ODOT/DLCD Transportation & Growth Management Program

Waldport Yaquina John Point Land Use and Transportation Final Preferred Plan

Adopted June 14, 2012

Prepared for:

City of Waldport

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The contents of this document do not necessarily reflect views or policies of the State of Oregon.

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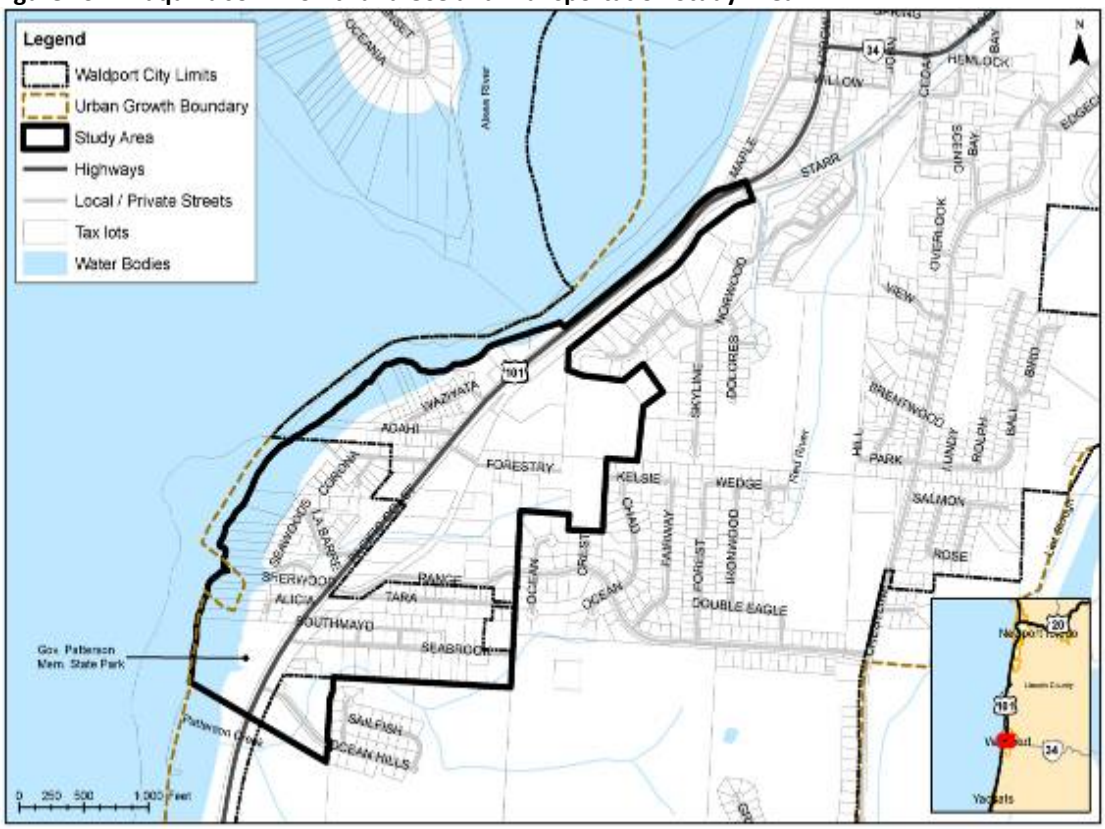
Executive Summary

Background

The Yaquina John Point Study Area encompasses about 150 acres in west Waldport, south of downtown and adjacent to the Pacific Ocean and Alsea Bay (see Figure ES-1). The Yaquina John Point Land Use and Transportation Plan (Plan) identifies needed transportation improvements and desired future land uses for this area, which is situated between a large undeveloped area in south Waldport and the downtown. While much of the Study Area is within current City limits, there are also large areas that are in unincorporated Lincoln County, including a large area west of US 101 and a residential area south of Range Drive.

Figure ES-1: Yaquina John Point Land Use and Transportation Study Area



Sources: Lincoln County, City of Waldport, State of Oregon July 2011

Planning Process

The Plan was developed in consultation with the project's Advisory Committee (AC), state and local agency representatives, and the public. The consultant team researched background conditions in the area, developed initial alternatives, evaluated and sought feedback on those alternatives, and developed the Preferred Plan.

Outreach during the planning process consisted of advisory committee meetings, stakeholder interviews, open houses and public meetings, and website updates. The consultant team collaborated with an advisory committee representing organizations such as the Waldport Planning Commission, the Waldport City Council, the Waldport Urban Renewal Agency, the Port of Alsea Commission, the Oregon

Department of Transportation, and the Oregon Department of Land Conservation and Development. Three advisory committee meetings and two open houses were held between July and December 2011. Interviews with stakeholders including realty interests, area property and business owners, and City officials were conducted early in the process (July 2011) as well.

A joint Planning Commission/City Council work session was conducted on March 8, 2012. The Planning Commission held a public hearing on April 23, 2012 and made a unanimous recommendation for adoption of the Plan with one suggested change: add a policy in support of transit service within the Study Area. The City Council held its public hearing on May 10, 2012 and took action on the plan on June 14, 2012. The City Council added the policy recommended by the planning commission and adopted the Plan.

Policy Framework

Adopted state and local plans were reviewed to establish a policy framework for the project. Key local documents included the City Transportation System Plan, Comprehensive Plan, Development Code, Parks Master Plan, the Lincoln County Transportation System Plan, Comprehensive Plan, and Zoning Code. State documents included the Oregon Transportation Plan, the Oregon Highway Plan, the Oregon Bicycle and Pedestrian Plan, the Transportation Planning Rule, the Access Management Rule, and the Pacific Coast Scenic Byway Corridor Management Plan for US 101 in Oregon.

The policy framework provides the parameters within which the Yaquina John Point Land Use and Transportation Plan must be developed. Alternately, these regulations can be the subject of changes identified during the planning process in order to ensure consistency between the Yaquina John Point Land Use and Transportation Plan and existing state and local regulations.

Existing Conditions Summary

Land Use

Existing land uses within the Study Area include single family homes, several apartment buildings, a mobile home park, a few small retail stores, a handful of real estate offices, a ranger station with U.S. Forest Service offices, a state park, two churches, an auto storage / towing company, a mini-storage facility with RV storage, and quite a few undeveloped properties. Many important shopping, employment, educational, and recreation destinations serving the Study Area are located in other parts of the City, including downtown, Waldport High School, Oregon Coast Community College, and the port.

Transportation

The existing transportation system generally performs adequately, and the following issues were identified:

- The local street network in the Study Area is relatively disconnected. This creates greater reliance on US 101 and hampers emergency access and egress.
- Driveways along US 101 do not comply with ODOT access spacing guidelines, thereby potentially inhibiting the throughput of this statewide facility.
- Many streets in the Study Area lack ADA accessibility.
- There is limited transit service to the Study Area, principally because of the low densities of development.

- All Study Area intersections operate well within ODOT and City mobility standards.
- This section of US 101 operates safely, as compared with similar highways.
- There are potential physical, environmental and utility issues associated with the completion of the street and pathway network in the Study Area.

Future Conditions

Land Use Designations

The land within the Study Area is currently zoned for a mix of uses including single-family residential (R-1 in both the City and the County), commercial (C-1 and C-2 in the City and C-T in Lincoln County), and public facilities (P-F in Lincoln County for the State Park). In both the City and County the predominant use allowed in the R-1 Residential zone is single family residential, though some supporting institutional uses are allowed conditionally. The C-1 zone allows a wide range of uses including single family residential, multi-family, office, hotels and motels, restaurants, retail, and commercial services. The C-2 zone allows an even wider range of uses, including those in the C-1 zone plus some heavy commercial / light industrial uses such as vehicle, boat, and heavy machinery service, storage, rental or repair; lumber or building materials sales or storage; and woodworking and metalworking. The County's C-T zone is similar to the City's C-1 zone except that the mix of retail uses and services is more limited.

Development Potential

The Study Area contains a total of roughly 36 acres of undeveloped land (excluding land that is protected from development, such as state parks and protected wetlands). There are also some redevelopment opportunities within the Study Area where existing land uses may transition over time to different or more intensive uses. However, there are some development constraints affecting the Study Area, including topography, wetlands, and public facilities. The projected new development over the next 25 years (based on population growth rates, historic growth trends, projected demand, and buildable area) includes roughly 36 new single-family homes and 6 multi-family units; 2,300 square feet of retail/service commercial; 2,500 square feet of office; 11,000 square feet of light industrial; and 4 hotel/motel rooms. The largest development opportunities in the Waldport UGB lie southeast of the Study Area, where there is potential for substantial mixed use development.

Transportation System Operations

General traffic growth and land development in the study area is expected to result in an increase of about 60 percent more trips on many streets in the study area. Even with this additional traffic, all Study Area intersections are projected to operate acceptably within the standards set by ODOT and the City of Waldport through the year 2035. The existing and planned street system currently operates well within acceptable standards for vehicular movements within and through the City. There are elements of the system that can be further improved, including:

- Extending local streets into new developing areas, and providing additional street connections to minimize out-of-direction travel;
- Providing safer and better connected circulation for pedestrian and bicycle modes;
- Enhancing safety and protection for pedestrians and bicyclists in the seawall section of US 101; and,

- Enhancing access control on US 101 to minimize vehicular conflicts and improve operations of the highway.

Alternatives Analysis

Land Use

Three key land use issues/opportunities were identified through research of existing conditions and consultation with stakeholders and City staff:

- Reducing the potential for incompatible uses especially in the C-2 zoning district or between commercial/industrial uses and residential uses.
- Opportunities to create a southern "gateway" to the City of Waldport.
- Provide for a variety of housing types and supportive uses.

Initial land use alternatives were developed to address these issues/opportunities. The initial alternatives included map amendments to change the zoning designations applied to specific parcels or groups of parcels; amendments to the list of uses allowed in the General Commercial (C-2) zone; design standards to address compatibility of commercial uses with adjacent residential districts; and design standards to enhance the appearance of the Study Area as a gateway to the downtown along US 101.

Based on input from state agency representatives, the AC and the public, a Draft Preferred Alternative was developed that included the following land use components:

- Five targeted zone/plan designation changes (two inside City limits and three for parcels outside City limits that would apply upon annexation).
- An overlay zone for the Study Area that included design standards to enhance compatibility of uses in commercial zones with adjacent residential districts; design standards for aesthetics of properties fronting on US 101; and restrictions on light industrial uses within the overlay.

The Preferred Land Use Plan has been refined based on comments on the Draft Preferred Alternative.

Transportation

There were a total of 48 transportation alternatives considered in five different elements of the plan, including US 101 Seawall section treatments, US 101 South section treatments, US 101 Access Management Policies and Standards, Local street connections, and pedestrian/bicycle pathways.

On US 101 in the Seawall section, the existing cross-section does not meet ODOT Highway Design standards, due to physical constraints. Seven alternatives were developed to either reconfigure the existing space or expand the highway width to better accommodate the needs of all travel modes. The US 101 South section is not as physically constrained, and six alternatives were evaluated to improve intersection operations and bicycle and pedestrian safety.

Local streets were identified to improve accessibility as properties develop, as were pathways and trails to provide better connections for bicyclists and pedestrians.

The 48 alternatives were carefully evaluated and input was solicited from the AC and general public. This process resulted in the dismissal of many alternatives, and a set of refined multi-modal projects are incorporated into the Preferred Transportation Plan.

Preferred Land Use Plan

Zone Changes

One property within City limits (north of the US Forest Service property) is proposed for a zone change, from C-2 to Residential Zone R-4. In addition, appropriate City zoning was identified for properties outside City limits within the Study Area. For the most part, the recommended future zoning designations follow logically from the existing Lincoln County zoning and the adopted Comprehensive Plan designations. However, three properties along US 101 – the undeveloped parcel north of LaBarre Drive, the undeveloped parcel north of Alicia Lane, and the parcel developed with a single-family home south of Alicia Lane - are proposed for multi-family residential zoning rather than the current (and default future) commercial zoning.

Waldport South Overlay Zone

The Preferred Land Use Plan creates a new overlay zone for the Study Area, focused on the areas currently zoned for commercial uses. The overlay zone will be implemented through a new chapter adopted into Municipal Code Title 16, Waldport's Development Code. The area in which the overlay zone and the design standards apply is shown in Figure ES-2.

Within the overlay zone, many of the heavy commercial / light industrial uses allowed outright in the C-2 zone are designated as conditional uses; two are prohibited entirely. Conditional uses require review by the city's Planning Commission, which creates an opportunity to ensure compatibility with adjacent uses and to address quality of life concerns including noise, parking, site layout, hours of operation, etc.

As an additional measure to ensure compatibility between commercial uses and abutting residential districts, the overlay zone includes special design standards that apply generally within 100 feet of a residential district. These standards prohibit outdoor storage and commercial or industrial activities within 100 feet of a residential district and require landscaping to provide visual screening along property lines shared with residential zones.

In response to the broad desire to improve the appearance of development along US 101 in the Study Area and create a more attractive gateway to the downtown, the overlay zone also includes design standards to enhance the appearance of new development fronting on US 101. New development fronting on US 101 must locate the building near the road or limit the amount of parking near the road; provide extra screening between parking and the street; orient entrances towards the front or side of the lot; and provide a safe and convenient pedestrian walkway from the street to the entrance. The overlay also includes provisions addressing driveways to improve the safety and comfort of bicycle and pedestrian travel on US 101.

Preferred Transportation Plan

The Preferred Transportation Plan addresses existing and projected capacity, safety, and connectivity needs within and through the Study Area for all travel modes. Figure ES-3 shows the planned transportation improvements. Due to the relatively high cost of the long-term plan for the US 101 Seawall section, interim plans were developed to maximize use of the existing cross-section. This interim plan includes the first phase of the Bridgeview Trail on the terrace above the highway to the east. In the long-term, the Plan calls for travel lanes and shoulders to be widened to meet ODOT Highway Design standards and the Bridgeview multi-use path to be further improved and extended to meet ADA standards.

In the US 101 South section, the Plan calls for sidewalks separated from the highway and crosswalks with median islands and flashing beacons to provide safer routes for pedestrians, as well as a center left turn lane from Waziyata Avenue to Patterson State Park. As properties develop on US 101, strategies have been established to consolidate and eliminate driveways that may inhibit highway capacity.

Over 1.6 miles of local streets are planned to better connect upland areas with those along the highway. The new streets are intended to provide a more connected, convenient network to serve all modes of transport. Key planned streets include:

- *An alley on the old railroad corridor, behind the properties east of US 101, from Range Drive to the new Forestry Way-Kelsie Lane extension to accommodate local access;*
- *An extension of Kelsie Lane from the neighborhood in the upper level of the Study Area to connect with US 101 directly opposite Corona Court; and*
- *Local connections within the residential areas and to newly developable areas south of the Study Area.*

These streets would be funded primarily by local development through which they serve; however, the streets that benefit the greater public may be partially city or ODOT funded.

About 1¼ miles of pathways are planned to provide safe connections between key activities and scenic recreational opportunities for urban hikers. In addition, existing beach access trails should be improved and signed.

Total transportation improvement costs are estimated at $9.5 million, about 50% of which is expected to be funded by future private development. Of the remaining $4.7 million, over half (56%) would be the responsibility of ODOT, with City funding expected to be about $2.0 million. Projects have been phased over time in recognition of limited funding.

Figure ES-2

Waldport South (W-S) Overlay Zone Boundaries and Applicability of Design Standards

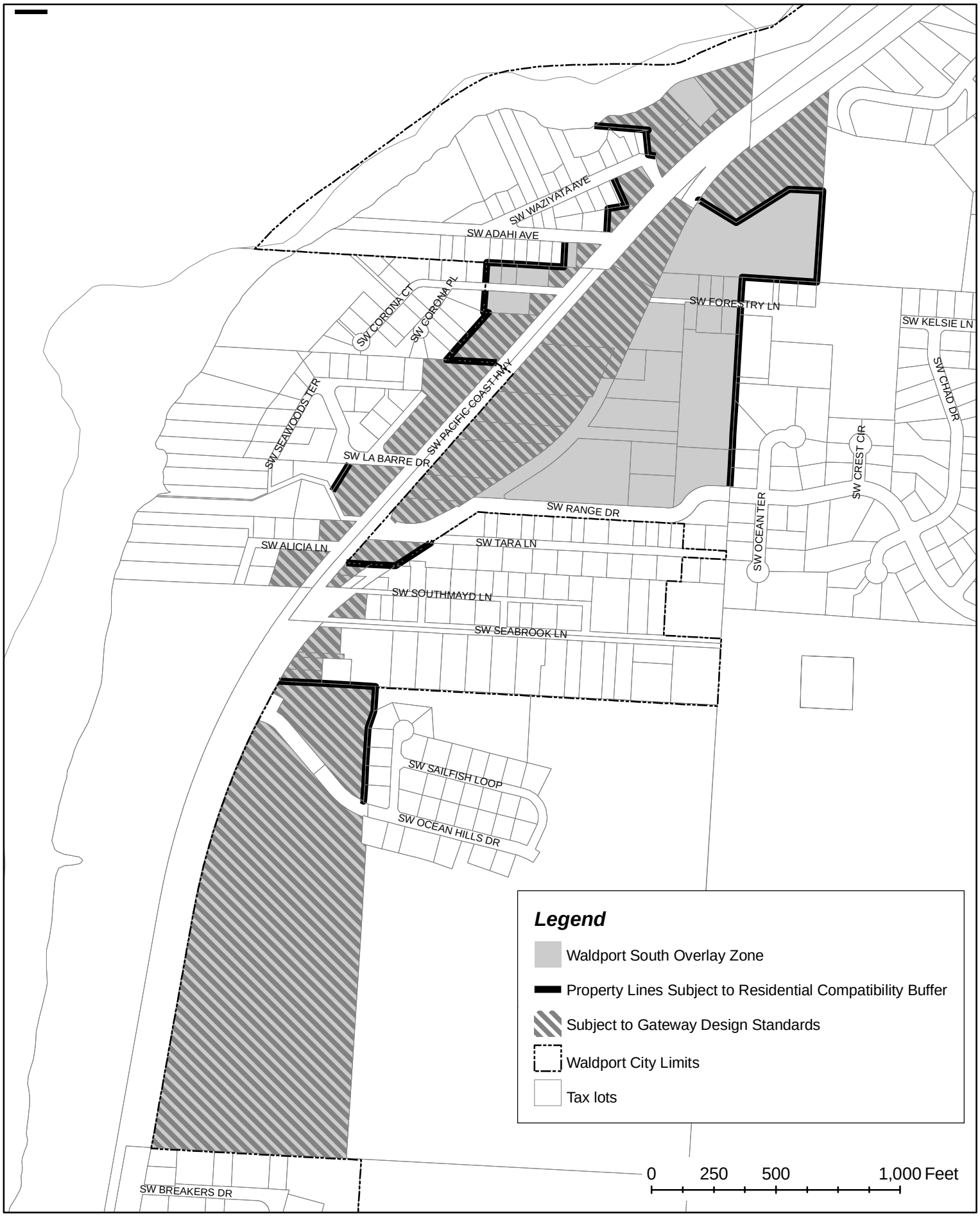
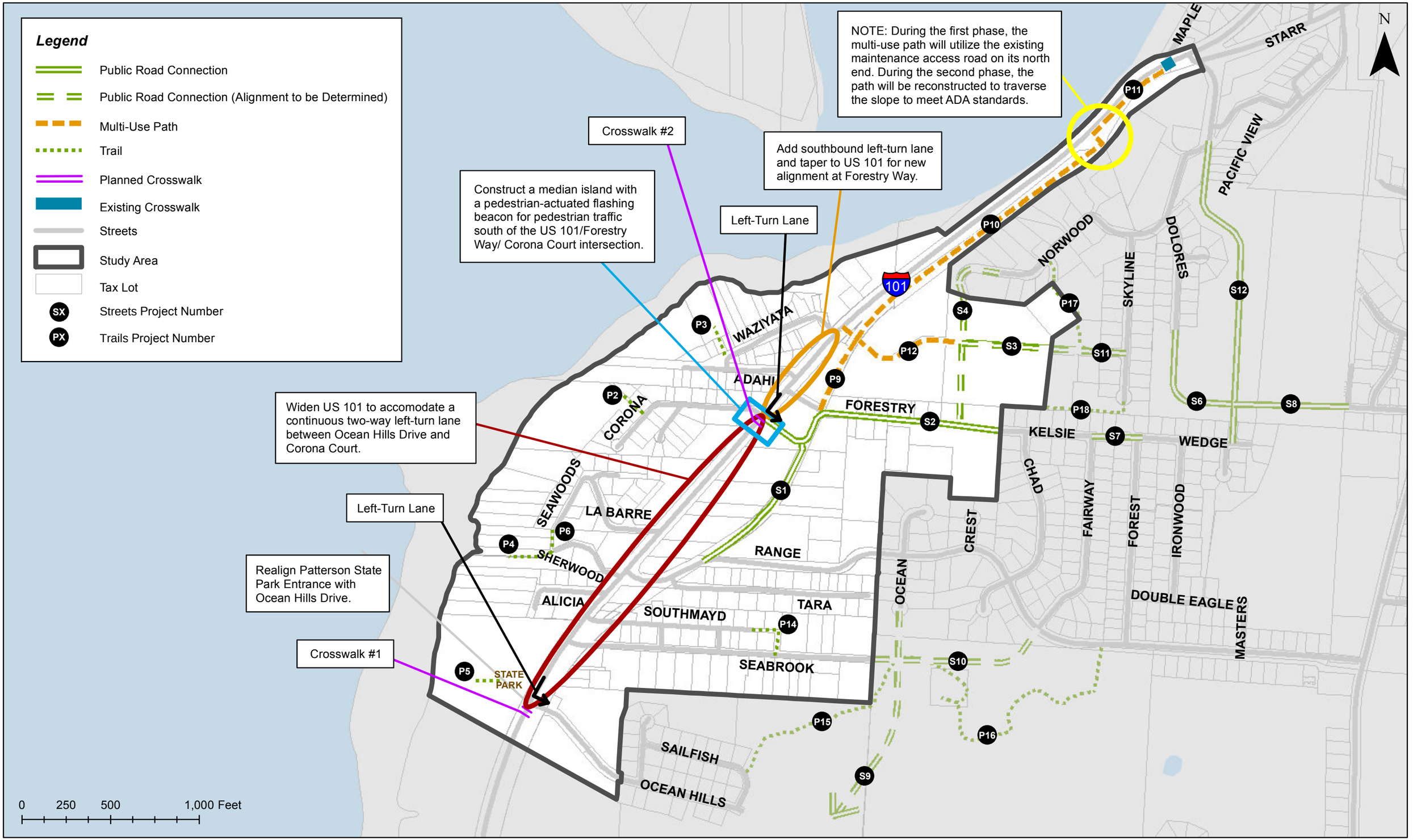


Figure ES-3: Preferred Transportation Plan



Prepared January 2012

1. Introduction

Project Background and Purpose

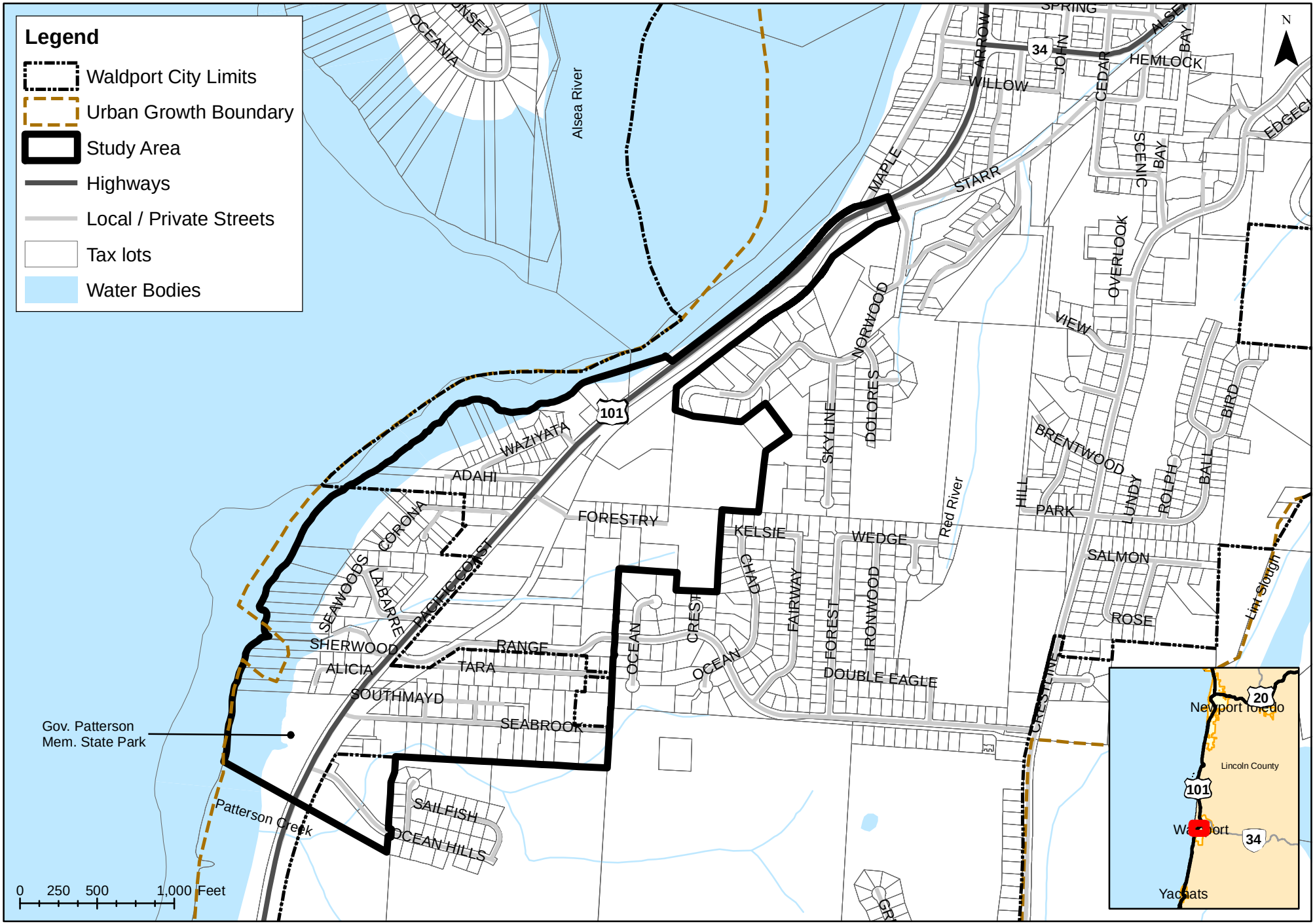
The Yaquina John Point Study Area encompasses about 150 acres in west Waldport, south of downtown and adjacent to the Pacific Ocean and Alsea Bay (see Figure 1-1). The Study Area is situated between a large undeveloped area in south Waldport and the downtown. Public sewer has recently become available to south Waldport and is being extended to parts of the Study Area that did not previously have service. In recent years, the City has received land use applications and inquiries regarding development for various properties along the US 101 corridor within the Study Area and for the more than 475 acres that was previously planned as the Naples Golf and Beach Resort (a project which has since been abandoned). Traffic studies for some of these proposed developments indicated that US 101 improvements will be needed as development occurs. While individual development projects may not trigger the need for US 101 improvements, multiple projects eventually will. In addition, the City's adopted Transportation System Plan (TSP) identifies the need to develop a US 101 corridor plan through the Study Area. This document provides that plan.

Another important goal of this project was to address land use and zoning issues within the Study Area. The current zoning in the Study Area is a mix of single-family residential and various commercial zones. The project evaluated the current zoning as well as potential alternatives, including appropriate zoning designations for Study Area properties within the Urban Growth Boundary but currently outside City limits that will be annexed in the future.

Project Objectives	
✓	A US 101 plan that will adequately accommodate future traffic and adjacent land uses, i.e. travel lanes, turn lanes, bicycle and pedestrian facilities, parking, access and landscaping.
✓	A feasible conceptual plan for pedestrian and bicyclist travel improvements along the Seawall between Yaquina John Point and downtown Waldport that addresses travel safety and, to the extent practicable, enhances the experience of such travel.
✓	A local street system that will provide enhanced connectivity, reduce vehicle miles traveled, and improve access to and from US 101.
✓	A connected system of pedestrian and bicycle facilities.
✓	A land use plan that will guide future growth and mitigate conflicts among different land uses.
✓	Appropriate zoning designations for all properties within the Study Area.

Figure 1-1

Yaquina John Point Land Use and Transportation Study Area



Sources: Lincoln County, City of Waldport, State of Oregon

July 2011

Planning Process and Community Involvement

The Final Preferred Plan was developed through meetings with the project's Advisory Committee (AC), state and local agency representatives, and the public. The Project Team initially researched and documented background conditions in the Study Area, and reviewed these with the AC and key local stakeholders on July 20, 2011. Based on this information, the Project Team developed initial alternatives for land use and transportation within the Study Area. These initial alternatives were screened for technical feasibility and compliance with state policy by state agency representatives at a meeting on September 6, 2011. Those alternatives that were found to be potentially feasible were presented to the AC and the public for review and comment at meetings on September 26, 2011. The feedback obtained during those meetings informed and shaped the development of the Draft Preferred Plan, which was reviewed and discussed by the AC and the public at meetings on December 5, 2011. Input from those meetings led to refinement of the Preferred Plan.

A joint Planning Commission/City Council work session was conducted on March 8, 2012. The Planning Commission held a public hearing on April 23, 2012 and made a unanimous recommendation for adoption of the Plan with one suggested change: add a policy in support of transit service within the Study Area. The City Council held its public hearing on May 10, 2012 and took action on the plan on June 14, 2012. The City Council added the policy recommended by the planning commission and adopted the Plan.

2. Policy Framework Overview

Plan Requirements

Implementation of the Yaquina John Point Land Use and Transportation Plan will require modifications to the City of Waldport's planning and regulatory documents, including the City's Transportation System Plan (TSP), Development Code, and Comprehensive Plan. Modifications to these documents to implement the Plan are included as attachments to the Plan, but must be formally adopted by the City in order to take effect.[1]

Policy Guidance by Topic Area

This section summarizes relevant state and local policies by topic area and describes how they affect planning for land use and transportation within the Study Area. This section describes the *existing* policy framework within which the Plan was developed; some changes to local plans and policies that will implement the Plan have been identified through the planning process. These are described in Sections 6 and 7.

Access Management

Access management is the systematic implementation and control of the locations, spacing, design, and operations of driveways and street connections to a roadway, with the intent of preserving the transportation system investment, and guarding against deteriorations in safety and increased congestion. Well deployed access management strategies can greatly improve travel conditions for the motoring public, pedestrians and bicycles. Eliminating the number of access points on roadways reduces the number of potential interruptions and conflict points between pedestrians, bicyclists, transit vehicles and cars.

Oregon Administrative Rule (OAR) 734-051 provides access management standards for state facilities that address when approaches to state roadway facilities are regulated, spacing standards for approaches to state highways, and when and how access management plans should be prepared. The *Oregon Highway Plan* (OHP) identifies US 101 in the Study Area as a Statewide Highway, not a freight route, and a Non-Designated Urban Highway (meaning that it runs through an urban area and does not carry any special land use designations). This has implications for access management on the facility. Non-Designated Urban Highways are intended to balance moving through-traffic with providing access to abutting properties. OAR 734-051 was recently updated (December 2011), and temporary administrative rules are in effect. Section 734-051-4020 of the temporary administrative rule provides standards and criteria for private approaches (e.g. driveways).

Lincoln County's TSP includes a recommendation to adopt access management standards that reflect state standards into the development code; however, while other recommended text amendments from the TSP are reflected in the current version of the Lincoln County Code, this section is not included. The City's TSP includes policies supporting access management on arterials (including US 101) and collectors (including Range Drive); however, these policies are not implemented through the development code, and neither the TSP nor the development code includes access spacing standards. Street Plan Project H

[1] Conforming amendments are included as attachments in adoption-ready language; however, the City may choose to modify the policy and/or code language prior to adoption without amending the Plan itself.

in the City TSP calls for improvements to access at the time of redevelopment, but there is currently no corresponding language in the City's development code to implement this action.

Roadway Design

The state *Highway Design Manual* generally guides roadway design standards for state facilities such as US 101. There is a process for applying for exceptions to these standards for stretches of roadway where other designs may be more appropriate. This Plan identifies conceptual designs for US 101 in the Study Area; in some areas the conceptual designs are non-standard, and would require a design exception.[2] Local street design is regulated by the 1999/2009 City TSP and the City development code through a table that addresses right-of-way and surface width and notes that describe the standard cross-section for various types of streets.

Bicycle and Pedestrian Facilities

High-level policy support for improving bicycle and pedestrian facilities along state highways is contained in OTP Policies 1.1 (Integrated Multimodal System) and 1.2 (Equity, Efficiency and Travel Choices). In addition, the 1997 *Pacific Coast Scenic Byway Corridor Plan* and City Comprehensive Plan Open Space policies support development and enhancement of the Oregon Coast Trail and Oregon Coast Bike Route through Waldport. A variety of City policies and code provisions support bicycle and pedestrian projects and increasing access and connectivity for walking and biking.

The 1995 *Oregon Bicycle and Pedestrian Plan* includes guidance on the type of bicycle facilities that are appropriate to different roadway conditions, such as dedicated bicycle facilities on higher traffic and higher speed roadways or where children may use them as part of a Safe Routes to School program, and shared roadways for low traffic, low speed roadways. It also notes that a multi-use path may be appropriate where street connections are unavailable or substantial out-of-direction travel is required, and that bike facilities should connect residential neighborhoods to schools, retail centers, and employment areas. (Additional detail on the types of bicycle facilities is included in Section 3 beginning on page 15.) A.1. Action 1 of the *Oregon Bicycle and Pedestrian Plan* establishes the conditions for when and how bicycle and facility improvements will be provided along state facilities (in some cases these facilities may be provided on local streets that provide a better alternative to the highway). The design of these facilities is covered in the *Highway Design Manual*, discussed above.

The City TSP describes the type of bicycle and pedestrian facilities that are appropriate on the street system in Waldport, including bicycle lanes and sidewalks (6-foot-wide facilities, appropriate for arterials in the City such as US 101), shoulder bikeways (also for pedestrians, four to six feet, on collectors such as Range Drive), and shared roadways (on local streets). These facilities are compatible with the standards in the County TSP, which addresses shoulder bikeways and calls for four to six feet. Section 16.100.100 of the City's development code identifies required roadway right-of-way and paved surface widths for various types of streets. These standards are expressed as ranges; the City may require a width within the limits based upon adjacent physical conditions, safety of the public and the traffic needs of the community. The standard street section for collector and business streets is two 16-22' travel lanes (including the paved shoulder), 2' curb and gutter, 5' sidewalk and 7' utility strip.

[2] This plan does not provide the documentation needed to support design exceptions. Such documentation will need to be developed during construction-level design of any highway improvements that do not meet design standards.

Beach Access and Trails

Numerous City Comprehensive Plan policies, including those related to Open Space, Recreation, Transportation, and Coastal Shorelands, call for increased and improved beach access. Natural Hazard policies support public beach access but in a "defined" way so as to limit impact and exposure to natural resource and hazard areas. The existing City TSP does not call out specific beach access projects for the Study Area.

The City Parks Master Plan includes clear standards for trails. It establishes policies promoting more trails on City-owned land and to provide more access to water and open spaces, but does not identify specific trail projects for the Study Area. As noted above, the 1997 Pacific Coast Scenic Byway Corridor Plan and City Comprehensive Plan Open Space policies support development and enhancement of the Oregon Coast Trail, which runs along US 101 through the northern portion of the Study Area, and along the beach through the southern portion of the Study Area.

Mobility / Safety

OTP Goal 5 (Safety and Security) provides state-level support for safety policies and projects at the local level. The Oregon Highway Plan (OHP) establishes clear mobility standards for state facilities such as US 101 in Waldport. The County has adopted ODOT mobility standards in its TSP. County code also includes requirements for traffic impact studies. The City TSP and code do not include specific mobility standards or traffic impact study requirements.

Land Use

High-level state policies (including the Transportation Planning Rule and Policy 1B of the OHP) call for integrating land use and transportation planning. Other state policies (such as Policy 4.3 of the OTP) support compact communities with a variety of uses to support use of alternative modes and reduce vehicle miles traveled. City Comprehensive Plan policies provide general guidance for land use in the City and Study Area, including policies calling for more, but "suitable", industrial and commercial development as well as a range of housing types. The City C-1 and C-2 zoning and County C-T zoning in the study area are very permissive zones, allowing a variety of commercial, residential, and, in some cases, light industrial uses, while the residential zones (R-1 in both the City and the County) allow for relatively compact single-family neighborhoods where urban services are available. Additional information about existing City zoning and proposed changes is included in Sections 4 and 6.

Connectivity

State transportation policies, including Strategies 1.2.2, 1.3.2, and 2.1.4 of the 2006 OTP and Action 1B.5 of the OHP, support the development of connected networks of local, arterial, and collector streets to improve local traffic movements and preserve state highways for intercity transportation. City and County code both include general provisions and requirements for vehicle and pedestrian circulation and connectivity within and through development sites. The City TSP Street Plan Projects F and G call for improvements to connectivity for undeveloped land and new development. Other street and pedestrian/bicycle plan projects included in the existing TSP will improve connections in the City, including a new east-west connection between Crestline Drive and US 101, a new east-west connection between Kelsie Lane and US 101, and new north-south connections between Norwood Drive and Range Drive in the Study Area vicinity.

Functional Classification

A roadway's functional classification determines its role in the transportation system, as well as its width, right-of-way dedications, driveway (access) spacing requirements, and types of pedestrian and bicycle facilities provided. City and ODOT roadway classifications relevant to the Study Area are described in Section 3 beginning on page 11.

Signage

Signs within ODOT right-of-way are regulated by ODOT's Right of Way section within the Highway Division. Signs on private property are governed by Chapter 16.76 of the City's development code. In addition, signs on private property that are visible from the highway are regulated by state law (Oregon Revised Statutes Chapter 377). Advertising signs that are not associated with the business conducted on-site are prohibited along US 101 both by local and state regulations.

3. Existing Conditions

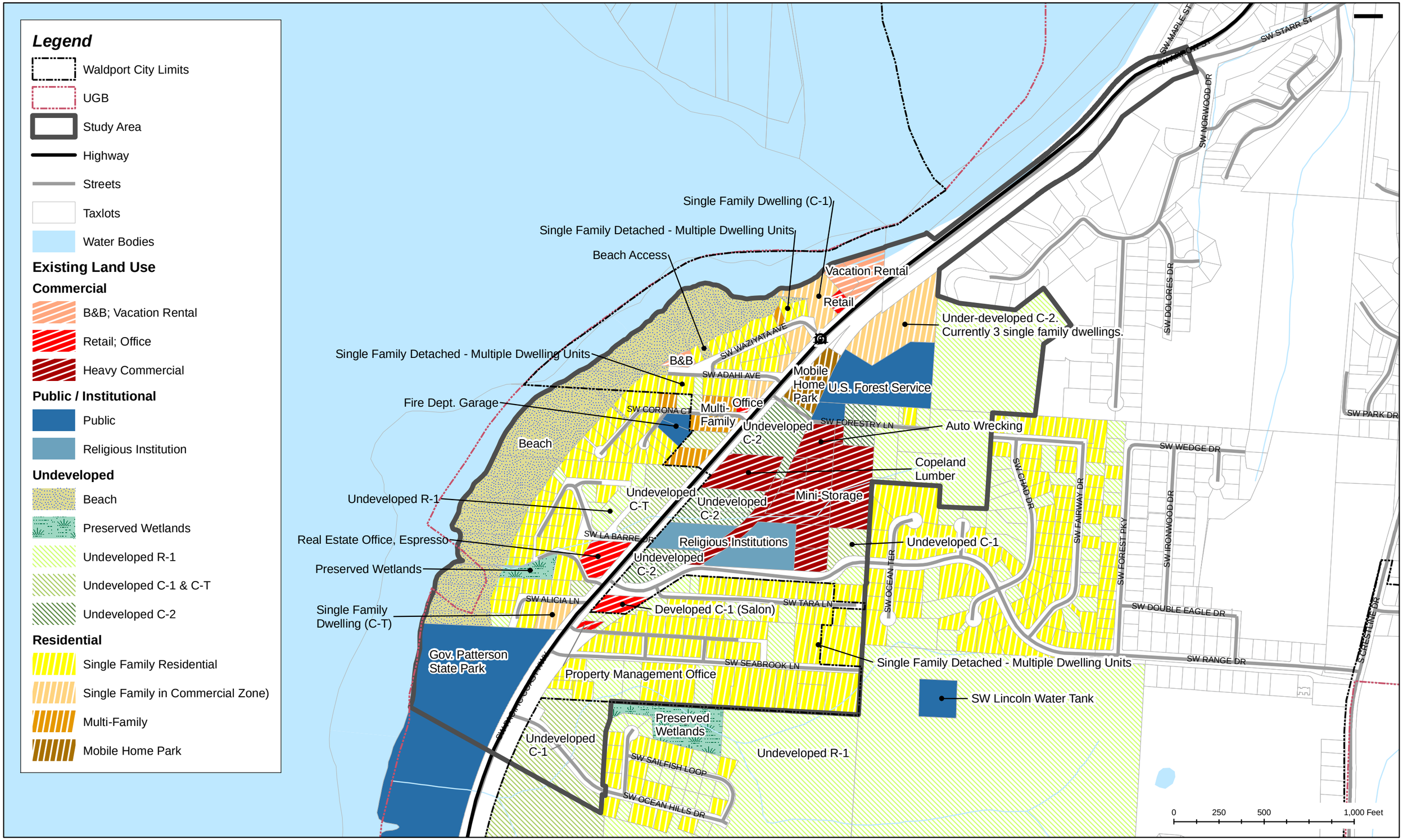
Land Use

Existing land uses within the Study Area include single family homes, several apartment buildings, a mobile home park, a few small retail stores, a handful of real estate offices, a ranger station with U.S. Forest Service offices, a state park, two churches, an auto storage / towing company, a mini-storage facility with RV storage, and quite a few undeveloped properties. Existing land uses are shown on Figure 3-1: Existing Study Area Land Uses.

