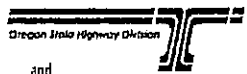


Clatsop County Transportation System Plan

Final

Prepared For:

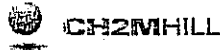
Oregon Department of
Transportation



and

Clatsop County

Prepared By:



and



July 2003

IN THE BOARD OF COMMISSIONERS
FOR CLATSOP COUNTY, OREGON



ORDINANCE NO. 03-09

(AN ORDINANCE AMENDING THE
(CLATSOP COUNTY COMPREHENSIVE
PLAN, AND ORDINANCE (80-14),
(ADOPTING THE CLATSOP COUNTY
(TRANSPORTATION SYSTEMS PLAN AND
(ADOPTING CERTAIN FINDINGS

The Board of County Commissioners of Clatsop County, Oregon ordains as follows:

SECTION 1. SHORT TITLE.

This ordinance shall be known as the Countywide Transportation System Plan.

SECTION 2.

The Board of County Commissioners of Clatsop County, Oregon recognizes the need to revise and amend the Clatsop County Comprehensive Plan as amended and the Land and Water and Development and Use Ordinance (80-14) and Standards Document, in the interest of the health, safety and welfare of the citizens of Clatsop County and pursuant to State law, the Board of Commissioners hereby determines a need to approve this request and to adopt certain findings.

The Board of County Commissioners determines and takes notice that the adoption procedure for this ordinance complies with State Transportation Rule, with all Statewide Planning Goals, the Clatsop County Comprehensive Plan, and the Land and Water and Development Use Ordinance (80-14). The County Planning Commission has sought review and comment and has conducted the public hearing process pursuant to the requirements of ORS 215.050 and 215.060. The Planning Commission held a public hearing on June 10, 2003 and July 8, 2003. The Board received and considered the Planning Commission's recommendations on this request and held a public hearing on this ordinance pursuant to

law on August 13, 2003, held deliberations on August 27, 2003, September 10, 2003 and
tober 22, 2003.

SECTION 3. CONFORMITY WITH THE LAW.

This ordinance shall not substitute for nor eliminate the need to conform with all laws or
rules of the State of Oregon, or its agencies, or any ordinance, rule or regulation of Clatsop
County.

SECTION 4. INCONSISTENT PROVISIONS.

This ordinance shall supersede, control and repeal any inconsistent provision of the
Clatsop County Land and Water Development and Use Ordinance, as amended, or any
other ordinance or regulation made by Clatsop County.

SECTION 5. SEPARABILITY.

If any portion of this ordinance is held invalid or unconstitutional by a court of competent
jurisdiction, such portion shall be deemed as a separate, distinct, and independent provision
and such holding shall not affect the validity of the remaining portions of this ordinance.

SECTION 6. EFFECTIVE DATE.

This ordinance shall be in full force and effective thirty (30) days from the date the Chair
signs this Ordinance.


SECTION 7. ADOPTION CLAUSE.

The Board of Commissioners hereby adopts

- the Amendments to the Clatsop County Comprehensive Plan, set forth in Exhibits "A" and "B"
- The Amendments to the Land and Water Development and Use Ordinance (Ord. 80-14) set forth on Exhibit "C" and
- The findings and conclusions contained in the staff reports set forth in Exhibits "D" through "F" and:
- The Clatsop County Transportation System Plan dated July 2003 prepared by CH2MHILL and Angelo-Eaton including as an appendix to that plan the letters from the Clatsop County Commission to ODOT which are set forth as Exhibit G.

Approved this 22nd day of October 2003.

THE BOARD OF COUNTY COMMISSIONERS
FOR CLATSOP COUNTY, OREGON

By 
Helen Westbrook, Chair

By 
Recording Secretary

Effective Date: November 20, 2003

APPROVED AS TO FORM: 
Clatsop County Counsel

Clatsop County Transportation System Plan

Adopted by Ordinance No. 03-09 Effective November 22, 2003

Prepared by
CH2MHILL

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Preface

The Clatsop County Transportation System Plan (TSP) was funded by the Oregon Department of Transportation (ODOT). This document does not necessarily reflect the views or policies of the State of Oregon. The progress of the TSP was guided by the Clatsop County Project Management Team (PMT), the Clatsop County Advisory Committee (AC), and the Consultant Team identified below.

Acknowledgments

Project Management Team

Bill Arnold, Clatsop County Planning Director
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Patrick Wingard, Planning Director, Warrenton
Mitch Mitchum, Public Works Director, Astoria
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Oregon Department of Transportation

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Valerie Grigg Devis, Senior Transportation Land Use Planner

Department of Land Conservation and Development

Dale Jordan, DLCD Regional Representative
Larry Ksionzyk, DLCD Transportation Representative

Clatsop County TSP Citizen Advisory Committee

The Transportation Committee of the Clatsop Economic Development Council served as the Citizen Advisory Committee for the Clatsop County TSP. Clatsop County and the Oregon Department of Transportation express their sincere appreciation to the following members of the Clatsop TSP Advisory Committee for their participation in this project:

Ron Ash	Dale Barrett	Bruce Conner	Jim Hunt
Bob Gannaway	Larry Haller	Cindy Howe	Jan Mitchell
Richard Johnson	Lynn Leland	Ken Meiser	Larry Pfund
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Kirsten Pennington

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by federal Transportation Equity Act for the 21st Century (TEA-21), local government, and the State of Oregon funds.

Acronyms and Abbreviations

AAGR	average annual growth rate
AC	Advisory Committee
ADA	Americans with Disabilities Act
ADT	average daily traffic
ATR	Automated Traffic Recorder
CAC	citizen advisory committee
CGB	Community Growth Boundary
CREST	Columbia River Estuary Study Taskforce
DAR	dial-a-ride
DEIS	Draft Environmental Impact Statement
DLCD	Department of Land Conservation and Development
EIS	Environmental Impact Statement
HCM	Highway Capacity Manual
HOV	high occupancy vehicle
IM	interstate maintenance
IOF	Immediate Opportunity Fund
IRIS	Integrated Roadway Information System
ITS	Intelligent Transportation System
LCD	Land Conservation and Development
LOS	level of service
MP	milepost
mph	miles per hour
MUTCD	Manual on Uniform Traffic Control Devices
NHS	National Highway System
NWRC	Northwest Ride Center
OAR	Oregon Administrative Rule
OBPP	Oregon Bicycle and Pedestrian Plan

ODF	Oregon Department of Forestry
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
ORS	Oregon Revised Statute
OTIA	Oregon Transportation Investment Act
OTP	Oregon Transportation Plan
PCI	pavement condition index
PDO	Planned Unit Development
PMT	Project Management Team
SETD	Sunset Empire Transportation District
SPIS	Safety Prioritization Index System
STIP	Statewide Transportation Improvement Program
TDM	Transportation Demand Management
TPAU	Transportation Planning and Analysis Unit
TPR	Transportation Planning Rule
TSM	Transportation System Management
TSP	Transportation System Plan
TWSC	two-way stop control
UGB	Urban Growth Boundaries
v/c	volume-to-capacity

SECTION 1

Introduction

Clatsop County, in conjunction with the Oregon Department of Transportation (ODOT), initiated a study of the County's transportation system in 2002. The Clatsop County Comprehensive Plan is undergoing periodic review as required by State law. While the transportation element (Goal 12) of the Clatsop County Comprehensive Plan is not a specified periodic review work task, the County views it as a priority to address transportation issues through the planning horizon.

The Clatsop County Transportation System Plan (TSP) identifies planned transportation facilities and services needed to support planned land uses as identified in the Clatsop County Comprehensive Plan in a manner consistent with the Transportation Planning Rule (TPR) (Oregon Administrative Rule [OAR] 660-012) and the Oregon Transportation Plan (OTP). Preparation and adoption of a TSP for the County provide the following benefits:

- Assures adequate planned transportation facilities to support planned land uses for the next 20 years
- Provides certainty and predictability for the siting of new streets, roads, highway improvements and other planned transportation improvements
- Provides predictability for land development
- Helps reduce the cost and maximize the efficiency of public spending on transportation facilities and services by coordinating land use and transportation decisions

This TSP will guide the management and development of appropriate transportation facilities within Clatsop County, incorporating the community's vision, while remaining consistent with State, regional, and other local plans. This report provides the necessary elements to be adopted as the transportation element of the County's comprehensive plan.

The Clatsop County TSP addresses ways to improve the transportation system to support anticipated growth throughout the unincorporated areas of Clatsop County (See Section 3). The TSP considered future traffic volumes and circulation patterns in a way that emphasizes the County road network and protects the function of the primary State highway corridors: US 101, US 26, and US 30. This TSP pays particular attention to the tourist and recreational aspects of the area and the transportation conditions created by the unique traffic characteristics. A system of transportation facilities and services adequate to meet the County's transportation needs to the planning horizon year of 2022 is established in this TSP. The TSP includes plans for a transportation system that incorporates all modes of travel (e.g., auto, bicycle, pedestrian, rail, marine, and public transportation), serves the urban area, and is coordinated with the State, regional, and County transportation network.

Elements of the Clatsop County TSP

Specific elements of the Clatsop County TSP include:

- A road network with connections and extensions to provide for local circulation and access off State highways, including US 101, US 26, and US 30
- Road standards that comply with the TPR
- Appropriate improvements along the primary County and State highway corridors to support planned land uses and measures to protect the long-term functionality of statewide highways
- Pedestrian and vehicle circulation improvements to reduce the need for short car trips on State highways and improve pedestrian safety throughout the planning area
- Amendments to the County's zoning, subdivision, and other land use-related ordinances; the County's Comprehensive Plan; and any relevant County financing plans, such as a capital improvement plan or other similar documents

TPR Requirements

The contents of the Clatsop County TSP are guided by Oregon Revised Statute (ORS) 197.712 and the Department of Land Conservation and Development (DLCD) administrative rule known as the TPR. These laws and rules require that jurisdictions develop the following:

- Plan for a network of arterial and collector roads
- Public transit plan
- Bicycle and pedestrian plan
- Air, rail, water, and pipeline plan
- Transportation financing plan
- Policies and ordinances for implementing the transportation system plan

The TPR requires that alternative travel modes be given equal consideration with the automobile, and that reasonable effort be applied to the development and enhancement of the alternative modes in providing the future transportation system. In addition, the TPR requires that local jurisdictions adopt land use and subdivision ordinance amendments to implement the provisions of the TSP. Finally, local communities must coordinate their respective plans with the applicable County, regional, and State transportation plans. This coordination occurred throughout the preparation of the Clatsop County TSP.

In addition to addressing the policies and requirements outlined in the statewide TPR, the Clatsop County TSP process incorporated local plans and policies to ensure that the TSP reflected the vision and aspirations of the community.

Plans and Policies

Several jurisdictions own the public roadways serving Clatsop County. ODOT, Clatsop County, and individual jurisdictions all have jurisdiction over specific roadways within Clatsop County. These jurisdictions have plans and policies that directly affect transportation planning in Clatsop County. One of the first steps in the TSP process was to

review the following documents to serve as the basis for updating policies to reflect current conditions and to achieve consistency with other local, regional and State plans.

Federal

- General Management Plan, Development Concept Plans, Final Environmental Impact Statement (EIS) for Fort Clatsop National Memorial (U.S. Department of the Interior, National Park Service) (1995)

State/ODOT

- Transportation Planning Rule (OAR 660-12)
- Oregon Transportation Plan (1992)
- Oregon Aviation Plan (2000)
- Oregon Bicycle and Pedestrian Plan (1995)
- Draft 2001 Oregon Rail Plan
- 1995 Oregon Transportation Safety Action Plan
- 1997 Oregon Public Transportation Plan
- 1999 Oregon Highway Plan
- 2002-2005 Statewide Transportation Improvement Program
- 2000-2003 Statewide Transportation Improvement Program
- Draft 2004-2007 Statewide Transportation Improvement Program
- Executive Order No. EO-00-07, Development of a State Strategy Promoting Sustainability in Internal State Government Operations (2000)
- Executive Order No. EO-00-23, Use of State Resources to Encourage the Development of Quality Communities (2000)
- Access Management Rules (OAR 734-051)
- Freight Moves the Oregon Economy (1999)
- Proposed Oregon Coast Highway Corridor Master Plan (1995)
- Pacific Coast Scenic Byway Corridor Management Plan for US 101 in Oregon (1997)
- Portland – Astoria (US 30) Corridor Plan (1999)
- Portland – Cannon Beach Junction (US 26) Corridor Plan (1999)
- US 101 – Warrenton Vicinity Transportation Planning Study (Camp Rilea Road to Youngs Bay Bridge) (1993)
- Pacific Way – Dooley Bridge Oregon Coast Highway, Draft Environmental Impact Statement (DEIS) (1995)

- Prioritization of Oregon Bridges for Seismic Retrofit

Sunset Empire Transit District

- Sunset Empire Transportation District Strategic Plan (2001)

Clatsop County

- Clatsop County Comprehensive Plan Goals and Policies (1994)
- Clatsop County Land and Water Development and Use Ordinance (Ordinance 80-14) (2001)
- Clatsop County Standards Document (Ordinance 80-14) (2000)
- Clatsop County Bicycle Plan (1993)
- Astoria Airport Master Plan (Port of Astoria) (2001)
- Central Waterfront Master Plan (Port of Astoria) (2001)
- Columbia River Estuary Study Taskforce (CREST) Memorandum: Amended Clatsop County Population Projections with 2000 U.S. Census Information (2001)
- Astoria Bypass John Day River Bridge—Youngs Bay Bridge Draft EIS (1993)
- Extended Bypass Alignment Study, Astoria, Oregon (1999)
- Astoria Bypass Application to Clatsop County for Land Use Approvals (1997)
- Clatsop County 2001–2006 Capital Improvement Project List

Cities

- City of Warrenton TSP (1993)
- Warrenton Urban Growth Boundary Joint Management Agreement
- City of Seaside Draft Transportation System Plan (1997)
- Astoria Transportation System Plan Volume I (1999)
- City of Cannon Beach Comprehensive Plan—Transportation Element (1998)
- City of Gearhart Comprehensive Plan—Background Report and Goals and Policies (1994)

Public Involvement

The TSP planning process provided the citizens of Clatsop County with the opportunity to identify priorities and provide input on future transportation projects within the County. The public involvement component of the Clatsop County TSP consisted of two advisory committees and a community open house.

The project management team (PMT) included planners and public officials representing the County and jurisdictions within the County such as Astoria, Cannon Beach, Seaside, Warrenton, ODOT, and DLCD. The PMT was responsible for reviewing technical aspects of the TSP. A citizen advisory committee (CAC) was made up of 20 residents representing a broad cross-section of the County population. The CAC was responsible for evaluating the TSP from a policy perspective. This included reviewing the TSP goals and objectives, as well as the transportation evaluation criteria.

The two committees convened four times each during the process of developing the draft TSP, including: project kickoff, completion of the existing conditions analysis, presentation of the future conditions and alternatives analyses, and presentation of the draft TSP.

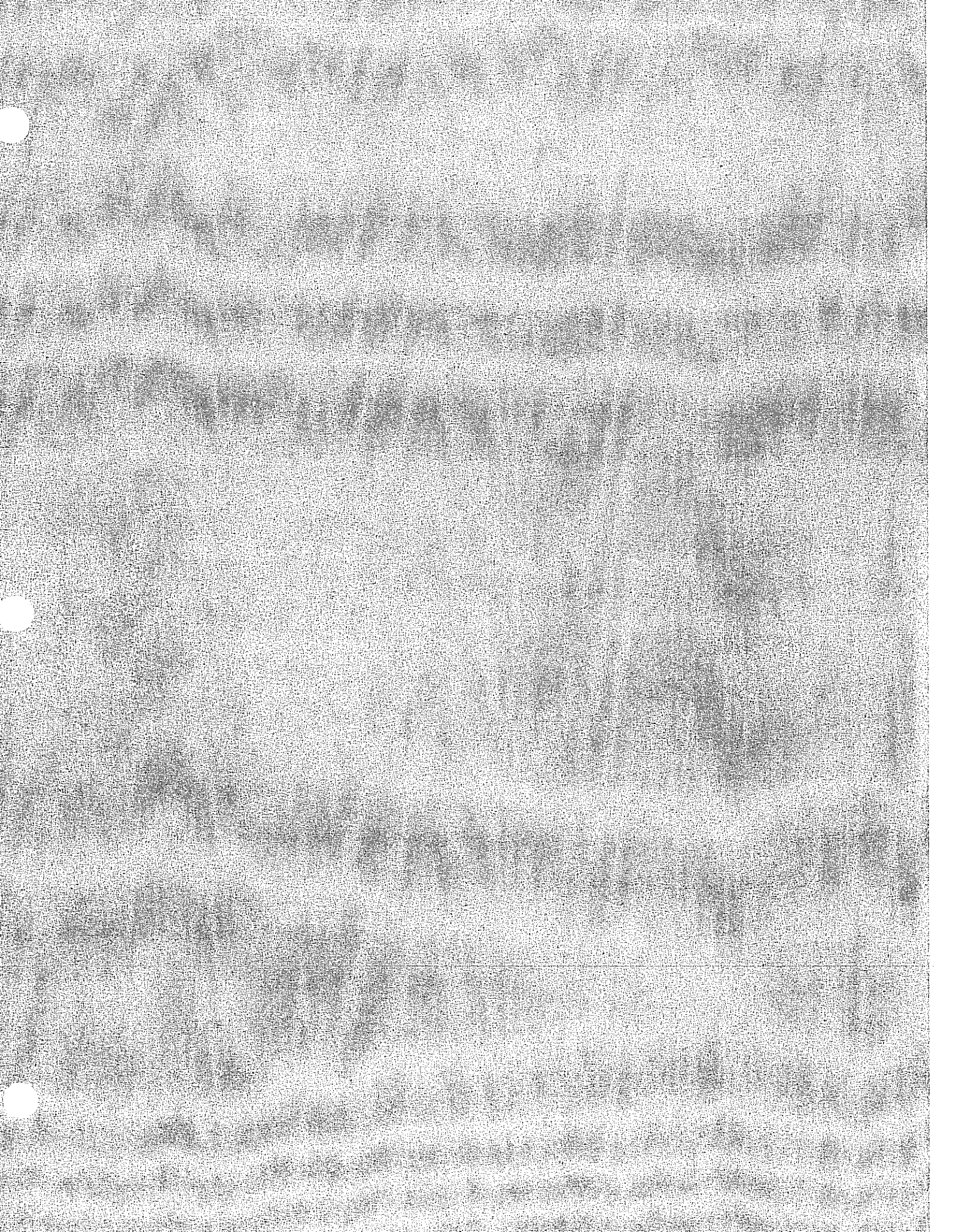
Two community open houses were designed as the primary public outreach tool for the TSP planning process and provided opportunities for the public to review TSP materials and to provide comments to the technical team preparing the TSP. The main objectives of the first open house were to gather community input for the development and evaluation of the proposed alternatives. Public notice for the August 15, 2002, open house appeared in the *Daily Astorian* 2 weeks before the event. Though the open house did not attract a large number of participants, those who did attend made valuable contributions to the TSP planning process. A second open house was held on April 23, 2003, to review and gather public input on the draft TSP. Public notice for this open house also appeared in the *Daily Astorian* 2 weeks before the event.

Goals and Objectives

The formulation of goals and objectives represent an important component of the TSP process. Goals and objectives are intended to reflect the vision and character of Clatsop County as the community develops its transportation system. The goals and objectives also are intended to implement and support the Clatsop County Comprehensive Plan.

The Clatsop County TSP goals and objectives serve two main purposes: (1) to guide the development of the Clatsop County transportation system during the next 20 years; and (2) to demonstrate how the TSP relates to other County, regional, and State plans and policies. The goal statements are general statements of purpose to describe how the County and the TSP intend to address the broad elements of the transportation system. The objectives are specific steps that illustrate how the goal is to be carried out.

The goals and objectives were formed as part of the Clatsop County TSP planning process. They reflect the input of residents, businesses, and agencies that was obtained during the course of preparing the TSP. They also reflect current local, regional, and State goals and policies, and are intended to support these policies. The goals and objectives of the TSP have been incorporated into the Clatsop County Comprehensive Plan Goals and Policies document as transportation goals and objectives.



SECTION 2

Existing Transportation Conditions

This section summarizes the state of existing transportation conditions in Clatsop County, Oregon. The inventory of existing transportation conditions in Clatsop County will serve as a baseline for the 20-year planning horizon. The inventory focuses on roadway segments that are classified as arterials and collectors by Clatsop County and ODOT and does not include roadways within the communities of Astoria, Cannon Beach, Gearhart, Seaside, and Warrenton. The following elements of the existing transportation system are discussed in this section:

- Land Use
- Roadway Inventory
- Traffic Operations Analysis
- Safety Analysis
- Public Transportation Inventory
- Pedestrian and Trail System Inventory
- Bicycle System Inventory
- Air System Inventory
- Rail System Inventory
- Water System Inventory

Land Use

Clatsop County, as shown on Figure 2-1, is located in the northwest corner of Oregon along the Columbia River and the Pacific Ocean, with a population of 35,850 in year 2001. The incorporated communities of Astoria, Cannon Beach, Gearhart, Seaside, and Warrenton are located within Clatsop County. Table 2-1 summarizes the July 1, 2001, population estimates for Clatsop County as reported by the Portland State University Population Research Center.

TABLE 2-1
Year 2001 Populations in Clatsop County

City	Population
Astoria	9790
Cannon Beach	1600
Gearhart	1010
Seaside	5950
Warrenton	4230
Unincorporated	13,270

Source: 2000 US Census

According to the 2000 US Census, approximately 59 percent of Clatsop County's population lives in urban clusters. This includes both incorporated cities and towns and unincorporated rural communities. People residing in rural areas account for approximately 41 percent of the County population. Of this number, approximately 2.5 percent are farmers. The split between urban and rural living in Clatsop County is relatively balanced.

In terms of aging, the County population is also balanced but tends toward a middle aged population. Approximately 27 percent of the 2000 population is between 1 and 20 years old; 25 percent are between 20 and 40 years old; 29 percent are between 40 and 60 years old; 8 percent are between 60 and 70 years old; and 11 percent are between 70 and 80 years old; and .6 percent are 85+ years old.

Major roadways within Clatsop County include US 101, US 26, and US 30. Clatsop County serves a variety of transportation needs through a system that includes roads, public transportation amenities, pedestrian and bicycle facilities, an airport, water transportation facilities, and pipelines.

At this point, cursory statistics about the commuting patterns of Clatsop County residents are available from the 2000 US Census. Of those who commute to work, the mean travel time is 19.5 minutes. The following table describes the modes which Clatsop County commuters use in order to get to work and shows that while an overwhelming majority of workers travel alone in their cars, approximately 11 percent of the working population walks to work or works at home, highlighting the importance of pedestrian systems.

TABLE 2-2
Clatsop County Statistics on Commuting to Work in 2000 (16+ years)

Mode	Number	Percentage of 2000 Working Population
Drive Alone	12,336	74.02%
Carpool	1,872	11.23%
Public Transportation	215	1.29%
Walk	1,020	6.12%
Other	375	2.25%
Work at Home	837	5.02%
Total Working	16,665	100%

Source: 2000 US Census

Clatsop County includes over 800 square miles of land, with a majority of the land area characterized as rural. "Resource" lands, such as agricultural and forest land, make up a large portion of Clatsop County.

Figure 2-1
Study Area
Back

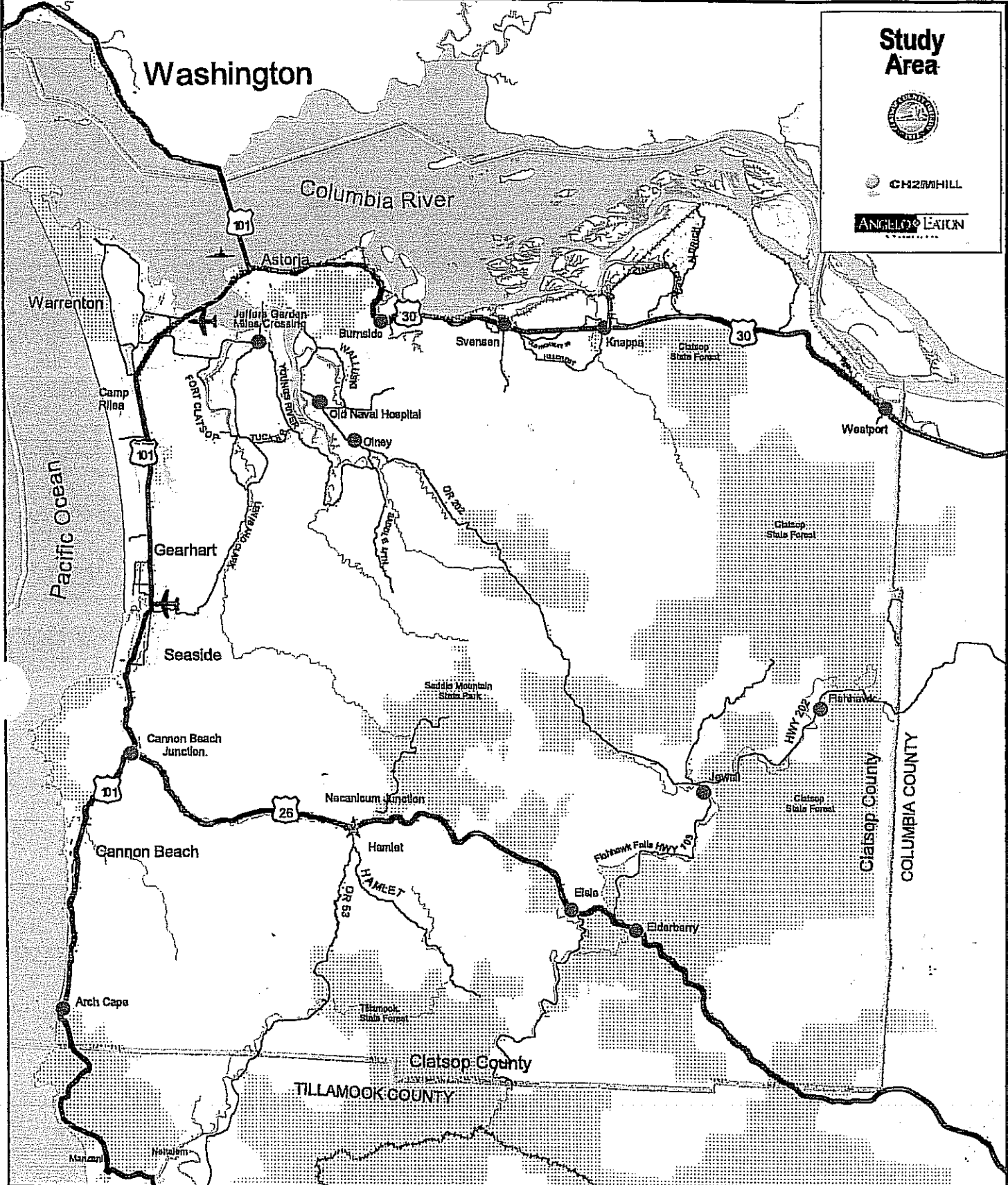
Washington

Columbia River

Study Area



CH2MHILL
ANGELO LARON



- Principal Arterial
- Other Road
- Rural Service Center
- Rural Community
- Ports
- Airport
- Portland & Western Railroad
- Parks
- City Limits
- County Boundary

Figure 2-1
 Transportation System Plan
 Clatsop County



Clatsop County is characterized by its location adjacent to the Pacific Ocean and Columbia River, as well as its quantities of streams and forestland. Much of the eastern and southern portions of the County consist of forestland (Clatsop State Forest). The County also includes Saddle Mountain State Park, Jewell Wildlife Area, Fort Stevens State Park, Fort Clatsop National Memorial, and several other parks located adjacent to the Pacific Ocean, including Ecola State Park, Tolovana Beach State Wayside, Arcadia Beach State Wayside, Hug Point State Park, and Oswald West State Park. Lakes and wetlands characterize the northwest corner of the County, which shapes development patterns in that area.

Most urban development in the County is located near principal arterial roadways (US 101 and US 30) in the northern and western portions of the County. The northwestern portion of the County is also the location of a significant amount of farmland, particularly near the Lewis and Clark and Youngs Rivers. Camp Rilea Oregon National Guard Base is located just south of Warrenton. The Hammond and Warrenton Marinas, as well as the Port of Astoria on the Columbia River are functional.

Commercial development within Clatsop County is concentrated within the cities of Astoria, Warrenton, Gearhart, Seaside, and Cannon Beach. Smaller pockets of commercial development are located in Svensen, Knappa, Elsie and Westport. Much of the commercial development in Warrenton and Seaside is accessed from US 101, and most of the commercial areas in Astoria are accessed via US 30 or US 101. Much commercial development is geared toward tourists, who primarily visit Clatsop County due to the wealth of scenic and recreational resources.

Industrial development is primarily located in the northern portion of the County, adjacent to the Columbia River and near the Ports of Astoria and Warrenton and can typically be characterized as "water-dependent" industrial use. Other industrial development is located near the Port of Astoria Airport. There are also several logging operations throughout Clatsop County forestland.

Rural Communities

Residential development is primarily concentrated in the incorporated cities of Astoria, Warrenton, Gearhart, Seaside, and Cannon Beach. However, there are 12 Rural Communities in the unincorporated area of Clatsop County (see Figure 2-1). A number of transportation improvements have been identified for the County's unincorporated communities. These are addressed in Section 5 of this document. The following provides an overview of the transportation system and the intensity of development in the 12 rural communities.

Arch Cape Rural Community (Proposed)

Arch Cape is located in the southwest corner of Clatsop County. The Community Growth Boundary (CGB) borders State parks to the north and south, the Pacific Ocean to the west, and resource forestland to the east. Highway 101 runs north and south dividing the community in half. More than 50 percent of the acres that make up Arch Cape are developable vacant land. Land uses in Arch Cape are predominately residential. Almost 40 percent of the community's acreage is zoned Single Family Residential. Forestland accounts for the second largest (23 percent) use designation. Currently, no industrially

zoned areas exist or are proposed for the future. Only 3 acres are assigned to small-scale, low-impact commercial use.

Miles Crossing/Jeffers Garden Rural Community (Adopted)

Miles Crossing/Jeffers Garden is located in the northwest corner of Clatsop County. The CGB, surrounded by agricultural land, borders Youngs Bays to the north and Lewis and Clark River to the west. Alternate Highway 101 enters into Miles Crossing from the north and then proceeds across Jeffers Garden from east to west. Miles Crossing/Jeffers Garden is primarily residential with over 55 percent of the town's 400 lots designated Single Family Residential. Currently, over 75 percent of the community's total 367.08 acres are occupied, leaving less than 91 acres available to develop. The community is approaching buildout. The County recently completed a rural community plan for the Miles Crossing/Jeffers Garden Rural Community that, when implemented, will increase the development capacity of the community through rezonings and implementation of a rural community sewer system.

Knappa Rural Community (Proposed)

Knappa Rural Community is located on the north border of Clatsop County. The CGB, surrounded by both agricultural and forest lands, is bordered by the Columbia River to the north. Highway 30 runs east to west through the center of the community. Of the 391 (626 acres) tax lots designated in this area, 63 percent (355 acres) of the sites are occupied, leaving 37 percent vacant. However, of that 37 percent, over 270 potential acres is still available for development, a little under ½ of the total area within the community. Land use in Knappa is primarily residential, with over 40 percent of the total lots are zoned Single Family Residential, but occupying only 11 percent of the area's total acreage.

Currently, no industrially zoned areas exist or are proposed for the future and 46 acres are assigned to small-scale, low-impact commercial use.

Svensen Rural Community (Proposed)

Svensen Community is located on the northern border of the Columbia River. The CGB, surrounded by both agricultural and forest lands, is bordered by the Columbia River to the north. Highway 30 runs east to northwest through the northern quarter of the community. Land use in Svensen is primarily residential, with about 30 percent (50 acres) of the total 304 lots zoned as Single Family Residential. This zone occupies only 7 percent of the community's total acreage. More than 40 percent of the remaining lots, nearly 465.07 acres, that make up Svensen are developable vacant land. Currently, no industrially zoned areas exist or are proposed for the future and about 6 acres are assigned to small-scale, low-impact commercial use.

Westport Rural Community (Proposed)

The Westport Community is located in the northeastern corner of Clatsop County. The CGB, surrounded by both agricultural and forest lands, is bordered by the Columbia River to the north. Highway 30 runs southeast to northwest through the bottom 1/3 of the community. Land use in Westport is primarily residential; with over 65 percent (15 acres) of the total lots zoned is Single Family Residential. Commercial zoning is the second largest use of land, occupying about 13 percent (18 acres). There is also a ½ acre lot of heavy industrial land

along the Columbia River. The flow of traffic to this area has been highlighted as a problem by the County. Ferry Road, which provides access for the community to the Westport Ferry, Columbia River and industrial area, is a narrow residential road that is inundated with heavy industrial traffic. The solution is to develop options that will better serve both the industrial area and the residents who live along this stretch of the River. The remaining transportation facilities and Highway 30 are expected to support the community should increased density and development occur within the CGB at a realistic rate.

Roadway Inventory

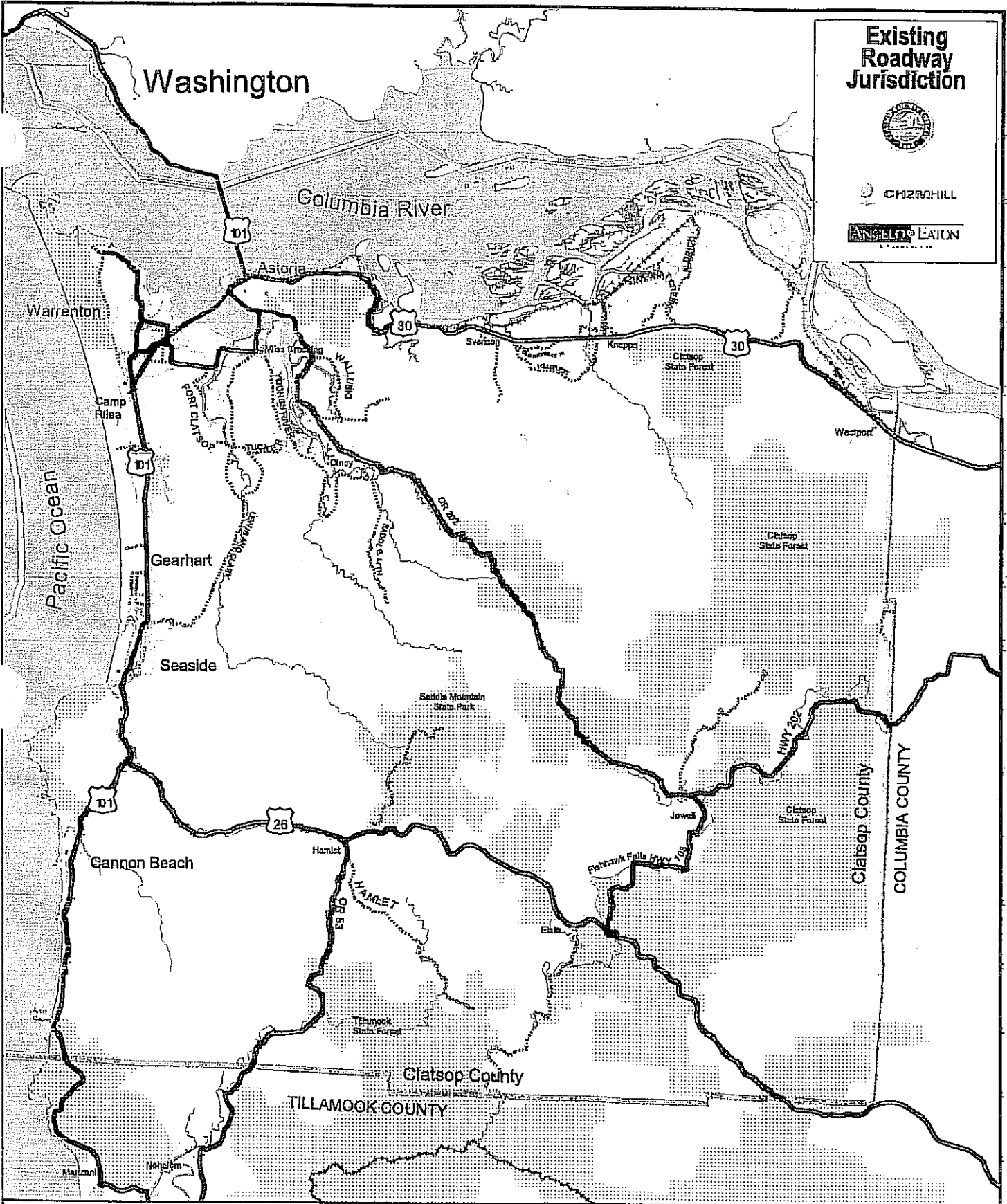
Within Clatsop County, the following roadway characteristics were inventoried:

- Maintenance and Ownership
- Functional Classification
- IRIS Database
- ODOT Facilities
- Intersection Control
- Lifeline Routes
- Bridges
- Truck Routes

Clatsop County maintains a road inventory database using the Integrated Roadway Information System (IRIS) program. The IRIS database includes many roadway features including the pavement condition index (PCI), number of lanes, functional classification, roadway width, surfacing type, and roadway length for County roads. The IRIS database, ODOT sources, and a field visit were used to summarize the existing conditions in Clatsop County. See the document titled Clatsop County Transportation System Plan Supplemental Background Document (CH2M HILL, January 2003) (referred to from this point forward as the Background Document), which includes copies of all the technical memos completed for the Clatsop County TSP, for further information regarding the inventory of existing conditions.

Maintenance and Jurisdiction

Within Clatsop County there is a mixture of road jurisdiction, including roads owned by ODOT, Clatsop County, and local cities as shown on Figure 2-2. Roads under the jurisdiction of ODOT and Clatsop County combine to total approximately 350 miles of roadway. State and County facilities equal approximately 48 percent and 52 percent, respectively, of the total 350 miles of roadway.



Existing Roadway Jurisdiction

CH2M HILL

ANGELLO EATON

Figure 2-2
Transportation System Plan
Clatsop County

Figure 2-2
Existing Roadway Ownership
Back

ODOT maintains and has jurisdiction over the following roads:

- US 101
- US 26
- US 30
- OR 202
- Fishhawk Falls Highway 103
- OR 53
- Fort Stevens Highway 104
- Fort Stevens Highway 104 Spur
- Warrenton-Astoria Highway 105

Clatsop County maintains and has jurisdiction over all the collector and arterial roads shown on Figure 2-2 and all roads listed in the Background Document.

In an amendment to the Warrenton Urban Growth Boundary Management Agreement signed in 1999, Clatsop County transferred jurisdiction and maintenance of Airport Road and Dolphin Road (west of Ridge Road) to the City of Warrenton.

Existing Functional Classification

Clatsop County and ODOT have identified the functional classification of roadways within Clatsop County. The proper classification of each roadway is important to help determine the appropriate traffic control, design standards, pedestrian and bicycle facilities, and access to adjacent properties for a roadway segment. The following existing functional classifications are shown on Figure 2-3:

- **Arterial Roadways.** The primary function of an arterial roadway is to provide mobility. Therefore, arterials typically carry higher traffic volumes and allow higher travel speeds while providing limited access to adjacent properties.
- **Collector Roadways.** The function of a collector roadway is to collect traffic from local roads and provide connections to arterial roadways. Generally, collectors operate with moderate speeds and provide more access in comparison to arterials.
- **Local Roadways.** The primary function of a local roadway is to provide access to local traffic and route users to collector roadways. Generally, local roadways operate with low speeds, provide limited mobility, and carry low traffic volumes in comparison to other roadway classifications.

County Roadways

For each of the County roads, an inventory of pavement type, number of travel lanes, and roadway width was conducted using information from the IRIS database and field visit.

Pavement Condition

The IRIS database indicates the surfacing type of each County roadway (e.g., gravel, asphalt, and concrete). The IRIS database includes an PCI of each roadway segment, as well as the high and low PCI for each segment. A PCI of 0 to 40 was considered to be poor condition, 40 to 55 was considered fair condition, and 55 or higher was assumed to be good condition.

Generally, the pavement condition of arterial and collector County roads is fair to good. A few sections of County collector and arterial roads, including Youngs River Loop from Olney Cutoff to OR 202, sections of Old Highway 30 in Svensen, and Knappa Dock Road, are in poor condition.

Number of Travel Lanes

The IRIS database contains the number of travel lanes on each roadway segment. Within Clatsop County, there are no County facilities with more than two travel lanes. A majority of arterial, collector, and local roads under jurisdiction of Clatsop County are two lane roadways, with a few local and collector roads having only one lane. Examples of one lane roads include Cedar Avenue in Arch Cape and Driscoll Slough near Taylorville.

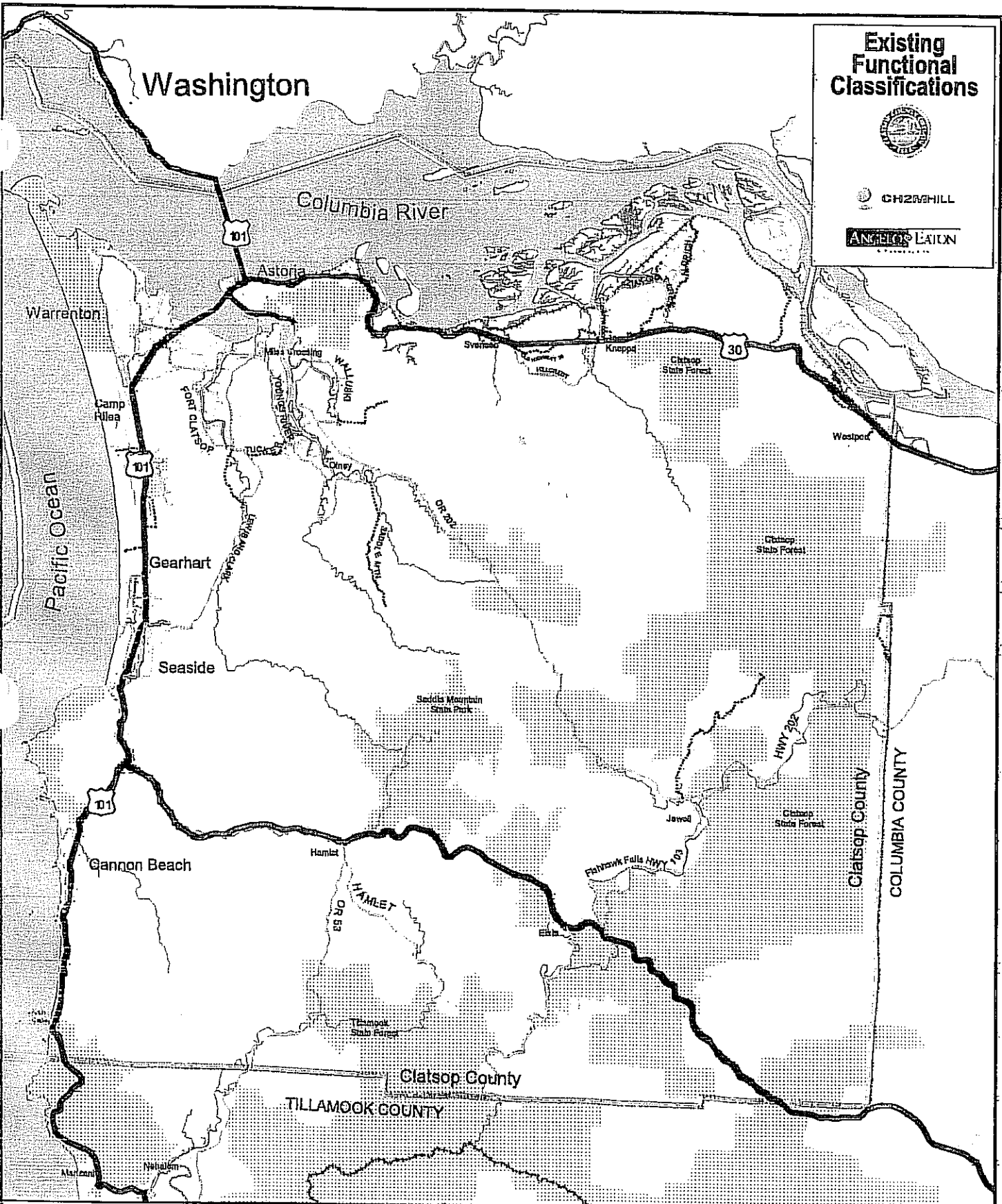
Roadway Width

The IRIS database contains the width of each County roadway. A majority of the arterial and major collector County facilities have roadway widths of at least 18 feet.

ODOT Facilities

The IRIS database does not contain information on roads under the jurisdiction of ODOT. An inventory was conducted along US 101, US 26, US 30, OR 202, Fishhawk Falls Highway 103, OR 53, Fort Stevens Highway 104, Fort Stevens Highway 104 Spur, and Warrenton-Astoria Highway 105 to determine pavement type, pavement condition, number of lanes, and general observations of existing conditions. All ODOT facilities have asphalt surfacing. The condition of pavement on ODOT facilities varies from poor to good, with a majority of pavement conditions falling within the fair to good range. The number of lanes varied per roadway segment, as passing lanes and left/right-turn lanes exist on some facilities. See below for a summary of roadway conditions on each ODOT facility:

- The pavement conditions along **US 101** are generally fair to good. There are passing lanes, left/right-turn lanes, guardrail sections, and turnouts at key locations along the highway and paved shoulders for bikes. South of Cannon Beach, slide issues, falling rock warnings, and more frequent horizontal/vertical curvature exist along US 101. The speed limit along the highway is 55 miles per hour (mph), with reduced speed zones in Gearhart, Seaside, Cannon Beach, and Arch Cape. There is an existing tunnel at Arch Cape along US 101, with a posted speed limit of 30 mph and a pedestrian/bicycle warning signal. US 101 is a designated National Scenic Byway.
- **US 26** has isolated sections of roadway with a poor pavement condition due to rutting and slide issues. A section at approximately milepost (MP) 23.5 within a slide area has a "rough road" sign and pavement sections in poor condition. However, the pavement along most of US 26 is in good condition. The speed limit along most of US 26 is 55 mph, with a reduced speed limit of 50 mph in Elsie. There are passing lanes, left/right-turn lanes, guardrail sections, and turnouts at key locations along the highway and paved shoulders for bikes.



Existing Functional Classifications

- Minor Collector
- Urban Collector/ Rural Major Collector
- Minor Arterial
- ===== Principal Arterial

----- Portland & Western Railroad

- [Stippled Area] Parks
- [Dashed Line] City Limits
- [Solid Line] County Boundary

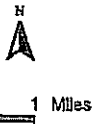


Figure 2-3
 Transportation System Plan
 Clatsop County

Note: Functional Classification for State facilities from ODOT.
 Functional Classification for County facilities from Clatsop County.

Figure 2-3
Existing Clatsop County Functional Classifications
Back

- **US 30** has isolated sections of roadway with a poor pavement condition, but most of the highway is in good condition. The speed limit along highway is 55 mph, with reduced speed zones near Astoria, Knappa, and Westport. There are passing lanes, left/right-turn lanes, guardrail sections, and turnouts at key locations along the highway and paved shoulders for bikes. In Astoria, there are sections of road with sidewalk and on-street parking.
- **OR 202** has sections of pavement in poor condition from Astoria to the Clatsop/Columbia County line. The highway contains left-turn lanes within the vicinity of the City of Astoria. However, a majority of the highway has two lanes, with passing allowed where sight distance is adequate. Most of OR 202 has no shoulders and the horizontal alignment contains numerous curves with reduced speeds. Guardrail exists at several of the major curves, but is not present along a majority of the highway or along several segments with steep side embankments. Visibility of striping varies by section, as some sections have striped bike lanes and others have no visible centerline or fog line striping. The highway travels through forest land, so there are clear zone issues with adjacent trees and steep side slopes. Overall, OR 202 has a relatively low average daily traffic (ADT).
- The conditions along **Fishhawk Falls Highway 103** are very similar to OR 202. This highway has sections of roadway with a poor pavement condition from Highway 202 to US 26.
- The conditions along **OR 53** are also very similar to OR 202. This highway has sections of roadway with a poor pavement condition from US 26 to the Clatsop/Tillamook County Line.
- The pavement condition of **Fort Stevens Highway 104** within Warrenton is fair to good. There are left-turn lanes in front of the Warrenton High School and the highway has shoulders for bikes. There are sidewalks and sections with on-street parking in downtown Warrenton. The speed limit ranges from 25 to 45 mph.
- The pavement condition of **Fort Stevens Highway 104 Spur** is generally fair and this highway has shoulders for bikes.
- The pavement condition of **Warrenton-Astoria Highway 105** is generally fair. The speed limit on this section of roadway varies between 35 and 55 depending upon location. There are paved shoulders along some sections of this roadway and other sections of roadway have no striped shoulders. There is a passing lanes and right/left-turn lanes at key locations.

Design Standards on State Highways

Using lane width data available on the ODOT website (<http://www.odot.state.or.us/transview/highwayreports>), existing travel lane and shoulder widths for each State facility within the County were compared to ODOT design standards (See Table 2-3). Table 2-4 summarizes the State facilities that do not meet these standards.

TABLE 2-3
ODOT Design Standards

No.	Roadway Section	Minimum Lane Width	Minimum Shoulder Width
1	ADT Over 4000—All Speeds (< 10% Trucks)	11 feet*	6 feet
2	ADT of 2001 to 4000—All Speeds (< 10% Trucks)	11 feet	4 feet
3	ADT of 750 to 2000—Under 50 mph (> 10% Trucks)	11 feet	2 feet
4	ADT Less Than 750—Under 50 mph (> 10% Trucks)	10 feet	2 feet
5	ADT of 750 to 2000—Over 50 mph (> 10% Trucks)	12 feet	3 feet
6	ADT Less Than 750—Over 50 mph (> 10% Trucks)	10 feet	3 feet

*Note: For nationally recognized truck routes, the minimum lane width is 12 feet.

TABLE 2-4
State Facilities Not Meeting Minimum ODOT Standards

Roadway Section	From Milepost	To Milepost	Standard No. (See Table 2-3)	Deficiency
US 101 (Oregon Coast Highway)—Both Sides	35.68	35.85	2	No Shoulder—Arch Cape Tunnel
US 101 (Oregon Coast Highway)—East Side	32.34	35.58	2	Sections with 1' to 2' Shoulders
US 101 (Oregon Coast Highway)—Both Sides	28.64	28.70	1	Sections with 4' to 5' Shoulders
US 101 (Oregon Coast Highway)—Both Sides	19.15	19.72	1	0' to 4' Shoulders
US 101 (Oregon Coast Highway)—Both Sides	16.44	18.20	1	3' to 4' Shoulders
US 101 (Oregon Coast Highway)—Both Sides	14.45	14.84	1	Sections with 5' Shoulders
US 101 (Oregon Coast Highway)—Both Sides	13.38	13.48	1	Sections with 4' Shoulders
OR 53	0.11	County Line	3 & 4	No Shoulders
US 26—Both Sides	0	29.41	1	Sections with 0' to 4' Shoulders
US 30—Both Sides	92.87	95	1	Sections with 4' to 5' Shoulders and lane widths less than 12'
US 30—Both Sides	88.46	92.12	1	Sections with 3' to 5' Shoulders and lane widths less than 12'
US 30—Both Sides	86.37	86.43	1	3' to 4' Shoulders over bridge
US 30—Both Sides	83.45	85.76	1	Sections with 4' to 5' Shoulders and lane widths less than 12'

TABLE 2-4
State Facilities Not Meeting Minimum ODOT Standards

Roadway Section	From Milepost	To Milepost	Standard No. (See Table 2-3)	Deficiency
US 30—Both Sides	72.86	81.81	1	Sections with 3' to 5' Shoulders and lane widths less than 12'
OR 202—Both Sides	38.89	39	6	1' Shoulders
OR 202—Both Sides	38.03	38.41	6	No Shoulders
OR 202—Both Sides	12.27	37.80	6	No Shoulders
OR 202—Both Sides	7.14	12.27	5	No Shoulders and lane widths of less than 12'
OR 202—Both Sides	4.77	7.14	2	0' to 1' Shoulders and lane widths of less than 12'
OR 202—Both Sides	3.88	4.36	2	1' Shoulders and lane widths of less than 12'
Fishhawk Falls Highway 103—Both Sides	6.98	8.89	5	No Shoulders and lane widths of less than 12'
Fishhawk Falls Highway 103—Both Sides	0	6.98	6	No Shoulders
Fort Stevens Highway 104—Both Sides	5.3	5.38	2	3' Shoulders
Warrenton-Astoria Highway 105—Both Sides	6.75	7.08	1	No Shoulders
Warrenton-Astoria Highway 105—Both Sides	2.85	4.79	2	0' to 1' Shoulders

The existing travel lane and shoulder widths on US 101, US 26, and US 30, which carry the highest ADT traffic volumes in Clatsop County, are generally adequate. Most locations identified in Table 2-4 on each of these facilities have existing shoulder widths of 3 to 5 feet, which are slightly under the ODOT design standard. Although these shoulder widths are considered deficient, they accommodate pedestrians and bikes better than roads without shoulders.

Fishhawk Falls Highway 103, OR 202, and OR 53, which carry the lowest ADT traffic volumes in Clatsop County, generally have no shoulders and narrow travel lanes.

Intersection Control

All of the existing signalized intersections in Clatsop County are located along ODOT facilities in incorporated areas:

- The intersections of US 101 with Portway Street (Astoria), Harbor Street (Warrenton), Neptune Avenue (Warrenton), Pacific Way (Gearhart), 12th Avenue (Seaside), Broadway Drive (Seaside), and U Avenue (Seaside).

- The intersections of US 30 with 30th Street, 14th Street (2), 12th Street (1), 11th Street (2), 9th Street (2), Hume Street, Bond Street, and Basin Street. In addition, there is a fire signal at the intersection of US 30 with Melbourne Avenue and a signalized pedestrian crossing at Bay Street.

Because this document focuses on rural areas of the County, the signalized intersections above were not analyzed as part of the Clatsop County TSP. Under existing conditions, all intersections between County roads and State facilities are stop-controlled.

Lifeline Routes

Within Clatsop County, several County and State roadways are designated by ODOT as Priority 1 or 2 lifeline routes as shown on Figure 2-4. The following roadway segments are designated by ODOT as Priority 1 lifeline routes, which means they are essential for emergency responses in the first 72 hours after an incident:

- US 101 between Arch Cape and Fort Stevens Highway 104 Spur
- US 30 between Astoria and Knappa
- Ridge Road between Hammond and Delaura Beach Lane
- Delaura Beach Lane between Ridge Road and Fort Stevens Highway 104
- Fort Stevens Highway 104 between Delaura Beach Lane and US 101
- Fort Stevens Highway 104 Spur
- Airport Road/12th Place in Warrenton

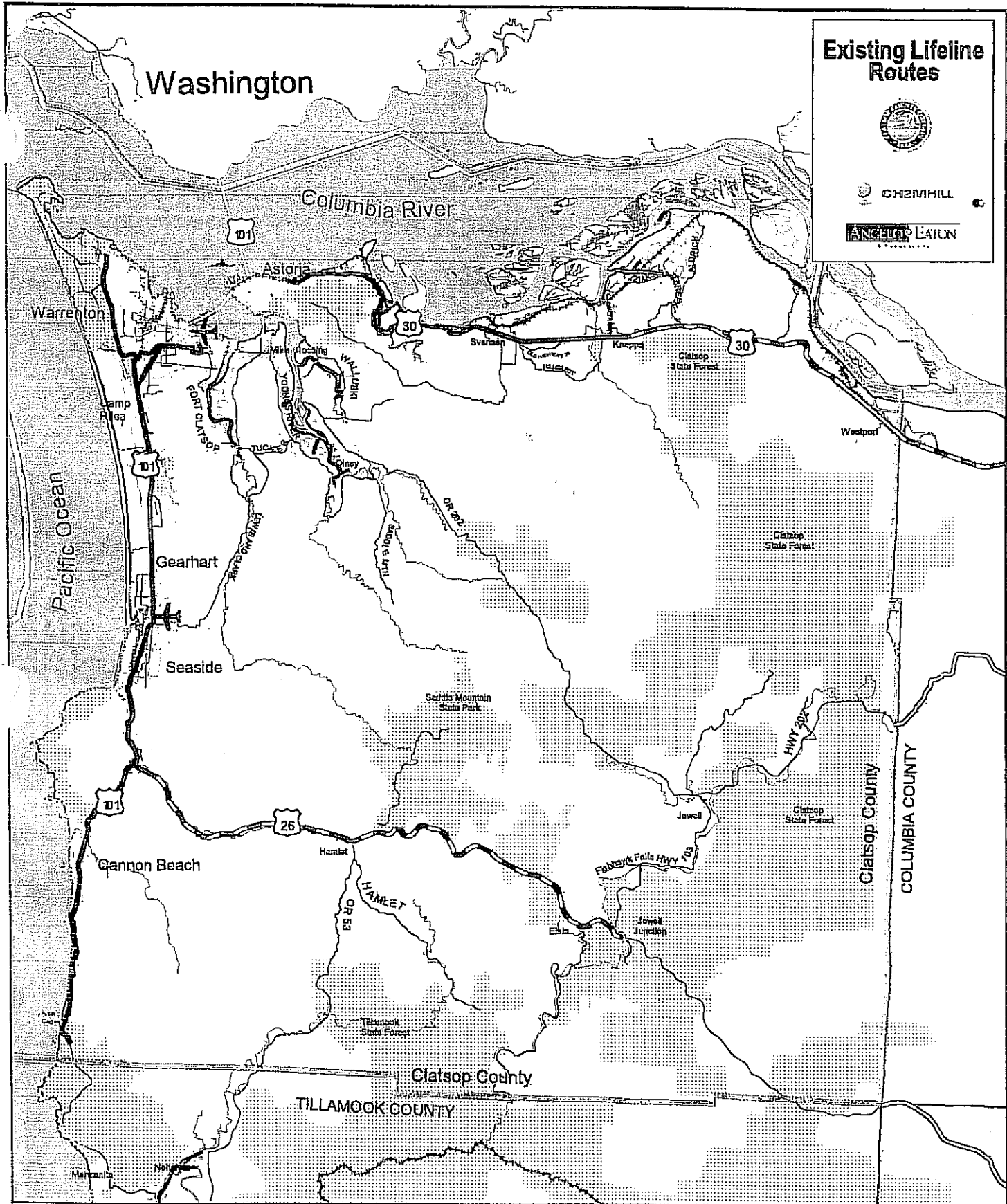
The following roadway segments are designated by ODOT as Priority 2 lifeline routes, which means they are desirable for emergency responses in the first 72 hours after an incident or routes that are essential for economic recovery:

- US 26 between US 101 and Jewell
- US 30 between Knappa and the Clatsop/Columbia County line

In addition to ODOT designated lifeline routes, other state highways (i.e. OR 53 and OR 202), county roads (i.e. Lewis and Clark Road and Youngs River Road), Oregon Department of Forestry logging roads, and private logging roads are used as alternate routes in the event of an emergency.

Bridges

Sufficiency Ratings were obtained through ODOT for a total of 184 bridges within Clatsop County. A sufficiency rating is a measure of a bridge's capacity to carry traffic and includes many factors including the effects of geometry, ADT, structural strength, and current condition. A rating of 75 or above is considered good, 50 to 75 is fair, and below 50 is poor. There are 112 bridges in good condition, 45 bridges in fair condition, and 27 bridges in poor condition within Clatsop County. Table 2-5 summarizes the bridges in poor condition.



Existing Lifeline Routes

- | | | | | | |
|--|---------------------------|--|-----------------------------|--|-----------------|
| | Priority 1 Lifeline Route | | Ports | | Parks |
| | Priority 2 Lifeline Route | | Airport | | City Limits |
| | Other Road | | Portland & Western Railroad | | County Boundary |



Figure 2-4
 Transportation System Plan
 Clatsop County

Figure 2-4
Existing Lifeline Routes
Back

TABLE 2-5
Bridges With Poor Sufficiency Ratings

Bridge ID	Sufficiency Rating	Crossing
02164	46.9	Quartz Creek
03112A	44.0	Nehalem River
07C11	46.9	Necanicum River
07T03	45.4	38th Street
11296	32.7	Neawanna Creek
07T01	43.5	Ravine
00921	39.2	Gnat Creek*
07417	45.3	Big Creek*
07226	45.5	Sunset Boulevard*
02601	44.5	Necanicum River*
01319	49.4	Soapstone Creek*
01831	46.2	Humbug Creek*
01832	48.7	Humbug Creek*
02165	43.5	Nehalem River*
11295	26.0	Clifton Channel—Columbia* ¹
01400	38.3	Skipanon River*
00711	42.2	Lewis and Clark River
00330	42.5	Youngs Bay
02418	40.9	Belt Line
11294	29.1	Knappa Slough ¹
11152	42.3	Ferris Creek ²
11230A001004	46.3	Neacoxie Lake
72P09	35.6	Creek*

*Indicates bridges that are located on Priority 1 or 2 lifeline routes.

¹ Indicates bridge is closed.

² Indicates bridge that will be replaced through 2002-2005 STIP.

There are three drawbridges in Clatsop County: New Youngs Bay Bridge, Old Youngs Bay Bridge, and Lewis and Clark Bridge. Opening data, which is displayed in Table 2-6, was obtained from ODOT for each of the three bridges for years 1995 through 2000.

TABLE 2-6
Existing Clatsop County Drawbridge Openings

Bridge Name	Total Number of Openings (2000)	Annual Average Number of Openings (1995-2000)
New Youngs Bay Bridge	335	363
Old Youngs Bay Bridge	47	61
Lewis and Clark Bridge	325	402

For each of the three drawbridges, the number of openings per year was less in year 2000 than in previous years. As shown in Table 2-6, the New Youngs Bay Bridge and Lewis and Clark Bridge had significantly more openings than the Old Youngs Bay Bridge for the six years included in the ODOT data.

Truck Routes

Within Clatsop County, major truck routes consist of US 26 and US 30, which are both designated freight routes in the Oregon Highway Plan (OHP). US 101 also experiences truck traffic, but is not a designated freight route through Clatsop County. There is an existing truck weigh station south of Cullaby Lake on US 101. Roads classified as collectors and arterials by Clatsop County also experience truck activity. There are truck restrictions on Youngs River Road from Astoria-Warrenton Highway 105 to MP 5.7 and for westbound traffic on Lewis and Clark Road east of US 101. In addition, there are weight-restricted bridges at the following locations shown in Table 2-7:

TABLE 2-7
Weight Restricted Bridges

Road	Crossing	Approx. Location
Dolphin Road	Skipanon Creek	0.72 miles S. of US 101

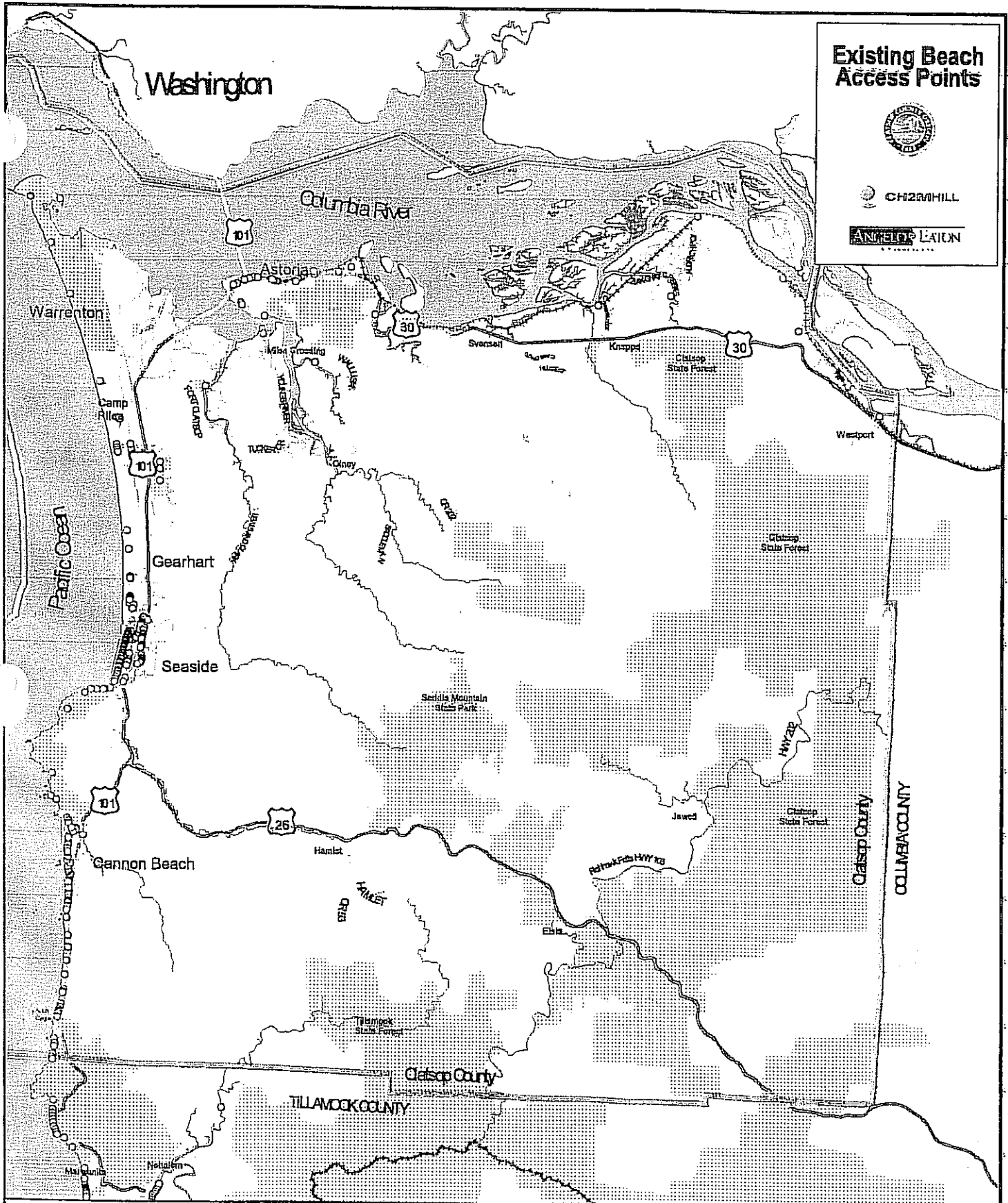
Log trucks currently use OR 202, Fishhawk Falls Highway 103, and OR 53, as these highways are adjacent to forestland.

Beach Access Points

Public beach access points in Oregon have been inventoried and are summarized on the Inforain website (www.inforain.org). According to the website, there are over 120 maintained beach access points within Clatsop County (see Figure 2-5). A majority of the access points in Clatsop County exist within the city limits of Gearhart, Cannon Beach, Seaside, and Warrenton (Fort Stevens State Park). Within unincorporated Clatsop County, there are maintained access points at Sunset Beach, Del Ray Beach, Tillamook Head, Ecola State Park, Silver Point, Arcadia Beach, and within the vicinity of Arch Cape. The beach access points at Sunset Beach, Del Ray Beach, and 13th Avenue in Gearhart, which was funded by the City of Gearhart, are the only access points maintained by the County. Amenities at each of the maintained access points vary.

Existing Traffic Operations Analysis

The operational analysis of existing conditions (2002) was conducted for State and County roadway segments and five intersections located on State facilities. The analysis was conducted using ADT volumes for State and County roads, ODOT Future Volume Tables, Automated Traffic Recorder (ATR) data, and intersection turn movement counts. This section provides a summary of the operational analysis of existing conditions (2002). See the Background Document for further information on the methodology used to conduct the operational analysis of existing conditions.



Existing Beach Access Points

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Beach Access Point	Parks
Highway	City Limits
Other Road	County Boundary

Figure 2-5

Transportation System Plan

Clatsop County

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Figure 2-5
Existing Beach Access Points
Back

The operational analysis of existing conditions focused on roadway segments with year 2002 ADT volumes of over 500 vehicles per day, as roadway segments with ADT volumes of less than 500 are not expected to experience operational deficiencies. This threshold focused the analysis of existing conditions and deficiencies to State facilities and sixteen County roads. The analysis excluded roadway segments within the city limits of Astoria, Cannon Beach, Gearhart, Seaside, or Warrenton, as deficiencies in operations or safety within city limits should be addressed in each City's Transportation System Plan.

The analysis of existing conditions included five intersections: US 101 at Sunset Beach Lane, US 30 and Westport Ferry Road, Warrenton-Astoria Highway 105 at Lewis and Clark Road and Youngs River Road, US 101 and Fort Stevens Highway 104, and Warrenton-Astoria Highway 105 and Fort Clatsop Road.

Design Year Traffic Volumes

Existing ADT volumes were obtained for State and County road facilities for use in the operational analysis of existing conditions. For State facilities, year 2001 ADT volumes were obtained from Transportation Volume Tables available on the ODOT website (http://www.odot.state.or.us/tdb/traffic_monitoring/tvtable.htm). ADT traffic volumes for County road facilities are included in the IRIS database maintained by Clatsop County. For County facilities, existing ADT volumes measured using electronic traffic counters from years 1995 to 2001 were obtained from Clatsop County.

An average annual growth rate (AAGR) was applied to State and County roadway segment ADT volumes to estimate 2002 ADT traffic volumes, which are shown on Figure 2-6. Under existing conditions, US 101, US 30, US 26, and Warrenton-Astoria Highway 105 experience the highest year ADT volumes in Clatsop County. The year 2002 ADT volumes on OR 202, OR 53, and Fishhawk Falls Highway 103 are the lowest of all State facilities. Fort Stevens Highway 104 Spur and Fort Stevens Highway 104 are located almost entirely within the city limits of Warrenton, with medium ADT volumes. Table 2-8 summarizes the range of ADT volumes currently experienced by each State facility.

TABLE 2-8
Year 2002 ADT Volume Ranges on State Facilities

Highway Number	Low ADT Volume	High ADT Volume
US 101	3,800 (Clatsop-Tillamook Line)	23,000 (Astoria)
US 26	6,000	6,800
US 30	5,500 (Wauna)	23,600 (Astoria)
OR 202	Less than 1,000	8,700 (Astoria)
OR 53	Less than 1,000	Less than 1,000
Fishhawk Falls Highway 103	Less than 1,000	Less than 1,000
Fort Stevens Highway 104	3,500 (Warrenton)	7,600 (Warrenton)
Warrenton-Astoria Highway 105	3,500 (Warrenton)	7,500 (Astoria)

Source: Forecasted Year 2002 ADT Volumes

As shown on Figure 2-6, all County facilities have year 2002 ADT volumes of less than 3,000. Several County facilities, including Cullaby Lake Lane, Highlands Lane, Hillcrest Loop, Sunset Beach Lane, Fort Clatsop Road, sections of Lewis and Clark Road, sections of Youngs River Loop, and Old Highway 30 (Svensen) experience ADT volumes of 1,000 to 2,000. Wahanna Road, Ridge Road, and sections of Lewis and Clark Road experience ADT volumes of 2,300 to 2,700.

The analysis of existing conditions included five intersections: US 101 at Sunset Beach Lane, US 30 and Westport Ferry Road, Warrenton-Astoria Highway 105 at Lewis and Clark Road and Youngs River Road, US 101 and Fort Stevens Highway 104, and Warrenton-Astoria Highway 105 and Fort Clatsop Road. Peak hour counts conducted in year 2001 at each of these intersections were provided by ODOT. To calculate 2002 peak hour turn movements at each of the intersections, an AAGR was applied to each year 2001 intersection turn movement count.

Analysis of the Automated Traffic Recorders

The TSP Guidelines adopted by ODOT require that volume-to-capacity (v/c) ratios for intersections and roadway segments be calculated using 30th-highest-hour traffic volumes (i.e. traffic volumes during the 30th highest hour of the year). Within urban areas, 30th-highest-hour traffic volumes typically occur during a weekday PM peak hour. Within recreational areas like the Oregon coast, 30th-highest-hour traffic volumes typically occur during the peak tourist season. Therefore, 30th-highest-hour traffic volumes in Clatsop County occur during summer months (August and July) during the peak tourist season.

The analysis of 2001 data from ATR sites within the vicinity of Clatsop County demonstrate that ADT traffic volumes measured during the peak tourist season in August increase between 20 to 40 percent on US 101, US 30, and US 26 over average ADT volumes. In 2001 during weekends in August, average traffic volumes increased by 36 percent on US 101 (Gearhart) and by 155 percent on US 26 (Sunset Tunnel). Figure 2-7 demonstrates the variability in ADT volumes per month along US 101 as measured by the Gearhart ATR in year 2001.

To meet the ODOT TSP Guidelines, the 2002 volumes for State roads, County roads, and the five study intersections were factored to 30th-highest-hour design volumes. Therefore, the operational analysis presented in this section indicates how the transportation network in Clatsop County performs during the peak tourist season (i.e., weekend in August) under existing conditions.

Existing 2002 ADT Volumes



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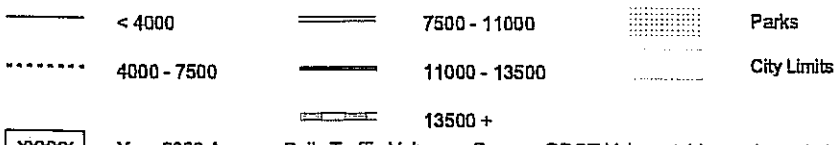
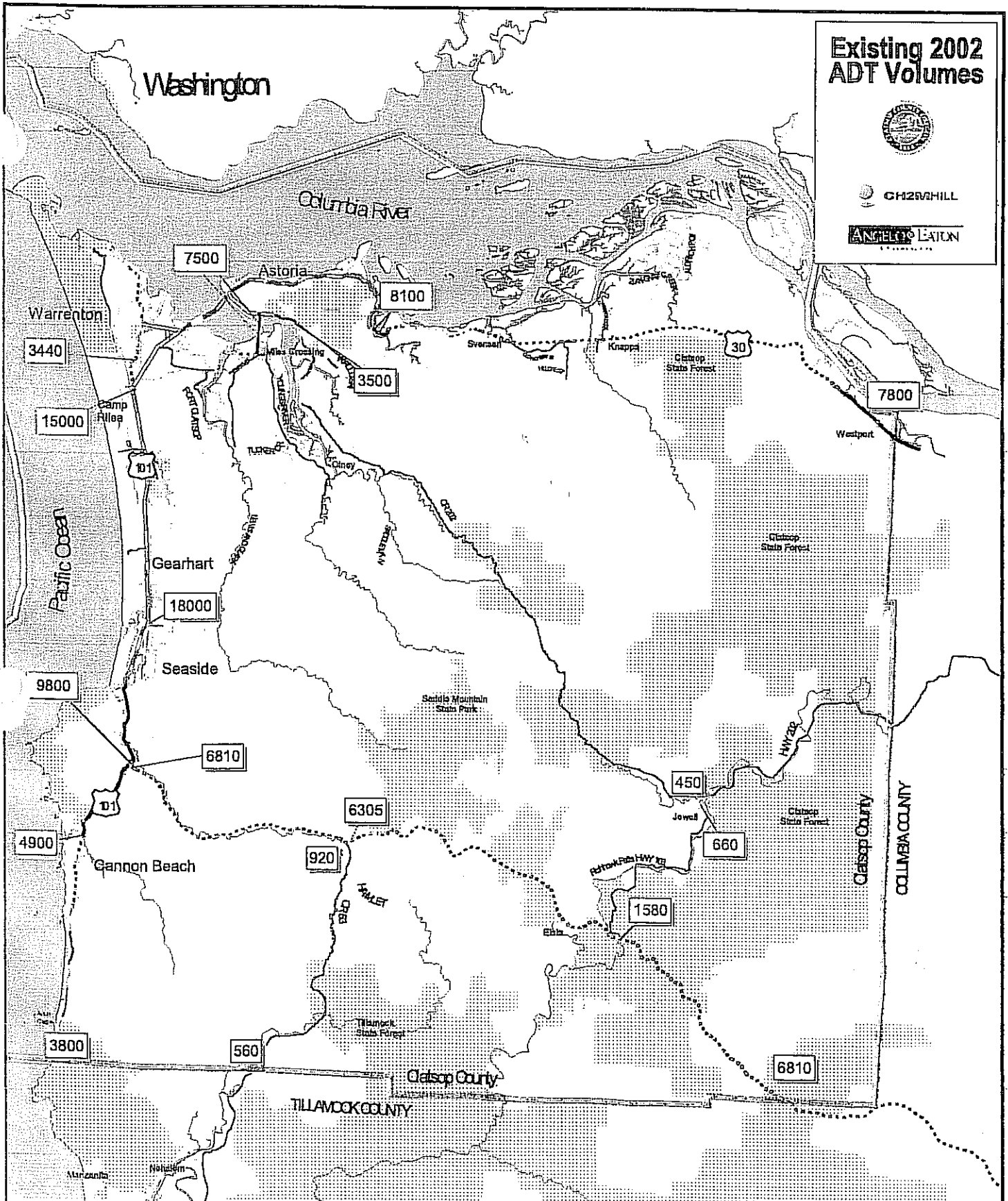
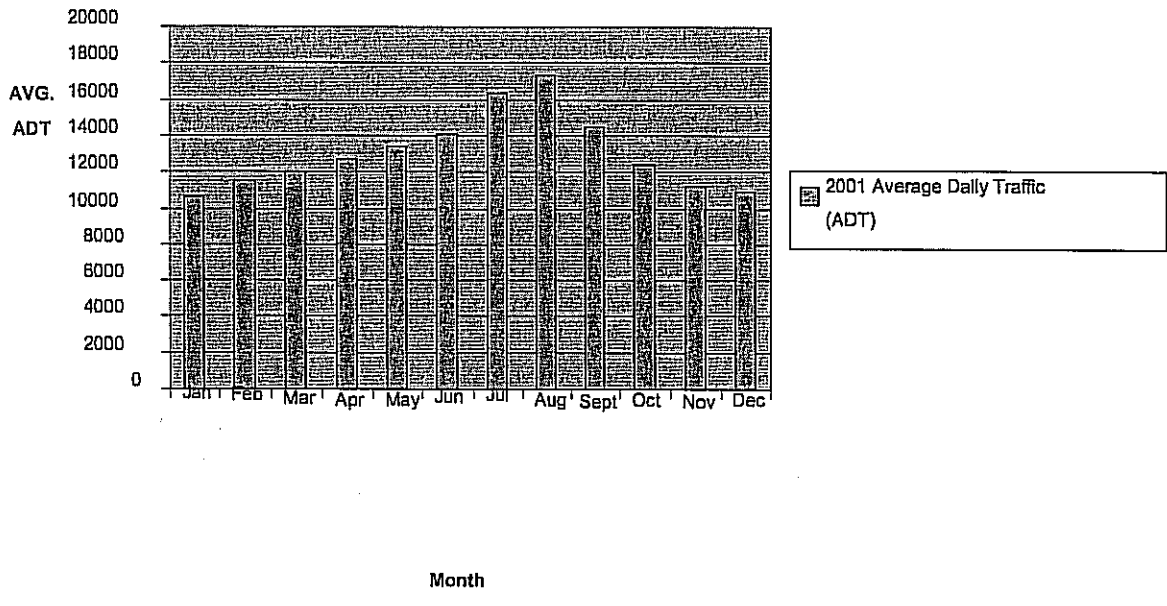


Figure 2-6
 Transportation System Plan
 Clatsop County

Figure 2-6
Existing 2002 ADT Volumes
Back

Figure 2-7 - 2001 ADT Volumes at Gearhart ATR by Month



State Highway Mobility Standards

The 1999 OHP designates mobility standards for State facilities, which were used in this operational analysis to determine if roadway segments and intersections perform adequately under existing and future forecasted conditions. The mobility standards are in terms of volume to capacity ratios (v/c ratios), which indicate how much volume a facility is supporting relative to the capacity of the facility (or maximum volume a facility can support).

The OHP designates US 101 a Statewide National Highway System (NHS) Non-Freight route. Outside of the city limits of Astoria, Warrenton, Gearhart, Seaside, and Cannon Beach, the mobility standard designated by the OHP is a v/c ratio of 0.75 in unincorporated communities and 0.70 in rural lands. US 30 and 26 are both designated as Statewide NHS Freight routes by the OHP. The mobility standard designated by the OHP for each of these facilities is a v/c ratio of 0.70. Fort Stevens Highway 104, Warrenton-Astoria Highway 105, OR 202, Fishhawk Falls Highway 103, and OR 53 are District Highways. On District Highways, the mobility standard designated in the OHP is a v/c ratio of 0.80 in unincorporated communities and 0.75 on rural lands. Roads under jurisdiction of Clatsop County are considered local roads. The mobility standards designated in the OHP for local roads match the standards for district highways. Table 2-9 summarizes OHP mobility standards.

TABLE 2-9
Oregon Highway Plan Mobility Standards

Highway Category	Mobility Standard (V/C Ratio)
Statewide NHS Non-Freight Routes, Non-MPO Area, (US 101)	0.75 - Unincorporated Communities 0.70 - Rural Lands
Statewide NHS Freight Routes, Non-MPO Area (US 26 and US 30)	0.70
District Highways and local Interest roads	0.80 - Unincorporated Communities 0.75 - Rural Lands

Source: Table 6 in the 1999 Oregon Highway Plan.

Level of Service Analysis

Level of service (LOS) is a measure of effectiveness for traffic operations at an intersection or along a roadway segment. Traffic is able to move freely with a LOS A, B, or C. Traffic operations become progressively worse as they move towards LOS D and E. LOS F represents conditions where traffic volumes exceed capacity, resulting in long queues and delay times for drivers. For each of the five study intersections, the LOS is reported.

Roadway Capacity and Analysis Methodology

Capacity is defined as the maximum flow of vehicles that a roadway can accommodate. A number of variables influence the capacity of a road. Roads with comfortable travel widths and shoulders have higher capacities than roads with narrow widths or no shoulders. Roads with high percentages of trucks have lower capacities than those traveled primarily by passenger cars. Roads with more curvature and slower speeds have lower capacities when compared with roads without curvature. Terrain type also affects capacity, as roads with mountainous terrain have lower capacities in comparison to roads with level terrain.

Methodology from *NCHRP Report 387: Planning Techniques to Estimate Speeds and Service Volumes for Planning Applications* was used to estimate capacities for each of the State and County road segments included in the operational analysis of existing conditions. Synchro, Version 5, which is based on the 2000 Highway Capacity Manual (HCM) was used for the analysis of unsignalized intersections. Both of these methodologies are based on the 1994 HCM.

Existing Conditions Traffic Operations (30th-Highest-Hour)

For the analysis of existing conditions, v/c ratios were determined for each State and County road segment and the five study intersections. The analysis of existing conditions indicates how the transportation network in Clatsop County performs under 30th-highest-hour conditions compared with OHP mobility standards.

State Roadway Segments

Table 2-10 summarizes the maximum calculated v/c ratio for each State facility outside of the city limits of Astoria, Cannon Beach, Gearhart, Seaside, and Warrenton.

TABLE 2-10
State Highway Maximum V/C Ratios—Year 2002 30th-Highest-Hour Volumes

Highway Number (Location)	Mobility Standard	V/C Ratio
US 101 (Between Gearhart and Seaside)	0.75/0.70 ¹	0.92
US 26 (Clatsop-Tillamook County Line)	0.70	0.73
US 30 (East City Limits of Astoria)	0.70	0.64
OR 202 (Between Astoria and Walluski Loop)	0.80/0.75 ²	0.28
OR 53 (Junction with US 26)	0.80/0.75 ²	0.14
Fishhawk Falls Highway 103 (Junction with US 26)	0.80/0.75 ²	0.14
Fort Stevens Highway 104 (Junction with US 101)	0.80/0.75 ²	0.24
Warrenton-Astoria Highway 105 (South City Limits of Astoria)	0.80/0.75 ²	0.38

¹Within unincorporated communities, the OHP mobility standard is 0.75. On rural lands, the OHP mobility standard is 0.70.

²Within unincorporated communities, the OHP mobility standard is 0.80. On rural lands, the OHP mobility standard is 0.75.

As shown in Table 2-10, all of the State highway segments except for US 101 and US 26 meet OHP mobility standards for the segments that were analyzed outside of the city limits of Astoria, Cannon Beach, Gearhart, Warrenton, and Seaside. Results of the operational analysis of State and County roads are as follows:

- Several of the State facilities perform well with a v/c ratio of 0.28 or better, including OR 202, OR 53, Fishhawk Falls Highway 103, and Fort Stevens Highway 104.
- Outside of the south city limits of Astoria, Warrenton-Astoria Highway 105 operates at a v/c ratio of 0.38 or better. Capacities on this highway are reduced over the Youngs Bay Bridge and Lewis and Clark Bridge, which are narrow two-lane bridges.
- US 30 operates at a v/c ratio of 0.64 or better for most of its length. Near the east city limits of Astoria and near Westport, US 30 experiences the highest v/c ratios of the entire length due to high ADT volumes.
- US 26 operates at a v/c ratio of 0.73 or better during 30th-highest-hour conditions. Conditions are similar over the entire length of highway, as volumes are relatively constant over the entire segment. According to the US 26 Corridor Plan, there are several rural sections that are congested under existing conditions. A high v/c ratio currently exists at the West Humbug Creek Bridge (MP 16.24). Other congested areas within Clatsop County are the Quartz Creek Bridge, Jewell Junction, Necanicum Junction (OR 53), Camp 18, and the Sitka Spruce viewing site, as summarized in the corridor plan.
- Between Seaside and Gearhart, US 101 operates at v/c ratio of 0.92. This section of road has the highest ADT volume along US 101 in Clatsop County. During 30th-highest-hour conditions, this section of US 101 does not meet OHP mobility standards.

County Facilities

Table 2-11 summarizes the calculated v/c ratio for each County facility included in the analysis. As shown in Table 2-11, all of the County road segments included in the operational analysis of existing conditions perform very well (v/c ratio of less than 0.20).

TABLE 2-11
County Road Maximum V/C Ratios—Year 2002 30th-Highest-Hour Volumes

County Road (Location)	Mobility Standard	V/C Ratio
Abbott Road (Bagley Road to US 30)	0.80/0.75 ¹	0.04
Columbia Beach Lane (Highway 104 to Ridge Road)	0.80/0.75 ¹	0.06
Cullaby Lake Road (US 101 to Shoreline Drive)	0.80/0.75 ¹	0.06
Fort Clatsop Road (Highway 105 to Park)	0.80/0.75 ¹	0.07
Hawkins Road (Cullaby Lake Road to Parking Lot)	0.80/0.75 ¹	0.03
Highlands Lane (US 101 to Del Ray Beach Access)	0.80/0.75 ¹	0.05
Hillcrest Loop Road (90 Degree Corner to US 30)	0.80/0.75 ¹	0.09
Knappa Dock Road (Old Hwy 30)	0.80/0.75 ¹	0.06
Koppisch Road (US 30 to Hillcrest Loop Road)	0.80/0.75 ¹	0.03
Lewis and Clark Road (Youngs River to Lyngstad Heights)	0.80/0.75 ¹	0.16
Lewis Avenue (Sunset Beach Road)	0.80/0.75 ¹	0.04
Old Hwy 30 (Svensen Market Road to Simonsen Road)	0.80/0.75 ¹	0.07
Ridge Road (Pacific Drive to Delaura Beach Lane)	0.80/0.75 ¹	0.11
Sunset Beach Lane (US 101 to Lewis Avenue)	0.80/0.75 ¹	0.10
Wahanna Road (Lewis and Clark Road to Oregon Avenue)	0.80/0.75 ¹	0.17
Youngs River Loop (Miles Crossing to Tucker Creek Rd)	0.80/0.75 ¹	0.13

¹Within unincorporated communities, the OHP mobility standard is 0.80. On rural lands, the OHP mobility standard is 0.75.

Traffic Operations at Intersections

The analysis of existing conditions included five intersections: US 101 at Sunset Beach Lane, US 30 and Westport Ferry Road, Warrenton-Astoria Highway 105 at Lewis and Clark Road and Youngs River Road, US 101 and Fort Stevens Highway 104, and Warrenton-Astoria Highway 105 and Fort Clatsop Road. Table 2-12 summarizes the results of the operational analysis of existing conditions at each of the study intersections, including LOS, OHP mobility standards, v/c ratios, and delay times. Table 2-12 reports results for the movement with the worst operating performance on both the major and minor approaches at each intersection (major/minor). Table 2-12 indicates that all of the intersections analyzed under 30th-highest-hour existing conditions meet OHP mobility standards.

TABLE 2-12
Operational Analysis of Intersections—30th-Highest-Hour (Year 2002)

Intersection	LOS	OHP Mobility Standard ¹	Max. V/C Ratio	Delay (sec)
US 101 and Sunset Beach Lane	B/E	0.70/0.75	0.59/0.68	11.0/49.5
US 30 and Westport Ferry Road	A/D	0.70/0.80	0.02/0.39	0.6/33.5
Miles Crossing	A/B	0.80/0.80	0.18/0.37	5.6/11.7
US 101 and Fort Stevens Highway 104	A/F	0.70/0.75	0.21/0.75	9.2/47.2
Warrenton-Astoria Highway 105 and Fort Clatsop Road	A/B	0.75/0.75	0.05/0.11	0.7/11.0

Source: Synchro HCM Unsignalized Report

¹The intersections of Miles Crossing and US 30 at Westport Ferry Road are assumed to be in unincorporated communities. All other intersections are assumed to be on rural lands.

Safety Analysis

A safety analysis was conducted using data obtained from ODOT and Clatsop County for intersections and roadway segments. The safety analysis included the top 32 accident sites in Clatsop County, the top 10 percent Safety Prioritization Index System (SPIS) sites, study intersections, and State and County road segments. The safety analysis was conducted based upon reported accidents to ODOT and Clatsop County. This section provides a summary of the safety analysis. More detailed information about the analysis is available in the Background Document.

Top 32 Accident Sites

A list of the top 32 accident sites by the total number of crashes from January 1, 1997, to December 31, 2001, was obtained from ODOT for Clatsop County. All but one of the top 32 accident sites in Clatsop County were located within the city limits of Astoria, Gearhart, Seaside, or Warrenton. The intersection of US 101 with Fort Stevens Highway 104 was the only intersection on the top 32 accident site list located within unincorporated Clatsop County.

The intersection of US 101 with Fort Stevens Highway 104 and Perkins Road is located outside of the city limits of Warrenton. The intersection was ranked number 25 out of 32. From 1996 to 2000, 10 reported accidents occurred at the intersection, with 5 resulting in property damage only, 4 resulting in injuries, and 1 resulting in a fatality. A majority of the 10 accidents occurred at the intersection (10) during daytime (8) with a dry surface (8). Of the reported accidents, 5 involved a vehicle that stopped at US 101 and then continued moving across US 101 without right-of-way. The geometry and operational performance of this intersection were most likely causes of these accidents.

Safety Priority Index System (SPIS) Sites

The SPIS method is used by ODOT to identify locations with safety problems due to the crash frequency, rate, and severity at the site. The top 10 percent ranked SPIS sites are evaluated each year by ODOT to identify improvements that may reduce the number and severity of accidents. Within Clatsop County, there were five top 10 percent SPIS sites in year 2001 that are located along US 101 and US 30. Of the five top 10 percent SPIS sites in Clatsop County in 2001, only one site is not located within the city limits of Astoria, Seaside, or Warrenton.

The one top 10 percent site within unincorporated Clatsop County in 2001 was located along US 101 from MP 16.98 to 17.09 near the intersection of US 101 and Highlands Lane. Along this section of roadway, the crash rate was calculated to be 2.4 accidents per million vehicle miles. From 1996 to 2000, a majority of the 7 accidents that occurred along this stretch of US 101 were during daytime (5) with a dry surface (4). Of all the reported accidents, 1 resulted in property damage only, 4 resulted in injuries, and 2 resulted in fatalities. Of the accidents resulting in fatalities, 1 was caused by a head-on collision on US 101 and the other was caused by a driver from Highlands Lane failing to yield right of way when making a left turn onto US 101. The remaining property damage only and injury accidents involved failure to yield right-of-way, cutting in on US 101, and excessive speeds. One of the injury accidents involved a bicyclist.

Intersection Crash Rates—State Facilities

A crash analysis was conducted using data obtained from ODOT for the five intersections that were included in the operational analysis of existing conditions. An accident rate of greater than 1.0 crashes per million entering vehicles (MEV) generally indicates that accident causes should be further studied at an intersection. As shown in Table 2-13, crash rates lower than 1.0 crashes per MEV were calculated for each of the five study intersections using accident data obtained from ODOT from years 1997 to 2001.

TABLE 2-13
Crash Analysis of Study Intersections (Year 1997 to 2001 Data)

Location	Property Damage	Injuries	Fatalities	Crash Rate ¹
US 101 and Sunset Beach Lane	1	1	0	0.07
US 30 and Westport Ferry Road ²	0	1	0	0.07
Warrenton-Astoria Highway 105, Lewis and Clark Road, and Youngs River Road (Miles Crossing)	6	4	0	0.63
US 101 and Fort Stevens Highway 104	5	4	1	0.36
Warrenton-Astoria Highway 105 and Fort Clatsop Road	0	1	0	0.14

Source: ODOT Crash Data, Years 1997 to 2001.

¹Crash Rate in terms of million entering vehicle miles.

²The PMT indicated that a fatality occurred on Westport Ferry Road from 1999 to 2001. However, this fatality was not included in the data provided by ODOT.

Due to the relatively low volume of traffic and calculated crash rate at each of these intersections, it is not appropriate to assume that each intersection is safe and will continue to operate safely through the 20-year planning horizon. As traffic volumes increase at each intersection, geometric or safety deficiencies may create safety problems. The causes of accidents at the intersections of Miles Crossing and US 101 at Fort Stevens Highway 104 were further reviewed, as these locations have been identified as safety issues.

The intersection of Warrenton-Astoria Highway 105, Lewis and Clark Road, and Youngs River Road, also known as Miles Crossing, has the highest crash rate of the five intersections. A majority of accidents at this location were caused by a failure to yield right-of-way. The intersection geometry at this location is very confusing, which is a likely cause for this type of accident. Geometric improvements should be considered for this location to improve the safety performance of the intersection.

The intersection of US 101 with Fort Stevens Highway 104 has the second highest crash rate of the five intersections. A majority of accidents at this location were caused by a failure to yield right-of-way to drivers on US 101. The intersection geometry and operational performance of this intersection are most likely causes of this type of accident. This intersection was a top 10 percent SPIS site in 1998, 1999, and 2000. Therefore, improvements should be considered for this location to improve the safety performance of the intersection.

Segment Crash Rates—State Facilities

Crash Rates calculated by ODOT for State facilities within Clatsop County were compared with statewide averages to determine safety deficiencies. The analysis included a comparison of year 2000 crash rates and 5-year average (1995-2000) crash rates for each State highway in Clatsop County with applicable statewide averages.

Through the analysis, the following State facilities in unincorporated Clatsop County had year 2000 crash rates higher than statewide averages:

- OR 202 (Astoria to Columbia County)
- Warrenton-Astoria Highway 105 (Warrenton to Astoria)

Through the analysis, the following State facilities in unincorporated Clatsop County had 5-year average crash rates higher than statewide averages:

- OR 202 (Astoria to Columbia County)
- OR 53 (US 26 to Tillamook County)

All other State highway segments within the county, including facilities located within city limits, had year 2000 and 5-year average crash rates lower than statewide averages.

Detailed Crash Analysis—State Facilities

Along each State highway located in unincorporated Clatsop County and several County roads, causes of accidents were further reviewed to identify safety deficiencies. Crash data from years 1997 to 2001 was obtained from ODOT to conduct the detailed crash analysis.

OR 53

As discussed above, OR 53 had a 5-year average crash rate higher than statewide averages for similar types of highways. On OR 53, a majority of the accidents occurred because of excessive speeds, loss of control, and driving on the wrong side of the road. Several of the accidents involved trucks and resulted in drivers running off the road into a ditch or onto an embankment. OR 53 currently has no shoulders, frequent horizontal and vertical curvature, and steep sideslopes, which are causes of those types of accidents.

Of the 13 accidents that occurred on OR 53 from US 101 to the Clatsop-Tillamook County line, 4 occurred between MPs 10.9 and 11.0 and 3 occurred between MPs 3.5 and 4.5. All of these accidents were a result of loss of control. The remaining accidents occurred throughout the segment length. This facility serves as an alternate route to Tillamook when US 101 is closed. Therefore, geometric improvements, including the addition of shoulders, the corrections to the horizontal and vertical curvature, and improvements to the sideslopes, should be considered along OR 53.

OR 202

As discussed above, OR 202 had a year 2000 and 5-year average crash rate higher than statewide average crash rates for similar types of highways. On OR 202, a majority of the accidents occurred because of excessive speeds, loss of control, and driving on the wrong side of the road. Similar to OR 53, several of the accidents resulted in drivers running off the road into a ditch or onto an embankment. OR 202 currently has no shoulders along most of its length, frequent horizontal and vertical curvature, and steep sideslopes, which are causes of those types of accidents.

The 59 total crashes that occurred from MP 2.77 to MP 39.18 on OR 202 were located throughout the segment length. Using the crash data provided by ODOT, no specific problem areas could be identified. This facility serves as an alternate route between Astoria and Portland. Therefore, geometric improvements, including the addition of shoulders, corrections to the horizontal and vertical curvature, and improvements to the sideslopes, should be considered along OR 202.

Warrenton-Astoria Highway 105

As discussed above, Warrenton-Astoria Highway 105 had a year 2000 crash rate that was higher than statewide averages for similar highway types. On Warrenton-Astoria Highway 105, a majority of the 66 accidents that occurred between years 1997 and 2001 were caused by failure to yield right-of-way (15), rear-ends (15), excessive speeds (8), and making left turns in front of oncoming traffic (6). Using the crash data provided by ODOT, the crashes were spread out along the entire segment length. The highest crash location on the segment was at Miles Crossing, where 6 of the 7 accidents were caused by failure to yield right-of-way.

US 30

On US 30, there were 156 total crashes in rural Clatsop County in the 5-year period. The most frequent causes for accidents were excessive speeds (59), rear-end accidents (25), driving on the wrong side of the road (16), and failing to yield right-of-way to drivers on US 30 (13). Along US 30, locations with more than four accidents in the 5-year period and

locations with potential safety issues identified by the Project Management Team (PMT) were further examined. These locations include US 30 at Westport, MP 77, MP 82, MP 83, MP 84.67, Fern Hill curves, MP 93, the John Day Boat Ramp, and MP 94.

Within Westport, there were four accidents at the Clatsop-Columbia County line. Two of the accidents involved excessive speeds and two involved livestock or deer/elk. One of the accidents caused by excessive speeds resulted in a fatality. Using the data provided by ODOT, no specific accident type or cause could be identified. However, this location was identified by the PMT as a high accident location. This location should be further examined to determine if geometric improvements or access management might improve the safety performance.

East of the Gnat Creek Bridge at MP 77, there were seven accidents in the 5-year period. Four of the accidents were caused by excessive speeds and loss of control, with three of the accidents involving icy conditions. Geometric improvements and icy condition warnings should be considered at this location.

At the intersection of US 30 with Hillcrest Road and Knappa Road, which is MP 82, there were six accidents in the 5-year period. Five of the accidents were caused by failure of drivers to yield to traffic on US 30. There is currently a flashing yellow light at this intersection. Geometric improvements and traffic control modifications should be considered at this location to improve the safety performance of this intersection.

West of Maggie Johnson Road, an overcrossing on US 30 at MP 83, there were five accidents in the 5-year period. Three of the accidents involved excessive speeds and one accident was caused by driving on the wrong side of the road. One fatality occurred on this stretch of roadway that involved drinking and excessive speeds. West of Ivy Station Road at MP 84.67, there were four accidents in the 5-year period. Three of the accidents involved excessive speeds, with two of these accidents involving deer/elk. Both of these locations are on a grade with no horizontal curvature, resulting in excessive speeds. Geometric improvements are most likely not possible in these locations.

The Fern Hill curves are located between MPs 89 and 93. Along this stretch of highway, there were 28 accidents in the 5-year period. Excessive speeds (14) and rear-end accidents (4) were the most common cause of accidents along the Fern Hill curves. Between MPs 93 and 94.7, which includes significant vertical and horizontal curvature, there were 30 crashes in the 5-year period. Excessive speeds (17), rear-end accidents (4), and driving on the wrong side of the road (3) were the most common causes of accidents between MPs 93 and 94.7. Improvements to the alignment along both of these stretches of US 30 and the addition of turn lanes should be considered to improve the safety performance.

At the John Day Boat Ramp, MP 93.5, there were five accidents in the 5-year period. Excessive speeds accounted for three of the accidents. The entrance is located on a curve with limited sight distance. Sight distance improvements at the intersection of US 30 and the John Day Boat Ramp should be considered, as this was a high accident location identified by the PMT.

At MP 94, between the John Day Boat Ramp and Tongue Point, there were eleven accidents in the 5-year period. Excessive speeds accounted for eight of the accidents. This section of

US 30 has significant horizontal and vertical curvature. Geometric improvements should be considered for this location to improve the safety performance of the road.

US 26

On US 26, there were 256 total crashes in rural Clatsop County in the 5-year period. The most frequent causes for accidents were excessive speeds (115), rear-end accidents (28), driving on the wrong side of the road (22), and failing to yield right-of-way to drivers on US 26 (8). Along US 26, locations with more than four accidents in the 5-year period and locations with potential safety issues identified by the PMT were further examined. These locations include US 26 from MPs 1 through 6, MP 11, MP 14, MP 19.5, MPs 22 through 30.

Between MPs 1 and 6, there were 87 accidents in the 5-year period. Along this stretch of US 26, accidents were caused by a wide range of causes, including excessive speeds, loss of control, rear-end accidents, deer/elk, and driving on the wrong side of the road. At MPs 2, 3, 4, and 4.5, a majority of the accidents involved excessive speeds. At MPs 5 and 6, a majority of the accidents involved deer/elk. Improvements to this section of highway, including sight distance improvements and access management, should be considered to improve the safety performance of the roadway.

At MP 11, within the curves to the east of Saddle Mountain Road, all of the five accidents at this location were due to excessive speeds. At MP 14, east of the Coast Range Summit, all of the five accidents at this location were due to excessive speeds. At both of these locations, no specific recommendations can be made to improve the safety performance of US 26.

Within Elsie at MP 19.5, there were four accidents caused by deer/elk, failure to yield, rear-end accident, and inattention. This location is near the intersection of US 26 with Lower Nehalem Road. Improvements along US 26, including intersection improvements and access management in Elsie should be further considered at this location.

Between MPs 22 and 30, there were 67 accidents in the 5-year period. Along this segment of US 26 accidents were due to a wide range of causes, including excessive speeds, loss of control, rear-end accidents, deer/elk, driving on the wrong side of the road, and failing to yield right-of-way. Excessive speeds were the cause of a majority of accidents at MPs 22, 24.2, 25, 26, 28, and 30. Of the 67 accidents on this stretch, 27 accidents involved icy conditions. Improved warning devices for icy conditions should be considered for this stretch of US 26.

US 101—Warrenton to Gearhart

On US 101, there were 96 total crashes in rural Clatsop County in the 5-year period between Warrenton and Gearhart. The most frequent causes for accidents were excessive speeds (21), rear-end accidents (26), and failing to yield right-of-way to drivers on US 101 (12). Along US 101 between Warrenton and Gearhart, locations with more than four accidents in the 5-year period and locations with potential safety issues identified by the PMT were further examined. These locations include US 101 at MP 9.5, Glenwood Village, 16.3 through 18.

At the intersection of US 101 with Fort Stevens Highway 104, MP 9.5, there were eight total accidents in the 5-year period. Five of the eight accidents were caused by a failure to yield right-of-way to drivers on US 101. Intersection improvements should be considered at this location to improve the safety performance of the intersection.

For the Glenwood Village entrance, MP 12.6, data from the Warrenton Fire Chief was used in the analysis of existing conditions. At this location, there were a total of 30 accidents from 1997 to 2001. The records from the Warrenton Fire Chief show many more reported accidents than the crash data from ODOT. Of the 30 accidents at this location, one crash resulted in a fatality. The addition of turn lanes into this facility along US 101 and sight distance improvements should be considered to improve the safety performance of the intersection.

From MPs 16.3 through 18, there were 33 accidents in the 5-year period. The most frequent causes for accidents were excessive speeds (10), failure to yield to drivers on US 101 (8), and rear-end accidents (6). There were six accidents on US 101 at both MP 16.26 and MP 18, which are the intersections of US 101 with Dellmoor Loop Road and Gearhart Loop Road, respectively. At both of these locations, excessive speeds, rear-end accidents, failure to yield to traffic on US 101, and improper turns were causes of accidents. Geometric improvements, including the addition of lanes, should be considered for both of these locations to improve the safety performance of both intersections.

US 101—Gearhart to Seaside

On US 101, there were 21 total crashes in rural Clatsop County in the 5-year period between Gearhart and Seaside. The most frequent causes for accidents were rear-end accidents (7) and failing to yield right-of-way to drivers on US 101 (9). There were twelve accidents at the intersection of US 101 with Wahanna Road in the 5-year period. The most frequent causes for accidents at this location were failing to yield to drivers on US 101 (7) and rear-end accidents (3). Geometric and traffic control improvements should be considered for this location to improve the safety performance of the intersection.

US 101—Seaside to Cannon Beach

On US 101, there were 112 total crashes in rural Clatsop County in the 5-year period between Seaside and Cannon Beach. The most frequent causes for accidents were excessive speeds (28), rear-end accidents (42), and failing to yield right-of-way to drivers on US 101 (10). Along US 101 between Seaside and Cannon Beach, locations with more than four accidents in the 5-year period and locations with potential safety issues identified by the PMT were further examined. These locations include US 101 at MPs 23, 23.5, 25, 27, 27.5, 28.1, and 28.25.

At MPs 23, 23.5, and 25, no specific cause for accidents could be identified. Accidents were a result of failure to yield, rear-end accidents, collisions with animals, and excessive speeds.

At MPs 27 and 27.5, a majority of the accidents were caused by excessive speeds. Of the ten total accidents at these locations, four resulted in drivers running off the road into a ditch or tree. Geometric and alignment improvements along US 101 should be considered in these locations.

At MP 28.1, the intersection of US 101 with Old Cannon Beach Road, there were ten total accidents in the 5-year period. A majority of the accidents were caused by failing to yield right-of-way. This location is within the North Cannon Beach Entrance project limits, which should resolve safety issues at this location.

At MP 28.25, the intersection of US 101 with Cannon Beach Frontage Road, there were four total accidents reported in the 5-year period. A majority of the accidents were caused by

failing to yield right-of-way. Improvements to this intersection are currently under construction.

US 101—Cannon Beach to County Line

On US 101, there were 33 total crashes in rural Clatsop County in the 5-year period between Cannon Beach and the Clatsop-Tillamook County line. The most frequent causes for accidents were excessive speeds (11) and rear-end accidents (8). The only location along this stretch of US 101 with more than four accidents in the 5-year period is MP 33.5, which is located south of South Park Avenue within a series of horizontal curves on US 101. All of these accidents were a result of excessive speeds and resulted in loss of control. As discussed with the AC, major improvements will not be recommended along US 101 south of Cannon Beach due to the scenic nature of this corridor.

Segment Crash Rates—County Facilities

Crash data from Clatsop County was used to determine crash rates for County facilities. Data from years 1996 through 2000 was used to calculate the number of accidents per million vehicle miles along County road facilities included in the operational analysis of existing conditions. Table 2-14 summarizes the crash rates and number of accidents by type on each County facility included in the analysis. County road segments with crash rates that exceed statewide averages for rural non-freeway secondary highways have been marked with an asterisk. Higher than average crash rates for intersections or segments with low volumes and short segment lengths should be further examined, as they can be the result of only a few reported accidents.

As shown in Table 2-14, a majority of the County road facilities included in the analysis are below the statewide average crash rate for rural non-freeway secondary highways. Roads that have higher than average crash rates should be further examined to determine if geometric or traffic control improvements can be implemented to improve the safety performance of the road.

Sunset Beach Lane and Cullaby Lake Lane

Sunset Beach Lane and Cullaby Lake Lane, which were both identified by the PMT as high accident locations, experienced higher than average crash rates from 1996 to 2000. As shown in Table 2-14, the segment length used in the crash rate calculations was less than a mile and there were only two reported accidents along each of the County road segments. Although the Sunset Beach Lane segment has a higher than average crash rate, the intersection of US 101 and Sunset Beach Lane has a low crash rate (see section on intersection crash rates). Each of these facilities experiences high ADT volumes in comparison to other County facilities and are used frequently by tourists, as they are located along US 101. The reported accidents along both of these segments occurred very close to US 101, where both intersections are stop-controlled. There are sight distance issues at both of the intersections, as the Sunset Beach approach is located on a grade and the Cullaby Lake approach is located on a horizontal curve along US 101. The intersection of US 101 and Sunset Beach Lane currently has a flashing yellow light to warn drivers of an approaching intersection. Geometric and traffic control improvements should be considered at both of these intersections, as their traffic volumes will continue to increase in the future.