Many important shopping, employment, educational, and recreation destinations serving the Study Area are located in other parts of the City. These include downtown, Waldport High School, Oregon Coast Community College, and the port, as shown on Figure 3-2: Pedestrian Destinations.

Figure 3-1

Existing Land Use

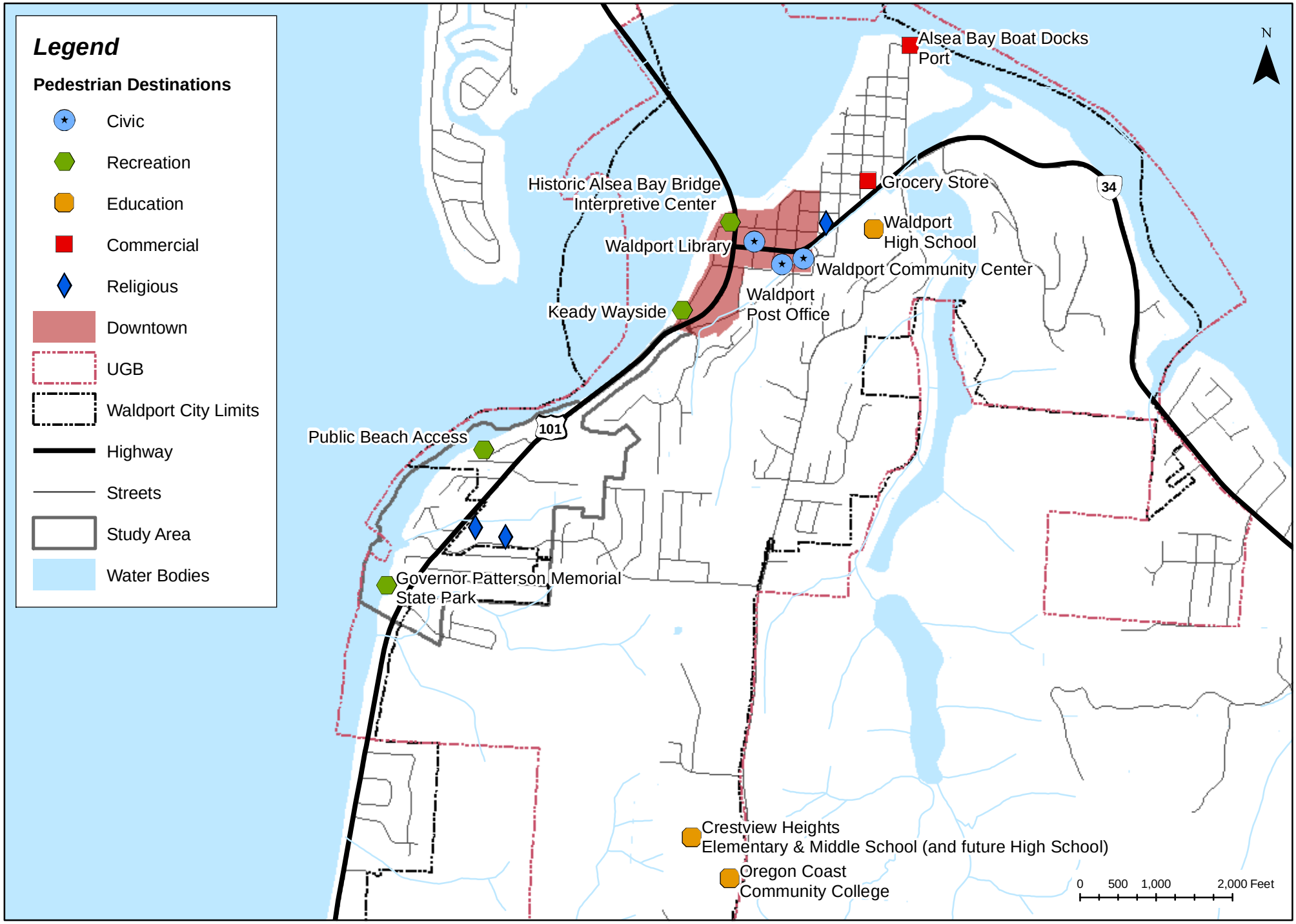


Sources: Lincoln County (Aerial Photo: 2009; Taxlots, Street Names: May 2011); State of Oregon (State Highways: 2009; UGB, Water Bodies: 2010); City of Waldport (City Limits: May 2011). Existing Land Use information compiled from City, Field Survey, and Assessor's Database (May 2011).

Prepared June 2011

Figure 3-2

Pedestrian Destinations



Sources: Lincoln County (Streets: May 2011); State of Oregon (State Highways: 2009; UGB, Water Bodies: 2010); City of Waldport (City Limits: May 2011).

Prepared June 2011

Transportation

This section describes the current classifications, physical conditions, performance and operational deficiencies of the Study Area's transportation system. Automobile, freight, pedestrian, bicycle, and public transportation modes are each addressed.

Street Condition and Functional Classification

Highways and streets are the primary means of mobility for Waldport's citizens, serving the majority of trips over multiple modes. Pedestrians, bicyclists and motorists all utilize public roads for the vast majority of their trips. US 101 is under the authority of ODOT. The remaining Study Area streets are under City, County, or private jurisdiction. Each jurisdiction has the authority to designate allowable traffic loads, permitted speeds, and access on their respective facilities.

Roadway Functional Classification

As noted above, a roadway's functional classification determines its role in the transportation system, as well as its width, right-of-way dedications, driveway (access) spacing requirements, and types of pedestrian and bicycle facilities provided. The functional classification is typically established by the City based on the following hierarchy:

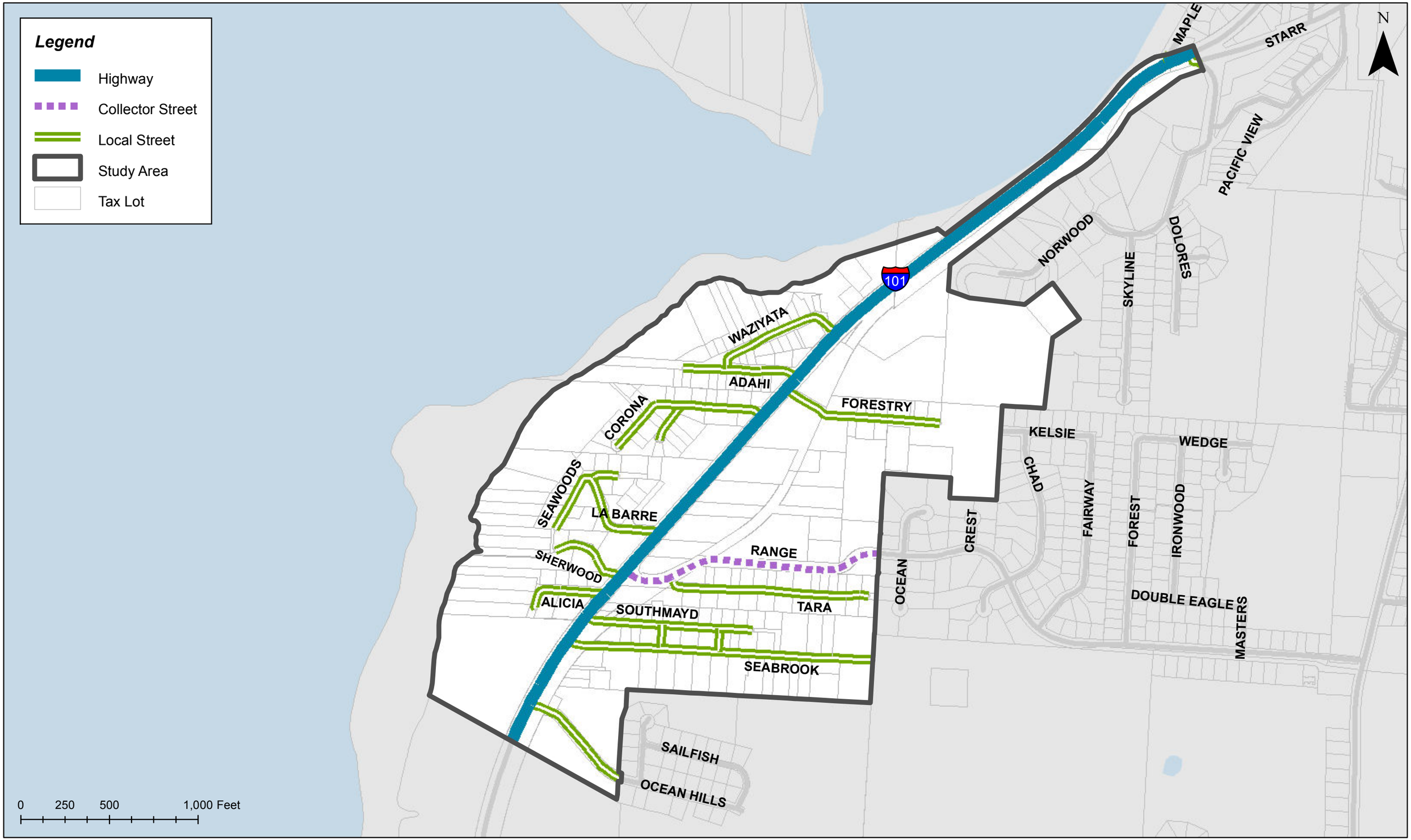
> *Highways* – ODOT facilities (described below) are all arterials by function.
>
> *Arterials* are intended to serve high volumes of traffic, particularly through traffic, at relatively high speeds. They also serve truck movements and typically emphasize traffic movement over local land access.
>
> *Collectors* serve traffic from the local street system and distribute it to the arterial street system. These roadways provide a balance between traffic movement and land access, and should be designed as best to facilitate traffic circulation throughout the City.
>
> *Local* streets provide land access and carry locally generated traffic at relatively low speeds to the collector street system. Local streets should provide connectivity through neighborhoods, but should be designed to discourage cut-through vehicular traffic.

The existing Waldport functional classifications within the Study Area, as designated in the 1999 TSP, are shown in Figure 3-3: Roadway Functional Classifications.

ODOT has a separate classification system for its highways that guides the planning, management, and investment for state highways. ODOT's categories, from highest to lowest, are *Interstate*, *Statewide*, *Regional*, and *District* highways. As noted previously, the *Oregon Highway Plan* (OHP) classifies US 101 as a *Statewide Highway* on the National Highway System (NHS). The OHP defines *Statewide Highways* on the NHS as follows:

> Statewide Highways (NHS) typically provide inter-urban and inter-regional mobility and provide connections to larger urban areas, ports, and major recreation areas that are not directly served by Interstate Highways. A secondary function is to provide connections for intra-urban and intra-regional trips. The management objective is to provide safe and efficient, high-speed, continuous-flow operation. In constrained and urban areas, interruptions to flow should be minimal. Inside Special Transportation Areas (STAs), local access may also be a priority.

Figure 3-3: Roadway Functional Classifications



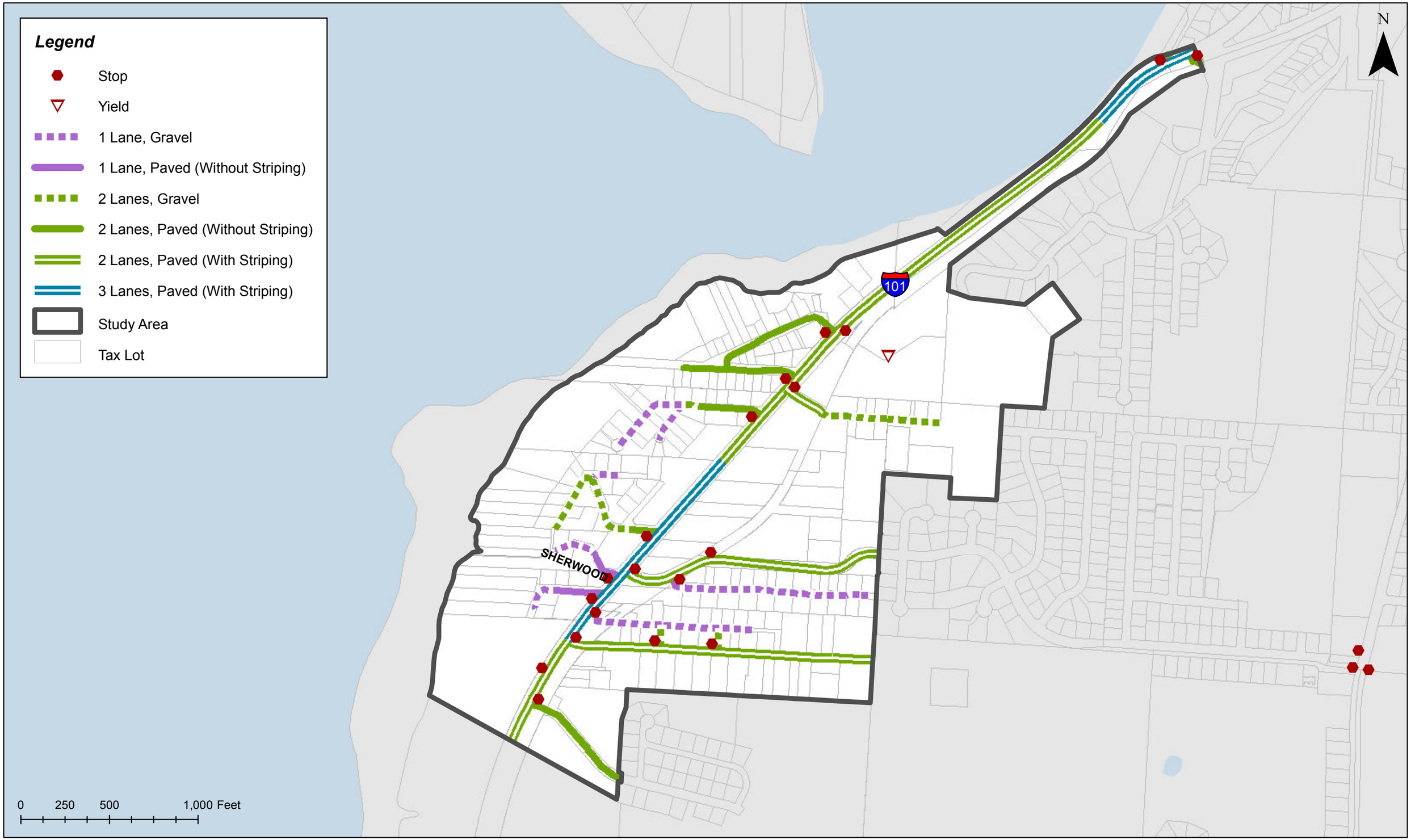
Sources: City of Waldport

Prepared June 2011

Roadway Condition, Width, and Lanes

The City provided an assessment of the current condition and characteristics of each roadway within the Study Area. Roadway condition, with respect to whether streets are gravel, paved, or striped, is shown in Figure 3-4: Existing Roadway Condition, Width, and Traffic Controls, which also shows the number of lanes of each street in the Study Area and existing traffic controls on Study Area streets. As shown, the highway and Range Drive are 2-3 lanes, and most local streets are two lanes, with some low volume local streets being only one lane. All side streets intersecting with US 101 are stop-controlled. In addition, at some intersections of two local streets, the higher-order street has priority over the subsidiary street, as enforced through stop and yield signs.

Figure 3-4: Existing Roadway Condition, Width, and Traffic Controls



Sources: Data Collected by Consultant Team May 2011

Prepared June 2011

Bicycle, Pedestrian and Transit Facilities

Bicycle System

The 1995 *Oregon Bicycle and Pedestrian Plan* identifies four basic bikeway designs:

- Shared roadway – Bicycles and vehicles share the same roadway area under this classification. The shared roadway facility is best used where there is minimal vehicle traffic to conflict with bicycle traffic.
- Shoulder bikeways – This bicycle facility consists of roadways with paved shoulders to accommodate bicycle traffic.
- Bike lanes – Separate lane adjacent to the vehicle travel lane for the exclusive use of bicyclists are considered bike lanes.
- Multi-use path – A facility separated from the roadway by open space or a barrier that is typically used by pedestrians, joggers, skaters, and bicyclists.

Key guidance provided by the *Oregon Bicycle and Pedestrian Plan* includes:

- Dedicated bicycle facilities should be provided along major streets where automobile traffic speeds are significantly higher than bicycle speeds.
    - Allowing bicycle traffic to mix with automobile traffic is acceptable where the average daily traffic (ADT) on a roadway is less than 3,000 vehicles per day and vehicular speeds are low.
    - Lower volume roadways should be considered for bike shoulders or lanes if anticipated to be used by children as part of any potential future Safe Routes to School program.
- Bicycle facilities should connect residential neighborhoods to schools, retail centers, and employment areas.
- In areas where no street connection currently exists or where substantial out-of-direction travel would otherwise be required, a multi-use path may be appropriate to provide adequate facilities for bicyclists.

Figure 3-5: Existing Pedestrian, Bicycle and Transit Facilities shows the bicycle facilities in the Study Area, which are limited to six-foot shoulder bikeways (such as those shown in the photo below) in the US 101 South section and narrower shoulder bikeways in the US 101 Seawall section (as noted in Figure 3-5).

US 101 Shoulder Bikeway

All other streets in the Study Area do not have designated bicycle facilities; hence, bicyclists are required to share the traveled way with motorists on these streets (see image below). With the exception of Range Drive, all local streets in the Study Area have posted travel speeds of 25 miles per hour or less and carry less than 3,000 vehicles per day. Per the guidance of the *Oregon Bicycle and Pedestrian Plan*, it is acceptable for bicyclists to share the traveled way with motorists on these streets.

Local Street Shared Lane

Pedestrian System

Figure 3-5 also shows the pedestrian facilities in the Study Area. As shown, only Ocean Hills Drive (outside the gates of the Ocean Hills subdivision) has sidewalks (see photo below, left). The remainder of the streets in the Study Area require that pedestrians walk on the traveled way.

Ocean Hills Drive Sidewalks

On US 101, pedestrians may walk on the shoulder bikeway (see photo below, left), except in the section along the Seawall. The section of US 101 along the seawall is an especially constrained section as people walking and cycling must travel within the same space as motor vehicle traffic (see photo below, right). There is limited space for pedestrian and bicycle facilities due to the existing steep hillside on the east side and seawall to the west. There are no crosswalks across US 101 in the Study Area.

Pedestrians on US 101 Shoulder

Pedestrians on US 101 Seawall Section

As illustrated by Figure 3-2: Pedestrian Destinations, US 101 is the most direct route for much of the study area to reach key destinations in and around downtown Waldport, including Waldport High School. During field observations, youth were seen walking on the shoulder of US 101 at the seawall on their way to school. Range Drive, which has no sidewalks and narrow shoulders, provides an important connection to Crestview Heights Elementary and Middle School, which is also the site of a future High School.

There is an extensive, albeit relatively discontinuous, system of pedestrian pathways in the Study Area. Many of these paths are informal trails through private properties.

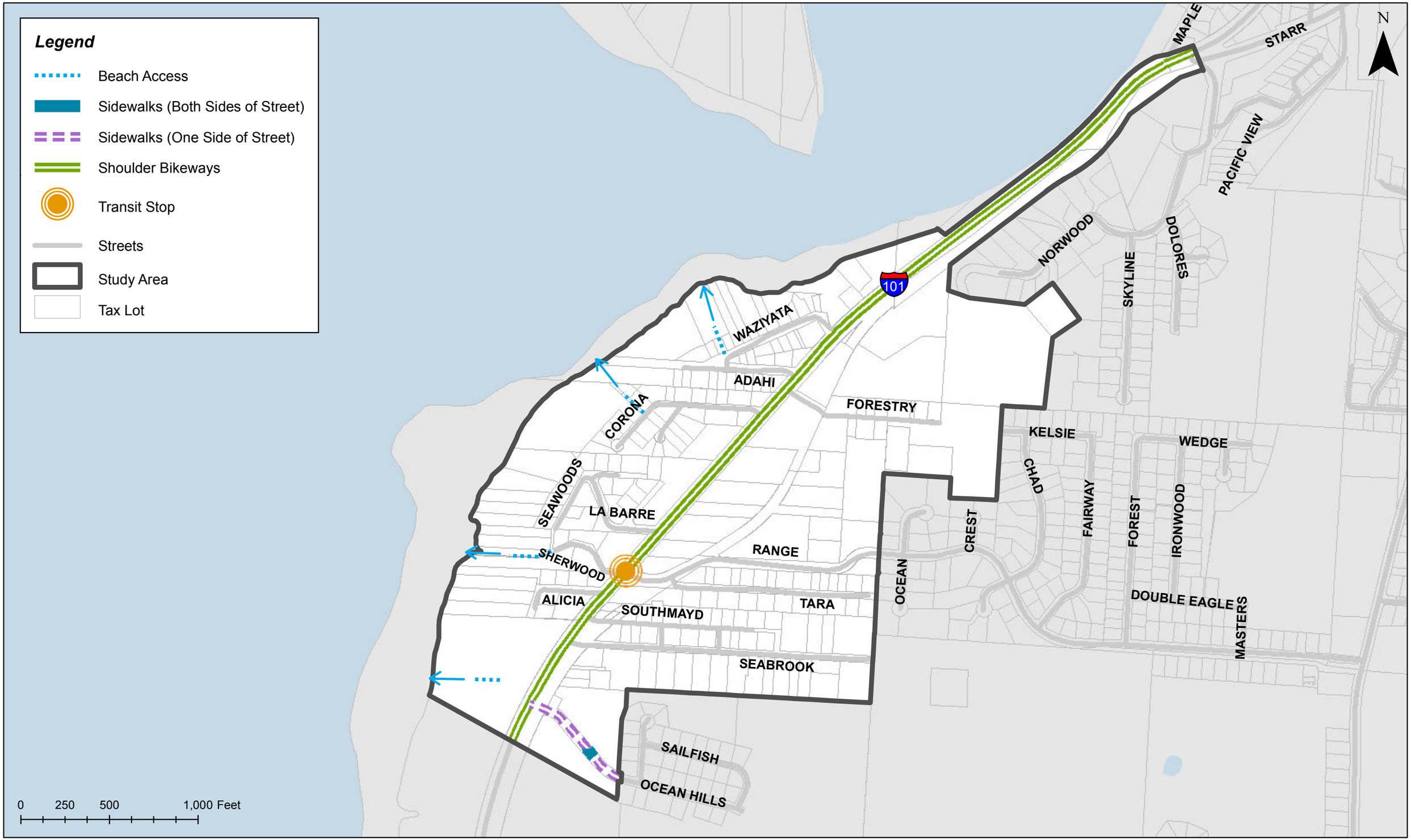
Within the Study Area, there are currently five pathways providing pedestrian access to the beach (see Figure 3-5: Existing Pedestrian, Bicycle and Transit Facilities for locations). The beach pathways vary widely in terms of width, grade, and ease of access, and are typically not ADA accessible (see photo below). However, the beach paths are all accessible for typical able-bodied walkers.

Beach Access Point at Corona

Transit Facilities

The Lincoln County Transit *Yachats to Newpor*t (Northbound) bus serves the Study Area, and stops on US 101 at the Range Drive intersection when passengers are present. (Figure 3-5 shows the bus stop location.) Riders can also pre-arrange to be picked up/dropped off at other safe locations. Currently, this route runs four times daily, Monday through Saturday. According to Fred Collazo, Operations Supervisor, this route carries 55-56 one-way trips on a typical day, with 1-3 trips per day boarding and alighting within the Waldport study area. There are no current plans to expand service, nor are there plans to cut service on this route. The importance of transit service to the community of having transit service available within and through the Study Area was emphasized by both the Planning Commission and City Council during the joint work session and public hearings. Decisions about transit service are made by Lincoln County Transit, with input from local jurisdictions. Waldport has the opportunity to work with Lincoln County Transit when service levels are under consideration and to assure that bus stops are located at safe and convenient places.

Figure 3-5: Existing Pedestrian, Bicycle and Transit Facilities



Sources: City of Waldport, Lincoln County Transit, Data Collected by Consultant Team May 2011

Prepared June 2011

Roadway Physical, Operating, and Safety Characteristics

US 101 Cross-Section

US 101 has varying cross-sections through the Study Area. Figure 3-6: US 101 Cross-section Milepost References shows the milepost (MP) references for the various cross-sections that are illustrated in Figure 3-7: US 101 Existing Cross-Sections by Milepost. Table 3-1 has the specific dimensions of each cross-section illustrated in the figures. As shown in these materials, US 101 – particularly in the seawall section – has insufficient width to adequately facilitate the vehicular, bicycle, and pedestrian needs that are placed on it on a daily basis.

US 101 Access

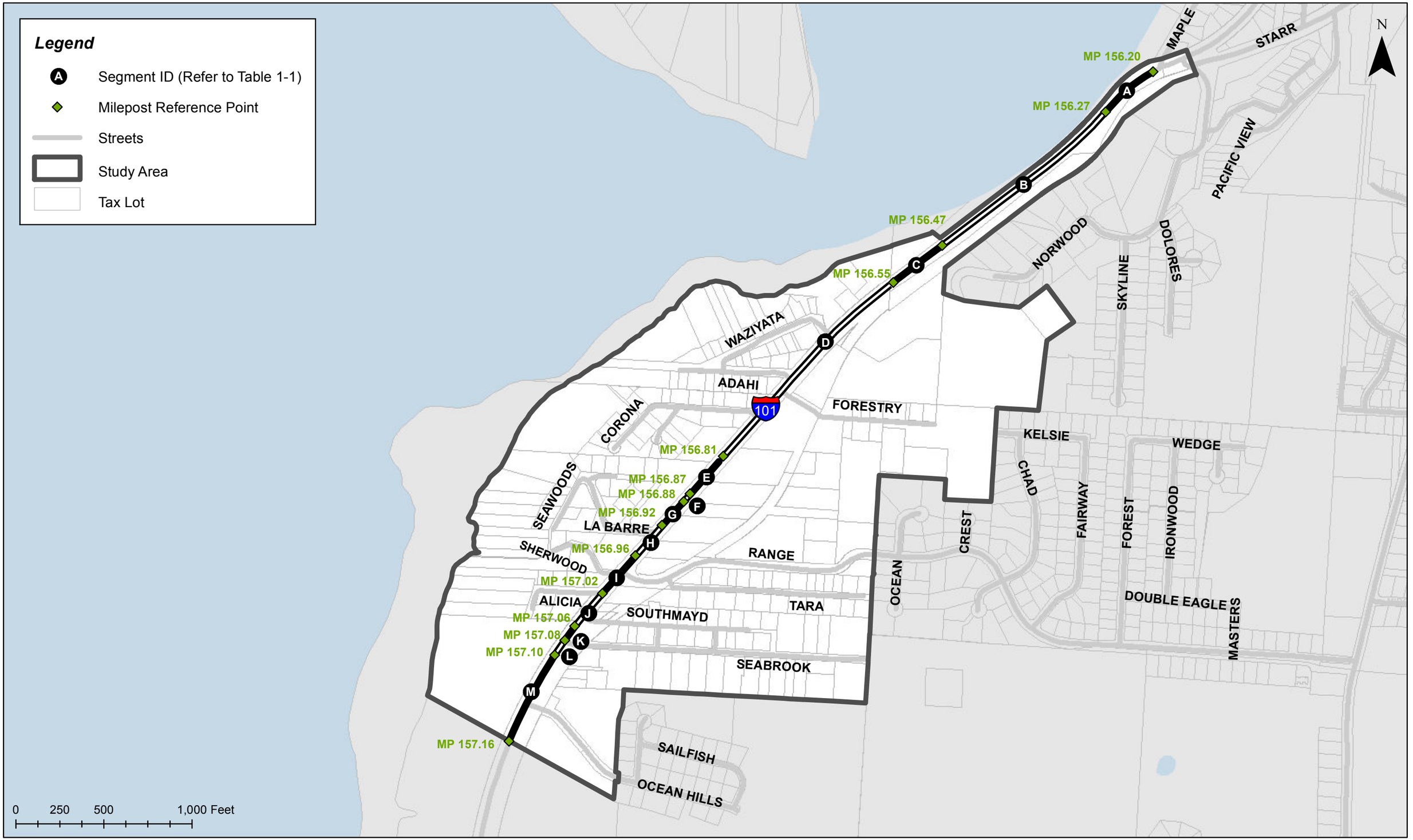
US 101 in the Study Area has a relatively high degree of local access, either via public local streets or via private driveways to residences and businesses. Figure 3-8: Existing US 101 Access Locations shows the specific access locations. There are 27 public and private accesses along this one-mile section of US 101. Table 3-2 contains information on the width, condition, location, and type of each access.

As noted in Section 2, access spacing standards for state highways have recently been updated. The applicable spacing standard is determined based on the classification of the highway segment, its posted speed limit, its location relative to urban areas, and its average daily traffic volume. As noted previously, US 101 through Waldport is a Statewide Highway. It is not a freight route and it is not an expressway. This section of US 101 has a posted speed of 35 MPH beginning at the seawall and extending to approximately MP 156.83 (see Figure 3-6 for location of milepost references). South of this location, the posted speed is 45 MPH. The study area is entirely within the Waldport UGB. The traffic volume in 2009 at Patterson Creek Bridge (south of the study area) was approximately 5500 vehicles. Based on these characteristics, the current spacing standards are:

- Within the 35 MPH section: 500 feet.
- Within the 45 MPH section: 800 feet.

These are the standards that will be applied to new access permits on US 101 in the Study Area, with additional City requirements (see subsequent section).

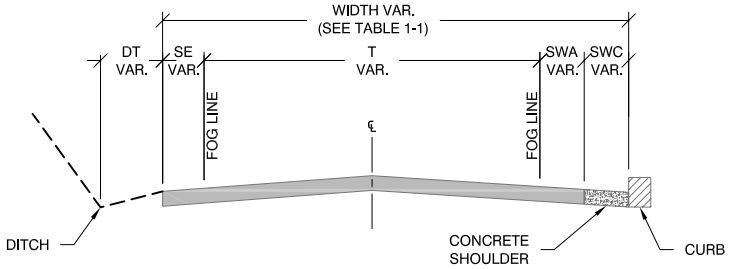
Figure 3-6: US 101 Cross-section Milepost References



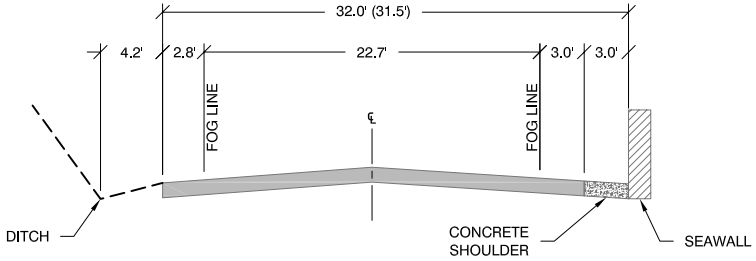
Sources: Oregon Department of Transportation, Data Collected by Consultant Team May 2011

Prepared June 2011

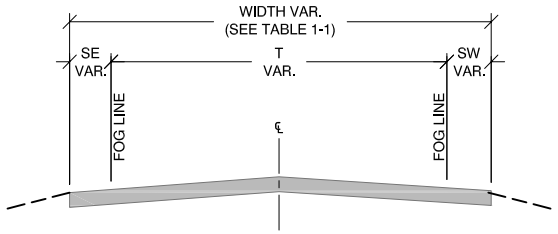
Figure 3-7: US 101 Existing Cross-Sections by Milepost



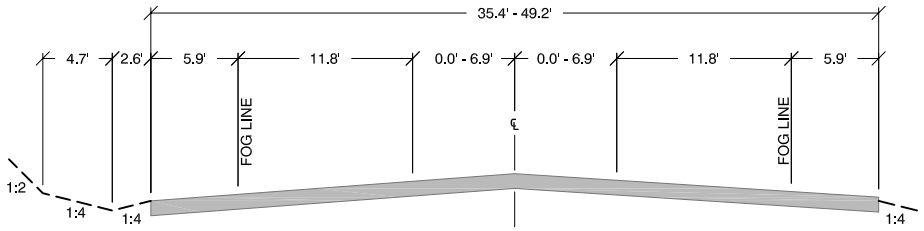
M.P. 156.20 TO M.P. 156.27
M.P. 156.47 TO M.P. 156.55



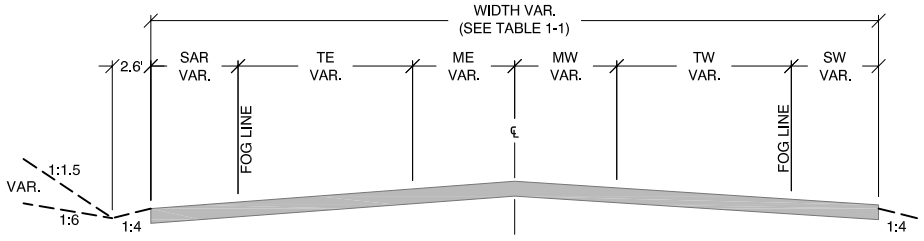
M.P. 156.27 TO M.P. 156.47



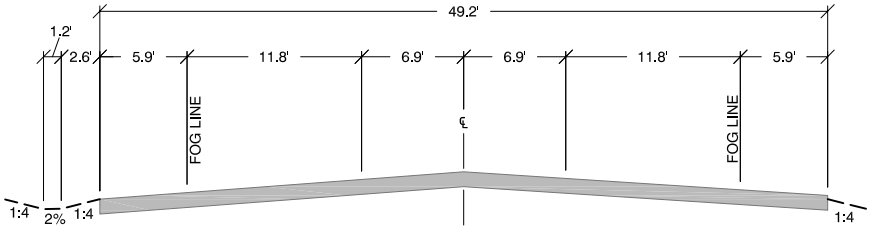
M.P. 156.55 TO M.P. 156.81
M.P. 157.10 TO M.P. 157.16



M.P. 156.81 TO M.P. 156.87



M.P. 156.87 TO M.P. 156.92
M.P. 156.96 TO M.P. 157.10



M.P. 156.92 TO M.P. 156.96

LEGEND

DT = EAST DITCH
SE = EAST SHOULDER (ASPHALT)
TE = EAST TRAVEL LANE
ME = EAST MEDIAN
MW = WEST MEDIAN
TW = WEST TRAVEL LANE
SWA = WEST SHOULDER (ASPHALT)
SWC = WEST SHOULDER (CONCRETE)

US 101 CROSS-SECTION ILLUSTRATIONS
WALDPORT, OREGON

Table 3-1: US 101 Cross Section Dimensions

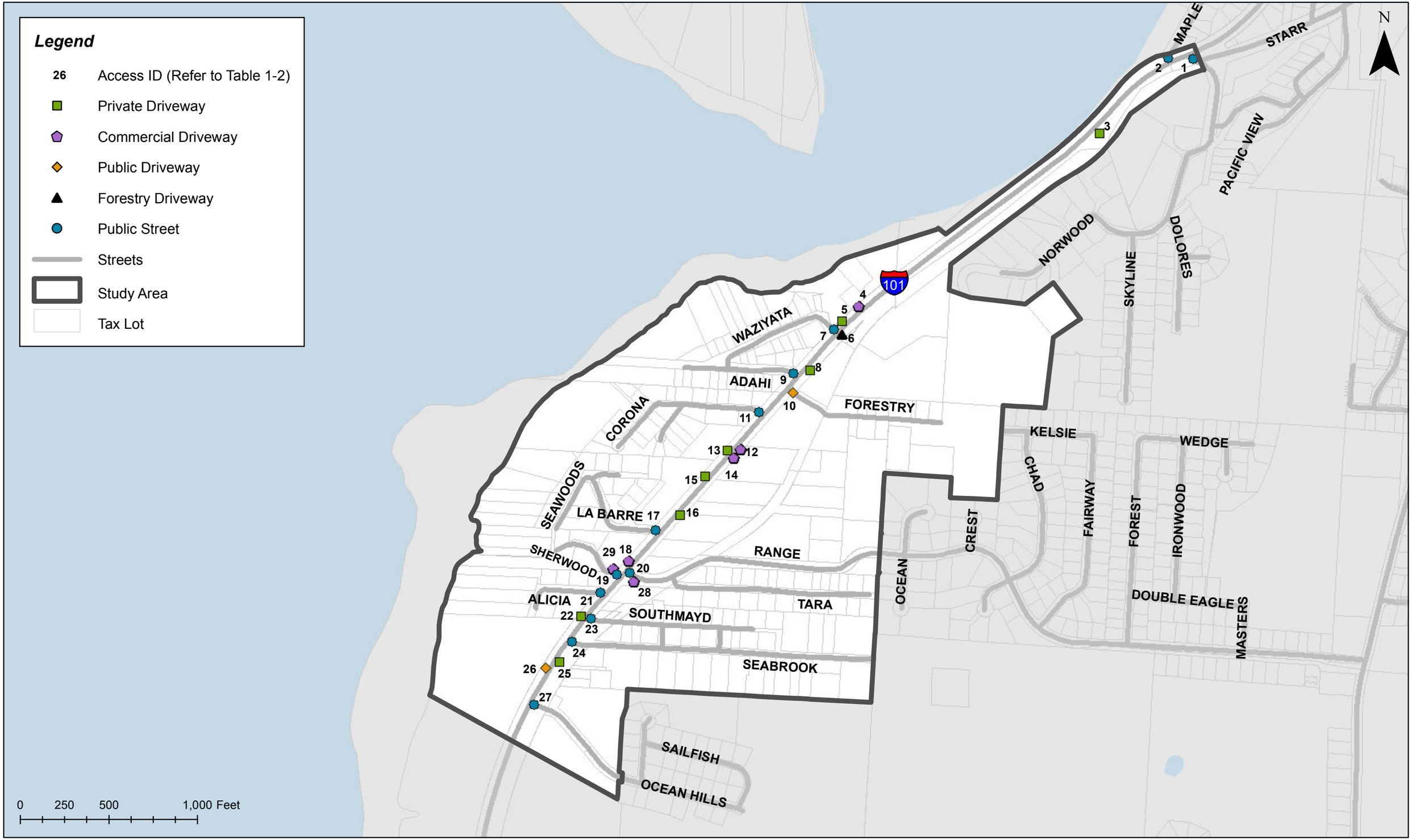
*Section Element (Refer to Figure 3-7)				Ditch Slope*	DT*	SE*	TE*	ME*	MW*	TW*	SWA*	SWC*	
ID	Begin. MP	Ending MP	Total Width (SE – SW) Feet	East Ditch (Slope)	East Ditch (Feet)	East Shoulder (Asphalt) (Feet)	East Travel Lane (Feet)	East Median (Feet)	West Median (Feet)	West Travel Lane (Feet)	West Shoulder (Asphalt) (Feet)	West Shoulder (Concrete) (Feet)	Notes
A	156.20	156.27	36.0	-	-	-	-	-	-	-	-	-	Curb (West)
B	156.27	156.47	32.0 [31.5][1]	-	[4.2]	[2.8]	[22.7]				[3.0]	[3.0]	Seawall (West)
C	156.47	156.55	[25.5]	-	[2.6]	[2.2]	[21.0]				[2.3]	- [2]	Curb (West)
D	156.55	156.81	35.3 [33.7]	-	-	[5.4]	[24.0]				[4.3]	-	
E	156.81	156.87	35.4 - 49.2	1:2	7.3	5.9	11.8	0.0 - 6.9	0.0 - 6.9	11.8	5.9	-	Taper Section
F	156.87	156.88	35.4 - 49.2	1:1.5	2.6	5.9	11.8	0.0 - 6.9	0.0 - 6.9	11.8	5.9	-	Taper Section
G	156.88	156.92	49.2	1:1.5	2.6	5.9	11.8	6.9	6.9	11.8	5.9	-	
H	156.92	156.96	49.2	1:4	3.8	5.9	11.8	6.9	6.9	11.8	5.9	-	
I	156.96	157.02	49.2	1:1.5	2.6	5.9	11.8	6.9	6.9	11.8	5.9	-	Taper Section
J	157.02	157.06	49.2 - 39.2	1:1.5	2.6	5.9	11.8	6.9 - 1.9	6.9 - 1.9	11.8	5.9	-	Taper Section
K	157.06	157.08	39.2 - 40.3	1:1.5	2.6	5.9 - 10.8	11.8	1.9 - 0.0	1.9 - 0.0	11.8	5.9	-	Taper Section
L	157.08	157.10	40.3 - 39.3	1:1.5	2.6	10.8	11.8	0.0	0.0	11.8	5.9 - 4.9	-	
M	157.10	157.16	40.1	-	-	-	-	-	-	-	-	-	

[1]Brackets indicate measurements that were taken in the field.