Hillcrest Loop Road

Hillcrest Loop Road experienced higher than average crash rates from 1996 to 2000. As shown in Table 2-14, the segment length used in the crash rate calculations was less than a mile and there were very few reported accidents along each of the segments. The accidents that occurred on this County facility were generally a result of high speeds and inability to maintain control through horizontal curves. As reported by ODOT, there were 5 accidents at the intersection of Hillcrest Road with US 30. All 5 accidents were a result of minor turn movements failing to yield to traffic on US 30. Improvements should be considered at this intersection to increase the safety performance of the intersection.

Lewis and Clark Road

Lewis and Clark Road, from Youngs River Loop to Fort Clatsop Loop, also experienced a higher than average crash rate from 1996 to 2000. A majority of the accidents on this County road segment were a result of high speeds and a failure of minor turn movements to yield right-of-way to through movements on Lewis and Clark Road. Most of the reported accidents resulted in property damage only. Improvements and modifications to the Miles Crossing intersection should be considered.

Along the entire length of Lewis and Clark Road there were a total of 31 reported accidents from 1996 to 2000, with 19 resulting in property damage only and 12 resulting in injuries. Of the injury accidents, 6 were a result of minor movements failing to yield to major movements along Lewis and Clark Road and 3 were a result of fast speeds or loss of control.

Wahanna Road

Wahanna Road, from US 101 to Oregon Avenue, also experienced a higher than average crash rate. All of the accidents on this County road segment occurred at the intersection of Wahanna Road and Lewis and Clark Road. The accidents were a result of high speeds and a failure of minor turn movements to yield right-of-way to through movements. All of the reported accidents resulted in property damage only. The length of Wahanna Road included in the safety analysis is less than 1 mile long, which contributes to the higher than average crash rate. As stated in the DRAFT City of Seaside TSP, this location should continue to be monitored for accidents in the future. If accident rates increase at this intersection, improvements should be considered to address any observed deficiencies.

Abbott Road

At the intersection of Abbott Road and US 30, one fatality occurred in the 5-year period. This accident was caused by failure to give right-of-way to drivers on US 30. This location should be monitored in the future for accidents. If accident rates increase at this location, intersection improvements should be considered to address any observed deficiencies.

Walluski Loop

In addition to the segments listed in Table 2-14, accident data for all remaining County roads was examined to find other high accident sites not included in the operational analysis of existing conditions. On Walluski Loop, there were a total of 6 accidents over a 3.65 mile segment. This results in an accident rate of 3.5 million vehicle miles. Most of the accidents were a result of fast speeds or failure of minor turn movements to yield to major

movements along Walluski Loop. Of the 6 reported accidents, 5 resulted in property damage only and 1 resulted in an injury.

TABLE 2-36
Crash Rates Along County Road Segments

Street Name	Beginning Location	End Location	Year 2002 ADT	Total No. of Accidents	Fatalities	Injuries	PDO	Segment Length	Accident Rate (MVM) ¹
ABBOTT	BAGLEY RD	STATE HWY 30	731	0	1	0	0	0.13	0
COLUMBIA BEACH	OLD HWY 101	POLE # 332600 (RIDGE RD)	776	0	0	0	0	0.46	0
CULLABY LAKE	STATE HWY 101	SHORELINE DR	1135	2	0	1	1	0.44	2.19
FORT CLATSOP	OLD HWY 101	NATIONAL PARK ENTRANCE	995	0	0	0	0	1.3	0
HAWKINS	CULLABY LAKE RD	PARKING LOT	694	0	0	0	0	0.66	0
HIGHLANDS	STATE HWY 101	DEL RAY BEACH ACCESS	1088	0	0	0	0	0.63	0
HILLCREST	150 FT S. OF WICKIUP TERRACE	90 DEGREE CORNER	497	2	0	2	0	0.43	5.12
HILLCREST	90 DEGREE CORNER	STATE HWY 30	1134	1	0	1	0	0.27	1.79
KNAPPA DOCK	OLD HWY 30 (KNAPPA)	Power Pole#172407	813	1	0	0	1	0.55	1.22
KOPPISCH	STATE HWY 30	HILLCREST LOOP RD	578	2	0	1	1	1.44	1.32
LEWIS & CLARK ²	LYNGSTAD HEIGHTS	FORT CLATSOP LOOP RD	1894	12	0	4	6	2.8	1.24
LEWIS & CLARK	WAHANNA ROAD	RETREAT CONDOMINIUMS	1494	0	0	0	0	0.46	0
LEWIS & CLARK ²	YOUNGS RIVER LOOP	Lyngstad Heights	2625	16	0	2	7	1.05	3.18
LEWIS SOUTH	SUNSET BEACH RD	PRIVATE ROAD	661	0	0	0	0	0.62	0
OLD HWY 30 (SVENSEN)	CONROY RD	STATE HIGHWAY 30	654	0	0	0	0	1.34	0
OLD HWY 30 (SVENSEN)	SIMONSEN RD	CONROY	937	1	0	0	1	1.14	0.51
OLD HWY 30 (SVENSEN)	250' W OF SVENSEN MKT RD	SIMONSEN RD	1365	0	0	0	0	0.51	0
RIDGE	Pacific Drive	DELAURA BEACH LN	2225	1	0	0	1	3.52	0.07
SUNSET BEACH	LEWIS AVE	END OF PAVEMENT	559	0	0	0	0	0.45	0.00
SUNSET BEACH	STATE HWY 101	LEWIS AVE	1711	2	0	1	1	0.54	1.19
WAHANNA ²	LEWIS & CLARK RD	OREGON AVE	2896	4	0	1	2	0.55	1.48
YOUNGS RIVER ²	TUCKER CREEK RD	#672 YOUNGS RIVER LP RD	530	4	0	1	1	2.06	2.01
YOUNGS RIVER	INT YOUNGS RIV/LEWIS AND CLARK	Tucker Creek Rd	1867	8	1	1	4	3.66	0.64

¹Calculated With following formula: Rate= (Number of Accidents*1,000,000)/(ADT*Segment Length*No.Days). Crash Rate in terms of million vehicle miles (MVM).

²Crash Data from ODOT (1997 through 2001)

Table 2-14
Crash Rates Along County Road Segments
Back

Youngs River Road

Along the entire length of Youngs River Road there were a total of 15 reported accidents from 1996 to 2000, with 10 resulting in property damage only, 2 resulting in injuries, and 3 resulting in fatalities. All of the accidents resulting in fatalities were caused by drivers who had been drinking. Several of the reported injury and property damage only accidents were caused by excessive speeds, loss of control, or failure of minor movements to yield right-of-way to major movements.

Public Transportation Inventory

In 2002, the following public transportation services within Clatsop County were provided by SETD:

- Fixed-route service between the five incorporated cities within Clatsop County
- Countywide dial-a-ride service

Other public transportation services available within the Clatsop County include medical appointment transportation through the Northwest Ride Center, school bus service, fixed-route services available through Pacific Transit, Cannon Beach Shuttle, and Oregon Coachways, the Astoria Riverfront Trolley, and door-to-door services provided by Bay Shuttle.

A majority of the public transportation services provided by SETD are located within incorporated areas. The unincorporated areas of Clatsop County are served by intracity SETD routes, the countywide dial-a-ride service, the medical appointment services, and fixed-route services available through private service providers.

Fixed-Route Service—SETD

The following SETD routes served Clatsop County in 2002. See the Background Document for further information.

- **Route 10, Astoria**, provides service to the city of Astoria. Route 10 has stops at 9th and Duane, 7th and Bond Street, Hume and Bond Street, Astor Court Grocery, Astoria High School, Hanover and Marine Drive, 11th and Exchange, 12th and Commercial, 37th and Leif Erickson, Emerald Heights, MERTS, 51st and Birch, Columbia Hospital, Clatsop Community College, the Astor House, and KFC. Route 10 operates during weekdays and on Saturday with 80-minute headways, starting at 6:30 AM and finishing at 7:30 PM. According to the SETD Comprehensive Transportation Plan, this route carries approximately 25 percent of SETD's riders.
- **Route 15, Astoria/Warrenton/Hammond**, provides service to the cities of Astoria and Warrenton/Hammond. Route 15 has stops at 9th and Duane, the State offices, KFC, Fred Meyer (Warrenton), Warrenton Mini Mart, Kampers West, Point Adams, Corky's, KOA, Parkview Apartments, 9th and Cedar, Alder and 2nd, and Clatsop Community College. Route 15 operates during weekdays and on Saturday with 60-minute headways, starting at 6:25 AM and finishing at 8:00 PM. According to the SETD Comprehensive Transportation Plan, this route carries 25 percent of SETD's riders.

- **Route 20, *Seaside/Cannon Beach***, provides service to the cities of Seaside and Cannon Beach. Route 20 has stops at Broadway and Holiday, Clatsop College (South), 24th and US 101, the outlet mall, the Seaside Senior Center, Providence Hospital, Avenue S and US 101, the Cannon Beach Visitor Center, Hemlock and Dawes, and the RV Resort. Route 20 operates during weekdays and on Saturday with 80-minute headways, starting at 6:30 AM and finishing at 7:30 PM. According to the SETD Comprehensive Transportation Plan, this route carries approximately 10 percent of SETD's riders.
- **Route 25, *Seaside Streetcar***, provides service within the City of Seaside. Route 25 has stops at the Cannes Theater, 12th and parking lot, 10th and Necanicum, Best Western and Ebb Tide, 5th and Necanicum, the Seaside Convention Center, Columbia and Avenue A, Avenue A and Holladay, Holladay and US 101, US 101 and Avenue U, Avenue U and Beach Drive, Beach Drive and Avenue A, Broadway and Holladay, Broadway and US 101, Broadway and Wahanna, Suzanne Elise, and Leisure Times. Route 25 operates during weekdays and on Saturday between the hours of 9:30 AM and 9:15 PM with 45-minute headways.
- **Route 101, *Astoria/Warrenton/Gearhart/Seaside***, provides service between the cities of Astoria, Warrenton, Gearhart, and Seaside. Route 101 operates during weekdays and on Saturday between the hours of 6:00 AM and 8:20 PM with 120-minute headways. According to the SETD Comprehensive Transportation Plan, this route accounts for a quarter of the overall mileage served by SETD and carries over a third of the system riders.

SETD routes will stop between the designated stops if flagged down by a rider. Along roads with more traffic, including US 101, riders are asked to call SETD so that buses can be alerted to pull off the road at a specified location. The headquarters for the SETD is located in Warrenton. The stops at the intersection of 9th Street at Duane Street (Astoria), Fred Meyer (Warrenton), and the intersection of Broadway at Holladay (Seaside) allow transfers between SETD routes. Official Park and Ride facilities are not currently available in Clatsop County, but will be constructed as part of the Lewis and Clark Bicentennial Celebration.

Dial-A-Ride—SETD

Dial-a-ride (DAR) service is currently provided by SETD within Clatsop County. According to the SETD Comprehensive Transportation Plan, SETD currently operates five vehicles on weekdays between the hours of 6:00 AM and 4:00 PM, which can be extended depending upon demand. DAR service is available to all users, but currently serves mainly seniors and disabled passengers. Riders are asked to call two days in advance to schedule a ride. However, SETD will schedule rides with less notice when possible.

Northwest Ride Center

The Northwest Ride Center (NWRC) provides transportation to medical appointments within Clatsop, Columbia, and Tillamook Counties for those passengers eligible under the Oregon Health Plan. The call center, which is stationed in Warrenton, is open Monday through Friday from 7:00 AM to 6:00 PM. Transportation services are scheduled through the call center and are provided 24 hours a day, 365 days per year, by reservation. Riders are

asked to call at least two days in advance to schedule a ride. However, NWRC will schedule rides with less notice when possible.

School Bus

School bus service is provided within Clatsop County by the Warrenton-Hammond School District, the Astoria School District, Knappa School District, the Jewell School District, and the Seaside School District.

Pacific Transit

Fixed-route services are provided by Pacific Transit between Pacific County, Washington, and the City of Astoria. Four trips per day are currently provided into Astoria through this service. The stop in Astoria at 11th and Duane allows transfers with SETD Routes 101 and 15.

Oregon Coachways

Oregon Coachways provides fixed-route service between Portland and Astoria along US 26. The bus departs Astoria at 8:00 AM and arrives in Portland at 10:15 AM each day, making stops in Warrenton, Gearhart, Seaside, Cannon Beach, Necanicum Junction, Elsie, and Manning. The bus also departs Portland at 6:00 PM and arrives in Astoria at 8:15 PM each day. The stop at Fred Meyer allows transfers with SETD routes 101 and 15.

Cowlitz Coach

Cowlitz Coach provides fixed-route service between Kelso and Cannon Beach, with stops in Astoria and Seaside, along US 30. The bus departs Kelso at 12:10 PM and arrives in Astoria at 1:20 PM daily, and then continues south to Warrenton, Seaside, and Cannon Beach. The service then returns back to Kelso each day via US 101 and US 30. In Kelso this service connects with Greyhound, allow users to continue on to Portland or other Greyhound destinations.

Bay Shuttle

Bay Shuttle, which is based out of the southwest Washington, currently provides door-to-door service from northwest Oregon to the Portland area. The shuttle will pick up riders from their homes along US 101, US 26, or US 30 and transport them to Portland. Reservations up to a week in advance are required for use of this service.

Astoria Riverfront Trolley

Along the rail line on the Astoria riverfront, the Riverfront Trolley Association operates a trolley system. From May to September, the trolley operates on weekdays between 3:00 PM and 9:00 PM and on weekends between 12:00 PM and 9:00 PM. For the remainder of the year, the trolley operates on Fridays, Saturdays, and Sundays between 1:00 PM and 4:00 PM. The schedules are weather dependent and a roundtrip usually takes approximately 45 minutes. Stops are located at the Astoria Red Lion Inn, Maritime Memorial, Columbia House Condominiums, 6th Street, 11th Street, 14th Street, Maritime Museum, and East End Mooring Basin.

Cannon Beach Shuttle

In July of 2002, SETD began operation of the Cannon Beach Shuttle under contract with the City of Cannon Beach. The Shuttle generally operates along Hemlock Street between Les Shirley Park (northern portion of the city) and Maher Street (southern portion of city). The shuttle has seventeen designated stops, with bus shelters planned for installation at four stops. The stops allow transfer to SETD Route 20. The winter schedule, between September and May, provides seven day service between 10:10 AM and 6:00 PM. The summer schedule, which operates between June and August, also operates seven days a week and offers expanded service between 9:30 AM and 6:40 PM.

Pedestrian System Inventory

Pedestrian facilities are an important component of the transportation system. As the 1995 *Oregon Bicycle and Pedestrian Plan* (OBPP) points out, virtually everyone is a pedestrian at some point during the day. For example, pedestrians include children walking to and from school, people using wheelchairs or other forms of mobility assistance, people at bus stops, and people walking to and from their vehicles. Walking meets transportation needs for a significant segment of the population that does not have access to vehicle travel for a variety of reasons (e.g., the young, elderly, and poor). Aside from providing a necessary mode of transportation, a community's pedestrian system also offers recreational opportunities for both local and out-of-town users.

Walking in Clatsop County is primarily centralized around cities and other unincorporated communities, such as Svensen, Knappa, Elsie and Jewell. Due to the scenic and historic character of Clatsop County, there is also relatively high pedestrian activity near natural features (such as accesses to the beach) and other significant landmarks (e.g., viewpoints, historical markers). Because of the distances, most people do not walk between communities in Clatsop County.

According to the OBPP, pedestrian facilities include walkways, traffic signals, crosswalks and other amenities such as illumination or benches. Clatsop County has several different types of pedestrian facilities, including the following types of walkways, which are defined in the OBPP as "transportation facilities built for use by pedestrians and persons in wheelchairs":

- **Sidewalks:** Sidewalks are located along roadways, are separated from the roadway with a curb and/or planting strip, and have a hard, smooth surface, such as concrete. Examples of sidewalks in Clatsop County include sidewalks along US 101 through Seaside and along US 30 through Astoria.
- **Multi-Use Paths:** Multi-use paths can be used by a variety of people, including pedestrians, cyclists, skaters, and runners. Multi-use paths may be paved or unpaved, and are often wider than the average sidewalk. Portions of the Warrenton Waterfront Trail and the Astoria River Walk are considered multi-use paths.
- **Roadway shoulders:** Roadway shoulders often serve as pedestrian routes in many Oregon communities. On roadways that experience low volumes of traffic, roadway shoulders are often adequate for pedestrian travel. These roadways should have

shoulders wide enough so that both pedestrians and bicyclists can use them. Many roadways in Clatsop County have roadway shoulders that function as pedestrian facilities, including OR 202 and several County roads, such as Walluski Loop Road.

The Clatsop County pedestrian system is generally in good condition through the cities of Astoria, Cannon Beach, and Seaside. Specific information regarding the existing pedestrian system in incorporated areas of the County is located in the Background Document. Many of the roadways in Clatsop County, particularly County roads, do not have sidewalks, and pedestrians either share a striped shoulder or a roadway with motorists and bicyclists. The only pedestrian overcrossing in the County is located over Walluski Loop Road between the County Fairgrounds and the fairgrounds parking area. Rural communities such as Knappa, Svensen, Olney, Jewell and Necanicum Jct. are in need of improvements to pedestrian facilities, such as sidewalks and crosswalks. Pedestrian projects included in the preferred alternative for the rural communities of Clatsop County are included in Table 5-7.

Existing Sidewalk and Crosswalk Locations

The existing sidewalks in Clatsop County transportation system are primarily located within incorporated cities. Some roads, particularly newer development, have sidewalks on both sides, while others have sidewalks on just one side of the road. Many County roadways do not have sidewalks, and pedestrians share the roadway with bicycle and vehicle traffic. There are sidewalks on US 26 over several bridges, though there is often no shoulder striping on the bridges with sidewalks.

Existing striped crosswalks are located in incorporated areas of Clatsop County, such as Warrenton, Seaside, and Astoria. The majority of signalized crosswalks are located across US 101 and US 30. Other unsignalized striped crosswalks exist in the County, and are also primarily located in incorporated, urbanized areas.

The following inventories the pedestrian system in the county's rural communities.

- **Knappa and Svensen.** The roadway system running through Knappa and Svensen consists primarily of US 30 where there are no sidewalks. There are many local roads intersecting with US 30 in this area, and several local east-west roads. The local roads offer potential alternate east-west routes to US 30 for pedestrians.
- **Westport.** US 30 also travels through Westport, and has no sidewalks. Local roadways within Westport do not have sidewalks, but also experience low traffic volumes. The county roadway system through Elsie consists primarily of US 26. There are no crosswalks across US 26 in the community of Elsie, and no sidewalks. Traffic on US 26 moves quickly in this area, and there are several access points and streets that intersect US 26.
- **Jewell.** The major roadway in the community of Jewell is Fishhawk Falls Highway 103. There are no sidewalks or crosswalks on this roadway near the Jewell elementary school located along this roadway.
- **Jewell Junction.** The county roadway system near Jewell Junction consists primarily of US 26. There are no crosswalks across US 26 near Jewell Junction, as well as no sidewalks. Traffic on US 26 moves quickly in this area, and there are several access points and streets that intersect US 26, including a driveway leading to the Elderberry Inn.

- **Olney.** Major roadways in the Olney area include OR 202 and Youngs River Road. Neither roadway has sidewalks, and pedestrians share the roadway shoulders with bicyclists and motorists. There are no pedestrian facilities located near the Olney School.

See the following ODOT website for an inventory of existing sidewalks:
<http://www.odot.state.or.us/transview/highwayreports>.

Existing Sidewalk Condition

Existing sidewalks in Clatsop County vary in terms of sidewalk condition and ADA compliance. In general, sidewalks in front of newer development tend to be of sufficient width and surface quality. The sidewalks in Astoria, Warrenton, Seaside, and Cannon Beach have pedestrian amenities (e.g., benches or public telephones) while sidewalks located in rural communities generally do not have pedestrian amenities.

Existing Trails and Shared Use Paths

There are several trails in Clatsop County. The Warrenton Waterfront Trail is 4.5 miles long, and stretches from Seafarers' Park near the Hammond Mooring Basin and east along the Columbia River to E.H. Carruthers Park, and then on to Lighthouse Park near downtown Warrenton and finally to 2nd Street Park.

Fort Stevens State Park (northwestern Warrenton) has over five miles of hiking trails and seven miles of bike paths. There is a multi-use path located parallel to Peter Iredale Road in Fort Stevens State Park, and there are several bicycle/pedestrian crossing locations on this roadway. Fort Clatsop National Memorial also has several miles of trail facilities. The State Park and National Memorial have trail amenities, such as restrooms and trash receptacles. Astoria features the Astoria River Trail, which runs along the waterfront of the Columbia River. The existing trail is approximately three miles long, and links several commercial amenities, such as retail shops and restaurants; the Maritime Museum; and downtown Astoria

Major trail system deficiencies in Clatsop County include (1) connections between different trails, including trails within Fort Clatsop National Memorial and Fort Stevens State Park, and (2) a lack of adequate trail signage and other pedestrian or bicyclist amenities, such as trash receptacles.

There are many hiking trails in Clatsop County due to the scenic nature of the County, but the majority of these are not accessible to all pedestrians and/or bicyclists and do not provide transportation functions.

Bicycle System Inventory

Bicycle travel offers commuters, children and others a significant option for transportation. Cycling is also a valid transportation choice for people who do not own vehicles. Cycling is also an important recreational option, especially in scenic portions of the country, such as Clatsop County. US 101 through Clatsop County is an important recreational route, and is designated and signed as an Oregon Coast Bike Route. According to the *1995 Oregon Bicycle and Pedestrian Plan* (OBPP), bicycles are found in most households in America.

The *Clatsop County Bicycle Plan (1993)* was developed prior to the adoption of the OBPP, and therefore, may not be entirely up to date. This document describes the types of bicycle travel and use in Clatsop County, along with proposed bicycle system improvements. The document does not provide a comprehensive inventory of existing bikeways, though it lists the major highway routes (US 101, US 30 and US 26). The Clatsop County TSP will review the bicycle system improvements proposed in the Clatsop County Bicycle Plan.

According to the OBPP, there are several different types of bicycle facilities. Bikeways are design treatments located on roadways to accommodate bicycles, such as signage or striped shoulders. Multi-use paths are facilities separated from a roadway for use by cyclists, pedestrians, skaters, runners, or others. Multi-use paths are discussed in the review of existing conditions for the Clatsop County pedestrian system. The following include types of bikeways:

- **Shared Roadway:** Shared roadways include roadways on which cyclists, motorists, and pedestrians share the same travel lane. Shared roadways are common on neighborhood roads and rural roads, such as the Walluski Loop. According to the OBPP, two design treatments can enhance travel on a shared roadway:
 - Wide Outside Lanes (where shoulder bikeways or bike lanes are warranted but limited due to physical constraints – wide enough so that a vehicle can comfortably pass a bicycle); and
 - Bicycle Boulevards (a modification of the operation of a local street to function as a through street for bicycles while maintaining local access for vehicles, often via traffic control devices).
- **Shoulder Bikeway:** Paved roadways are striped shoulders wide enough for bicycle travel. According to the OBPP, most rural bicycle travel on State highways occurs on shoulder bikeways. Often times shoulder bikeways are signed as a signal to motorists to expect bicycle travel along the roadway. Examples of this type of bikeway in Clatsop County are portions of OR 202 between Astoria and Olney.
- **Bike Lane:** Bike lanes are portions of the roadway designated specifically for bicycle travel via a 6-foot striped lane, and are particularly appropriate on arterials and major collectors. US 101 and Warrenton-Astoria Highway 105 are examples of roadways with bike lanes in Clatsop County.

The County bicycle system suffers from gaps in the continuity of its bicycle system. Most bikeways in Clatsop County are located on State facilities rather than County roads. Bicyclists either share shoulders or lanes with pedestrians and motorists on most County roadways. Many County roadways do not have striped shoulders at least four feet wide, and several do not have fog lines. Many roadways in urbanized areas of Clatsop County are characterized by high numbers of vehicle access points for residential and commercial access, which can cause issues for bicycle travel.

Existing Bikeway Locations

The existing bikeways in Clatsop County are generally located along major arterials or collectors, such as US 101 or portions of US 30. See the Background Document for more

discussion about existing bikeways in Clatsop County. County roads with designated bicycle facilities include Ridge Road, Walluski Loop Road (OR 202 to the County Fairgrounds), and sections of Fort Clatsop Road. Most County roadways do not have bikeways, and cyclists share roadway shoulders or lanes with pedestrian and vehicle traffic. Though not officially designated as bikeways, the following County roadways have striped shoulders at least four feet wide on at least some portions: Cullaby Lake, Hillcrest, Highlands, Ridge Road, Delaura Beach Lane, Fort Clatsop Road, Cullaby Road, Hawkins Road, Sunset Beach Lane, Old Highway 30, Lewis and Clark Road, and Lewis Avenue south of Sunset Beach.

Bikeway Condition

The condition of bikeways in Clatsop County varies both between roadways and along each roadway. Roadways near urbanized areas tend to have wider shoulders, and some have designated bicycle routes. Shoulder maintenance (brush clearing and surface maintenance) is an issue on many County roadways and some areas of State roadways. Shoulder width deficiencies and potential bicycling hazards on State highways and County roadways are common over bridges or in areas with steep slopes and curves.

Bicycle Facilities Along Key Roadways in Unincorporated Clatsop County

- **US 101.** US 101 is designated and signed as the Oregon Coast Bike Route, and generally has wide, well maintained striped shoulders that are adequate for bicycle usage. Signalized intersections along US 101 are somewhat confusing because the bike lanes become wider, leading some motorists to believe that these are lanes for vehicles.
- **US 30.** US 30 is characterized as a high traffic volume paved road throughout the length of the County. Areas of steep grades are identified near Svensen, Knappa, and Westport. Most stretches of US 30 have paved shoulders at least four feet wide.
- **US 26.** US 26 is characterized as a high traffic volume paved road throughout the length of the County. Many stretches of US 26 in unincorporated areas have paved shoulders at least four feet wide. However, an area of shoulder deficiency is located on the stretch of roadway from the Nehalem River west to near the Necanicum Junction. This stretch of road is called out as dangerous for bicycles due to combinations of narrow width, poor sight distance, high truck traffic, and very high traffic volumes. In general, much of the shoulder striping is faded or worn. Many bridges lack shoulder striping.
- **OR 202.** OR 202 is a fairly low-traffic roadway from Olney to the County line, though it carries a fair amount of traffic through Astoria to Olney. There are many roadway intersections and private drives on OR 202 between the US 101 intersection and Olney. Several stretches of OR 202, particularly east of Olney, do not have striped shoulders or fog lines for bicycle use, though there is a sign indicating bicycle travel in the eastern portion of the County.
- **OR 53 (Necanicum Highway 45).** OR 53 is characterized as a low traffic volume paved road from the Necanicum Junction (at US 26) to the County line. Most of OR 53 lacks striped shoulders, and parts of the roadway lack striping altogether (near Soapstone Creek).

- ***Fishhawk Falls Highway 103.*** Fishhawk Falls Highway generally has no striped shoulders or fog lines, though there is signage to indicate potential usage by bicycles. There is a school warning sign near the Jewell elementary school, but no designated bike lanes.
- ***Fort Stevens Highway 104 (S. Main Street/Warrenton Drive/Pacific Avenue).*** Fort Stevens Highway 104 is characterized as a moderate-high volume paved road from its junction with US 101 up to its connection with Ridge Road in Hammond. It is characterized by high numbers of roadway intersections and residential and commercial access points along its length from US 101 to Ridge Road/Lake Drive. Outside the city limits of Warrenton, the highway lacks four-foot shoulders for bicycle travel.
- ***Warrenton-Astoria Highway 105 (Harbor Street/Marlin/US 101 Business).*** Warrenton-Astoria Highway 105 is characterized as a moderate volume paved road from Warrenton to the Lewis and Clark River, and a high volume paved road from the Lewis and Clark River to Astoria. This roadway functions as a main east-west collector for the County. The roadway generally has paved shoulders at least four feet wide near Astoria and Warrenton, but does not on other portions of the roadway.

Bicycle Facilities at Attractions in Clatsop County

There are several recreational bicycling opportunities in Clatsop County, separate from travel on major State and County roadways. Fort Stevens State Park has over seven miles of bicycle paths. There is a multi-use path located adjacent to Peter Iredale Road through the park, and there are several striped bicycle/pedestrian crossings across the roadway for connectivity. Fort Clatsop National Memorial also offers bicycling opportunities, which are primarily recreational. An unpaved bicycle facility also exists on the Fort Clatsop Trail, also known as "Old Stagecoach Road"

Air System Inventory

The air system consists of three airports, the Astoria Regional Airport, the Karpen Airport (Knappa), and the Seaside Municipal Airport. These airports are shown on Figure 2-8.

Astoria Regional Airport

The Astoria Regional Airport, owned and operated by the Port of Astoria, is located in the City of Warrenton. A US Coast Guard Air Station is located at the airport and there are two active asphalt surfaced runways. In addition, the airport provides the following services: air freight, air cargo, charter flights, flight instruction, aircraft rental, hangars, and fuel. The airport averages 145 operations per day, with 47 aircraft based at the airport. Approximately 38 percent of the operations are military, 31 percent are local general aviation, 30 percent are transient general aviation, and 2 percent are air taxi.

Currently the Astoria Regional Airport provides no commercial air passenger service. The Portland International Airport, which is located approximately 95 miles from Astoria, is the closest commercial air passenger service provider. SkyTaxi service, which provides the ability for passengers to make arrangements to fly from Astoria to hub airports or out-of-the-way destinations, is available at the Astoria Regional Airport. SkyTaxi flights serve

Oregon, Washington, Idaho, NW. Utah, Nevada, W. Montana, N. California, and S. British Columbia.

As summarized in the Astoria Airport Master Plan prepared in 1993, the Astoria Regional Airport had sufficient capacity to handle existing demand (1993) and expected future demand for the twenty-year planning period (2013). The Airport Manager for the Port of Astoria indicates that the Astoria Regional Airport still has sufficient capacity to handle existing demand (2002) under current use.

Access to the Astoria Regional Airport from the west is provided along Airport Road, which connects with the Warrenton-Astoria Highway 105, Fort Stevens Highway 104 Spur, and US 101. From the east, access to the airport is provided along Flight Line Drive and Airport Lane, which connect with Warrenton-Astoria Highway 105.

Karpen Airport

The Karpen Airport is located between Knappa and Svensen between US 30 and Old Highway 30. Access to the Karpen Airport is provided along Karpen Airport Lane and Pilot's Drive.

Seaside Municipal Airport

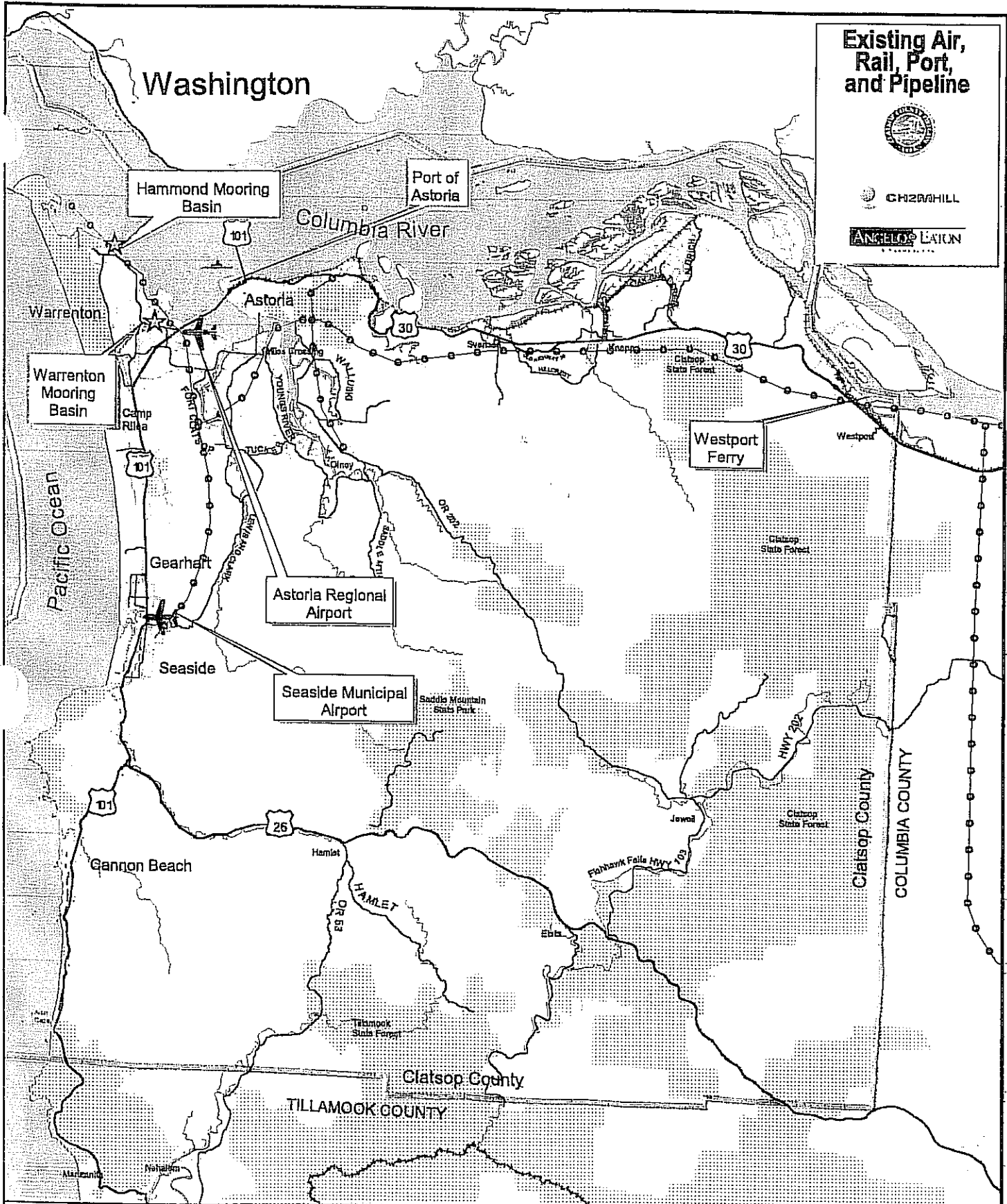
The Seaside Municipal Airport is located approximately one mile north of the City of Seaside adjacent to US 101. The asphalt runway is in fair condition. The airport averages 50 operations per week, with one aircraft based at the airport. Approximately 62 percent of the operations are transient general aviation, 15 percent are air taxi, 15 percent are military, and 8 percent are local general aviation.

Rail System Inventory


As shown on Figure 2-8, there is an existing rail line along US 30 from Portland to Astoria. Portland & Western owns a majority of the line except for the last few miles near Astoria, which are owned by the City of Astoria.

Recent maintenance of slide areas has opened the entire stretch of line from Portland to Astoria, allowing approximate travel speeds of up to 25 mph east of Clatskanie and 10 mph west of Clatskanie. Repairs to the rail line will continue through 2003 so that travel speeds can be upgraded to 25 mph west of Clatskanie (Class II). Improvements to existing at-grade crossings outside of removing brush and sight distance constraints are not planned as part of the work to be completed this year.

Current rail service operates from Portland to a mill in Clatskanie, stopping short of Clatsop County. Current service to Clatskanie operates two days per week, averaging approximately 10 cars per week of lumber products. Plans are underway to extend current rail service past Clatskanie to locations in Clatsop County, including Wauna, Tongue Point, and possibly the Port of Astoria. An extension of rail service to Wauna, which is a paper mill, is likely in the future. An extension of freight rail service to Tongue Point and the Port of Astoria is possible if new markets that use rail as a mode of transportation are pursued.



Existing Air, Rail, Port, and Pipeline













 Airport	 Portland & Western Railroad	 Parks
 Ports	 Gas Pipeline	 City Limits
 Mooring Basin	 Highway	 County Boundary
	 Other Road	

Figure 2-8
Transportation System Plan
Clatsop County

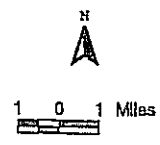


Figure 2-8
Existing Air, Rail, Port, and Pipeline Facilities
Back

Currently, no passenger rail service is provided along this route. The nearest passenger rail service is available in Kelso, Washington. However, plans are underway to develop passenger rail from Portland to Astoria along this route starting in Summer of 2003 (4 day/week). After improvements are constructed, travel speeds of approximately 30 mph are expected for passenger trains from Portland to Astoria.

Water System Inventory

The existing water system in Clatsop County consists of the following facilities, which are shown on Figure 2-8: Port of Astoria, the Westport Ferry, and the Warrenton and Hammond Mooring Basins.

Port of Astoria

The Port of Astoria is a deep draft port on the Columbia River with 7,250 feet of dock and 3 existing piers. The Port of Astoria provides highway connections to US 101 and the existing Portland & Western rail line terminates at the port. The facility is able to accommodate vessels up to 1,100 feet in length with a 40 foot water depth along the piers. The Port of Astoria is a destination for cruise ships and both commercial and recreational users.

There are two existing moorage facilities within the City of Astoria, including the West Mooring Basin and the East Mooring Basin on the Columbia River. Both facilities provide services to recreational boats and commercial boats and can handle boats up to 100 feet in length. The West Mooring Basin has 335 slips and the East Mooring Basin has 81 slips. These facilities provide the following services to users: fuel, sewage pump station, showers, restrooms, potable water, laundry facilities, trash disposal, restaurant, lodging, and a launch ramp. Heavy usage of the facilities currently occurs in the summer months.

Westport Ferry

Wahkiakum County Public Works operates a toll ferry across the Columbia River that provides service between Westport, Oregon and Cathlamet, Washington. The ferry operates 365 days per year between the hours of 5:15 AM and 10:15 PM and makes round trips every hour. The ferry transports passenger cars, pickups, foot passengers, bicyclists, motorcycles, and motorhomes/large trucks. The ferry ramp and access road on the Oregon side of the Columbia River are owned and maintained by Clatsop County.

Warrenton Mooring Basin and Hammond Mooring Basins

There are two existing moorage facilities within the City of Warrenton, including the Warrenton Mooring Basin on the Skipanon River and the Hammond Mooring Basin on the Columbia River. Both facilities provide services to recreational boats as well as commercial boats and guide services. Usage of both facilities is seasonal, with maximum usage occurring from May to November. Boats that are too large for the mooring basins within the City of Warrenton are referred to the Port of Astoria.

The Warrenton Mooring Basin is able to handle commercial boats up to a length of 100 feet and recreational boats up to a length of 50 feet. The facility has approximately 373 slips and

inadequate parking facilities to handle parking demand during the summer months. The Warrenton Mooring Basin requires a fee for each launch.

The Hammond Mooring Basin is able to handle boats up to a length of 50 feet, with approximately 173 total slips. The Columbia River Bar Pilots use the Hammond Mooring Basin facilities.

Pipeline System Inventory

As shown in the Corridor Plans for US 30 and 26 and Figure 2-8, a Northwest Natural Gas pipeline runs east and west along US 30 from Portland to Astoria. There is a storage facility in Mist, which is located east of Clatsop County in Columbia County. Northwest Natural Gas pipelines are also shown along OR 202 from Astoria towards Olney, in the vicinity of Lewis and Clark Road from US 101 to Astoria-Warrenton Highway 105, and within the City of Warrenton along the Columbia River towards Hammond.

Existing Conditions Summary

As described in this section, the major transportation corridors through Clatsop County consist of State facilities: US 30, US 26, and US 101. Under existing conditions, these State facilities are generally adequate to serve both local and tourist traffic. The existing operational and safety deficiencies on each of these facilities typically occur in the city limits of Astoria, Cannon Beach, Gearhart, Seaside, and Warrenton. However, operational and safety deficiencies do occur on each of the major State facilities in unincorporated areas of the County, as these routes typically serve high volumes of through tourist traffic.

On State and County facilities that carry low volumes of traffic in comparison to the major transportation corridors (i.e., OR 53, OR 202, Ridge Road, Lewis and Clark Road), there are no operational deficiencies under existing conditions. However, safety deficiencies that should be further evaluated were noted on several of these facilities.

Along each of the State and County roadway segments in Clatsop County, additional roadway deficiencies were also identified in this section. Additional deficiencies include the condition and location of bicycle and pedestrian facilities. In urbanized portions of the County, the pedestrian and bicycle systems are in generally good condition, with sidewalks and crosswalks for walking and adequately wide shoulders and warning signage for biking. However, many of the roadways in rural areas, particularly County roads, do not have pedestrian or designated bicycle facilities. The lack of adequate sidewalks, crosswalks shoulder width and warning signage will need to be addressed in the Pedestrian and Bicycle elements of the TSP. Bridges, design standards, and pavement condition of State and County roads also need to be addressed.

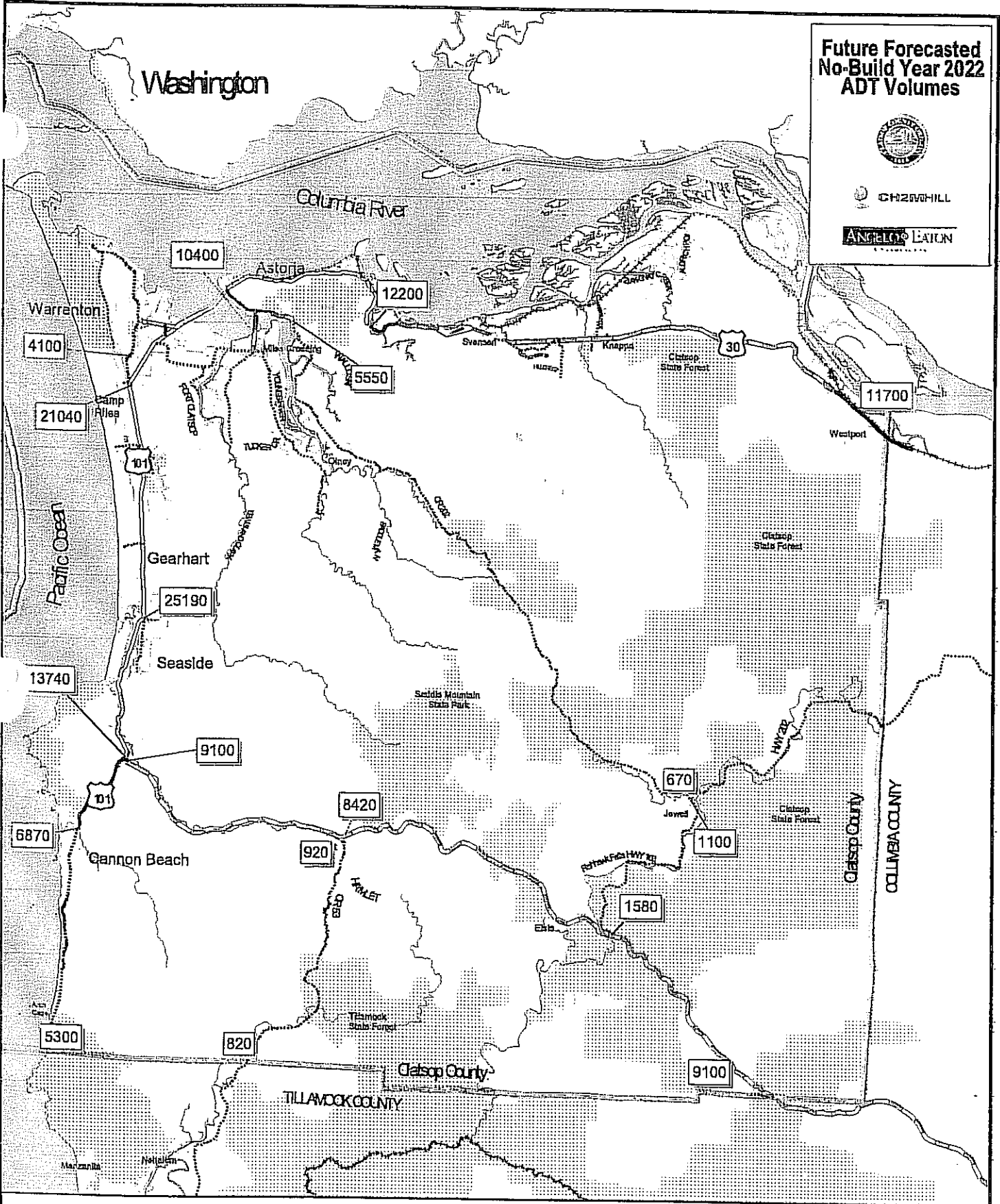
The inventory of conditions on State and County facilities will serve as a baseline for identifying the existing and future needs of the transportation system in Clatsop County. In subsequent sections, projects and alternatives to address each identified need will be developed and evaluated.

Future Forecasted No-Build Year 2022 ADT Volumes



CH2MHILL

ANGELUS LATION



< 4000		7500 - 11000		Parks
4000 - 7500		11000 - 13500		City Limits
XXXXX		13500 +		Portland & Western Railroad

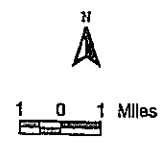


Figure 3-1
Transportation System Plan
Clatsop County

Future Transportation Conditions (2022) and Transportation System Needs

Population growth and increases in tourist volumes will play an important role in determining the future needs of the transportation system in Clatsop County. This section summarizes the methodology used to determine future travel demand and the results of the operational analysis that include future, forecasted (2022) no-build 30th-highest-hour conditions in Clatsop County. This section also summarizes the needs of the transportation system as determined through the analysis of existing and future conditions. See the Background Document for more information on the methodology used in the analysis of future, forecasted, no-build conditions.

Population Growth

Within the next 20 years, growth and development are expected within the incorporated communities of Clatsop County. The forecasted County population for 2020 is 41,788, which is 18 percent growth from the 2000 population of 33,301. Over the next 20 years, growth is also anticipated in unincorporated portions of the County, which include rural areas as well as the rural communities of Jewell/Elsie, Arch Cape, Knappa/Svensen, Miles Crossing/Jeffers Garden, and Clatsop Plains. The availability of existing infrastructure and planned infrastructure improvements will guide population growth and development within UGB's and rural communities.

Table 3-1 shows the historic and projected population for incorporated and unincorporated areas of the County. An average annual growth rate of 0.8 percent is expected within Clatsop County until year 2020.

TABLE 3-1
Clatsop County Population

Jurisdiction	Actual ¹		% of County Population		New Forecasts		
	1990	2000	1990	2000	2020 Urban Area Totals ²	% of County Population ³	% Average Annual Growth Rate 2000-2020
Astoria	10,069	9,813	30.24%	27.54%	11,826	28.30%	0.94%
Cannon Beach ⁴	1,221	1,588	3.67%	4.46%	1,859	4.45%	0.79%
Gearhart	1,027	995	3.08%	2.79%	1,254	3.00%	1.16%
Seaside	5,359	5,900	16.09%	16.56%	7,337	17.56%	1.10%
Warrenton ⁵	2,681	4,096	9.82%	11.50%	5,741	13.74%	1.70%
Hammond	589	-					
CITY TOTAL	20,946	22,392	62.90%	62.85%	28,017	67.05%	1.13%

TABLE 3-1
Clatsop County Population

Jurisdiction	Actual ¹		% of County Population		New Forecasts		
	1990	2000	1990	2000	2020 Urban Area Totals ²	% of County Population ³	% Average Annual Growth Rate 2000–2020
UNINCORPORATED TOTAL	12,944	13,238	38.87%	37.15%	13,771	32.95%	0.20%
COUNTY TOTAL	33,301	35,630	-	-	41,788 ⁶	-	0.80%

1. Center for Population Research and Census, Portland State University; United States Census.
2. City totals projected based on previous percentages of County population and percent growth.
3. Based on the previous growth rates and percentage of County population.
4. Cannon Beach numbers reflect the City's assumption that their existing percentage of County population will be maintained.
5. Warrenton annexed Hammond in 1999, thus the substantial change in population.
6. County projection from the Office of Economic Analysis, Department of Administrative Services, State of Oregon.

Future Travel Demand

Several methodologies for determining future travel demand in Clatsop County were considered, including use of the Astoria EMME/2 Model, the Oregon Statewide Model, and historical growth rates. Through discussions with ODOT Transportation Planning and Analysis Unit (TPAU), historical growth rates calculated using the Future Volume Tables available on the ODOT web site (<http://www.odot.state.or.us/tddtpau/SysAnalysis.html>) were used to determine future travel demand. This methodology is consistent with a Level 1 Trending Forecast as discussed in the ODOT TSP Guidelines. Table 3-2 presents the growth rates that were used to calculate future forecasted 2022 no-build Average Daily Traffic (ADT) on State and County roadway segments, and 30th-highest-hour traffic conditions for State facilities, County roads, and the five study intersections within Clatsop County.

TABLE 3-2
State Highway Growth Rates

Highway Number	Annual Growth Rate (%)
US 101 (1997 to 2019)	2.1%
US 26 (1999 to 2019)	1.7%
US 30 (1998 to 2019)	2.6%
OR 202 (1997 to 2019)	2.8%
OR 53 (1997 to 2019)	2.1%
Fishhawk Falls Highway 103 (1997 to 2019)	3.4%
Fort Stevens Highway 104 (1997 to 2019)	1.2%
Warrenton-Astoria Highway 105 (1997 to 2019)	2.0%

Source: ODOT Future Volume Tables

As shown in Table 3-2, the growth rates within Clatsop County are expected to be fairly consistent for all State facilities until year 2019, as they range from 1.2 to 3.4 percent. These annual growth rates are higher than the forecasted population growth rates shown in Table 3-1, which indicates that traffic volumes within Clatsop County are influenced by both local and tourist traffic.

The analysis of future forecasted no-build conditions assumes that the growth rates that have been observed in the past 20 years will continue through the 20-year planning horizon. If conditions change unexpectedly between existing conditions (2002) and the 20-year planning horizon (2022), the future forecasted traffic volumes will need to be revised.

Figure 3-1 presents the future forecasted no-build 2022 ADT volumes for State and County road segments.

2022 Future No-Build Traffic Operations (30th-Highest-Hour Conditions)

Using year 2022 30th-highest-hour conditions and the capacities calculated using *NCHRP Report 387: Planning Techniques to Estimate Speeds and Service Volumes for Planning Applications*, v/c ratios were determined for each State and County road segment. For the analysis of unsignalized intersections, Synchro, Version 5 was used. Both of these methodologies are based on the 1994 Highway Capacity Manual (HCM). The analysis of future forecasted no-build conditions indicates how the transportation network in Clatsop County will perform during the peak tourist season in comparison with OHP mobility standards without capacity improvements.

State Roadway Segments

The future no-build analysis includes only one major roadway improvement project on State facilities: the Pacific Way–Dooley Bridge Project from Seaside to Gearhart, which has committed funding. The analysis of future forecasted no-build 30th-highest-hour conditions assumes that US 101 between the north city limits of Gearhart and the south city limits of Seaside will operate within OHP mobility standards after construction of this project. The analysis of future forecasted no-build conditions does not include any other major roadway improvements on State or County roadway facilities. Table 3-3 summarizes the maximum calculated v/c ratio for each State facility outside of the city limits of Astoria, Cannon Beach, Gearhart, Seaside, and Warrenton.

TABLE 3-3
 State Highway Maximum V/C Ratios—Year 2022 30th-Highest-Hour Conditions

Highway Number (location)	OHP Mobility Standard	V/C Ratio
State Facilities Not Meeting OHP Mobility Standards		
US 101 (New Youngs Bay Bridge)	0.75/0.70 ¹	1.51
US 26 (Clatsop-Tillamook County Line)	0.70	0.97
US 30 (East City Limits of Astoria)	0.70	0.96
State Facilities Meeting OHP Mobility Standards		
OR 202 (Between Astoria and Walluski Loop)	0.80/0.75 ²	0.44
OR 53 (Junction with US 26)	0.80/0.75 ²	0.20
Fishhawk Falls Highway 103 (Junction with US 26)	0.80/0.75 ²	0.23
Fort Stevens Highway 104 (Junction with US 101)	0.80/0.75 ²	0.30
Warrenton-Astoria Highway 105 (South City Limits of Astoria)	0.80/0.75 ²	0.54

¹Within unincorporated communities, the OHP mobility standard is 0.75. On rural lands, the OHP mobility standard is 0.70.

²Within unincorporated communities, the OHP mobility standard is 0.80. On rural lands, the OHP mobility standard is 0.75.

As shown in Table 3-3, all of the State highway segments except for US 101, US 30, and US 26 meet OHP mobility standards for the segments analyzed outside of the city limits of Astoria, Cannon Beach, Gearhart, Warrenton, and Seaside. Results of the operational analysis of State and County roads are as follows:

- Several of the State facilities perform well in year 2022, with a v/c ratio of 0.30 or better, including OR 53, Fishhawk Falls Highway 103, and Fort Stevens Highway 104.
- Just outside the city limits of Astoria, OR 202 has a v/c ratio of 0.44 in year 2022.
- Outside the south city limits of Astoria, Warrenton-Astoria Highway 105 operates at a v/c ratio of 0.54 or better. Capacities on this highway are reduced over the Youngs Bay Bridge and Lewis and Clark Bridge, which are narrow, two-lane bridges.
- US 30 operates at v/c ratio of 0.96 or better for its entire length. From John Day Road to Astoria, US 30 does not meet OHP mobility standards in year 2022.
- US 26 operates at v/c ratio of 0.97 or better during 30th-highest-hour conditions over its entire length. The entire length of US 26 within Clatsop County would not meet OHP mobility standards in year 2022, except between mileposts 4 to 9.

Figure 3-1
Future Forecasted No-Build 2022 ADT Volumes
Back

- US 101 will operate at a v/c ratio of less than 0.50 south of Cannon Beach. Between US 26 and Cannon Beach, US 101 will operate at a v/c ratio of less than 0.75. Between Seaside and Gearhart, US 101 will operate within OHP mobility standards through construction of the Pacific Way – Dooley Bridge Project. Between Warrenton and Gearhart, US 101 will operate in excess of OHP mobility standards. During 30th-highest-hour conditions, US 101 from Warrenton to Gearhart and from Seaside to US 26 will not meet OHP mobility standards.

County Facilities

Table 3-4 summarizes the calculated v/c ratio for each County facility included in the analysis. As shown in Table 3-4, all County road segments included in the operational analysis of existing conditions perform well (v/c ratio of 0.23 or better).

TABLE 3-4
County Road Maximum V/C Ratios—Year 2022 30th-Highest-Hour Conditions

County Road (location)	Mobility Standard	V/C Ratio
Abbott Road (Bagley Road to US 30)	0.80/0.75 ¹	0.06
Columbia Beach Lane (Highway 104 to Ridge Road)	0.80/0.75 ¹	0.08
Cullaby Lake Road (US 101 to Shoreline Drive)	0.80/0.75 ¹	0.08
Fort Clatsop Road (Highway 105 to Park)	0.80/0.75 ¹	0.10
Hawkins Road (Cullaby Lake Road to Parking Lot)	0.80/0.75 ¹	0.05
Highlands Lane (US 101 to Del Ray Beach Access)	0.80/0.75 ¹	0.07
Hillcrest Loop Road (90 Degree Corner to US 30)	0.80/0.75 ¹	0.13
Knappa Dock Road (Old Hwy 30)	0.80/0.75 ¹	0.09
Koppisch Road (US 30 to Hillcrest Loop Road)	0.80/0.75 ¹	0.04
Lewis and Clark Road (Youngs River to Lyngstad Heights)	0.80/0.75 ¹	0.23
Lewis Avenue (Sunset Beach Road)	0.80/0.75 ¹	0.06
Old Hwy 30 (Svensen Market Road to Simonsen Road)	0.80/0.75 ¹	0.10
Ridge Road (Pacific Drive to Delaura Beach Lane)	0.80/0.75 ¹	0.13
Sunset Beach Lane (US 101 to Lewis Avenue)	0.80/0.75 ¹	0.14
Wahanna Road (Lewis and Clark Road to Oregon Avenue)	0.80/0.75 ¹	0.23
Youngs River Loop (Miles Crossing to Tucker Creek Rd)	0.80/0.75 ¹	0.19

¹Within unincorporated communities, the OHP mobility standard is 0.80. On rural lands, the OHP mobility standard is 0.75.

Traffic Operations at Intersections

The analysis of future forecasted 30th-highest-hour conditions included five intersections: US 101 at Sunset Beach Lane; US 30 and Westport Ferry Road; Warrenton-Astoria Highway 105 at Lewis and Clark Road and Youngs River Road; US 101 and Fort Stevens Highway 104; and Warrenton-Astoria Highway 105 and Fort Clatsop Road. Table 3-5 summarizes the results of the operational analysis of future conditions at each of the study

intersections, including LOS, OHP mobility standards, v/c ratios, and delay times. Table 3-5 shows results for the movement with the worst operating performance on both the major and minor approaches at each two-way stop control (TWSC) intersection (major/minor).

TABLE 3-5
Operational Analysis of TWSC Intersections—Year 2022 30th-Highest-Hour Conditions

Intersection	LOS	OHP Mobility Standard ²	Max. V/C Ratio	Delay (sec)
US 101 and Sunset Beach Lane Critical Movement: Shared approach on Sunset Beach Lane	B/F	0.70/0.75	0.84/ERR ¹	14.7/ERR ¹
US 30 and Westport Ferry Road Critical Movement: Southbound shared approach on Westport Ferry Road	A/F	0.70/0.80	0.04/1.21	1.0/257.2
Miles Crossing Critical Intersection: Youngs River Loop at Lewis and Clark Road	A/C	0.80/0.80	0.25/0.56	6.3/15.1
US 101 and Fort Stevens Highway 104 Critical Movement: Eastbound shared approach on Fort Stevens Highway 104	C/F	0.70/0.75	0.50/ERR ¹	17.7/ERR ¹
Warrenton-Astoria Highway 105 and Fort Clatsop Road Critical Movement: Northbound shared approach on Fort Clatsop Road	A/B	0.75/0.75	0.07/0.19	0.8/12.8

Source: Synchro HCM Unsignalized Report

¹ERR indicates an error reported by Synchro as a result of high delay time on minor approach.

²The intersections of Miles Crossing and US 30 at Westport Ferry Road are assumed to be in unincorporated communities. All other intersections are assumed to be on rural lands.

As shown in Table 3-5, the following intersections will not meet OHP mobility standards under future forecasted no-build 30th-highest-hour conditions:

- **US 101 and Sunset Beach Lane.** Under future conditions during the peak tourist season, US 101 will experience high volumes and operate in excess of the OHP mobility standard. Because of high through volumes on US 101 under future conditions, and the shared-lane configuration, the minor approach movements will experience high delay times and operate in excess of OHP mobility standards. This intersection experiences high seasonal peak traffic volumes, as it provides access to Sunset Beach.
- **US 30 and Westport Ferry Road.** Under future conditions during the peak tourist season, US 30 will operate under OHP mobility standards. However, the minor approaches of Westport Ferry Road will operate in excess of OHP mobility standards.
- **US 101 and Fort Stevens Highway 104.** Under future conditions during the peak tourist season, US 101 will operate under OHP mobility standards at this intersections because of the existing four-lane cross section. Fort Stevens Highway 104, on the other hand, will

operate in excess of OHP mobility standards as a result of steady through volumes on US 101 and the shared-lane configuration.

The intersections of Warrenton-Astoria Highway 105 with Fort Clatsop Road and at Miles Crossing will continue to meet OHP mobility standards under future forecasted no build 30th-highest-hour conditions.

The analysis of future forecasted no-build 30th-highest-hour conditions included only five unsignalized intersections within the County. As traffic volumes increase on major State facilities (US 30, US 26, and US 101) over the next 20 years, other intersections with high traffic volumes may not meet OHP mobility standards.

Transportation System Needs

This section describes the long- and short-term needs of the transportation system in Clatsop County. Roadway; pedestrian and bicycle; transit; rail; air; and water needs were identified based on the analyses of existing and future forecasted no-build conditions and on projects that have been recommended in relevant planning documents and policies. The needs included in this section have not been prioritized. In Section 5 of the Clatsop County TSP, projects and alternatives will be developed to address the needs described in this section.

Roadway System Needs

Through the analysis of existing and future forecasted 2022 no-build 30th-highest-hour conditions, capacity, safety, and other roadway deficiencies were identified for State and County facilities in Clatsop County.

Operational Deficiencies

Under future forecasted no-build 30th-highest-hour conditions, operations on the following State facilities will not meet OHP mobility standards:

- US 101 between Astoria and Gearhart
- US 101 between Seaside and US 26
- US 30 between the John Day River Bridge and the city limits of Astoria
- US 26 between US 101 and MP 4 and between MP 9.5 and the Clatsop-Tillamook County line
- Intersection of US 101 and Sunset Beach Lane
- Intersection of US 101 and Fort Stevens Highway 104
- Intersection of US 30 and Westport Ferry Road

Operational deficiencies forecasted under no-build 2022 conditions are significant, as US 101, US 30, and US 26 are the primary transportation routes within Clatsop County. With two-lane rural highways along a majority of US 101, US 30, and US 26 in year 2022, there will be congestion and high delay times during the peak tourist season. The analysis of

future no-build 30th-highest-hour conditions (2022) forecasts that the demand on US 101 will be greater than the capacity of the highway (i.e., v/c ratio is greater than 1.0). US 30 and US 26 are forecasted to operate under a v/c ratio of 1.0 throughout Clatsop County. Under future forecasted no-build conditions, stop-controlled intersections along major State highways will not operate under OHP mobility standards because of high through traffic conditions on US 101, US 26, and US 30.

Safety Deficiencies

Based on the analysis of existing transportation system conditions, comments from the PMT, Advisory Committee (AC), and public open house, and recommendations in relevant planning documents, several safety-related needs were identified.

To address safety issues, turn lanes should be considered in the following locations:

- US 26 at the Humbug Maintenance Center
- US 101 at the Glenwood Village
- US 101 at the entrance to the proposed Cullaby Lake RV Facility (Advisory Committee)
- US 101 at Dellmoor Loop Road
- US 101 at Gearhart Loop Road
- US 101 at Wahanna Road
- US 26 at Lower Nehalem Road
- US 26 at Klootchie Creek
- US 26 at the Necanicum Junction
- Median turn lane at the Jewell Junction
- US 101 at Arch Cape
- US 101 at Hug Point
- US 101 at Oswald West State Park
- US 30 at Clifton Road (public open house)
- US 30 at Bradley State Wayside (public open house)

In addition, improvements in the following locations should also be considered to address safety needs:

- US 101 from MP 16.98 to MP 17.07 (Top 10 percent SPIS Site)
- Intersection of Warrenton-Astoria Highway 105 with Lewis and Clark Road and Youngs River Loop Road
- Addition of shoulders or geometric improvements on OR 202
- Addition of shoulders on Warrenton-Astoria Highway 105
- Addition of shoulders or geometric improvements on OR 53
- Realignment of US 30 through the Fern Hill Curves (MP 89 to MP 93) and near Scandinavian Cannery Road (MP 93 to MP 94.7)
- Sight distance improvements at the intersection of US 101 at Cullaby Lake. This intersection does not meet the preliminary traffic signal warrant analysis under future forecasted conditions. Under existing conditions, there were very few reported accidents

at this location. However, this location was included as a potential project because it was identified by the ODOT and other local agency staff as a site with safety issues.

- Geometric improvements at the intersection of US 101 at Sunset Beach Lane. Under existing conditions, there were very few reported accidents at this location. However, this location was included as a potential project because it was identified by ODOT and other local agency staff as a site with safety issues. Under future forecasted no-build conditions, this stop-controlled intersection will not operate under OHP mobility standards because of high through traffic volumes on US 101. A proposed bike path from the Fort Clatsop National Memorial, which may include restroom and parking facilities on Sunset Beach Lane, will likely increase traffic volumes at this intersection.
- Improvements to US 101 at MP 33.5 (South Entrance of Hug Point State Park). There were four accidents at this site in the past 5 years, with all resulting in drivers running off the road into the ditch or guardrail.
- US 26 from MP 1 to 6. Access management, the addition of shoulders, and sight distance improvements should be considered in this location.
- US 26 from MP 22 to 30. Improved icy condition warnings.
- US 30 east of the Gnat Creek Bridge. Improved icy condition warnings or geometric improvements.
- Sight distance improvements at the US 30 and John Day River Boat Ramp intersection. This location was included as a potential project because it was identified by the ODOT and other local agency staff as a site with safety issues. There were five accidents at this location in the past 5 years.
- Geometric improvements at MP 94 (Maritime Road) on US 30
- Geometric improvements on Hillcrest Loop Road
- Addition of shoulders on Walluski Loop Road
- Widen travel lanes and shoulders on Youngs River Road
- US 30 at Tongue Point intersection
- US 30 at Svensen intersection. Improvements at this intersection were recommended at the last Clatsop County Open House due to sight distance issues and safety issues.
- US 101 at Arcadia Beach State Wayside access improvements
- Pacific Way – Dooley Bridge Project Limits on US 101 (Including improvements at the intersection of US 101 and Wahanna Road)
- Camp Rilea – Dellmoor Loop Road Project Limits on US 101
- Geometric improvements at the intersection of US 101 with Fort Stevens Highway 104

Preliminary Traffic Signal Warrant Analysis

A preliminary traffic signal warrant analysis was conducted for select intersections based on Warrant 1 (Eight-Hour Vehicular Volume) from the Manual on Uniform Traffic Control Devices (MUTCD). The analysis was based on forecasted year 2022 30th-highest-hour ADT volumes, as directed by the ODOT TPAU.

Signalization should be considered at the following locations based on results of the preliminary traffic signal warrant analysis.

- **US 101 and Fort Stevens Highway 104.** This location meets the preliminary traffic signal warrant analysis under future forecasted conditions (2022), as there are high ADT volumes on US 101 and Fort Stevens Highway 104. This location is outside of city limits and should be further reviewed before recommending a traffic signal in this location. Improvements at the intersection of US 101 and Fort Stevens Highway 104 and Perkins Road should be considered to improve the geometry, operational performance, and safety performance of the intersection.
- **US 101 at Sunset Beach Lane.** This location is close to meeting the preliminary traffic signal warrant analysis under future forecasted conditions (2022), as there are high ADT volumes on US 101 and Sunset Beach Lane. Minor turn movement volumes should continue to be monitored at this location during the peak tourist season to determine if a traffic signal is warranted.

The following location should be further studied to determine if a traffic signal is warranted under future forecasted conditions:

- **US 30 and Knappa Road/Hillcrest Loop**

Drainage/Safety Issues

Based on the AC meeting and public open house, the following drainage/safety issues were identified:

- **US 101 near MP 23.** Flooding frequently occurs in this location, which restricts through traffic on US 101. Improvements should be considered for this section of US 101.
- **Knappa Dock Road.** Flooding occurs along Knappa Dock Road, blocking access to residences.
- **US 101 near Cullaby Lake Lane.** Flooding at this location was identified as a deficiency through the public open house.

Design Standards on State Highways

As described in this section, an inventory of travel lane and shoulder widths was conducted for State facilities within Clatsop County. State facilities with low traffic volumes, including Fishhawk Falls Highway 103, OR 53, and OR 202, generally have narrow travel lane widths and no shoulders, which is deficient when compared with ODOT design standards. The addition of shoulders should be considered on OR 53 and OR 202, as they experience high crash rates when compared with statewide averages.

On US 26, US 30, and US 101, there are generally 3' to 5' shoulder widths and adequate travel lane widths. Shoulder width improvements along each of these State highways in all locations that are considered deficient are not likely, as several locations are restricted with environmental constraints or narrow bridges. However, shoulder width and travel lane improvements should be considered in locations that do not meet design standards where possible.

Design Standards on County Roads

Clatsop County's Road Standard Specifications for Design and Construction specify a minimum travel width of 18 feet for new County road facilities. Roadway widths listed in the IRIS database indicate that most existing County facilities meet this standard. Most of the roads that do not meet this standard are classified as local and collector roads. Upgrades to local and collector County facilities that do not meet County standards for new roads may not be practical as most serve low ADT volumes. All arterial roads meet County standards except for segments of Youngs River Road. From MP 5.95 to 8, 1.6 miles of road do not meet County standards. Improvements to Youngs River Road within this section should be considered, as accidents relating to road geometry have occurred in the past 5 years.

Based upon the field visit, Clatsop County 2001-2006 Capital Improvement Project List, and Clatsop County Comprehensive Plan, widening or the addition of shoulders should be considered on the following County roads:

- Lewis and Clark Road
- Youngs River Loop
- Cottage Road
- Gearhart Loop Road
- Sunset Beach Road (Lewis Avenue to Beach)
- North Section of Lewis Avenue (Sunset Beach to end)
- Walluski Loop Road
- Lewis and Clark Road (Crown Hill Road)
- Logan Road

Pavement Condition

As described in the 2001 Pavement Condition Report by ODOT and the OHP, the State has a goal of maintaining a statewide pavement condition rating at 78 percent fair or better.

Within Clatsop County, there are several sections of roadway under ODOT jurisdiction in poor condition, including Fishhawk Falls Highway 103, OR 53, OR 202, US 30 (MP 89 to MP 95), sections of US 26, Fort Stevens Highway 104, Fort Stevens Highway 104 Spur, and sections of Warrenton-Astoria Highway 105. Overlay or roadway improvement projects would improve existing pavement condition deficiencies.

Generally, the pavement condition of arterial and collector County roads is fair to good. A few sections of County collector and arterial roads, including Youngs River Loop from Olney Cutoff to OR 202, sections of Old Highway 30 in Svensen, and Knappa Dock Road, are in poor condition.

Maintenance/Operations Projects on State Highways

Potential maintenance and operations projects that have been identified include improvements at rock fall areas, guardrail repairs, sunken grade areas, rest area illumination, shoulder sweeping, a flood warning system in Seaside on US 101, a variable message sign on the New Youngs Bay Bridge, and emergency call boxes on US 26.

Access Management

According to the OHP, access management is “balancing access to developed land while ensuring movement of traffic in a safe and efficient manner.” The OHP states that the purposes of access management strategies include: ensuring safe and efficient roadways consistent with their determined function, ensuring the statewide movement of goods and service, enhancing community livability, supporting planned development patterns, and recognizing the needs of motor vehicles, transit, pedestrians, and bicyclists.

The State TPR requires that local governments adopt land use or subdivision ordinance regulations to protect transportation facilities for their identified functions, such as access control (OAR Section 660-12-0045(2)). The Clatsop County Standards Document includes development standards for the County, including access control standards relating to industrial, commercial, and residential development along arterials, including frontage roads, spacing of access points, and joint access (Section S5.032-S5.033). The access control standards for the County will be reviewed as part of the TSP process for compliance with the TPR.

Several roadways in Clatsop County have multiple vehicle access points for access to local roads or private roads or driveways. Some of these roadways do not meet ODOT access spacing standards, and will be examined later in the TSP process. Many roadways with multiple access points are located within the Urban Growth Boundaries (UGBs) of other jurisdictions. Roadways with multiple accesses that are not located within other jurisdictions are generally located near incorporated cities or other communities. Multiple access points can lead to increased opportunities for vehicle conflicts as well as conflicts with bicyclists or pedestrians. The TSP will examine where access control issues may affect the operations of the transportation system in Clatsop County.

Access management should be investigated in the following locations on State highways:

- US 30 through Westport
- US 101 from Cannon Beach to the Clatsop-Tillamook County line
- US 101 between Seaside and Cannon Beach
- US 30 in logging contract areas
- US 26 at the Jewell Junction
- US 26 from MP 1 through MP 6
- US 26 at the Necanicum Junction
- US 26 at Camp 18
- US 26 near Elderberry Inn
- US 101 between Warrenton and Seaside (Camp Rilea to Dellmoor Loop Road Project)

Bridge

Improvement projects for bridges with sufficiency ratings less than 50 shown in Table 2-4, Section 2, should be considered. In addition, bridge projects listed in corridor plans and Statewide Transportation Improvement Program (STIP) project lists should be implemented. As detailed in the Prioritization of Oregon Bridges for Seismic Retrofit Report completed in 1997, Phase 1 and Phase 2 seismic retrofit projects are recommended for bridges in Clatsop County.

Salmon Projects

Salmon projects have been identified for US 26 and US 30 through the Corridor Plans. These projects should be implemented along with salmon projects on other State and County facilities. Salmon projects should be coordinated and funded with appropriate state and federal agencies.

Pedestrian and Bicycle System Needs

Pedestrian and bicycle needs are based on review of existing pedestrian and bicycle system conditions and existing pedestrian and bicycle system deficiencies. In general, pedestrian and bicycle improvements, ranging from sidewalks to widened shoulders, should be considered any time a roadway is improved for any reason for cost efficiency.

The majority of pedestrian and bicycle system deficiencies in Clatsop County are located in or near unincorporated communities in the County. In general, the recommended pedestrian and bicycle system improvements address gaps in connectivity and lack of crosswalks or other safety considerations. Regular maintenance of sidewalks and bicycle lanes/shoulders should also be a priority for the County, as outlined in the *Clatsop County Bicycle Plan (1993)*.

Pedestrian and bicycle improvements on both State and County roadways are integral to the connectivity and safety of the pedestrian and bicycle systems in Clatsop County. The *Clatsop County Bicycle Plan* includes recommended bicycle route classification for major bicycle routes in the county, which are also recommended as part of this Clatsop County Transportation System Plan. All of these routes should have proper signage indicating their bicycle system designation, as listed below:

- US 101 – Shoulder bikeway
- US 30 – Shoulder bikeway
- US 26 – Shoulder bikeway
- Warrenton-Astoria Highway #105 – Shoulder bikeway
- Youngs River Loop – Shared roadway
- Walluski Loop – Shared roadway
- Lewis & Clark/Tucker Creek/Youngs River Loop – Shared roadway
- Logan Road – Shared roadway

- Fort Clatsop Road (Fort Clatsop to Warrenton-Astoria Highway #105) – Shoulder bikeway
- Fort Clatsop/Lewis and Clark/ Alternative US 101 Loop – Shared roadway
- Lewis & Clark Road (Miles Crossing to Seaside) – Shared roadway
- Old Highway 30/Hillcrest Loop Road – Shared roadway
- Gnat Creek Road/US 30 Loop – Shared roadway

Improvements on State Roadways

According to the Oregon Department of Transportation, sidewalks should be added to various segments of State roadways that are all located in unincorporated Clatsop County. For a complete listing of the recommended projects, refer to Table 5-7, Pedestrian System Improvements, in Section 5 and the Background Document. The following State facilities are sidewalk deficient and ODOT's *Bikeway Report* recommends the construction of sidewalks for them:

- US 101 (Oregon Coast Highway #009) – Near intersection with Sunset Highway 47: MP 24.85-24.90
- US 101 (Oregon Coast Highway #009) – Near intersection with Sunset Highway 47: MP 24.90-24.95
- Warrenton-Astoria Highway No. 105 – From MP 4.64 to Lewis and Clark Rd: MP 4.64-5.87
- Warrenton-Astoria Highway No. 105 – Near Wireless Rd: MP 6.42- 6.45
- Warrenton-Astoria Highway No. 105 – Near Wireless Rd MP 6.45-6.95
- Warrenton-Astoria Highway No. 105 – From Astoria to end of Warrenton-Astoria Highway 105: MP 6.95-7.25

Other deficient areas where pedestrian and bicycle system improvements on State facilities in unincorporated Clatsop County are needed were derived from (1) a review of relevant existing local, regional, and State plans and policies and (2) a field visit to Clatsop County in Spring 2002. These deficient areas are noted below. For a complete listing of pedestrian and bicycle improvements are needed see Chapter 5, Table 5-7 Pedestrian System Improvements and Table 5-9, Bicycle System Improvements.

- US 101 (Oregon Coast Highway #009) Youngs Bay Bridge: MP 4.51-5.31
- US 101 (Oregon Coast Highway #009) Generally – Signage indicating bicycles
- US 101 (Oregon Coast Highway #009) Sunset Highway Crossing: MP 25.27
- US 101 (Oregon Coast Highway #009) Arch Cape: MP 35.13
- US 101 (Oregon Coast Highway #009) Mile point 39.25
- Warrenton-Astoria Highway #105 Mile point 4.67-4.83

- Warrenton-Astoria Highway #105 At Young's Loop Road Intersection: MP5.7
- Warrenton-Astoria Highway #105 Mile point 6.75-7.08
- Warrenton-Astoria Highway #105 Generally -- Signage indicating bicycles
- US 30 (Lower Columbia River Hwy. #092) Mile point 82
- US 26 From Necanicum Jct. to North fork of Nehalem River: MP 9.42-12.86
- US 26 Mile point 15
- US 26 Near restaurant entrance: MP 17.71
- US 26 At Elsie: MP 19.57
- US 26 At Jewell Jct.: MP 21.81
- Fishhawk Falls Highway #103 Mile point.01
- OR 202 (Nehalem Highway #102) From Astoria to Olney: MP 2.79-9.52
- OR 202 (Nehalem Highway #102) Olney: MP 9.52
- OR 202 (Nehalem Highway #102) Generally--Signage indicating bicycles

Improvements on County Roadways

Clatsop County's road standards require that bicycle lanes be built along both sides of all new arterials and collectors (unless constraints exist) and sidewalks be built within rural communities and significant pedestrian generators. According to the *1995 Oregon Bicycle and Pedestrian Plan*, "In sparsely populated areas, the shoulders of rural roads usually accommodate pedestrians. There are, however, roadways outside urban areas where the urban character creates a need for sidewalks, such as on highly developed commercial strips or in residential clusters along County roads or State highways." The same reasoning holds true for bicycling on rural roads. The road standards will help to provide more connected pedestrian and bicycle systems for the County as development and redevelopment occurs, particularly in unincorporated communities or activity centers.

County roadways such as Delaura Beach Lane (Improvements to County portion complete - Hwy 104 to Ridge Rd.), Lewis and Clark Road, Ridge Road (Improvements complete), and Youngs River Road, are located in areas with sparse population densities and relatively low traffic volumes, and generally, pedestrians and bicyclists can share the roadway with vehicles. However, some of the major roadways in Clatsop County could benefit from pedestrian and/or bicycle system improvements, particularly widened shoulders.

Trail and Off-Road Improvements

The following off-road pedestrian and bicycle improvements are recommended for Clatsop County:

- Trail connection between Hammond boat basin and Fort Stevens State Park

- Mountain bike route on Lower Nehalem Road
- Trail connecting Fort Clatsop Memorial and Sunset Beach
- Trail from Old Ridge Road connecting Camp Rilea and Sunset Beach

Transit Needs

The Sunset Empire Transportation District (SETD) Comprehensive Transportation Plan (June 2001) outlines opportunities to improve public transportation services offered by SETD, including the following items:

- **Decrease the reliance on single occupancy vehicles in Clatsop County.** To meet this goal, services available to low-wage workers and dial-a-ride users would need to be strengthened. In addition, the hours of operation and service frequency would need to be expanded.
- **Cut travel time.** Transit users that currently commute between Astoria and Seaside cite travel time as an inconvenience to public transit usage. As stated in the SETD Comprehensive Plan, ways to cut travel time should be explored.
- **Extend hours of operation** to allow users with alternative work schedules to use transit services.
- **Decrease the headway between buses** to minimize wait time for users.
- **Review scheduling and routes** and make changes as necessary. Incorporated communities have both residential and tourist related needs. Each of the incorporated communities also has both inter-city and intra-city public transportation needs that should be addressed.
- **Improve the efficiency of the dial-a-ride program** to serve more users. According to the SETD Comprehensive Plan, the system currently serves an average of one user per hour. By grouping dial-a-ride trips generated in the same location and assigning dial-a-ride drivers to a specific geographic zone, the program would serve more riders for the same cost throughout Clatsop County. The use of specialized software and training for dial-a-ride employees would be necessary to improve the efficiency of the program.
- **Meet the transit demands created by future development**, including the relocation of Clatsop Community College and the North Coast Business Park.
- **Consider the loss of transit connections with Washington.**
- **Improve connections** with other transit service providers. Currently, connections among transit service providers, including Pacific Transit, Oregon Coachways, and the Cannon Beach Shuttle, are not well coordinated.
- **Advertise and promote SETD services.**
- **Maximize the potential of the proposed inter-modal center**, by using the facility to educate users about transit options and community events, in addition to providing an efficient transfer point between services.

In addition to the points above in the SETD Comprehensive Plan, other transit issues were identified through the field visit and interaction with the PMT, AC and attendees of the public open house. Other issues that have been identified include the addition of transit amenities and extended service to unincorporated areas.

Transit amenities, including covered benches, signage, and concrete landing pads, should be considered for stops with high ridership. These amenities would make the system more visible to potential users and possibly attract new riders.

Currently, there is SETD service within Astoria (Route 10), between Astoria and Warrenton (Route 15), between Seaside and Cannon Beach (Route 20), within Seaside (Route 25), and between Astoria, Warrenton, and Seaside (Route 101). Because of low ridership, previous routes that provided service between Astoria and Westport and between Warrenton and Jewell through Seaside have been cancelled. Future service to connect unincorporated communities like Arch Cape, Knappa, Westport, and Miles Crossing with incorporated communities should be considered.

Additional transit needs were listed in relevant planning documents:

- Portland/Cannon Beach Transit Service for recreational use (US 26 Corridor Plan)
- Astoria Megler Bridge—pedestrian/bicycle shuttle and kiosks and shelters north and south of the bridge on US 101 (Astoria TSP)
- New Youngs Bay Bridge—kiosks and shelters north and south of the bridge on US 101 (Astoria TSP)
- Improve transit between the Willamette Valley and Seaside and between Cannon Beach and Astoria (Draft Oregon Coast Highway Corridor Master Plan)
- Fort Clatsop Shuttling System (2002-2005 STIP)
- Inter modal Facility Improvements (2002-2005 STIP)

Rail System Needs

The following needs for the existing Portland & Western rail line along US 30 have been identified through the US 30 corridor plan, field visit, and discussions with ODOT Rail Division:

- Continue to repair rail line between Clatskanie and Astoria to allow extension of service past Clatskanie into Clatsop County. Repairs should be completed in year 2003.
- Improve at-grade rail crossings west of Clatskanie if safety issues are identified.
- Pursue the extension of freight rail service to Wauna, Tongue Point, and possibly Astoria. All of these destinations have used rail service in the past. With expansion of the Wauna mill, extension of freight rail from Clatskanie to this destination is likely. At Tongue Point, there is sufficient acreage for developing a market that would use freight rail as a mode of transportation. Other possible locations for markets that would use rail

are Bradwood (dredge spoils), the Port of Astoria, or development in other areas of Astoria. Each of these opportunities should be further explored.

- Expand tourist-related rail services in Clatsop County. As part of the Lewis and Clark Bicentennial, passenger rail will be developed from Portland to Astoria. In addition, the City of Astoria operates a trolley along the waterfront in Astoria. Because Clatsop County experiences a high level of tourism, other tourist-related rail services should be considered.

Air System Needs

The following needs for the Astoria Regional Airport have been identified through the Astoria Airport Master Plan (1993), the Astoria TSP, and discussions with the Airport Manager:

- Runway safety areas for the 13/31 runway need to be modified to meet Federal Aviation Administration (FAA) standards.
- The existing water facilities at the airport do not meet minimum standards.

From the field inventory, improved signing to the airport and improved signing and striping within the airport area should be considered.

Currently the Astoria Regional Airport does not provide commercial air passenger service. If commercial air passenger service is reinstated at the airport in the future, the following issues needs should be addressed:

- As stated in the Astoria Airport Master Plan (1993), the current access to the airport should be improved to provide a more direct access with an improved alignment. The issue of improved access to the airport along US 101 will be addressed in the Warrenton TSP. An improved access to the airport should also be considered along Warrenton-Astoria Highway 105, including signing and striping improvements.
- A larger passenger terminal building with parking might be necessary if commercial air passenger service is reinstated.
- The airport would need to upgrade security to meet new security requirements.

Water System Needs

Port of Astoria

The Port of Astoria developed a Central Waterfront Master Plan in 2001 to address the needs of marine activities and the City of Astoria. Transportation issues that are critical to the success of the plan were identified in the Central Waterfront Master Plan and through conversations with the Deputy Director:

- Access improvements at 36th Street, Bay Street, Basin Street, Portway Street, and Hamburg Street to accommodate trucks and improve the safety and operational performance of the intersections.

- Improved circulation within the Port of Astoria property through construction of new streets.
- Improved pedestrian access along the waterfront to tie in with the Riverfront Trail and Astoria Riverfront Trolley.

Additional Parking to accommodate demand at the mooring basins, including parking for tourists using the Riverfront Trolley and those using the Port of Astoria facilities.

Warrenton Mooring Basin and Hammond Mooring Basins

Two needs were identified by the City of Warrenton Harbormaster for the Warrenton and Hammond Mooring Basins, including seasonal usage and parking facilities. Usage of both facilities is seasonal, with maximum usage occurring from May to November. During maximum usage periods, both facilities currently operate at capacity with all of the slips in use. Parking facilities at the Warrenton Mooring Basin are not adequate for the demand, causing users to park outside of the designated parking areas along local roads and State highways during peak periods of use. At the Hammond Mooring Basin, parking is not a problem because there are adequate parking areas to handle the demand during peak periods of use.

Pipeline Needs

No major deficiencies of the existing pipelines in Clatsop County have been identified.

Transportation System Plan Alternatives

To address the deficiencies and needs of the transportation system in Clatsop County, six system alternatives have been identified and evaluated in this TSP. Each alternative was evaluated based on measures of effectiveness that were developed using the goals and objectives of the Clatsop County TSP. The following six system alternatives were analyzed:

- **Alternative 1: No-Build Alternative.** Under the no-build alternative, no improvements would be constructed in Clatsop County during the next 20 years except for projects with committed funding. This alternative is not a viable planning alternative, because roadway, public transportation, bicycle, pedestrian, air, rail, water, and pipeline needs would not be addressed.
- **Alternative 2: Baseline Transportation System Management (TSM) Improvements.** Alternative 2 includes baseline TSM projects (e.g. turn bays and channelization improvements) to address the needs of the transportation system in Clatsop County. This alternative also identifies potential locations for passing lanes along US 101, US 26, and US 30 that have been included in previous ODOT studies and corridor plans.
- **Alternative 3: Primary Corridor Capacity Improvements.** This alternative was developed to eliminate future forecasted operational deficiencies along the primary corridors in Clatsop County without construction of new roadway alignments (e.g., Astoria Bypass or Astoria-Warrenton Parkway). Alternative 3 identifies which sections of US 101, US 26, and US 30 would need to be widened to four-lane sections to meet OHP mobility standards under future, forecasted 30th-highest-hour conditions.
- **Alternative 4: Astoria Bypass.** The Astoria Bypass, which was developed to eliminate congestion in downtown Astoria, has been the subject of many previous ODOT studies. Alternative 4 identifies the impacts of the Astoria Bypass on the overall transportation system of Clatsop County during future, forecasted 30th-highest-hour conditions, including impacts on the New Youngs Bay Bridge.
- **Alternative 5: Astoria-Warrenton Parkway and Astoria Bypass.** The Astoria-Warrenton Parkway was studied in 1999 to address community concerns about potential impacts of the Astoria Bypass. Alternative 5 identifies impacts of the Astoria-Warrenton Parkway and Astoria Bypass on the overall transportation system of Clatsop County during future, forecasted 30th-highest-hour conditions, including impacts on the New Youngs Bay Bridge.
- **Alternative 6: Nonseasonal Peak Capacity Improvements.** Alternative 6 is a policy driven alternative that was developed to determine which combination of improvements from Alternatives 2 through 5 would improve operations in the County under future, forecasted nonseasonal peak periods. This alternative recognizes that major capacity improvements on State facilities are not possible in all locations because of economic and environmental constraints. Under Alternative 5, which assumes construction of the Astoria-Warrenton Parkway and Astoria Bypass without additional

capacity on the New Youngs Bay Bridge, State facilities would experience congestion under future forecasted nonseasonal peak conditions.

Alternatives presenting only Transportation Demand Management (TDM), transit, and land use strategies have not been included in this analysis because of the nature of the transportation system needs. As rural Clatsop County experiences high volumes of through tourist traffic, each of these measures on their own would not address all of the transportation system needs. Therefore, TDM and transit strategies are included as part of other alternatives.

Within this section, the preferred alternative and recommended phasing of the preferred alternative are discussed.

Measures of Effectiveness

Using the goals and objectives developed for the Clatsop County TSP, the measures of effectiveness shown in Table 4-1 were developed to analyze each alternative and project.

TABLE 4-1
Measures of Effectiveness

Goal	Rating	Project Criterion
Mobility/Accessibility	+	Improves transportation options or connectivity to serve different types of users (pedestrians, bicycles, freight) and the transportation disadvantaged.
	0	Does not significantly change transportation options or connectivity
	-	Reduces or limits transportation options or connectivity
Coordination	+	Included as part of other local, County, regional, or State policies or plans
	0	Not specifically mentioned in other policies or plans, but not out of compliance with such plans
	-	Not in compliance with other plans and policies
Nonmotorized Users	+	Promotes an interconnected system of bicycle and/or pedestrian facilities to serve either commuters, transit users, or recreational users
	0	Does not significantly change existing nonmotorized facilities
	-	Reduces the connectivity, safety, or aesthetics of existing nonmotorized facilities
Transportation Funding	+	Has identified funding
	0	Has no identified funding, but potential funding anticipated as reasonable
	-	Does not have identified funding
Environment	+	Preserves or enhances environmental significant areas or natural or historic features
	0	Low impacts to environmentally significant areas or natural or historic features
	-	Significantly impacts environmentally significant areas or natural or historic features
Capacity	+	Improves the capacity of the roadway network
	0	Does not significantly change the capacity of the roadway network
	-	Worsens roadway capacity
Safety	+	Improves safety for users

TABLE 4-1
Measures of Effectiveness

Goal	Rating	Project Criterion
	0	Does not significantly change roadway/facility safety
	-	Decreases safety for users
Lifeline Routes	+	Improves the quality or identification of lifeline routes
	0	Does not significantly change the quality or identification of lifeline routes
	-	Adversely affects the effectiveness or connectivity of lifeline routes

Alternatives Analysis

For each of the six alternatives included in the analysis, this section presents a description of the alternative, a summary list of capacity projects required on major facilities, the measures of effectiveness, the advantages and disadvantages, and the analysis methodology. The no-build alternative assumes that no major capacity improvement projects will be constructed in Clatsop County. The remaining five alternatives were developed to address the needs of the transportation system in Clatsop County.

Alternative 1: No-Build Alternative

Under the no-build alternative, no improvements would be constructed in Clatsop County during the next 20 years except for projects with committed funding. This alternative is not a viable planning alternative, as roadway, public transportation, bicycle, pedestrian, air, rail, water, and pipeline needs of the transportation system would not be addressed. The no-build alternative is included for comparison purposes.

Alternative 1—30th Highest Hour Analysis Summary

Alternative 1 assumes that no improvements outside of those with committed funding would be constructed in Clatsop County in the 20-year planning horizon. Under Alternative 1, there would be operational deficiencies under future, forecasted 30th-highest-hour conditions. In addition, roadway, public transportation, bicycle, pedestrian, air, rail, water, and pipeline deficiencies would not be addressed.

Alternative 1 Measures of Effectiveness

The measures of effectiveness show that Alternative 1 would make no progress in meeting the goals and objectives of the Clatsop County TSP.

Mobility/ Accessibility	Coordination	Non-Motorized Users	Transportation Funding	Environment	Capacity	Safety	Lifeline Routes
0	-	0	+	+	0	0	0

The advantages of Alternative 1 are:

- Low economic impacts (cost)
- Low environmental impacts

The disadvantages of Alternative 1 are:

- Existing lifeline routes are not improved.
- Under future, forecasted 30th-highest-hour conditions, there would be operational deficiencies throughout the County.

Alternative 2: Baseline TSM Improvements

Alternative 2 was developed to meet the goals and objectives of the Clatsop County TSP with minimum construction costs and environmental impacts. Alternative 2 includes safety, noncapacity, and TSM-related projects to address deficiencies throughout the County. This alternative also identifies locations where the addition of passing lanes should be considered to improve operations on US 101, US 26, and US 30 under 30th-highest-hour conditions. This alternative recognizes that major widening on US 101, US 26, and US 30 to meet OHP mobility standards under weekend tourist traffic is not feasible in all locations because of environmental and economic constraints.

Baseline TSM Improvements

The appendix lists all of the safety, noncapacity, and TSM-related projects that are assumed in Alternative 2. The list includes projects identified in relevant planning documents, including corridor plans, community comprehensive plans, and TSPs. The list also includes short-term projects that have been approved for Clatsop County or STIP funding. Projects that were identified through the analysis of existing or future, forecasted no-build conditions; the field visit; and input from the PMT, Advisory Committee (AC); or public open house also are included in the list of needs and potential projects. For each of the transportation improvements in the appendix, preliminary order-of-magnitude cost estimates were calculated.

The appendix groups the needs by facility and the following project categories:

- **Modernization** projects include capacity improvements to reduce congestion and improve safety. Improvements in this category include the addition of lanes on roadways or bridges to increase capacity.
- **Safety** projects include cost-effective improvements to reduce crash rates and fatalities.
- **Preservation** projects include rehabilitative work to extend the service life of existing facilities. Preservation improvements include pavement overlays and safety improvements (e.g., installation of guardrail, slope flattening, striping).
- **Bridge** projects include improvements on bridges, overpasses, and culverts.
- **Maintenance** projects include improvements that relate to the appearance and functionality of a roadway system. Improvements in this category include surface repairs, drainage work, minor structural work, maintenance of signs, signals, and lighting.
- **Operations** projects include improvements that increase the efficiency of a roadway network. Improvements within this category include interconnected traffic signal

systems, signs, Intelligent Transportation System (ITS) features, and rock fall or slide repairs.

- **Salmon** projects enhance salmon habitat through improvements to existing culverts and salmon habitat.
- **Access management** projects identify locations where access management plans should be developed or considered based on recommendations in previous planning documents.
- **Air** projects include improvements include potential improvements at the Astoria Regional Airport.
- **Pedestrian and bicycle** projects include potential improvements to better serve pedestrians and bicycles, including the addition of striped bike lanes, shoulders, and sidewalks.
- **Rail** projects include potential improvements along the existing Portland & Western rail line along US 30.
- **Transit** projects include potential improvements to the existing public transportation system.
- **Water** projects include potential improvements at the Port of Astoria and Warrenton Mooring Basin.

The projects are evaluated based on the measures of effectiveness (see appendix).

Alternative 2 Summary

Under Alternative 2, passing lanes would be constructed in the locations shown in Table 4-2, all of which have been studied previously by ODOT or recommended in corridor plans. In addition, all of the projects included in the appendix would be constructed. Under Alternative 2, there would be operational deficiencies under future forecasted 30th-highest-hour conditions. However, operations would be improved when compared with the no-build alternative.

TABLE 4-2
Alternative 2 Capacity Improvement List

State Facility (Range)	Beginning MP	Ending MP
Eastbound climbing lane—US 30 (Fern Hill to John Day River Bridge)	91.3	92.5
Westbound and eastbound climbing lanes—US 26 (Lindsley Creek to West Humbug Creek)	N/A	N/A
Westbound climbing lane—US 26	20.4	21.6
Eastbound climbing lane—US 26	22	22.9
Four-lane section of US 101 (Camp Rilea to Dellmoor Loop Road)	9.87	15.19

Alternative 2 Measures of Effectiveness

The measures of effectiveness show that Alternative 2 would make progress in meeting the goals and objectives of the Clatsop County TSP. With the identified roadway, public transportation, bicycle, pedestrian, air, rail, water, and pipeline projects, this alternative improves mobility/accessibility, options for nonmotorized users and safety. Alternative 2 is consistent with other relevant plans and policies.

Mobility/ Accessibility	Coordination	Non-Motorized Users	Transportation Funding	Environment	Capacity	Safety	Lifeline Routes
+	+	+	0	0	0	+	0

The advantages of Alternative 2 are:

- Passing lanes along State facilities would improve operations.
- Alternative 2 would cost relatively less than major capacity improvements on State facilities.
- Low environmental impacts in comparison to major capacity improvements on State facilities.

The disadvantages of Alternative 2 are:

- Within the communities of Astoria and Warrenton, capacity improvements would be required to eliminate 30th-highest-hour operational deficiencies.
- In rural areas of Clatsop County, 30th-highest-hour operational deficiencies would exist.
- Alternative 2 would not significantly improve existing lifeline routes.

State Facilities

With construction of passing lanes on each of these facilities, two-lane sections along each State highway still will act as “bottlenecks” under 30th-highest-hour conditions. However, total travel time along each State facility would be decreased with the construction of passing lanes in comparison with no-build conditions. This approach is consistent with the corridor plans for US 26 and US 30, which address congestion in rural areas by recommending locations for passing lanes and turn lanes.

US 30. Along US 30, a passing lane was recommended in the US 30 Corridor Plan between MP 91.3 (Fern Hill Road) and MP 92.46 (John Day River Bridge). This improvement has been studied by ODOT as part of the Fern Hill to John Day River Bridge Project, which included an eastbound climbing lane in the build alternatives analyzed as part of the study. In addition to the eastbound climbing lane, the build alternatives also included realignment of the Fern Hill curves along US 30, which were identified as a safety issue in the corridor by the PMT for the Clatsop County TSP.

US 26. Along US 26, the addition of passing lanes between Lindsley Creek and West Humbug Creek was recommended in the US 26 Corridor Plan. This project had committed

funding at one time (2000-2003 STIP), but was removed from the STIP to construct other improvements.

Other passing lane locations that are included in this alternative include a westbound climbing lane from MP 20.4 to MP 21.6 and an eastbound passing lane between MP 22 and MP 22.9. Both of these improvements were recommended in the US 26 Corridor Plan as strategic projects.

US 101. Along US 101, several roadway improvement projects have been studied by ODOT, including the Camp Rilea to Dellmoor Loop Road Project. The Camp Rilea to Dellmoor Loop Road project, which proposes a four-lane parkway section with left turn pockets, would improve operations between Warrenton and Gearhart. With construction of a four-lane parkway section, US 101 between Warrenton and Gearhart could be designated as an expressway. This project is currently inactive, but has been recommended by the Draft Oregon Coast Highway Corridor Master Plan.

Summary

Alternative 2 would improve conditions in Clatsop County and meet most of the goals and objectives. As shown through the measures of effectiveness, Alternative 2 would not significantly improve lifeline routes or capacity on State facilities. To address both of these goals and objectives, Alternatives 3 through 5 were developed and analyzed. Each of these alternatives identifies which capacity improvements would be necessary on State facilities to meet OHP mobility standards under 30th-highest-hour conditions and improve lifeline routes.

Alternative 3: Primary Corridor Capacity Improvements

Alternative 3 was developed to eliminate future, forecasted 30th-highest-hour operational deficiencies in Clatsop County without the construction of new sections of roadway (e.g., the Astoria Bypass or Astoria-Warrenton Parkway). Improvements that are assumed in Alternative 3 include additional capacity on the New Youngs Bay Bridge and along US 101, US 26, and US 30 to eliminate future, forecasted operational deficiencies under 30th-highest-hour conditions. Construction of Alternative 3 would be costly because of bridge replacement costs, rural capacity improvements on State highways, environmental impacts, and capacity improvements necessary in the communities of Warrenton and Astoria.

Alternative 3 Summary

To eliminate future, forecasted operational deficiencies under 30th-highest-hour conditions, major capacity improvements would be required along US 101, US 26, and US 30. Table 4-3 and Figure 4-1 summarize the milepost ranges along each of these facilities where four-lane roadway sections would be required to eliminate future forecasted deficiencies.

TABLE 4-3
Alternative 3 Capacity Improvement List (2022 30th-Highest-Hour)

State Facility (Range)	Begin MP	End MP
Four-lane New Youngs Bay Bridge on US 101	4.51	5.31
Improvements to US 30 within Astoria city limits	95.12	99.34
Construct a four-lane roadway section on US 101 (Astoria to US 26 Interchange)	0	24.93
Construct a four-lane section on US 26 (US 101 to MP 4)	0	4
Construct a four-lane section on US 26 (MP 9.5 to Clatsop-Tillamook Line)	9.5	30.75
Construct a four-lane section on US 30 (John Day Bridge to Astoria)	92.68	95.12

Source: Future, Forecasted No-Build 30th-Highest-Hour Analysis

Alternative 3 Measures of Effectiveness

The measures of effectiveness show that Alternative 3 would meet the capacity and lifeline route goals of the Clatsop County TSP. However, the alternative would have high environmental and economic impacts and is not consistent with other planning documents and policies.

Mobility/ Accessibility	Coordination	Non-Motorized Users	Transportation Funding	Environment	Capacity	Safety	Lifeline Routes
0	-	+	-	-	+	0	+

The advantages of Alternative 3 are:

- Eliminates 30th-highest-hour operational deficiencies under future forecasted conditions
- Improves existing lifeline routes

The disadvantages of Alternative 3 are:

- Significant improvements would be required in the communities of Astoria and Warrenton to eliminate 30th-highest-hour operational deficiencies.
- Alternative would be costly because of rural improvements, improvements within city limits, and a four-lane section at the New Youngs Bay Bridge.
- High environmental impacts through the construction of 4-lane facilities within rural areas (e.g. wetlands and environmentally sensitive areas)

Alternative 3—30th-Highest-Hour Analysis Methodology

To eliminate future, forecasted 30th-highest-hour operational deficiencies, additional travel lanes would be required in all existing two-lane sections along US 101, US 26, and US 30 summarized in Table 4-3. By adding capacity along each of these sections, US 101, US 26, and US 30 would meet OHP mobility standards under 2022 30th-highest-hour conditions.

**Alternative 3:
Primary Capacity
Improvements
(2022)**



CH2MHILL

ANGELIA LEATON

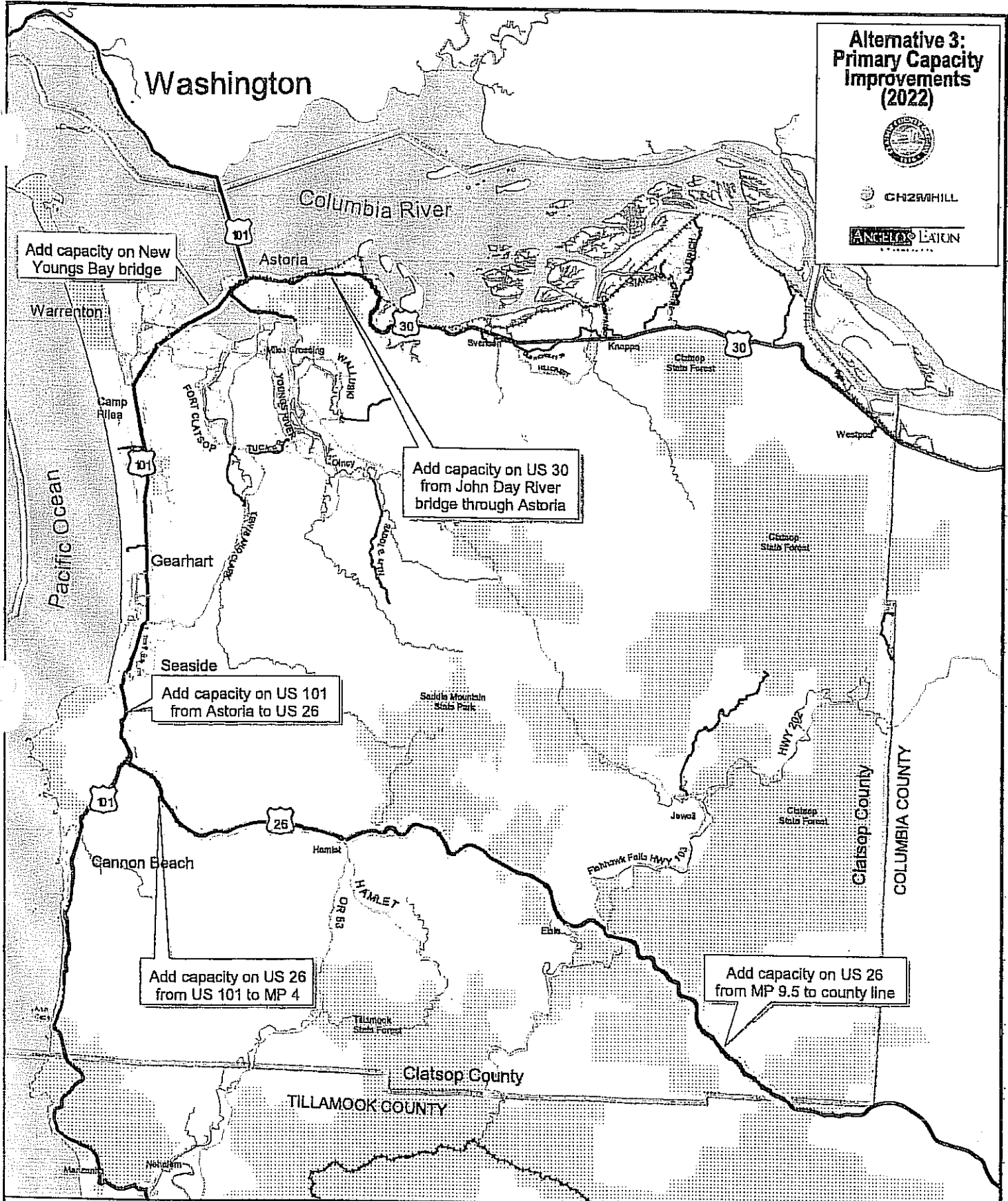


Figure 4-1
Transportation System Plan
Clatsop County

Figure 4-1
Capacity Improvement Locations—Alternative 3
Back

New Youngs Bay Bridge Improvements

A two-lane bridge section would operate at a v/c ratio of 1.51 (both directions) during future, forecasted 30th-highest-hour conditions. A v/c ratio of 1.0 indicates that a roadway section is operating at capacity. With a v/c ratio of more than 1.0, the roadway section is not able to serve all of the demand, resulting in decreased speeds, queuing, and congestion. By widening the New Youngs Bay Bridge to a four-lane section, the bridge would operate at a v/c ratio of 0.59 (both directions) under 30th-highest-hour conditions in year 2022.

Previous Analyses of New Youngs Bay Bridge

Traffic conditions on the New Youngs Bay Bridge have been analyzed previously in the Astoria TSP, the Astoria Bypass studies, and Astoria-Warrenton Parkway study. Each of these analyses used a weekday peak design hour, representing conditions during the PM peak hour on a weekday afternoon. Therefore, the results from these studies are not directly comparable to the results of the future, forecasted 30th-highest-hour analysis of Alternative 3, which assumes higher volumes because of seasonal tourist traffic on the Oregon Coast. The previous analyses used a future design year of 2016 compared to the design year of 2022 used in this analysis.

In the previous analyses, a capacity of 830 vehicles per hour (one-way) was originally assumed for the existing two-lane New Youngs Bay Bridge section. The capacity was reviewed and modified to 1,800 vehicles per hour per lane to resemble free-flow operating conditions on a freeway section. The analysis of the New Youngs Bay Bridge for the Clatsop County TSP uses a capacity of 1,283 vehicles per hour per lane, which is between the capacities assumed in previous analyses.

The New Youngs Bay Bridge is 2 miles long including the approaches, with a signal at the south end (intersection of US 101 with Harbor) and a roundabout at the north end (Smith Point) that will disrupt operations on the bridge approaches. The bridge operates as a drawbridge, with closure warnings, narrow shoulders, and a scenic view of Youngs Bay. Because each of these factors will disrupt operations on the bridge, a lower capacity was used in this analysis. However, it is important to note that a capacity of 1,800 vehicles per hour per lane would result in a v/c ratio of 1.07 (both directions) under future, forecasted (2022) 30th-highest-hour no-build conditions, which is still more than OHP mobility standards and a v/c ratio of 1.0.

Impacts of Alternative 3 on Cities of Astoria and Warrenton

Although the Clatsop County TSP focuses on rural sections in Clatsop County, the operating conditions within the communities of Astoria, Gearhart, Seaside, and Warrenton also need to be addressed. Alternative 3 would eliminate "bottlenecks" as a result of future forecasted traffic volumes in the rural areas of Clatsop County by adding capacity to State facilities. However, without improvements along State facilities in Astoria and Warrenton, "bottlenecks" still will exist within each of these cities within the 20-year planning horizon. Improvements along US 101 in Warrenton, which would be required to meet OHP mobility standards under Alternative 3, are addressed in the Warrenton TSP. In Astoria, significant improvements would be required along US 101 and US 30 to meet OHP mobility standards under Alternative 3.

Alternative 4: Astoria Bypass

Alternative 4 consists of the Astoria Bypass, which is detailed in several ODOT studies and the Astoria TSP. The Astoria Bypass concept was developed to alleviate congestion and reduce truck traffic in downtown Astoria. The alignment of the Astoria Bypass would begin just west of the John Day River Bridge on US 30 and continue west to OR 202 at Williamsport Road. This section of new roadway would be 55 mph with limited access and climbing lanes. The alignment then would continue west along OR 202 to Smith Point and north for 0.5 mile along US 101. Road improvements would be necessary along the existing sections of State highways, including sidewalks, bicycle improvements, access management projects, construction of turn lanes, and the addition of through lanes.

Alternative 4—30th-Highest-Hour Analysis Summary

Table 4-4 and Figure 4-2 display the milepost ranges of improvements that would be necessary to meet OHP mobility standards under future, forecasted 30th-highest-hour conditions with construction of the Astoria Bypass. Table 4-4 includes locations along the bypass route that would require improvements, the New Youngs Bay Bridge, which would need to be updated to a four-lane section to meet OHP mobility standards, and rural capacity improvements along US 101 and US 26. Alternative 4 would require the same capacity improvements on US 101 and US 26 as Alternative 3, but would not require capacity improvements on US 30 between the John Day River Bridge and Astoria and within the city limits of Astoria.