[2]West concrete shoulders do not exist in Sections C – M of US 101.

*These abbreviations are used on Figure 3-7: US 101 Existing Cross-Sections by Milepost.

Figure 3-8: Existing US 101 Access Locations



Sources: Oregon Department of Transportation, Data Collected by Consultant Team May 2011

Prepared June 2011

Table 3-2: Existing US 101 Access Characteristics

ID (Refer to Figure 3-8)	Milepost	Access Width (Feet)	Access Condition	Roadway Side of US 101	Access Type
1	156.17	120	Paved	East	Starr Street
2	156.19	80	Paved	West	SW Maple Street
3	156.30	14	Gravel	East	Residential Driveway
4	156.60	130	Paved	West	Commercial Driveway[3]
5	156.63	20	Paved	West	Residential Driveway
6	156.64	28	Paved	East	Forestry Driveway
7	156.64	24	Paved	West	SW Waziyata Avenue
8	156.69	76	Paved	East	Residential Driveway
9	156.71	20	Paved	West	SW Adahi Avenue
10	156.72	22	Paved	East	W Forest Way
11	156.76	42	Paved	West	SW Corona Court
12	156.80	62	Paved	East	Commercial Driveway[4]
13	156.81	18	Paved	West	Residential Driveway
14	156.81	38	Paved	East	Commercial Driveway[5]
15	156.85	84	Paved	West	Residential Driveway
16	156.91	34	Paved	East	Residential Driveway
17	156.93	30	Paved	West	La Barre Drive
18	156.95	66	Paved	West	Commercial Driveway[6]
19	156.99	24	Paved	West	Sherwood Lane
20	156.99	100	Paved	East	SW Range Drive
21	157.02	32	Paved	West	SW Alicia Lane
22	157.05	34	Paved	West	Residential Driveway
23	157.05	24	Paved	East	SW Southmayd Lane
24	157.08	28	Paved	East	SW Seabrook Lane
25	157.10	24	Paved	East	Residential Driveway
26	157.11	74	Paved	West	Public Driveway
27	157.16	76	Paved	East	Ocean Hills Drive
Driveways on Side Street Immediately Adjacent to US 101:					
28	NA	36	Paved	N/A	Commercial Driveway[7]
29	NA	18	Paved	N/A	Commercial Driveway[8]

[3] Hilltop Market driveway
[4] Copeland Lumber driveway
[5] St. Luke's Episcopal Church driveway
[6] Specialty retail shops/office driveway
[7] Family Tree Collectibles store driveway. Driveway located on Range at intersection of US 101/Range Drive.
[8] Motel driveway. Driveway located on Sherwood at intersection of US 101/Sherwood Lane.

Existing Traffic Operations

The existing conditions analysis in the current City TSP is based on population data from 1998 and employment data from 1996. Because the City is experiencing growth pressure from both land development and the increasing summer recreational season tourist traffic, the Plan was based on an updated analysis of existing traffic operations, which is summarized in this section.

This section reports the existing traffic operations for the six Study Area intersections. The following intersections have been selected for inclusion in this analysis.

ODOT operated and maintained intersections:

- US 101/Maple Street
- US 101/Adahi Avenue
- US 101/Forestry Way
- US 101/Range Drive
- US 101/Ocean Hills Drive

City of Waldport operated and maintained intersection:

- Range Drive/Crestline Drive

Traffic Counts

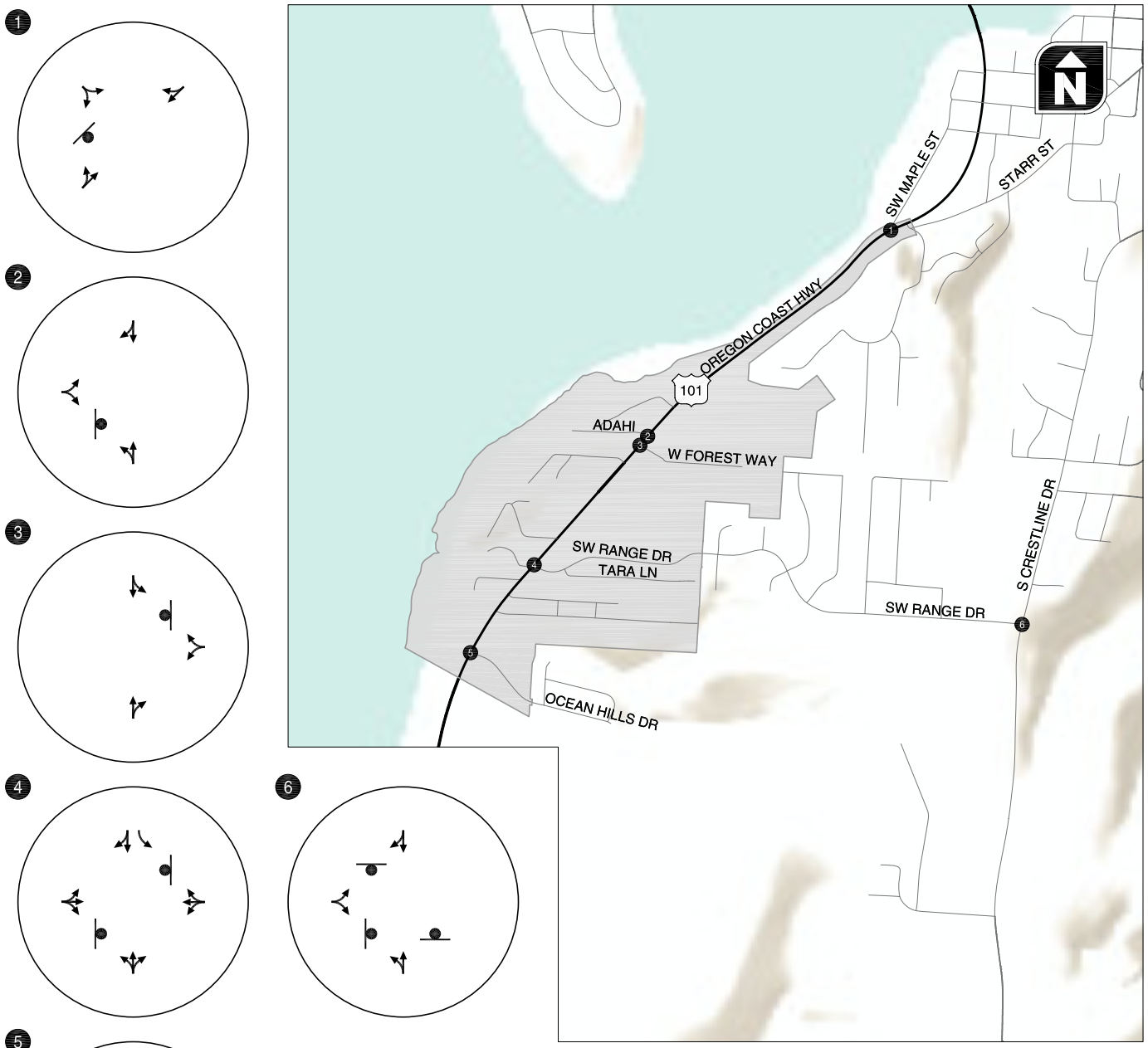
Traffic counts at six key Study Area intersections were conducted by ODOT on Friday, October 22, 2010. Counts were taken over a 16-hour period at three of the intersections and over a 4-hour period at the other three intersections. Based on an examination of the traffic count data, the weekday p.m. peak hour occurred between 4:00 and 5:00 p.m. Traffic count information is available in the technical documentation for this report provided in Volume 2.

Average daily traffic volumes during August conditions are currently in the range of 8,000 to 10,000 in the section of US 101 within the Study Area.

Peak Hour Traffic and Intersection Controls

Traffic operations analyses were conducted for the six study intersections. In order to assess reasonable worst case conditions for intersections in the Study Area, 30th highest hourly volumes (30HV) were estimated using a seasonal adjustment factor. The 30th highest hourly volumes essentially represent travel conditions during the peak summer recreational season of August. In recognition that the traffic counts were conducted in October, traffic volumes for all study intersections were factored by 1.33 to represent the 30HV. The methodology employed to determine this seasonal adjustment factor is described in a "Methods Memo" included in Appendix A. Figure 3-9 shows the lane configurations and traffic control devices at the six study intersections.

Figure 3-9: Existing Lane Configurations & Traffic Control Devices



LEGEND

- STOP SIGN

EXISTING LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES WALDPORT, OREGON

Traffic Operations Standards

US 101 Mobility Standards

ODOT uses volume-to-capacity ratio standards to assess intersection operations. Table 6 of the *Oregon Highway Plan* provides maximum volume-to-capacity ratios for all signalized and unsignalized intersections outside the Portland Metro area. All the highway intersections in the Study Area are along US 101, a Statewide Highway. These intersections are inside the Waldport Urban Growth Boundary. Waldport is not part of any metropolitan planning organization. The applicable minimum required performance standards are shown in Table 3-3 and reflect the posted speed limit and traffic control at the intersection (whether the intersection is signalized or unsignalized).

Table 3-3: Summary of ODOT Intersection Performance Standards

Intersection	Traffic Control[1]	Posted Speed Limit (mph)	OHP Mobility Standard
US 101/ Maple Street	TWSC	25	V/C ≤ 0.95 [2]
US 101/ Forestry Way-Adahi Ave	TWSC	45	V/C ≤ 0.80
US 101/ Range Drive	TWSC	45	V/C ≤ 0.80
US 101/ Ocean Hills Drive	TWSC	45	V/C ≤ 0.80

[1]TWSC: Two-way stop-controlled (unsignalized)

[2]Mobility standard based on this section within an STA (Special Transportation Area)

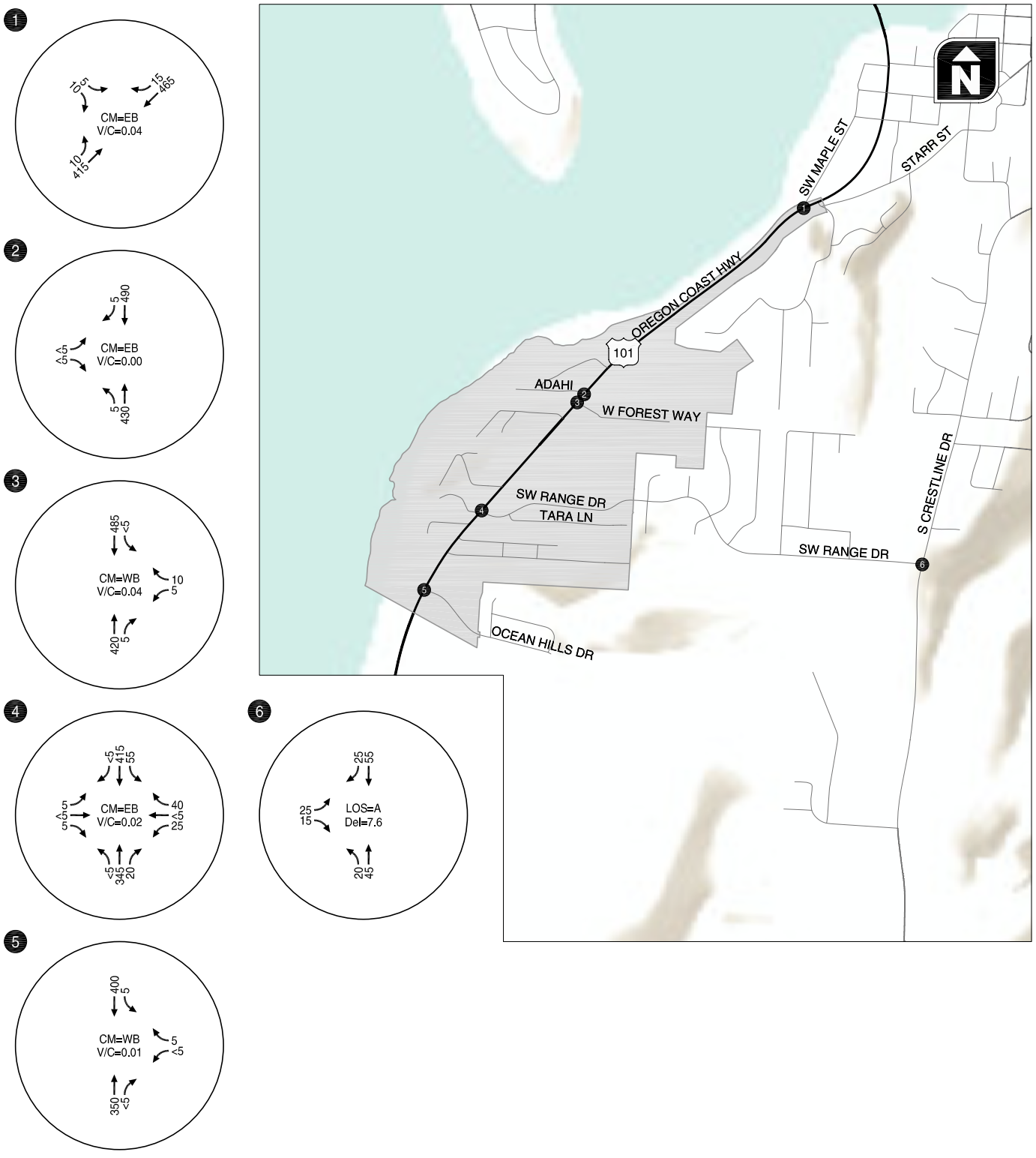
Waldport Operations Standards

The City's TSP notes that: "The City of Waldport does not have specific LOS standards for intersection operations. Typically, local jurisdictions in Oregon consider LOS E or better to be the standard for unsignalized intersections. At signalized intersections, LOS D or better is a typical standard for acceptable operations." (An explanation of LOS is provided in Appendix B.)

Traffic Operations Analysis Results

Figure 3-10 shows the existing weekday p.m. peak hour traffic operations at the six study intersections. Based on the operating standards shown in Table 3-3 above, all study intersections currently operate within allowable standards. Synchro (traffic model) output is available in the technical documentation that accompanies this report and is provided in Volume 2.

Figure 3-10: Existing Traffic Operations



LEGEND

CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

EXISTING TRAFFIC OPERATIONS
WEEKDAY PM PEAK HOUR
WALDPORT, OREGON

Crash History on US 101

Intersection and roadway segment safety were assessed based on the ODOT Safety Priority Index System (SPIS) and review of crash data provided by ODOT. The SPIS is a method developed by ODOT for identifying hazardous locations on state highways through consideration of crash frequency, crash rate, and crash severity. The review determined that the section of US 101 through the Study Area is ***not*** included on the SPIS as a high crash section (based on the SPIS listing, as provided by ODOT in 2011).

Segment Crash Data Analysis

ODOT provided detailed crash data covering all reported crashes along the one-mile study section of US 101 for the five-year period from January 1, 2005 to December 31, 2009. The data were analyzed to determine crash rates for this roadway segment in terms of crashes per million vehicle miles traveled (MVM). Crash data obtained from ODOT is summarized in Table 3-4 by type and severity of crashes. ODOT crash reports are available in the technical documentation that accompanies this report and is provided in Volume 2.

Table 3-4: Segment Crash History (January 1, 2005 through December 31, 2009)

Time Period	Accident Severity			Accident Type			Total	Crash Rate[2] (Per MVM[3])
	PDO[1]	Injury	Fatal	Rear-end	Turning	Sideswipe Other		
2005	5	-	-	3	-	2	5	0.41
2006	-	2	-	2	-	-	2	0.16
2007	2	4	-	5	1	-	6	0.49
2008	1	-	-	-	1	-	1	0.08
2009	-	-	-	-	-	-	0	0.00
5-Year	8	6	0	10	2	2	14	0.23

[1] PDO – property damage only

[2] Crash Rate = (total crashes) / MVM

[3] MVM – million vehicle miles traveled (5 years x 365 days/year x 1 mile x daily entering vehicles / 1,000,000) (daily entering vehicles = 10 x peak hour volume)

There were 14 crashes reported along US 101 within the Study Area over the five-year analysis period. Seventy-one percent of the crashes were rear-end crashes, and 57 percent resulted in a PDO crash. There were no fatal crashes reported in the Study Area along US 101 from 2005 to 2009. The five-year average crash rate for the Study Area is considerably lower than the statewide average. The crash rates for this section of US 101 are all at or below 0.49 crashes/MVM for the five years, with a five-year average crash rate of 0.23 crashes/MVM. By comparison, the 2009 statewide average on similar urban non-freeways (among state highways) is 2.04 crashes/MVM.

General Observations and Transportation Deficiencies

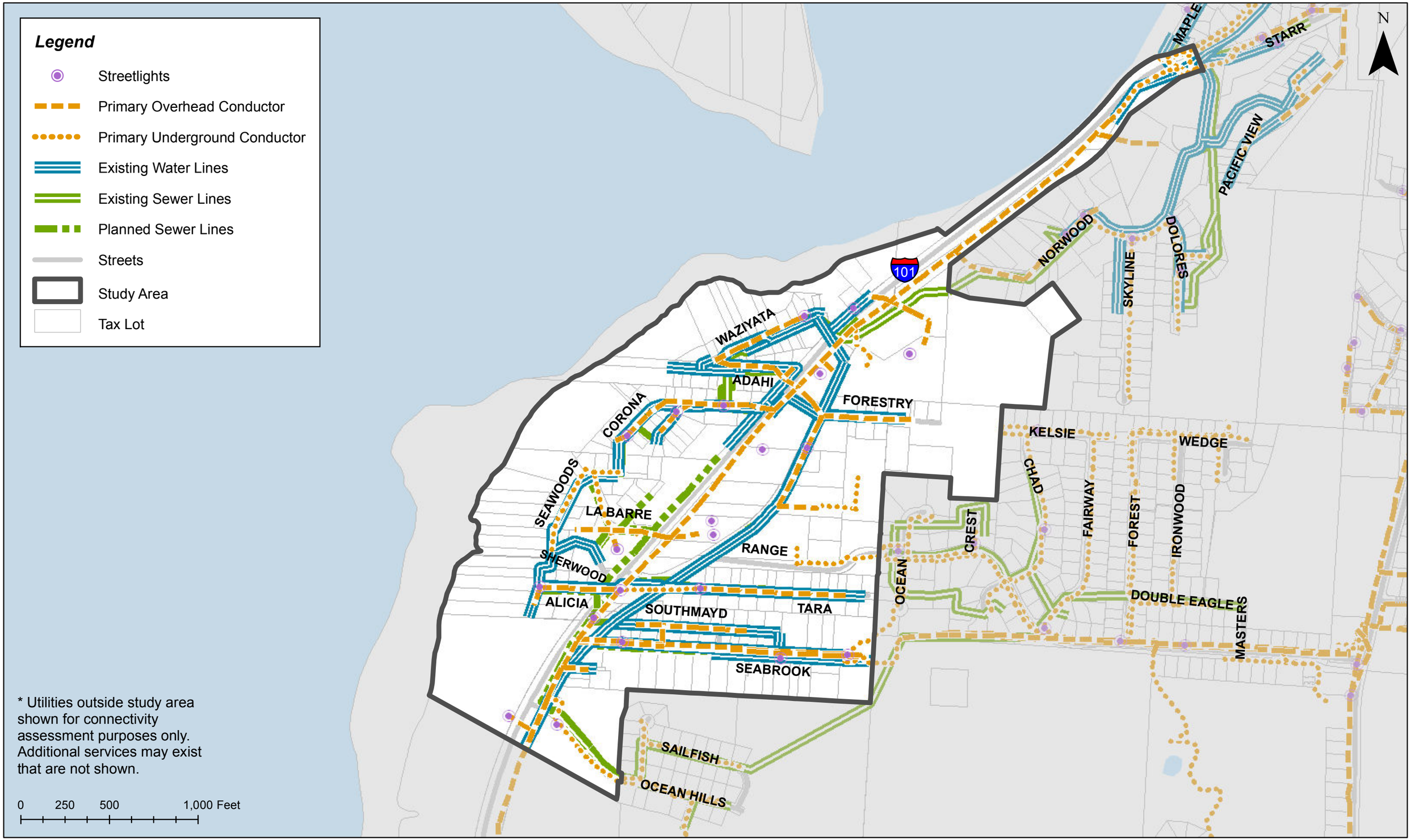
The following issues were identified through review of existing transportation conditions in consultation with the City of Waldport and the Project Management Team (PMT):

- The local street network in the Study Area is relatively disconnected. This creates greater reliance on US 101 and hampers emergency access and egress.
- Driveways along US 101 do not comply with ODOT access spacing guidelines, thereby potentially inhibiting the throughput of this statewide facility.
- Many streets in the Study Area lack ADA accessibility.
- There is limited transit service to the Study Area, principally because of the low densities of development.
- All Study Area intersections operate well within ODOT and City mobility standards.
- This section of US 101 operates safely, as compared with similar highways.
- There are potential physical, environmental and utility issues associated with the completion of the street and pathway network in the Study Area.

Utilities

Utilities were inventoried in the Study Area, in order to understand the potential infrastructure to support future development. Figure 3-11 shows the existing and proposed water, sewer, and electrical power lines in the Study Area.

Figure 3-11: Existing and Planned Utilities



Sources: City of Waldport, South West Lincoln County Water District, Central Lincoln PUD

Prepared June 2011

4. Future Conditions

Land Use

Zoning & Comprehensive Plan Designations

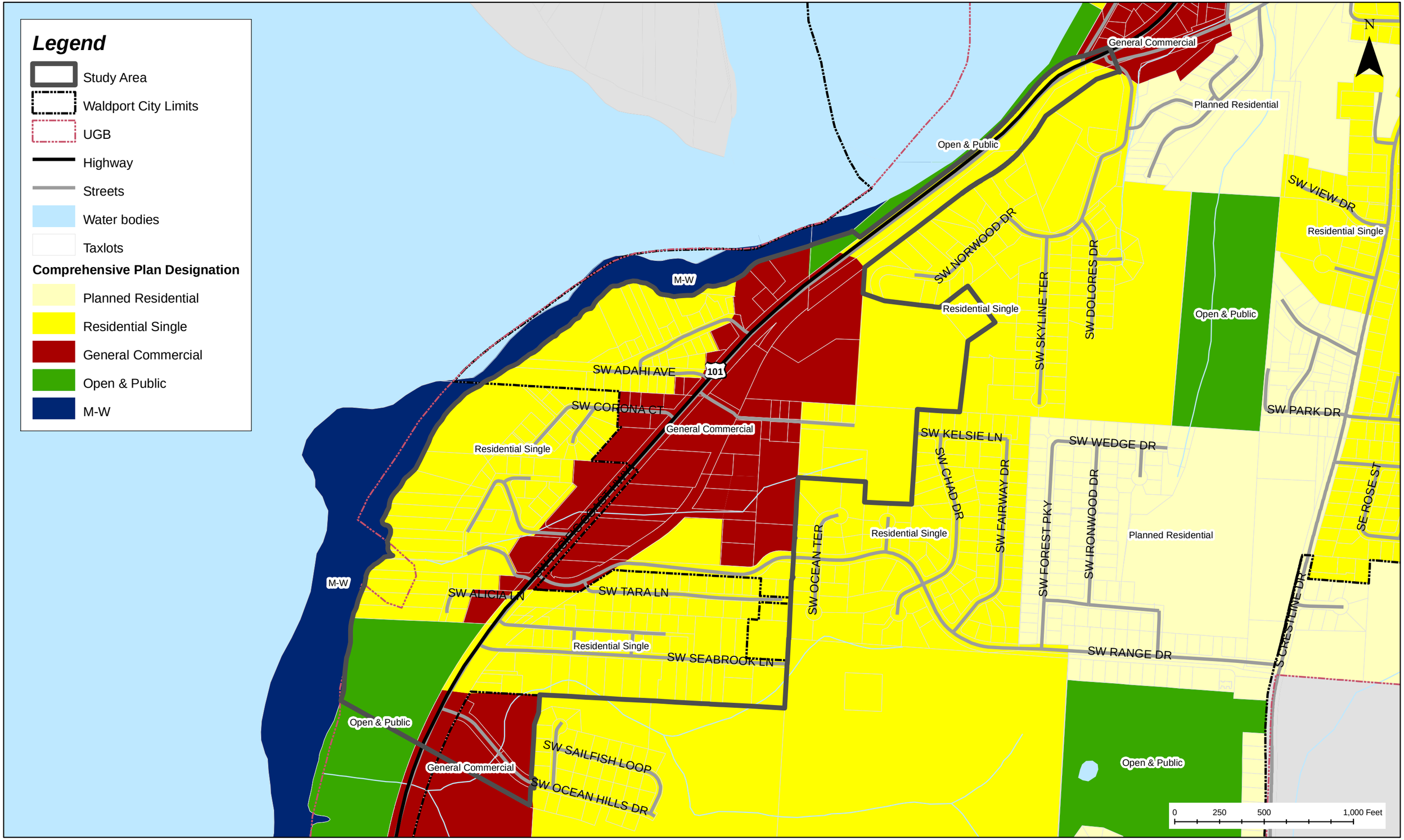
Current comprehensive plan and zoning designations are shown on Figure 4-1 and Figure 4-2, respectively. The City's comprehensive plan does not elaborate on the intentions of the various land use designations shown on the comprehensive plan map; however, the zoning designations currently applied within the Waldport Yaquina John Point Land Use and Transportation Plan Study Area are described briefly below:

- R-1 (City and County) – In both the City and County the predominant use allowed in the R-1 Residential zone is single family residential, though some supporting institutional uses are allowed conditionally. The minimum lot area is six thousand (6,000) square feet for a one family dwelling with public water and sewer; fifteen thousand (15,000) square feet for properties with public water only.
- C-1 (City) – This Commercial zone allows a wide range of uses including single family residential (at the same density as R-1), multi-family (at a density of one unit per 1,250 sf for a lot served by both public water and public sewer), office, hotels and motels, restaurants, retail, and commercial services. Some additional uses of a light industrial nature are allowed conditionally, including boat service, storage, rental or repair; woodworking shop; lumber or building materials sales or storage; contractors storage, repair or sales shop; and processing and packaging of non-explosive chemical materials and non-environmentally hazardous materials.
- C-2 (City) – This Commercial zone allows a wide range of uses including single family residential (at the same density as R-1), multi-family (no maximum density), office, hotels and motels, restaurants, retail, commercial services, and light industrial uses. Allowed light industrial uses include vehicle, boat, and heavy machinery service, storage, rental or repair; cabinetry and woodworking; lumber or building materials sales or storage; contractor storage, repair or sales shop; welding and metalworking; tire retreading; truck terminals and freight depots; food and beverage processing, packing, or storage; cold storage; and feed or seed stores.
- C-T (County) – This Tourist Commercial zone is similar to the City's C-1 zone except that the mix of retail uses and services is more limited. For example, automobile repair garages are conditional rather than permitted uses, and the conditional uses from the C-1 zone that border on light industrial (such as boat or marine equipment sales, service, storage, rental or repair; woodworking shop; lumber or building materials sales or storage; contractors storage, repair or sales shop; and processing and packaging of non-explosive chemical materials and non-environmentally hazardous materials) are not permitted. However, single family residential, multi-family, office, hotel/motels, and restaurants are all permitted uses.
- P-F (County) – Within the Study Area the Public Facilities zone is only applied to Gov. Patterson Memorial State Park.

The property in the Study Area that is currently outside of City limits lies within the City's urban growth boundary (UGB) and will likely be annexed to the City at some point in the future. Intended City zoning designations for these areas are identified in Section 6.

Figure 4-1

Comprehensive Plan Designations

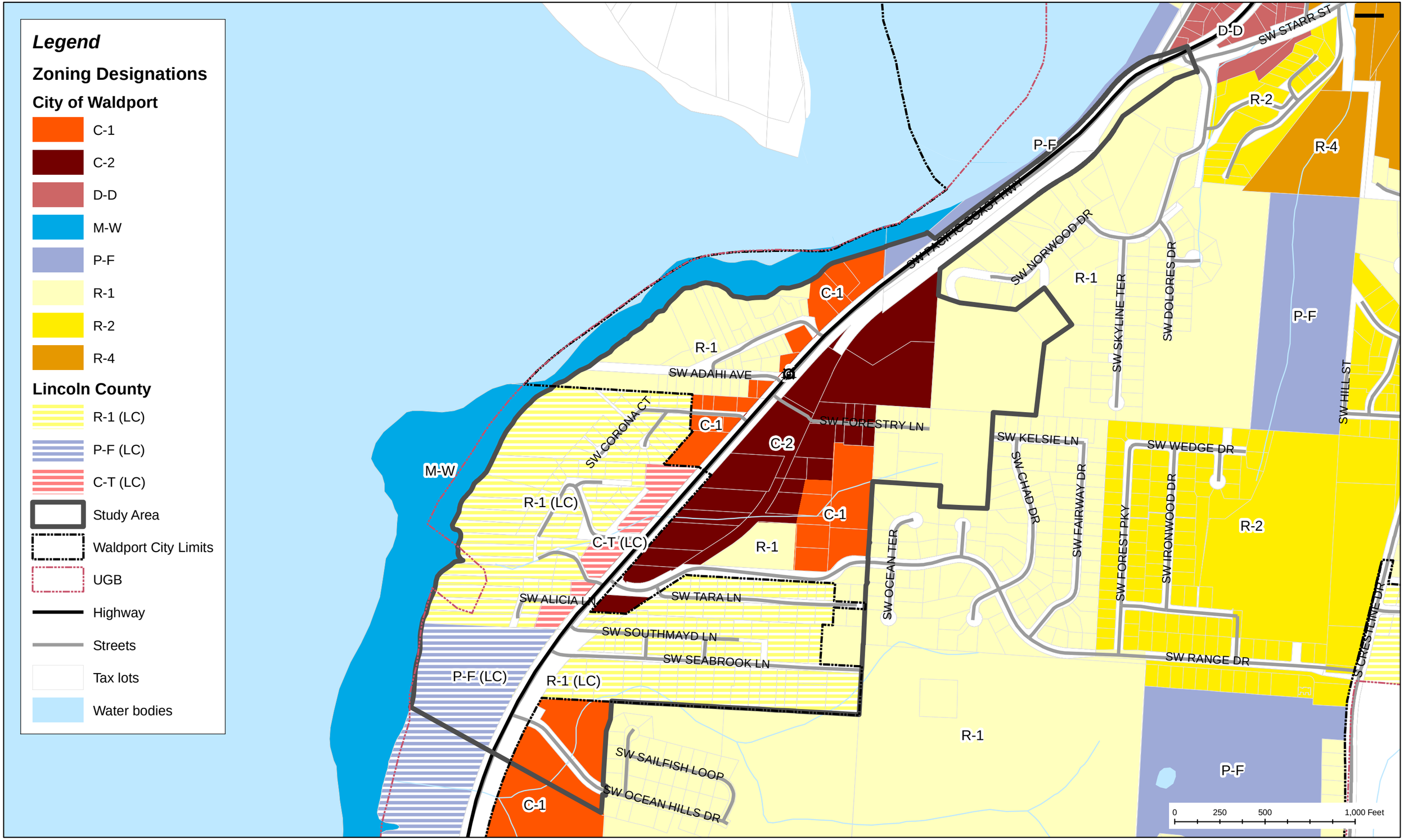


Sources: Lincoln County (Taxlots, Street Names: May 2011); State of Oregon (State Highways: 2009; UGB, Water Bodies: 2010); City of Waldport (City Limits, Comprehensive Plan Designations: May 2011).

Prepared June 2011

Figure 4-2

Zoning Designations



Sources: Lincoln County (Taxlots, Street Names: May 2011); State of Oregon (State Highways: 2009; UGB, Water Bodies: 2010); City of Waldport (City Limits, Zoning: May 2011).

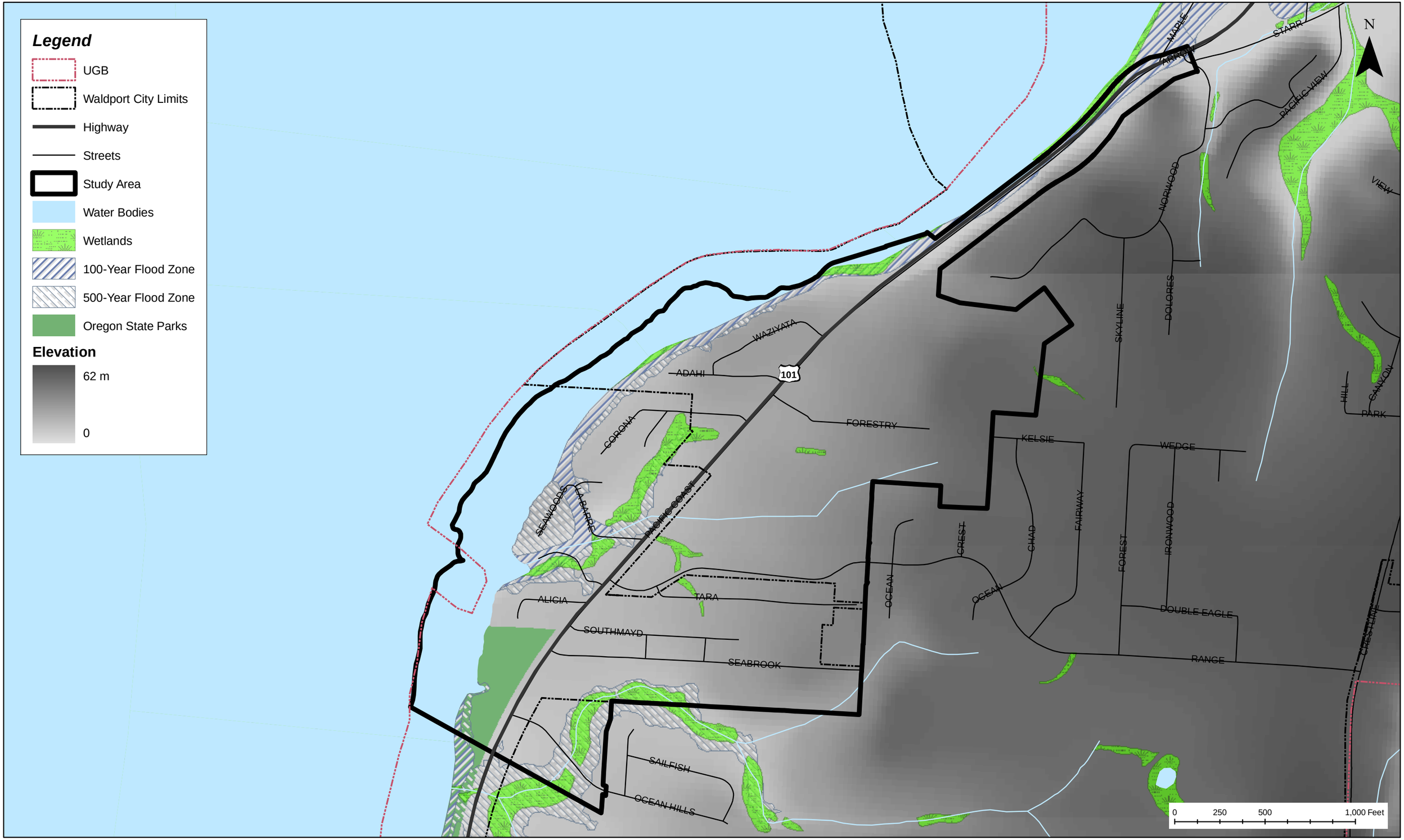
Prepared June 2011

(Re)Development Potential and Development Constraints

The Study Area contains a total of roughly 36 acres of undeveloped land (excluding land that is protected from development, such as state parks and protected wetlands). There are also some redevelopment opportunities within the Study Area where existing land uses may transition over time to different or more intensive uses. Planned utility extensions will provide services to most of the Study Area, as shown on Figure 3-11: Existing and Planned Utilities on page 31. However, there are some development constraints affecting the Study Area, including topography, wetlands, and public facilities. Topography in the Study Area generally slopes upward from the shoreline to the hills to the east of the Study Area, as shown on Figure 4-3. At the northern end of the Study Area, US 101 passes through an area with a fairly steep slope from the hillside down to the ocean. A seawall separates the beach from the highway. There are also smaller areas where localized slopes create challenges for development, including several of the properties fronting on the west side of US 101 outside City limits. These properties are generally also constrained by wetlands, stream corridors, and/or floodplains, as shown on Figure 4-3.

Figure 4-3

Study Area Environmental Constraints



Sources: Lincoln County (Streets: May 2011); State of Oregon (State Highways: 2009; UGB, Water Bodies: 2010; Wetlands); City of Waldport (City Limits: May 2011); USGS (Elevation Data: 2011); FEMA (Flood Hazards: 2011).

Prepared June 2011

The total additional development capacity of the Study Area was estimated both at "build out" (ultimate level of development allowed by zoning) and over the 25-year period covered by the Plan. During the 25-year period covered by this study, not all of the potentially developable or redevelopable land will be utilized. The projected new development over the next 25 years is based on population growth rates, historic growth trends, and projected demand. Table 4-1 summarizes build out capacity and projected demand through 2035 by land use. The methodology used to estimate development potential at build out and over the next 25 years is described in Appendix C; additional analysis of redevelopment potential for specific Study Area properties is included in Appendix D.

Table 4-1: Study Area Development Potential

Land Use	Build Out Potential (New Development)	2035 Projected New Development
New SF (DU)	145*	36*
Developable Commercial Land (acres)	23	3.1
Retail / Service Commercial (sf)	36,888	2,300
Office (sf)	24,450	2,500
Light Ind (sf)	44,067	11,000
Hotel / Motel (rooms)	117	4
Multi-family / Condo (DU)	149	6

*Includes 16 dwelling units on existing lots in the Ocean Hills subdivision, which is outside the Study Area but takes access to US 101 through the Study Area.

While there are small and medium-sized developable and redevelopable areas within the Study Area, the largest development opportunities in the Waldport UGB lie southeast of the Study Area; development in this area will have a significant impact on the Study Area. A brief summary of the major development opportunities south of the Study Area is presented below; a more detailed analysis is included in Appendix C.

A project called the Naples Golf & Beach Resort was proposed for roughly 475 acres south of the Study Area. The project was to include approximately 1245 housing units (including a mix of single-family and multi-family); support facilities such as day care and houses of worship; 50,000 square feet of retail; a 138-room hotel; and a golf course / country club. While this project has since been abandoned, the uses that may eventually be built on the land in question are likely to be similar to those proposed. However, due to changes in ownership, the configuration and extent of such development will likely be different from that originally proposed. Based on existing ownership patterns and previously submitted plans, the only development in this area that is likely to directly affect the Study Area would be on the two commercially zoned properties on either side of Ocean Hills Drive, which might develop with:

- 50,000 square feet of retail and/or office uses
- 50 condos on upper stories above the commercial uses
- A 120 to 138 room hotel
- Up to 200 single family homes (likely mostly vacation homes)

These assumptions were used to develop future traffic projections for the Study Area, as described below.

Transportation System

Transportation Infrastructure Improvements

The existing City of Waldport TSP does not include planned improvements to transportation infrastructure in the Study Area, with the exception of Range Drive. Range Drive is planned to be widened to include bike lanes from Crestline Drive to US 101.

ODOT has no existing planned projects within the Study Area.

Transportation improvements included in this Plan are identified in Section 7.

Future Transportation System Operations

Oregon's Transportation Planning Rule (TPR) requires communities to develop a 20-year transportation plan to support future land use and economic development. This section presents year 2035 forecast transportation conditions for the Study Area. The 2035 analysis was used to inform the identification and evaluation of transportation system options.

Traffic Forecasting Methodology

The year 2035 traffic volumes were developed according to the methodology described in the 2006 ODOT *Analysis Procedures Manual*. This type of analysis combines growth in regional traffic volumes along US 101 with growth in local traffic volumes associated with the projected development of available land within the City (development assumptions are described on page 35).