TABLE 4-4
Alternative 4 Capacity Improvement List (2022 30th-Highest-Hour)

State Facility (Range)	Begin MP	End MP
New roadway section between US 30 and OR 202	NEW	NEW
Roadway improvements on OR 202	0	2.64
Roadway improvements on US 101 within Astoria	3.8	4.2
Roadway improvements along US 101 in Warrenton	4.97	9.5
Four-lane New Youngs Bay Bridge on US 101	4.51	5.31
Construct a four-lane section on US 101 (Astoria to US 26 Interchange)	4.97	24.93
Construct a four-lane section on US 26 (US 101 to MP 4)	0	4
Construct a four-lane section on US 26 (MP 9.5 to Clatsop-Tillamook Line)	9.5	30.75

Alternative 4 Measures of Effectiveness

The measures of effectiveness show that Alternative 4 would meet the capacity, mobility, coordination, and lifeline route goals of the Clatsop County TSP. However, the alternative would have high environmental and economic impacts.

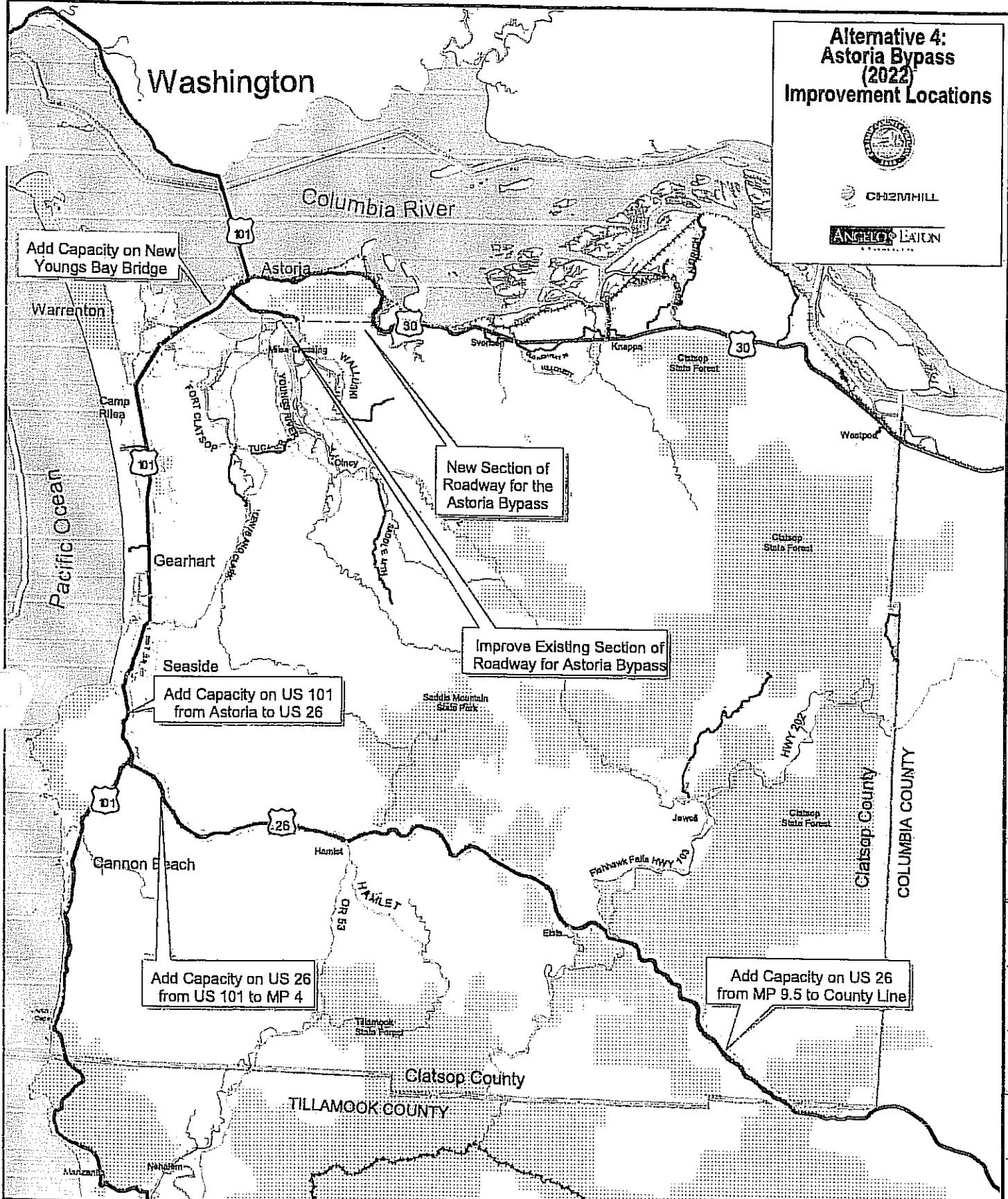
Mobility/Accessibility	Coordination	Non-Motorized Users	Transportation Funding	Environment	Capacity	Safety	Lifeline Routes
+	+	+	-	-	+	0	+

**Alternative 4:
Astoria Bypass
(2022)
Improvement Locations**



CH2MHILL

ANGELIC LAYTON



Capacity Improvement Location
New Roadway Construction

Portland & Western Railroad

Parks
City Limits
County Boundary

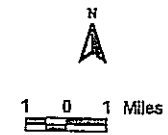


Figure 4-2
Transportation System Plan
Clatsop County

Figure 4-2
Capacity Improvement Locations – Alternative 4
Back

The advantages of Alternative 4 are:

- Eliminates 30th-highest-hour operational deficiencies under future forecasted conditions.
- Because of a significant shift of traffic at the east end of the Astoria Bypass, costly improvements within the city limits of Astoria and along US 30 would not be required.
- Improves existing lifeline routes and adds new lifeline routes to the network.

The disadvantages of Alternative 4 are:

- High environmental impacts through construction of 4-lane facilities within rural areas and the Astoria Bypass (e.g. wetlands and environmentally sensitive areas)
- Alternative 4 would be costly because of construction costs of the Astoria Bypass, potential improvements within the city limits of Warrenton, rural capacity improvements along US 101 and US 26, and construction of a four-lane section on the New Youngs Bay Bridge.
- Significant improvements would be required in the city limits of Warrenton.

Alternative 4—30th-Highest-Hour Analysis Methodology

The analysis of Alternative 4 is based on previously conducted modeling work for the Astoria Bypass (Astoria TSP and Extended Bypass Alignment Study). Under Alternative 4, traffic volumes would decrease on US 30 west of the John Day Bridge. The new section of roadway constructed between OR 202 and US 30 is expected to carry 77 percent of the traffic that currently uses US 30 at the John Day Bridge. The analysis assumes that the remaining 23 percent of traffic on US 30 would continue into downtown Astoria. This significant shift in traffic would create noticeable changes in traffic volumes in downtown Astoria.

According to the Astoria TSP, construction of the Astoria Bypass will eliminate much of the congestion in downtown Astoria.

The Astoria Bypass project would not cause significant shifts in traffic over the New Youngs Bay Bridge. This alternative would not include improvements to Warrenton-Astoria Highway 105, so traffic using the bypass route still would use the New Youngs Bay Bridge to access US 101 south of Astoria. Therefore, the operational analysis of the Astoria Bypass alternative produces results that are similar to Alternative 3. To meet OHP mobility standards under 30th-highest-hour conditions, significant capacity improvements would be required at the New Youngs Bay Bridge, along US 101 between Astoria and the US 26, and along US 26. Alternative 4 would reduce congestion along US 30 from the John Day River Bridge to Astoria and within the city limits of Astoria.

Alternative 4—New Youngs Bay Bridge Analysis

The Astoria Bypass DEIS acknowledges that traffic operations on the New Youngs Bay Bridge would need to be addressed in a future project with or without construction of the Astoria Bypass project. Therefore, Alternative 4 assumes that the New Youngs Bay Bridge would be widened to a four-lane section to address future, forecasted operational deficiencies that would occur on the bridge with construction of the Astoria Bypass project.

Alternative 5: Astoria-Warrenton Parkway and Astoria Bypass

Alternative 5 consists of the Astoria-Warrenton Parkway, which is detailed in a study completed for ODOT in April of 1999 (Extended Bypass Alignment Study). The Astoria-Warrenton Parkway alignment was studied at the request of the Astoria community to address concerns arising over the Astoria Bypass, including increased traffic in front of the high school and on the New Youngs Bay Bridge, operations at the Smith Point and Miles Crossing intersections, safety at several intersections, and maintenance of the two bridges along Warrenton-Astoria Highway 105.

Alternative 5 includes projects associated with the Astoria Bypass from the John Day River Bridge to OR 202. The Astoria-Warrenton Parkway alignment would begin at the intersection of OR 202 and Warrenton-Astoria Highway 105, continue south across the Old Youngs Bay Bridge, and then continue west along Warrenton-Astoria Highway 105. A new east-west section of roadway would link Warrenton-Astoria Highway 105 with US 101 near Dolphin Avenue, where an interchange would most likely be necessary. Road improvements would be necessary along existing sections of OR 202 and Warrenton-Astoria Highway 105, including sidewalks, bicycle improvements, access management projects, replacement of the Old Youngs Bay and Lewis and Clark Bridges, and the construction of turn lanes. The Astoria-Warrenton Parkway would serve as a truck route, reducing truck traffic through Astoria and Warrenton.

Alternative 5—30th-Highest-Hour Analysis Summary

To eliminate future forecasted deficiencies under 30th-highest-hour conditions with Alternative 5, major capacity improvements would be required along US 101 and US 26, at the New Youngs Bay Bridge, and along the Warrenton-Astoria Parkway and Astoria Bypass alignments. Table 4-5 and Figure 4-3 display the milepost ranges along each of these facilities where four-lane facilities or new roadway sections would be required to eliminate future forecasted deficiencies. Figure 4-4 shows the Astoria Bypass and Astoria-Warrenton Parkway improvements.

TABLE 4-5
Alternative 5 Capacity Improvement List (2022 30th-Highest-Hour)

State Facility (Range)	Begin MP	End MP
New roadway section between US 30 and OR 202	NEW	NEW
Roadway improvements on OR 202	1.42	2.64
Roadway improvements on Warrenton-Astoria Highway 105	2.35	7.25
Roadway improvements along US 101 in Warrenton	4.97	9.5
Upgrade Lewis and Clark Bridge	4.78	4.78
Upgrade Old Youngs Bay Bridge	6.89	6.89
Four-lane New Youngs Bay Bridge on US 101	4.51	5.31
Construct four-lane section on US 101 (Astoria to US 26 Interchange)	4.97	24.93
Construct four-lane section on US 26 (US 101 to MP 4)	0	4
Construct four-lane section on US 26 (MP 9.5 to Clatsop-Tillamook Line)	9.5	30.75

Washington

Alternative 5: Astoria-Warrenton Parkway and Astoria Bypass (2022) Improvement Locations



CH2MHILL

ANGELICO LATION

Columbia River

Add Capacity on New
Youngs Bay Bridge

101

Astoria

30

New Section of Roadway
for Astoria Bypass

New Section of Roadway
for Astoria-Warrenton Parkway

Improve Existing Section of
Roadway for Astoria Bypass

Improve Existing Section of
Roadway for Astoria-Warrenton
Parkway

Add Capacity on US 101
from Astoria to US 26

101

26

Gannon Beach

Add Capacity on US 26
from US 101 to MP 4

Add Capacity on US 26
from MP 9.5 to County Line

Clatsop County

TILLAMOOK COUNTY

Clatsop County

COLUMBIA COUNTY

Capacity Improvement
Location

New Roadway
Construction

Portland & Western
Railroad

Parks

City Limits

County Boundary



1 0 1 Miles

Figure 4-3

Transportation
System Plan

Clatsop County

Note: Improvements necessary within City of
Warrenton to be evaluated as part of Warrenton TSP

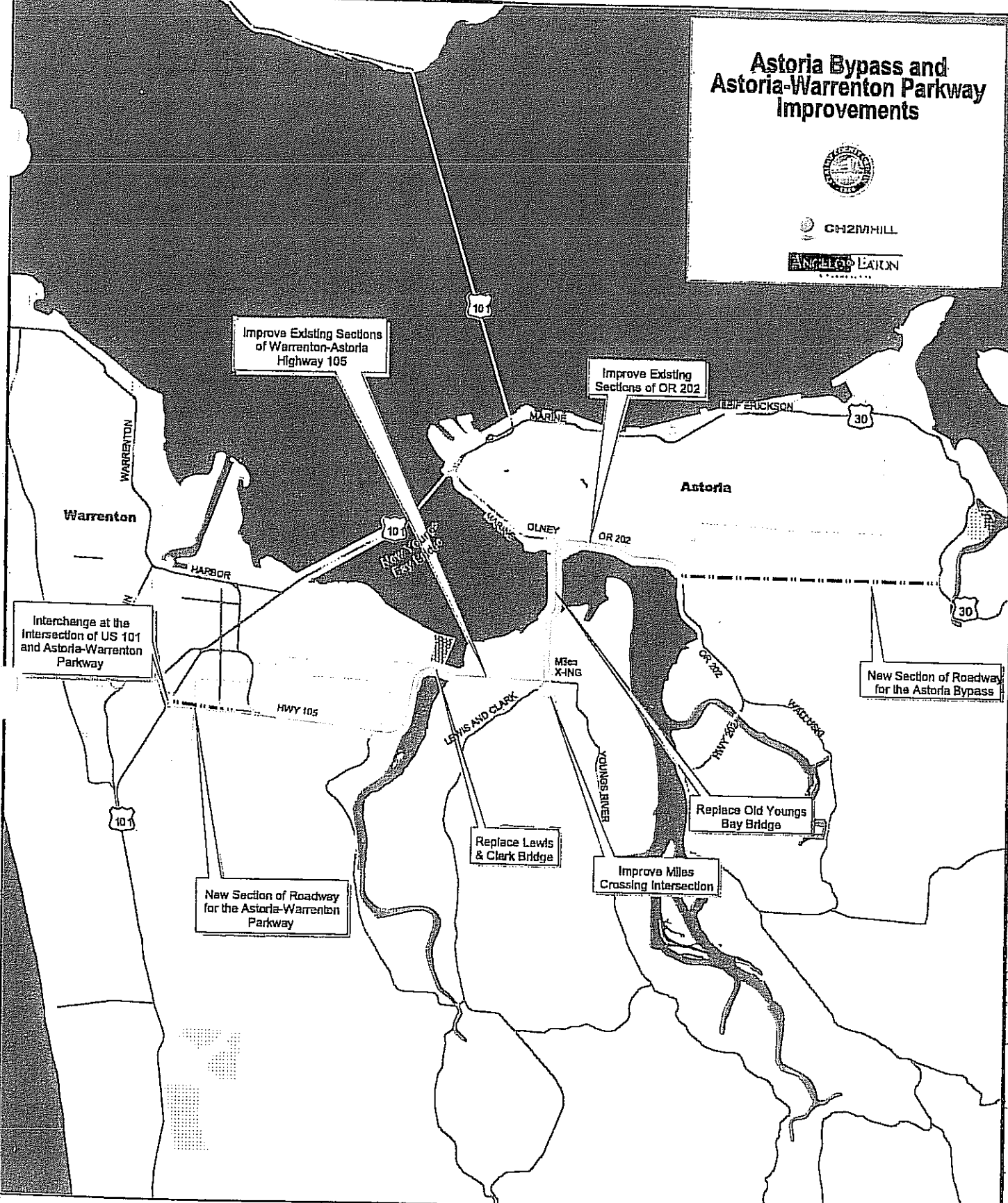
Figure 4-3
Capacity Improvement Locations – Alternative 5
Back

Astoria Bypass and Astoria-Warrenton Parkway Improvements



CH2MHILL

ENGINEERING & ARCHITECTURE



--- New roadway construction required for Astoria Bypass and Astoria-Warrenton Parkway



Forecasted 2022 Weekday PM Peak Hour Volume

--- Roadway Improvements required for Astoria Bypass and Astoria-Warrenton Parkway

City Limits



2000 0 2000 Feet

Figure 4-4

Transportation System Plan

Clatsop County

Figure 4-4
Astoria Bypass and Astoria-Warrenton Parkway Improvements
Back

Alternative 5 Measures of Effectiveness

The measures of effectiveness show that Alternative 5 would meet the capacity, mobility, coordination, and lifeline route goals of the Clatsop County TSP. However, the alternative would have high environmental and economic impacts.

Mobility/ Accessibility	Coordination	Non-Motorized Users	Transportation Funding	Environment	Capacity	Safety	Lifeline Routes
+	+	+	-	-	+	0	+

The advantages of Alternative 5 are:

- Meets OHP mobility standards under future forecasted 30th-highest-hour conditions.
- Because of a significant shift of traffic at the east end of the Astoria-Warrenton Parkway, costly improvements within the city limits of Astoria and along US 30 would not be required.
- Improves existing lifeline routes and adds new lifeline routes to the network.

The disadvantages of Alternative 5 are:

- High environmental impacts
- In comparison with previously analyzed alternatives, Alternative 5 would have the highest cost as a result of construction costs of the Astoria Bypass, Astoria-Warrenton Parkway improvements, potential improvements within the city limits of Warrenton, rural capacity improvements along US 101 and US 26, and additional capacity on the New Youngs Bay Bridge.
- Improvements would most likely be required in the city limits of Warrenton.

Alternative 5—30th-Highest-Hour Analysis Methodology

Traffic forecasts from the Astoria-Warrenton Parkway Study completed in 1999 were used to evaluate the operational performance of Alternative 5. The 1999 study by David Evans and Associates included an EMME/2 model of year 2016 forecasted weekday PM peak hour volumes. Using historical growth rates calculated for State facilities, the year 2016 EMME/2 volumes were forecasted to year 2022 weekday PM peak hour volumes. Figure 4-5 displays the forecasted year 2022 weekday PM peak hour volumes along the Astoria-Warrenton Parkway alignment.

To analyze future forecasted 30th highest hour conditions under Alternative 4, the weekday PM peak hour volumes shown in Figure 4-5 were increased to 30th highest hour volumes using seasonal adjustment factors. Figure 4-6 displays the forecasted year 2022 30th highest hour volumes along the Astoria-Warrenton Parkway alignment.

As shown in Figures 4-5 and 4-6, the new section of roadway constructed between OR 202 and US 30 is expected to carry 77 percent of the traffic that currently uses US 30 at the John Day Bridge. This assumption is consistent with previous modeling work for the Astoria

Bypass and Astoria-Warrenton Parkway, which both assume that the remaining 23 percent of traffic on US 30 will continue into downtown Astoria. This significant shift in traffic would create noticeable changes in traffic volumes in downtown Astoria.

Under the previous modeling work for the Astoria-Warrenton Parkway, a significant shift in traffic volumes also occurs on the west end of the Astoria-Warrenton Parkway project limits. In year 2016, a shift of 400 vehicles (both directions) is expected to occur from the New Youngs Bay Bridge to the Old Youngs Bay Bridge during weekday PM peak hour conditions. In year 2022, a shift of approximately 460 vehicles (both directions) would be expected during weekday PM peak hour conditions. Under future forecasted 30th highest hour conditions, this analysis assumes that 600 vehicles per hour would shift to the Astoria-Warrenton Parkway alignment, which would create noticeable changes in traffic volumes along US 101 in Warrenton.

This analysis assumes that under year 2022 forecasted 30th highest hour volumes, all segments of road along the bypass route would meet OHP mobility standards. Although the New Youngs Bay Bridge would see a reduction in traffic if the Astoria-Warrenton Parkway were constructed, the bridge is still forecasted to serve a total of 3035 vehicles (1640 vehicles southbound, 1395 vehicles northbound) during 30th highest hour conditions. Using a capacity of 1283 vehicles per hour per lane, the bridge would still operate over OHP mobility standards (V/C ratio of 1.28 southbound and 1.09 northbound). These high V/C ratios show that with construction of the Astoria-Warrenton Parkway, high volumes of traffic over the New Youngs Bay Bridge are still forecasted due to both local and through tourist traffic on US 101.

Capacity improvements along US 26 and US 101 described in Alternative 3 would still be required under Alternative 5 to eliminate future forecasted 30th highest hour operational deficiencies. Alternative 5 would eliminate much of the forecasted congestion in downtown Astoria. However, improvements to US 101 within Warrenton would most likely still be required to eliminate operational deficiencies forecasted under 30th highest hour conditions with construction of the Astoria-Warrenton Parkway. This alternative will be studied in detail as part of the Warrenton TSP.

Alternative 6: Nonseasonal Peak Hour Capacity Improvements

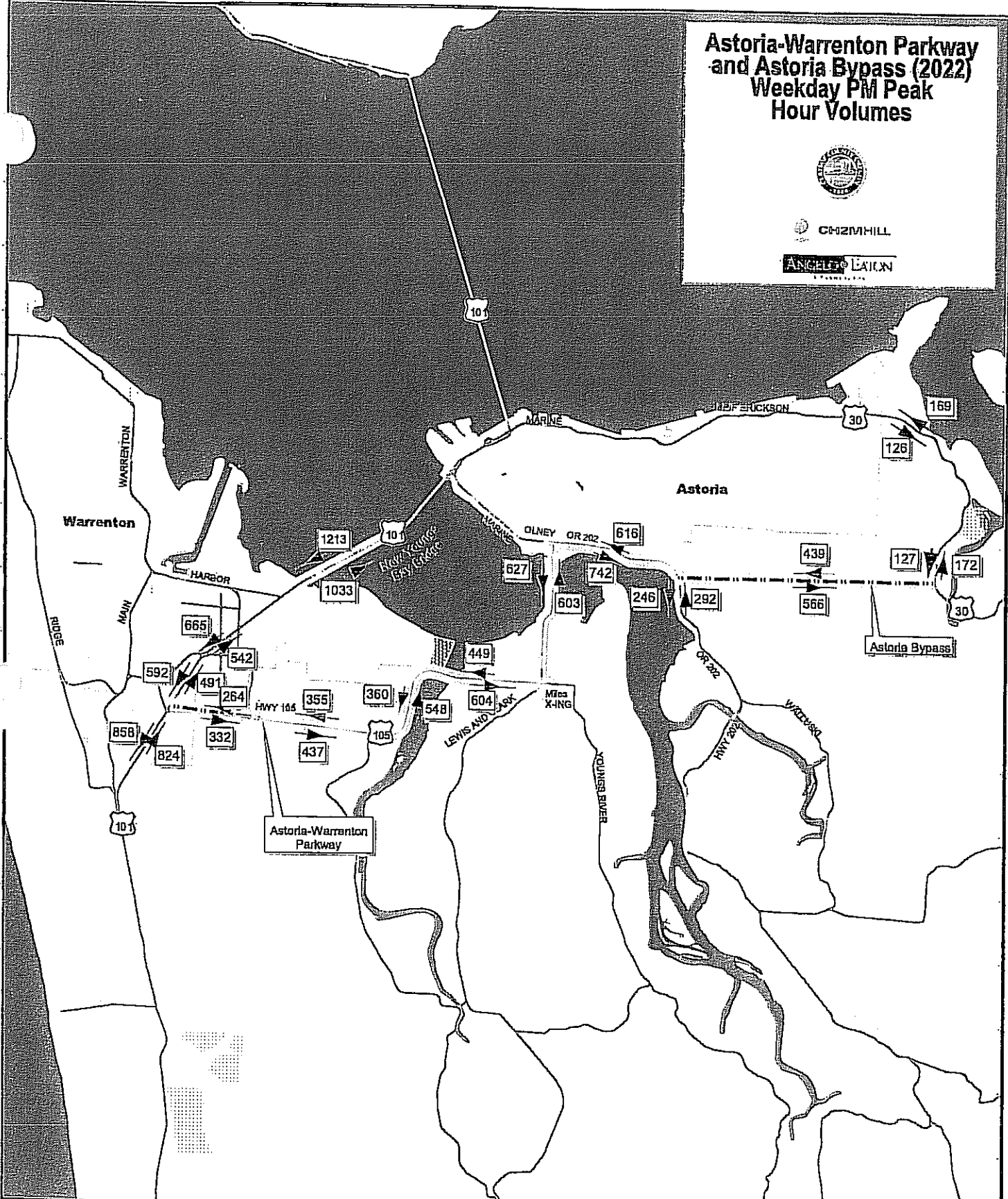
Alternative 6 is a policy-driven alternative that was developed to determine which combination of improvements from Alternatives 2 through 5 would improve operations within the County under future forecasted nonseasonal peak hour conditions without construction of a 4-lane New Youngs Bay Bridge. Nonseasonal peak hour conditions represent traffic operations during the peak hour on a weekday afternoon. This alternative, which assumes construction of the Astoria-Warrenton Parkway and Astoria Bypass, recognizes that major capacity improvements on State facilities are not possible in all locations due to economic and environmental constraints. Under Alternative 6, all State and County facilities except for sections of US 101 and the New Youngs Bay Bridge would meet OHP mobility standards under future forecasted nonseasonal peak periods. In addition, operations within the communities of Astoria and Warrenton would be improved in comparison to future forecasted no-build nonseasonal peak hour conditions.

Astoria-Warrenton Parkway and Astoria Bypass (2022) Weekday PM Peak Hour Volumes



CH2MHILL

ANGELLO LATION



--- New roadway construction required for Astoria Bypass and Astoria-Warrenton Parkway

--- Roadway improvements required for Astoria Bypass and Astoria-Warrenton Parkway



Forecasted 2022 Weekday PM Peak Hour Volume

City Limits



2000 0 2000 Feet

Figure 4-5

Transportation System Plan

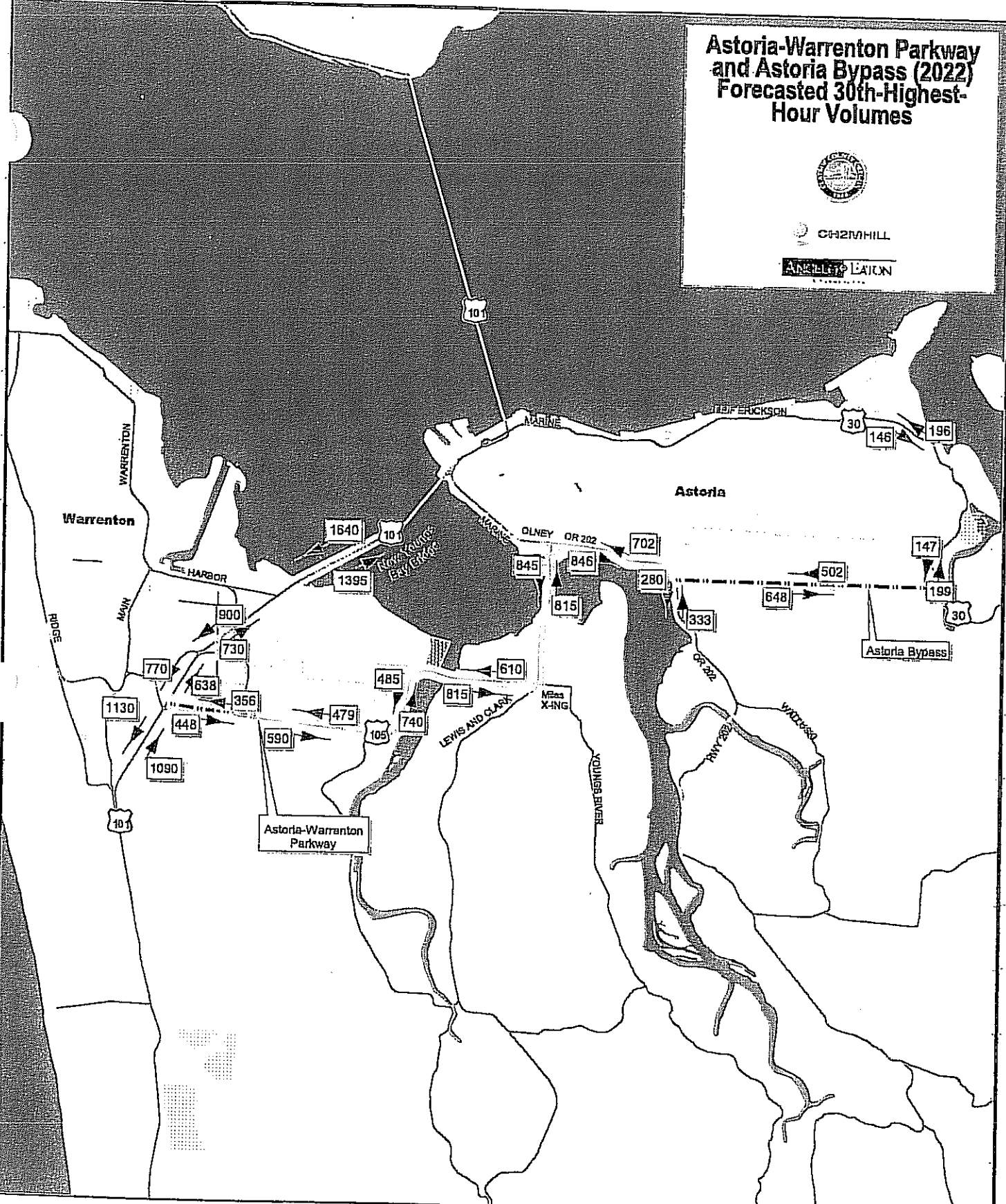
Clatsop County

Figure 4-5
2022 Forecasted Weekday PM Peak Hour Volumes – Alt 5
Back

Astoria-Warrenton Parkway and Astoria Bypass (2022) Forecasted 30th-Highest-Hour Volumes



CH2MHILL
ANSELMO LEATON



--- New roadway construction required for Astoria Bypass and Astoria-Warrenton Parkway

--- Roadway Improvements required for Astoria Bypass and Astoria-Warrenton Parkway



Forecasted 2022 Weekday PM Peak Hour Volume

City Limits



2000 0 2000 Feet

Figure 4-6

Transportation System Plan

Clatsop County

Figure 4-6
2002 Forecasted 30th Highest Hour Volumes – Alt 5
Back

Alternative 6—Nonseasonal Peak Hour Summary

Table 4-6 displays the milepost ranges of improvements that are included in Alternative 6.

TABLE 4-6
Alternative 6 Capacity Improvement List

State Facility (Range)	Begin MP	End MP
New roadway section between US 30 and OR 202	NEW	NEW
Roadway improvements on OR 202	1.42	2.64
Roadway improvements on Warrenton-Astoria Highway 105	2.35	7.25
Upgrade Lewis and Clark Bridge	4.78	4.78
Upgrade Old Youngs Bay Bridge	6.89	6.89
Eastbound climbing lane—US 30 (Fern Hill to John Day River Bridge)	91.3	92.5
Westbound and eastbound climbing lanes—US 26 (Lindsley Creek to West Humbug Creek)	N/A	N/A
Westbound climbing lane—US 26	20.4	21.6
Eastbound climbing lane—US 26	22	22.9
Potential passing lane on US 101 between Warrenton and Gearhart	8.72	18.3

Alternative 6 Measures of Effectiveness

The measures of effectiveness show that Alternative 6 would meet the mobility, coordination, and lifeline route goals of the Clatsop County TSP. The alternative would also improve capacity along State facilities. This alternative would have significant environmental and economic impacts.

Mobility/ Accessibility	Coordination	Non-Motorized Users	Transportation Funding	Environment	Capacity	Safety	Lifeline Routes
+	+	+	0	-	+	0	+

The advantages of Alternative 6 are:

- Eliminates the need for costly improvements within the city limits of Astoria and along US 30.
- Improves existing lifeline routes and adds new lifeline routes to the network.
- Construction of the Astoria-Warrenton Parkway would reduce the magnitude of improvements necessary within the city limits of Warrenton.

- With the exception of the New Youngs Bay Bridge and 2-lane sections of US 101, the rural transportation system would meet OHP mobility standards under future forecasted nonseasonal peak hour conditions.

The disadvantages of Alternative 6 are:

- High environmental impacts due to construction of the Astoria-Warrenton Parkway and Astoria Bypass improvements.
- High construction costs due to the Astoria-Warrenton Parkway and Astoria Bypass improvements.

Alternative 6—Nonseasonal Peak Hour Analysis Methodology

To analyze Alternative 6, nonseasonal no-build 2022 peak hour volumes were developed for US 101, US 30, and US 26 within Clatsop County. A seasonal factor of 1.35, which is consistent with the seasonal factor developed for the Warrenton TSP and the previous Astoria-Warrenton Parkway modeling, was used to convert future forecasted no-build 30th highest hour volumes to nonseasonal peak hour volumes. Using the nonseasonal no-build 2022 peak hour volumes and the methodology described in previous sections, operational deficiencies were identified on each of these State facilities under future forecasted no-build nonseasonal peak hour conditions.

2-lane sections of US 101 from Astoria through Seaside would not meet OHP mobility standards under future forecasted (2022) nonseasonal peak hour conditions. To improve operations between Warrenton and Gearhart, a passing lane could be constructed along US 101. The location of a passing lane in this location would need to be studied to minimize impacts to surrounding natural resources.

Under Alternative 6, the New Youngs Bay Bridge would operate at a V/C ratio of 0.95 southbound and 0.81 northbound during future forecasted nonseasonal peak hour conditions. These V/C ratios exceed OHP mobility standards for US 101.

On US 30 and US 26, all existing 2-lane sections would operate at less than or equal to OHP mobility standards under future forecasted nonseasonal peak hour conditions in rural Clatsop County. However, Alternative 6 assumes that all of the passing lane locations identified in Alternative 2 would be constructed along US 30 and US 26.

Summary of Alternatives

Table 4-7 summarizes the range of improvements in unincorporated areas and the city limits of Astoria and Warrenton that would be required under Alternatives 2 through 6. The table summarizes the performance of each alternative relative to OHP mobility standards, overall environmental impacts and cost, safety, and lifeline routes.

TABLE 4-7
Summary of Alternatives

	Alternative 2: Baseline TSM Improvements	Alternative 3: Primary Corridor Capacity Improvements	Alternative 4: Astoria Bypass	Alternative 5: Astoria- Warrenton Parkway	Alternative 6: Nonseasonal Peak Hour Capacity Improvements
Meets OHP Mobility Standard under 30th highest hour conditions	No	Yes	Yes	Yes	No
US 101 (Rural ¹) Improvements	Passing Lanes	4-lane New Youngs Bay Bridge 4-lane roadway sections	4-lane New Youngs Bay Bridge 4-lane roadway sections	4-lane New Youngs Bay Bridge 4-lane roadway sections	Passing Lanes
US 26 (Rural ¹) Improvements	Passing Lanes	4-lane roadway sections	4-lane roadway sections	4-lane roadway sections	Passing Lanes
US 30 (Rural ¹) Improvements	Passing Lanes	4-lane roadway sections	No improvements	No improvements	Passing Lanes
Warrenton-Astoria Highway 105 Improvements	None	None	None	Improvements on Extg. Sections of Roadway Replacement of the Lewis and Clark and Old Youngs Bay Bridges	Improvements on Extg. Sections of Roadway Replacement of the Lewis and Clark and Old Youngs Bay Bridges
City Impacts	Major Improvements: Astoria (US 30 and US 101) Warrenton (US 101)	Major Improvements: Astoria (US 30 and US 101) Warrenton (US 101)	Major Improvements: Warrenton (US 101)	Minor Improvements: Warrenton (US 101)	Minor Improvements: Warrenton (US 101)
Relative Environmental Impacts/Cost (\$)	Low	High	High	High	Mod to High
Lifeline Routes	No Change	Improves existing lifeline routes	Improves existing lifeline routes and creates new routes	Improves existing lifeline routes and creates new routes	Improves existing lifeline routes and creates new routes

¹Rural improvements refer to unincorporated areas along US 101, US 26, and US 30.

TSM and TDM Strategies

Transportation System Management (TSM) and Transportation Demand Management (TDM) measures could be implemented with any of the system alternatives described above.

Potential TSM Solutions

Within each of the alternatives, the addition of turn bays at intersections, turn prohibitions, channelization improvements, and access management would be recommended through the implementation of baseline projects. All of these solutions are considered to be TSM measures. TSM measures maximize use of the existing transportation system through low cost improvements.

Another TSM solution to reroute local traffic traveling between Astoria and Warrenton to the Astoria-Warrenton Parkway alignment should be considered for Alternatives 4 and 5. A more direct connection over US 101 between the Warrenton shopping center area and the Astoria-Warrenton Parkway alignment could be included (e.g., King Road Overpass/Extension or Marlin Road Overpass).

Potential TDM Solutions

Within each of the alternatives, expansion of existing public transit services is recommended to reduce single occupancy vehicle traffic. This solution is considered to be a TDM measure.

In addition to this solution, Intelligent Transportation System (ITS) solutions could be considered to reduce traffic volumes and congestion on the New Youngs Bay Bridge. In order for the New Youngs Bay Bridge to operate at OHP mobility standards (V/C ratio of 0.75 within UGB) during future forecasted weekday peak hour conditions, an additional 320 vehicles (250 southbound and 70 northbound) would need to shift from the New Youngs Bay Bridge to the Astoria-Warrenton Parkway alignment. This represents less than 15 percent of the total future forecasted no-build weekday peak hour traffic volumes using the bridge. The Astoria-Warrenton Parkway alignment would have sufficient capacity to handle this additional traffic, as upgrades to the bridges and existing roadway sections would significantly improve operations along the alignment. However, drivers would not make this shift unless their total travel time or travel cost was reduced. Potential improvements that might induce more traffic to the Astoria-Warrenton Parkway alignment include:

- Intelligent Transportation System (ITS) solutions, including variable message signs to divert traffic during peak periods, might provide a mechanism to shift traffic from the New Youngs Bay Bridge to the Astoria-Warrenton Parkway alignment.
- Use of spot based congestion pricing on the New Youngs Bay Bridge. Congestion or variable pricing implies that the fee imposed to use the bridge would vary depending on the demand for use (e.g., the fee to use the bridge during peak periods would be higher than during nonpeak times). During uncongested times, the fee could be nonexistent (\$0).

Preferred Alternative

Two key transportation issues that influence the selection of a preferred alternative for the Clatsop County Transportation System Plan (TSP) were identified and discussed with the Project Management Team (PMT) and Advisory Committee (AC), including the selection of an appropriate design hour.

As discussed in previous technical memorandums prepared for the TSP, Clatsop County experiences significant increases in traffic due to tourism during the summer season on State and County roadway facilities. As measured at the Gearhart Automated Traffic Recorder (ATR) in year 2000, 30th highest hour traffic volumes are approximately 35 percent higher than weekday peak hour volumes. To address fluctuations in traffic volumes due to tourism, alternatives were developed for the Clatsop County TSP to eliminate future forecasted operational deficiencies during both the peak tourist season (30th highest hour) and the weekday peak hour.

In addition to the selection of an appropriate design hour, mobility standards for State facilities have been discussed with the PMT and AC. Within Clatsop County, capacity improvements can be constructed on sections of US 101, US 26, and US 30 to meet OHP mobility standards under future forecasted conditions. However, capacity improvements on significant lengths of US 101, US 26, and US 30, and on the New Youngs Bay Bridge are not likely to occur within the 20-year horizon due to funding and environmental constraints. Without 4-lane roadway sections along US 101, US 26, and US 30 in areas that are not forecasted to meet OHP mobility standards, these sections will continue to act as a capacity constraints or "bottlenecks" in the transportation system. To address this issue, alternatives were developed to meet OHP mobility standards under future forecasted conditions by widening the New Youngs Bay Bridge and significant lengths of US 101, US 26, and US 30 to 4-lane roadway sections. In addition, an alternative that includes a 2-lane New Youngs Bay Bridge section and addresses congestion in rural areas through the addition of passing lanes in select locations only was developed and presented to the PMT and AC.

Based upon the analysis of each alternative, the measures of effectiveness, the TSP goals and objectives, and recommendations by the PMT and AC, a combination of Alternatives 2 and 5 was recommended as the preferred alternative for the Clatsop County TSP.

The Oregon Department of Transportation (ODOT) and the Department of Land Conservation and Development (DLCD) both commented on the recommended alternative. The comments focused on the cost of the proposed capacity improvements on state facilities over the 20-year planning period and the substantial amount of additional study required to resolve transportation and land use issues with regard to several major projects identified in the preferred alternative (The letters of comments are contained in the Appendix).

Based on the ODOT and DLCD comments, it was determined that Alternative 6 incorporated those overall transportation system elements that were most responsive to the long-range transportation and land use planning needs in the county, while providing a format for addressing the issues raised by the Department of Land Conservation and Development and the Oregon Department of Transportation.

Major System Improvements

The preferred alternative (Alternative 6) in the TSP proposes significant corridor improvements to the State Highway system. These include the following two proposed improvements that have the potential to impact the region's natural resources and can be expected to require a substantial funding commitment:

- Astoria Bypass Improvements
- Astoria Warrenton Parkway Improvements

Although the TSP has not defined specific alignments or improvement designs for these projects, it assumes these improvements will need to be part of the County's overall transportation system in the next twenty years to meet mobility and level of service standards. However, the County understands that additional planning and analysis work is required to refine regional transportation needs, further evaluate alternatives, and consider statewide planning goal requirements prior to reliance on these improvements as planned facilities. Specifically, the proposed Bypass and Parkway include several road and bridge improvements affecting forest, wetlands and estuarine areas protected in local comprehensive plans pursuant to Goals 4 (forest), 5 (wetlands) and 16 (estuarine).

The need for these projects has been established through analysis of current and projected capacity concerns in Clatsop County, Astoria, Warrenton and on the Young's Bay Bridge. An alternative analysis was completed and the determination made that given the magnitude of the capacity improvement need, topographic constraints, and natural and built environmental concerns, the number of alternatives is limited. However, due to the scope of these proposals, the anticipated environmental concerns, and the associated cost, it was determined that more detailed examination would be prudent. This could not be accomplished within the scope, budget, or time frame of the TSP. Following adoption of Clatsop County's and Warrenton's TSP's, a comprehensive regional planning process will be initiated to further explore options that balance the needs of the affected communities and the ability to finance them.

As these proposals move through project development, the process, at a minimum will refine the purpose, need and function for the Astoria By-pass and the Astoria- Warrenton Parkway improvements and will address key access, and land use issues affecting proposed transportation facilities and improvements as required by the Transportation Planning Rule. Any associated improvements listed in the TSP are included in this process. The remaining projects identified in the TSP serve other travel needs or would be compatible with the function, location, or mode of any solution identified in the final determination or, as in the case of the proposed 4-laning of US-101 in Warrenton and the Young's Bay Bridge further study of that portion of the proposal is deferred until an appropriate future date. The deferral of decisions related to the major capacity improvements shall not preclude implementation of the remainder of the Transportation Plan or invalidate the assumptions upon which the Transportation Plan is based. The projects will be evaluated for statewide planning goal compliance and document the results and any anticipated goal exceptions that may be required. Actual goal exceptions required will be addressed during the environmental documentation process in accordance with the SAC along with other Federal, State, and Local land use and permit requirements. Compliance with statewide

planning goals will be addressed through an amendment to the county's transportation system plan, an element of the county comprehensive plan. Other federal, state and local environmental and land use requirements will be addressed through preparation of environmental documents and permits determined necessary for proposed projects.

Miles Crossing/Jeffers Gardens Transportation Refinement Study

The proposed Astoria-Warrenton Parkway passes through the Miles Crossing/Jeffers Gardens rural community. Specifically, the section of the Astoria-Warrenton Parkway alignment on Highway 101 Business, between the Old Youngs Bay Bridge and the Lewis & Clark Bridge passes through the heart of the Miles Crossing/Jeffers Gardens rural community. Because the primary purpose of the Astoria-Warrenton Parkway is to provide a regional connection that serves as an alternate to US 101 and the new Young's Bay Bridge, it will be important to maintain regional through traffic capacity of the Astoria-Warrenton Parkway once the appropriate improvements are made. Road improvements will be necessary along existing sections of Highway 101 Business, including sidewalks, bicycle improvements, access management, replacement of the Old Youngs Bay and Lewis and Clark Bridges, and the construction of turn lanes. The Astoria-Warrenton Parkway will serve as a truck route, reducing truck traffic through Astoria and Warrenton. Figure 4-8 shows a preliminary cross section for the Astoria-Warrenton Parkway.

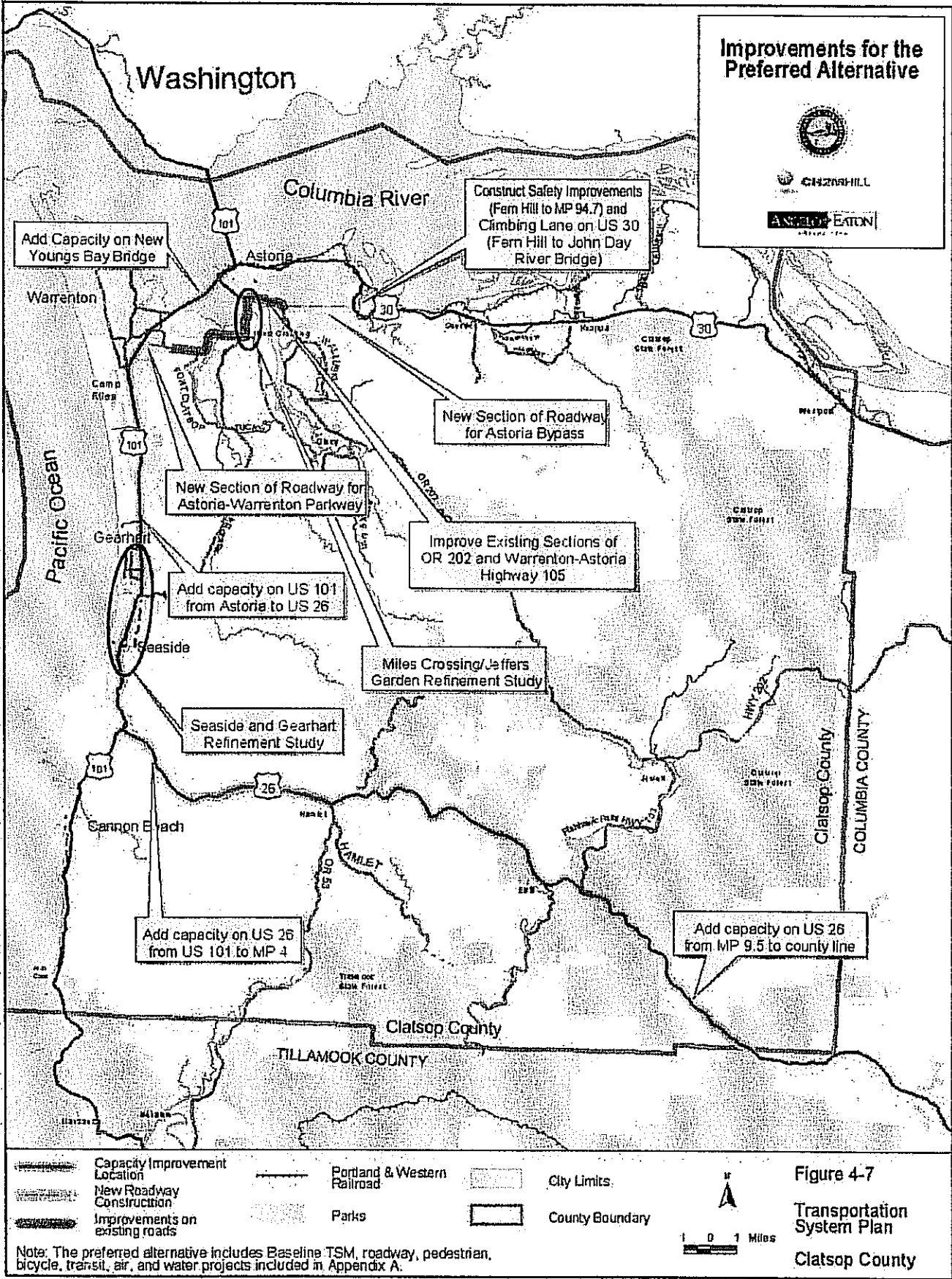
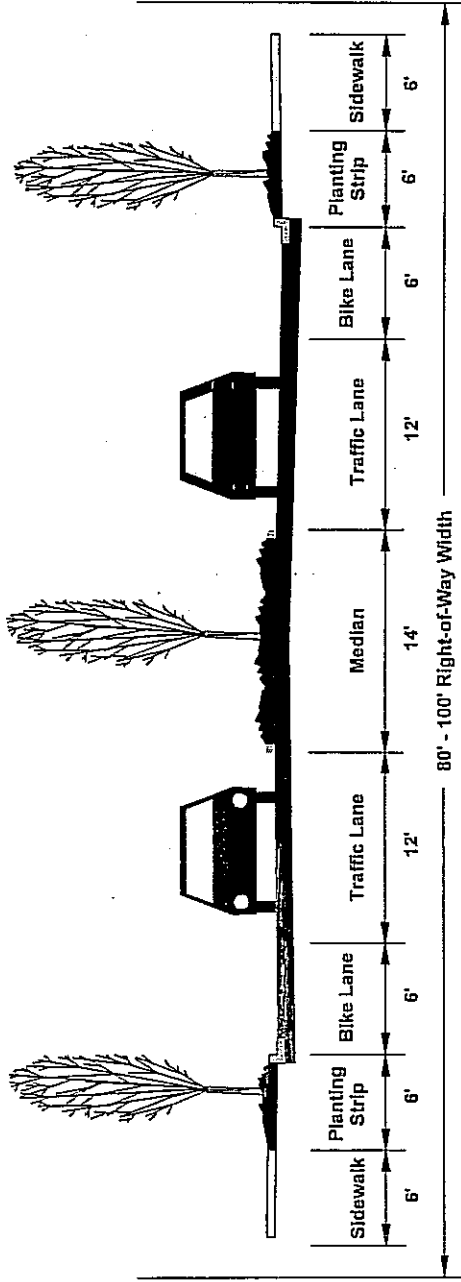
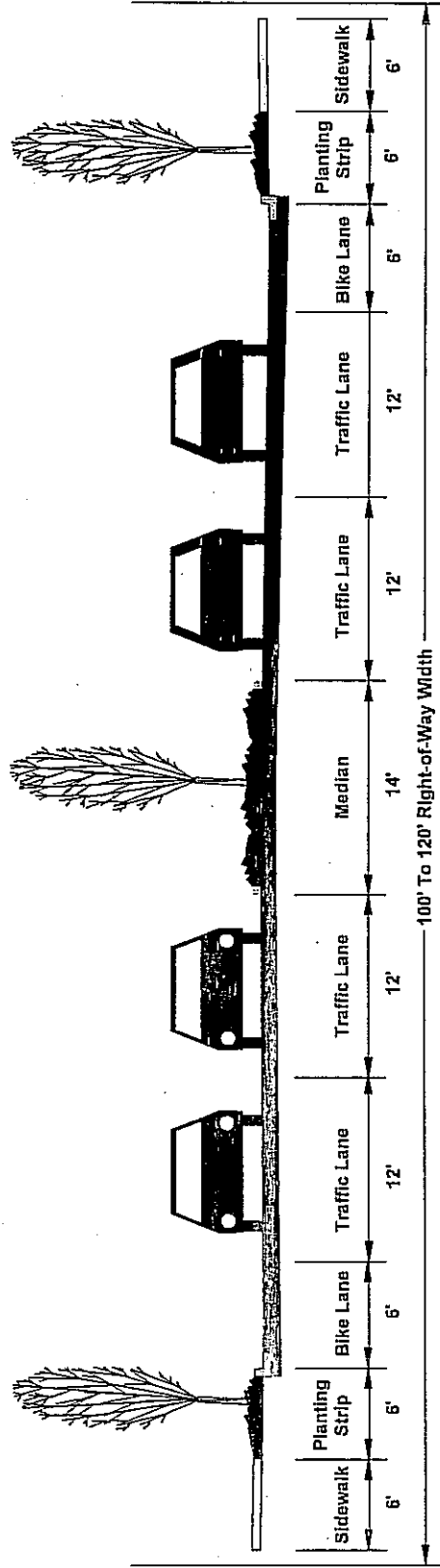


Figure 4-7
Preferred Alternative
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Astoria-Warrenton Parkway (2-Lane Facility)



Astoria-Warrenton Parkway (4-Lane Facility)

FIGURE 4-8

Preliminary Cross Sections - Astoria-Warrenton Parkway
Clatsop County Transportation System Plan

Figure 4-8
Preliminary Cross-Sections for the Astoria-Warrenton Parkway
Back

Clatsop County recently completed a rural community plan for this area that will increase the amount of developable area from approximately 591 acres to approximately 860 acres. As future development occurs in the Miles Crossing/Jeffers Gardens rural community it will be important to insure that future development patterns, street connections and property access do not impede regional through traffic capacity of the Astoria-Warrenton Parkway. In order to balance future development in the Miles Crossing/Jeffers Gardens rural community with the need to preserve the regional traffic capacity of the Astoria-Warrenton Parkway, Clatsop County, in cooperation with the Oregon Department of Transportation will prepare the Miles Crossing/Jeffers Gardens Transportation Refinement Plan. The Miles Crossing/Jeffers Gardens Transportation Refinement Plan will include the following elements:

- Determine the development capacity and transportation demand/circulation needs of the Miles Crossing/Jeffers Gardens rural community;
- Identify future road connections to serve future development;
- Prepare an access management plan for the Astoria-Warrenton Parkway as it passes through the Miles Crossing/Jeffers Gardens community;
- Prepare a Miles Crossing/Jeffers Garden Transportation Implementation Strategy that includes the following elements:
 - Interim measures necessary to protect the capacity of Astoria-Warrenton Parkway alignment prior to construction of the facility
 - Transportation and development standards (e.g., access spacing, building setbacks) that will protect the future alignment of the Astoria-Warrenton Parkway
 - Final cross-section and streetscape features of the Astoria-Warrenton Parkway
 - Necessary amendments to the Clatsop County Comprehensive Plan and Transportation System Plan to implement the Miles Crossing/Jeffers Garden Transportation Refinement Plan
 - Highway Segment Designation and Highway Classification Recommendations for the Astoria-Warrenton Parkway
- Develop and evaluate alternatives for intersection improvements at Miles Crossing to improve safety and operating conditions at the intersection, such as a T-intersection and roundabout.
- Determine appropriate improvements at the intersection of the Astoria-Warrenton Parkway with Fort Clatsop Road to improve access to the airport and Fort Clatsop National Park.

Seaside and Gearhart

The analysis in the Clatsop County TSP assumes that the Pacific Way-Dooley Bridge Project will address most deficiencies identified in the vicinity of Seaside and Gearhart. However, the idea for a bypass or alternate route to US 101 from US 26 to Youngs Bay has been discussed in previous planning documents (City of Seaside Comprehensive Plan and Draft

Oregon Coast Highway Corridor Master Plan). This concept could be further explored after construction of the Pacific Way-Dooley Bridge Project.