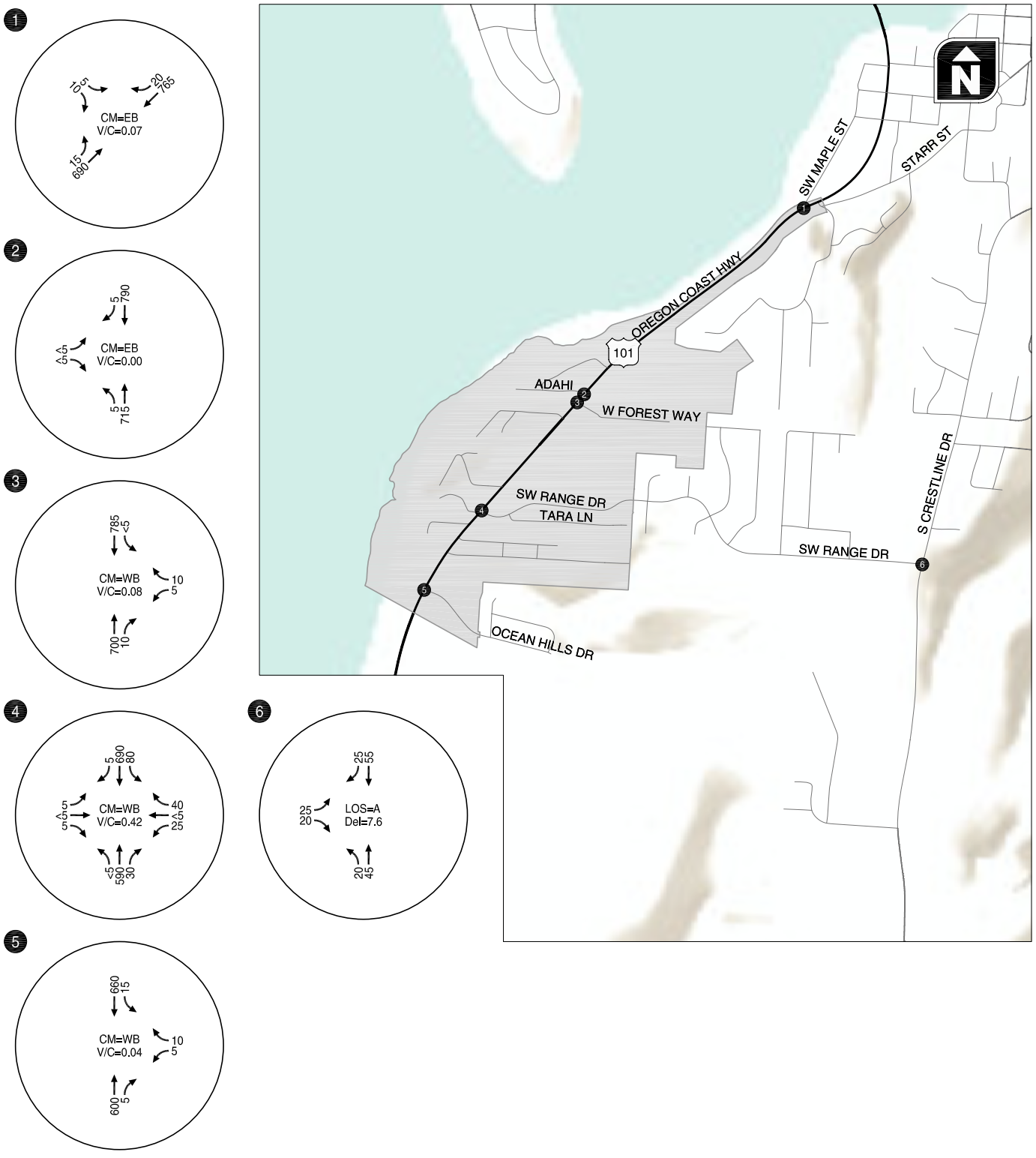
A growth factor of 1.35 was first applied to the existing through traffic volumes along US 101, as detailed in the "Methods Memo" in Appendix A. Trips associated with local household and employment growth were then estimated and added based on land use assumptions described previously. Estimates of weekday p.m. peak hour vehicle traffic generation ("trip ends") for each land use were based on the standard reference *Trip Generation*, *8th Edition*, published by the Institute of Transportation Engineers, which relies on empirical observations at similar land uses nationwide.

The table in Appendix E summarizes the estimated trip generation for each transportation analysis zone (TAZ). The trips generated from the TAZs were distributed using the assumption that 55 percent of motorists travel to and from north of the Study Area and that 45 percent travel to and from south of the Study Area. The distribution for the trips generated from the potential development south of the Study Area (the area of the former Naples Golf & Beach Resort) was assumed to be 50 percent traveling to and from north of the Study Area and 50 percent traveling to and from south of the Study Area. Therefore, only 50 percent of the trips from potential development in that area are expected to affect Study Area intersections.

Traffic Operations Results

Figure 4-4: 2035 Traffic Volumes and Operations shows the 2035 future traffic operations results, including the US 101 growth and new household and employment growth. Even with the additional traffic, all Study Area intersections are projected to operate acceptably within the standards set by ODOT and the City of Waldport through the year 2035. Synchro (traffic model) output is available in technical documentation that accompanies this report and is provided in Volume 2.

Figure 4-4: 2035 Traffic Volumes and Operations



LEGEND

CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

2035 FUTURE TRAFFIC OPERATIONS
WEEKDAY PM PEAK HOUR
WALDPORT, OREGON

Summary

The existing and planned street system currently operates well within acceptable standards for vehicular movements within and through the City. There are elements of the system that can be further improved, including:

- Extending local streets into new developing areas, and providing additional street connections to minimize out-of-direction travel;
- Providing safer and better connected circulation for pedestrian and bicycle modes;
- Enhancing safety and protection for pedestrians and bicyclists in the seawall section of US 101;
- Enhancing access control on US 101 to minimize vehicular conflicts and improve operations of the highway.

5. Alternatives Analysis

Land Use Alternatives

Three key land use issues/opportunities were identified through research of existing conditions and consultation with stakeholders and City staff:

- **Reducing the potential for incompatible uses especially in the C-2 zoning district or between commercial/industrial uses and residential uses.** The potential for incompatible land uses within the study area has been identified as a concern by the community. The area bounded by US 101 (west), Forest Lane (north), Range Drive (south) and Ocean Terrace (east) is mostly zoned C-2 (General Commercial); however, the area also includes C-1 (Retail Commercial) and R-1 (Single Family Residential) zoning (see Figure 4-2: Zoning Designations). This area is currently developed with a wide range of land uses, including a lumber/hardware store, auto storage and towing service, mini-storage, churches, and single family dwellings (see Figure 3-1: Existing Study Area Land Uses). While the diversity of land uses does not necessarily create incompatibilities, there are a few exceptions. The most noticeable potential incompatibility is an auto storage and towing service located near single family residential dwellings on the south side of Forestry Lane. With the wide range of land uses permitted in the C-2 zone, this mix of land uses and potential incompatible land uses could increase as properties develop/redevelop.
- **Opportunities to create a southern "gateway" to the City of Waldport.** While stakeholders indicated that the Yaquina John Point area is not like the downtown and should not be developed to look like it, they expressed support for the idea of creating a sense of arrival to the downtown when passing through the Study Area.
- **Provide for a variety of housing types and supportive uses.** Several local stakeholders identified a need for multi-family housing for low-income residents and seniors and for complementary uses to allow people to age in place.

Initial land use alternatives were developed to address these issues/opportunities. The initial alternatives included:

- map amendments to change the zoning designations applied to specific parcels or groups of parcels;
- amendments to the list of uses allowed in the General Commercial (C-2) zone either to limit new residential uses or limit new heavy commercial / light industrial uses;
- design standards to address compatibility of commercial uses with adjacent residential districts; and
- design standards to enhance the appearance of the Study Area as a gateway to the downtown along US 101.

The initial alternatives were evaluated based on the following criteria:

- Compatibility of adjacent uses with each other;
- Compatibility of planned uses with planned transportation improvements;
- Creates an attractive gateway to downtown;
- Supports existing businesses & institutions; and

- Creation of non-conforming uses.

The initial alternatives were presented to state agency representatives, the AC and the public at the meetings in September. None of the initial alternatives were found to be problematic by the state agency representatives. There was broad support from both the AC and the public for design standards to address compatibility and aesthetics, and support from some members of the public (though not the AC members) for either map amendments or amendments to allowed uses that would favor residential uses in the Study Area over new heavy commercial / light industrial uses.

Based on this input, a Draft Preferred Alternative was developed that included the following land use components:

- Five targeted zone/plan designation changes (two inside City limits and three for parcels outside City limits that would apply upon annexation) where the impacts to existing property owners would be minimized.
- An overlay zone for the Study Area that included design standards to enhance compatibility of uses in commercial zones with adjacent residential districts; design standards for aesthetics of properties fronting on US 101; and restrictions on light industrial uses within the overlay.

Input from the AC and the public on the Draft Preferred Plan indicated support for most of the Plan components. The public showed mixed feelings about one of the proposed zone changes, which was eliminated from the Plan. The Advisory Committee suggested several minor modifications to the implementing code language which have been reflected in the language included in Exhibit 1, but supported the approach of the Preferred Plan.

Transportation Alternatives

There were a total of 48 transportation alternatives considered in five different elements of the plan, including US 101 Seawall section treatments, US 101 South section treatments, US 101 Access Management Policies and Standards, Local street connections, and pedestrian/bicycle pathways. Table B1 describes the alternatives that were considered in two technical memoranda entitled Waldport Yaquina John Point Area Transportation Alternatives Analysis – *Task 3.1 for Review at the September 6th Interagency Meeting* and *Task 3.1 for Review at the September 26th Advisory Committee Meeting*.

The table describes the rationale for the dismissed alternatives. Of the 48 alternatives considered, 31 were recommended for inclusion in the plan.

Table 5-1: Disposition of Alternatives Considered for the Preferred Transportation Plan

Category	Alt No.	Alternative	Disposition	Rationale
US 101 Seawall	1	Existing Condition – Keep As-is	Discarded	Does not meet ODOT minimum standards for travel lanes, bike or ped path widths
	2	Narrow travel lanes to allow widening NB bikelane to 4 feet. Due to insufficient width, leave the 400-foot segment (MP 156.47-156.55) called the "curbed section" as-is.	Recommended for Intermediate Phase	Does not meet ODOT minimum standards for travel lanes, bike or ped path widths, but marginally improves safety for northbound bicyclists while maintaining marginally acceptable-width travel lanes for motorists in the north portion of this section
	3	Standard travel lanes and shoulder bikelanes (with retaining wall), Bridgeview multi-use path on powerline easement	Recommended for Long-term	
	A-1	Fill Ditch, with bike lanes both sides	Discarded	Not feasible, because surface drainage from slope would wash onto roadway. Would require additional 4-foot cut into slope, thereby requiring retaining wall and increasing construction cost to prohibitive levels
	A-2	Fill ditch, with multi-use path (separated by traffic barrier) and narrow travel lanes	Discarded	Use of barrier would result in encroachment on required minimum width for freight movements on US 101
	A-3	Cantilever bike/pedestrian path	Discarded	Infeasible, due to: 1) high cost, 2) structural issues, and 3) encroachment on City/State Parks land
	A-4	Fill ditch, with Bridgeview multi-use paths (seawall path separated by traffic barrier) and on powerline easement	Discarded	Use of barrier would result in encroachment on required minimum width for freight movements on US 101. Also, not feasible because surface drainage from slope would wash onto roadway. Would require additional 4-foot cut into slope, thereby requiring retaining wall and increasing construction cost to prohibitive levels

Category	Alt No.	Alternative	Disposition	Rationale
US 101 South	1	Existing Condition – Keep As-is	Discarded	Does not provide protected space for pedestrians from vehicular traffic; given increased urban uses in this area, protection for pedestrians is required
	2	Separated sidewalks on both sides	Recommended	
	3	Widen shoulder bikeways	Discarded	Does not provide protected space for pedestrians from vehicular traffic
	4	Multi-use path on west side only	Discarded	Does not protect pedestrian movements on east side, where there are many existing and future pedestrian-generators
	A-2	Different pavement type/color on shoulder bikeways	Discarded	Would have limited effectiveness, because it does not create a physical protection to pedestrians. Also, would be inconsistent treatment for this ODOT Coast highway route
	A-3	Sidewalks, adjacent to roadway, on one or both sides	Discarded	Creates surface drainage problems, unless underground drainage is installed, thereby rendering alternative infeasible
US 101 Access Spacing Standards and Policy	1	Abide by ODOT Access Spacing Standards	Recommended	
	2	Construct a “Backage Road” on abandoned rail right-of-way	Recommended	
	3	City adopts additional Access Management standards	Recommended	
	A-1	Keep access as-is	Dismissed	The City needs a policy to address a condition on US 101 in which accesses are currently inadequately spaced resulting in potentially unsafe conditions
	A-5	Treat each individual land parcel and side street access on its own merits	Dismissed	Not practical, because City/ODOT need a policy that can be applied uniformly across all land uses and access requests

Category	Alt No.	Alternative	Disposition	Rationale
Local Street Access and Connectivity	S1	Alley from Range Dr to New Kelsie-Forestry Connection	Partially recommended	The northern portion – from Range Dr to New Kelsie-Forestry Connection was recommended. The southern portion – from Southmayd to Range was discarded due to projected limited use and substantial local land use impacts
	S2	Kelsie-Forestry Extension to 101	Recommended	
	S3	Norwood to Skyline Connection	Recommended	
	S4	Norwood Extension	Recommended	
	S5	Southmayd to Seabrook Conn.	Dismissed	Redundant (and not necessary) link that would have limited effectiveness with substantial local land use impact
	S6	Dolores Extension to Pacific View	Recommended	
	S7	Kelsie to Wedge Connection	Dismissed	Substantial local land use impact. Also, connection would increase traffic on Kelsie-Forestry Way connection- to US 101 beyond intended local street function (it would function as a collector street, which would be inconsistent with adjacent residential uses
	S8	Wedge Connection to Hill	Recommended	
	S9	Ocean Extension	Recommended	
	S10	Seabrook to Range Connection	Recommended	
	S11	Norwood to Skyline Connection	Recommended	
	S12	Wedge to Norwood Connection	Recommended	
Public Pathways	P1	Corona South Beach Access	Dismissed	Redundant (and not necessary), and has significant land use impacts
	P2	Corona North Beach Access	Recommended	

Category	Alt No.	Alternative	Disposition	Rationale
	P3	Waziyata Beach Access	Recommended	
	P4	Sherwood Beach Access	Recommended	
	P5	State Park Beach Access	Recommended	
	P6	Seawoods to Sherwood Trail	Recommended	
	P7	Southmayd to Forestry trail	Dismissed	Limited use on portion of trail between Southmayd and Range; recommended as an alley instead in section between Range and Forestry
	P8		Recommended	Combined into P9
	P9	Bridgeview South Trail	Recommended	
	P10	Bridgeview North Trail	Recommended	
	P11	Shoulder bikeway on 101 North	Recommended	
	P12	Forest Service Multi-use Path	Recommended	
	P13	Range to Tara trail	Dismissed	Significant land use impacts that do not warrant trail, given alternate routes
	P14	Southmayd to Seabrook trail	Recommended	
	P15	Sailfish to Seabrook trail	Recommended	
	P16	Seabrook to Range nature trail	Recommended	
	P17	Skyline to Norwood nature trail	Recommended	
	P18	Skyline trail	Recommended	

6. Preferred Land Use Plan

Proposed Zone Changes

One property within City limits is proposed for a zone change, from C-2 to Residential Zone R-4. In addition, appropriate City zoning was identified for properties outside City limits within the Study Area. For the most part, the recommended future zoning designations follow logically from the existing Lincoln County zoning and the adopted Comprehensive Plan designations. However, three properties along US 101 are recommended for multi-family residential zoning rather than the current (and default future) commercial zoning. These changes are recommended as a way to reduce strip commercial development along US 101 in the Study Area and ensure a supply of land for multi-family development.[9] They are also based on the size and/or development constraints of the properties in question, which make them more suitable to multi-family development than to commercial. This recommendation will not be implemented as part of this plan; rather, the City will work with the County to implement this recommendation through a change to the Comprehensive Plan designation for these properties, or this recommendation will be implemented when the properties are annexed. The proposed changes are shown on Figure 6-1, and the rationale for each is documented in Table 6-1 below.

Table 6-1: Reasoning for Proposed Zone Changes

Map reference #	Proposed change	Reasoning
1	C-2 to R-4	This property is developed with three existing SF homes. It has limited visibility from US 101, and potential sight distance issues, making it less appropriate for commercial development. In addition, the property owner has expressed support for the proposed change to residential zoning.
2	C-T (LC) to R-4 (City)	This parcel is currently vacant, and has potential wetlands and topographic development constraints. Currently, its only access is via US 101 or through wetlands to La Barre Drive; however, there is a planned street (also on wetlands) at the back of the property. There is a possible development opportunity with lot to the north (which is currently developed with multi-family residential uses), which could lead to shared access with that property.
3	C-T (LC) to R-3 (City)	This parcel is small and currently vacant. It has access onto Alicia Lane as well as frontage (but no existing driveway) on US 101. Because of its small size and proximity to existing single family homes, this parcel would be more suitable for residential uses than commercial uses.
4	C-T (LC) to R-3 (City)	This parcel is currently developed with a single family home. There is existing access onto both US 101 and Alicia Lane. Because of its size and proximity to existing single family homes, this parcel would be more suitable for residential uses than commercial uses.

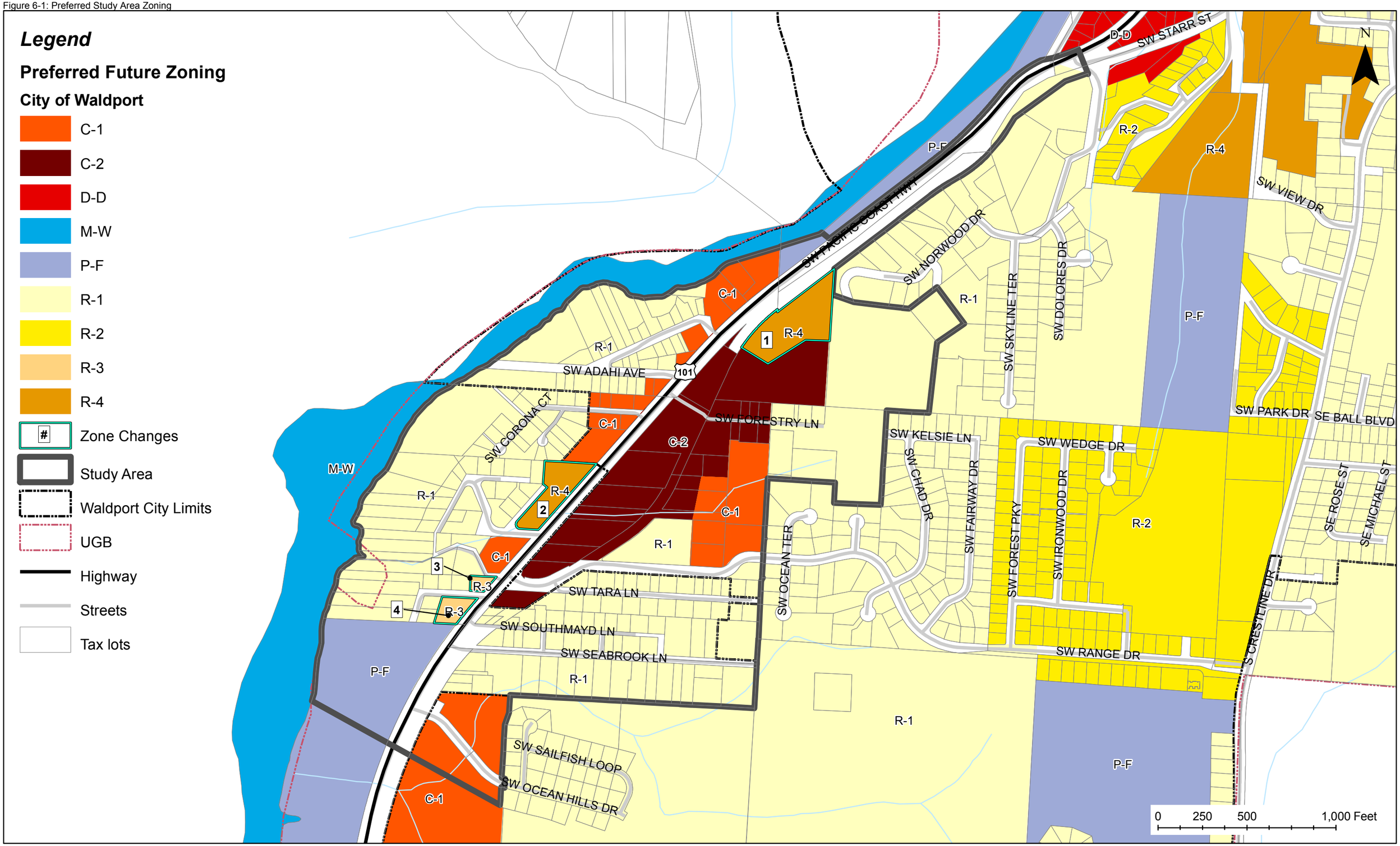
LC = Lincoln County

[9] While multi-family residential development is allowed outright in the city's C-1 and C-2 zones as well as the county's C-T zone, none of the land in the Study Area is currently zoned specifically for multi-family residential use. Restricting the few properties noted in Table 6-1 to residential use may help encourage a continued supply of multi-family housing in the area.

The areas outside City limits that currently have a Lincoln County zoning designation of Residential Zone R-1, as shown on Figure 4-2: Zoning Designations, are predominantly developed as single family residential. Given this fact, and considering that the land uses permitted in the current County's Residential Zone R-1 are very similar to the City's Residential Zone R-1 (i.e. single family residential use), the City's R-1 zone is recommended upon annexation to maintain neighborhood stability.

The State Park currently has a Lincoln County zoning designation of Public Facilities Zone P-F. When the park is annexed it should have a City zoning classification of Public Facilities Zone P-F.

Figure 6-1: Preferred Study Area Zoning



Sources: Lincoln County (Taxlots, Street Names: May 2011); State of Oregon (State Highways: 2009; UGB: 2010); City of Waldport (City Limits, Zoning: May 2011).

Prepared February 2012

Waldport South Overlay Zone

The Preferred Land Use Plan creates a new overlay zone for the Study Area, focused on the areas currently zoned for commercial uses (the proposed boundaries of the overlay zone are shown on Figure 6-2 on page 52). The overlay zone addresses modifications to allowed uses and design standards. These modifications would not apply to the rest of the City; however, the Plan recommends that the City consider applying some of the modifications more broadly in the future.[10]

The overlay zone will be implemented through a new chapter adopted into Municipal Code Title 16, Waldport's Development Code. Implementing language for this new chapter is included in Attachment A.

Allowed Land Uses

In response to concerns about the heavy commercial / light industrial uses allowed outright in the C-2 zone, the Preferred Land Use Plan designates many of these uses as conditional uses within the Study Area. In addition, two uses are prohibited entirely. Uses that will become conditional uses in the Study Area include:

- Vehicle, boat, and heavy machinery sales, service, storage, rental and repair
- Cabinetry and woodworking
- Welding and metalworking
- Wholesale and warehousing
- Drive-throughs and car washes
- Lumber or building materials sales and storage
- Laboratories
- Outdoor recreation uses
- Food and beverage processing, packing, or storage; cold storage; and feed or seed stores
- Shop, storage, or repair for plumbing, heating, electrical or paint contractors

Conditional uses require review by the city's Planning Commission, which creates an opportunity to ensure compatibility with adjacent uses and to address quality of life concerns including noise, parking, site layout, hours of operation, etc. The Preferred Land Use Plan also requires that, in order to be granted permission to locate within the Study Area, the uses listed above must demonstrate to the Planning Commission that they will be compatible with any adjacent residential districts.

[10] The Advisory Committee and City staff expressed a desire to apply the changes to allowed uses described above to all land zoned C-2 within the City. The implementing ordinances associated with the Preferred Land Use Plan do not reflect this approach, because to modify zoning City-wide would be beyond the scope of this planning process. However, the Plan does support the City's desire to apply these changes more broadly and recommends that the City consider implementing those changes through modifications to the C-2 base zone (and conforming modifications to the overlay zone to prevent duplication).

The two uses that will be prohibited within the overlay zone are tire retreading and truck terminals or freight depots.

All of the affected uses are either prohibited or conditional in the City's Planned Industrial (IP) zone; as a result, there is currently an incentive for these uses to locate in the C-2 zone instead to avoid the special permitting process. The Preferred Land Use Plan makes both zones equally permissive/restrictive for these uses.

Design Standards for Compatibility

As an additional measure to ensure compatibility between commercial uses and abutting residential districts, the overlay zone includes special design standards that apply generally within 100 feet of a residential district. The area in which these standards apply is shown on Figure 6-2 on page 52. These standards prohibit outdoor storage and commercial or industrial activities generally within 100 feet of a residential district and require landscaping to provide visual screening along property lines shared with residential zones. The standards apply in addition the new landscaping standards for commercial zones that have recently been adopted by the City.

Gateway Design Standards

In response to the broad desire to improve the appearance of development along US 101 in the Study Area and create a more attractive gateway to the downtown, the Preferred Land Use plan includes design standards intended to enhance the appearance of new development fronting on US 101. One goal of these standards is to make the environment more comfortable, safe, and interesting for pedestrians. This will be especially relevant once sidewalks are installed along the highway, as identified in the Preferred Transportation Plan, described in Section 7. The plan also includes provisions addressing driveways to improve the safety and comfort of bicycle and pedestrian travel on US 101. The properties within the overlay zone that will be subject to these standards are indicated on Figure 6-2 on page 52.

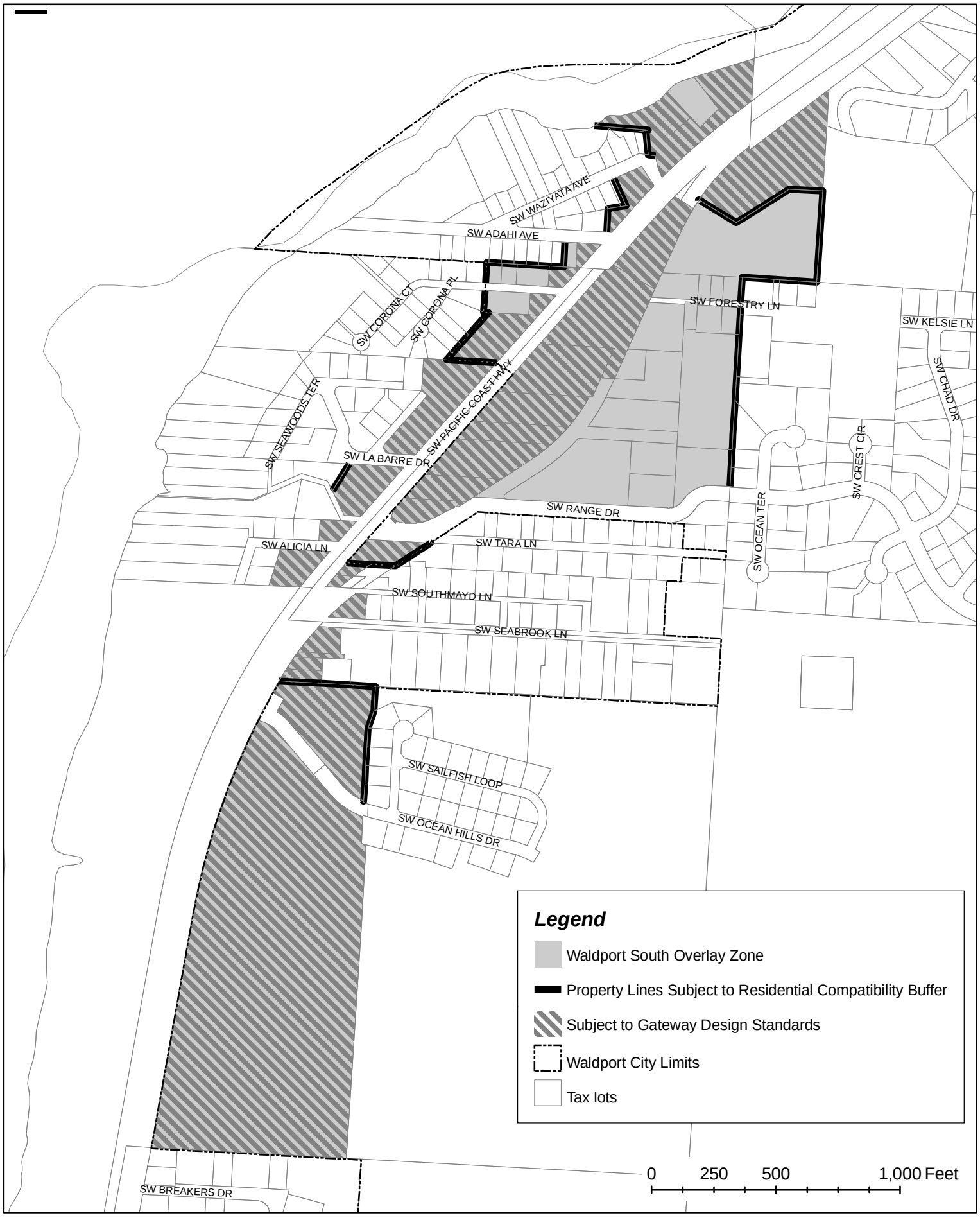
In order to achieve a more pedestrian-friendly environment, the Preferred Land Use Plan applies one of two standards to encourage new development to locate buildings closer to the street and minimize the amount of parking adjacent to the sidewalk. New development on properties fronting on US 101 in the Study area will be required to either locate the building near the road (specifically, to have at least 50% of the front of the building located within 20 feet of the front of the property) or to limit off-street parking along the front property line to 50% of the street frontage. These requirements make it more likely that new development will be built with the building pulled towards the street and the parking to the side or behind.

If a parking area is developed adjacent to the highway, additional landscaping and screening will be required in order to mitigate the impact to passing pedestrians. If buildings are located close to the street, they will be required to provide windows along the ground floor and to vary the look of the building walls facing the street in order to prevent buildings with blank walls, provide a more visually interesting pedestrian environment, and enhance the aesthetics of the corridor.

In addition, new buildings will be required to orient their main entrances towards the front or side of the lot and provide a safe and convenient pedestrian walkway from the street. This ensures that pedestrians have a safe route to access the building and are not be required to walk around to the rear of the building in order to enter.

Figure 6-2

Waldport South (W-S) Overlay Zone Boundaries and Applicability of Design Standards



7. Preferred Transportation Plan

Overview

The elements of the Preferred Transportation Plan include:

- US 101 Improvement Plan in the Seawall and South (of Seawall) sections
  - Street cross-sections
  - Pedestrian and bicycle facility improvements
  - Access managements
- Local Circulation Plan
  - Local street plan
  - Bicycle and pedestrian network
  - Transit policy
- Implementation Measures
  - Short, medium, and long range actions
  - Cost Estimates
  - Funding Strategies

Planning level cost estimates were generated for each project in the Preferred Transportation Plan; the Preferred Transportation Plan is intended to be implementable based on the city and ODOT's financial constraints.

US 101 Improvement Plan

Multi-modal improvements and access management policies were developed for two sections of US 101 within the Study Area. The northern section, about 0.28 mile in length, is referred to as the "seawall section", and is defined from mileposts 156.27 to 156.55. The southern section, about 0.66 mile in length, is referred to as the "south section" and is defined from mileposts 156.55 to 157.21. Each of these roadway segments is discussed in detail below. All trail and pathway improvements planned for the US 101 corridor have been included in this section, including some trails that are parallel to but off the highway and provide benefit to travelers in the corridor.

US 101 Seawall Section

The seawall highway cross-section, with a current paved width of between 25½ and 32 feet, does not meet ODOT Highway Design Manual standards (substandard travel lanes and shoulders) due to physical constraints including a seawall to the west and a steep slope on the east. Travel speeds in this section are 35 miles per hour (mph) in the northern portion, transitioning to 45 mph in the southern portion.

Figure 7-1 shows the preferred cross-section for US 101 in the seawall segment. As shown, the preferred long-term cross-section includes two 12-foot wide motor vehicle travel lanes, a six- to eight-foot shoulder multi-use path on the west side and a four- to six-foot bike lane on the east side. This would require construction of a retaining wall and provision for drainage. Drainage needs in this section, whether via underground pipe or surface drainage ditch, will be resolved during the design process. Due to the disparity of travel speeds of the multiple modes using this corridor and its narrow width, the plan calls for this section be restriped for "NO PASSING".

The powerline corridor (located on the former railroad right-of-way that is now part of the US 101 right-of-way on the east side of the highway) is expected to accommodate pedestrians and northbound

bicyclists, as shown at the bottom of Figure 7-1. The powerline corridor is on a graded shelf approximately 20-25 feet above the level of the highway. In the long-term future, the powerline multi-use path would traverse down the slope at a grade compliant with provisions in the American with Disabilities Act (ADA) to US 101.[11] The powerline multi-use path will be henceforth called the Bridgeview Path.

The 10-foot wide Bridgeview multi-use path follows a very gentle grade and could serve as a convenient alternative to US 101 for non-auto modes. Initially, the north terminus of this pathway is expected to use the maintenance road to access US 101, due to the relatively high cost (estimated at $174,000) of traversing the pathway down to highway grade. The long-term phase includes the path traversing the hillside at ADA-compliant grades.

The city and ODOT will likely not have immediate funding to construct the long-term plan for the US 101 Seawall section. Thus, an intermediate and less costly plan was developed. The intermediate plan uses the existing paved cross-section of 32 feet, and through restriping the travel lanes from 11½ feet to 11 feet, would allow widening the northbound shoulder to four feet in all but the southern 400-foot portion of the Seawall section.

The "curbed" portion of the Seawall section (from MP 156.47 to 156.55) does not have a concrete rail, and is narrower than the 32-foot paved width to the north. This curbed portion has about 25½ feet of paved width, with 10½-foot travel lanes and about 2 to 2½-foot shoulders on each side (see photo, next page). Due to the narrow width of this section, the provision of 11-foot travel lanes and a wider northbound bike lane would only occur with the long-term plan. This paved section is bounded by a curb on its west edge, west of which is a two-foot earthen path. Based on field observations, it may be possible to widen the pedestrian path on the west side by as much as three feet in conjunction with construction of a guard rail. However, a review of ODOT's historic construction documents reveals that there is inadequate information to establish the type and structural strength of subsurface materials on the west side of the highway. Hence, it will require substantial analysis to determine whether a sidewalk or crash-worthy guard rail could be installed. The feasibility of this improvement should be evaluated through structural analysis of the concrete slab base.

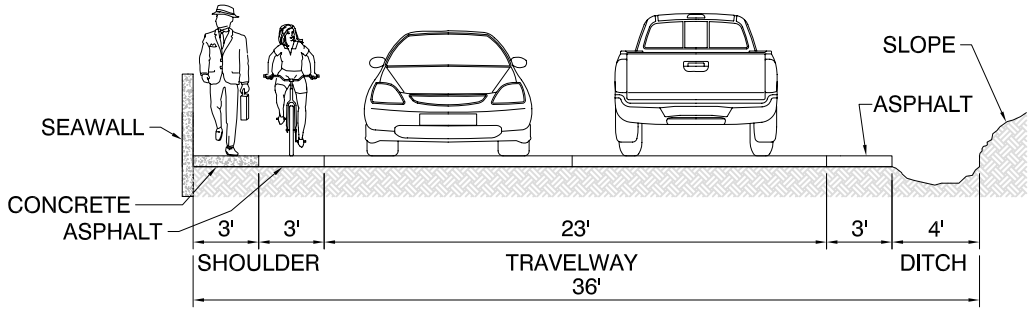
[11] Under the proposed ADA guidelines, an accessible trail would meet these minimum technical provisions:

- Clear tread width: 36" minimum
- Tread Obstacles: 2" high maximum (up to 3" high where running and cross slopes are 5% or less)
- Cross Slope: 5% max.
- Running slope (trail grade) meets one or more of the following:
  - is 5% or less.
  - is up to 8.33% for no more than 200'. Resting intervals provided no more than 200' apart.
  - is up to 10% for no more than 30'. Resting intervals provided no more than 30' apart.
  - up to 12.5% for no more than 10'. Resting intervals provided no more than 10' apart.
- No more than 30% of the total trail length may exceed a running slope of 8.33%.
- Passing Space: provided at least every 1000' where trail width is less than 6'
- Signs: shall be provided indicating the length of the accessible trail segment.

For purposes of estimating costs, the multi-use path was assumed to be 8% grade for 330 feet, with a ten-foot level landing mid-way.

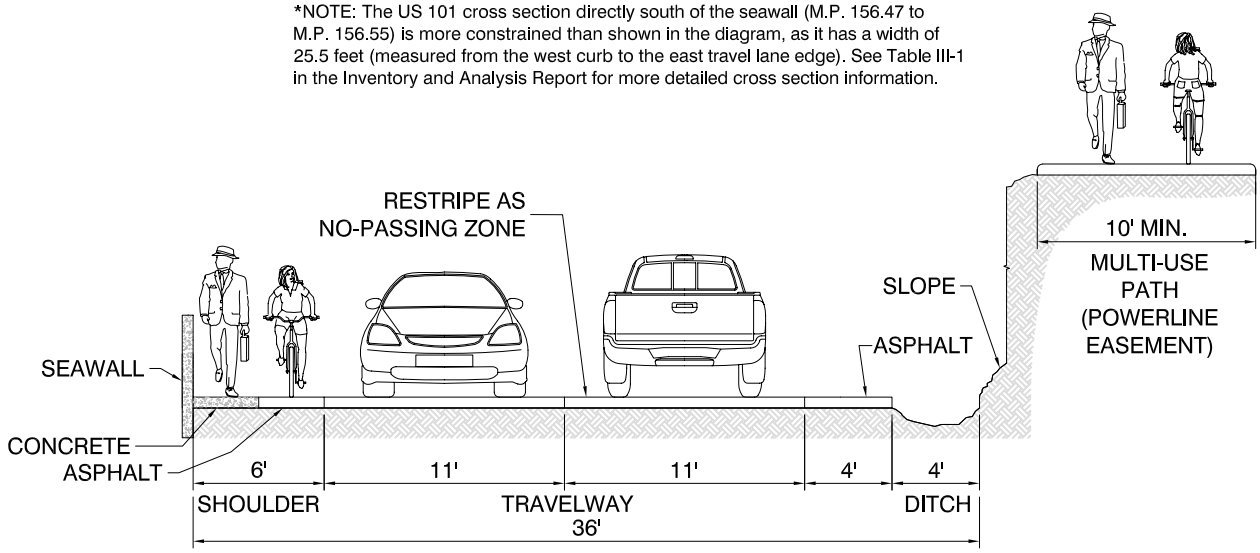
US 101 Seawall – curbed section

Figure 7-1: Existing and Preferred US 101 Seawall Cross-Sections



EXISTING CONDITION*

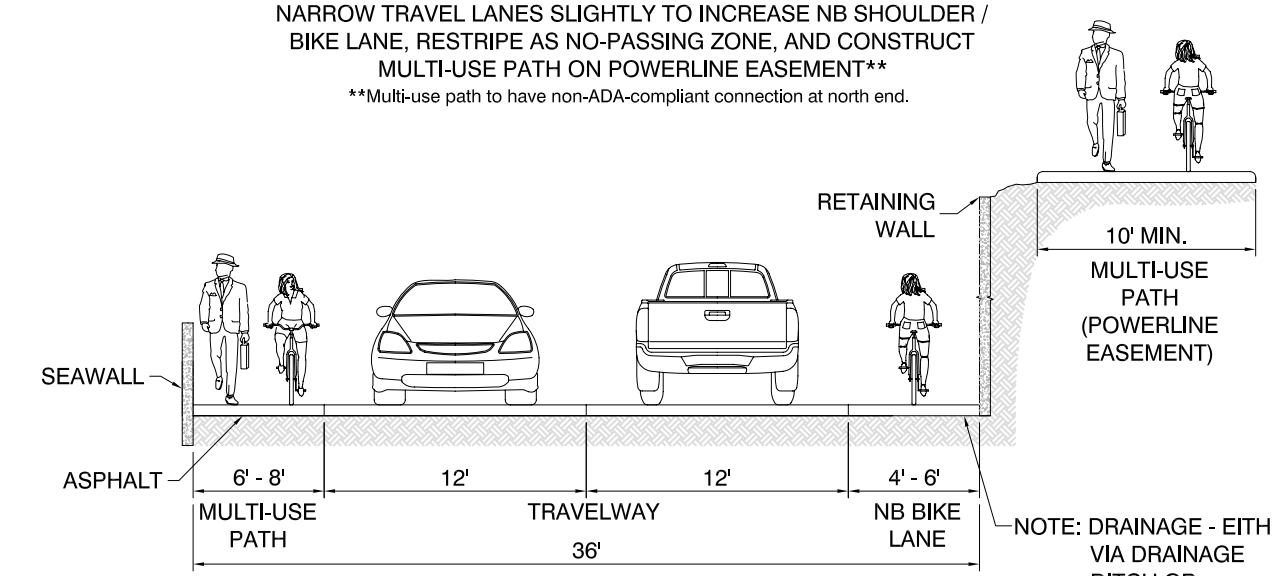
*NOTE: The US 101 cross section directly south of the seawall (M.P. 156.47 to M.P. 156.55) is more constrained than shown in the diagram, as it has a width of 25.5 feet (measured from the west curb to the east travel lane edge). See Table III-1 in the Inventory and Analysis Report for more detailed cross section information.