Warrenton

The Warrenton TSP was developed in conjunction with the Clatsop County TSP. Figure 4-9 presents the US 101 Strategy for the vicinity of Warrenton. As shown on this figure, the preferred alternative includes capacity improvements at the intersection of US 101 and Harbor Street, potential frontage roads along both the east and west sides of US 101, a potential overpass within the vicinity of Marlin Road or as an extension of King Road, capacity improvements at the intersection of Marlin Road with US 101, and an interchange at the realigned intersection of Dolphin Road, the Astoria-Warrenton Parkway, and US 101. The Warrenton TSP provides further information on each of these improvements.

TSM/TDM Measures

As part of the preferred alternative, TSM/TDM measures are recommended to increase usage of the Astoria-Warrenton Parkway. Some measures that should be further studied include:

- Intelligent Transportation System (ITS) solutions, including variable message signs to divert traffic during peak periods, might provide a mechanism to shift traffic from the New Youngs Bay Bridge to the Astoria-Warrenton Parkway alignment.
- Use of spot-based congestion pricing on the New Youngs Bay Bridge. Congestion or variable pricing implies that the fee imposed to use the bridge would vary depending on the demand for use (e.g., the fee to use the bridge during peak periods would be higher than during nonpeak times). During uncongested times, the fee could be nonexistent (\$0).
- A more direct connection over US 101 between the Warrenton shopping center area and the Astoria-Warrenton Parkway alignment could be included (e.g., King Road Overpass/Extension or Marlin Road Overpass).

Project Phasing

The roadway improvement projects associated with the preferred alternative are significant and would most likely be implemented in phases as funding becomes available. As a result, this section includes recommendations regarding project phasing and prioritization as shown on Figure 4-10.

Constructing both the Astoria-Warrenton Parkway and Astoria Bypass improvements as one project may be difficult due to funding and environmental constraints. Therefore, constructing these improvements over the 20-year planning horizon in two phases is recommended. Construction of the Astoria-Warrenton Parkway improvements are recommended to be constructed before the Astoria Bypass improvements to reduce congestion on the New Youngs Bay Bridge. Construction of the Astoria-Warrenton Parkway improvement project would provide local drivers an alternate route to the commercial area in Warrenton, but would not fully address congestion on the New Youngs Bay Bridge or within the downtown area of Astoria. Therefore, construction of the Astoria Bypass project

US 101 Strategy (Warrenton)



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ANGELOP LATION

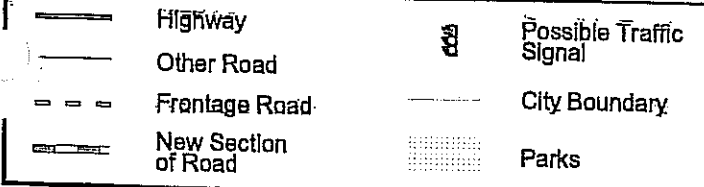
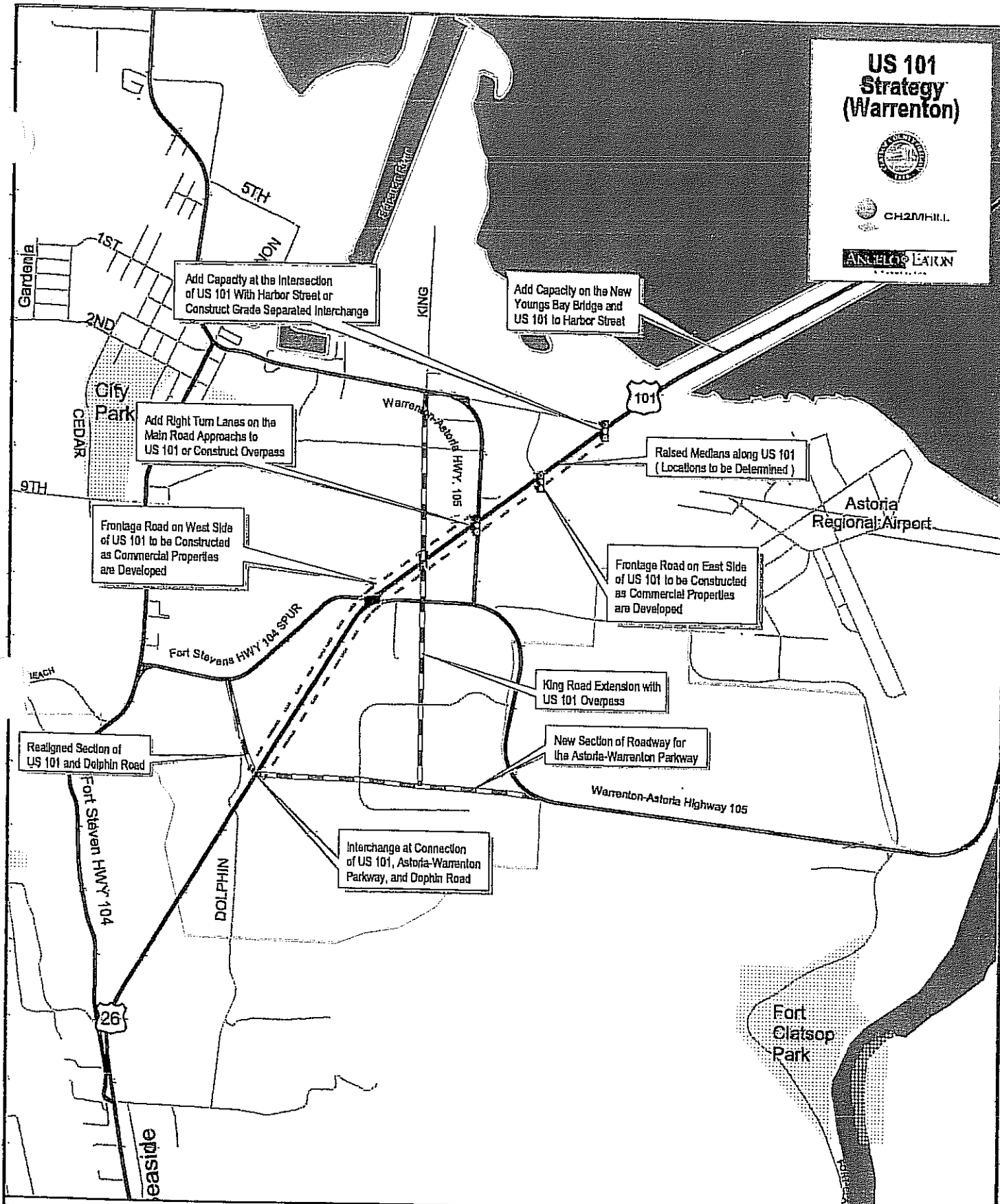
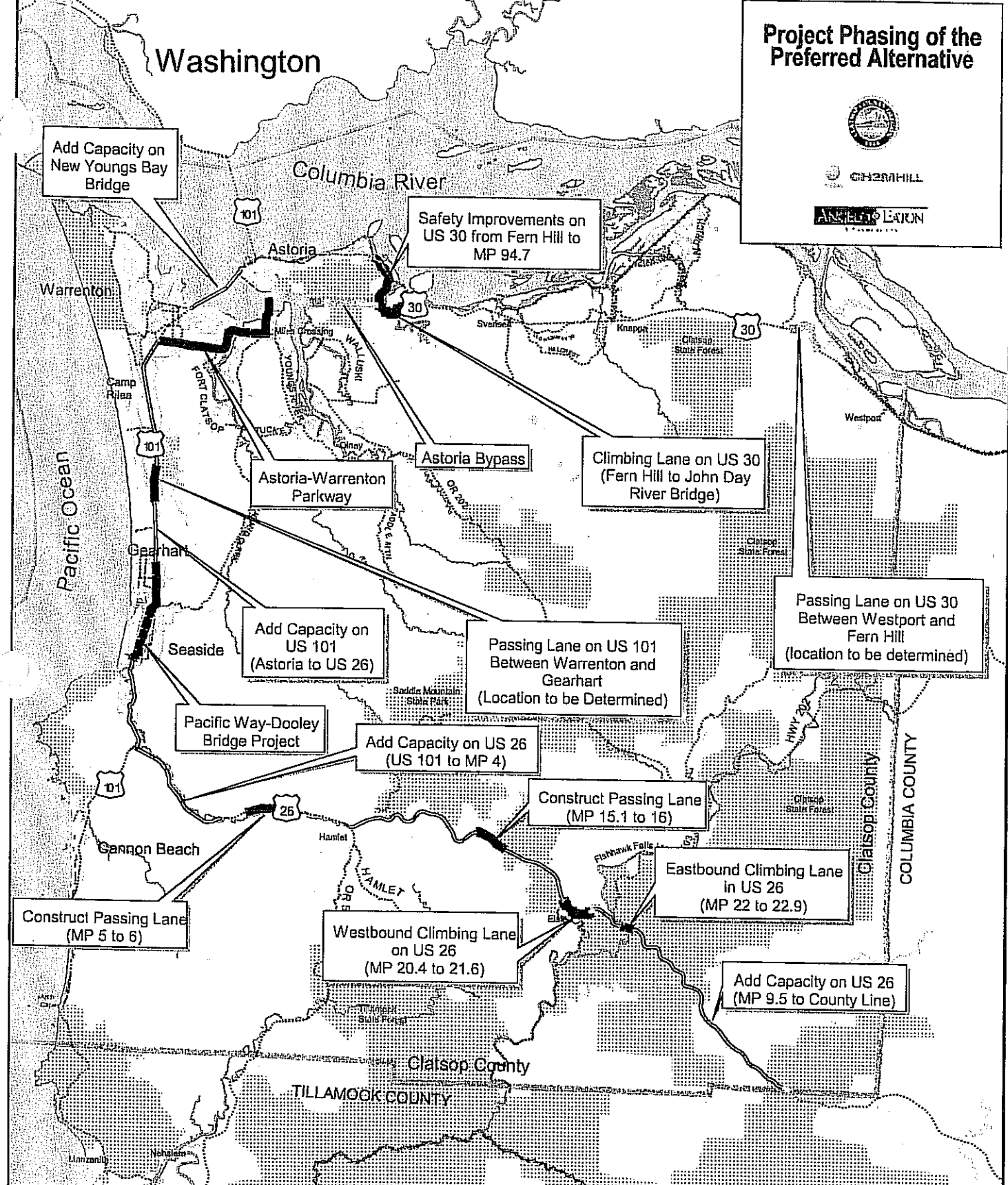


Figure 4-9

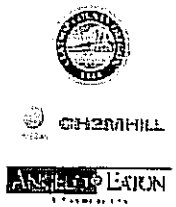
Transportation System Plan








Clatsop County

Figure 4-9
US 101 Strategy
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Project Phasing of the Preferred Alternative



 High Priority	 Portland & Western Railroad	 City Limits
 Medium Priority	 Parks	 County Boundary
 Low Priority (20-Year Priority)		






Figure 4-10
 Transportation System Plan
 Clatsop County

Figure 4-10
Project Phasing of the Preferred Alternative
Back

should be completed in the 20-year planning horizon after construction of the Warrenton-Astoria Parkway improvements.

To improve operations on US 101, US 26, and US 30, construction of passing lanes are proposed for each of these highways. This approach is consistent with the US 30 and US 26 Corridor Plans, which address rural capacity deficiencies through the addition of passing lanes, as well as environmental and economic constraints.

Construction of the Astoria-Warrenton Parkway and Astoria Bypass projects will likely modify travel patterns within the vicinity of Astoria and Warrenton, including on the New Youngs Bay Bridge. Therefore, traffic operations on the New Youngs Bay Bridge should be reevaluated after construction of these projects to determine if there is still a need for additional capacity on the bridge.

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Transportation System Plan

Introduction

This section includes the transportation improvements and policies that should be implemented in the next 20 years in Clatsop County to improve motor vehicle operations and safety, and pedestrian and bicycle travel. The TSP also includes public transportation, air, and water elements. The transportation improvements in this section were included based on the analysis of existing and future forecasted no-build conditions, the analysis of alternatives and projects, and the selection of a preferred alternative. This section includes the following systems and elements:

- State Roadway System
- County Roadway System
- Bicycle and Pedestrian System
- Public Transportation Element
- Port Element (Air, Water)
- Rail Element

Figure 5-1 presents the locations of all the capacity, safety, and refinement plan projects included in this section. All of the projects included in this section are not likely to be funded under existing revenue sources. The intent of this section is to prioritize all of the transportation improvements that are needed in Clatsop County within the 20-year planning horizon. Within this section, each project is given a priority in terms of years, based on the measures of effectiveness. An order-of-magnitude cost is also included for most projects.

The preferred alternative (Alternative 6) in the TSP proposes significant corridor improvements to the State Highway system. These include the following two proposed improvements that have the potential to impact the region's natural resources and can be expected to require a substantial funding commitment:

- Astoria Bypass Improvements
- Astoria Warrenton Parkway Improvements

Although the TSP has not defined specific alignments or improvement designs for these projects, it assumes these improvements will need to be part of the County's overall transportation system in the next twenty years to meet mobility and level of service standards. However, the County understands that additional planning and analysis work is required to refine regional transportation needs, further evaluate alternatives, and consider statewide planning goal requirements prior to reliance on these improvements as planned facilities. Specifically, the proposed Bypass and Parkway include several road and bridge improvements affecting forest, wetlands and estuarine areas protected in local comprehensive plans pursuant to Goals 4 (forest), 5 (wetlands) and 16 (estuarine).

The need for these projects has been established through analysis of current and projected capacity concerns in Clatsop County, Astoria, Warrenton and on the Young's Bay Bridge. An alternative analysis was completed and the determination made that given the magnitude of the capacity improvement need, topographic constraints, and natural and built environmental concerns, the number of alternatives is limited. However, due to the scope of these proposals, the anticipated environmental concerns, and the associated cost, it was determined that more detailed examination would be prudent. This could not be accomplished within the scope, budget, or time frame of the TSP. Following adoption of Clatsop County's and Warrenton's TSP's, a comprehensive regional planning process will be initiated to further explore options that balance the needs of the affected communities and the ability to finance them.

As these proposals move through project development, the process, at a minimum will refine the purpose, need and function for the Astoria By-pass and the Astoria- Warrenton Parkway improvements and will address key access, and land use issues affecting proposed transportation facilities and improvements as required by the Transportation Planning Rule. Any associated improvements listed in the TSP are included in this process. The remaining projects identified in the TSP serve other travel needs or would be compatible with the function, location, or mode of any solution identified in the final determination or, as in the case of the proposed 4-laning of US-101 in Warrenton and the Young's Bay Bridge further study of that portion of the proposal is deferred until an appropriate future date. The deferral of decisions related to the major capacity improvements shall not preclude implementation of the remainder of the Transportation Plan or invalidate the assumptions upon which the Transportation Plan is based. The projects will be evaluated for statewide planning goal compliance and document the results and any anticipated goal exceptions that may be required. Actual goal exceptions required will be addressed during the environmental documentation process in accordance with the SAC along with other Federal, State, and Local land use and permit requirements. Compliance with statewide planning goals will be addressed through an amendment to the county's transportation system plan, an element of the county comprehensive plan. Other federal, state and local environmental and land use requirements will be addressed through preparation of environmental documents and permits determined necessary for proposed projects.

Periodic review of the TSP is recommended in order to ensure that the County is meeting requirements of the Transportation Planning Rule (OAR-660-045). The County should review the TSP every 5 years and develop benchmarks to evaluate the level of TSP compliance. Review of this document will allow the County to continue to update the project lists based on the needs of the transportation system through time.

Rural Communities

The unincorporated communities of Clatsop County, such as Olney, Jewell, Cannon Beach Junction, Knappa, and Svensen, will benefit from many of the improvements identified in this plan. The tables and text in Section 5 identify which projects are within rural communities.

State Roadway System

The major roadway network in Clatsop County, including US 101, US 26, US 30, OR 202, OR 53, Fishhawk Falls Highway 103, Fort Stevens Highway 104, Fort Stevens Highway 104 Spur, and Warrenton-Astoria Highway 105, serves both local and through tourist traffic. Recommended State highway improvements for capacity, safety, planning studies, bridge improvements, a proposed truck route, TDM solutions, access management, maintenance, preservation, salmon, and operations are outlined in this section. In addition, highway segment and lifeline route designations are recommended.

Capacity Improvements

Table 5-1 presents the capacity improvements that are recommended for State facilities in Clatsop County.

TABLE 5-1
Recommended Capacity Improvements on State Facilities

#	Location and Description	Estimated Cost	Priority (Years)
1	Pacific Way—Dooley Bridge Project (Includes all phases) ¹	\$31,691,000	1-5
2	US 26 from Lindsey Creek to West Humbug Creek—construct 2 passing lanes (MP 5.0 to 6.0 EB and MP 15.12 to 16.2 WB) ¹	\$4,252,000	6-10
3	Astoria-Warrenton Parkway Improvements on Warrenton-Astoria Highway 105, including improvements to the Old Youngs Bay Bridge, Lewis and Clark Bridge, and Miles Crossing Intersection (Potential Roundabout). This project impacts the Miles Crossing/Jeffers Garden Rural Community.	\$47,200,000	6-10
4	New Section of Astoria-Warrenton Parkway (Includes an interchange at intersection of Dolphin and US 101 and realignment of the Astoria-Warrenton Parkway and Warrenton-Astoria Highway 105 intersection).	\$4,000,000	6-10
5	Passing Lane and realignment of curves on US 30 (MP 91.3 to MP 92.46)	\$9,931,000	6-10
6	Construct Passing Lane on US 101 between Gearhart and Warrenton (both NB and SB directions)	\$3,000,000	11-15
7	Construct Passing Lane on US 30 between Westport and Fern Hill (both NB and SB directions)	\$3,000,000	11-15
8	Astoria Bypass Project (Includes a new section of roadway between US 30 and OR 202)	\$45,900,000	16-20
9	Realignment and signalization of the Fort Stevens Highway 104 and US 101 Intersection (Note: this improvement applies if right-out only treatment is not effective). An Interchange could also be considered at this location.	\$1,000,000+	16-20
10	US 26 from Elsie to Jewell Junction (MP 20.4 to MP 21.6)—construct WB climbing lane. This project impacts the Elsie and Jewell Junction Rural Communities.	\$1,440,000	16-20
11	US 26 from Jewell Junction to Oswego Creek (MP 22 to MP 22.9)—construct EB climbing lane. This project impacts the Jewell Junction Rural Community.	\$1,215,000	16-20

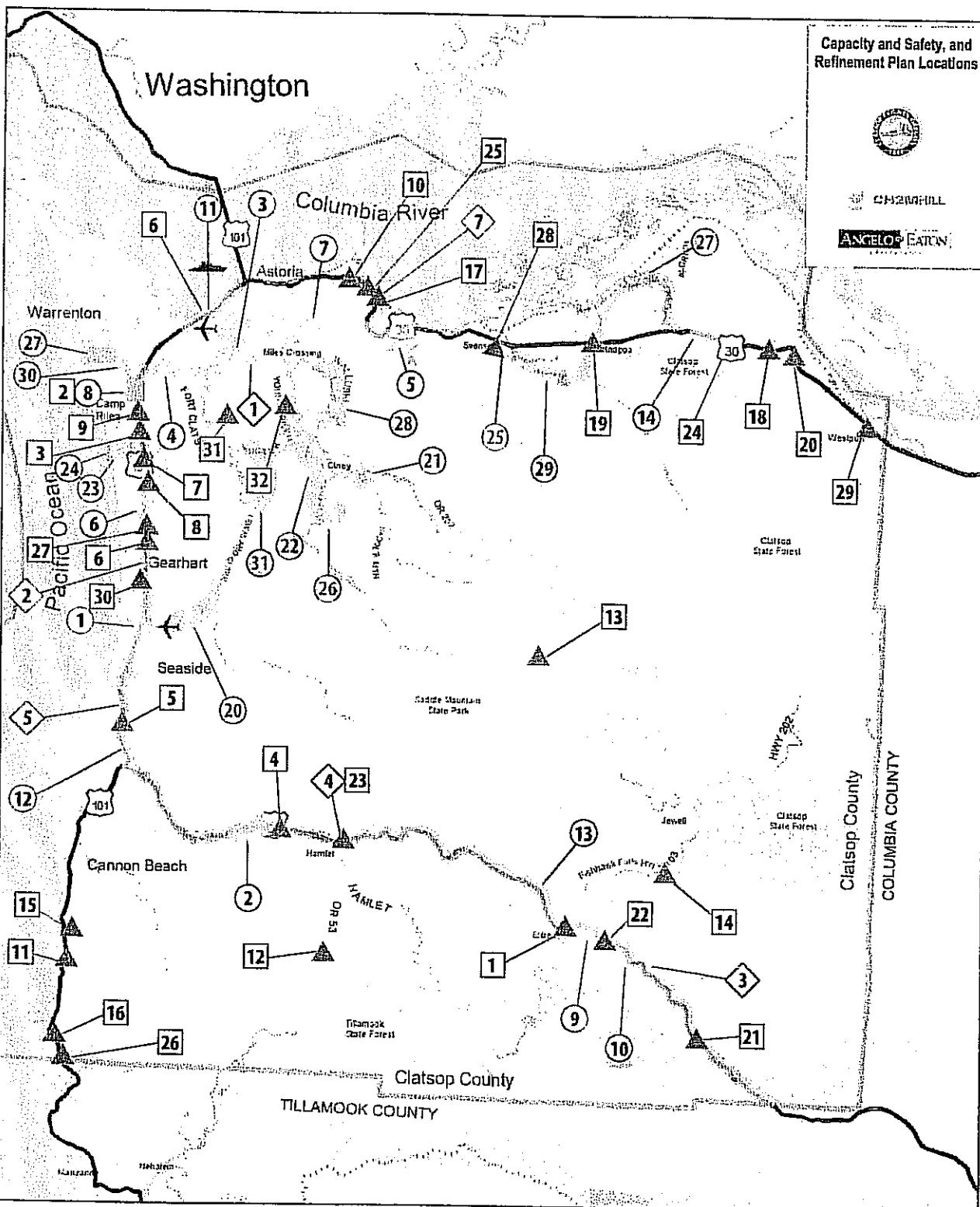
¹Indicates project has committed funding

(1) Projects 3,4 and 7: Subject to subsequent planning studies that include addressing statewide planning goals.

Capacity and Safety, and Refinement Plan Locations



CH2MHILL
ANGELO EATON



Highway	Ports	Parks
Other Road	Airport	City Limits
Capacity—Roadway Segment (20 year)	Portland & Western Rail Road	County Boundary
Capacity—Roadway Segment (1-20 year)	Safety Improvement	Capacity and Widening Improvements
Capacity—Intersection	Refinement Plan or Study	Safety Improvement



Figure 5-1
Transportation System Plan
Clatsop County

Figure 5-1
Transportation System Plan
Back

Safety Improvements

Table 5-2 presents the safety improvements that are recommended for State facilities within the Clatsop County.

TABLE 5-2
Recommended Safety Improvements on State Facilities

#	Location and Description	Estimated Cost	Priority (Years)
1	US 26 at Lower Nehalem Road Intersection—construct left turn refuge and intersection improvements ¹ This project is within the Rural Community of Elsie.	\$754,000	1-5
2	Improvements at intersection of US 101 with Fort Stevens Highway 104. Make Hwy 104 leg right-out only (restrict left turn lanes from this approach).	\$10,000	1-5
3	US 101 at Glenwood Village—construction of turn lanes and sight distance improvements	\$600,000	1-5
4	Construct turn lanes into Humbug Maintenance Station along US 26 at MP 6.2 ¹	\$256,000	1-5
5	Raise US 101 above flood zone near MP 23	\$1,500,000	6-10
6	US 101 at Dellmoor Loop Road Intersection—construct turn lanes and intersection improvements (MP 16.3)	\$500,000	6-10
7	US 101 at Sunset Beach Lane—construct turn lanes, intersection improvements, and traffic signal if warranted	\$500,000	6-10
8	US 101 at Cullaby Lake Lane—construct turn lanes and intersection improvements	\$300,000	11-15
9	Camp Rilea Underpass at US 101	\$5,000,000	11-15
10	US 30 at South Tongue Point Intersection Improvements	\$220,000	11-15
11	US 101 at Hug Point Intersection—construct left turn lane on US 101 and intersection improvements	\$300,000	11-15
12	Construct 3' shoulders on OR 53 (US 26 to County Line), overlay preservation. (Note: geometric improvements should also be considered for this stretch of highway.) This project is within the Rural Community of Hamlet.	\$3,730,000	11-15
13	Addition of 3' shoulders on OR 202 (MP 4.28 to County Line) ² (Note: geometric improvements should also be considered for this stretch of highway). This project is within the Rural Communities of Olney, Old Naval Hospital, Jewell, and Fishhawk.	\$11,000,000+	6-10
14	Construct 3' shoulders on Fishhawk Falls Highway 103 (OR 202 to US 26), overlay preservation, and include crosswalk at elementary school. (Note: geometric improvements should also be considered for this stretch of highway). This project is within the Rural Community of Jewell.	\$2,915,000	11-15
15	Improve Arcadia Beach State Wayside along US 101 for safer access	\$400,000	11-15
16	Add left turn lane along US 101 at Arch Cape and Oswald West State Park. This project is within the Rural Community of Arch Cape.	\$700,000	11-15
17	Intersection of US 30 and John Day Boat Ramp—sight distance improvements	\$250,000	11-15
18	Construct turn lane on US 30 at Clifton Road	\$250,000	11-15
19	Intersection of US 30, Knappa Road, and Hillcrest Road—intersection geometry or traffic control modifications should be considered. (Project includes a pedestrian crossing at the intersection plus a possible signal if warranted). This project is within the Rural Community of Knappa.	\$600,000	11-15
20	Construct turn lane on US 30 at the Bradley State Wayside	\$250,000	11-15
21	US 26 between milepost 22 and 30—icy conditions warning signs	\$20,000	11-15
24	US 30 East of the Gnat Creek Bridge at MP 77—icy Conditions Warning signs	\$10,000	16-20
25	US 30 from milepost 92.46 to milepost 94.7 - realign curves west of Fernhill curves	(3)	11-15
29	US 30 at Westport Ferry Road—construct turn lanes and intersection improvements. This project is within the Rural Community of Westport.	\$500,000	11-15

TABLE 5-2
Recommended Safety Improvements on State Facilities

#	Location and Description	Estimated Cost	Priority (Years)
28	Intersection of US 30 and Svensen - geometric and sight distance Improvements should be considered. This project is within the Rural Community of Svensen.	\$500,000	16-20
22	Construct a turn lane along US 26 at the Jewell Junction. This project is within the Rural Community of Jewell Junction.	(1)	20
23	Construct a turn lane on US 26 at the Necanicum Junction. This project is within the Necanicum Junction Rural Service Center.	(1)	20
26	Arch Cape Tunnel on US 101—Construct shoulders. This project is within the Rural Community of Arch Cape.	(2)	20
27	US 101 at proposed Cullaby Lake Lane RV Facility - construct turn lanes and sight distance improvements along US 101	\$300,000	(4)

¹Indicates project has committed funding

²This project assumes that an OTIA preservation project will be constructed in 2003 that includes shoulder widening to MP 4.28.

(1) Project was included in the US 26 Corridor Plan as an "unconstrained" project.

(2) Project cost was not estimated.

(3) Project cost to be estimated as part of refinement plan.

(4) To be constructed in conjunction with proposed RV Facility

Shoulder Improvements

Shoulder improvements on State facilities are recommended in the following locations as other roadway projects are constructed. Highways with safety deficiencies have been included in the safety section above. The shoulder improvements listed in Table 5-3 are low priority, as most sections have shoulders that are 3' to 5' wide.

TABLE 5-3
Shoulder Improvements on State Facilities

Roadway Section	From Milepost	To Milepost	Existing Shoulder Widths
US 101 (Oregon Coast Highway)—East Side	32.34	35.58	Sections with 1' to 2' Shoulders (Arch Cape)
US 101 (Oregon Coast Highway)—Both Sides	16.44	18.20	3' to 4' Shoulders
US 101 (Oregon Coast Highway)—Both Sides	14.45	14.84	Sections with 5' Shoulders
US 101 (Oregon Coast Highway)—Both Sides	13.38	13.48	Sections with 4' Shoulders
US 26 East of Jewell Junction	20.4	21.6	3' Shoulders (Jewell Junction)
US 26 Sunset Safety Rest Area	28.5	29.3	Sections with 4' Shoulders
US 26—throughout Clatsop County	0	29.41	Sections with 0' to 4' Shoulders (Cannon Beach Junction, Necanicum Junction, Elsie, Jewell Junction, and Elderberry)

TABLE 5-3
Shoulder Improvements on State Facilities

Roadway Section	From Milepost	To Milepost	Existing Shoulder Widths
US 30—Both Sides	92.87	95	Sections with 4' to 5' Shoulders and lane widths less than 12'
US 30—Both Sides	88.46	92.12	Sections with 3' to 5' Shoulders and lane widths less than 12'
US 30—Both Sides	86.37	86.43	3' to 4' Shoulders over bridge
US 30—Both Sides	83.45	85.76	Sections with 4' to 5' Shoulders and lane widths less than 12' (Svensen)
US 30—Both Sides	72.86	81.81	Sections with 3' to 5' Shoulders and lane widths less than 12'
Fort Stevens Highway 104—Both Sides	5.3	5.38	3' Shoulders

Planning Studies

Table 5-4 presents the recommended planning studies for State facilities in Clatsop County.

TABLE 5-4
Recommended Planning Studies on State Facilities

#	Location and Description	Priority (Years)
1	Refinement Plan for Miles Crossing/Jeffers Garden Area (Rural Community)	1-5
2	Conduct a planning study to improve Top 10 Percent SPIS Site along US 101 (MP 16.98 to MP 17.09)	1-5
3	Conduct a planning study of the Nehalem to Quartz Creek area on US 26—shoulder width less than desired minimum. Analyze striping in this section as described in the US 26 Corridor Plan.	1-5
4	Conduct a planning study of the Necanicum Junction on US 26 (MP 9.5)—further evaluation of accidents at junction to determine whether safety improvements are warranted as described in the US 26 Corridor Plan. (Rural Service Center)	1-5
5	Conduct a planning study of the feasibility of an alternate route to US 101 from US 26 to Youngs Bay after construction of the Pacific Way—Dooley Bridge Project	20
6	Conduct a planning study regarding TDM Strategies recommended in the preferred alternative (i.e. Congestion based pricing on the New Youngs Bay Bridge and other ITS solutions)	(1)
7	Conduct a planning study to add capacity to the new Youngs Bay Bridge (4-lane section); this may be coordinated with #6	(1)
8	Conduct a planning study of US 101 – Construction of a 4-lane facility from Astoria to US 26 (includes the Camp Rilea to Dellmoor Loop Road Project); this may be coordinated with #5	20
9	Conduct a planning study of US 26 – Construction of a 4-lane facility from US 101 to County Line	11-15

TABLE 5-4
Recommended Planning Studies on State Facilities

#	Location and Description	Priority (Years)
10	Conduct a study of the curves west of the Fernhill curves on US 30 (MP 92.46 to milepost 94.7)	1-5

(1) To be conducted after construction of the Astoria-Warrenton Parkway Project.

Bridge Improvements

In addition to the bridge projects on the 2002-2005 or Draft 2004-2007 STIP, improvements on the bridges represented in Table 2-4, Section 2, with existing sufficiency ratings of less than 50 should be implemented as funding becomes available. Phase 1 and Phase 2 seismic retrofit projects for Clatsop County bridges detailed in the Prioritization of Oregon Bridges for Seismic Retrofit Report (1997) also should be implemented as funding becomes available.

Truck Route

As part of the Clatsop County TSP, a recommended truck route was developed to provide access to locations with heavy truck traffic (i.e. forestland). The following County roads are recommended to be designated truck routes:

- Lewis and Clark Road (Warrenton-Astoria Highway 105 to Logan Road)
- Lewis and Clark Road (Logan Road to US 101)
- 12th Place/Airport Road/Flight Line Drive (Warrenton)
- Logan Road

The following State facilities are recommended to be designated truck routes:

- US 26 (Statewide NHS Freight Route)
- US 30 (Statewide NHS Freight Route)
- Astoria Bypass Alignment (US 30 to OR 202)
- Astoria-Warrenton Parkway Alignment between US 101 and Astoria Bypass
- OR 53 from US 26 to Tillamook-Clatsop County Line (Note: shoulders should be constructed before this facility is a designated truck route)
- OR 202 from Astoria to Clatsop- Columbia County Line (Note: shoulders should be constructed before this facility is a designated truck route)
- Fishhawk Falls Highway 103 from OR 202 to US 26 (Note: shoulders should be constructed before this facility is a designated truck route)

See Figure 5-2 for designated truck routes.

TSM/TDM

The transportation system plan includes many TSM solutions through the addition of turn lanes, access management, channelization improvements, and other TSM solutions. TDM solutions that should be considered are ITS solutions to divert traffic to the Astoria-Warrenton Parkway and congestion-based pricing on the New Youngs Bay Bridge. In addition, construction of a more direct route between the Astoria-Warrenton Parkway and the commercial area in Warrenton should be considered (i.e., King Road Overpass/Extension or Marlin Road Overpass).

Washington

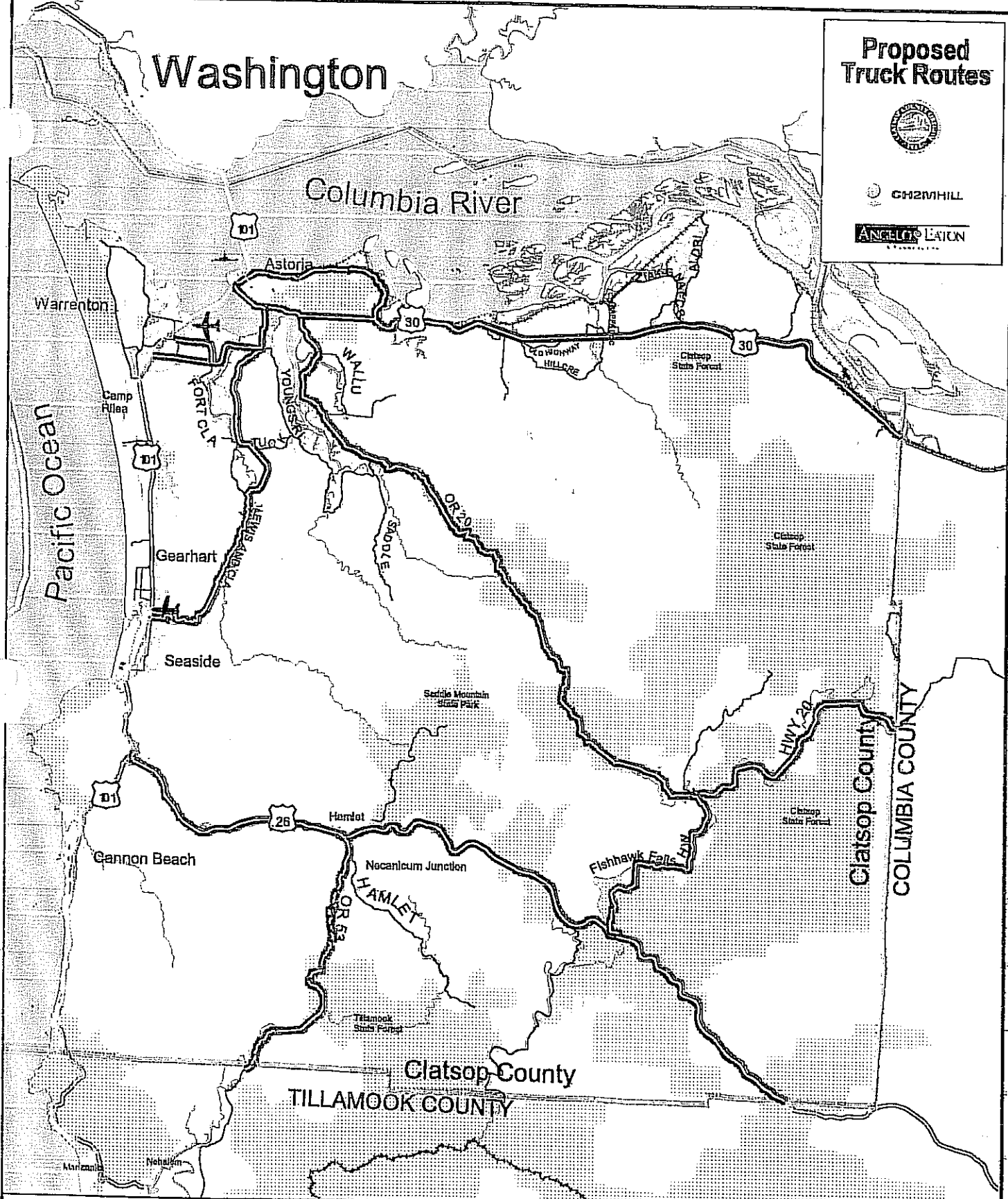
Proposed Truck Routes



CH2MHILL

ANGELIC LAYTON

Columbia River



- Proposed Truck Route
- Highway
- Other Road

- Ports
- Airport
- Portland & Western Rail Road

- Parks
- City Limits
- County Boundary



Figure 5-2
 Transportation System Plan
 Clatsop County

File Path: Q:\ODOT\170577\GIS\clatsop_co_top.apr, Date: 10 May 2003 14:21, User: JBATES2, Figure 5-2 - Truck Routes

Figure 5-2
Proposed Truck Routes
Back

Access Management Improvements

Access management improvements are recommended for State facilities in Clatsop County in the following locations:

- US 30 in Westport (Rural Community)
- Between Cannon Beach and Clatsop-Tillamook Line, develop access management and parking strategy for US 101 (Rural Community of Arch Cape)
- Between Seaside and Cannon Beach, develop an access management plan for US 101 (Rural Community of Cannon Beach Junction)
- Between Warrenton and Seaside (project should consider future development along US 101), develop an access management plan for US 101
- US 30 in logging contract areas
- US 26 at the Jewell Junction (Rural Community)
- US 26 from MP 1 to MP 6 – addition of shoulders, access management, and improved sight distance (Rural Community of Cannon Beach Junction)
- US 26 at the Necanicum Junction – access management, lengthen eastbound deceleration lane, improve illumination, close easternmost driveway (Rural Service Center)
- US 26 at Camp 18
- US 26 near Elderberry Inn (Rural Community)

Maintenance/Preservation/Salmon/Operations

The TSP for Clatsop County does not recommend specific maintenance, preservation, salmon, and operations projects to meet the needs of the transportation system throughout the 20-year planning horizon. However, the project list in Appendix A includes some of the maintenance, preservation, salmon, and operations projects that should be implemented to address existing deficiencies.

Proposed Functional Classifications

Changes to the functional classifications of most State facilities are not recommended. Major corridors (US 101, US 26, and US 30) should continue to be classified as principal arterials.

The Astoria Bypass and Astoria-Warrenton Parkway alignments should also be classified as principal arterials when they are constructed. Minor corridors (OR 53, OR 202, Fort Stevens Highway 104, and Fort Stevens Highway 104 Spur) should continue to be classified as urban collectors or rural major collectors.

Highway Segment Evaluation

As described in the OHP, highway segment designations of Special Transportation Areas (STA), Commercial Centers, and Urban Business Areas (UBA) guide future planning and management decisions. Each highway segment designation has specific objectives for access

management, automobiles, pedestrian and bicycle accommodation, transit amenities, and development. The following designations, including definitions from the OHP, were considered for State highways in Clatsop County:

- An **STA** provides access to community activities, businesses, and residences, including pedestrian access along and across a highway, within a downtown, business district, and/or community center. An STA highway designation can be made in an unincorporated community, where road connections and parking may be encouraged.
- **Commercial Centers** are designated to provide mobility for through traffic adjacent to commercial centers. Access to State highways should be minimized in commercial centers to minimize the number of vehicle conflicts with through traffic.
- An **UBA** designation should be used in existing or future commercial areas within urban growth boundaries where access is important to economic viability of a community.

No STAs, Commercial Centers, or UBAs are recommended for State highways in Clatsop County.

Expressway Classification

At this time, no state highways within Clatsop County are currently classified as Expressways. Five potential future Expressway designations have been identified by ODOT, as noted in the Plan and Policy Review Memorandum and discussed below. As defined by 1A.2 of the Oregon Highway Plan, an "Expressway" is a subset of a Statewide, Regional or District highway. By OHP definition,

Expressways are complete routes or segments of existing two-lane and multi-lane highways and planned multi-lane highways that provide for safe and efficient high speed and high volume traffic movements. Their primary function is to provide for interurban travel and connections to ports and major recreation areas with minimal interruptions... In urban areas, speeds are moderate to high. In rural areas, speeds are high. Usually, there are no pedestrian facilities, and bikeways may be separated from the roadway.

The criteria considered by the Oregon Transportation Commission to classify a highway as an Expressway include the following:

- Designation as part of a State Highway Freight System
- Designation as a safety corridor; or
- Function as an urban bypass

The process for classification of a highway as an Expressway varies, depending on a number of factors, including existing highway classification, access management conditions and safety issues. The Transportation Commission will classify Interstate and Statewide highways (such as US-101, US-26 and US-30) in consultation with local governments. The Commission will classify Regional and District Highways (such as Business Route 101) with the agreement of directly affected local governments.

US 30 – Westport to Fern Hill

ODOT currently considers US 30 to be the highest priority for Expressway classification within Clatsop County, based on its designation as an OHP Freight Route and the need to retain its functional integrity. This section of US 30 serves the rural communities of Westport, Knappa, Svensen, and Burnside. It also serves as a major route for traffic from the Portland area to Astoria and the coast. If the proposed Astoria Bypass were constructed, US 30 would also provide direct access to the Astoria Bypass and Astoria-Warrenton Parkway alignments. The classification of US 30 as an Expressway by the Transportation Commission would take place in consultation with local government.

Proposed Astoria Bypass - US 30 to OR 202

If this project is funded and constructed in the future, this route will function primarily as an urban bypass of downtown Astoria, consistent with the proposed OHP Bypass policy. Therefore, it would likely be given an Expressway classification, in order to assure that high speeds and access management measures are maintained on an on-going basis.

Astoria-Warrenton Parkway - Warrenton-Astoria Highway 105 (Business Route 101)

Consideration of an Expressway classification for the existing Business Route 101 from Astoria to Warrenton assumes that it would become a functional extension of the proposed Astoria Bypass, as discussed above and proposed by the Preferred Alternative. As such, Expressway classification would increase the integrity of the entire Bypass Route, including this extended Bypass portion, by reducing traffic safety hazards and assuring proper access management to maintain necessary traffic flows.

Warrenton-Astoria Highway 105 (Business Route 101), which serves the Miles Crossing/Jeffers Garden Rural Communities, is currently classified as a District highway. Alternative classifications include Regional highway and Expressway. Further discussion of which highway classification that would best serve the intended function of the Astoria-Warrenton Parkway should be addressed in the proposed Miles Crossing/Jeffers Gardens Transportation Refinement Study, which will also address access management and street spacing standards along the Parkway alignment.

US 101 - New Youngs Bay Bridge to Gearhart

The segment of US 101 from Smith Point to Gearhart has been identified by ODOT as a potential future Expressway route, with a low priority designation at this time. Further consultation with the County and the City of Warrenton may take place during a future Refinement Plan focused on the implementation of frontage roads and access management measures within Warrenton. According to the Oregon Highway Plan, Policy 1A.2.b, the classification of a Statewide Highway as an Expressway by the Transportation Commission would take place in consultation with local governments. Issues that remain to be addressed within this segment of US 101 include the location of existing and future intersections, interchanges and overpasses and other aspects of access management planning.

US-26 - US 101 through Elsie

This segment of US 26 has been identified by ODOT as a potential future Expressway with a low priority designation at this time. This section of US 26 includes the Rural Communities

of Cannon Beach Junction and Elsie, as well as the Necanicum Junction Rural Service Center. The purpose an Expressway classification would be to enhance access management efforts, increase traffic safety, maintain speeds and protect this route from degradation that may result from future development of adjoining property. Expressway classification would also support the role of US 26 as a Freight Route.

Lifeline Routes

Under existing conditions, there are gaps in connectivity between lifeline routes. The following state roadway segments should be considered for lifeline route designations for connectivity purposes:

- OR 53 from US 26 to the Clatsop/Tillamook County Line
- OR 202 from Astoria to the Clatsop/Columbia County Line
- US 26 from Jewell to the Clatsop/Tillamook County Line

The following new segments of highway, which are recommended under the preferred alternative, should be designated by ODOT as lifeline routes:

- Astoria Bypass Alignment
- Astoria-Warrenton Parkway Alignment

In addition to ODOT designated lifeline routes, county roads (i.e. Lewis and Clark Road), Oregon Department of Forestry (ODF) logging roads, and private logging roads are used as alternate routes in the event of an emergency on state highways. As suggested by the Clatsop County PMT, a lifeline route designation by ODOT should be considered for Lewis and Clark Road. ODOT, Clatsop County, and local jurisdictions should continue to coordinate with ODF and private landowners to ensure connectivity between alternate routes in the event of an emergency.

County Roadway System

Functional Classification and Design Standards

This section summarizes the proposed functional classifications and associated design standards for County roads in Clatsop County to meet transportation system needs in the 20-year planning horizon.

Functional Classifications

As part of the Clatsop County TSP, the functional classifications of County roadway facilities have been reviewed. Figure 5-3 displays the recommended functional classifications for both State and County road facilities.

Washington

Proposed Functional Classifications



CH2MHILL

ANGELICO LATON

Columbia River

Astoria

Warrenton

Camp Ripley

Seaside

Gearhart

Pacific Ocean

Seaside

Gannon Beach

Gannon Beach

Gannon Beach

Saddle Mountain State Park

Hamlet

Clatsop County

TILLAMOOK COUNTY

Fishhawk Falls Hwy 45

Jewell

Hwy 30

Jewell

Jewell

Jewell

Jewell

Jewell

Jewell

Jewell

Jewell

Jewell

Jewell

Jewell

Jewell

Jewell

Jewell

Westport

Clatsop State Forest

Clatsop State Forest

Clatsop State Forest

Clatsop State Forest

Clatsop State Forest

Clatsop State Forest

Clatsop County

COLUMBIA COUNTY

	Collector (County Facility)		Parks
	Urban Collector/ Rural Major Collector (State Facility)		City Limits
	Arterial (County Facility)		Portland & Western Rail Road
	Principal Arterial (State Facility)		County Boundary



Figure 5-3
 Transportation System Plan
 Clatsop County

Figure 5-3
Proposed Functional Classifications
Back

The following County facilities are recommended to be classified as arterials:

- Lewis & Clark Road—Miles Crossing to Logan Road
- Lewis & Clark Road—Seaside City Limits to Wahanna Road
- Wahanna Road—Lewis & Clark Road to 12th Street

The following County facilities are recommended to be classified as collectors:

- Abbott Road—US 30 to Bagely Road
- Airport Road—Entrance to Warrenton-Astoria Highway 105
- Aldrich Point—Ziak-Gnat Creek Road to End
- Bagley Road—Knappa Dock Road to Valley Creek Road
- Barendse Road—Ziak-Gnat Creek Road to Brownsmead Dike Road
- Beneke Creek Road—US 202 to End of Pavement
- Brownsmead Hill Road—Valley Creek Road to Ziak-Gnat Creek Road
- Clifton Road—US 30 to End
- Columbia Beach Lane (Old Ridge Road)—Fort Stevens Highway 104 to Ridge Road
- Cottage Avenue—Entire Length
- Cullaby Lake Road—US 101 to End
- Delaura Beach Lane—Fort Stevens Highway 104 to Ridge Road
- Dellmoor Loop—US 101 to US 101
- Fishhawk Road—Columbia County Line to Columbia County Line
- Flight Line Drive - Airport Road to Airport
- Fort Clatsop Road—Warrenton-Astoria Highway 105 to Lewis & Clark Road
- G Street—US 101 to MP 2.02
- Hamlet Road—OR 53 to Pavement End
- Hawkins Road- Cullaby Lake Road to Parking Lot
- Highlands Road—US 101 to Beach
- Hillcrest Loop Road—US 30 to Old Hwy 30 (Svensen)
- Knappa Dock Road—Old Hwy 30 (Knappa) to Ziak-Gnat Creek Road
- Koppisch Road—US 30 to Hillcrest Loop Road
- Labiske Lane—Walluski Loop Road to End of Pavement
- Lewis & Clark Road—Logan Road to Seaside City Limits
- Lewis Road—Entire Length
- Logan Road—Entire Length
- Lower Nehalem Road—US 26 to County Line
- McLean Hill Road—Westport School Road to End
- Old Hwy 30 (Knappa)—MP 0.45 to MP 2.09
- Old Hwy 30 (Svensen)—Svensen Market Road to US 30
- Ridge Road—Pole #332600 to Fort Stevens Highway 104
- Saddle Mountain Road—Youngs River Road to MP 4.6
- Simonsen Loop Road—Old Hwy 30 (Svensen) to Svensen Market Road
- Sunset Beach—US 101 to End of Pavement
- Svensen Market Road—US 30 to MP 1.82
- Taylorville Road—US 30 to US 30
- Tucker Creek Cutoff—Logan Road to Youngs River Road
- U Avenue—MP 0 to MP 0.04 (Seaside)

- Valley Creek Lane – Brownsmead Hill Road to US 30
- Walluski Loop Road – OR 202 to OR 202
- Westport Ferry Road – US 30 to Ferry Slip
- Youngs River Road – Miles Crossing to MP 10.85
- Ziak-Gnat Creek Road – Knappa Dock Road to US 30

All County roadway facilities not listed above are recommended to be classified as local roads.

Design Standards

Roadway design standards were developed for each functional classification proposed in this TSP for County facilities. Each functional classification requires different design standards based on the operating conditions (volumes, access management, speeds) and users (bicyclists, pedestrians, motorists) of the roadway segment. The design standards proposed in this TSP are intended for use in new roadway construction, and where feasible, reconstruction of existing roadway facilities.

For each functional classification proposed in this TSP, a design standard for rural conditions was developed as shown in Figures 5-4 and 5-5. Within the city limits of Astoria, Cannon Beach, Gearhart, Seaside, or Warrenton, the applicable city standards would apply to County roads. Table 5-5 shows the proposed design standards for County roads.

TABLE 5-5
Proposed Design Standards for County Roads

Functional Road Class	A.D.T.	Minimum Travel Lane Width (feet)	Minimum R/W Width
Arterial	>1000	24	80
Collector	300—1000	24	60
Local	0—300	22	60

Capacity Improvements

Table 5-6 presents the capacity and widening improvements recommended for local facilities in Clatsop County.

Figure 5-4
Proposed Design Standards
Front

Figure 5-4
Proposed Design Standards
Back

Figure 5-5
Proposed Design Standards
Front

Figure 5-5
Proposed Design Standards
Back

TABLE 5-6
Capacity and Widening Improvements on Local Facilities

#	Location and Description	Estimated Cost	Priority (Years)
20	Widen and pave Lewis and Clark Road from Crown Camp to the north (14000') and from Crown Camp to the Retreat Condominiums ²	\$950,000+ ³	1-5
21	Widen and pave Youngs River Loop from Olney Bridge to Hwy 202 (3600'). This project is in the vicinity of the Olney Rural Community.	\$250,000	1-5
22	Widen and pave Youngs River Loop from Tucker Creek to south (11000')	\$760,000	1-5
23	Widen and pave Sunset Beach Lane from Lewis to beach (2400')	\$120,000	1-5
24	Widen and pave Lewis Avenue from Sunset Beach to end of road (1600')	\$74,000	1-5
25	Widen and pave Old Highway 30 (Svensen) from Simonsen to Hillcrest ¹ . This project is between the rural communities of Knappa and Svensen.	\$136,000	1-5
26	Widen and pave Youngs River Road from MP 5.95 to MP 8.0	\$1,400,000	6-10
27	Widen and pave Ziak-Gnat Creek Road/Knappa Road from US 30 to US 30. This project is in the rural community of Knappa.	\$2,000,000	6-10
28	Widen and pave Walluski Loop from MP 0.3 to MP 3.65. This project is in the vicinity of the Old Naval Hospital and Olney Rural Communities.	\$2,000,000	6-10
29	Widen and pave Hillcrest Road to 28' Width. Geometric improvements should also be considered for this roadway section. This project is between the Knappa and Svensen Rural Communities.	\$2,000,000	6-10
30	Old Ridge Road – widen to 28' width between Hwy 104 and Delaura Beach Lane	\$105,000	6-10
31	Logan Road - widen and pave to 28' width	\$260,000	6-10
-	Construct improvements within the Miles Crossing/Jeffers Garden Rural Community (Note: specific improvements to be identified as part of refinement plan).	-	-
-	Widen and pave sections of Lewis and Clark Road to 28' Width ⁴	-	-
	Note: Geometric, safety, and sight distance improvements should be considered on this stretch of roadway within the 20-year period.		
-	Widen and pave sections of Youngs River Road to 28' width ⁵	-	-
	Note: Geometric, safety, and sight distance improvements should be considered on this stretch of roadway within the 20-year period.		

¹Note: This project will be bid in Spring of 2003

²Note: This project should be complete in 2003.

³Note: This cost does not include the section from Crown Camp to the Retreat Condominiums

⁴Upon completion of the projects in Table 5-5, this analysis assumes Lewis and Clark Road will be at least 28' wide in all locations.

⁵Upon completion of the projects in Table 5-5, this analysis assumes Youngs River Road will be at least 28' wide in all locations.

Safety Improvements

Table 5-7 presents the safety improvements recommended for County facilities in Clatsop County.

TABLE 5-7
Safety Improvements on County Facilities

#	Location and Description	Estimated Cost	Priority (Years)
30	US 101 at Gearhart Loop Road Intersection—construct turn lanes on Gearhart Loop Approach	\$20,000	1-5
31	Construct safety improvements on Lewis and Clark Road—access management and turn lanes	-	6-20
32	Construct safety improvements on Youngs River Road—access management and turn lanes	-	6-20

Pedestrian System Plan

Pedestrian activity in Clatsop County occurs primarily within cities and other unincorporated rural communities. The County's scenic and historic character also promotes pedestrian activity around natural features (such as beach accesses and hiking trailheads) and other significant landmarks (viewpoints and historical markers). However, because of the distances between cities and rural communities, there is relatively little pedestrian activity between communities. Therefore, the Pedestrian System Plan focuses on improving connections within communities and enhancing pedestrian access to the numerous recreational features of Clatsop County.

Providing a connected network of pedestrian facilities in Clatsop County is important to:

- Serve shorter pedestrian trips from neighborhoods to area recreational and activity centers, such as schools, churches, and neighborhood commercial uses
- Provide access to public transit
- Meet residents' and visitors' recreational needs
- Provide circulation within town centers and more densely populated areas of the County.