INTERMEDIATE-TERM PREFERRED ALTERNATIVE

NARROW TRAVEL LANES SLIGHTLY TO INCREASE NB SHOULDER / BIKE LANE, RESTRIPE AS NO-PASSING ZONE, AND CONSTRUCT MULTI-USE PATH ON POWERLINE EASEMENT**

**Multi-use path to have non-ADA-compliant connection at north end.



LONG-TERM PREFERRED ALTERNATIVE

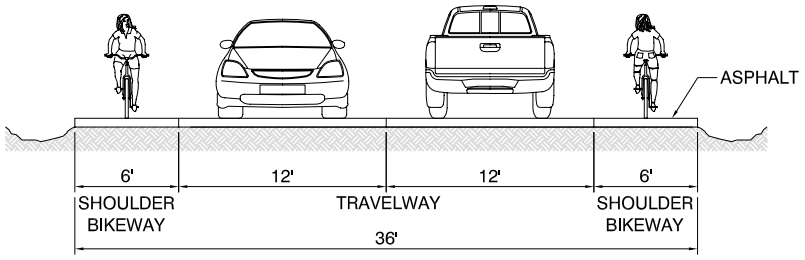
WIDE TRAVEL LANES AND BIKE LANES
MULTI-USE PATH ON POWERLINE EASEMENT WITH ADA-COMPLIANT CONNECTION ON NORTH END

EXISTING AND PREFERRED FUTURE US 101 SEAWALL CROSS SECTIONS (M.P. 156.27 TO M.P. 156.55) WALDPORT, OREGON

US 101 South Section

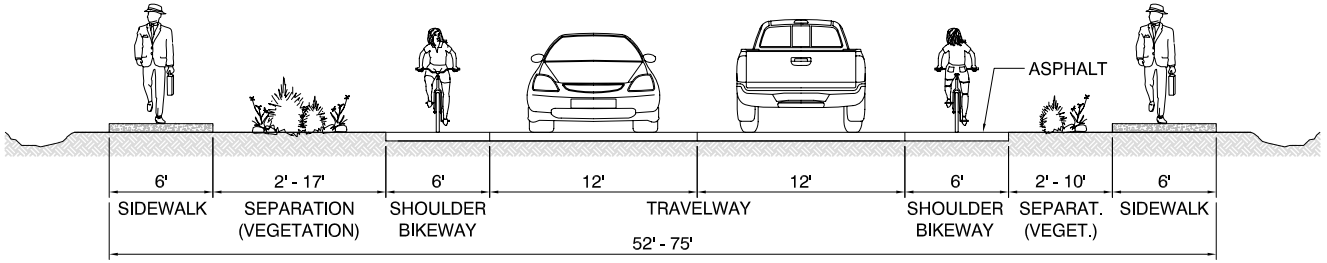
Figure 7-2 shows the preferred cross-section for the US 101 South section. As shown, the existing 36-foot paved section would be augmented with 6-foot sidewalks separated from the motor vehicle travel lanes and shoulder bike lanes by a vegetated strip. The right-of-way available along US 101 can accommodate a vegetated strip varying in width between 2 and 17 feet.

Figure 7-2: Existing and Preferred US 101 South Section Cross-Sections

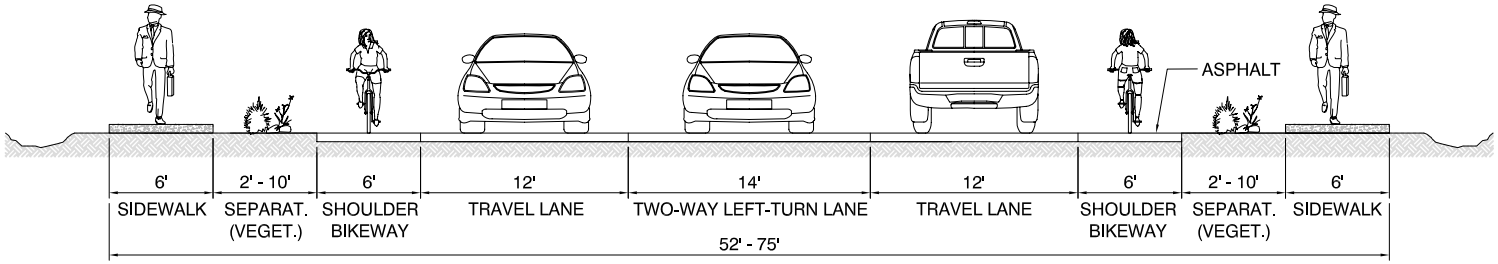


EXISTING CONDITION*

*NOTE: The US 101 cross section south of the seawall (M.P. 156.55 to M.P. 157.16) varies in width as a result of the left-turn lane provided at Range Road. The east shoulder remains wider than 6 feet and the west shoulder remains wider than 5 feet throughout the study area. See Table III-1 in the Inventory and Analysis Report for more detailed cross section information.



PREFERRED ALTERNATIVE
SEPARATED SIDEWALKS ON BOTH SIDES OF US 101
NO CENTER LEFT-TURN LANE



PREFERRED ALTERNATIVE
SEPARATED SIDEWALKS ON BOTH SIDES OF US 101
WITH CENTER LEFT-TURN LANE

EXISTING AND PREFERRED FUTURE US 101 SOUTH SECTION CROSS SECTIONS (M.P. 156.55 TO M.P. 157.16) WALDPORT, OREGON

H:\projfile\11626 - Waldport TSP\dwgs\figs\Cross Sections.dwg Oct 26, 2011 - 2:10pm - atanaka Layout Tab: 3-2

The US 101 South section currently has a southbound left turn lane at Range Drive. As described later in this report, the Plan calls for Kelsie Lane to be extended from its western terminus to connect with US 101 directly opposite Corona Court. Based on the results of the traffic analysis, a southbound left turn lane would be warranted on US 101 at this new local street intersection. In addition, at build-out of the Ocean Hills subdivision, the Ocean Hill Drive intersection will also warrant a left turn lane for southbound movements on US 101. (Left turn lane volumes and warrants are included in the technical documentation that accompanies this report and is provided in Volume 2). In addition, the Patterson State Park driveway will be relocated southward to align directly opposite Ocean Hills Drive should development occur on the commercial property between the subdivision and the highway with access to Ocean Hills Drive, or if the Ocean Hills subdivision develops beyond 34 dwellings. This widening should be constructed to ODOT standards.

In recognition that the proposed Kelsie Lane intersection is about 2,100 feet north of Range Drive, the plan calls for a two-way left turn lane on US 101 from Ocean Hills Drive to Adahi Avenue. This lane would serve left turns at Ocean Hills, Seabrook, Southmayd, Alicia, Sherwood, LaBarre, Forestry, Adahi, and driveways located along its length. In addition to the left turn lane that already exists at the Range Drive intersection, left turn lanes on US 101 will only be warranted at the Kelsie Lane and Ocean Hills Drive intersections (and not at the other local streets in this section). However, the plan includes this section of US 101 being widened with a continuous center left turn lane, because it would benefit left turns made at the other local streets and because there is insufficient room between the intersections to allow separate turn lanes to be constructed. Figure 7-2 shows the cross-section of this three-lane section of US 101, and Figure 7-4 shows the preferred US 101 improvements combined with planned local streets discussed in a later section.

Table 7-1 shows the improvements planned for US 101 in the Study Area.

Table 7-1: Transportation Plan - US 101 Improvements

101 Seawall Intermediate Phase	Widen northbound bike lane by restriping (northern portion only[1]). Restripe existing paved section, only concurrent with repaving, providing narrower travel lanes and wider northbound shoulder	State Highway	1,050’	$3,000	ODOT
101 Seawall Bridgeview Multi-use path Intermediate Phase (P10)	Bridgeview multi-use path on east side of US 101 from North Forest Service Drive to North Terminus (maintenance road), includes bridge over creek and uses existing powerline corridor maintenance road for access to 101	Multi-use Path	1,850’	$247,000	City / ODOT
101 Seawall Long-term Phase	Widen travel lanes, shoulder/bikelanes to ODOT standards, build retaining wall	State Highway	1,450’	$890,000	ODOT
101 Seawall Bridgeview Multi-use Path Long-term Phase (P10)	Bridgeview multi-use trail on east side traversing down slope to US 101 at maintenance road intersection (includes 6’ retaining walls)	Multi-use Path	330’	$174,000	City / ODOT

101 Seawall Shoulder bikeway on US 101 east shoulder from maintenance road to Maple (P11)	Widen shoulder to 8' on east side of US 101 from powerline easement maintenance road intersection to Maple Street	Shoulder Bikeway	580'	$50,000	ODOT
101 South Highway	Provide separated 6' sidewalks both sides for full section and construct continuous two-direction left turn lane from Adahi Avenue to Range Drive, and from Range Drive to Ocean Hills Drive.	State Highway	3,200'	$1,263,000	ODOT / Develop-ment[2]
101 South Multi-use Path Parallel to 101 on East Side (P9)	Provide multi-use path from Forestry Way-Kelsie Lane to North Forest Service Drive (10' asphalt path with 2' gravel shoulders each side)	Multi-use Path	450'	$27,000	City / ODOT
101 South Highway	Realign Patterson State Park Entrance and Ocean Hills Drive	State Highway	NA	$20,000	Develop-ment
101 South (PX1)	Provide protected pedestrian crossing of US 101 at Ocean Hills/Patterson State Park Entrance by widening highway, constructing center median island, pedestrian-actuated flashing beacon, and striped crosswalk.	State Highway	NA	$25,000	ODOT
101 South (PX2)	Protected pedestrian crossing of US 101 immediately south of realigned Forestry Way-Kelsie Lane extension intersection to include constructing center median island, pedestrian-actuated flashing beacon, and striped crosswalk.	State Highway	NA	$25,000	ODOT
TOTAL				**$2,724,000**	

Notes:

101 = US 101 project

[1] Southern (curb section) portion remains as-is, because there is inadequate width to accommodate this intermediate improvement in this 400-foot south portion of the seawall section.

[2] A relatively small proportion of this project facilitates left turn movements into private developments on US 101, and accordingly, some funding may be provided by those benefitting private developments. In addition, sidewalks may be provided as part of private development in some places. In any case, the majority of funding would come from ODOT.

Access Management Plan for US 101

Access management techniques and strategies help to preserve the transportation system investment and guard against deteriorations in safety and increased congestion by balancing the need for land access while preserving the safe and efficient movement of traffic.

ODOT access spacing policy regulates access to US 101. For US 101 within the Study Area, this Transportation Plan prescribes provisions that apply in addition to ODOT standards. Current spacing standards require a minimum spacing of 800 feet and 500 feet for the 45 and 35 mph sections, respectively.[12]

There are many existing access locations that currently do not meet ODOT standards. Increased access spacing should be provided as redevelopment occurs, or as a part of highway construction projects. Local access management standards and policies can also augment State standards on US 101 if the local standards are more restrictive than the State standards.

Implementation Language

The Plan calls for the city of Waldport to adopt local access management standards and policies for US 101 in the Study Area as provisions in the city's development code, as described below. (These access management measures are reflected in the language for the overlay zone in Exhibit 1.) Access management guidelines for properties abutting US 101 are as follows:

- Driveways onto US 101 (including multiple driveways on the same property) that meet ODOT's access spacing standards are permitted (subject to obtaining an access permit from ODOT).
- If spacing standards cannot be met, the following alternatives should be used where possible:
    - Developments with frontage on another street should locate their driveway(s) on the lower functional classified roadway.
    - Effort should be made to consolidate access points with neighboring properties through shared driveways and/or cross-access easements.
    - Temporary conditional access to US 101 may be granted when other alternatives are not available or adequate at time of development, with a non-remonstrance agreement that the property owner will not object to the eventual elimination of the temporary access. When shared access with abutting parcels can be established, temporary accesses will be eliminated.
- Access driveways should be located to avoid or minimize conflicts with opposing driveways.
- All non-residential properties abutting US 101 should be designed to allow for cross-access to abutting non-residential properties.

Figure 7-3 illustrates the application of cross-over easements and conditional access permits over time to achieve the desired access management objectives. The individual steps are described in Table 7-2,

[12] The driveway access spacing is measured from center-to-center of each driveway to the upstream or downstream driveway or intersection on one side of the roadway.

following Figure 7-3. As illustrated in the figure and supporting table, using these guidelines, driveways located along US 101 will eventually move in the overall direction of the access spacing standards as development and redevelopment occurs along US 101.

Figure 7-3: Example of Cross-over Easement / Indenture / Consolidation / Conditional Access Process

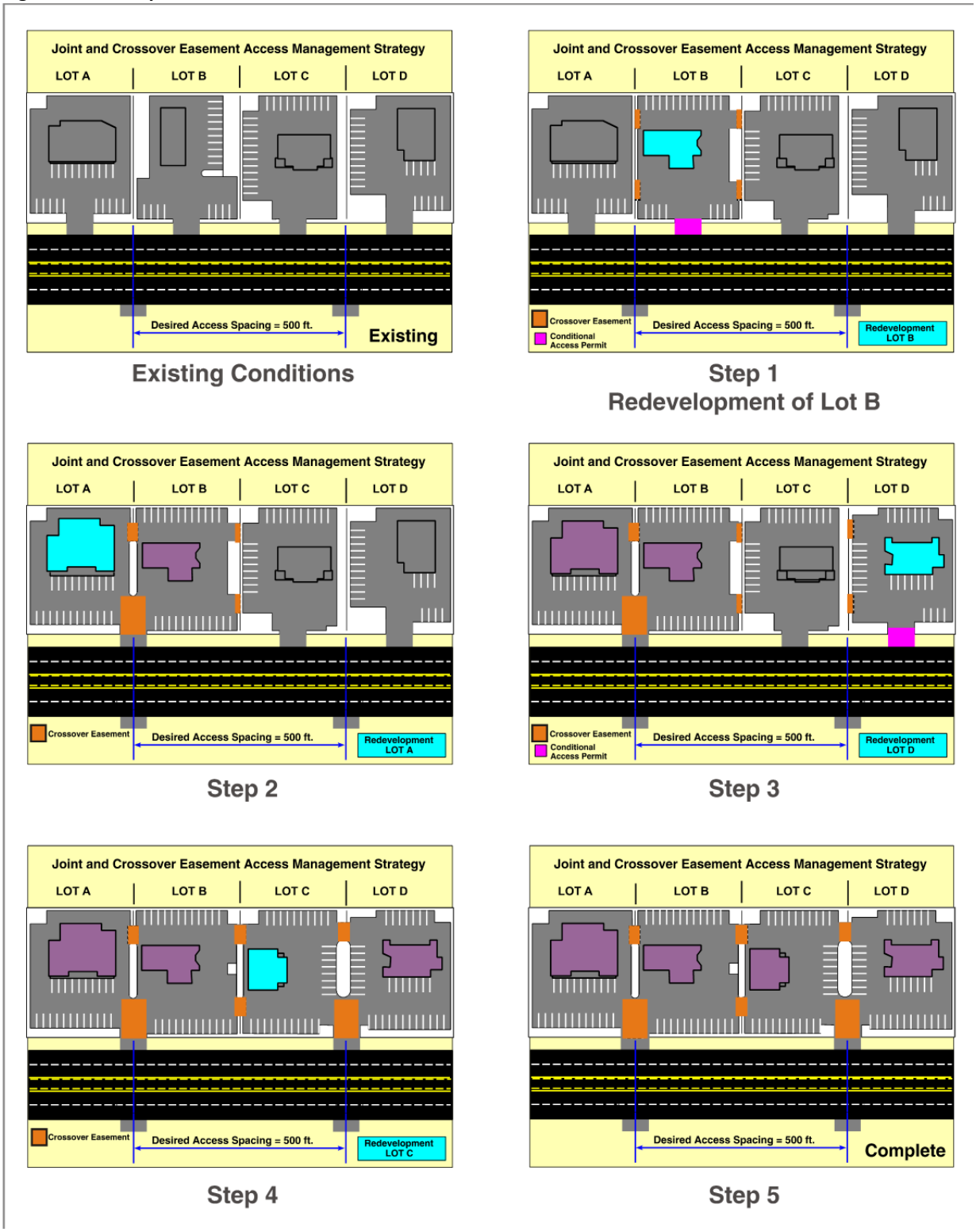


Table 7-2: Example of Crossover Easement/Indenture/Consolidation - Conditional Access Process

Step	Process
Existing	Currently Lots A, B, C, and D have site-access driveways that neither meet the access spacing criteria nor align with driveways or access points on the opposite side of the roadway. Under these conditions motorists may be exposed to potential conflicting left turns with opposing traffic. Additionally, the number of side-street (or site-access driveway) intersections may reduce the operation and safety of the roadway.
1	REDEVELOPMENT OF LOT B – At the time that Lot B redevelops, the city would review the proposed site plan and ensure that the site could provide for future crossover or consolidated access with adjacent commercially-zoned properties (A and C). The city would determine that Lot B does not have alternative access, nor can the available lot frontage provide an access point that meets the access spacing criteria set forth for segment of roadway. Next, the city would issue conditional land use permits for the development with the requirements to provide crossover easements with Lots A and C when those properties redevelop, and to not remonstrate against the removal/relocation of the temporary conditional access point when an alternative, shared access becomes available. ODOT would grant a conditional access permit to the lot.
2	REDEVELOPMENT OF LOT A – At the time Lot A redevelops, the city would undertake the same review process as with the redevelopment of Lot B (see Step 1); however, under this scenario the city would use the non-remonstrance agreement previously obtained from Lot B to require Lot B to provide a cross-over easement that would allow consolidation of the access points to Lots A and B. The city would require Lot B to relocate the conditional access to align with the opposing access point and provide an efficient access to both Lots A and B. The consolidation of site-access driveways for Lots A and B would not only reduce the number of driveways accessing the roadway, but will also eliminate the conflicting left-turn movements the roadway by the alignment with the opposing access point.
3	REDEVELOPMENT OF LOT D – The redevelopment of Lot D would be handled in same manner as the redevelopment of Lot B (see Step 1)
4	REDEVELOPMENT OF LOT C – The redevelopment of Lot C would be reviewed to ensure that the site would accommodate crossover and/or consolidated access. Using crossover agreements with Lots B and D, Lot C would share a consolidated access point with Lot D and would also have the shared site-access driveway of Lots A and B as an alternative frontage access. By using the crossover agreement and conditional access permit process, the city is able to eliminate another access point and provide alignment with the opposing access points.
5	COMPLETE – After Lots A, B, C, and D redevelop, the number of access points would be reduced and aligned, and the remaining access points would meet the access spacing standard.

Local Circulation Plan

The Study Area has natural features including steep slopes, creeks, undeveloped properties, and unstable soils that have resulted in discontinuities among facilities for various travel modes. The following sections describe local streets and bicycle and pedestrian network improvements to address existing and anticipate future deficiencies.

Many of the new construction projects are categorized as "development funded," meaning that those projects would be constructed based on needs related to future land developments and are likely to be constructed by development as frontage improvements or subdivision requirements. Funds for construction of these projects will likely be generated from the private developments each would serve, as opposed to city or ODOT capital improvement funds. As such, implementation timing and phasing is unknown and is likely to be incremental in nature.

Local street plan

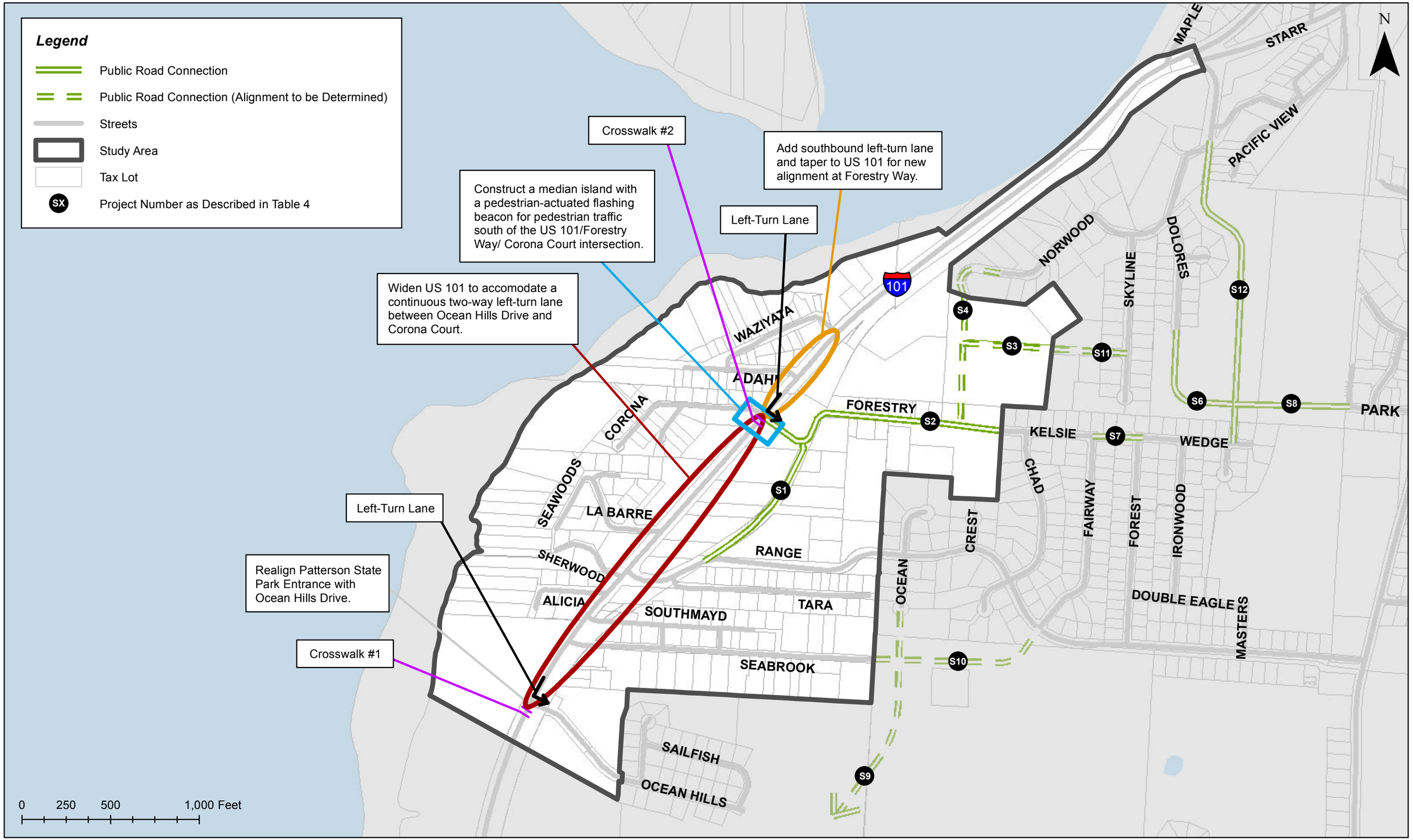
There are over 1.6 miles of future local streets and alleys included in the Transportation Plan. The local streets are shown in Figure 7-4: Preferred US 101 Improvements and Local Streets. Table 7-3 describes each of the planned local street improvements. The new streets are intended to provide a more connected, convenient network to serve all modes of transport. Key streets include:

- *An alley on the old railroad corridor, behind the properties east of US 101, from Range Drive to the new Forestry Way-Kelsie Lane extension.* This alley, 20 feet in width, would provide secondary access to US 101-fronting properties, thereby reducing congestion on the highway. This alley is not intended for primary access, and would serve as alternative access and may be used for deliveries. The alley should be designated "20 mph" and could serve pedestrian and bicycle movements. Figure 7-5 shows the cross-section of the alley backage road.
- *An extension of Kelsie Lane from the neighborhood in the upper level of the Study Area, via Forestry Way to intersect with US 101 directly opposite Corona Court.* This would provide a much needed alternate route from the hilltop neighborhood to US 101, thereby reducing reliance on Range Drive.[13]
- *Local connections within the residential areas and to newly developable areas south of the Study Area*, thereby providing a more convenient, efficient transportation network for all modes.

These streets would be funded primarily by local development through which they serve; however, the streets that benefit the greater public may be partially city or ODOT funded.

[13] This alignment was identified in the TSP as a planned trail connection. This Plan has identified it for a full roadway improvement, superseding the planned trail identified in the TSP.

Figure 7-4: Preferred US 101 Improvements and Local Streets



Prepared October 2011

Table 7-3: Draft Preferred Transportation Plan - Local Streets and Alleys

Project Number	Name	Description	Functional Designation	Length	Cost (2011 Dollars)	Funded By…
S1	Alley from Range Drive to New Kelsie-Forestry Way Connection	Provides a 20' alley "backage road" for adjacent property access (thereby reducing congestion on US 101) and to serve as a local north-south bicycle and pedestrian connection.	Alley	850'	$245,000	City
S2	Kelsie Lane-Forestry Way Extension to US 101*	Extends Kelsie Lane from its current western terminus westward via Forestry Way to intersect with US 101 directly opposite Corona Court. This is the portion of this connection inside the Study Area.	Local Street	1,500'	$1,080,000	City
S3	Norwood Drive to Skyline Terrace Connection*	Provides a connection from Norwood Drive Extension (S4) to Skyline Terrace (via S11).	Local Street	500'	$360,000	Development
S4	Norwood Drive Extension*	Provides a new north-south connection from the south terminus of Norwood Drive to the new Forestry Way-Kelsie Way extension.	Local Street	1,100'	$792,000	Development
S6	Dolores Drive Extension to New Wedge Drive to Norwood Connection*	Extends Dolores Drive from its current terminus south and east to connect to a new north-south street between Norwood Drive and Wedge Drive.	Local Street	700'	$504,000	Development
S7	Wedge Drive Connection from Fairway to Forest	Connects Wedge Drive from its eastern terminus west of Fairway Drive to Forest Parkway	Local Street	150'	$108,000	Development
S8	Park Drive Extension*	Extends Park Drive westward to Wedge Drive to-Norwood Drive extension (S12).	Local Street	650'	$468,000	City
S9	Ocean Terrace Extension	Extends Ocean Terrace southward to vacant undeveloped land to south.	Local Street	1,000' **	$720,000	Development
S10	Seabrook Lane Extension to Range Drive	Extends Seabrook Lane eastward to connect with Range Drive opposite Fairway Drive.	Local Street	1,000'	$720,000	Development

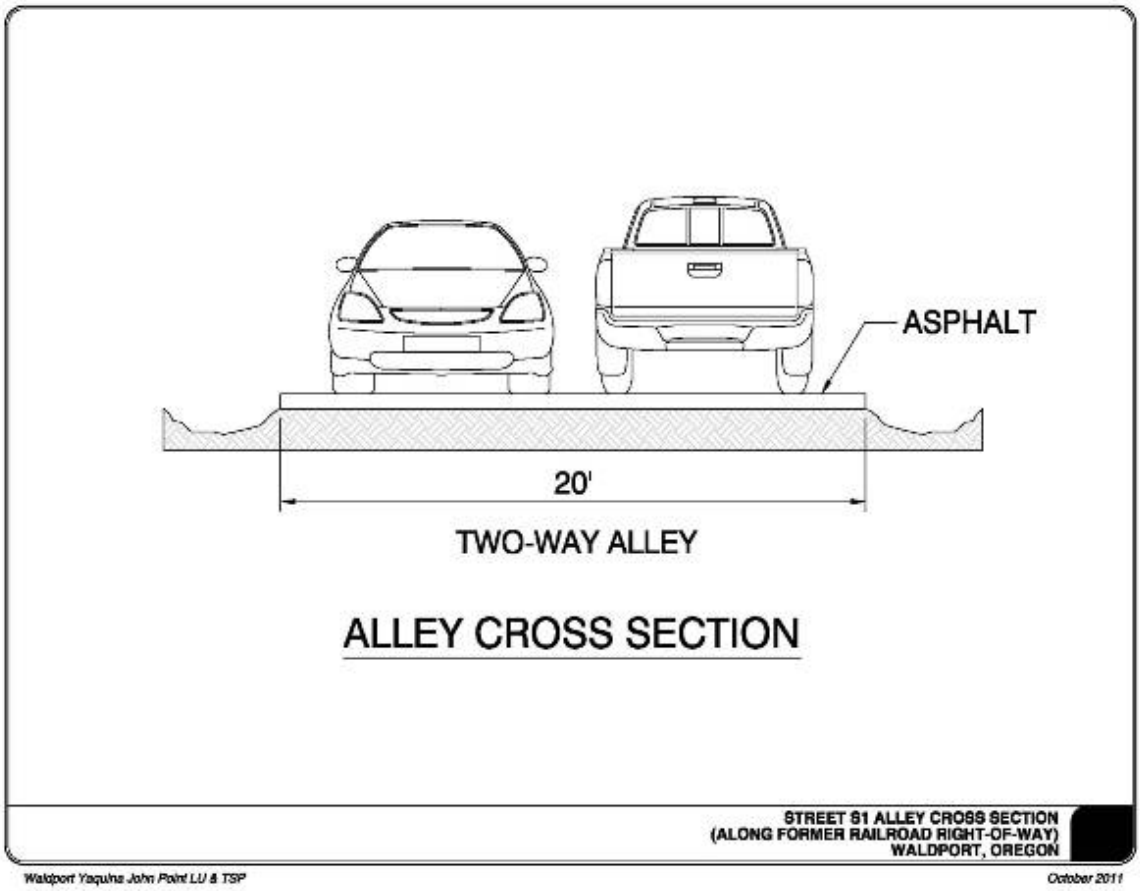
Project Number	Name	Description	Functional Designation	Length	Cost (2011 Dollars)	Funded By…
S11	Norwood Drive to Skyline Terrace Connection*	Provides the eastern portion of the connection from Norwood Drive Extension (S3) to Skyline Terrace. This is the portion of this connection outside the Study Area.	Local Street	400’	$288,000	Development
S12	Wedge Drive to Norwood Connection	Provides connection from Wedge Drive to Norwood Drive.	Local Street	1,550’	$1,116,000	Development
	TOTAL			**5,000’**	**$6,401,000**	

Note: S = street project

* This connection was identified in the TSP as a planned trail connection. This Plan has identified it for a full roadway improvement, superseding the planned trail identified in the TSP at this location.

** The length of this connection is unknown and depends upon future development. For purposes of estimating cost, it was assumed to be 1,000 feet long.

Figure 7-5: Planned Street #S1 Alley Cross-Section



Bicycle and pedestrian network

Table 7-4 shows the local pathways and trails planned for the Study Area. There are about ¼ miles of local pathways and trails planned for the area. Many of these facilities currently exist, and this plan identifies improvements to provide consistency for public use. Figure 7-6 shows the planned pathways and trails. Key facilities identified:

- *Beach trails:* improve these trails to 3-8 feet wide with soft surface material (wood chips, gravel, earth, or other), with 1-2 foot gravel shoulders. Also, provide signs at each end of the trail ("BEACH ACCESS" or "STREET ACCESS").[14]
- *Nature trails that connect neighborhoods and scenic areas*: There are many trails that exist in and just outside the study area, that are planned for improvement to trail standards.

Table 7-4: Transportation Plan - Local Pathways and Trails

Project Number	Name	Description	Functional Designation	Length	Cost (2011 Dollars)	Funded By…
P2	Corona Beach Access	Improve/sign existing access trail to beach from Corona Court.	Trail	150'	$8,500	City
P3	Waziyata Beach Access	Improve/sign existing access trail to beach from Waziyata Avenue.	Trail	150'	$8,500	City
P4	Sherwood Beach Access	Improve/sign existing access trail to beach from Sherwood Lane.	Trail	250'	$14,500	City
P5	State Park Beach Access	Improve/sign existing access trail to beach from state park.	Trail	150'	$9,000	State Parks
P6	Seawoods Terrace to Sherwood Lane Trail Connection	Improve/sign existing trail from Seawoods Terrace to Sherwood Lane.	Trail	150'	$8,500	City
P12	Forest Service North Multi-use path to US 101	Construct multi-use path to connect with Norwood Drive extension (S4) to US 101 slightly north of Waziyata	Multi-use Path	750'	$72,000	City
P14	Southmayd Lane to Seabrook Lane Trail	Improve existing trail on city easement from eastern terminus of Southmayd Lane to SeabrookLane.	Trail	300'	$17,500	City

[14] These signs should be coordinated with existing signage in the corridor to reduce visual clutter and provide clear direction for motorists, cyclists, and pedestrians. Any new signs within the right-of-way will be subject to approval by ODOT.

Project Number	Name	Description	Functional Designation	Length	Cost (2011 Dollars)	Funded By…
P15	Sailfish Loop to Seabrook Lane Nature Trail	Improve/sign existing nature trail from Sailfish Loop to Seabrook Lane Trail.	Trail	1,150’	$66,000	Development
P16	Seabrook Laneto Range Drive Nature Trail	Improve/sign existing nature trail from Seabrook Lane to Range Drive.	Trail	2,200’	$126,500	Development
P17	Skyline Drive to Norwood Drive Nature Trail	Improve/sign existing nature trail from Skyline Drive to Norwood Drive.	Trail	750'	$43,000	Development
P18	Skyline Drive Trail	Improve existing nature trail from Skyline Drive south terminus to 500’ westward.	Trail	500’	$29,000	Development
	TOTAL			**6,500’**	**$403,000**	

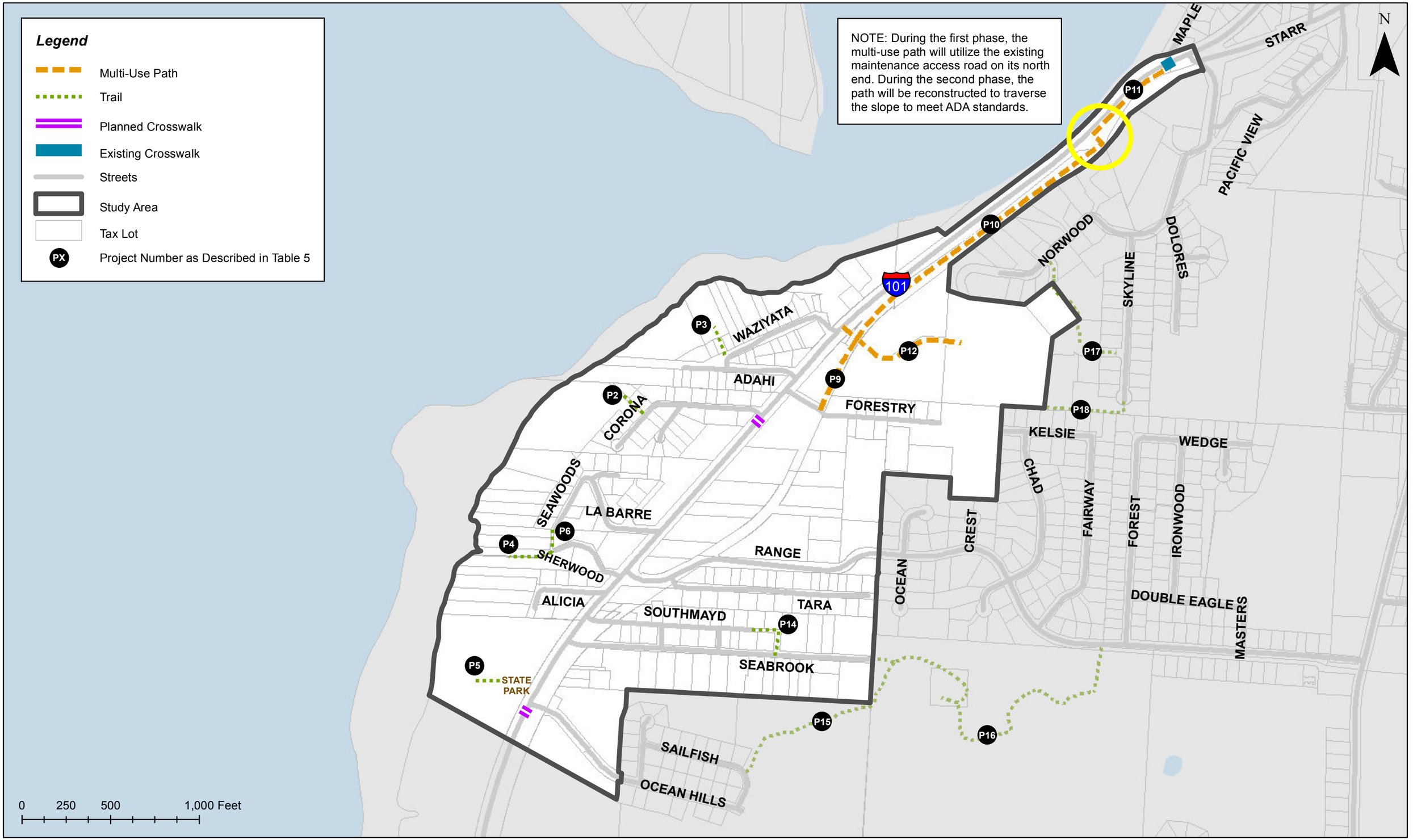
Note: P = pathway project

Costs for trails include improvement to trail standards as 3-8 feet wide with soft surface material (wood chips, gravel, earth, or other), with 1-2 foot gravel shoulders. In many cases, the City will elect to retain natural surface, thereby reducing cost. Thus, these cost estimates may be higher than actual costs.

Transit Policy

Currently, the Lincoln County Transit Yachats to Newport (Northbound) bus serves the Study Area, and stops on US 101 at the Range Drive intersection when passengers are present. Riders can also pre-arrange to be picked up/dropped off at other safe locations. This route runs four times daily, Monday through Saturday. While not the transit provider, the City of Waldport supports continued public transit service to and though the study area and will work with Lincoln County Transit to help ensure the provision of safe and efficient transit stops within the study area.

Figure 7-6: Preferred Public Pathways



Prepared October 2011

Implementation Measures

This section explores estimated project costs, priorities and available funding revenues, and a suggested strategy for staging the planned transportation projects over the planning horizon. The city and ODOT will need flexibility to respond to changes in funding sources and project priorities as private development activities create opportunities and funding sources such as grants evolve.

Short, medium, and long range actions

Based on a review of the projects identified in the Study Area, their staging is subject principally to the state of the economy (which affects the rate of new development), and by the availability of state improvement funds. The city could accelerate this funding model significantly if it chooses to initiate new funding sources for the Study Area. Potential new funding options are identified in the Funding Strategies section.

Cost Estimates

Combining the cost elements presented in Tables 2, 4, and 5 above, Table 7-5 presents a summary of estimated transportation improvement costs. Of the $9,548,000 estimated transportation improvement costs in the Study Area, almost $5 million (51%) are likely to be the responsibility of future private development. Of the remaining $4,656,000, over half (56%) are the responsibility of ODOT, with the city responsible for virtually all of the remainder.

Table 7-5: Total Planning Level Draft Preferred Transportation Plan Improvement Costs

Project Type	Public Agency Funding				Private Development Funding
	ODOT	City	State Parks	Total	
Capital Improvement Projects					
US 101 Corridor	$2,624,000[1, 2]	$100,000[1]	$0	$2,724,000	$20,000[2, 3]
Local Street	$0	$1,793,000	$0	$1,793,000	$4,608,000
Local Pathways / Trails	$0	$130,000	$9,000	$139,000	$264,000
Total	**$2,624,000**	**$2,023,000**	**$9,000**	**$4,656,000**	**$4,892,000**

Note: Development funded projects are excluded from totals because these projects are not expected to use capital improvement dollars.

[1] Cost of multi-use paths parallel to US 101 (P9, P10 and P11) assumed to be funded 80% by ODOT and 20% by City.

[2] Private development could be responsible for part of the cost of improvements on ODOT facilities. This may include facilities that benefit a private development, including sidewalks, turn lanes, signals, etc. For purposes of this analysis, it has been assumed that only those improvements on ODOT facilities that are explicitly identified for private funding (see note 3 below) are funded by development.

[3] Realignment of Patterson State Park Entrance to Ocean Hills Drive assumed to be funded by private development in conjunction with future development.

Funding Strategies

The Waldport Transportation System Plan, adopted in February 12, 2010, identifies sources available to fund transportation projects in the city. These funding sources include a road tax administered by the Waldport Road District (of $0.6960 per $1000 of assessed value). According to the TSP:

"The Waldport Road District provides an ongoing source of funding for street improvements, therefore the City has not pursued other sources of funding to date for street maintenance and improvements, i.e. transportation system development charges, local gas tax, etc."

In addition to the city's road tax, State grant programs are available for transportation projects that are funded and administered through the Oregon Department of Transportation (ODOT). Grant programs administered by ODOT include, but are not limited to, Transportation Enhancement funds, Bicycle and Pedestrian Program grants, and the Special Small City Allotment Program grants. Projects on US 101 may be eligible for funding through the National Scenic Byway Discretionary Program because US 101 is the Pacific Coast Highway National Scenic Byway. The highway became a National Scenic Highway in 1998 and an All-American Road in 2002. In addition, the federal *Safe Routes to School* program assists communities to fund transportation projects and programs to provide safe routes for students to reach school.

The city's TSP identifies various funding sources, most of which are still available today. These funding sources should be considered for each of the projects identified in the plan. In addition, there are potential funding sources that the city could initiate for the Study Area, including:

Street LID Assessments

The city and local property owners could form one or more Local Improvement District agreements to fund selected street projects. Under a local improvement district (LID), a street or other transportation improvement is built and the adjacent properties that benefit are assessed a fee to pay for the improvement. The city could form LIDs for specific projects, or groups of projects, where benefitting property owners agree to pay for new projects such as streets, pathways, or sidewalks.