To meet the goals and objectives identified in this TSP, Clatsop County will encourage walking as a means of transportation by addressing the following areas:

- **Connectivity.** The County will work to develop a connected network of pedestrian facilities. Connected networks are important to provide continuity between communities and to improve safety.
- **Safety.** The County will work to provide a secure walking environment. In order for residents to use the pedestrian system, it must be perceived as safe.

- **Design.** The County can ensure pedestrian-oriented urban design by adopting policies and development standards that integrate pedestrian scale, facilities, access and circulation into the design of residential, commercial, and industrial projects.

The Pedestrian System Plan identifies facility and system improvements that will contribute to a safe and well-connected pedestrian environment. This, in turn, will promote walking as a viable transportation mode.

Pedestrian Facility Improvements

The Clatsop County pedestrian system is generally in good condition within the cities of Astoria, Cannon Beach, and Seaside. However, many of the County roadways, particularly outside of city limits, do not have sidewalks, and pedestrians share the roadway with bicycle and vehicle traffic. Where sidewalks exist, they vary in condition and level of ADA compliance. A lack of crosswalks on busy roads also can be a barrier to walking. Although many crosswalks exist along US 101 and US 30, they are needed along other roadways to promote pedestrian circulation and safety. Shoulder widths on many State facilities are also deficient and need to be widened.

Sidewalks

To provide a network of safe and connected facilities and promote a balanced transportation system for Clatsop County, sidewalk improvements have been identified. Particular focus is placed on increasing pedestrian safety by adding new sidewalks along such high traffic routes as US 101 and US 105.

In rural areas of the County where it is not feasible to construct sidewalks, it is recommended that the shoulders be widened from their current width to 5 or 6 feet on either side. These improvements are recommended for portions of County and State facilities (primarily US 26 and US 101). This will enhance accessibility for those who travel these roads as pedestrians and share the roadway shoulder with bicycle traffic.

Bridges can pose particular challenges to pedestrian safety and connectivity, especially when they lack adequate sidewalks, shoulder width, and striping. Therefore, the Pedestrian Plan identifies the addition of pedestrian facilities to two Clatsop County bridges as priority projects.

Crosswalks and Trails

To assist pedestrians in crossing busy roads, marked and/or signalized crosswalks and pedestrian warning signage should be installed at high volume intersections on US 26 and US 101 and at the Olney Elementary School on OR 202. To increase safety and better connect foot traffic to popular recreational areas, a pedestrian crossing under US 101 is proposed at the Oswald West beach access, as well as a trail extension connecting Hammond to Fort Stevens State Park, and a crosswalk near the soccer fields in Warrenton.

Rural Communities

The unincorporated communities of Clatsop County, such as Olney, Jewell, Jewell Jct., Cannon Beach Jct., Knappa and Svensen will benefit from many of the pedestrian

improvements identified in Table 5-7. The table calls out the rural community affected by each project.

Projects

Table 5-8 displays the recommended pedestrian facility improvements along existing streets and roads for the next 20 years.

TABLE 5-8
Pedestrian System Improvements

Location and Description	Estimated Cost	Priority (years)
US 101 in Cannon Beach Jct.—Sidewalk west side—From MP 24.67 to MP 24.85	Undetermined	6-10
US 101 in Cannon Beach Jct.—Sidewalk both sides—From MP 24.85 to MP 24.9	Undetermined	6-10
US 101 in Cannon Beach Jct.—Sidewalk east side—From MP 24.9 to MP 24.95	Undetermined	6-10
US 101 in Cannon Beach Jct.—Pedestrian and bicycle facilities at Sunset Interchange, at MP 25.27 (pending status of document)	\$5,000 (1)	11 to 15
Wahanna Rd—Sidewalks from Lewis and Clark Rd to Broadway (Note: This project would require right-of-way from surrounding property owners.)	\$369,000	6-10
US 101 in Arch Cape—Widen shoulders to 6 feet (both sides); pedestrian warning signage near parking lot of dell—MP 35.13	\$5,000 (1)	6-10
Old Ridge Road—multi-use path connecting Camp Rilea and Sunset Beach	\$500,000 (1)	6-10
Astoria Megler Bridge—Pedestrian and Bike Shuttle—MP 3.79	\$100,000	Undetermined
US 26 in Jewell Jct.—Widen shoulders to 6 feet (both sides) from MP 19.53 to MP 19.67; also potential crosswalk—MP 19.57	\$30,000 (1)	6-10
US 26 in Jewell Jct.—Widen shoulders to 6 feet (both sides) from MP 21.78 to MP 21.92; potential crosswalk at MP 21.81	\$20,000 (1)	6-10
US 101 in Arch Cape—Pedestrian underpass at Oswald West access (pending status of document) MP 39.25	Undetermined	6-10
US 30 in Knappa—Pedestrian crossing—MP 82	\$2,000+	1-5
Youngs River Road/County Bike Plan—Install 6' bicycle lanes to both sides and designation signage 6 feet (Affects Miles Crossing)	\$1,000,000 (1)(3)	11-15
Lewis and Clark Road—Install 6' bicycle lanes to both sides and designation signage 6 feet (Affects Miles Crossing Rural Community)	\$1,300,000 (1)(2)	11-15d
Multi-use Trail to connect Fort Clatsop to Sunset Beach	\$2,000,000 (1)	1-5
<i>The following pedestrian improvements are part of larger facility improvement projects listed in Tables 5-1, 5-2, or 5-5:</i>		
US 101—(New Youngs Bay Bridge) Pedestrian/bicycle improvements at MP 4.97	\$1,000,000 for Pedestrian and Bicycle Improvements Only	1-5

TABLE 5-8
Pedestrian System Improvements

Location and Description	Estimated Cost	Priority (years)
US 101 in Arch Cape—Feasibility of widening Arch Cape tunnel (pending status of document) Beginning MP 35.8. End MP 35.91	Part of Safety project	-
Lewis and Clark Bridge—Widen Shoulders and Pedestrian Facilities—MP 4.78 (Affects Miles Crossing/Jeffers Garden Rural Communities)	Part of Warrenton-Astoria Parkway	-
Old Young's Bay Bridge—Widen Shoulders and Pedestrian Facilities—MP 6.89	Part of Warrenton-Astoria Parkway	-
Hwy 105—Crossing with warning signal/signage—MP 5.7	Part of Warrenton-Astoria Parkway	-
Hwy 105 in Miles Crossing—Sidewalk both sides—From MP 4.64 to MP 5.87	Part of Warrenton-Astoria Parkway	-
Hwy 105 in Miles Crossing —Sidewalk south side—From MP 6.42 to MP 6.45	Part of Warrenton-Astoria Parkway	-
Hwy 105—Sidewalk both sides—From MP 6.45 to MP 6.95 (#225)	Part of Warrenton-Astoria Parkway	-
Hwy 105—Sidewalk south side—From MP 6.95 to MP 7.25 (#226)	Part of Warrenton-Astoria Parkway	-
Hwy 103 in Jewell—Widen shoulders (both sides); crosswalk at elementary school MP 0.01	Part of Warrenton-Astoria Parkway	-
US 202 in Olney—Widen shoulders to 6 feet (both sides) at MP 9.52; crosswalk and signage at elementary school	Part of Safety Project	-

- (1) Project is a joint pedestrian/bicycle improvement and appears on the Bicycle System Improvements table (Table 5-9) as well. Its cost should be accounted for in one table only.
- (2) Upon completion of the projects in Table 5-7, this analysis assumes Lewis and Clark Road will be at least 28' wide in all locations.
- (3) Upon completion of the projects in Table 5-7, this analysis assumes Youngs River Road will be at least 28' wide in all locations.

Pedestrian Standards and Policies

To enhance pedestrian safety, circulation and connectivity, and to comply with the State TPR, several changes have been proposed for the Clatsop County Land and Water Development and Use Ordinance. Pedestrian facilities now are permitted either outright or conditionally in all of the County's base zones. Additionally, a new section on *Pedestrian Access and Circulation* has been included in the code. This section requires new development in Rural Communities to provide internal pedestrian systems that meet minimum standards, sidewalks along both sides of arterials, collectors and most local roads in Rural Communities that meet minimum standards, and pedestrian connections between developments. The new code language encourages pedestrian trips because it facilitates direct, safe, and convenient access to pedestrian destinations.

Bicycle System Plan

Bicycle travel offers commuters, children, and others a significant option for transportation and is a transportation option for people who do not own vehicles. Cycling is also an important recreational option, especially in scenic areas such as Clatsop County.

The Bicycle Plan establishes a network of bicycle lanes and routes throughout Clatsop County to connect trip generators and to provide a safe, interconnected bicycle system. While all roadways and streets can be used as bikeways, designated routes along bicycle streets and roads and/or separated bicycle lanes on busy streets can improve safety as well as increase bicycle use. The Bicycle Plan in this TSP incorporates the recommendations included in the May 1993 Clatsop County Bicycle Plan (Ordinance 93-25).

Bicycle Facility Improvements

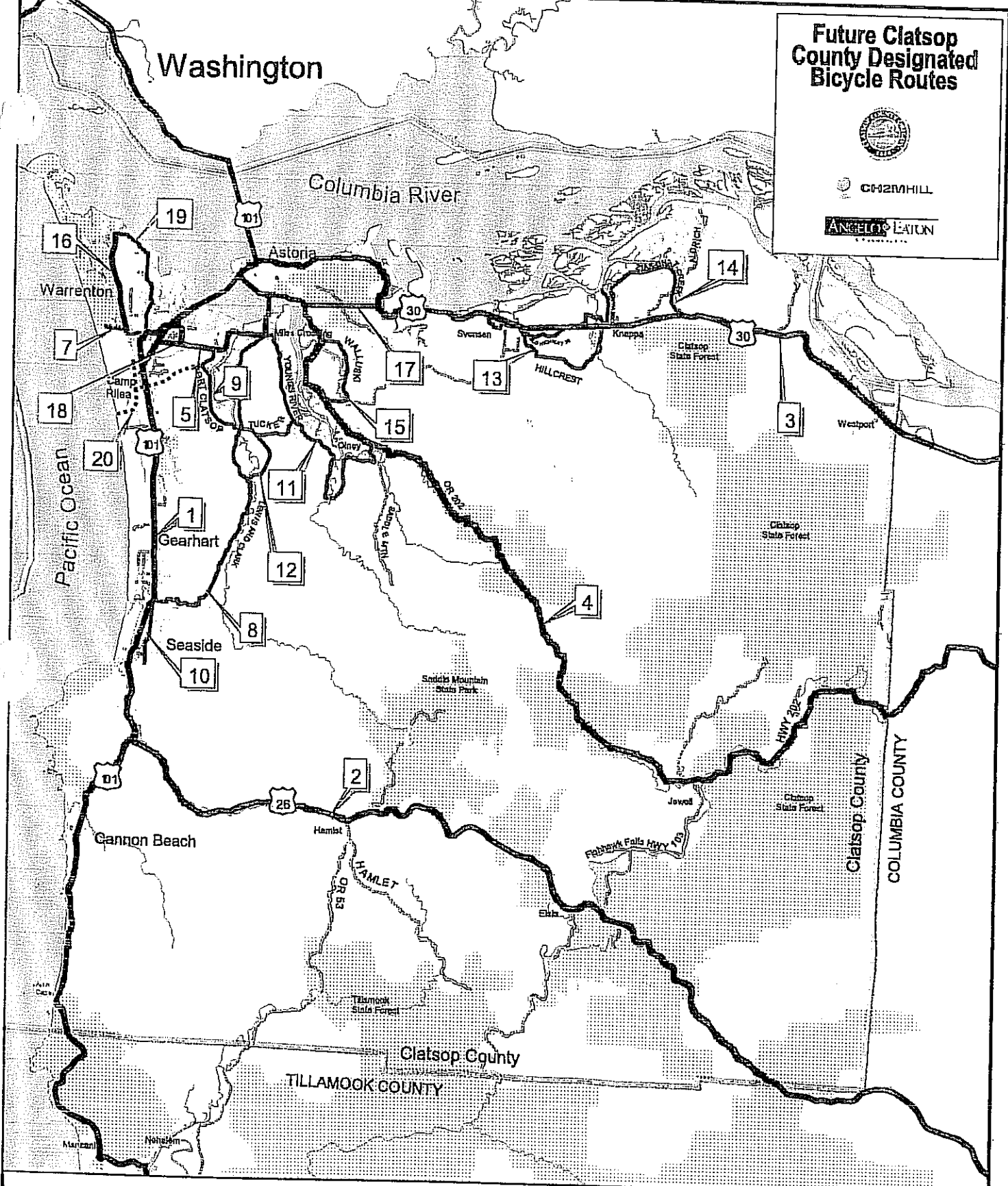
Figure 5-6 is a map that illustrates the recommended bicycle plan for Clatsop County. This figure includes County- and State-designated facilities throughout the County, including bike lanes and designated bike routes. Table 5-9 describes Clatsop County's designated bicycle routes by their corresponding map number in Figure 5-6 and labels them as County or State facilities.

Future Clatsop County Designated Bicycle Routes



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	State Bicycle Facilities		Parks
	County Bicycle Facilities		City Limits
	Road without Bicycle Routes		Trail
			County Boundary

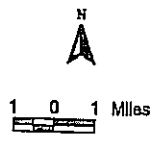


Figure 5-6
Transportation System Plan
Clatsop County

Figure 5-6
Future Clatsop County Designated Bicycle Routes
Back

TABLE 5-9
Clatsop County Designated Bicycle Routes

Map Number	Bike Facility Name	Between		Management
1	US 101	Astoria Bridge	Tillamook County Line	State
2	US 26	US 101	Tillamook County Line	State
3	US 30	Astoria Bridge	Columbia County Line	State
4	Hwy 202	US 101	Columbia County Line	State
5	Hwy 105	US 101	Hwy 202	State
6	Hwy 104/Hwy 104 Spur	US 101	US 101	State
7	Delaura Beach Lane	Ridge Rd	Hwy 104	County
	Delaura Beach Lane	Hwy 104	West	City of Warrenton
8	Lewis and Clark Road	Hwy 105	US 101	County
9	Fort Clatsop Road	Hwy 105	Lewis and Clark Road	County
10	Wahanna Road	12 th Street	Avenue S	City of Seaside
	Wahanna Road	12 th Street	Lewis and Clark Road	County
11	Young's River Road	Hwy 105	Hwy 202	County
12	Tucker Creek/Logan Road	Lewis and Clark Road	Young's River Road	County
13	Old US 30 Loop	US 30	US 30	County
14	Gnat Creek/US 30 Loop	Loop		County
15	Walluski Loop Road	Loop		County
16	Ridge Road	Fort Stevens Highway 104	Delaura Beach Lane	County
17	Astoria Bypass	US 30	Astoria-Warrenton Parkway	State
18	Astoria-Warrenton Parkway	Astoria Bypass	US 101	State
19	Fort Stevens Highway 104	Ridge Road	Fort Stevens Highway 104 Spur	State
20	Logan Road	Lewis and Clark Rd	Fort Clatsop Rd	County
21	Camp Rilea Trail	Old Ridge Rd and Camp Rilea	Sunset Beach	County
22	Fort Clatsop Bicentennial Trail	Fort Clatsop National Memorial	Sunset Beach	Federal
23	Fort Clatsop Trail or "Old Stagecoach Road"	Entire Route		County

Bikeways in Clatsop County are located on State facilities and County roads. Bicyclists either share shoulders or lanes with pedestrians and motorists on most County roadways. Many County roadways do not have sufficiently wide enough shoulders for bicycling safely. Many roadways in urbanized areas of the County are characterized by high numbers of vehicle access points for residential and commercial access, which can make bicycle travel difficult and hazardous.

The existing bikeways in Clatsop County generally are located along arterials or collectors, such as US 101, US 30, and Ridge Road. An unpaved bicycle facility also exists on the Fort Clatsop Trail, also known as "Old Stagecoach Road" Most County roadways do not have bikeways, and cyclists share roadway shoulders or lanes with pedestrian and vehicle traffic.

The condition of bikeways in Clatsop County varies both among and on roadways. Near urbanized areas, roadways tend to have wider shoulders, and some have designated bicycle routes. Shoulder maintenance is an issue on many County roadways and some areas of State roadways. Shoulder width deficiencies and potential bicycling hazards on State highways and County roadways are common over bridges or in areas with steep slopes and curves.

Oregon Coast Bike Route

US 101 is designated and signed as the Oregon Coast Bike Route. Approximately 35 miles of the 370-mile Oregon Coast Bike Route is located in Clatsop County. The Oregon Coast Bike Route enters Oregon from the State of Washington on the Astoria Bridge. The route then proceeds along US 101 to a point just north of the Cannon Beach where the official route shifts to Hemlock Street. The route stays on Hemlock Street through Cannon Beach until it rejoins US 101 just south of Tivolana Park (MP 34.6). With the exception of the route on the New Young's Bay Bridge and roughly a 1-mile section in Cannon Beach, the Oregon Coast Bike Route uses marked bike lanes or shoulders that have a width of 3 feet or greater. There are two exception areas that have shoulder widths of less than 3 feet.

Bikeway Improvements

To promote safe and convenient bicycle linkages between commercial, recreational, and other land uses the following improvements to the bicycle system have been identified. General bikeway improvements are proposed for portions of the County's Wahanna Road. Where width deficiencies exist, notably along County roads and bridges, and on routes with high volumes of vehicular and bicycle traffic, such as US 26 and US 101, widening and striping shoulders has been identified as a high priority project.

Signage

To promote bicyclist safety and awareness of bicyclists among motor vehicle drivers, designation signage is recommended along several County roads, as well as Highway 105. Additionally, the need for warning signage indicating the presence of bicyclists is identified for portions of US 101 and OR 202.

Trails

To provide an opportunity for recreational off-road cycling, the development of a recreational mountain biking trail is proposed off of Lower Nehalem Road. Multi-use paths have also been proposed from Old Ridge Road to connect camp Rilea and Sunset Beach and to connect the Fort Clatsop National Memorial to Sunset Beach.

Rural Communities

The unincorporated communities of Clatsop County, such as Olney, Jewell, Jewell Jct., Cannon Beach Jct., Knappa and Svensen will benefit from a number of the bicycle improvements identified in Table 5-9. The table calls out the rural community affected by each project.

Projects

Table 5-10 presents the recommended bicycle route improvements required during the next 20 years. The location of all designated bicycle facilities is shown in Figure 5-6.

TABLE 5-10
Bicycle System Improvements

Location and Description	Estimated Cost	Priority (Years)
Burma Road – Bike/Multi use trail connecting Fort Stevens with DeLaura Beach	\$200,000	6-10
Airport Dike – Bike /Multi use trail on airport dike from Hwy 105 to Young's Bay Bridge	\$175,000	6-10
US 101 in Arch Cape—Widen shoulders to 6 feet (both sides); pedestrian warning signage near parking lot of deli. Beginning MP 35.13. End MP 35.91	\$5,000 (1)	6-10
US 101 in Cannon Beach Jct.—Pedestrian and bicycle facilities at Sunset Interchange, at MP 25.27 (pending status of document)	\$5,000 (1)	11-15
US 101—Add signage indicating bicycles in outer lane. (Affects Cannon Beach Jct. and Arch Cape Rural Communities)	\$100,000	11-15
US 26—Develop bike lanes in rural portions of corridor. (Affects Cannon Beach Jct., Necanicum Jct., Elsie, and Jewell Jct. Rural Communities)	\$3,900,000	20+
Fort Clatsop Road—complete right of way widening to 28' (approximately 1 mile)	\$210,000	6-10
Old Ridge Road – multi use to trail connect Camp Rilea to Sunset Beach 1 mile	\$500,000 (1)	6-10
Old Ridge Road – widen shoulders to 28' between Hwy 104 and Delaura Beach Ln	\$105,000	6-10
US 26—Widen shoulders to 6 feet At MP 15 (both sides)	\$30,000+	11-15
US 26—Shoulders to 6 feet (both sides) near restaurant. From MP 17.5 to MP 18.04	\$105,000	11-15
US 26 in Necanicum Jct.—Widen shoulders to 6 feet (both sides)from MP 9.42 to MP 12.86.	\$445,000	11-15
US 26—Widen shoulders to 6 feet at MP 19.57 (both sides); potential crosswalk. From MP 19.53 to MP 19.67.	\$30,000 (1)	6-10

TABLE 5-10
Bicycle System Improvements

Location and Description	Estimated Cost	Priority (Years)
US 26 in Jewell Jct.—Widen shoulders to 6 feet (both sides); potential crosswalk from 21.78 to 21.92.	\$20,000 (1)	6-10
Lower Nehalem Road—Recreational use—mountain bike trail	\$2,000,000+	20
Lewis & Clark Road—Widen lanes/shoulders, add 6' bike lanes from Tucker Creek to Miles Crossing; designation signage.	\$1,300,000 (1) (2)	11-15
Youngs River Road/County Bike Plan—Widen lanes/shoulders, add 6' bicycle lanes from Tucker Creek to Miles Crossing; designation signage	\$1,000,000 (1) (3)	11-15
Multi-use Trail to connect Fort Clatsop to Sunset Beach	\$2,000,000 (1)	1-5
<i>The following bicycle improvements are part of larger facility improvement projects listed in Tables 5-1, 5-2, 5-5 or 5-7:</i>		
US 101—(New Youngs Bay Bridge) Pedestrian/bicycle improvements at MP 4.97	\$1,000,000 for Pedestrian and Bicycle Improvements Only	-
US 26—Where bridges are replaced, provide shoulders for bikes	Part of Safety project	-
Hwy 105—Widen shoulders to 6 feet (both sides); warning signage. From MP 4.67 to end, MP 4.83 (bridge).	Part of Warrenton Astoria Parkway	-
Hwy 105—Bicycle route designation signage (Affects Miles Crossing Rural Community)	Part of Warrenton Astoria- Parkway	-
US 202 near Jewell—Widen shoulders from MP 4.28-9.52 (both sides).	Part of Safety project	-
US 202—Widen shoulders (both sides); crosswalk and signage at elementary school. From MP 9.52. (Affects Olney and Jewell)	Part of Safety project	-
US 202—Warning signage (Affects Olney and Jewell)	\$10,000	-
Walluski Loop Road—Designation signage; widen shoulders/lanes to 28'	Part of Safety project	-
Gnat Creek Road—Widen shoulders/lanes to 28 feet; designation signage	Part of Safety project	-
Logan Road—Pave and widen to 28'	Part of Capacity project	-
Hwy. 103 in Jewell—Widen shoulders to 6 feet (both sides); crosswalk at elementary school. At MP 0.01.	Part of Safety project	-

- (1) Project is a joint pedestrian/bicycle improvement and appears on the Pedestrian System Improvements table (Table 5-7) as well. Its cost should be accounted for in one table only.
- (2) Upon completion of the projects in Table 5-9, this analysis assumes Lewis and Clark Road will be at least 28' wide in all locations.
- (3) Upon completion of the projects in Table 5-9, this analysis assumes Youngs River Road will be at least 28' wide in all locations.

Bicycle Standards and Policies

To enhance bicycle safety, circulation and connectivity, and to comply with the State TPR, several changes have been proposed for the Clatsop County Land and Water Development and Use Ordinance. Bicycle facilities now are permitted either outright or conditionally in all of the County's base zones. Additionally, in the new *Pedestrian Access and Circulation* section, standards for pedestrian and bicycle pathways are designated for new development. Bicycle lanes now are required along all arterials and major collectors constructed in the County. Updated standard road cross-sections reflect these changes. Additionally, a new section has been added to the ordinance addressing required bicycle parking for new development. These new standards and policies encourage bicycle trips because they facilitate more direct, safe, and convenient access to County destinations.

Public Transportation

The following opportunities and policies from SETD Comprehensive Transportation Plan should be explored:

- **Decrease the reliance on single occupancy vehicles in Clatsop County.** To meet this goal, services available to low-wage workers and dial-a-ride users would need to be strengthened. In addition, the hours of operation and service frequency would need to be expanded.
- **Cut travel time.** Transit users who currently commute between Astoria and Seaside cite travel time as an inconvenience to public transit usage. As stated in the SETD Comprehensive Plan, ways to cut travel time should be explored.
- **Extend hours of operation** to allow users with alternative work schedules to use transit services.
- **Decrease the headway between buses** to minimize wait time for users.
- **Review scheduling and routes** and make changes as necessary. Incorporated communities have both residential and tourist related needs. Each of the incorporated communities also has both intercity and intracity public transportation needs that should be addressed.
- **Improve the efficiency of the dial-a-ride program** to serve more users. According to the SETD Comprehensive Plan, the system currently serves an average of one user per hour. By grouping dial-a-ride trips generated in the same location and assigning dial-a-ride drivers to a specific geographic zone, the program would serve more riders for the same cost throughout Clatsop County. The use of specialized software and training for dial-a-ride employees would be necessary to improve the efficiency of the program.
- **Meet the transit demands created by future development**, including the relocation of Clatsop Community College and the North Coast Business Park.
- **Consider the loss of transit connections with Washington.**

- **Improve connections** with other transit service providers. Currently, connections between transit service providers, including Pacific Transit, Oregon Coachways, and the Cannon Beach Shuttle, are not well coordinated.
- **Advertise and promote** SETD services.
- **Maximize the potential of the proposed intermodal center**, by using the facility to educate users about transit options and community events, in addition to providing an efficient transfer point between services.

In addition, the following opportunities should be explored:

- Transit amenities, including covered benches, signage, and concrete landing pads, should be considered for stops with high ridership in Clatsop County. These amenities would make the system more visible to potential users and possibly attract new riders. Also, as mentioned previously, all transit stops should be accessible to all potential riders per ADA standards.
- Transit pull-outs on state and county facilities.
- Currently, there is SETD service within Astoria (Route 10), between Astoria and Warrenton (Route 15), between Seaside and Cannon Beach (Route 20), within Seaside (Route 25), and among Astoria, Warrenton, and Seaside (Route 101). Intercity bus service in Warrenton should be considered to better serve seasonal usage at Fort Stevens State Park and the KOA, connecting these facilities with downtown Warrenton and the commercial area along US 101.
- Currently, high volumes of local traffic travel across the New Youngs Bay Bridge from Astoria to the Warrenton commercial area. To reduce traffic volumes across the New Youngs Bay Bridge, opportunities to improve transit service between the City of Astoria and the Warrenton commercial area should be explored.
- As a result of low ridership, previous routes that provided service between Astoria and Westport and between Warrenton and Jewell through Seaside have been cancelled. Future service to connect unincorporated communities like Arch Cape, Knappa, Westport, and Miles Crossing with incorporated communities should be considered.

Mechanisms to fund the following additional transit projects listed in relevant planning documents should be explored:

- Portland/Cannon Beach Transit Service for recreational use (US 26 Corridor Plan)
- Astoria Megler Bridge—pedestrian/bicycle shuttle and kiosks and shelters north and south of the bridge on US 101 (Astoria TSP)
- New Youngs Bay Bridge—kiosks and shelters north and south of the bridge on US 101 (Astoria TSP)
- Improve transit between the Willamette Valley and Seaside and between Cannon Beach and Astoria (Draft Oregon Coast Highway Corridor Master Plan)
- Fort Clatsop Shuttling System (2002-2005 STIP)

- Intermodal Facility Improvements (2002-2005 STIP). This project will improve transfer opportunities between different service providers.

Transit TDM Recommendations

ODOT's TSP Guidelines list circumstances where Transportation Demand Management (TDM) techniques can benefit the system and enhance mobility. These circumstances include:

- Favorable community demographics for employment/residency
- Appropriate travel distances for the trip to work
- Appropriate travel patterns for the trip to work
- Supportive community attitudes

While congestion is not currently a large problem during the weekday PM peak period, access to employment and services can present challenges for certain residents, due to limited travel options. Ridesharing is a flexible, low-cost method of addressing these challenges in certain situations. In larger metropolitan areas, a dedicated staff person offers assistance to citizens and employers interested in ridesharing via a local phone number. This level of assistance is not necessary in rural areas. Clatsop County does not currently have the resources to provide a staff person to this effort at this time. Nonetheless, certain TDM tools can be identified in a TSP that can provide a basic level of benefit without incurring a great deal of cost.

- An effective, low-cost method of providing rideshare assistance in lieu of a dedicated staff person is via an online ride-matching tool. This website, www.carpoolmatchnw.org, is provided by the City of Portland as a free service for communities who wish to use it. While the use of the site is free, gaining access to the reporting functions of the site does require a fee. The entire state of Oregon and certain counties in SW Washington have been mapped, so the site has the capabilities of providing connections within and outside of Clatsop County. Portland is currently working on adding a "one-time only" trip feature, which will allow the casual traveler to potentially find a ride. Providing carpooling opportunities between incorporated or rural communities and major employment centers (i.e. Wauna) should be considered.
- Park and ride lots provide a centralized locale for carpoolers to meet. Existing parking, such as at churches or grocery stores, should be utilized to the extent that it is feasible. Right-of-way owned by the state or county can be signed and developed into low-cost lots.
- A simple listing of a county's available transit, rideshare, and park and ride lot information should be made available and distributed via government agencies, social service agencies, libraries, community websites, etc.

Port Element

Astoria Regional Airport

The following projects for the Astoria Regional Airport have been identified through the Astoria Airport Master Plan (1993), the Astoria TSP, and discussions with the Airport Manager:

- Runway safety areas for the 13/31 runway need to be modified to meet Federal Aviation Administration (FAA) standards (Should be complete by the summer of 2003).
- The existing water facilities at the airport do not meet minimum standards.

From the field inventory, improved signing to the airport and improved signing and striping in the airport area are recommended.

Currently, the Astoria Regional Airport does not provide commercial air passenger service. However, SkyTaxi Service, which provides the ability for passengers to make arrangements to fly from Astoria to hub airports or out-of-the way destinations is available at the Astoria Regional Airport. If commercial air passenger service is to be reinstated at the airport in the future, the following issues would need to be addressed:

- As stated in the Astoria Airport Master Plan (1993), the current access to the airport should be improved to provide more direct access with an improved alignment. The Warrenton TSP addresses improved access off US 101. Improvements at the intersection of the Astoria-Warrenton Parkway with Fort Clatsop Road, including signing, should be considered.
- A larger passenger terminal building with parking might be necessary if commercial air passenger service is reinstated.
- The airport would need to upgrade security to meet new security requirements.

Financing for projects at the Astoria Regional Airport has not been investigated.

Port of Astoria

Transportation issues that should be addressed at the Port of Astoria include:

- Access improvements at 36th Street, Bay Street, Basin Street, Portway Street, and Hamburg Street to accommodate trucks and improve the safety and operational performance of the intersections.
- Improved circulation within the Port of Astoria property through construction of new streets.
- Improved pedestrian access along the waterfront to tie in with the Riverfront Trail and Astoria Riverfront Trolley.
- Additional parking to accommodate demand at the mooring basins, including parking for tourists using the Riverfront Trolley and those using the Port of Astoria facilities.
- Improvements at the Port of Astoria to accommodate cruise ship traffic.

Warrenton Mooring Basin

The Warrenton Mooring Basin is located near downtown Warrenton. Parking facilities at the Warrenton Mooring Basin are not adequate for the demand, causing users to park outside of the designated parking areas along local roads and State highways during peak periods of use. Opportunities for additional parking facilities at the Warrenton Mooring Basin should be explored. Financing for additional parking at the Warrenton Mooring Basin has not been investigated.

Rail Element

The following needs for the existing Portland & Western rail line along US 30 have been identified through the US 30 Corridor Plan, field visit, and discussions with the ODOT Rail Division:

- Continue to repair rail line between Clatskanie and Astoria to allow extension of service past Clatskanie into Clatsop County. Repairs should be completed in 2003.
- Improve at-grade rail crossings west of Clatskanie if safety issues are identified.
- Pursue the extension of freight rail service to Wauna, Tongue Point, Astoria, and across the New Youngs Bay Bridge. All of these destinations have used rail service in the past. With expansion of the Wauna mill, extension of freight rail from Clatskanie to this destination is likely. At Tongue Point, there is sufficient acreage for developing a market that would use freight rail as a mode of transportation. Other possible locations for markets that would use rail are Bradwood (dredge spoils), the Port of Astoria, or development in other areas of Astoria. Capacity improvements on the New Youngs Bay Bridge should consider the possibility of extending freight rail service to Warrenton and Camp Rilea. Each of these opportunities should be explored further.
- Expand tourist-related rail services in Clatsop County. As part of the Lewis and Clark Bicentennial, passenger rail will begin operating between Portland and Astoria in the summer of 2003. In addition, the City of Astoria operates a trolley along the waterfront in Astoria. Because Clatsop County experiences a high level of tourism, other tourist-related rail services should be considered.

SECTION 6

Transportation Funding Plan

This chapter outlines funding sources that can be used to meet the needs of the transportation system improvements identified in Section 5. Today, much of the user fee revenues such as gas tax and vehicle registration fees generated for the transportation system are consumed by operation, maintenance and preservation requirements. As a result, much of the new construction is funded from other sources. Balancing these needs is not an easy challenge. The TSP for Clatsop County contains the following elements:

- List of transportation facilities and major improvements (Section 5)
- General estimate of timing for planned transportation facilities and major improvements (Section 5)
- Order of magnitude planning level cost estimates for recommended transportation facilities and major improvements (Section 5)
- Discussion of existing and potential future financing sources (Section 6)

Existing County Funding Sources

Table 6-1 summarizes Clatsop County revenues and expenditures for transportation maintenance and capital improvements during the past 6 fiscal years (1997/98 through 2002/03). Transportation funding has been relatively constant over the 6-year period, averaging approximately \$4.1 million per year. Clatsop County's primary sources of transportation revenue are primarily derived from the County's share of the State gas tax (40 percent), property taxes (35 percent), and timber revenue (25 percent). Table 6-1 also illustrates how transportation funds have been spent during this period separating capital improvements and maintenance. Typically, 40 percent of current revenues have been allocated to capital improvements with remainder covering maintenance and administration.

Existing State Funding Sources

The STIP provides funding for capital improvements on federal, state, county, and city transportation systems. Within the STIP, which is updated every 2 years, funds are allocated for multimodal projects, including roadway, public transportation, bicycle and pedestrian, air, freight, and bridge projects. Each STIP lists projects that will be constructed over a 4-year period. Projects that are included in the STIP are regionally significant, as they have been given a high priority through planning efforts.

Transportation projects in the STIP are generally categorized as follows:

Modernization Projects: Improvements to accommodate existing traffic and/or projected traffic growth.

- Addition of lanes: High Occupancy Vehicle (HOV) lanes, new alignments, new facilities (bypasses)
- Highway reconstruction with major alignment improvements or major widening; grade separations
- Widening of bridges to add travel lanes
- Immediate Opportunity Fund (IOF) projects
- New safety rest areas

Safety Projects: An investment program focused on improvements to priority hazardous highway locations and corridors, including the interstate, in order to reduce the number of fatal and serious injury crashes. Projects funded through this program meet strict benefit/cost criteria. Improvements include the following:

- Capital improvements such as passing lanes, turn lanes, and wider shoulders
- Access management
- New guardrails
- Illumination, delineation, or signing
- Channelization within the existing roadway at intersections
- Continuous shoulder rumble strips
- Enforcement of traffic laws
- Railroad crossing improvements (separate funding source)

Pavement Preservation: Improvements to rebuild or extend the service life of existing facilities, and rehabilitative work on roadways. Preservation projects add useful life to the road without increasing the capacity. Improvements include the following:

- Pavement overlays (includes minor safety and bridge improvements)
- Interstate Maintenance (IM) Program (pavement preservation projects on the interstate system)
- Reconstruction to reestablish an existing roadway
- Resurfacing projects

Bridge Projects: Improvements to rebuild or extend the service life of existing bridges and structures beyond the scope of routine maintenance.

- Rehabilitation, replacement, major repair, major maintenance
- Overpass screening
- Tunnels
- Large (over 6 feet) culverts

Operations: System management and improvements that lead to more efficient and safer traffic operations and greater system reliability. Improvements include the following:

- Signals and signs, illumination, and other operational improvements
- Rockfalls and slides (chronic rockfall areas and slides; not emergency repair work)

Table 6-1
Existing Sources of Clatsop County Transportation Funds
Front

Table 6-1
Existing Sources of Clatsop County Transportation Funds
Back

- ITS: Intelligent Transportation System (includes ramp metering, incident management, emergency response, traffic management operations centers, and mountain pass and urban traffic cameras)
- Slow Moving Vehicle turnouts, traffic circles or roundabouts
- Transportation Demand Management (TDM): Includes rideshare, vanpool, and park and ride programs

Oregon Transportation Investment Act

The Oregon Transportation Investment Act (OTIA) was passed by the 2001 Oregon Legislative Assembly and is funded through bond proceeds derived from increased DMV fees. OTIA currently provides \$650 million (including \$150 million local matching funds) for 173 construction projects that will improve pavement conditions, increase lane capacity, and improve bridges throughout Oregon. Projects were selected with extensive input from local communities and other stakeholders. In 2002, the Oregon Transportation Commission allocated these funds for modernization, preservation, and bridge projects throughout the State.

State-Funded Projects in Clatsop County

The 2002-2005 STIP, 2004-2007 Draft STIP, and OTIA-funded projects combine to generate nearly \$75 million of transportation improvements over the next 6 years in Clatsop County, which results in an average of about \$12 million in funding annually. Modernization (OTIA and STIP), safety, and pedestrian/bicycle enhancement projects make up approximately 60 percent or \$45 million of this funding in the next six years. Table 6-2 summarizes the STIP and OTIA funding for projects in Clatsop County from 2002 to 2007.

Transportation System Plan Financing

Overall, the TSP contains over \$350 million dollars in multi-modal transportation improvements over the next twenty years, with the biggest improvements occurring on the primary state facilities serving the county. This plan assumes that existing revenues and expenditures for transportation maintenance and capital improvements over the next 20 years will remain stable. As a result, the county will likely need a combination of state and/or federal assistance in addition to additional local revenue to address funding needs. Table 6-3 summarizes timing and costs for projects listed in Section 5 under the categories of modernization, safety, and pedestrian/bicycle.

TABLE 6-3
Transportation System Plan Improvements Costs

Type of Improvement	Priority				Total
	1-5	6-10	11-15	16-20	
State Capacity	\$31,700,000	\$65,400,000	\$6,000,000	\$49,555,000	\$152,655,000
State Safety	\$1,620,000	\$13,500,000	\$15,400,000	\$500,000+ (1)	\$31,000,000+
County Widening and Safety	\$2,310,000	\$7,770,000	(2)	(2)	\$10,000,000+
State Bike and Pedestrian	\$2,002,000	\$55,000	\$685,000	\$3,900,000	\$6,642,000
County Bike and Pedestrian	(3)	\$1,284,000	\$2,300,000	\$2,000,000	\$5,584,000

- (1) Costs to be determined through refinement plans. Safety projects that are not funded in the 11-15 year range should be given a 16-20 year priority.
- (2) No projects with an 11-15 or 16-20 year priority are recommended in this document. These projects to be identified through updates to the Clatsop County TSP and as part of the Miles Crossing/Jeffers Garden Refinement Plan to support development within this rural community.
- (3) No projects with 1-5 year priority are recommended in this document.

Potential Future Funding Sources

U.S. Department of Transportation (USDOT) TEA-21 Reauthorization

The 2004 budget lays the groundwork for a \$247 billion, six-year reauthorization proposal, as compared to TEA-21's current level of \$218 billion. Of the proposed total, \$195 billion would fund the highway program (up from \$168 billion) over six years, and \$45 billion would fund the transit program (up from \$41 billion). Federal funding is typically distributed through the state.

U.S. Department of Homeland Security (DHS)

Several agencies formerly under the USDOT now reside in the DHS. Based on spending by various agencies and offices that have moved to DHS proposed funding for the \$36 billion agency represents a 64 percent increase. The department's focus is on reducing the nation's vulnerability to terrorism, and minimizing the damage and recovering from attacks that may occur. Funding for projects that involve military operations (i.e. the Camp Rilea Underpass) and lifeline routes should be pursued through the DHS.

US Department of Defense Access Road (DAR) Program

The DAR Program provides a means for the US Department of Defense to fund improvements on public highways that are necessary due to defense-generated impacts. The DAR program is available to local or state agencies if a military site requires access control (i.e. gate), there are significant increases in traffic due to operations at a military site, new public highways are required to replace those closed for military necessity, or upgrades are necessary on a road to handle unique defense vehicles. Funds are distributed to state and local agencies for construction projects through FHWA and the Department of Defense.

Table 6-2
Existing Sources of State Transportation Funds
Front

Table 6-2
Existing Sources of State Transportation Funds
Back

Source: <http://www.tea.army.mil/DODProg/HND/DAR%20Brochure.pdf>

ODOT Bicycle and Pedestrian Program

The State-funded Bicycle and Pedestrian Program distributes approximately \$3 million per year throughout the state. Many of the pedestrian and bicycle projects included in the TSP would be eligible for funding through this program. Therefore, Clatsop County and ODOT should consider applying for these funds for pedestrian and bicycle projects included in the TSP.

System Development Charges

System Development Charges (SDC) create a mechanism for development to pay for transportation improvements necessary to support trips generated by development. SDCs are used in many cities and counties in Oregon and are generally based on the number of vehicle trips generated by the development.

Local Gas Tax

Clatsop County currently receives a portion of state gas taxes. However, the county could implement an additional local gas tax to increase revenue and fund transportation related improvements. Local gas taxes are currently being utilized by several counties and cities within Oregon to fund transportation projects.

Road Pricing

As described in this TSP, tourism accounts for major increases in traffic volumes throughout Clatsop County. In coordination with the State, the county could employ some form of tolling to support transportation related improvements throughout the county. This concept is considered under the preferred alternative as a TDM measure to reduce reliance on the New Youngs Bay Bridge. A refinement plan is included in the Clatsop County TSP to further study TDM measures like road pricing.

Revenue and General Obligation Bonds

Revenue bonds sold by government agencies and repaid by user charges. Typically, the bonds are secured by stable revenue stream, such as a local gas tax, street utility fee, or toll.

Similarly, general obligation bonds serve the same purpose however, they are secured by the full faith and credit of the issuing municipality. Such bonds are authorized by vote. Revenue bonds can also be issued with this backing.

Vehicle Registration Fees

Clatsop County could implement a local vehicle registration fee to fund transportation related improvements throughout the county. This fee would be in addition to the statewide vehicle registration fee.

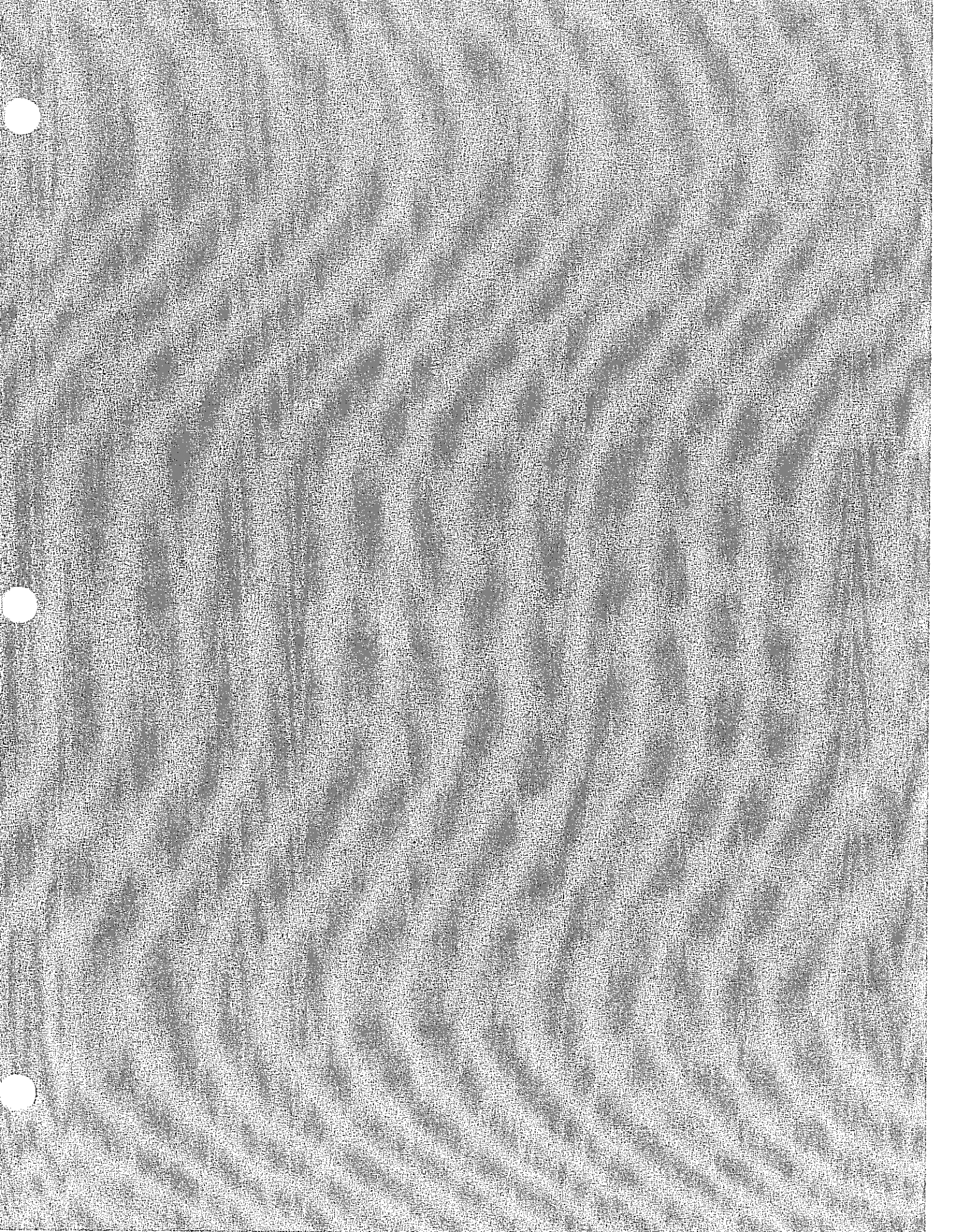
Property Tax

Property taxes currently account for approximately 35 percent of the county's transportation revenue. The county could fund additional improvements through an increase in local property taxes.

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SECTION 7

**Transportation Planning Rule Consistency
(OAR 660.012-0045)**



Transportation Planning Rule Consistency (OAR 660.012-0045)

In 1991, the Land Conservation and Development Commission (LCDC), with the concurrence of ODOT, adopted the Transportation Planning Rule, OAR 660 Division 12. Table 7-1 identifies TPR requirements for the adoption of a Transportation System Plan and describes how each requirement is addressed in this TSP to ensure compliance with the TPR.

**TABLE 7-1
TPR Requirements for a Transportation System Plan**

TPR Requirements	Clatsop County TSP Compliance
OAR 660.012-0015: Preparation and Coordination of the TSPs	
<p>Preparation, adoption, and amendment of Local TSPs</p> <p>Local TSPs shall establish a system of transportation facilities and services adequate to meet identified local transportation needs and shall be consistent with adopted elements of regional and State TSPs.</p> <p>Coordinate the preparation of the local TSP to assure regional and State transportation needs are met.</p> <p>Local governments shall adopt regional and local TSPs as part of their comprehensive plan.</p> <p>TSPs preparation shall be coordinated with affected state, federal, and regional agencies; local governments; special districts; and private providers of transportation services.</p>	<p>Sections 1 through 4 document Clatsop County's existing and future local transportation needs. Section 5 consists of the Clatsop TSP, describing a system of transportation facilities and services to meet these needs. These sections have been prepared in accordance with the Oregon Transportation Planning Rule and the Oregon Highway Plan.</p> <p>All State transportation needs were considered in the development of the Clatsop County TSP through consultation with the project management team (PMT) and coordination meetings with affected agencies.</p> <p>The County will adopt this TSP as part of its comprehensive plan.</p> <p>To ensure that the Clatsop County TSP would be consistent with the policies, goals, and needs of affected agencies, a PMT was established at the outset of the planning process. The PMT was made up of representatives from the county, cities within the county, the Oregon Department of Transportation, and the Department of Land Conservation and Development.</p>
OAR 660.012-0020: Elements of Transportation System Plans	
<p>Establish a coordinated network of facilities to serve state, regional, and local transportation needs.</p> <p>The TSP shall include the following elements:</p> <p>Determination of transportation needs per OAR 660-2-0030.</p> <p>A road plan for a system of arterials and collectors and standards for the layout of local streets and connections.</p> <p>A public transportation plan.</p> <p>A bicycle and pedestrian plan consistent with ORS 65.514.</p> <p>An air, rail, water, and pipeline plan that identifies public airports, mainline and branchline railroads, port facilities, and major regional pipelines and terminals.</p>	<p>All planned transportation facilities were coordinated with the identified needs of State and local agencies.</p> <p>Clatsop County's 20-year transportation needs are documented in Section 3 of this report.</p> <p>The Clatsop County roadway plan is documented in Section 5, and illustrated in Figure 5-3 and Tables 5-4, 5-5, and 5-6.</p> <p>The Clatsop County Transit Plan is documented in Section 5.</p> <p>The Clatsop County Pedestrian Plan is documented in Section 5, Table 5-7. The Clatsop County Bicycle Plan is documented in Section 5, and illustrated in Figure 5-6.</p> <p>The air, rail, water, and pipeline system plans are documented in Section 5 and illustrated in Figure 2-8.</p>

TPR Requirements	Clatsop County TSP Compliance
<p>Policies and land use regulation for TSP implementation per OAR 660-012-0045.</p> <p>For areas within an urban growth boundary containing a population of 2500 or more, a transportation financing program as provided in OAR660-12-0040</p> <p>Each element identified in (2)(b)-(d) shall contain:</p> <p>An inventory and assessment of existing and committed facilities and services by function, type, capacity, and condition.</p> <p>A system of planned facilities, services, and major improvements.</p> <p>A description of planned facilities, services, and major improvements including a map showing general location of proposed improvements, minimum and maximum right-of-way widths, and a description of facility or service.</p> <p>Identification of the provider of each facility or service.</p>	<p>These will be adopted separately from the TSP.</p> <p>The transportation financing program is documented in Section 6.</p> <p>An inventory of Clatsop County's existing transportation facilities is documented in Section 2 of this plan.</p> <p>A system of planned facilities, services, and major improvements is documented in Section 5 of this plan.</p> <p>Section 5 of this plan contains a description of Clatsop County's planned facilities, services, and major improvements. A map showing the general location of the proposed improvements is provided for in Figure 5-1. Right-of-way widths are illustrated in Figures 5-4 through 5-5 and Appendix A.</p> <p>The responsible agency/provider of each facility is documented in Section 2.</p>
<p>OAR 660-012-0025 - Complying with the Goals in TSP Preparation</p>	
<p>Adoption of a TSP shall constitute the land use decision regarding the need for transportation facilities services, and major improvements and their function, mode, and general location.</p> <p>Findings of compliance with applicable statewide planning goals and comprehensive plan policies shall be developed in conjunction with adoption of the TSP.</p>	<p>In process.</p> <p>In process.</p>
<p>OAR 660-012-0060 - Determination of Transportation Needs</p>	
<p>The TSP shall identify transportation needs including:</p> <p>a) State and local transportation needs;</p> <p>b) Needs of the transportation disadvantaged;</p> <p>c) Needs for the movement of goods and services.</p>	<p>The State and local transportation needs are documented in Section 3 of this plan.</p> <p>The needs of the transportation disadvantages are documented in Section 3 of this plan.</p> <p>The needs for the movement of goods and services are documented in Section 3 of this plan.</p>
<p>OAR 660-012-0085 - Evaluation and Selection of Transportation System Alternatives</p>	
<p>The TSP shall be based upon evaluation of potential impacts of system alternatives that can reasonably be expected to meet the identified needs at reasonable cost. The following shall be evaluated as components of the system alternatives:</p> <p>a) Improvements to existing facilities or services;</p> <p>b) New facilities and services including different modes of travel;</p>	<p>Reasonable and cost effective solutions to existing facilities were evaluated before new facilities were considered.</p> <p>All new facilities were evaluated based on their reasonableness and cost-effectiveness.</p>

BLE 7-1
 R Requirements for a Transportation System Plan

TPR Requirements	Clatsop County TSP Compliance
<p>Transportation system management measures;</p>	<p>Transportation system management strategies were anticipated in the development of TSP.</p>
<p>Demand management measures;</p>	<p>Demand management measures were anticipated in the development of the TSP.</p>
<p>A no-build system alternative required by the national PA.</p>	<p>Section 3, Alternative 1 documents the "no-build" system alternative and its inadequacies to meet the future transportation needs of Clatsop County.</p>
<p>The following standards shall be used to evaluate and select alternatives:</p>	
<p>The transportation system shall support urban and rural development by providing types and levels of facilities and services appropriate to serve the land uses identified in the knowledgeable comprehensive plan;</p>	<p>The TSP is based on the current, acknowledged comprehensive plan for Clatsop County and provides enhancement to the integration of transportation and land use systems.</p>
<p>The transportation system shall be consistent with state and Federal standards for the protection of air, land and water quality;</p>	<p>The standards used to evaluate and select transportation alternatives are documented in Section 4 of this plan.</p>
<p>The transportation system plan shall minimize adverse economic, social, environmental, and energy consequences;</p>	<p>The standards used to evaluate and select transportation alternatives are documented in Section 4 this plan.</p>
<p>The transportation system shall minimize conflicts and promote connections between modes of transportation.</p>	<p>The standards used to evaluate and select transportation alternatives are documented in Section 4 of this plan.</p>
<p>The transportation system plan shall avoid principal reliance of any one mode of transportation and reduce principal reliance on the automobile.</p>	<p>The standards used to evaluate and select transportation alternatives are documented in Section 4 of this plan.</p>
<p>Local TSPs shall include interim benchmarks to assure satisfactory progress towards meeting the requirements of this chapter at five-year intervals. Local governments shall evaluate progress in meeting interim benchmarks at five year intervals from adoption of the TSP.</p>	<p>The County will regularly review the TSP at five-year intervals to ensure that it is meeting the requirements of the TPR.</p>

Implementing Ordinances

The draft of this section of the TSP included recommended changes to the Clatsop County Land and Water Development and Use Ordinance ("LWDUO") and Standards Document in order to comply with implementation provisions of the Oregon Transportation Planning Rule (TPR) as codified in OAR 660-012-045. The *Plan and Policy Review* document includes an outline that presents required TPR code elements compared with the current county code. This "TPR code audit" served as the guide for identifying sections of the code that needed revisions. The recommendations in the draft TSP were reviewed and modified by County staff and the Planning Commission. Changes to the Clatsop County Land and Water Development and Use Ordinance and the Standards Document were adopted as part of the TSP adoption process, but not as part of the Clatsop County Transportation System Plan.