System Development Charges

The city could initiate a System Development Charge (SDC), either city-wide or for the Study Area, to be assessed on new development to pay for projects to triggered by growth. For many cities, this funding source has proven to augment other available funding sources to allow construction of needed projects.

Development Improvements

Developments affecting traffic conditions on state highways may be required to contribute funding for measures to mitigate traffic impacts caused by the development, including provision of turn lanes, traffic signals, and other traffic control measures. Development projects may also be required to install sidewalks along the street frontage.

Funding for State Projects

Based on historical precedence and the outlook for future funding, the following assumptions appear reasonable for State funding in the Study Area:

- ODOT will continue to be responsible for maintenance of US 101.
- ODOT is primarily responsible for improvements to US 101, including provision of additional capacity, sidewalks, and bicycle lanes, as warranted by traffic conditions, development, and population growth in Waldport.
- ODOT will fund improvements to highways and highway intersections that are determined by ODOT to be necessary to address safety, including turn lanes and other traffic control measures and in relation to other statewide priorities and available funding. (The Phase 1 strategy for the US 101 Seawall section will not change the "curb section" due to insufficient width.)

The city of Waldport should continue to pursue funding available from grant programs administered by ODOT and other Federal and State agencies. The city should identify needed projects that are consistent with the funding criteria of these grant programs and prioritize projects for grant applications based on the city's need for the project and the likely competitiveness of the project based on past grant awards.

Funding Projects in the Study Area

The city should coordinate carefully with ODOT to identify available state funding sources for the US 101 projects. The city will compete statewide for these funds, and it is difficult to predict how successful the city will be in acquiring ODOT funds.

For the Seawall section projects on US 101, the city and ODOT should implement the Phase 1 strategy first (restripe the highway in conjunction with repaving). Changing the highway into a "no-pass" section should improve highway safety. While shoulder widths in the curbed section would not be changed (due to limited available width), widening the shoulder through the seawall section would improve safety for northbound bicyclists. Moreover, the city should seek funds to complete the Phase 1 improvements on the Bridgeview multi-use pathway, and over time, seek funds to complete Phase 2 in the Seawall section. This section should be the city's highest priority, and improving safety for pedestrians and bicyclists (e.g. providing children safe routes away from the highway) may provide rationale for acquiring state Safe Routes to School funds.

With respect to city-funded projects, which amount to $1,793,000 for local streets and $130,000 for pathways and trails, the city should consider an LID or Special SDC to fund the local streets.

- For the railroad corridor backage road (cost: $245,000), the city may choose to form an LID and assess adjacent property owners based on their projected traffic demand on the new facility.
- For the Kelsie Lane-Forestry Way Extension to US 101 (cost: $1,080,000), this new local street is expected to benefit new development and existing development with improved access to US 101. Accordingly, an LID with benefitting property owners may be an equitable method of sharing the cost.

In the case of either of the two local street improvements discussed above, they are not required immediately and would be required at the time that the Range Drive intersection reaches capacity or experiences safety deficiencies. Nevertheless, these projects would improve mobility in the Study Area, and thus their priority may be greater as housing demand grows. The city may choose to monitor the operation of the US 101/Range Drive intersection to ensure its safe and efficient operation, and may choose to reevaluate funding of these two projects if that intersection operation approaches capacity or safety thresholds.

For the pathways and trails, the city's cost share is an estimated $130,000. The city may choose to seek grants to fund these projects, and should prioritize the projects accordingly. Many of the trails would improve Safe Routes to School (e.g. #15, 16, 17, and 18, and #12 if the Kelsie-Forestry local street connection is not made), and thus, federal and state funds may be sought under this grant source. Another potential grant program may apply to beach trails, which could potentially funded under the Oregon Recreational Trails (non-motorized) Grant program.

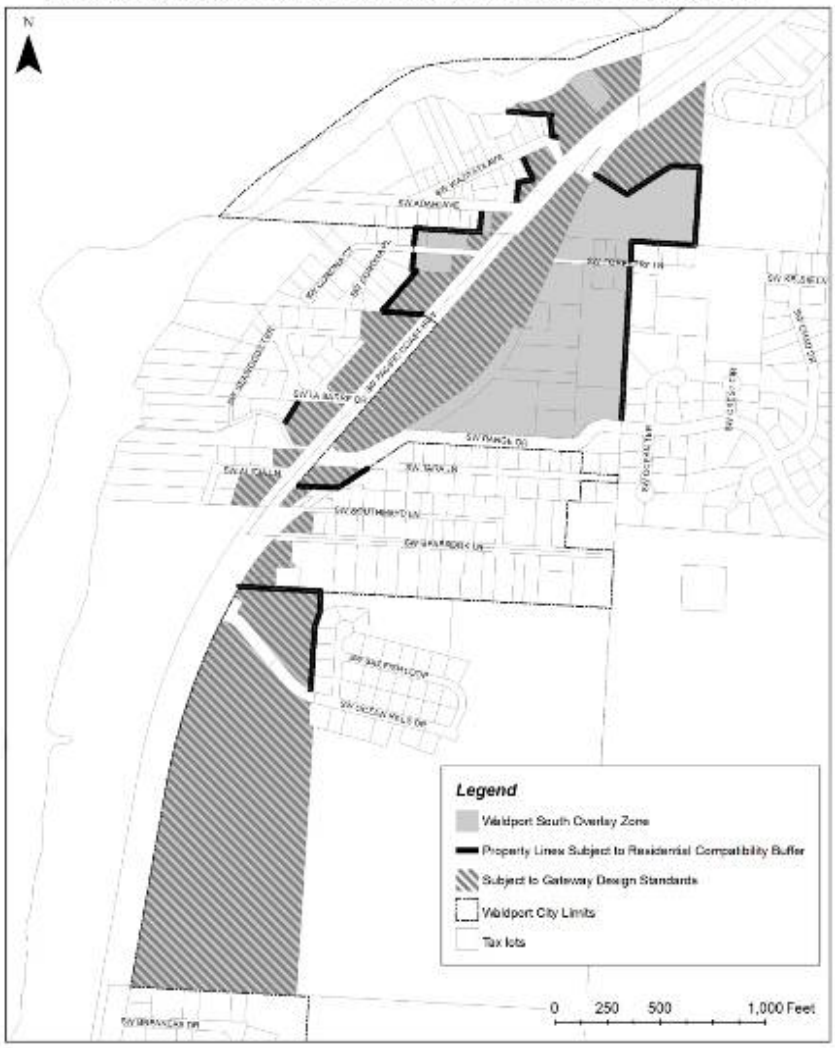
Exhibit 1
Implementing Plan and Code Amendments

Comprehensive Plan Amendments	*Commentary*
XII. TRANSPORTATION	
Policies 1. City Plans. The City of Waldport has adopted a Waldport Transportation System Plan, Yaquina John Point Land Use and Transportation Plan, and Waldport Parks Master Plan which are herein incorporated into the Waldport Comprehensive Plan. A primary objective of the Transportation System Plan is to provide for street connectivity, bicycle and pedestrian needs; decrease dependence on the private automobile; and provide pleasing transportation routes which promote safety by reducing conflicts between pedestrian/bicycles and automobiles. The Yaquina John Point Land Use and Transportation Plan refines both land use and transportation policies and objectives for the Yaquina John Point area, providing more specific direction for this area than that contained in the Comprehensive Plan or Transportation System Plan. The Parks Master Plan includes proposed trail corridors as well as trail and pathway standards.	The double-underlined text is intended to reflect how the city could incorporate the plan into existing policy documents upon adoption.

Code Amendments	*Commentary*
16.08.060 Zone descriptions. … N. Waldport-South Overlay Zone W-S. The Waldport South overlay zone is intended to address compatibility of commercial and light industrial uses with adjacent residential zones and to improve the appearance of the Waldport South area as a gateway to downtown Waldport. …	*Adds the new overlay zone to the introductory zone descriptions section.*
NEW SECTION **Chapter 16.62** **WALDPORT SOUTH OVERLAY ZONE W-S**	*This section creates the proposed new overlay zone. The text is all new; it is not shown underlined for ease of reading.* *The chapter number was selected to fall in an existing gap, after the C-S overlay. The overlay zone name would have been South Waldport Overlay Zone, but SW designation is already in*

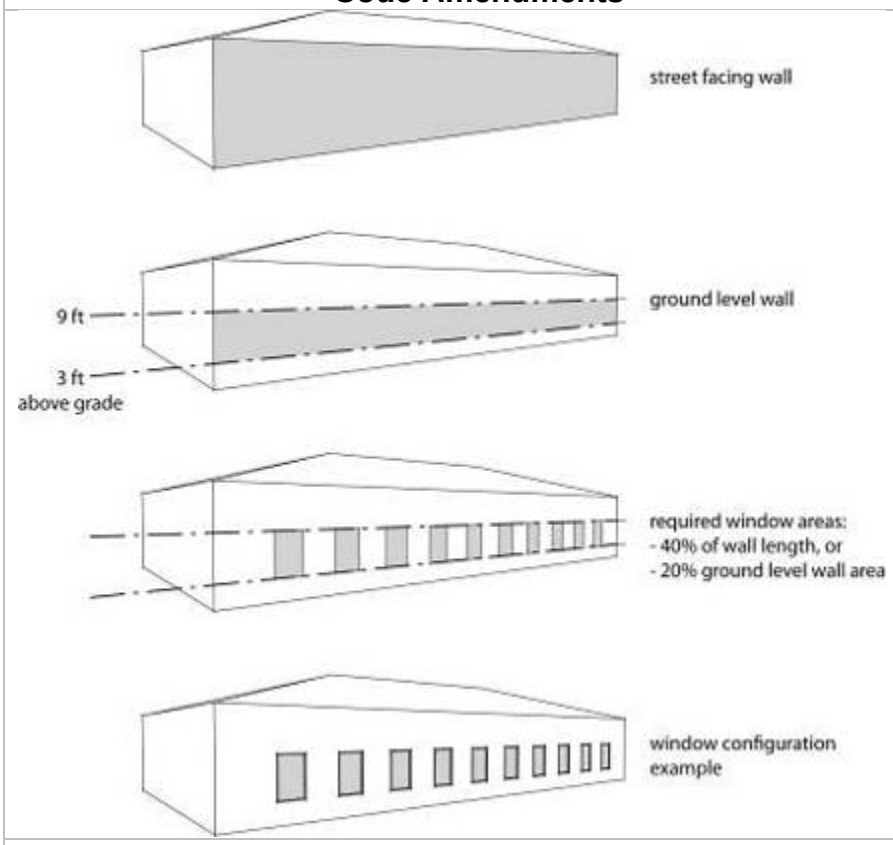
Code Amendments	*Commentary*
	use.
16.62.010 Purpose	
The Waldport South (WS) overlay zone is intended to address compatibility of commercial and light industrial uses with adjacent residential zones and to improve the appearance of the Waldport South area as a gateway to downtown Waldport.	
16.62.020 Conditional uses permitted.	
Within the W-S overlay zone, the following uses and their accessory uses may be conditionally permitted where permitted outright in the underlying base zone, subject to the applicable provisions of Chapters 16.72, 16.76, 16.80, 16.84 and 16.96 of this title. Uses permitted conditionally in the base zone shall not be subject to this section. A. A use permitted in the base zone with drive-in service facilities such as an automobile service station or a drive‑in restaurant; B. Automobile, truck or trailer sales, service, storage, rental or repair; C. Boat or marine equipment sales, service, storage, rental or repair; D. Cabinet or similar woodworking shop; E. Cold storage or ice processing plant; F. Feed or seed store; G. Implement, machinery or heavy equipment sales, service, storage or rental; H. Laboratory or equipment; I. Lumber or building materials sales and storage; J. Machine, welding, sheet metal, or similar metal working shop; K. Outdoor commercial amusement or recreation establishment such as miniature golf course or drive-in theater, but not including uses such as race track or automobile speedway; L. Plumbing, heating, electrical or paint contractors storage, repair or sales shop; M. Processing, packing or storage of food or beverage, excluding those products involving distillation, fermentation, rendering of fats or oils, or slaughtering; N. Upholstery shop; O. Warehouse or storage area; P. Wholesale establishment; and Q. Car wash.	*Many uses are allowed outright in the C-2 zone that may not be compatible with adjacent residential. The overlay makes these uses conditional where they are currently permitted outright (if they are not permitted in the base zone, they remain prohibited). This impacts areas zoned C-2 within the overlay.* *City staff and the Advisory Committee have expressed a desire to implement these changes directly within the C-2 zone so that they would apply city-wide. This approach is consistent with the intent of the Plan and the Overlay zone; however it goes beyond the scope of this planning project. The city may choose to revise the implementing ordinances prior to adoption to accomplish this.*
16.62.025 Uses specifically prohibited.	
Within the W-S overlay zone, in addition to all uses not specifically listed as permitted or conditional in the base zone, the following uses	*These uses were identified by the Advisory Committee as inappropriate for the overlay*

Code Amendments	*Commentary*
are prohibited. A. Tire retreading or vulcanizing; B. Truck terminal, freight depot;	*district. There are no existing uses in these categories within the overlay zone area.*
16.62.030 Conditional Use Approval Criteria A. Applicability. This section applies to applications for conditional use within the WS overlay zone. B. Approval criteria. In addition to the requirements and standards governing conditional uses established in Chapter 16.84, when determining whether to approve, approve with conditions, or deny an application for conditional use, the planning commission shall take into consideration the compatibility of the proposed use with adjacent residential districts.	*The goal of this section is to ensure that compatibility of a conditional use with the adjacent residential districts is taken into consideration when the Planning Commission considers conditional use applications within the overlay zone.*
16.62.040 Residential Compatibility Design Standards	
A. Applicability. At the time a building is erected, enlarged, substantially improved, or the use is changed to the point of requiring additional approval from the City, the standards of this section shall apply in portions of the WS overlay that lie within 100 feet of a lot line indicated as being subject to the residential compatibility buffer on Figure 16.62-1. These standards do not apply to residential uses, including dwellings, residential homes, residential facilities, and manufactured homes.	*"Substantial improvement" is defined as any repair, reconstruction or improvement of a structure which exceeds fifty percent (50%) or more of the true cash value of the structure.* *Residential uses are exempt from these standards.*
B. Outdoor commercial and industrial uses. The following commercial and industrial uses are prohibited unless located entirely within an enclosed building:	*This section restricts outdoor commercial and industrial activities and storage within 100 feet of residential districts.*
1. Processing, packaging, assembly, or production of goods, including woodworking and metalworking.	
2. Repair and related activities.	
3. Display of goods for wholesale or retail sale.	
4. Storage of materials, equipment, or supplies other than passenger vehicles.	
C. Setback landscaping. The area within the minimum setback standards of the applicable zone shall be landscaped with a combination of trees and shrubs to provide continuous visual screening from abutting residential districts. Ground cover plants and non-plant ground covers may be used between trees and shrubs, but shall not be considered to contribute to the visual screening. Parking is not allowed in a required yard abutting a residential district.	*Creates more specific landscaping standards for the required setback area abutting a residential district than are proposed in the general commercial landscaping standards.*

Code Amendments	*Commentary*
16.62.050 Gateway Design Standards	
A. Applicability. At the time a building is erected, enlarged, substantially improved, or the use is changed to the point of requiring additional approval from the City, the standards of this section shall apply on property within the WS overlay zone that abuts US 101 as shown on Figure 16.21-1 below. These standards do not apply to uses permitted outright in the R-2 zone. Figure 16.62-1 ***Waldport South (W-S) Overlay Zone Boundaries and Applicability of Design Standards***  	*"Substantial improvement" is defined as any repair, reconstruction or improvement of a structure which exceeds fifty percent (50%) or more of the true cash value of the structure.*
B. Site Configuration. Development abutting US 101 shall provide an environment that is comfortable, safe, and interesting for pedestrians. The site configuration standard is met when one of the following criteria is met:	*Language draws on the DD zone (16.30.050)*
1. At least (50) fifty percent of the front building elevation (façade) is placed no more than 20 feet back from the	

Code Amendments	*Commentary*
property line that abuts US 101.	
2. When located abutting US 101, off street parking shall be limited to 50 percent of the US 101 street frontage.	
C. Pedestrian Entrances. Buildings shall provide for safe and convenient pedestrian access to buildings, based on the standards in subsections 1-4, below.	
1. Buildings shall have their primary entrance(s) oriented to (facing) the street or a side yard. Primary entrances shall not face the rear yard. a. For commercial, industrial, mixed use, public, and institutional buildings, the "primary entrance" is the main public entrance to the building. In the case where no public entrance exists, the "primary building entrance" is the main employee entrance. b. For residential buildings the "primary entrance" is the front door to the dwelling unit or, for residential buildings that do not have separate exterior entrances for each unit, the "primary building entrance" may be a lobby, courtyard, or breezeway that serves as a common entrance for more than one dwelling.	*Adapted from DD zone (16.30.050.B). Definitions of primary entrance adapted from the Model Code.*
2. All buildings shall provide safe, convenient and reasonably direct pedestrian walkways between the nearest primary building entrance and all abutting streets. A pedestrian walkway shall be considered reasonably direct if it does not deviate unnecessarily from a straight line or does not involve a significant amount of out-of-direction travel for likely users.	*Adapted from the Model Code.*
3. Where there are multiple buildings on a site, pedestrian walkways shall connect all building entrances to one another.	*Adapted from the Model Code.*
4. Pedestrian walkways shall conform to all of the following standards: a. Where pedestrian walkways are parallel and adjacent to a driveway or street (public or private), they shall be raised 6 inches and curbed, or separated from the driveway/street by a 5-foot minimum strip with bollards, landscaping, or other physical barrier. If a raised path is used, the ends of the raised portions must be equipped with curb ramps. b. Where pedestrian walkways cross a parking area, driveway, or street, they shall be clearly marked with contrasting paving materials, humps/raised crossings, or painted striping (thermo-plastic or similar durable application). c. Surfaces for all required pedestrian walkways shall be concrete, asphalt, brick/masonry pavers, or other durable surface, at least 5 feet wide, and shall conform to ADA requirements.	*Adapted from the Model Code.*
D. Parking/Maneuvering Area Screening. All parking or vehicle	*This assumes that the*

Code Amendments	*Commentary*
maneuvering areas in yards abutting US 101, in addition to meeting all other standards of the Waldport Development Code, shall provide, a landscaped area a minimum of 6 feet in depth between the property line abutting US 101 and the parking area. This landscaped area shall be planted with trees, shrubs, and/or ground cover as follows: 1. If an evergreen hedge has been provided to satisfy 16.28.030.5.c, the remainder of the landscaped area shall be planted with groundcover. 2. If a decorative wall (masonry or similar quality material) with openings; arcade, trellis, or similar partially opaque structure has been provided to satisfy 16.28.030.5.c, trees shall be planted within the landscaped area at the minimum recommended spacing for the species.	*proposed commercial landscape standards are adopted as currently written, and references the section of the draft amendments related to parking area screening.*
E. Building Design Standards. Building façades shall be designed to provide visual interest for pedestrians and an attractive gateway to downtown for travelers along US 101. Non-residential buildings shall meet all of the following criteria; residential buildings shall be exempt from subsection 1 below.	
1. Fenestration. All building façades oriented towards or within a 90 degree angle of a lot line adjoining Highway 101 and located within 70 feet of a lot line adjoining Highway 101 shall incorporate ground floor windows meeting the following standards:	
a. Required Window Areas. Windows must be a minimum of forty (40) percent of the length or twenty (20) percent of the ground level wall area. Ground level walls include all exterior walls from three feet above finished grade up to nine feet above the finished grade.	*Adapted from City of Happy Valley design standards*

Code Amendments	*Commentary*
	
b. Qualifying Window Features. Required window areas must either be windows that allow views into working areas or lobbies, pedestrian entrances, or display windows set into the wall. Display cases attached to the outside wall do not qualify. The bottom of the windows must be no more than three feet above the adjacent exterior grade.	*Adapted from City of Happy Valley design standards*
2. Building Façade Design. All building façades oriented towards or within a 90 degree angle of a lot line adjoining US 101 and located within 70 feet of a lot line adjoining US 101 that exceed forty (40) feet in length shall incorporate features to vary the look of the façade at intervals not to exceed forty (40) feet. Such features may include variable planes; projections; bays; dormers; setbacks; canopies; awnings; parapets; and/or changes in the roof line, materials, color, or textures.	*Adapted from Happy Valley design standards*
3. Where an applicant can demonstrate that a building that would otherwise be subject to the standards above will not be visible from Highway 101 due to obstruction by other buildings, topography, or other permanent site features (not including vegetation), the applicant may request an exception from subsections 1 and 2 above through the normal review process.	*Creates a way for applicants to avoid the standards for buildings that will not be visible from the highway.*
16.62.050 Access Management Standards.	

Code Amendments	*Commentary*
A. Applicability. In order to provide for safe multi-modal operations on US 101, the following standards shall apply to all applications for development that create a new, or modify an existing, vehicular access (driveway) to US 101:	*The purpose of this section is to strengthen access management regulations at the local level so that with redevelopment, access spacing and safety in the corridor will improve.*
1. Driveways to US 101 shall be separated from other driveways and street intersections in accordance with ODOT's spacing standards except as described in sub-section 2 below.	*Where a property can meet ODOT spacing standards, they may take access to US 101 and are not subject to the requirements of sub-section 2 (sub-sections 3 and 4 still apply).*
2. Where the spacing standards in sub-section 1 would preclude access to US 101 from a particular property, the following standards shall apply, unless the Fire Chief determines that fire and life safety considerations require otherwise:	*For a development that cannot meet spacing standards, this section requires access to be provided in an alternative way if feasible.*
a. Where access to a corner lot can reasonably be provided from a local street, the subject site shall have access to the local street and shall not have access to US 101. Access to a local street shall be considered reasonable unless environmental or other physical site characteristics render access to the local street impracticable.	*Local street access is one alternative to US 101 access – where available and reasonable, local street access is instead of access to US 101.*
b. Where access to US 101 can reasonably be shared with an abutting property, access shall be provided via a shared driveway or cross-access easements to an existing driveway on the abutting property; separate access to US 101 shall not be provided on the subject property. Shared access shall be considered reasonable where the physical configuration of the abutting property allows for shared access, the uses are not incompatible, and the owner of the abutting property is willing to provide an easement.	*Shared access with a neighboring property is another alternative to US 101. Where this is an option, it is required instead of a separate access to US 101.*
c. Where access cannot be provided in accordance with subsection (a) or (b), temporary conditional access to US 101 may be granted, provided that the owner of the subject property signs a non-remonstrance agreement to remove the temporary conditional access at such time as shared access via an abutting property becomes available.	*For properties that currently do not have access options other than US 101, the access to US 101 is temporary until an alternative or shared access becomes available.*
3. Non-residential development abutting US 101 shall be designed to allow for shared access with abutting commercially zoned properties as specified below.	*Regardless of a property's ability to meet spacing standards, all non-residential development must be designed to provide for*

Code Amendments	*Commentary*
	shared access and/or parking lot inter-connections with adjacent commercially-zoned property to facilitate better connectivity in the future as adjacent properties develop or redevelop.
a. Where an abutting property is zoned for commercial use but is undeveloped or has not been designed to allow for shared access with the subject property, development on the subject property shall be designed to allow for a future shared driveway and/or parking lot interconnection if practicable. The owner of the subject property shall sign a non-remonstrance agreement to provide a cross-access easement to the abutting property at such time as the abutting property develops or redevelops.	This sub-section applies to future connections with abutting properties that are not currently designed to accommodate inter-connection or shared access.
b. Where an abutting property is zoned for commercial use and has been designed to allow for shared access with the subject property, shared driveways and/or parking lot interconnections shall be provided to connect to the abutting property. The owner of the subject property shall provide a cross-access easement to the abutting property and shall obtain a cross-access easement from the owner of the abutting property to allow use of the shared driveway and/or parking lot interconnection.	This sub-section applies to connections to abutting properties that are already designed to allow for such connections.
4. Access driveways shall be located to avoid or minimize conflicts with entering and exiting vehicles from opposing driveways.	
Chapter 16.100 **LAND DIVISION**	The existing subdivision regulations provide an opportunity to implement the proposed local street system both within and surrounding the Study Area.
16.100.040 General requirements and minimum standards of design development. The following are the minimum requirements and standards to which subdivisions and partitions must conform: ...	
3. Relation to adjoining street system. A subdivision or partition shall provide for the continuation of existing and projected streets. <u>For the purposes of this section, projected streets include, but are not limited to those streets indicated in the City of Waldport Transportation System Plan, the Yaquina John Point Land Use and Transportation Plan, and other transportation plans adopted by the City of Waldport.</u> If	The double-underlined text is proposed to ensure that the planned street network in both the TSP and the Yaquina John Point Land Use and Transportation Plan are

<table>
<tr><th>Code Amendments</th><th>Commentary</th></tr>
<tr><td>physical conditions make such continuation impractical, exceptions may be made. All new subdivisions will be required to construct public streets to city standards.</td><td>considered at time of subdivision.</td></tr>
<tr><td>4. Access.
a. A subdivision or partition shall provide each lot or parcel, by means of a public street or private road, satisfactory vehicular access to an existing street.
b. A subdivision or partition shall consider vehicular access to the parcel off existing or proposed streets that addresses traffic congestion, speed, stop signs and turn lanes for the orderly development of traffic accessing the area.
c. The subdivider/partitioner shall be solely responsible for constructing all necessary or required street(s) or road(s), whether public or private, to city requirements as stated herein to serve each and every lot or parcel created by the subdivision or partition.
d. All public or private streets or roads established for the purpose of subdividing, partitioning or replatting land shall be surveyed and monumented.
e. All plans and specifications for street and road improvements, whether public or private, shall be prepared by a civil engineer licensed in the State of Oregon. Street improvements, including grades, paving, drainage and centerline radii on curves, shall at a minimum meet the applicable requirements of this title and standards set forth in the American Association of State Highway and Transportation Officials (AASHTO) manual or other design principles and construction specifications consistent with generally accepted engineering practices which are acceptable to the planning commission.
<u>f. In the case of private road accesses to US 101, if a proposed subdivision provides cross-access from abutting parcels or subdivision lots, the developer will dedicate an access easement in a format determined by the City.</u></td><td>The double-underlined text is proposed to allow the City to require dedication of cross-access easements at time of subdivision or partition as appropriate.</td></tr>
<tr><td>…</td><td></td></tr>
<tr><td>16.100.100 Street width and improvement standards.</td><td></td></tr>
<tr><td>A. Street Widths.
<table>
<tr><th>Type of Street</th><th>Min. Right-of-Way Width</th><th>Min. Surface Width</th></tr>
<tr><td>1. Collector streets and all business streets other than arterials:</td><td>60' - 80' +</td><td>36' – 48' +</td></tr>
<tr><td>2. Local streets in residential areas:</td><td>56' ++</td><td>28' ++</td></tr>
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</table>

Code Amendments	Commentary
<table><tr><td>3. Circular ends of cul-de-sacs:</td><td>90' +++</td><td>70' +++</td></tr><tr><td>4. Hammerheads:</td><td>++++</td><td>++++</td></tr></table> Notes: + The City may require a width within the limits shown based upon adjacent physical conditions, safety of the public and the traffic needs of the community. The standard street section for collector and business streets is two 16-22' travel lanes <u>including a striped shoulder bikeway with a minimum width of 5'</u>, 2' curb and gutter, 5' sidewalk and 7' utility strip. This may be altered upon approval by the Waldport Public Works Department, utility companies, and the Planning Commission. ++ The standard street section for local streets is two 14' travel lanes, 2' curb and gutter, 5' sidewalk and 7' utility strip. This may be altered upon approval by the Waldport Public Works Department, utility companies, and the Planning Commission. +++ Measured by diameter of circle constituting circular end. ++++ Hammerheads will be of such width and length as to allow for adequate turn-a-round of all emergency vehicles as determined by the Public Works Department.	While the lane width range listed in the first note is interpreted to include a paved shoulder, the recommended change establishes a minimum width for the shoulder and requires it to be striped to function as a shoulder bikeway.
…	

Appendix A
Methods Memo

MEMORANDUM

Date:	June 29, 2011	Project #: 11626.0
To:	Larry Lewis, AICP, City of Waldport Dorothy Upton, ODOT TPAU	
From:	Dan Seeman, Kittelson & Associates, Inc. Chris Brehmer, PE, Kittelson & Associates, Inc. Alison Tanaka, Kittelson & Associates, Inc.	
CC:	Cathy Corliss, Angelo Planning Group Sue Geniesse, ODOT	
Project:	City of Waldport Yaquina John Point Land Use & Transportation Plan	
Subject:	Existing and Future Conditions Analysis Methodology	

The purpose of this memorandum is to document the methodology and key assumptions to be used in preparation of the existing conditions analyses for the City of Waldport Yaquina John Point Land Use & Transportation Plan. The methodologies included in this memorandum are based on guidance provided in the Oregon Department of Transportation (ODOT) *Transportation System Plan Guidelines* and the *Analysis Procedures Manual* (APM) as they relate to small urban areas.

This memorandum includes the methodology for the existing and future conditions analysis, which will identify the current and future no-build operational and geometric characteristics of the roadways within the Yaquina John Point subarea of the City of Waldport.

STUDY INTERSECTIONS

The following intersections have been selected for inclusion in the TSP update.

ODOT operated and maintained intersections:

- US 101/Maple Street
- US 101/Range Drive
- US 101/Ocean Hills Drive
- US 101/Forestry Way/Adahi Avenue

City of Waldport operated and maintained intersection:

- Range Drive/Crestline Drive

Based on an examination of traffic counts conducted, the weekday p.m. peak hour occurs between 4:00 and 5:00 p.m. Traffic counts at two key study intersections were conducted by ODOT for a 16-hour period on Friday, October 22, 2010.

INTERSECTION ANALYSIS

Peak hour counts (4:00 - 5:00 p.m.) will be identified for each of the study intersections. These counts will be used to determine the 30th highest hour counts, as described below. The 30th highest hour volumes will be used to perform the intersection analyses.

Seasonal Adjustment Factor

The 30th highest hour volumes (30 HV) for US 101 will be derived from the traffic counts collected on Friday, October 22, 2010 by ODOT. There are no ODOT Automatic Traffic Recorders (ATR) within the project area, although there is an ATR located at milepost 139.11, about 17 miles to the north in Newport.

Based on the traffic using this section of US 101, the study area could be considered a *Coastal Destination*. The method used is based on designating this area as *Coastal Destination.* The resulting seasonal adjustment for the October 22, 2011 counts is 1.33, as shown in Table 1 below.

Table 1 APM Seasonal Trend Method

Trend	15-October	22-October	1-November	ODOT Peak Period Seasonal Factor
Coastal Destination	1.07	**1.09**	1.12	**0.82**
Resulting Average Seasonal Adjustment Factor = 1.09/0.82 = 1.33				

Based on the APM, it is highly discouraged to use a seasonal adjustment factor of greater than 30%. However, given that 1.33 is only marginally greater than 1.30, it is recommended that a seasonal adjustment of 1.33.

MOBILITY STANDARDS

US 101 Corridor

ODOT uses volume-to-capacity ratio standards to assess intersections operations. Table 6 of the *Oregon Highway Plan* (OHP) provides maximum volume-to-capacity ratios for all signalized and unsignalized intersections outside the Portland Metro area. All the highway intersections in the study area are along US 101, a Statewide Highway. These intersections are inside the Waldport Urban Growth Boundary. Waldport is not part of any metropolitan planning organization. The minimum required performance standards are shown in Table 3 and reflect the posted limit and traffic control at the intersection (whether the intersection is signalized or unsignalized).

Table 2 Summary of ODOT Intersection Performance Standards

Intersection	Traffic Control[1]	Posted Speed Limit (mph)	OHP Mobility Standard
US 101/ Maple Street	TWSC	25	V/C ≤ 0.95[2]
US 101/ Range Drive	TWSC	45	V/C ≤ 0.75
US 101/ Ocean Hills Drive	TWSC	45	V/C ≤ 0.75
US 101/ Forestry Way/Adahi Ave	TWSC	45	V/C ≤ 0.75

[1]TWSC: Two-way stop-controlled (unsignalized)
[2]This intersection is within the downtown, and thus, has a different v/c standard

City of Waldport

The City of Waldport has not adopted level-of-service (LOS) or volume-to-capacity (V/C) ratio standards for signalized or unsignalized intersections. The only reference to operations standards in the 1998-1999 TSP is as follows:

> "The *Oregon Highway Plan* specifies an operating standard of LOS C for intersections on facilities of statewide LOI in urbanizing areas. The City of Waldport does not have specific LOS standards for intersection operations. Typically, local jurisdictions in Oregon consider LOS E or better to be the standard for unsignalized intersections. At signalized intersections, LOS D or better is a typical standard for acceptable operations."

The consultant team recommends an amendment to the TSP to adopt mobility standards as defined in the *Oregon Highway Plan* (ODOT, 1999) at state highway intersections. Further, the TSP should be amended to have the following minimum operating standards at City intersections:

- LOS "D" is considered acceptable at signalized and all-way stop controlled intersections if the V/C ratio is not higher than 1.0 for the sum of critical movements.
- LOS "E" is considered acceptable for the poorest operating approach at two-way stop intersections. LOS "F" is allowed in situations where a traffic signal is not warranted.

A summary of the recommended performance standards at each of the study intersections under city jurisdiction is included in Table 4.

Table 3 Recommended Performance Standards for City Intersections

Intersection	Traffic Control[1]	Posted Speed Limit (mph)	Performance Standard
Range Drive/Crestline Drive	AWSC	45	LOS "E"

[1]AWSC: All-way stop-controlled (unsignalized)

CRASH ANALYSIS

The most recent five years of crash data will be reviewed at the collector/arterial street intersections and for this segment of US 101. The segment data will allow an assessment of US 101 safety history within Waldport compared to state averages for comparable state highways (urban principal arterials).

TRAFFIC ANALYSIS SOFTWARE AND INPUT ASSUMPTIONS

Synchro software, Version 7 will be used for the intersection analysis. The reported results will be the level of service, intersection delay, and V/C ratios generated by the HCM report. Analysis assumptions are listed in Table 4.

Table 4 Synchro Operations Parameters/Assumptions

Arterial Intersection Parameters	Existing Conditions
Peak Hour Factor	From traffic counts
Conflicting Bikes and Pedestrian per Hour	From traffic counts
Area Type	Other
Ideal Saturation Flow Rate (for all movements)	1,750 passenger cars per hour green per lane
Lane Width	From field measurements, otherwise 12 feet
Percent Heavy Vehicles	From traffic counts
Percent Grade	Estimated based on field observations
Parking Maneuvers per Hour	No on-street parking
Bus Blockages	None
Intersection signal phasing and coordination	No signals
Intersection signal timing optimization limits	Maximum cycle length = 120 seconds[1]
Minimum Green time	From ODOT, otherwise 8 seconds[1]
Yellow and all-red time	From ODOT, otherwise yellow = 4 seconds, all-red = 1 second[1]
95th percentile vehicle queues	Will be calculated using results of HCM capacity analysis, based on an average of 25 feet per vehicle

1 If new signal considered, these parameters will be used.

In recognition that Synchro version 8 will be released soon, the analysis conducted for existing and future no-build conditions will be re-run to determine whether there is a difference as a result of the Synchro revision. if there is, the project team will discuss the results and determine whether version 8 should be used for alternatives analysis testing.

FORECASTING TRAFFIC VOLUMES

Future No-Build Analysis

This section provides an overview of the trip forecasting methodology proposed for use in developing year 2035 traffic volume projections for the project study area. Pending ODOT and City review comments, the growth projections identified herein will be used to prepare an analysis of the study intersection operations under future 2035 conditions.

Various methods of estimating future traffic growth have been developed for planning purposes. The Cumulative Analysis method was selected to estimate future traffic volumes in the Waldport subarea. The ODOT *Analysis Procedures Manual* (APM – Reference 1) identifies the Cumulative Analysis method as appropriate for "small urban areas that are growing at a fairly uniform rate or for areas where only minor changes are expected to take place." Two distinct components comprise the cumulative method:

- *Background growth* reflecting anticipated increases in through traffic
- *Household and employment growth* within the subarea that results in new land development

The derivation of trips associated with each of these components is described below.

Background Growth Rate

As outlined in the APM, a background growth rate was developed for the Waldport Yaquina John Point section of US 101 based on ODOT's Future Volume Tables. Two data points were identified along US 101 that might apply. Of the two data points – one immediately south of the OR 34 intersection and the second at the City's south city limit – only one is statistically reliable. The location that is statistically reliable, and hence was used as a basis for determining the growth rate, is located at milepost 155.92 on US 101 immediately south of OR 34. The 20-year growth factor for each data point is listed in Table 1 along with the existing (2008) and forecast (2029) Average Annual Daily Traffic (AADT). A correlation coefficient (R^2 value) is also provided that indicates how well the historical traffic volume corresponds with the year. The APM states that R^2 values over 0.75 are preferred. Thus, the data point at MP 156.36 was dismissed.

Table 5
Background Growth Rate Calculations in Waldport

Highway Mile Point	Location	AADT		R^2 Value	25-Year Growth Factor
		2009	2029		
US 101 – 155.92	0.02 mile south of Alsea Hwy (OR 34)	8,300	10,600	0.91	1.35[1]
US 101 – 156.36	South City Limits of Waldport	7,200	8,200	0.39[2]	1.14
25-Year Growth Factor to be used for through movements on US 101					***1.33***

1 Annual growth rate = (10,600/8,300) = ((1.277 – 1) / 20 yrs) = 1.39% per year x 25 yrs = 35% growth by 2035
2 MP 156.36 has a poor R^2 factor, indicating that the data is not statistically reliable. Hence, this data point was dismissed.

Based on the information provided in Table 1, the 25-year growth factor for the Waldport area is 1.33 and the average annual growth factor is 1.32 percent[1]. Year 2035 through volumes on US 101 will be derived by increasing the year 2010 traffic volumes by 33 percent to represent 25 years of regional growth.

Traffic volumes for turning movements on and off of US 101 within the study area will be estimated based on explicit modeling of actual land uses to be developed. This methodology is described in the next section. Traffic generated by two developments outside the study area – Naples Resort and Ocean Hills subdivision (latter phases) – will be modeled explicitly and described in a later section of this technical memorandum.

Household and Employment Growth

The 2035 traffic volume forecast also needs to reflect anticipated employment and household growth in the Yaquina John Point subarea. Growth estimates will be developed by Angelo Planning Group based on the "safe harbor" projection process identified in the APM (since Waldport and Lincoln County do not have coordinated population projections). In addition, projections will include consideration of existing land use, zoning, and allowable densities and reasonable absorption levels to reflect 2035 development levels.

Traffic Analysis Zones

Projected employment and housing growth will be assigned to the traffic network according to Traffic Analysis Zones (TAZs) established for the project to evaluate the anticipated growth in the subarea. The TAZ boundaries aggregate areas that have common access to major transportation facilities and similar land use patterns. Figure 1 illustrates the TAZs established for the TSP update.

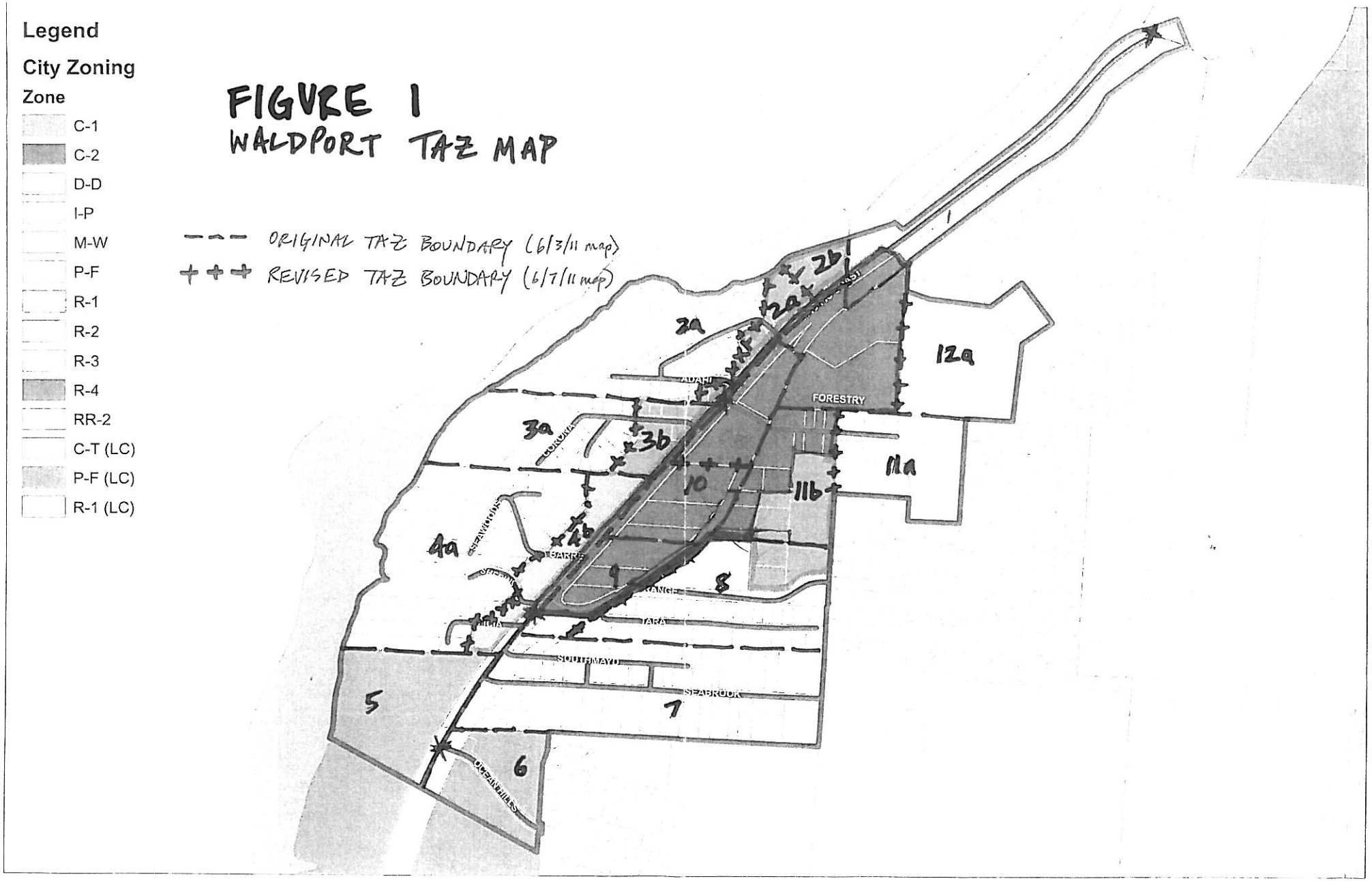
Trip Generation

Trip generation estimates reflecting the anticipated growth will be prepared based on trip rate data published in the standard reference manual, *Trip Generation*, *8th Edition*, published by the Institute of Transportation Engineers (ITE). Trips will be estimated for all locally-generated trips within the study area, and accounted for by the Transportation Analysis Zones (TAZs) as shown in Figure 1.

Cumulative Analysis

The cumulative method combines historical growth trends with information about existing and planned land uses to predict total future traffic volumes. The methodology to be employed considers two categories of trips:

FIGURE 1
WALDPORT TAZ MAP



- *Through trips* (External-External): those vehicles that travel through the subarea on US 101 but don't leave the highway
- *Locally-generated trips* (Internal-External, External-Internal, or Internal-Internal): vehicles that have at least one terminus within the study area

Through Trips

Ideally, through trips would be measured by completing a survey of users on US 101. This type of data collection can be a time and resource intensive endeavor. A more simple method of approximating through traffic can be determined through evaluation of existing turning movements at key intersections on US 101.

The APM method of assessing through trips assumes that all turning movement volumes off the highway are destined or originate within the subarea. There are not major intersecting roadways with US 101 in the study area that may carry statewide or regional travel. Thus, this assumption is reasonable; it has been assumed as part of this analysis that all turn movements on/off of US 101 within the study area are made to uses within the Yaquina John Point subarea or are traveling through the study area. Those trips that travel as through movements on US 101 are considered *through trips*.

Locally-Generated Trips

After accounting for through trips, the remaining trips are assumed to be generated by uses within the Yaquina John Point subarea to locations outside the study area. While it may be an unrealistic assumption that all locally-generated trips will have one trip end outside the study area, this assumption will produce a conservatively high estimate of traffic on streets in the study area. The majority (but not all) of these trips will use US 101. The majority of these locally-generated trips are generated by households within the subarea and traveling to/from uses outside the subarea.

Trips that are locally-generated will be assigned to turning movements into and out of local streets intersecting US 101 proportionate to existing turning movements at these intersections. In cases where new local streets are to be considered, turning movements will be estimated by adjacent local street turning movements, where appropriate. Figure 1 shows the TAZs for which trip generation estimates will be prepared.

Trips Generated By Properties Outside Study Area

There are two potential developments, neither of which is currently in application for, that if constructed will generate trips that will affect traffic in the study area. These two developments – Naples Resort Ocean Hills subdivision (latter phases) – are addressed in this section.

Naples Resort

The Naples Resort was planned, but not approved, for development within the past decade. This 475-acre mixed-use resort was originally planned to include a golf course, hotel, restaurant, retail center, condominiums and recreation homes. Since that time, a parcel of 130 acres has been sold, diminishing the size of the property to 345 acres. In addition, the majority of the property is either outside the Waldport Urban Growth Boundary or would require a zone change, and is therefore not allowable outright for development as resort uses. Through discussions with Larry Lewis, Waldport Planning Director, the uses that can be reasonably assumed for this property include:

- 50,000 square feet of retail and/or office uses
- 50 condos on upper stories above the commercial uses
- A 120 to 138 room hotel
- Up to 200 single family homes (likely mostly vacation homes)

For this development, we used ITE trip generation rates (allowing for 10% internal traffic), and then assumed 50% of the traffic would use US 101 to the north and the other 50% would use US 101 to the south. We would add the 50% that uses US 101 to the north as through trips in our study area section of US 101.

Ocean Hills Subdivision (Latter phases)

Ocean Hills subdivision was approved for 34 single family homes in the early 2000's. An adjacent parcel, outside the study area and zoned R-1, could theoretically be developed as additional phases of the Ocean Hills subdivision, since it could connect to the stub streets in that development. However, if any additional development occurs that accesses US 101 via Ocean Hills Drive beyond the 34 existing subdivision lots in the existing Ocean Hills subdivision, it would trigger a requirement to realign access to the state park across US 101. Given this, for this analysis it is assumed that this property will not develop.

NEXT STEPS

It is requested that ODOT staff confirm the assumptions and methods included in this memorandum. It is also requested that City staff confirm the following assumptions:

- City intersection performance standards

Please review the methodology and analysis described in this memorandum and advise us of any questions, concerns, or suggestions. Once the methodology and projections are confirmed, the new through and locally-generated trips will be assigned to the study intersections. Future 2035 traffic operations will then be analyzed at the study intersections.

If you have any questions as you review this material, please call us at (503) 228-5230.

Appendix B
Level of Service Description

Level of Service Concept

Level of Service (LOS) is a concept developed to quantify the degree of comfort (including such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles) afforded to drivers as they travel through an intersection or roadway segment. Six grades are used to denote the various Level of Service from A to F.[1]

Signalized Intersections

The six level of service grades are described qualitatively for signalized intersections in Table D1. Additionally, Table D2 identifies the relationship between level of service and average control delay per vehicle. Control delay is defined to include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Using this definition, level of service D is generally considered to represent the minimum acceptable design standard.

Table B1: Level of Service Definitions (Signalized Intersections)

Level of Service	Average Delay per Vehicle
A	Very low average control delay, less than 10 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Average control delay is greater than 10 seconds per vehicle and less than or equal to 20 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for a level of service A, causing higher levels of average delay.
C	Average control delay is greater than 20 seconds per vehicle and less than or equal to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Average control delay is greater than 35 seconds per vehicle and less than or equal to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle length, or high volume/capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Average control delay is greater than 55 seconds per vehicle and less than or equal to 80 seconds per vehicle. This is usually considered to be the limit of acceptable delay. These high delay values generally (but not always) indicate poor progression, long cycle lengths, and high volume/capacity ratios. Individual cycle failures are frequent occurrences.
F	Average control delay is in excess of 80 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation. It may also occur at high volume/capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such high delay values.

[1] Most of the material in this appendix is adapted from the Transportation Research Board, *Highway Capacity Manual*, (2000).

Table B2: Level of Service Criteria for Signalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Unsignalized Intersections

Unsignalized intersections include two way stop controlled (TWSC) and all way stop controlled (AWSC) intersections. The *2000 Highway Capacity Manual* provides models for estimating control delay at both TWSC and AWSC intersections. A qualitative description of the various service levels associated with an unsignalized intersection is presented in Table D3. A quantitative definition of level of service for unsignalized intersections is presented in Table D4. Using this definition, Level of Service E is generally considered to represent the minimum acceptable design standard.

Table B3: Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Delay per Vehicle to Minor Street
A	Nearly all drivers find freedom of operation. Very seldom is there more than one vehicle in queue.
B	Some drivers begin to consider the delay an inconvenience. Occasionally there is more than one vehicle in queue.
C	Many times there is more than one vehicle in queue. Most drivers feel restricted, but not objectionably so.
D	Often there is more than one vehicle in queue. Drivers feel quite restricted.
E	Represents a condition in which the demand is near or equal to the probable maximum number of vehicles that can be accommodated by the movement. There is almost always more than one vehicle in queue. Drivers find the delays approaching intolerable levels.
F	Forced flow. Represents an intersection failure condition that is caused by geometric and/or operational constraints external to the intersection.

Table B4: Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10.0 and ≤15.0
C	>15.0 and ≤25.0
D	>25.0 and ≤35.0
E	>35.0 and ≤50.0
F	>50.0

It should be noted that the level of service criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, there are a number of driver behavior considerations that combine to make delays at signalized intersections less onerous than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, while drivers on the minor street approaches to TWSC intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized intersections than signalized intersections. For these reasons, it is considered that the control delay threshold for any given level of service is less for an unsignalized intersection than for a signalized intersection. While overall intersection level of service is calculated for AWSC intersections, level of service is only calculated for the minor approaches and the major street left turn movements at TWSC intersections. No delay is assumed to the major street through movements. For TWSC intersections, the overall intersection level of service remains undefined: level-of-service is only calculated for each minor street lane.

In the performance evaluation of TWSC intersections, it is important to consider other measures of effectiveness (MOE's) in addition to delay, such as v/c ratios for individual movements, average queue lengths, and 95th-percentile queue lengths. By focusing on a single MOE for the worst movement only, such as delay for the minor-street left turn, users may make inappropriate traffic control decisions. The potential for making such inappropriate decisions is likely to be particularly pronounced when the HCM level-of-service thresholds are adopted as legal standards.

Volume-To-Capacity Concept

The *Highway Capacity Manual 2000* defines capacity as "the maximum number of vehicles that can pass a certain point during a specified period under prevailing roadway, traffic, and control conditions." Capacity analysis examines segments or points (such as signalized intersections) of a facility under uniform traffic, roadway, and control conditions. These conditions determine capacity; therefore, segments with different prevailing conditions will have different capacities. Capacity is not the absolute maximum flow rate – driver characteristics vary from region to region, and the absolute maximum capacity can vary from day to day and location to location.

Signalized Intersections

The *Oregon Highway Plan* Action 1F.6 identifies maximum v/c thresholds for intersections within and outside of MPO areas. The thresholds for areas outside of MPO areas are summarized in Table B5.

Table B5: Volume-To-Capacity Ratio Targets Outside Metro [1, 2]

Highway Category	Inside Urban Growth Boundary					Outside Urban Growth Boundary	
	STAs	MPO	Non-MPO outside of STAs where non-freeway posted speed <= 35 mph, or a Designated UBA	Non-MPO outside of STAs where non-freeway speed limit > 35 mph, but <45 mph	Non-MPO where non-freeway speed limit >= 45 mph	Unincorporated Communities	Rural Lands
Interstate Highways	N/A	0.85	N/A	N/A	0.80	0.80	0.75
Statewide Expressways	N/A	0.85	0.80	0.80	0.80	0.80	0.75
Freight Route on a Statewide Highway	0.90	0.85	0.85	0.80	0.80	0.80	0.75
Statewide (not a freight route)	0.95	0.90	0.90	0.85	0.80	0.80	0.80
Freight Route on a Regional or District Highway	0.95	0.90	0.90	0.85	0.85	0.80	0.80
Expressway on a Regional or District Highway	N/A	0.90	N/A	0.85	0.85	0.80	0.80
Regional Highways	1.0	0.95	0.90	0.85	0.85	0.85	0.80
District/Local Interest Roads	1.0	0.95	0.95	0.90	0.90	0.85	0.85

[1] For the purposes of this policy, the peak hour shall be the 30th highest hour. This approximates weekday peak hour traffic in larger urban areas. Alternatives to the 30th highest annual hour may be considered and established through alternative mobility target processes.

[2] Highway design requirements are addressed in the Highway Design Manual (HDM).

Unsignalized Intersections

For unsignalized intersections, capacity is determined using a gap acceptance model which calculates the potential capacity of each minor traffic stream in accordance with Equation 17-3 in the *Highway Capacity Manual 2000*. The potential capacity of a movement is a function of the conflicting flow rate expressed as an hourly rate, as well as the minor-street movement.

The *Oregon Highway Plan* Action 1F.1 identifies maximum v/c thresholds for unsignalized intersections. As stated on page 75, "At unsignalized intersections and road approaches, the volume-to-capacity ratios in Tables 6 and 7 shall not be exceeded for either of the state highway approaches that are not stopped. Approaches at which traffic must stop, or otherwise yield the right of way, shall be operated to maintain safe operation of the intersection and all of its approaches and shall not exceed the volume to capacity ratios for District/Local Interest Roads in Table 6 within the urban growth boundaries or 0.85 outside of urban growth boundaries."

Appendix C
Land Use Assumptions
Memorandum

Angelo planning group

LAND USE PLANNING • TRANSPORTATION PLANNING

Memorandum

Date: July 27, 2011
To: Dan Seeman and Alison Tanaka, Kittelson & Associates
cc: Larry Lewis, City of Waldport
Sue Geniesse, ODOT
From: Cathy Corliss
Re: Land Use Assumptions - Waldport Yaquina John Point Land Use and Transportation Plan (Revised)

Purpose

The purpose of this memorandum is to document the assumptions used to project future land use conditions within the study area of the Yaquina John Point Land Use and Transportation Study. These future land use conditions will become inputs for modeling future traffic conditions within and around the study area.

Land Use Designations

The following land use designations are used on properties within the Waldport Yaquina John Point Land Use and Transportation Plan study area:

- R-1 (City and County) – In both the City and County the predominant use in the R-1 Residential zone is single family residential. The minimum lot area shall be six thousand (6,000) square feet for a one family dwelling with public water and sewer; fifteen thousand (15,000) square feet with public water only.

- C-1 (City and County) – This Commercial zone allows a wide range of uses including single family residential (at the same density as R-1), multi-family (at a density of one unit per 1,250 sf for a lot served by both public water and public sewer), office, hotel/motels, restaurants, retail and commercial services. Within the City's C-1 zone some industrial uses are allowed conditionally.

- C-2 (City) – This Commercial zone allows a wide range of uses including single family residential (at the same density as R-1), multi-family (no maximum density), office, hotel/motels, restaurants, retail, commercial services and industrial uses.

- C-T (County) – This Tourist Commercial zone is similar to the City's C-1 zone except that the mix of retail uses and services is more limited. However, single family residential, multi-family, office, hotel/motels, and restaurants are all permitted uses.

- P-F (County) – Within the study area the Public Facilities zone is only applied to Gov. Patterson Memorial State Park.

The area and zoning of each TAZ is summarized in Table 1.

Table 1: Summary of Zones by TAZ

TAZ	Zones	Gross Acres
1	R-1 (City)	2.42
2a	R-1 (City)	14.28
2b	C-1 (City)	1.37
2c	C-1 (City)	2.07
3a	R-1 (Co)	12.53
3b	C-1 (City)	2.09
4a	R-1 (Co)	24.86
4b	C-T (Co)	3.25
5	P-F (Co)	7.99*
6	C-1 (City)	4.56*
7	R-1 (City and Co)	33.04
8	R-1 (City and Co), C-1 (City)	9.63
9	C-2 (City)	2.82
10a	C-2 (City)	3.33
10b	C-2 (City)	3.30
11a	R-1 (City)	6.96
11b	C-1 (City), C-2 (City)	7.99
12a	R-1 (City)	8.83
12b	C-2 (City)	11.27
Total		162.59
* Includes only the portion of the tax lots that lie within the study area.		

Build-out Assumptions

This section of the memorandum calculates the ultimate capacity of the land within the foreseeable future not necessarily limited by the 25 year planning period.

- R-1 (City and County) - For the purposes of the land use assumptions, future development potential on vacant land was based on the gross site square footage x 80% / 6000 square feet per lot. No infill or development was assumed for large lots in existing subdivisions with existing dwellings unless there was specific field observation to suggest that the site had redevelopment potential. Residential development potential is summarized by TAZ in Table 2.

Table 2: Single Family Residential Build-out Development Potential by TAZ

TAZ	Existing Single Family Dev. (in du)	New Single Family Dev. Potential (in du)
1	0	0
2a	37	1
2b	1	0
2c	6	0
3a	18	5
3b	29	0
4a	26	11
4b	1	-1*
5	0	0
6	0	16**
7	43	22
8	19	9
9	0	0
10a	0	0
10b	11	0
11a	1	39
11b	2	0
12a	0	46
12b	4	-3*
Total	198	**145**

* Redevelopment of existing single family homes in commercial zones to non-residential development.

** While there is no residential land within TAZ 6 itself, there is additional development capacity within the existing Ocean Hills subdivision, which accesses US 101 via Ocean Hills Drive (which passes through TAZ 6). Just over half of the lots within the existing Ocean Hills subdivision have been built on to date –16 remain undeveloped. See pages 8 and 9 for more information on assumptions about development outside the study area.

- C-1 (City), C-2 (City) and C-T (County) – Except where site specific information indicates otherwise, for the purposes of the land use assumptions, the gross acreage of the site was reduced by 20% to allow for dedications and improvements. The total developable area of commercially-zoned land by TAZ is shown in Table 3.

Table 3: NON-Single Family Build-out Development Potential by TAZ

TAZ	Existing Zoning	Gross Developable Com. Land Area	
		Acres	Square feet
1	R-1	0	0
2a	R-1	0	0
2b	C-1	1.37	59,543
2c	C-1	1.23	53,655
3a	R-1	0	0
3b	C-1	1.04	45,251
4a	R-1	0	0
4b	C-T	1.62	70,708
5	P-F	0	0
6*	C-T	1.00	43,560
7	R-1	0	0
8	R-1, C-1	1.97	85,640
9	C-2	1.09	47,414
10a	C-2	1.76	76,861
10b	C-2	2.14	60,984
11a	R-1	0	0
11b	C-1, C-2	3.97	331,275
12a	R-1	2.94	0
12b	C-2	0	127,264

* TAZ 6 includes a small portion of a parcel that was included in the proposal for the Naples Golf & Beach Resort. The portion within the study area includes only about 1 acre of developable land which did not have a specific use identified in the development proposal; therefore, the default assumptions for the C-1 zone have been applied.

The developable commercial land was allocated to the various allowed uses as shown in Table 4.

Table 4: Breakdown of Uses by Zone

Use	C-1 (City) & C-T (County)	C-2 (City)
Retail/Service Commercial*	25%	20%
Institutional*	5%	10%
Hotel/Motel**	35%	0%
Office*	10%	15%
Multi-family/Condo***	25%	15%
Light industrial*	0%	40%
* Assumed a 0.25 floor area ratio (FAR) based on gross site size except in the case of highly constrained sites (e.g., significant riparian or wetland areas) where buildable acreage was reduced based on an estimate of the percentage of the lot with environmental constraints. ** Assumed FAR of 0.25 and 300 square feet of gross building area per guest room. *** Assumed density of 24.7 dwelling units per acre based on existing multi-family in study area.		

The total projected capacity of the buildable commercial land in the study area based on the breakdown shown in Table 4 is summarized in Table 5.

Table 5: Total Development Potential of Buildable Commercial Land in Study Area

Use	Study Area Total
Gross Developable Com. Land Area (sf)	1,002,154
Retail/ Service Commercial (sf)	36,888
Institutional (sf)	14,428
Office (sf)	24,450
Hotel/ Motel (rooms)	117
Multi-family/ Condo (DU)	149
Light Industrial (sf)	44,067

- P-F (County) – No new development potential was assumed.

Absorption

Not all of the potential development identified in the build-out tables will occur within the 25 year planning horizon of the Waldport Yaquina John Point Land Use and Transportation Plan. According to the 2010 Comprehensive Plan, "Waldport's population increased from 1,274 in 1980 to 2,050 in 2000. This was a 61% increase over 20 years with an average annual increase of 39 people and approximately 2.3%." The 2008 population is estimated at 2,145. If the average annual growth rate of the previous 20 years continues, the total population will increase by roughly 120 persons over the 25 year planning horizon to a total of 2,282.

- **Single Family Residential** - According to the 2010 Comprehensive Plan, "Over the past ten years, Waldport has averaged approximately 11 new housing units per year." (Inventory, p.7) This is an estimate for the entire City; the Project study area is limited in size and includes both City and unincorporated areas. City staff estimates that approximately nine new single family homes have been built in the study area during the last nine years, averaging roughly

one per year. While there are some larger vacant properties in the study area, there is significant capacity for residential growth elsewhere in the City as well. Given this, a continued rate of 1 dwelling unit per year is assumed for the next 25 years. This would result in a total of roughly 25 new single family homes in the study area over the planning horizon. This growth is assumed to come primarily from development on existing vacant lots, with a few partitions or small subdivisions.

The Ocean Hills subdivision, which is outside the study area but has its only access to US 101 via Ocean Hills Drive through TAZ 6, has a total of 34 lots, of which 18 were developed during the last 20 years. It is reasonable to assume that with a similar rate of growth the remaining 16 homes lots will be developed with single family homes in the next 25 years. Thus, 16 additional homes have been included in the projection for TAZ 6 to account for this growth.

The combined growth projected for these areas over the next 25 years totals 41 dwelling units, or roughly 17% of the buildout capacity for the Study Area and existing Ocean Hills subdivision.

- **Multi-Family/Condo** – According to the 2010 Comprehensive Plan, 72% of existing housing units are single family homes, while 14% are either duplex or multi-family. If this pattern continues, one would expect that of the 11 housing units per year city-wide, roughly 1.5 (on average) per year would be multi-family or duplex units. There are roughly 34 multi-family housing units in the study area today, roughly 20% of the total in the City (170, according to the 2010 Comprehensive Plan). There are several other areas of the city that allow multi-family development. If 20% of the projected growth in multi-family housing occurs in the study area, that would yield roughly 7 multi-family units in the study area during the next 25 years, which equates to about 5% of the buildout capacity.

- **Hotel/Motel** – Waldport currently has roughly 25 hotel/motel rooms, of which only a few (in a Bed & Breakfast) are located within the study area. While the previously proposed Naples Golf & Beach Resort included 138 hotel rooms along with a variety of other development, there is likely to be little additional hotel/motel development within the study area. It is reasonable to assume one additional B&B could be developed during the planning period, yielding roughly 4 additional rooms.

- **Retail/Service Commercial** - There is little existing retail within the study area. The International Council of Shopping Centers (ICSC) estimates approximately demand for retail space at about 46.6 square feet per capita. Based on the projected increase of roughly 120 additional persons City-wide during the planning period, this would translate to a demand for roughly 5,600 square feet of additional retail space citywide. While the City has other land zoned for commercial uses (including the downtown), little of it is vacant. Assuming roughly half of the retail demand is accounted for by new development within the study area, this would equate to just under 2,800 square feet of new retail uses.

- **Office** – Existing office uses in the study area are limited to the Forest Service offices and scattered real estate offices. While no expansion of the Forest Service offices are expected, it

is possible that a small amount of additional office space (primarily real estate or similar service-oriented offices) could be built in the study area in the next 25 years. A total of roughly 2,500 square feet of office space has been assumed for the study area during the planning period.

- **Institutional** – There are several existing institutional uses within the study area, including two churches. One of the most readily developable properties within the study area is currently owned by Oregon Coast Community College, which had planned to build an 8,500 square foot building. While this application has since been withdrawn, it is reasonable to assume that a similar development could take place within the study area in the next 25 years.

- **Light Industrial** – There are several existing light industrial uses in the study area. Many of the more readily developable commercial lots in the study area are zoned C-2; however, most of these front on US 101, making them less likely to develop with a light industrial use. The buildout estimate assumes roughly 44,000 sf. for industrial. The City's Planned Industrial Park does not have sewer service, so the study area's C-2 zoned area may be more attractive to general commercial/light industrial development. Assuming continued small scale development, approximately 25% of the 44,000 sf within the study area could be built within the planning period, for a total of roughly 11,000 square feet of light industrial development.

Given that the buildout capacity of the study area far exceeds the likely demand for new development within the 25-year planning period, new development was allocated to transportation analysis zones (TAZs) based on ease and attractiveness of development. Barriers to development considered include existing development, environmental constraints such as wetlands and steep slopes, access issues, and effort required to develop. This means that lots that are already cleared were considered more readily developable than those with trees, and that existing vacant residential lots were assumed to develop before partitioning or subdivision would take place. Factors assumed to increase attractiveness for development include ocean views (for residential and hotel uses) and highway visibility and accessibility (for commercial uses).

Table 6: Estimated New Development by TAZ by Use through 2035

TAZ	New Single Family (DU)	Retail / Service Commercial (sf)	Institutional (sf)	Office (sf)	Hotel / Motel (rooms)	Multi-family / Condo (DU)	Light Ind (sf)
1							
2a	1						
2b					4		
2c						7	
3a	1						
3b							
4a	4						
4b	0	1,500					
5							
6	16*						
7	9						
8	10						
9		1,300		2,500			
10a							11,000
10b			8,500				
11a	0						
11b							
12a	0						
12b							
Totals	**41**	**2,800**	**8,500**	**2,500**	**4**	**7**	**11,000**

* As noted above, these 16 homes are not within TAZ 6, which is largely unbuildable, but are projected as part of the Ocean Hills subdivision, which accesses US 101 via Ocean Hills Drive (which passes through TAZ 6).

In summary, in the next twenty years the Waldport Yaquina John Point study area is projected to have an estimated 25 new single-family homes, 7 multi-family homes, 4 rooms of lodging, and about 24,800 sf of commercial, institutional, and light industrial development.

Development Potential Outside the Study Area

While traffic will not be analyzed at intersections outside the study area, the potential for a large-scale development on the over 475 acres of undeveloped land south and east of the study area was part of the impetus for this project, and could impact traffic on US 101 through the study area. A project called the Naples Golf & Beach Resort was proposed for those roughly 475 acres and included approximately 1245 housing units (including a mix of single-family and multi-family); support facilities such as day care and houses of worship; 50,000 square feet of retail; a 138-room hotel; and a golf course / country club. While this project has since been abandoned,

the uses that may eventually be built on the land in question are likely to be similar to those proposed.

For example, a portion of the land that was included in the proposed development (in the northeast corner, abutting the existing Crestview Golf Course) has since been sold to an individual who also has an ownership stake in the existing golf course. This portion may develop as an expansion of the existing golf course with additional golf course homes, as planned in the Naples development. However, since this property is now under separate ownership from the rest of the land included in the Naples proposal, it is likely that access to the new development will be primarily from Range Drive and/or Crestline Drive, through the existing golf course and surrounding homes, rather than via internal roads onto US 101 as shown in the Naples proposal.

Of the remaining land that was included in the Naples proposal, much of it lies outside the existing urban growth boundary (UGB) or on land designated for light industrial uses. A UGB amendment was proposed that would have traded the land proposed for development outside the UGB for land proposed for conservation as open space within the existing UGB, for no net expansion of the UGB. This amendment was contingent on the Naples project going through; therefore, it did not and will not happen. Without a large master planned development with significant open space preservation, a similar arrangement could not be made. As a result, we have assumed that the development proposed for lands outside the UGB is not likely to occur within the planning horizon. The portions of the Naples proposal that were planned for land zoned for industrial use are surrounded by the large parcel that has since been bought by the golf course owners and the properties that are outside the UGB. As a result, this section likely would not be incorporated into a master planned development with the rest of the Naples land.

There are two parcels that remain under common ownership that are within the UGB and would not require a zone change to develop the uses proposed as part of the Naples proposal. One of these, zoned C-1, fronts on US 101, and is just under 25 acres. The other, immediately to the east of the first, is zoned R-1 and is just over 51 acres. Both have wetlands and topography constraints. In the Naples proposal, these lands were identified for retail/office, hotel, and residential uses. It is reasonable to assume that these two parcels could be developed as part of a smaller master planned development. Based on the uses and densities identified in the Naples proposal, such a development might contain:

- 50,000 square feet of retail and/or office uses
- 50 condos on upper stories above the commercial uses
- A 120 to 138 room hotel
- Up to 200 single family homes (likely mostly vacation homes)

The above-mentioned 51-acre parcel zoned R-1 could also theoretically be developed as additional phases of the Ocean Hills Subdivision, since it could connect to the stub streets in that development. However, if any additional development occurs that accesses US 101 via Ocean Hills Drive beyond the 34 existing subdivision lots in the existing Ocean Hills subdivision, it would trigger a requirement to realign access to the state park across US 101. Given this, we have assumed that it is more likely to develop as part of a master planned project with the 25 acre C-1-zoned parcel and take access to US 101 via new internal roads south of the study area.

Appendix D
Redevelopment Analysis

The development or redevelopment potential of particular properties of interest in the Study Area is described below. The locations of the properties identified below are shown on Figure D-1.

1. **Nordell Properties** (Tax Map 13-12-24DD, Tax Lots 200 and 201)**.** The Nordell properties are located just north of the former Hilltop Market. These two properties total approximately 1.40 acres however the majority of the property (±1 acre) is either water (Alsea Bay), beach, or within top of bluff development restricted areas. The remaining ±0.40 acres currently has two vacation rentals and one office. The improvement to land value ratio for both properties is under 0.5. There is high potential for redevelopment of this property; however there are some access constraints from US 101.

2. **Booth Property** (Tax Map 13-12-24DD, Tax Lot 400)**.** The Booth property is located at the northwest corner of US 101 and Waziyata Avenue. Roughly 0.60 acres of the 1.09 acre Booth property appears to have redevelopment potential. Approximately 0.50 acres is a very steep bank leading to the beach and Alsea Bay. A single family home currently exists on the property. There appears to be a high potential for redevelopment of this property in the future.

3. **North of U.S. Forest Service** (Tax Map 13-11-19CC, Tax Lot 700)**:** This 2.81 acre property currently has three single family residential dwellings. The combined improvement value of the homes on this lot is less than one-half the value of the land. This property was formerly part of the U.S. Forest Service property. This property was sold by the U.S. Forest Service in 2007. It would appear to have high potential for redevelopment in the future with several possible land uses.

4. **Dane Property** (Tax Map 13-12-24DD, Tax Lot 2700)**.** The 0.35 acre Dane property is located at the southwest corner of Hwy 101 and Waziyata Avenue. This property is currently developed with residential dwellings. There appears to be a high potential for redevelopment of this property in the future.

5. **Pioneer Trust Property** (Tax Map 13-11-19CC, Tax Lot 120)**:** This undeveloped 7.75 acre property is zoned for residential use. It currently has no access to public roads and is specially assessed as forest land; however, for the purposes of this report, the analysis assumes that it could have development potential for roughly 40 single-family homes, despite topographic constraints.

6. **U.S. Forest Service Property** (Tax Map 13-11-19CC, Tax Lot 800)**:** It appears that the USFS plans to continue to use the existing facilities as the headquarters for the northern portion of the Siuslaw National Forest. However, even if the Forest Service were to relocate, it is likely that the existing office buildings would simply be occupied by a new entity rather than being redeveloped.

7. **Mobile Home Park** (Tax Lot 13-12-24DD, Tax Lot 600)**:** Although this 1.15 acre parcel could be redeveloped eventually, however, it appears to have a low potential for redevelopment at this time.

8. **Southeast Corner of Hwy 101/Forestry Lane** (Tax Map 13-12-25AA, Tax Lot 1129)**:** This 2.09 acre undeveloped property is owned by the Oregon Coast Community College but is currently for sale and has high potential for development. Several potential land uses have been identified for this property, including mixed commercial/multi-family residential, multi-family residential only, and governmental facilities. There are easements on the north and east sides,

and a drainage way on the south side of this property which reduces the developable portion to approximately 1.40 acres.

9. **C-2 properties fronting on Forestry Lane** (Tax Map 13-12-25AA, Tax Lots 100, 200, 300, 400, 500, 600, 700, 701)**:** Existing uses on these parcels include an auto towing business, a few homes, and undeveloped properties. The auto towing business provides minimal screening or buffering from adjacent residences. These properties are all zoned C-2 (General Commercial) and could potentially develop/redevelop at some point in the future, although no plans are known for development.

10. **Woodhaven Properties** (Tax Map 13-12-25AA Tax Lot 1100 and Tax Map 13-11-30BB, Tax Lots 100, 101, 104, 199, 300, 400)**:** Woodhaven Properties owns 5 properties totaling 6.92 acres zoned for residential use (R-1) that are currently undeveloped and specially assessed as forest land. The properties are accessed via Kelsie Way. These properties appear to have high potential for residential development although there are some topographic constraints. For the purposes of this report, the analysis assumes the total number of housing units on these properties could be roughly 34 under the current zoning.

11. **Eigerdes Property** (Tax Map 13-12-25AB, Tax Lot 6800)**.** The 0.92 Eigerdes property is located south of Corona Court and zoned C-1 for Retail Commercial use. This property is currently only partially developed, with several small apartment buildings on one side. The property is currently for lease as commercial land. For the purposes of this report, the analysis assumes there is high potential for redevelopment of this property.

12. **Waldport Storage Co.** (Tax Map 13-12-25AA, Tax Lots 800, 1115, 1130, 1132, 7100, 7200, 7300)**:** Waldport Storage Co. operates a mini-storage and RV park facility that spans 7 parcels totaling 6.74 acres. There are no known plans for redevelopment.

13. **Copeland Lumber (Central Coast Builders Supply LLC)** (Tax Map 13-12-25AA, Tax Lots 900, 1000) owns adjacent 1.61 and 1.00 acre parcels. The 1.61 acre parcel is fully developed with no known plans for redevelopment. The improvement to land value ratio of this property is greater than 1.0, suggesting little likelihood of redevelopment. Development on the southerly one acre parcel is limited to a small portion along the north property line that is part of the Copeland Lumber development on the northerly lot. This one acre parcel appears to have high potential for development although there are no known plans.

14. **Dokay Property** (Tax Map 13-12-25AB, Tax Lots 100, 2200, 2300)**:** This 1.63 acre property is located outside City limits and is currently zoned C-T. Much of the site appears to be constrained by wetlands and steep slopes, which may make development challenging.

15. **St. Lukes By The Sea Episcopal Church** (Tax Map 13-12-25AA, Tax Lot 1104, 1114) owns adjacent 0.54 and 1.15 acre parcels. The northerly 0.54 acre parcel is undeveloped and appears to have a high potential for development although there are no known plans. The southerly 1.15 acre parcel has the church and low potential for redevelopment.

16. **Schlosser Property** (Tax Map 13-12-25AA, Tax Lot 1128)**.** This undeveloped 0.86 acre C-1 Retail Commercial zoned property is located on the north side of Range Drive west of Ocean Terrace. It has high potential for development. The current property owner discussed residential development at one time. Although this property is zoned C-1, it may be more conducive to residential-only development.

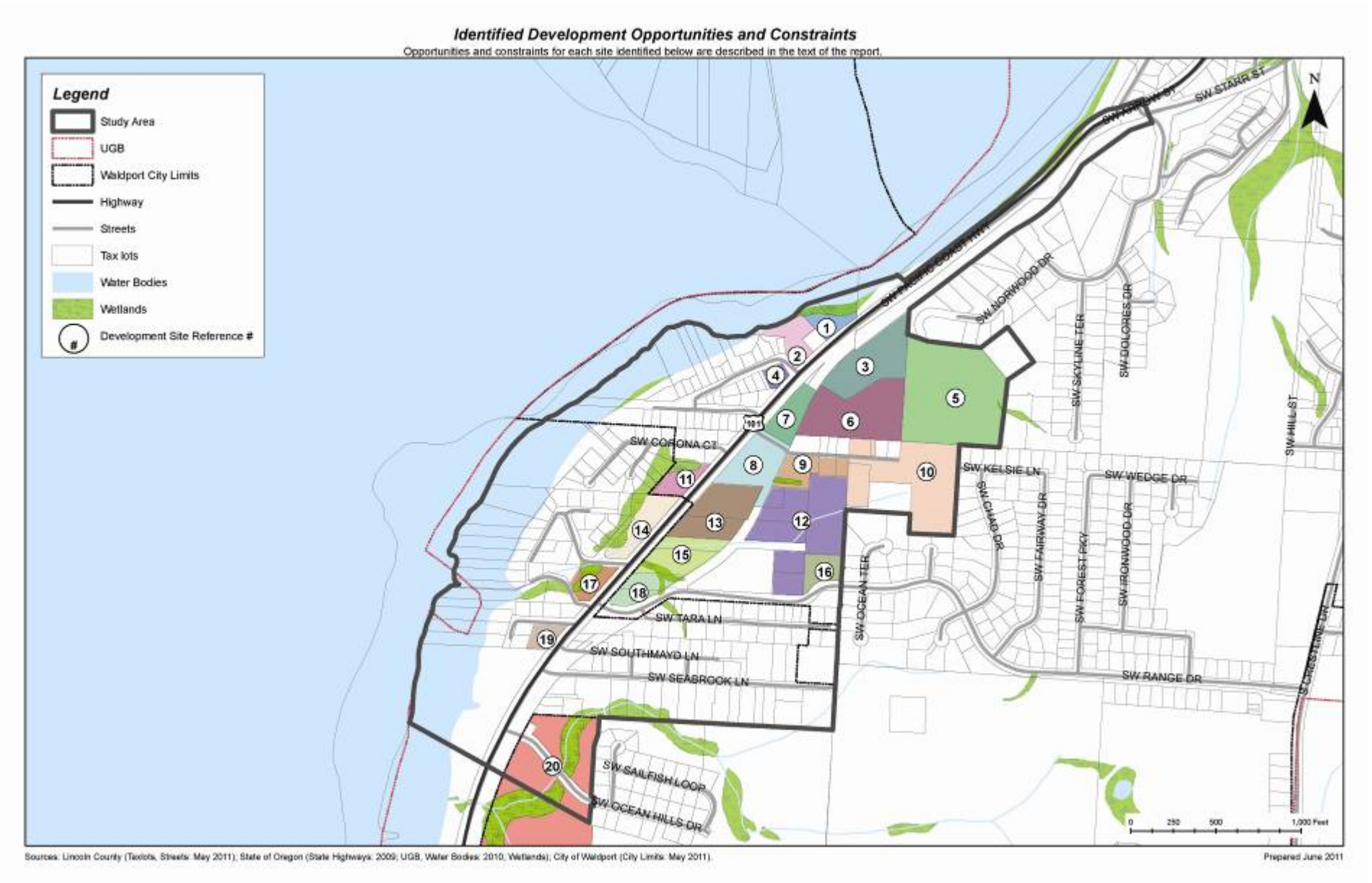
17. **Steve Small** (Tax Map 13-12-25AB, Tax Lot 2500) owns a 0.7 acre property east of US 101 between LaBarre and Sherwood that is currently developed with a real estate office and a small espresso drive-through (both relatively new). The back half of the site appears to be constrained by topography and wetlands; however, the developable portion of the site is large enough to accommodate more commercial development than exists at present.

18. **Dennis Property** (Tax Map 13-12-25AA, Tax Lots 1119, 1122) **.** These are contiguous 0.63 and 0.46 acre undeveloped properties at the northeast corner of Hwy 101 and Range Drive. These properties appear to have high potential for development.

19. **St. Clair Property** (Tax Map 13-12-25AB, Tax Lot 4001)**.** This 0.53 acre parcel, located at the southwest corner of US 101 and Alicia Lane, is developed with a single family residence. While the improvement to land value ratio is over 1.0, it is currently listed for sale, with the commercial zoning noted (it has Lincoln County C-T zoning), which indicates the potential for redevelopment.

20. **NAREP Waldport LLC** (Tax Map 13-12-25AD, Tax Lot 3800 and Tax Map 13-12-25, Tax Lot 300) owns undeveloped 2.64 acre and 24.77 acre C-1 Retail Commercial zoned properties fronting on US 101 on either side of Ocean Hills Drive. The 2.64 acre (northeast of Ocean Hills Drive) appears to be restricted in terms of development potential due to topographic and wetland constraints. The 24.77 acre parcel located south of Ocean Hills Drive (the northern corner of which is included in the Study Area) has over 1,700 lineal feet of Hwy 101frontage. The defunct Naples Golf and Beach Resort project planned 50,000 square feet of commercial space and a 138 room hotel on this property. Development constraints include wetlands and limited access potential requiring the relocation of an ODOT weigh station.

Figure D-1: Study Area Properties of interest



Appendix E
Study Area Net New Housing and Employment Growth Trip Generation

Net New Housing and Employment Growth Trip Generation

TAZ Number	1	2a	2b	2c	3a	3b	4a	4b	5	6	7	8	9	10a	10b	11a	11b	12a	12b	NG
TOTAL TRIP GENERATION																				
Weekday PM Peak Hour	**0**	**1**	**2**	**3**	**1**	**0**	**4**	**5**	**0**	**16**	**7**	**7**	**8**	**11**	**22**	**0**	**0**	**0**	**0**	**330**
Weekday PM In	*0*	*1*	*1*	*2*	*1*	*0*	*3*	*2*	*0*	*10*	*4*	*4*	*3*	*1*	*14*	*0*	*0*	*0*	*0*	*165*
Weekday PM Out	*0*	*0*	*1*	*1*	*0*	*0*	*1*	*3*	*0*	*6*	*3*	*3*	*5*	*10*	*8*	*0*	*0*	*0*	*0*	*165*
Single-Family Detached Housing (ITE 210)																				
Weekday PM Peak Hour	-	**1**	-	-	**1**	-	**4**	-	-	**16**	**7**	**7**	-	-	-	-	-	-	-	-
Weekday PM In (63%)	-	*1*	-	-	*1*	-	*3*	-	-	*10*	*4*	*4*	-	-	-	-	-	-	-	-
Weekday PM Out (37%)	-	*0*	-	-	*0*	-	*1*	-	-	*6*	*3*	*3*	-	-	-	-	-	-	-	-
Recreational Homes (ITE 260)																				
Weekday PM Peak Hour	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**52**
Weekday PM In (41%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*21*
Weekday PM Out (59%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*31*
Shopping Center (ITE 820)																				
Weekday PM Peak Hour	-	-	-	-	-	-	-	**5**	-	-	-	-	**4**	-	-	-	-	-	-	**187**
Weekday PM In (49%)	-	-	-	-	-	-	-	*2*	-	-	-	-	*2*	-	-	-	-	-	-	*92*
Weekday PM Out (51%)	-	-	-	-	-	-	-	*3*	-	-	-	-	*2*	-	-	-	-	-	-	*95*
Junior/Community College (ITE 540)																				
Weekday PM Peak Hour	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**22**	-	-	-	-	-
Weekday PM In (64%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*14*	-	-	-	-	-
Weekday PM Out (36%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*8*	-	-	-	-	-

Net New Housing and Employment Growth Trip Generation (Continued)

	1	2a	2b	2c	3a	3b	4a	4b	5	6	7	8	9	10a	10b	11a	11b	12a	12b	NG
General Office Building (ITE 710)																				
Weekday PM Peak Hour	-	-	-	-	-	-	-	-	-	-	-	-	**4**	-	-	-	-	-	-	-
Weekday PM In (17%)	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-	-	-	-
Weekday PM Out (83%)	-	-	-	-	-	-	-	-	-	-	-	-	*3*	-	-	-	-	-	-	-
Motel (ITE 320)																				
Weekday PM Peak Hour	-	-	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**65**
Weekday PM In (54%)	-	-	*1*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*35*
Weekday PM Out (46%)	-	-	*1*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*30*
Residential Condominium/Townhouse (ITE 230)																				
Weekday PM Peak Hour	-	-	-	**3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**26**
Weekday PM In (67%)	-	-	-	*2*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*17*
Weekday PM Out (33%)	-	-	-	*1*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*9*
General Light Industrial (ITE 110)																				
Weekday PM Peak Hour	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11**	-	-	-	-	-
Weekday PM In (12%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-	-
Weekday PM Out (88%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*10*	-	-	-	-	-

Appendix F

Technical Documentation

- Crash Data
- Existing Conditions Traffic Analysis
- Future Conditions Traffic Analysis
- Traffic Counts

ODOT Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Highway 101 (Hwy 009) from Norwood Drive to 100 feet South of Maple Street
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

ODOT Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Highway 101 (Hwy 009) from 100 feet South of Maple Street to 100 feet N of Waziyata
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2007														
REAR-END	0	1	1	2	0	1	0	2	0	2	0	0	0	0
2007 TOTAL	0	1	1	2	0	1	0	2	0	2	0	0	0	0
YEAR: 2005														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	0	0	0
2005 TOTAL	0	0	1	1	0	0	0	1	0	1	0	0	0	0
FINAL TOTAL	0	1	2	3	0	1	0	3	0	3	0	0	0	0

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CDS380 6/10/2011

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

009 OREGON COAST

Highway 101 (Hwy 009) from 100 feet South of Maple Street to 100 feet N of Waziyata
January 1, 2005 through December 31, 2009

SER# / INVEST	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY / TIME	COUNTY / CITY / URBAN AREA	RD# / COMPNT / MLG / MILEPNT	FC / TYP	CONN # / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00494	N	N	N		08/17/2007	LINCOLN	1	02		STRGHT		N	N	CLR	S-1STOP	01	NONE	0	STRGHT											07
NONE					Fri		0	0				UNKNOWN	N	DRY	REAR		PRVTE		N S										000	00
					2P		156.48			03	(NONE)		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	00	M	UNK		026		000	07
											(02)														OR>25					
																	02	NONE	0	STOP										
																		PRVTE		N S									011	00
																		PSNGR CAR			01	DRVR	NONE	40	F	OR-Y		000	000	00
																										OR<25				
00459	N	N	N		08/16/2005	LINCOLN	1	02		STRGHT		N	N	CLR	S-STRGHT	01	NONE	0	STRGHT											07
NO RPT					Tue		0	0				UNKNOWN	N	DRY	REAR		PRVTE		S N										000	00
					6P		156.50			04	(NONE)		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	44	F	OR-Y		042		000	07
											(02)														OR<25					
																	02	NONE	0	STRGHT										
																		PRVTE		S N									006	00
																		PSNGR CAR			01	DRVR	NONE	19	M	OR-Y		000	000	00
																										OR<25				
00653	N	N	N	N	N	10/13/2007	LINCOLN	1	02		ALLEY		N	N	CLR	S-1STOP	01	NONE	0	STRGHT											27,07
STATE						Sat		0	0				NONE	N	DRY	REAR		PRVTE		S N										001	00
						11A		156.59			04	(NONE)		N	DAY	INJ		PSNGR CAR			01	DRVR	INJC	49	F	OR-Y		016,026		038	27,07
												(02)														OR>25					
																	02	NONE	0	STOP										
																		PRVTE		S N									011	00
																		MOTRHOME			01	DRVR	NONE	50	F	OR-Y		000	000	00
																										OR>25				

ODOT Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Highway 101 (Hwy 009) from 100 feet N of Waziyata to 100 feet N of Range Dr
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2008														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	0	0	0
2008 TOTAL	0	0	1	1	0	0	0	1	0	1	0	0	0	0
YEAR: 2007														
REAR-END	0	1	0	1	0	1	0	1	0	1	0	0	0	0
2007 TOTAL	0	1	0	1	0	1	0	1	0	1	0	0	0	0
YEAR: 2005														
SIDESWIPE - MEETING	0	0	1	1	0	0	0	1	0	1	0	0	0	0
2005 TOTAL	0	0	1	1	0	0	0	1	0	1	0	0	0	0
FINAL TOTAL	0	1	2	3	0	1	0	3	0	3	0	0	0	0

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CDS380 6/10/2011

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

009 OREGON COAST

Highway 101 (Hwy 009) from 100 feet N of Waziyata to 100 feet N of Range Dr
January 1, 2005 through December 31, 2009

SER# / INVEST	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY / TIME	COUNTY / CITY / URBAN AREA	RD# COMPNT / MLG / MILEPNT	FC / TYP	CONN # / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00383	Y	N	N	N	N	07/07/2007	LINCOLN	1 02			STRGHT		N	N	CLR	S-1STOP	01	NONE 0	STRGHT										092	07
STATE						Sat		0 0			UN	(NONE)	NONE	N	DRY	REAR		PRVTE	S N										000		00
						1P		156.76			04			N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	21	F	OR-Y		026,050	000		07
												(02)														OR>25					
																				02	PSNG	NO<5	01	M			000	000		00
																	02	NONE 0	STOP											
																		PRVTE	S N									011	092	00
																		PSNGR CAR		01	DRVR	NONE	49	F	OR-Y		000	000		00
																									OR>25					
00525	N	N	N			09/11/2008	LINCOLN	1 02			ALLEY		N	N	CLR	S-1TURN	01	NONE 1	TURN-R											10
NONE						Thu	WALDPORT	0 0		OREGON COAST HY	UN	(NONE)	UNKNOWN	N	DRY	TURN		PRVTE	S E									019		00
						9A		156.81			04			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	60	M	OR-Y		000	000		00
												(02)														OR<25					
																	02	NONE 0	STRGHT											
																		PRVTE	S N									031		00
																		PSNGR CAR		01	DRVR	NONE	72	M	OTH-Y		031	000		10
																									N-RES					
00156	N	N	N			03/15/2005	LINCOLN	1 02			STRGHT		N	N	CLR	O-STRGHT	01	NONE 0	STRGHT											05
NONE						Tue	WALDPORT	0 0		OREGON COAST HY	N	(NONE)	UNKNOWN	N	DRY	SS-M		PRVTE	S N									000		00
						4P		156.96		RANGE DR	03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	57	M	OR-Y		039	000		05
												(02)														OR<25					
																	02	NONE 0	STRGHT											
																		PRVTE	N S									000		00
																		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		000	000		00
																									OR<25					

ODOT Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Highway 101 (Hwy 009) & Range Dr plus 100 feet North and South on Highway 101
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2007														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	0	1	1	0	0
2007 TOTAL	0	1	0	1	0	1	0	1	0	0	1	1	0	0
YEAR: 2006														
REAR-END	0	1	0	1	0	1	0	1	0	1	0	0	0	0
2006 TOTAL	0	1	0	1	0	1	0	1	0	1	0	0	0	0
YEAR: 2005														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	0	0	0
SIDESWIPE - MEETING	0	0	1	1	0	0	0	1	0	1	0	0	0	0
2005 TOTAL	0	0	2	2	0	0	0	2	0	2	0	0	0	0
FINAL TOTAL	0	2	2	4	0	2	0	4	0	3	1	1	0	0

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CDS380 6/10/2011

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

009 OREGON COAST

Highway 101 (Hwy 009) & Range Dr plus 100 feet North and South on Highway 101
January 1, 2005 through December 31, 2009

SER# / INVEST	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY / TIME	COUNTY / CITY / URBAN AREA	RD# COMPNT / MLG / MILEPNT	FC / TYP	CONN # / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00156	N	N	N			03/15/2005	LINCOLN	1	02		STRGHT		N	N	CLR	O-STRGHT	01	NONE 0	STRGHT												05
NONE						Tue	WALDPORT	0	0	OREGON COAST HY	N	(NONE)	UNKNOWN	N	DRY	SS-M		PRVTE	S N										000		00
						4P		156.96		RANGE DR	03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	57	M	OR-Y		039		000		05
												(02)														OR<25					
																	02	NONE 0	STRGHT											
																		PRVTE	N S										000		00
																		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		000		000		00
																									OR<25					
00561	N	N	N	N	N	08/15/2007	LINCOLN	1	02		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT												03,02
STATE						Wed		0	0		CN		STOP SIGN	N	DRY	TURN		PRVTE	S N										000		00
						10P		156.98			02	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	47	F	OR-Y		000		000		00
																									OR<25					
																	02	NONE 0	TURN-L											
																		PRVTE	E S										000		00
																		PSNGR CAR		01	DRVR	NONE	25	M	OR-Y		021,028		000		03,02
																									OR<25					
00419	Y	N	N			07/25/2005	LINCOLN	1	02		STRGHT		N	N	CLR	S-1STOP	01	NONE 0	STRGHT												01
NONE						Mon		0	0		UN	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	N S										000		00
						1P		157.00			03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	68	M	OR-Y		026		000		01
												(02)														OR<25					
																	02	NONE 0	STOP											
																		PRVTE	N S										011		00
																		PSNGR CAR		01	DRVR	NONE	56	F	OR-Y		000		000		00
																									OR<25					
00759	N	N	N			10/12/2006	LINCOLN	1	02		STRGHT		N	N	CLR	S-1STOP	01	NONE 0	STRGHT												10
						Thu		0	0		UN	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	N S										000		00
						1P		157.00			03			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	64	M	OR-Y		026		000		10
												(02)														OR<25					
																	02	NONE 0	STOP											
																		PRVTE	N S										011		00
																		PSNGR CAR		01	DRVR	INJC	55	M	OR-Y		000		000		00
																									OR<25					

ODOT Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Highway 101 (Hwy 009) 100 feet South of Range Dr to 250 feet South of Ocean Hills Dr
January 1, 2005 through December 31, 2009

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2007														
REAR-END	0	1	1	2	0	3	0	1	0	2	0	1	0	0
2007 TOTAL	0	1	1	2	0	3	0	1	0	2	0	1	0	0
YEAR: 2006														
REAR-END	0	1	0	1	0	1	0	1	0	1	0	0	0	0
2006 TOTAL	0	1	0	1	0	1	0	1	0	1	0	0	0	0
YEAR: 2005														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	0	0	0
2005 TOTAL	0	0	1	1	0	0	0	1	0	1	0	0	0	0
FINAL TOTAL	0	2	2	4	0	4	0	3	0	4	0	1	0	0

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

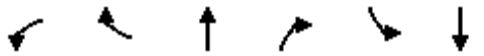
009 OREGON COAST

Highway 101 (Hwy 009) 100 feet South of Range Dr to 250 feet South of Ocean Hills Dr
January 1, 2005 through December 31, 2009

SER# / INVEST	SPEED	ALCHL	DRUGS	WORK	DATE / DAY / TIME	COUNTY / CITY / URBAN AREA	RD# / COMPNT / MLG / MILEPNT	FC / TYP	CONN # / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00419	Y	N	N		07/25/2005	LINCOLN	1	02		STRGHT		N	N	CLR	S-1STOP	01	NONE 0	STRGHT											01
NONE					Mon		0	0		UN	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	N S										000		00
					1P		157.00			03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	68	M	OR-Y		026	000		01
											(02)														OR<25				
																02	NONE 0	STOP											
																	PRVTE	N S									011		00
																	PSNGR CAR		01	DRVR	NONE	56	F	OR-Y		000	000		00
																								OR<25					
00759	N	N	N		10/12/2006	LINCOLN	1	02		STRGHT		N	N	CLR	S-1STOP	01	NONE 0	STRGHT											10
					Thu		0	0		UN	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	N S									000		00
					1P		157.00			03			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	64	M	OR-Y		026	000		10
											(02)														OR<25				
																02	NONE 0	STOP											
																	PRVTE	N S									011		00
																	PSNGR CAR		01	DRVR	INJC	55	M	OR-Y		000	000		00
																								OR<25					
00765	N	N	N		11/29/2007	LINCOLN	1	02		INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE	STRGHT											10
NONE					Thu		0	0		N		UNKNOWN	N	UNK	REAR		PRVTE	N S									000		00
					1P		157.04			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	32	U	UNK		026	000		10
																								UNK					
																02	NONE	STOP											
																	PRVTE	N S									012		00
																	PSNGR CAR		01	DRVR	NONE	32	M	OR-Y		000	000		00
																								OR<25					
00572	N	N	N		09/03/2007	LINCOLN	1	02		ALLEY		N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	07
NO RPT					Mon		0	0		UN	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	S N									000		00
					1P		157.08			04			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	55	M	OR-Y		026	000		07
											(02)														OR>25				
																02	NONE 0	STOP											
																	PRVTE	S N									022	013	00
																	PSNGR CAR		01	DRVR	INJC	43	M	OR-Y		000	000		00
																								OR>25					
																			02	PSNG	INJC	41	F			000	000		00
																			03	PSNG	NO<5	04	M			000	000		00
																03	NONE 0	STOP											
																	RENTL	S N									022	013	00
																	PSNGR CAR		01	DRVR	NONE	55	M	OTH-Y		000	000		00
																								N-RES					
																04	NONE 0	STOP											
																	PRVTE	S N									012		00
																	PSNGR CAR		01	DRVR	NONE	36	M	OR-Y		000	000		00
																								OR>25					
																			02	PSNG	INJC	32	F			000	000		00
																			03	PSNG	NO<5	03	M			000	000		00

HCM Unsignalized Intersection Capacity Analysis
11: Ocean Hills Dr & US 101

6/29/2011



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	7	352	0	7	399
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	7	359	0	7	407
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	781	359			359	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	781	359			359	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			99	
cM capacity (veh/h)	364	690			1211	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	7	359	414
Volume Left	0	0	7
Volume Right	7	0	0
cSH	690	1700	1211
Volume to Capacity	0.01	0.21	0.01
Queue Length 95th (ft)	1	0	0
Control Delay (s)	10.3	0.0	0.2
Lane LOS	B		A
Approach Delay (s)	10.3	0.0	0.2
Approach LOS	B		

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		38.9%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
12: Sherwood Ln & US 101

6/29/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	3	23	0	40	0	347	20	57	415	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	3	25	0	43	0	377	22	62	451	1
Pedestrians					2							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1007	976	452	968	966	390	452			401		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1007	976	452	968	966	390	452			401		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	89	100	93	100			95		
cM capacity (veh/h)	198	239	612	224	242	655	1119			1140		

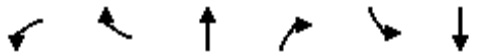
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	7	68	399	62	452
Volume Left	3	25	0	62	0
Volume Right	3	43	22	0	1
cSH	299	384	1119	1140	1700
Volume to Capacity	0.02	0.18	0.00	0.05	0.27
Queue Length 95th (ft)	2	16	0	4	0
Control Delay (s)	17.3	16.4	0.0	8.3	0.0
Lane LOS	C	C		A	
Approach Delay (s)	17.3	16.4	0.0	1.0	
Approach LOS	C	C			

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	59.5%	ICU Level of Service	B	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

13: W Forestry Way & US 101

6/29/2011



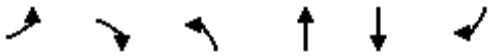
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	8	422	7	0	483
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	7	9	449	7	0	514
Pedestrians	5					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	971	458			461	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	971	458			461	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	99			100	
cM capacity (veh/h)	281	605			1106	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	456	514
Volume Left	7	0	0
Volume Right	9	7	0
cSH	394	1700	1106
Volume to Capacity	0.04	0.27	0.00
Queue Length 95th (ft)	3	0	0
Control Delay (s)	14.5	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.5	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
14: SW Adahi Ave & US 101

6/29/2011



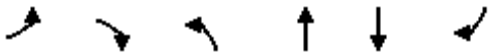
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	1	4	432	488	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1	4	460	519	4
Pedestrians	6					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	995	527	529			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	995	527	529			
tC, single (s)	6.4	6.2	4.4			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.5			
p0 queue free %	100	100	100			
cM capacity (veh/h)	271	552	893			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	464	523
Volume Left	0	4	0
Volume Right	1	0	4
cSH	552	893	1700
Volume to Capacity	0.00	0.00	0.31
Queue Length 95th (ft)	0	0	0
Control Delay (s)	11.5	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	11.5	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
15: SW Maple Street & US 101

6/29/2011



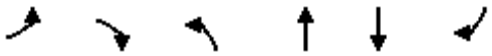
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	7	8	11	414	466	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	7	8	11	418	471	15
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	920	479	487			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	920	479	487			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	300	590	1086			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	15	429	486
Volume Left	7	11	0
Volume Right	8	0	15
cSH	407	1086	1700
Volume to Capacity	0.04	0.01	0.29
Queue Length 95th (ft)	3	1	0
Control Delay (s)	14.2	0.3	0.0
Lane LOS	B	A	
Approach Delay (s)	14.2	0.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
16: SW Range Dr & S Crestline Dr

6/29/2011



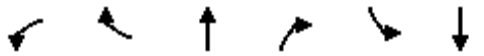
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	25	17	19	47	56	23
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	29	20	22	55	66	27

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	49	78	93
Volume Left (vph)	29	22	0
Volume Right (vph)	20	0	27
Hadj (s)	0.03	0.13	-0.09
Departure Headway (s)	4.3	4.2	4.0
Degree Utilization, x	0.06	0.09	0.10
Capacity (veh/h)	803	828	882
Control Delay (s)	7.6	7.7	7.5
Approach Delay (s)	7.6	7.7	7.5
Approach LOS	A	A	A

Intersection Summary			
Delay	7.6		
HCM Level of Service	A		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
11: Ocean Hills Dr & US 101

7/28/2011



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	3	10	598	5	14	661
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	3	10	610	5	14	674
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1316	613			615	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1316	613			615	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	98			99	
cM capacity (veh/h)	173	496			974	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	13	615	689
Volume Left	3	0	14
Volume Right	10	5	0
cSH	347	1700	974
Volume to Capacity	0.04	0.36	0.01
Queue Length 95th (ft)	3	0	1
Control Delay (s)	15.8	0.0	0.4
Lane LOS	C		A
Approach Delay (s)	15.8	0.0	0.4
Approach LOS	C		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
12: Sherwood Ln & US 101

7/28/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	3	24	0	41	0	590	29	79	688	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	3	26	0	45	0	641	32	86	748	3
Pedestrians					2							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1623	1596	749	1582	1582	659	751			675		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1623	1596	749	1582	1582	659	751			675		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	99	68	100	90	100			90		
cM capacity (veh/h)	70	97	415	82	99	461	867			901		

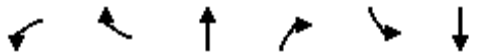
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	7	71	673	86	751
Volume Left	3	26	0	86	0
Volume Right	3	45	32	0	3
cSH	119	170	867	901	1700
Volume to Capacity	0.05	0.42	0.00	0.10	0.44
Queue Length 95th (ft)	4	47	0	8	0
Control Delay (s)	36.9	40.6	0.0	9.4	0.0
Lane LOS	E	E		A	
Approach Delay (s)	36.9	40.6	0.0	1.0	
Approach LOS	E	E			

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	82.7%	ICU Level of Service	E	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

13: W Forestry Way & US 101

7/28/2011



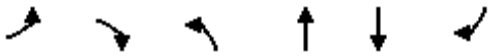
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	8	699	9	0	783
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	7	9	744	10	0	833
Pedestrians	5					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1586	753			758	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1586	753			758	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	98			100	
cM capacity (veh/h)	120	411			859	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	753	833
Volume Left	7	0	0
Volume Right	9	10	0
cSH	193	1700	859
Volume to Capacity	0.08	0.44	0.00
Queue Length 95th (ft)	7	0	0
Control Delay (s)	25.4	0.0	0.0
Lane LOS	D		
Approach Delay (s)	25.4	0.0	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
14: SW Adahi Ave & US 101

7/28/2011



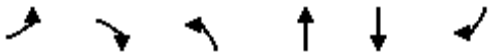
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	1	5	714	790	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1	5	760	840	5
Pedestrians	6					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1619	849	852			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1619	849	852			
tC, single (s)	6.4	6.2	4.4			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.5			
p0 queue free %	100	100	99			
cM capacity (veh/h)	113	362	666			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	765	846
Volume Left	0	5	0
Volume Right	1	0	5
cSH	362	666	1700
Volume to Capacity	0.00	0.01	0.50
Queue Length 95th (ft)	0	1	0
Control Delay (s)	15.0	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	15.0	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
15: SW Maple Street & US 101

7/28/2011



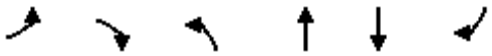
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	7	8	14	688	765	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	7	8	14	695	773	20
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1507	784	794			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1507	784	794			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	98	98			
cM capacity (veh/h)	132	396	835			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	15	709	793
Volume Left	7	14	0
Volume Right	8	0	20
cSH	205	835	1700
Volume to Capacity	0.07	0.02	0.47
Queue Length 95th (ft)	6	1	0
Control Delay (s)	24.0	0.5	0.0
Lane LOS	C	A	
Approach Delay (s)	24.0	0.5	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
16: SW Range Dr & S Crestline Dr

7/28/2011



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	26	18	20	47	56	24
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	31	21	24	55	66	28

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	52	79	94
Volume Left (vph)	31	24	0
Volume Right (vph)	21	0	28
Hadj (s)	0.03	0.13	-0.10
Departure Headway (s)	4.3	4.2	4.0
Degree Utilization, x	0.06	0.09	0.10
Capacity (veh/h)	802	826	881
Control Delay (s)	7.6	7.7	7.5
Approach Delay (s)	7.6	7.7	7.5
Approach LOS	A	A	A

Intersection Summary			
Delay	7.6		
HCM Level of Service	A		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

Summary of Traffic Count
Transportation Development Division

Site: 21022010
County: Lincoln
City: Waldport
Milepoint: 156.18
Count Number: 1.00

Date: 10/22/2010
Hours: 6:00 AM-10:00 PM
Highway #: 009
US101 @ SW Maple St.
Location: site 1153 - south leg
Weather: Clear

	Summary By Movements								Entering Volumes		
Time of Day	N-NE	N-SW	NE-N	NE-SW	SW-N	SW-NE		TOTAL	North	North-East	South-West
6:00	0	0	0	10	0	10		20	0	10	10
6:15	0	0	1	10	0	19		30	0	11	19
6:30	0	0	0	21	0	23		44	0	21	23
6:45	0	0	2	15	0	23		40	0	17	23
7:00	0	0	1	22	2	26		51	0	23	28
7:15	1	0	0	27	2	27		57	1	27	29
7:30	1	1	1	36	0	39		78	2	37	39
7:45	0	1	0	25	1	34		61	1	25	35
8:00	1	1	1	33	0	51		87	2	34	51
8:15	1	0	0	33	1	42		77	1	33	43
8:30	0	0	2	43	1	45		91	0	45	46
8:45	0	1	3	44	2	50		100	1	47	52
9:00	1	8	6	182	15	261		473	9	188	276
9:15	0	0	0	0	0	0		0	0	0	0
9:30	0	0	0	0	0	0		0	0	0	0
9:45	0	0	0	0	0	0		0	0	0	0
10:00	3	8	12	247	22	284		576	11	259	306
10:15	0	0	0	0	0	0		0	0	0	0
10:30	0	0	0	0	0	0		0	0	0	0
10:45	0	0	0	0	0	0		0	0	0	0
11:00	8	13	21	271	12	292		617	21	292	304
11:15	0	0	0	0	0	0		0	0	0	0
11:30	0	0	0	0	0	0		0	0	0	0
11:45	0	0	0	0	0	0		0	0	0	0
12:00	7	13	11	293	19	205		548	20	304	224
12:15	0	0	0	0	0	0		0	0	0	0
12:30	0	0	0	0	0	0		0	0	0	0
12:45	0	0	0	0	0	0		0	0	0	0
13:00	6	9	11	277	20	285		608	15	288	305
13:15	0	0	0	0	0	0		0	0	0	0
13:30	0	0	0	0	0	0		0	0	0	0
13:45	0	0	0	0	0	0		0	0	0	0
14:00	4	9	18	305	15	213		564	13	323	228
14:15	0	0	0	0	0	0		0	0	0	0
14:30	0	0	0	0	0	0		0	0	0	0
14:45	0	0	0	0	0	0		0	0	0	0
15:00	8	7	16	335	11	338		715	15	351	349
15:15	0	0	0	0	0	0		0	0	0	0
15:30	0	0	0	0	0	0		0	0	0	0
15:45	0	0	0	0	0	0		0	0	0	0
16:00	1	3	2	81	2	85		174	4	83	87
16:15	2	3	4	86	2	77		174	5	90	79
16:30	1	0	2	93	3	74		173	1	95	77
16:45	1	0	3	90	1	75		170	1	93	76
17:00	1	5	4	85	3	57		155	6	89	60
17:15	2	1	1	88	3	67		162	3	89	70
17:30	0	0	2	82	1	41		126	0	84	42
17:45	2	0	5	65	4	54		130	2	70	58
18:00	6	6	12	227	6	152		409	12	239	158
18:15	0	0	0	0	0	0		0	0	0	0
18:30	0	0	0	0	0	0		0	0	0	0
18:45	0	0	0	0	0	0		0	0	0	0
19:00	3	3	4	147	4	107		268	6	151	111
19:15	0	0	0	0	0	0		0	0	0	0
19:30	0	0	0	0	0	0		0	0	0	0
19:45	0	0	0	0	0	0		0	0	0	0
20:00	0	6	3	106	0	74		189	6	109	74
20:15	0	0	0	0	0	0		0	0	0	0
20:30	0	0	0	0	0	0		0	0	0	0
20:45	0	0	0	0	0	0		0	0	0	0
21:00	0	0	1	58	1	43		103	0	59	44
21:15	0	0	0	0	0	0		0	0	0	0
21:30	0	0	0	0	0	0		0	0	0	0
21:45	0	0	0	0	0	0		0	0	0	0
Total Count	60	98	149	3437	153	3173		7070	158	3586	3326
24hr Factor	1.1	1.1	1.1	1.1	1.1	1.1		1.1	1.1	1.1	1.1
24hr Volume	66	108	164	3781	169	3491		7777	174	3945	3659

Summary of Traffic Count
Transportation Development Division

Site: 21072010
County: Lincoln
City: Waldport
Milepoint: 156.69
Count Number: 1.00

Date: 10/22/2010
Hours: 2:00 PM-6:00 PM
Highway #: 009
Location: US101 @ Adahi Ave. 4 hr count 2-6PM
Weather: Clear

	Summary By Movements								Entering Volumes		
Time of Day	NE-SW	NE-W	SW-NE	SW-W	W-NE	W-SW		TOTAL	North-East	South-West	West
14:00	78	0	89	0	1	0		168	78	89	1
14:15	83	2	81	1	2	1		170	85	82	3
14:30	73	0	83	1	0	0		157	73	84	0
14:45	85	0	74	1	0	0		160	85	75	0
15:00	92	0	87	3	1	2		185	92	90	3
15:15	89	2	97	0	1	3		192	91	97	4
15:30	90	0	86	1	0	1		178	90	87	1
15:45	81	0	75	1	0	1		158	81	76	1
16:00	89	0	94	3	0	0		186	89	97	0
16:15	94	2	87	0	0	0		183	96	87	0
16:30	93	1	73	0	0	1		168	94	73	1
16:45	91	0	71	0	0	0		162	91	71	0
17:00	89	0	72	0	0	0		161	89	72	0
17:15	88	0	72	1	0	0		161	88	73	0
17:30	86	0	45	0	0	1		132	86	45	1
17:45	67	1	54	0	0	1		123	68	54	1
Total Count	1368	8	1240	12	5	11		2644	1376	1252	16
24hr Factor	1	1	1	1	1	1		1	1	1	1
24hr Volume	1368	8	1240	12	5	11		2644	1376	1252	16

Summary of Traffic Count
Transportation Development Division

Site: 21062010
County: Lincoln
City: Waldport
Milepoint: 156.71
Count Number: 1.00

Date: 10/22/2010
Hours: 2:00 PM-6:00 PM
Highway #: 009
US10@ W Forest Way 4
Location: hr count 2-6PM
Weather: Clear

	Summary By Movements								Entering Volumes		
Time of Day	NE-E	NE-SW	E-NE	E-SW	SW-NE	SW-E		TOTAL	North-East	East	South-West
14:00	0	79	0	1	89	0		169	79	1	89
14:15	1	86	4	1	79	1		172	87	5	80
14:30	0	73	1	0	81	0		155	73	1	81
14:45	1	85	0	1	74	2		163	86	1	76
15:00	3	90	2	1	87	4		187	93	3	91
15:15	0	90	3	0	97	0		190	90	3	97
15:30	3	90	0	1	86	1		181	93	1	87
15:45	1	81	1	1	75	0		159	82	2	75
16:00	0	89	2	0	94	1		186	89	2	95
16:15	0	90	2	4	79	2		177	90	6	81
16:30	0	93	1	1	73	1		169	93	2	74
16:45	0	91	1	0	71	1		164	91	1	72
17:00	1	89	0	0	72	0		162	90	0	72
17:15	1	88	1	1	72	0		163	89	2	72
17:30	1	86	1	1	45	0		134	87	2	45
17:45	1	67	0	1	54	0		123	68	1	54
Total Count	13	1367	19	14	1228	13		2654	1380	33	1241
24hr Factor	1	1	1	1	1	1		1	1	1	1
24hr Volume	13	1367	19	14	1228	13		2654	1380	33	1241

Summary of Traffic Count
Transportation Development Division

Site: 21032010 | Date: 10/22/2010
County: Lincoln | Hours: 6:00 AM-10:00 PM
City: Waldport | Highway #: 009

Milepoint: 156.98 | Location: US101 @ SW Range Dr.
Count Number: 1.00 | Weather: Clear

	Summary By Movements													Entering Volumes			
Time of Day	NE-E	NE-SW	NE-W	E-NE	E-SW	E-W	SW-NE	SW-E	SW-W	W-NE	W-E	W-SW	TOTAL	North-East	East	South-West	West
6:00	0	9	0	2	1	0	9	0	0	0	0	0	21	9	3	9	0
6:15	2	7	0	7	3	0	12	0	0	0	0	0	31	9	10	12	0
6:30	0	13	1	4	0	0	17	1	0	1	0	0	37	14	4	18	1
6:45	1	15	0	8	1	0	15	0	0	0	0	0	40	16	9	15	0
7:00	3	18	0	3	6	0	24	0	0	0	0	0	54	21	9	24	0
7:15	5	21	1	6	4	0	24	2	0	0	1	0	64	27	10	26	1
7:30	4	33	1	6	2	0	37	1	0	0	0	0	84	38	8	38	0
7:45	11	16	0	9	2	0	25	4	0	0	0	1	68	27	11	29	1
8:00	11	23	2	11	2	1	41	7	0	1	0	1	100	36	14	48	2
8:15	2	33	0	9	3	2	27	1	1	0	0	3	81	35	14	29	3
8:30	7	35	0	4	1	0	38	2	1	1	0	0	89	42	5	41	1
8:45	4	35	1	5	1	0	45	3	1	1	0	2	98	40	6	49	3
9:00	17	150	2	31	9	0	205	7	2	4	0	0	427	169	40	214	4
9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	31	202	4	33	9	1	238	8	2	2	2	1	533	237	43	248	5
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	30	246	2	31	9	0	227	9	0	1	0	3	558	278	40	236	4
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	38	246	2	38	9	0	275	16	3	3	0	0	630	286	47	294	3
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	34	241	3	19	11	0	284	14	2	0	1	2	611	278	30	300	3
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	43	263	1	33	7	0	271	14	1	1	0	1	635	307	40	286	2
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	33	294	1	40	17	0	290	19	1	0	0	0	695	328	57	310	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	9	81	1	11	6	0	72	3	0	1	0	2	186	91	17	75	3
16:15	10	78	0	6	5	0	68	4	0	1	0	0	172	88	11	72	1
16:30	13	78	0	5	4	0	63	7	0	0	0	0	170	91	9	70	0
16:45	11	75	0	8	2	0	58	1	0	0	0	0	155	86	10	59	0
17:00	17	66	0	9	5	0	49	6	0	0	0	0	152	83	14	55	0
17:15	10	76	1	4	2	0	53	5	0	1	0	0	152	87	6	58	1
17:30	10	73	1	4	2	0	40	6	0	0	0	1	137	84	6	46	1
17:45	4	55	0	8	2	0	45	2	0	0	0	0	116	59	10	47	0
18:00	30	191	1	18	5	0	133	7	0	1	0	0	386	222	23	140	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	17	127	0	9	3	0	93	4	0	0	0	1	254	144	12	97	1
19:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	11	97	0	11	5	0	58	3	0	0	0	0	185	108	16	61	0
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	5	48	0	4	2	0	40	4	0	0	0	0	103	53	6	44	0
21:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Count	423	2945	25	396	140	4	2876	160	14	19	4	18	7024	3393	540	3050	41
24hr Factor	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
24hr Volume	466	3240	28	436	154	5	3164	176	16	21	5	20	7727	3733	594	3355	46

Summary of Traffic Count
Transportation Development Division

Site: 21052010
County: Lincoln
City: Waldport
Milepoint:
Count Number: 1.00

Date: 10/22/2010
Hours: 6:00 AM-10:00 PM
Highway #: 8405
S Crestline Dr. @ SW
Location: Range Dr.
Weather: Clear

	Summary By Movements								Entering Volumes		
Time of Day	N-S	N-W	S-N	S-W	W-N	W-S		TOTAL	North	South	West
6:00	1	1	2	0	0	0		4	2	2	0
6:15	1	0	1	1	1	0		4	1	2	1
6:30	0	0	1	0	1	0		2	0	1	1
6:45	1	0	1	0	0	0		2	1	1	0
7:00	1	1	2	0	1	0		5	2	2	1
7:15	2	1	4	0	1	1		9	3	4	2
7:30	1	0	5	0	1	1		8	1	5	2
7:45	4	1	1	1	0	3		10	5	2	3
8:00	47	3	29	9	3	17		108	50	38	20
8:15	13	1	31	7	4	2		58	14	38	6
8:30	3	3	7	3	6	2		24	6	10	8
8:45	2	2	2	4	2	1		13	4	6	3
9:00	24	12	24	14	10	9		93	36	38	19
9:15	0	0	0	0	0	0		0	0	0	0
9:30	0	0	0	0	0	0		0	0	0	0
9:45	0	0	0	0	0	0		0	0	0	0
10:00	30	18	32	14	9	16		119	48	46	25
10:15	0	0	0	0	0	0		0	0	0	0
10:30	0	0	0	0	0	0		0	0	0	0
10:45	0	0	0	0	0	0		0	0	0	0
11:00	38	10	32	22	21	14		137	48	54	35
11:15	0	0	0	0	0	0		0	0	0	0
11:30	0	0	0	0	0	0		0	0	0	0
11:45	0	0	0	0	0	0		0	0	0	0
12:00	56	29	47	22	24	25		203	85	69	49
12:15	0	0	0	0	0	0		0	0	0	0
12:30	0	0	0	0	0	0		0	0	0	0
12:45	0	0	0	0	0	0		0	0	0	0
13:00	30	11	36	12	18	10		117	41	48	28
13:15	0	0	0	0	0	0		0	0	0	0
13:30	0	0	0	0	0	0		0	0	0	0
13:45	0	0	0	0	0	0		0	0	0	0
14:00	50	18	39	11	26	28		172	68	50	54
14:15	0	0	0	0	0	0		0	0	0	0
14:30	0	0	0	0	0	0		0	0	0	0
14:45	0	0	0	0	0	0		0	0	0	0
15:00	42	29	74	27	18	17		207	71	101	35
15:15	0	0	0	0	0	0		0	0	0	0
15:30	0	0	0	0	0	0		0	0	0	0
15:45	0	0	0	0	0	0		0	0	0	0
16:00	12	8	8	5	5	3		41	20	13	8
16:15	10	2	11	4	7	2		36	12	15	9
16:30	11	1	8	2	5	4		31	12	10	9
16:45	9	6	8	3	2	4		32	15	11	6
17:00	7	4	9	5	5	3		33	11	14	8
17:15	8	6	16	2	5	3		40	14	18	8
17:30	14	3	4	4	5	2		32	17	8	7
17:45	2	5	14	5	0	3		29	7	19	3
18:00	15	9	21	5	14	4		68	24	26	18
18:15	0	0	0	0	0	0		0	0	0	0
18:30	0	0	0	0	0	0		0	0	0	0
18:45	0	0	0	0	0	0		0	0	0	0
19:00	9	5	11	3	4	8		40	14	14	12
19:15	0	0	0	0	0	0		0	0	0	0
19:30	0	0	0	0	0	0		0	0	0	0
19:45	0	0	0	0	0	0		0	0	0	0
20:00	4	6	14	8	6	6		44	10	22	12
20:15	0	0	0	0	0	0		0	0	0	0
20:30	0	0	0	0	0	0		0	0	0	0
20:45	5	0	0	0	0	0		5	5	0	0
21:00	0	2	7	1	5	3		18	2	8	8
21:15	0	0	0	0	0	0		0	0	0	0
21:30	0	0	0	0	0	0		0	0	0	0
21:45	0	0	0	0	0	0		0	0	0	0
Total Count	452	197	501	194	209	191		1744	649	695	400
24hr Factor	1.1	1.1	1.1	1.1	1.1	1.1		1.1	1.1	1.1	1.1
24hr Volume	498	217	552	214	230	211		1919	714	765	440

Summary of Traffic Count
Transportation Development Division

Site: 21042010
County: Lincoln
City: Waldport
Milepoint: 157.14
Count Number: 1.00

Date: 10/22/2010
Hours: 2:00 PM-6:00 PM
Highway #: 009
Location: US101 @ Ocean Hill Dr. - 4hr count 2-6P
Weather: Clear

	Summary By Movements								Entering Volumes		
Time of Day	NE-E	NE-SW	E-NE	E-SW	SW-NE	SW-E		TOTAL	North-East	East	South-West
14:00	0	63	0	0	77	0		140	63	0	77
14:15	1	69	0	0	69	0		139	70	0	69
14:30	0	64	0	0	86	0		150	64	0	86
14:45	0	72	1	0	50	0		123	72	1	50
15:00	1	74	1	0	62	1		139	75	1	63
15:15	0	68	0	0	92	0		160	68	0	92
15:30	1	75	0	0	69	0		145	76	0	69
15:45	0	73	0	1	74	0		148	73	1	74
16:00	1	74	3	0	67	0		145	75	3	67
16:15	2	72	0	0	73	0		147	74	0	73
16:30	1	77	0	0	69	0		147	78	0	69
16:45	1	77	2	0	56	0		136	78	2	56
17:00	0	65	1	0	49	0		115	65	1	49
17:15	2	69	0	0	54	0		125	71	0	54
17:30	1	73	1	0	42	0		117	74	1	42
17:45	2	52	0	0	45	0		99	54	0	45
Total Count	13	1117	9	1	1034	1		2175	1130	10	1035
24hr Factor	1	1	1	1	1	1		1	1	1	1
24hr Volume	13	1117	9	1	1034	1		2175	1130	10	1035