APPENDIX A
Project List

Projects for Clatsop County Transportation System Plan

The following modernization projects are assumed in the Preferred Alternative:

Project Type	Years	Cost	Description	Source	Facility	BEG MP	EHD MP	Mobility/Accessibility	Coordination	Non-motorized	Capacity	Safety	Life-line Routes	Environmental	Transportation Fur
Modernization	1 to 5	10074	Pacific Way - Dooley Bridge (Phase 1) (w/in Seaside)	2002-2005 STIP	US 101	18.34	20.24	+	+	+	+	+	+	-	+
Modernization	1 to 5	6210	Pacific Way - Dooley Bridge (Phase 2) (w/in Seaside)	2002-2005 STIP	US 101	21.6	22.5	+	+	+	+	+	+	-	+
Modernization	1 to 5	950	Widen and pave Lewis and Clark from Crown Camp to north (14000')	Clatsop County 2001-2006 Project list	County Road - Lewis and Clark	N/A	N/A	+	+	0	+	+	0	0	+
Modernization	8 to 10	9931	Passing Lane and realignment of curves Necanicum Junction - access management, lengthen EB decel lane, improve illumination, close easternmost driveway	US 30 Corridor Plan	US 30	61.3	62.46	+	+	0	+	+	+	-	-
Modernization	8 to 10	1093	Camp 18 - access management	US 26 Corridor Plan	US 26	6.42	6.42	0	+	0	0	+	+	0	0
Modernization	6 to 10 - Constrained	1093	Median turn lanes/access management at Jewell Junction	US 26 Corridor Plan	US 26	17.71	17.71	0	+	0	0	+	+	0	0
Modernization	6 to 10	1364	Widen and pave Youngs River Loop from Tucker Creek to south (11000')	Clatsop County 2001-2006 Project list	County Road - Youngs River Loop	N/A	N/A	+	+	+	+	+	0	0	+
Modernization	0 to 10	250	Widen and pave Youngs River Loop from Olney Bridge to Hwy 202 (3600')	Clatsop County 2001-2006 Project list and Existing Conditions analysis and CC Comp Plan	County Road - Youngs River Loop	N/A	N/A	+	+	+	+	+	0	0	+
Modernization	8 to 10	120	Sunset Beach Lane - widen and repave from Lewis to beach (2100')	Clatsop County 2001-2006 Project list	County Road - Sunset Beach Lane	N/A	N/A	+	+	+	+	+	0	0	+
Modernization	6 to 10	105	Old Ridge Road - widen to 28' width	Advisory Committee	Old Ridge Road			+	0	0	+	+	0	0	0
Modernization	6 to 10	135	Overlay and widen Old Highway 30 (Svensen) - from Simonsen to Hillcrest	Existing Conditions Analysis and CC Comp Plan and 2001-2006 County Project List	County Road - Old Highway 30	N/A	N/A	+	+	+	0	+	0	0	+
Modernization	8 to 10	74	Lewis Avenue - widen and pave from Sunset Beach to end of road (1600')	Clatsop County 2001-2006 Project list	County Road - Lewis Avenue	N/A	N/A	+	+	+	+	+	0	0	+

Bicycle	11 to 15	445	Widen shoulders to 6' (both sides) along US 26 in Hecanicum	Field Work Field Work	US 26 US 26	9.12 15	12.80	+	0	+	0	+	0	0	0	0
Bicycle	11 to 15	105	Widen shoulders to 6' (both sides) at MP 15	PMT	Younger River Lewis and Clark Road			+	0	+	0	+	0	0	0	0
Bicycle	11 to 15	1000	Add bike lanes from Miles Crossing to Tucker Creek	PMT												
Bicycle	11 to 15	1300	Add bike lanes from Miles Crossing to Tucker Creek	Field Work	US 26	17.5	16.04	+	0	+	0	+	0	0	0	0
Bicycle	11 to 15	105	Widen shoulders to 6' (both sides) near restaurant on US 26	County Bike Plan	OR 202 County Road - Wasatch Loop Road			+	+	+	0	+	0	0	0	0
Bicycle	11 to 15	10	Warning signage	County Bike Plan	County Road - Old Hwy. 340 Forest Loop			+	+	+	0	+	0	0	0	0
Bicycle	11 to 15	2,000	bicycle route designation signage; widen shoulders/signage (28')	US 26 Corridor Plan	US 26	N/A		+	+	+	0	+	0	0	0	0
Bicycle	11 to 15	2,000	widen shoulders/lanes to 26'; designation signage	County Bike Plan	County Road - Lower Nehalem Road			+	+	+	0	+	0	0	0	0
Bicycle	16 to 20	3500	Develop bike lanes in rural portions of corridor on US 20 from MP 0 to MP 31	County Bike Plan				+	+	+	0	+	0	0	0	0
Bicycle	16 to 20	Not Estimated	recreational use-maintain bike trail					+	+	+	0	+	0	0	0	0

The following safety projects are included in the Preferred Alternative:

Safety	1 to 5	754	Sunset Highway at Lower Nehalem Road Intersection - construct left turn refuge and intersection improvements	2002-2005 STIP and Existing Conditions Analysis	US 26	19.53	20.57	0	+	0	+	0	+	0	0	0
Safety	1 to 5	10	Stevens Highway 104, and Perkins Lane. Make Hwy 104 leg right-out only (restrict left turn lanes from this leg).	Existing Conditions Analysis	US 101	9.5	0.5	0	0	0	+	0	+	0	0	0
Safety	1 to 5	600	US 101 at Glenwood Village - construction of turn lanes and sight distance improvements	Existing Conditions Analysis	US 101	12.68	12.08	0	0	0	+	0	+	0	0	0
Safety	1 to 5 - Committed	250	Construct turn lanes into Humburg Maintenance Station	Corridor Plan and 2004-2007 STIP	US 26	6.2	6.6	0	+	0	0	+	0	0	0	0
Safety	6 to 10	1500	Raise US 101 above flood zone or provide alternate flood route	Drill Oregon Coast Highway Master Plan and Existing Conditions Analysis	US 101	23	23	+	+	0	0	+	0	0	0	0
Safety	6 to 10	500	US 101 at DeLamoor Loop Road - construct turn lanes, intersection improvements	Existing Conditions Analysis	US 101	16.27	10.27	0	0	0	0	+	0	+	0	0
Safety	As Developed	300	US 101 at entrance to the proposed Cullaby Lake RV Park - construct sight distance improvements and turn lanes on US 101	AC	US 101	To Be Determined	To Be Determined	0	0	0	0	+	0	+	0	0
Safety	6 to 10	20	US 101 at Gearhart Loop Road - construct turn lanes on Gearhart Loop Approach	Existing Conditions Analysis and 2001-2008 County Project List	US 101	17.90	17.09	0	0	0	0	+	0	+	0	0

Salmon	150	Salmon recovery	US 28 Corridor Plan	US 28	7.6	7.6
Salmon	150	Salmon recovery	US 28 Corridor Plan	US 28	6.7	6.7
Salmon	150	Salmon recovery	US 28 Corridor Plan	US 28	9.03	9.03
Salmon	150	Salmon recovery	US 28 Corridor Plan	US 28	10.9	10.9
Salmon	150	Salmon recovery	US 28 Corridor Plan	US 28	12.8	12.8
Salmon	150	Salmon recovery	US 28 Corridor Plan	US 28	13.2	13.2
Salmon	150	Salmon recovery	US 28 Corridor Plan	US 28	13.4	13.4
Salmon	150	Salmon recovery	US 28 Corridor Plan	US 28	14.1	14.1
Salmon	150	Enhance salmon habitat	US 30 Corridor Plan	US 30	75.5	75.5
Salmon	150	Enhance salmon habitat	US 30 Corridor Plan	US 30	75.7	75.7
Salmon	150	Enhance salmon habitat	US 30 Corridor Plan	US 30	78	78
Salmon	150	Enhance salmon habitat	US 30 Corridor Plan	US 30	79.3	79.3
Salmon	150	Enhance salmon habitat	US 30 Corridor Plan	US 30	79.7	79.7
Salmon	150	Enhance salmon habitat	US 30 Corridor Plan	US 30	81	81
Salmon	150	Enhance salmon habitat	US 30 Corridor Plan	US 30	81.4	81.4
Salmon	150	Enhance salmon habitat	US 30 Corridor Plan	US 30	87.9	87.9
Salmon	143	Replace Mill Creek Culvert #06093A	2002-2005 STIP	US 28	4	4

The following transit improvements should be implemented:

Transit		Portland-Cannon Beach transit service for recreation/tourism	US 28 Corridor Plan	Transit	N/A	N/A
Transit	2478	Fort Clatsop Shuffling System	2002-2005 STIP	Transit		
Transit	901	Intermodal Facility Improvements	2002-2005 STIP	Transit		
Transit	100	Astoria Mopler Bridge - Ped and Bike Shuttle	Astoria TSP	Transit	3.78	3.78
Transit	20	US 101 North and South of the Astoria meglor Bridge - Install shelters and kiosks	Astoria TSP	Transit	3.79	3.79
Transit	20	US 101 North and South of the New Youngs Bay Bridge - Install shelters and kiosks	Astoria TSP	Transit	4.97	4.97

Transit			Identify ways to improve transit service between Seaside and Willamette Valley and between Cannon Beach and Astoria	Draft Oregon Coast Highway Master Plan	Transit	N/A	N/A
Transit			Recommendations in the SETD comprehensive plan	Existing Conditions Analysis	Transit	N/A	N/A
Transit			Improve transit amenities (benches, signing, landings, etc.)	Existing Conditions Analysis	Transit	N/A	N/A
Transit			Increase coverage of SETD services to rural localities, including Jewell, Westport, Krappa, Svensen, Lewis and Clark, etc...	Existing Conditions Analysis	Transit	N/A	N/A

The following improvements should be constructed at the Port of Astoria and Warrenton Mooring Basin:

Water			Port of Astoria: Access issues, circulation issues, improved pedestrian access to the moley, and increased parking	Existing Conditions Analysis	Water	N/A	N/A
Water			Warrenton Mooring Basin: addition of parking	Existing Conditions Analysis	Water	N/A	N/A

The following bridge improvements should be constructed on state and county roads:

Bridge			Improvements on bridges with sufficiency ratings less than 50	ODOT Field Work US 30/26	All	N/A	N/A
Bridge			Widen shoulders on bridges as they are replaced to accommodate bikes	Corridor Plan Astoria TSP	All	N/A	N/A
Bridge	I	90	Phase 1 and Phase 2 seismic retrofit projects	US 26 Corridor Plan	US 101	3.70	3.70
Bridge	I	8115	US 101 Astoria Mesler Bridge - Painting	US 26 Corridor Plan	US 26	24.23	24.23
Bridge	I	328	Quartz Creek Bridge No. 2164 - Replace Bridge Footings	US 26 Corridor Plan	US 26	4.4	4.4
Bridge	N	551	Necanicum Bridge No. 2001 - Bridge too narrow to handle traffic demand	US 26 Corridor Plan	US 26	10.28	10.28
Bridge	N	133	Necanicum Bridge No. 2001 - Deficiencies in bridge rails	US 26 Corridor Plan	US 26	17.37	17.37
Bridge	N	180	W. Humburg Creek (No. 1031) - Replace bridge	US 26 Corridor Plan	US 26	21.73	21.73
Bridge	N	310	E. Fork Humburg Creek No. 1832 - substructure, replace structure	US 26 Corridor Plan	US 26	24.23	24.23
Bridge	N	2158	Nehalem River and Owing Hwy 103 Bridge No. 2165 - Replace Bridge	US 26 Corridor Plan	US 26	24.47	24.47
Bridge	N	1913	Quartz Creek Bridge No. 2164 - Steel bridge needs major paint	US 26 Corridor Plan	US 101	4.01	4.01
Bridge	N	27	S. Fork Quartz Creek Bridge No. 2168 - replace bridge pier footings in stream bed	2004-2007 STIP			
Bridge	V	5621	Palng Operator House and Tower, Electrical Upgrade, Repair Girders - New Youngs Bay Bridge No. 00308				

The following rail improvements should be constructed on the Portland & Western Railroad:

Rail	Committed - V	875	Remove landside and repair rail line	US 30 Corridor Plan	US 30	N/A	N/A
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Rail			Improve at-grade crossing west of Clatskanie	Existing conditions analysis	US 30	N/A	N/A
Preservation		1740	Pavement overlay	US 26 Corridor Plan and 2000-2003 STIP	US 26	0.5	10
Preservation		1425	Pavement overlay	US 26 Corridor Plan and 2000-2003 STIP	US 26	14	22
Preservation		513	Pavement overlay	US 26 Corridor Plan	US 26	34.94	37.4
Preservation		1470	Pavement overlay - Lindsay Creek to Coast Range Summit	2002-2005 STIP	US 26	9.73	13.78
Maintenance	I		Left turn lanes and deceleration lanes at Klondike Creek	US 26 Corridor Plan	US 26	2.1	2.1
Maintenance	I		Jewell Junction - include minor widening or grading in next maintenance overlay to achieve five foot minimum	US 26 Corridor Plan	US 26	11.84	21.68
Maintenance	V	45	Repave within existing width and transfer to Gearhart	Clatsop County 2001-2008 Project list	County Road - Collage Road		
Maintenance	I	105	Gearhart Loop Road - pave within existing width and transfer to Gearhart (4300')	Clatsop County 2001-2008 Project list and CC Comp Plan Existing	County Road - Gearhart Loop Road	N/A	N/A
Maintenance	S		Maintenance overlay along OR 202	Conditions Analysis	OR 202	2.77	38.13
Maintenance	I	30	G Street - repave within existing width and transfer to Gearhart	Clatsop County 2001-2008 Project list	County Road - G Street		
Maintenance	I		Overlay preservation on Old Highway 30 (Svensen) - from Koppisch to Hwy 30	Existing Conditions Analysis and 2001-2006 County Project List	County Road - Old Highway 30	N/A	N/A
Maintenance	Committed - V	1828	Preservation overlay	US 30 Corridor Plan	US 30	87.7	92.3
Maintenance	Committed - V	159	Rockfall protection (screening)	US 26 Corridor Plan and 2000-2003 STIP	US 30	74.11	74.82
Maintenance	Constrained		Hwy 101 junction to Necanicum - Program maintenance activities for shoulder sweeping	US 26 Corridor Plan	US 20	1.78	4.32
Maintenance	Constrained		Sunken grade repair	US 26 Corridor Plan	US 20	19.7	18.7

The following preservation and maintenance projects should be constructed:

Maintenance	Constrained		Sunken grade repair	US 28 Corridor Plan	US 26	20.9	20.9	20.9
Maintenance			Sunken grade repair	US 28 Corridor Plan	US 28	21.3	21.3	21.3
Maintenance			Rest Area Illumination Upgrade	US 28 Corridor Plan	US 26	28.65	28.65	28.65
Maintenance			Sunken grade repair	US 30 Corridor Plan	US 30	74.4	74.4	74.4
Maintenance			Deep base repair, shoulder widening	US 30 Corridor Plan	US 30	78.5	78.5	78.5
Maintenance			Drainage Improvement and slope stabilization	US 30 Corridor Plan	US 30	87.3	87.3	87.3
Maintenance			Sunken grade repair	US 30 Corridor Plan	US 30	94.4	94.4	94.4
Maintenance			Sunken grade repair	US 30 Corridor Plan	US 30	94.5	94.5	94.5
Maintenance			Guardrail replacement locations	US 30 Corridor Plan	US 30	varies	varies	varies
Maintenance			Logging contract locations - access management	US 30 Corridor Plan	US 30	varies	varies	varies
Maintenance			Sunken grade repair	US 26 Corridor Plan	US 26	14.5	14.5	14.5
Maintenance			Sunken grade repair	US 26 Corridor Plan	US 26	18.3	18.3	18.3
Maintenance			Sunken grade repair	US 26 Corridor Plan	US 26	19.3	19.3	19.3
Maintenance	V	2002	Pavement overlay - OR 202 (Frankfurt Street to Disney Cliff)	2002-2005 STIP and Existing Conditions Analysis	OR 202	0.89	0.89	10.56
Maintenance	V	2002	Pavement overlay - Fort Stevens park to US 101	2002-2005 STIP and Existing Conditions Analysis	Hwy 104	4.66	4.66	6.03
Maintenance			Overlay preservation on Warrenton-Astoria Highway 105	Existing Conditions Analysis	Hwy 105	1.75	1.75	7.06
Maintenance			Overlay preservation on US 30	Existing Conditions Analysis	US 30	89	89	95

The following planning projects should be completed:

Planning	V		Study to identify improvements for section of US 101 to address safety concerns (Top 10% SPIS Site)	Existing Conditions Analysis	US 101	16.98	16.98	17.08
Planning	I		Necanicum Junction - further evaluation of accidents at junction to determine whether safety improvements are warranted	US 28 Corridor Plan	US 28	9.33	9.33	10.2
Planning			Nehalem to Claretz Creek - shoulder width less than desired minimum. Analyze striping in this section	US 28 Corridor Plan	US 28	22.02	22.02	24.15

Planning		Final Estimated - Environmental Constraints	US 26 - Construct 4-Lane Facility from US 101 to County Line	Preferred Alternative	US 101	24
Planning	Planning					
		102,000	Widen Hwy Youngs Bay Bridge to Home Section	Preferred Alternative		
		Final Estimated - Environmental Constraints	US 101 - Construct 4-Lane Facility from US Astoria to US 26	Preferred Alternative		
Operations	V	00	Seaside Flood Warnings	2002-2005 STIP	US 101	22.0
Operations	V	1025	Astoria Signal and sign upgrades, VMS on Youngs Bay Bridge (with Astoria)	2002-2005 STIP	US 30	98.05
Operations			Emergency Callboxes, rest stops	US 28 Corridor Plan	US 28	varies

The following access management projects should be constructed or further studied:

Access Management			Develop access management and parking strategy between Cannon Beach and Clatsop-Tillamook Line	Draft Oregon Coast Highway Master Plan Existing Conditions Analysis	US 101	20.68	37.11
Access Management			US 30 through Westport - access management	Existing Conditions Analysis	US 30	69.95	70.7
Access Management			US 26 from milepost 1 to 0 - addition of shoulders, access management, and improved sight distance	Existing Conditions Analysis	US 26	1	6

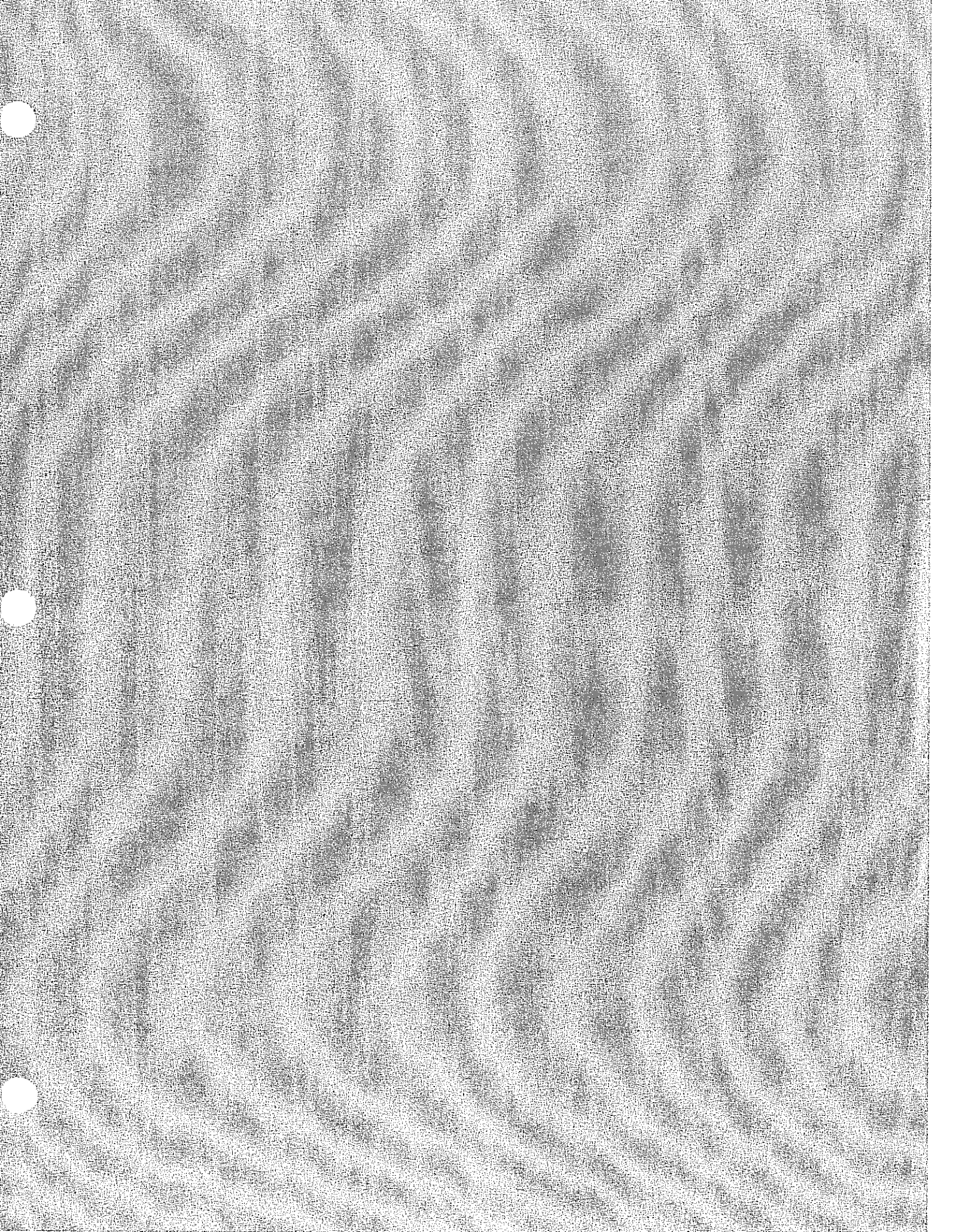
The following air projects should be constructed at the Astoria Regional Airport:

Air		1000	Improve runway surface at Astoria Regional Airport	Astoria TSP	Air	N/A	N/A
Air			Improve runway safety areas and water facilities if passenger service is reinstated, security, passenger terminal facilities, and airport access would need to be addressed	Astoria Airport Master Plan	Air	N/A	N/A
Air				Astoria Airport Master Plan Existing Conditions Analysis	Air	N/A	N/A
Air	I		Improved signaling and striping to airport	Existing Conditions Analysis	Air	N/A	N/A



APPENDIX B

Pacific Way-Dooley Bridge Exceptions



Application for a Comprehensive Plan Amendment to Authorize the Modification of US 101 Outside the Seaside Urban Growth Boundary

Contents

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III. Goal 11 and 14 Exceptions	7
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I. Overview of Application

This is an application by the Oregon Department of Transportation (ODOT) requesting an amendment to the Clatsop County Comprehensive Plan that is needed to support proposed transportation improvements that would widen and modify US 101 (the Oregon Coast Highway) in the cities of Seaside and Gearhart.

ODOT is proposing to reconstruct the existing two-lane section of US 101 between Pacific Way in the City of Gearhart and a point just south of the Dooley Bridge near the south end of the City of Seaside's urban growth boundary (UGB). See Figure 1, Project Description. The project is described in detail in section II of this application. The proposed roadway improvements have been designed to accommodate travel demands for at least 20 years into the future. Towards that end, ODOT has applied to the City of Seaside for comprehensive plan and zoning ordinance text and map amendments to authorize the project. No plan and zoning amendments are needed for the portion of the project located in Gearhart.

One element of the proposed project involves construction of a couplet that would provide two one-way streets of two lanes each between approximately the South Holladay Street intersection in Seaside and the Dooley Bridge, with the southbound lanes routed over the existing roadway and the northbound lanes constructed over an abandoned railroad right-of-way. A small portion of the northbound couplet leg is located in unincorporated Clatsop County, outside the Seaside UGB. Based on a preliminary level of project design, the amount of land outside the UGB occupied by road improvements not otherwise allowed in rural areas is estimated to be less than 0.1 acre—currently estimated at 0.03 acres. See Figure 2, Urban Growth Boundary and County Zoning. Final design could increase the area by an additional 0.1 acre. This affected area is designated Rural Lands and zoned Residential Agriculture 2 (RA-2) on the Clatsop County Comprehensive Plan/ Zoning Map. It is this portion of the northbound couplet leg that necessitates this application. Because this roadway segment would be a "new road" located on rural land, it requires exceptions to Goals 11 (Public

SECTION ONE

SECTION TWO

SECTION THREE

PACIFIC

OCEAN

Wetland Mitigation Area

Wetland Mitigation Area

PHASE 4

PHASE 1

PHASE 5

PHASE 3

PHASE 2

Data Source:
Oregon Dept of Transportation

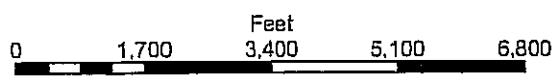
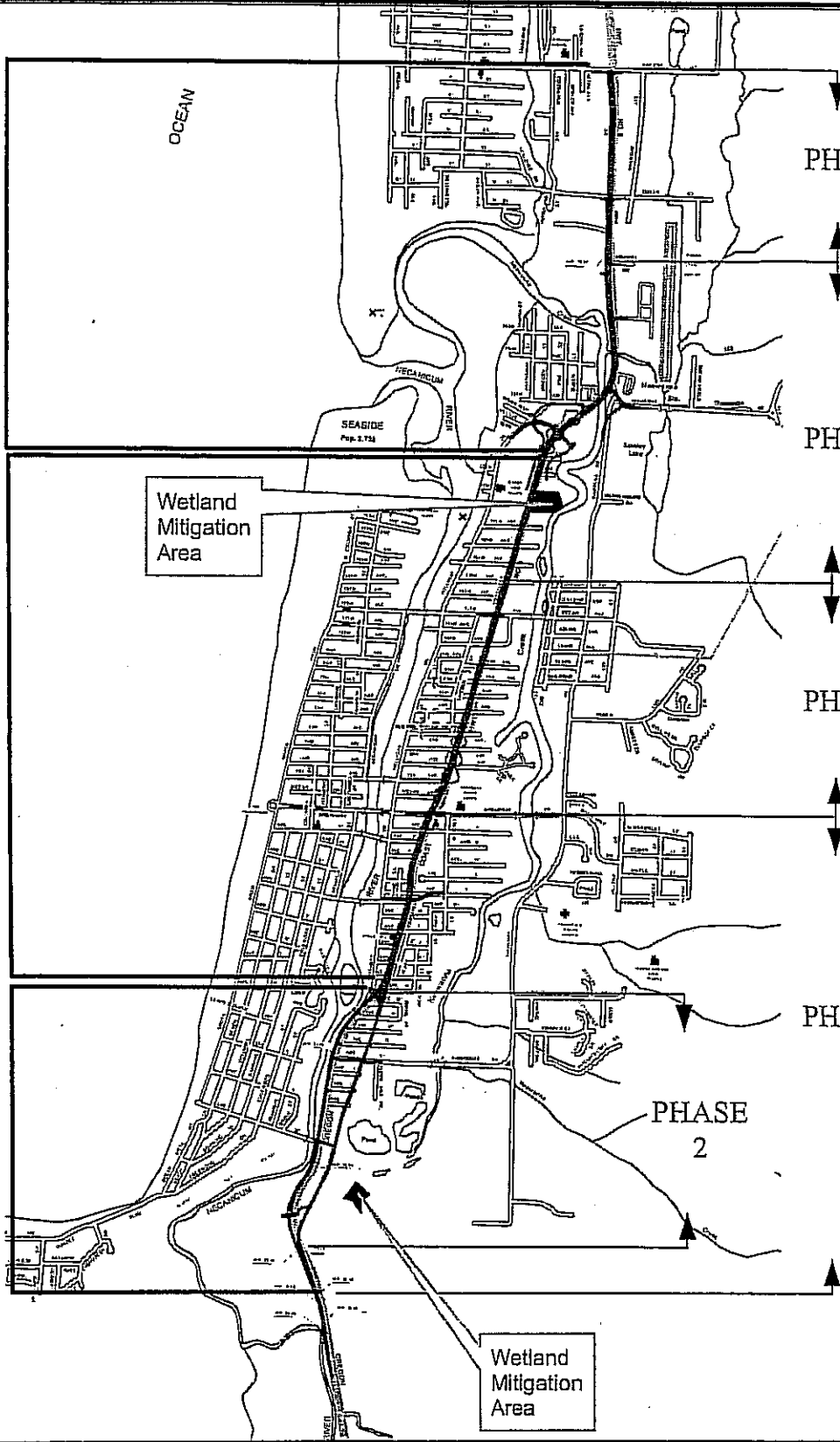
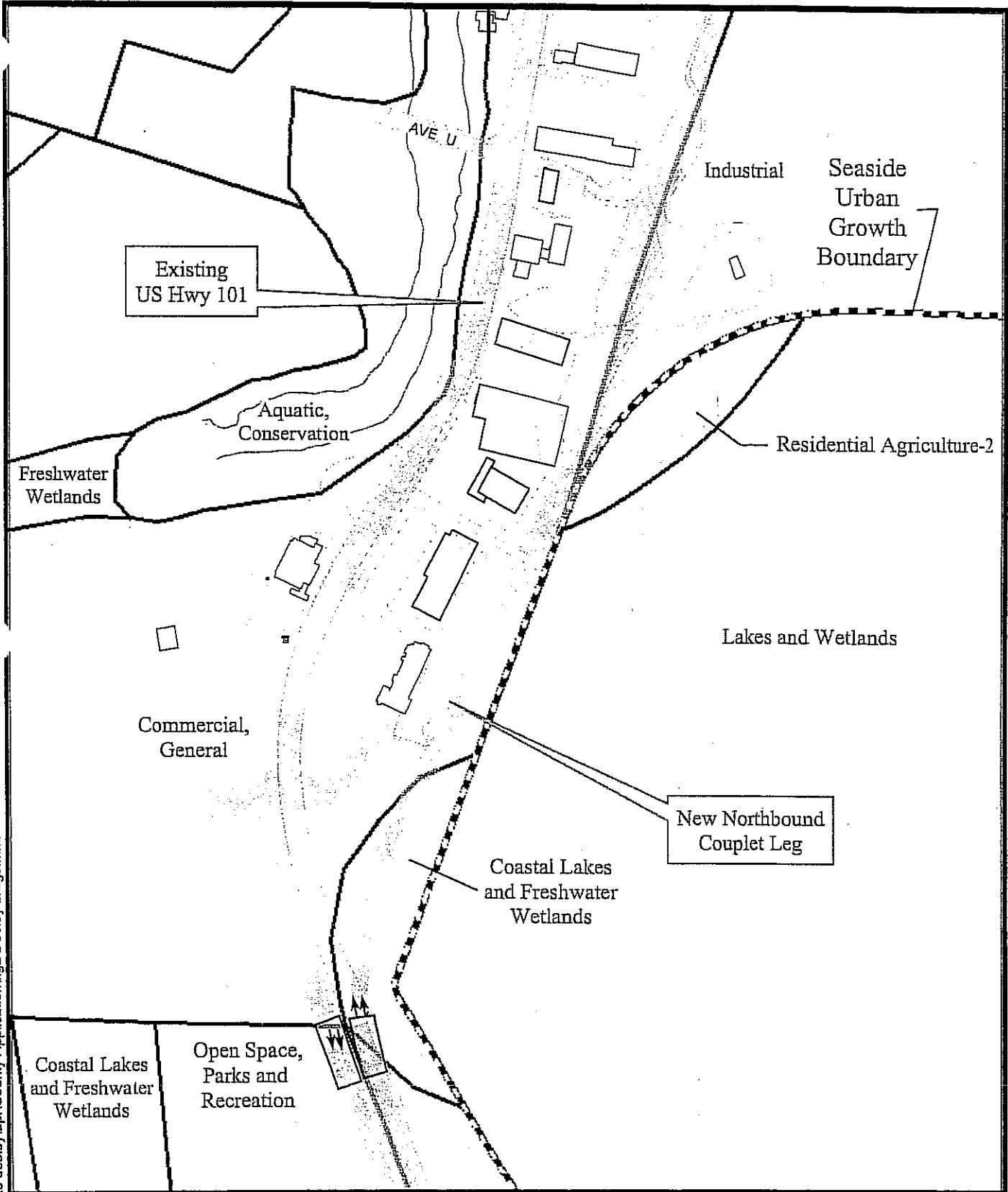


Figure 1
 Project Description
 Application to Clatsop County for
 Goal 12 Exception,
 US 101 Improvements



pac-dooyle\apra\County Application\fig2 Dooyle brdgs.mxd
Print Date: Dec 26



Data Sources:
Oregon Dept of Transportation
City of Seaside

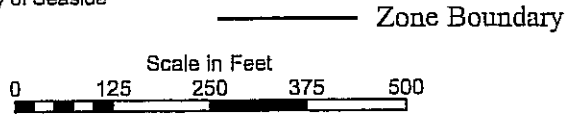


Figure 2
Urban Growth Boundary
and County Zoning
Application to Clatsop County for
Goal 11 and 14 Exceptions,
US 101 Improvements

Facilities Planning) and 14 (Urbanization) under the Land Conservation and Development Commission's (LCDC) Transportation Planning Rule (TPR). This is so even though the alignment directly affects less than 0.03 acres of rural land.¹

A. Background

In December 1995, ODOT published a Draft Environmental Impact Statement (DEIS) that identified a need to widen US 101 to four travel lanes in Gearhart and Seaside. The DEIS divided the project into three segments extending from north to south (See Figure 1).

- Section 1. Pacific Way in Gearhart to the north side of Seaside High School in Seaside.
- Section 2. The north side of Seaside High School to Avenue M in Seaside.
- Section 3. Avenue M to just south of Dooley Bridge near the southern city limits of Seaside.

The DEIS identified one build alternative for Sections 1 and 2 of the project and four build alternatives for Section 3, which is the only section involved in this application. The four alternatives for Section 3 included:

- a "Western Widening Alternative" that would widen US 101 on the west side of its existing alignment;
- a "Weave Alternative" that would widen the existing alignment on both its east and west sides;
- a "Couplet Alternative" that would provide two one-way streets of two lanes each between approximately the South Holladay Street intersection and the Dooley Bridge, with the southbound lanes routed over the existing roadway and the northbound lanes constructed over an abandoned railroad right-of-way; and
- a "New Alignment Alternative" that would realign US 101 east of the existing roadway on the abandoned railroad right-of-way.

ODOT circulated the DEIS for public review and comment and held public hearings. Thereafter, ODOT selected the Couplet Alternative as the preferred alternative for Section 3 of the project.

B. Need for Plan Amendments

The proposed improvements to US 101 require amendments to the City of Seaside and the Clatsop County Comprehensive Plans. A separate application has been filed with the City of Seaside.

¹ An exception to neither Goal 3, Agricultural Lands, nor Goal 4, Forest Lands, is needed because the affected land qualifies as neither agricultural nor forest land, within the meaning of the Statewide Planning Goals.

The required Clatsop County Comprehensive Plan amendment is a Comprehensive Plan text amendment in the form of exceptions to Statewide Planning Goals 11 and 14. ODOT proposes that the amendment be formally listed in Section I, Land Use Planning, Exceptions of the Comprehensive Plan² and read as follows:

"Goals 11 & 14: Modification of US 101 east of the City of Seaside Urban Growth Boundary"

II. Detailed Description of Pacific Way – Dooley Bridge Project

Although only a small portion of the Pacific Way – Dooley Bridge Project reaches into unincorporated Clatsop County, a detailed description of the project is instructive.

The Pacific Way – Dooley Bridge Project extends from Pacific Way in the City of Gearhart to a location south of the existing Dooley Bridge that is within the City of Seaside's UGB but lies outside its current city limits. For planning purposes, the project has been divided into the three sections described above. See Figure 1.

In Sections 1 and 2, the project follows the existing US 101 alignment. US 101 is proposed to be reconstructed with two 12-foot travel lanes in each direction separated by a 16-foot wide median. The roadway design also calls for six-foot wide shoulders/bicycle lanes and six-foot wide sidewalks, as well as storm sewers, curbs and gutters. A five-foot wide landscaped strip will separate the sidewalks from the highway shoulder, except where the right-of-way width is constrained. The intersection of 14th Avenue and US 101 will be closed and a turn-around constructed at the end of 14th Avenue immediately west of the highway.

The project includes an access management plan on which ODOT and the City of Seaside must agree before the highway improvements are constructed. The plan will provide for the installation of raised, landscaped medians throughout Sections 1 and 2. It will determine which sections of the raised medians ODOT will install when it constructs the new travel lanes and when the remaining sections will be installed as roadside development, traffic volumes and crash rates increase. The plan will also determine who will be responsible for installing the future sections of raised medians. The raised medians will be 12 feet wide, with two-foot wide shoulders on each side. As raised medians are installed, some local street intersections will be limited to right turn in, right turn out. Access to properties adjoining US 101 without alternative access will be limited to the minimum number to provide reasonable access to the existing use. For most properties, this will mean one driveway to the highway. The medians and other access restrictions are intended to prevent left turns to and from adjoining properties and side streets and limit right turns, in order to improve safety and reduce both congestion and delay. As the raised medians are installed, U-turns will be permitted at Pacific Way, northbound (NB) to southbound (SB); Oster Road, NB to SB; Airport Road, SB to NB; 16th Avenue, SB to NB; 15th Avenue, NB to SB; and 2nd Avenue, SB to NB. The medians will also improve safety conditions for pedestrians and bicyclists crossing the highway.

² Clatsop County Comprehensive Plan Goals and Policies, p. 8.

In Section 1, US 101 will be widened on both sides of the existing alignment. The width of the roadway's paved surface will expand from the existing 54 feet to 76 feet, and the total right-of-way will approximate 100 feet, excluding easements for embankments. At Mill Creek, the fill under the existing highway will be widened and the culverts lengthened. The existing bridge crossing Neawanna Creek will be removed and replaced with a new bridge. The median on the new bridge will not be landscaped. The bridge replacement will require the placement of fill materials to support the associated roadway improvements. The US 101/Lewis and Clark Road intersection will have a southbound left turn lane on US 101 for the turn onto Lewis and Clark Road and no westbound left turn from Lewis and Clark Road onto US 101 southbound. Wahanna Road will be realigned at its intersection with Lewis and Clark Road.

Also in Section 1, Holladay Drive will be extended at an angle to intersect with US 101 and extend about 80 meters (260 feet) to the east. On the west side of US 101, a new access road from this extension will connect to Seaside High School and direct access to the high school from US 101 will be eliminated. On the east side of US 101, a new access road from the extension will connect to the school bus barn.

In Section 2, US 101 will be widened primarily to the east to take advantage of a vacated railroad right-of-way that borders the existing highway on its east side. The width of the roadway's paved surface will increase from the existing 40 feet to nearly 76 feet and the right-of-way width will be approximately 100 feet. Avenue F will be realigned to line up with Avenue G and both streets widened to create three lanes at the intersection with US 101. The westerly approach of 12th Avenue to US 101 will be widened and on-street parking between US 101 and Lincoln Street removed to create three travel lanes at the intersection. Existing traffic lights at the 12th Avenue and Broadway Avenue intersections will be upgraded. New traffic lights will be installed at the new North Holladay Avenue intersection and the Avenue F/G intersection.

In Section 3, US 101 will become a couplet, consisting of two one-way streets of two lanes each. The existing highway will become the southbound leg of the couplet and the northbound leg will be constructed to generally follow the abandoned railroad right-of-way. Unlike Section 2, the railroad right-of-way is not located adjacent to the existing highway in this section, but follows a corridor several hundred feet to the east. A small portion of the right-of-way needed for the highway (currently measured at less than 0.1 acres) is outside the City of Seaside's UGB.

The couplet will begin at the South Holladay Drive/US 101 intersection and end south of the Dooley Bridge, where the northbound and southbound couplet legs will merge and the lanes taper from four to two lanes. The existing Dooley Bridge will be replaced with a new bridge for southbound US 101 traffic flows. An adjacent, separate, new bridge will be constructed for northbound US 101 traffic flows.

Each one-way leg in Section 3 will have two 12-foot travel lanes, together with six-foot wide shoulder/bicycle lanes on the right side, four-foot wide shoulder/bicycle lanes on the left side, five-foot wide planting strips (except where right-of-way width is constrained), six-foot wide sidewalks, and storm sewers, curbs and gutters. A short road will be built to allow northbound traffic to connect to South Holladay Drive. Traffic volumes may justify the installation of a traffic signal at the South Holladay Drive intersection by the year 2015. Avenue U will be

extended east to intersect the northbound leg of the couplet. The signal at the intersection of Avenue U with the southbound leg will be retained, and stop signs will be used at the intersection with the northbound leg of US 101. The Northbound US 101/Avenue U intersection will remain unsignalized. Avenue S will be realigned to intersect the legs of the couplet at a 90 degree angle and widened to accommodate turnaround movements and traffic between the highway and the southerly sections of Wahanna Road.

ODOT expects to build the project in phases, rather than all at once. See Figure 1 for project phases. Although subject to change, the phases and the anticipated years when construction is expected to begin are:

Phase	Description	Year
1	Airport Road - 14th Street	2006
2	Holladay Drive - Dooley Bridge, northbound couplet leg	2006
3	Holladay Drive - South Seaside UGB, including new Dooley Bridges	2007
4	Pacific Way - Airport Road	2009
5	14th Street – Broadway Drive (currently unfunded)	2010

III. Goal 11 and 14 Exceptions

ODOT is requesting exceptions to Goals 11 (Public Facilities Planning) and 14 (Urbanization) to authorize a portion of the new northbound couplet to be located on rural land northeast of the existing Dooley Creek Bridge. This portion of the application identifies and addresses how the project complies with the applicable goal exception standards.

A. Background

In 1991 the Oregon Land Conservation and Development Commission (LCDC) adopted the Transportation Planning Rule (TPR), OAR 660, Division 12, to implement Goal 12, Transportation. Section 0065 of that rule identifies transportation facilities and improvements that may be located on rural lands without need for exceptions to Goals 3 (Agricultural Lands), 4 (Forest Lands), 11 (Public Facilities and Services) and/or 14 (Urbanization). Because the proposed US 101 northbound couplet leg would be a "new road" of a type that is not otherwise permitted under OAR 660-012-0065 on rural lands, and because the roadway would accommodate regional and through traffic as well as local traffic, exceptions to Goals 11 and 14 pursuant to OAR 660-012-0070 are required.³

Under OAR 660-012-0070 in particular and under ORS 197.732(1)(c), Goal 2, Part II and OAR 660, Division 4 more generally, an exception must provide reasons justifying (1) why the state policy embodied in the applicable goals should not apply, and (2) why areas not requiring a new exception cannot reasonably accommodate the use. Additionally, an exception must (3) compare the economic, social, environmental and energy consequences of the proposed location and other alternative locations requiring exceptions, determining whether the net adverse impacts

³ The affected acreage is neither agricultural nor forest land. Consequently, Goals 3 and 4 do not apply.

associated with the proposed exception site are "significantly more adverse" than the net impacts from other locations requiring exceptions; and (4) describe the adverse effects the proposal is likely to have on adjacent uses and explain how the proposal will be rendered compatible with adjacent land uses.

In taking goal exceptions for roadway projects it is important to recognize the unique role roads and highways play in Oregon's land use framework. Roads and highway are linear facilities that are linked to form an overall transportation system. Clatsop County and the State of Oregon are traversed by roads and highways that cross urban and rural lands to form a comprehensive transportation network. This network is necessary to move people and goods and to secure the welfare and well-being of Oregon residents. In this way, roads and highways are very different from site-specific land uses such as residential, commercial or industrial developments, and from facilities and services like public sewer and water lines.

The competing policies of Goals 11 and 14 come into play with the proposed widening and improvement of US 101. The area through which the roadway extension would go is rural land that is zoned RA-2. Typically, traffic within such an area would be predominantly rural in nature. However, with the proposed improvements, the character of traffic traveling through this area is considered more urban in its nature. Under established case law, this requires the taking of exceptions to Goals 11 and 14. Exceptions to Goals 3 and 4 are not required because the proposed improvements do not directly impact agricultural or forest lands.

B. Compliance with OAR 660-012-0070(1)

OAR 660-012-0070(1) requires an exception for the siting on rural lands of transportation facilities and improvements that do not meet the requirements of 660-012-0065. This application complies with OAR 660-012-0070(1) because it seeks approval of goal exceptions as required by this rule.

C. Compliance with OAR 660-012-0070(2)

OAR 660-012-0070(2) requires that this exception be taken pursuant to ORS 197.732(1)(c), Goal 2, OAR 660, Division 4 and OAR 660, Division 12. OAR 660, Division 4 and OAR 660, Division 12 implement Goal 2 and ORS 197.732(1)(c). Accordingly, a demonstration of compliance with the relevant standards in these divisions demonstrates compliance with those requirements.

D. Compliance with OAR 660-012-0070(3)

OAR 660-012-0070(3) requires that "an exception adopted as part of a Transportation System Plan or refinement plan shall, at a minimum, decide need, mode, function and general location for the proposed facility or improvement." Because Clatsop County has not yet adopted a Transportation System Plan (TSP), this section does not apply. Nonetheless, this application satisfies the intent of this standard because this exception, which, if approved, becomes an element of the County's Comprehensive Plan, decides need, mode, function and general location for the proposed transportation improvement. The need for the US 101 widening and

improvement project is identified below in the discussion of compliance with OAR 660-012-0070(4). The mode is highway, the function is arterial (statewide non-freight route), and the general location is as shown on Figures 1 and 2.

1. 660-012-0070(3)(a)

This subsection requires that the general location be specified as a corridor. Figure 1 identifies the corridor within which the improvements to US 101 will occur.

2. 660-012-0070(3)(b)

This subsection requires that the size, design and capacity of the proposed facility be described generally but with sufficient detail to allow a general understanding of the likely impacts of the facility. A detailed description of the proposed US 101 improvements is set out above in Section II of this application. The northbound couplet leg will have two 12-foot travel lanes, together with six-foot wide shoulder/bicycle lanes on the right side, four-foot wide shoulder/bicycle lanes on the left side, five-foot wide planting strips (except where right-of-way width is constrained), six-foot wide sidewalks, and storm sewers, curbs and gutters.

3. 660-012-0070(3)(c)

This subsection requires that the adopted exception "include a process and standards to guide selection of the precise design and location within the corridor and consistent with the general description of the proposed facility or improvement." For this project, the design and location have already been selected, such that Clatsop County decision-making to create such a process is not required for this project.

4. 660-012-0070(3)(d)

This subsection provides that land use regulations implementing the exception may include standards for specific mitigation measures to offset unavoidable economic, social, environmental or energy impacts of the proposed use or to assure compatibility with adjacent uses. This standard is permissive, not mandatory, and does not constitute a review criterion. Nonetheless, roadway design will comply with state regulations governing water quality and development in wetland areas and floodplains.

E. Compliance with OAR 660-012-0070(4), ORS 197.732(1)(c)(A), Goal 2 Part II(c)(1) and OAR 660-004-0020(2)(a)

OAR 660-012-0070(4) states:

"To address Goal 2, Part II(c)(1) the exception shall demonstrate that there is a transportation need identified consistent with the requirements of OAR 660-012-0030 which cannot reasonably be accommodated through one or a combination of the following measures not requiring an exception:

- "(a) Alternative modes of transportation.
- "(b) Traffic management measures; and
- "(c) Improvements to existing transportation facilities."

1. Transportation Need Consistent with OAR 660-012-0030

To comply with OAR 660-012-0070(4), a transportation need first must be identified that is consistent with the requirements of OAR 660-012-0030.

OAR 660-012-0030(1) requires that the TSP identify transportation needs relevant to the planning area and the scale of the transportation system being planned, including state, regional and local transportation needs, needs of the transportation disadvantaged, and needs for movement of goods and services to support planned industrial and commercial growth. While Clatsop County has not yet adopted a TSP, the need for the proposed US 101 widening and improvements is nonetheless identified.

The widening of US 101 from two to four lanes from Gearhart southward through Seaside is needed to relieve existing traffic congestion and safety hazards and to accommodate increased traffic volumes anticipated by the year 2020. This need is linked to Statewide Planning Goal 12's requirement to "provide and encourage a safe, convenient and economic transportation system" and to the TPR, which requires cities, counties and ODOT to establish a coordinated network of transportation facilities adequate to serve state, regional and local transportation needs.⁴

Both the City of Seaside and ODOT have long recognized the need to widen and modify US 101 in Seaside. According to the Seaside Comprehensive Plan, US 101 was relocated to Roosevelt Drive during the 1960s to relieve intolerable congestion on Holladay Drive. During the 1970s, Roosevelt Drive served well as a highway, but there have been increasing local and regional needs which conflict with the through-traffic pattern.⁵ During the 1980s and 90s, Seaside continued to grow in population and employment, and its tourist industry expanded. As development occurred along Roosevelt Drive and as regional traffic volumes increased, roadway performance began to deteriorate.

As early as 1958, ODOT considered a proposal to bypass Seaside as a possible solution to increasing traffic congestion. However, the project was not funded because of the higher priority assigned other projects. In 1981, increasing traffic congestion prompted Seaside's city manager to request that a project addressing Seaside's traffic problem be developed and incorporated into ODOT's Six Year Highway Improvement Program (as it was called at the time), which guided ODOT's priorities for transportation improvements around the state. This request led to the

⁴ OAR 660-012-0020(1). ODOT's proposal includes access management measures to protect the function of the expanded facility to serve through traffic. The access management elements of the proposal are consistent with OAR 660-012-0020(2)(b), which provides that new connections to arterials and state highways shall be consistent with designated access management categories.

⁵ City of Seaside, Comprehensive Plan, October 24, 1996, p. 19.

development and study of numerous alternatives in the 1980s and early 1990s and, ultimately, the release of the Draft Environmental Impact Statement in December 1995.

The need to widen and improve US 101 is most apparent during the summer months and on peak-use weekends, when peak daily traffic increases by up to 40 percent over the average annual daily traffic. Growth in traffic volumes will result in substantial worsening of current, already serious summer traffic congestion. Traffic volumes on US 101 are projected to grow by approximately 45 percent by 2020. The table below compares 2000 and projected 2020 traffic volumes during a summer weekend in July or August. (The volumes in the table represent the 30th highest hour, meaning they are exceeded about 29 times a year. Highways are commonly designed to accommodate the 30th highest hour because sizing them for higher volumes would severely escalate costs and impacts.)

US 101 Summer Weekend Traffic Volumes
(thousands of vehicles per day)

Between	2000	2020	Percent Increase
N. City Limits and Lewis and Clark Road	23.7	34.4	58
24 th Avenue and Avenue G	19.7	28.6	45
Avenue G and S. Holladay Drive	19.3	27.9	45
S. Holladay Drive and Avenue S	23.2	33.6	45
Avenue S and Avenue U	22.9	33.2	45
Avenue U and Dooley Bridge	21.3	31.0	46

Source: ODOT Transportation Analysis Unit, 2000

The 1999 Oregon Highway Plan (OHP), which establishes standards for improvements to state highways, designates US 101 as a Statewide Non-Freight Route. As such, US 101 is expected to 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. The management objective for statewide routes is to provide safe and efficient, high-speed, continuous flow operation. In urban areas, interruption to flow should be minimal.⁶

As a statewide highway, US 101 in Seaside is expected to operate at a volume to capacity ratio that does not exceed 0.80.⁷ According to the OHP:

volume to capacity (v/c) ratio is the peak hour traffic volume (vehicles/hour) on a highway section divided by the maximum volume that the highway section can handle. For example, when v/c equals 0.85, peak hour traffic uses 85 percent of a highway's capacity; 15 percent of the capacity is not used. If the traffic volume entering a highway section exceeds the section's capacity, traffic queues will form and lengthen for as long as there is excessive demand. When v/c is less than but close to 1.0 (e.g., 0.95), traffic flow becomes very unstable. Small disruptions can cause traffic flow to break down and long traffic queues to form . . .⁸

⁶ Oregon Transportation Commission, Oregon Highway Plan, 1999, page 41.

⁷ Ibid., page 80.

⁸ Ibid., pages 72-73.

As of 2000, using 30th highest hour traffic volumes, the summer weekend v/c ratio on the unsignalized section of US 101 south of Avenue S was 0.79, just below ODOT's 0.80 standard, and the ratio on the unsignalized section at the north end of Seaside was at ODOT's standard of 0.80. The v/c ratio at US 101's signalized intersections with Avenue U, Broadway Drive, and 12th Avenue was 0.76, also approaching the ODOT standard. At these times, left-turning vehicles cause substantial delays and vehicles turning off of and onto the highway reduce free-flow conditions. Indeed, during heavy travel periods, vehicles turning from the cross streets find it very difficult to turn left onto US 101 due to the lack of acceptable gaps in traffic flows on the highway. Congestion during the 29 hours of higher volumes would have been even worse. Seaside and nearby Clatsop County residents are familiar with these conditions.

Forecasted future traffic volumes indicate substantially worsening v/c ratios along US 101 in Seaside. Without the project, the v/c ratios in 2020, as measured at 12th Avenue, Broadway Drive and Avenue U, will range between 1.02 and 1.07, all above the roadway's capacity and far above ODOT's performance standard. As with 2000 v/c ratios, congestion during the 29 hours of higher volumes will be even worse. V/c ratios over 1.0 mean bumper to bumper traffic, gridlock or near gridlock, and long delays in turning left from the roadway or turning onto it. With the project, 30th highest hour v/c ratios will range between 0.67 and 0.72 and allow for the efficient flow of traffic.

Moving traffic efficiently along US 101 is very important for a number of reasons. It is important to maintain the function of US 101 as a statewide highway under the 1999 Oregon Highway Plan and as a component of the National Highway System (NHS). It is important to ensure traffic safety. ODOT uses the Safety Priority Index System (SPIS) to help identify high crash locations on the state highway system. In 2000, three locations on US 101 within the project corridor had SPIS ratings within the top ten percent in the state: Pacific Way in Gearhart, 1st Avenue to Broadway Drive in Seaside, and Broadway Drive to Avenue B in Seaside.⁹ Unless action is taken to reduce congestion and improve mobility within these areas, the incidence of crashes is likely to increase.

US 101 through Seaside is also the main transportation facility providing links to Astoria and the State of Washington to the north; Cannon Beach, Tillamook, and the central and southern Oregon coast to the south, and Portland (via US 26) and Rainier/Longview (via US 30) to the east. It plays a critical role in the movement of people and goods through the region. For this reason, it needs to be able to operate efficiently and safely. A congested roadway is costly for businesses and can discourage patronage of businesses along US 101 in Seaside during peak hours.

The priority assigned to the project under the Oregon Transportation Investment Act (OTIA) further demonstrates the need for it. The 2001 session of the Oregon Legislature enacted OTIA, which authorizes the issuance of bonds to finance the construction of road and highway improvements across the state. Over \$1 billion in projects were proposed for the funds, which total \$500 million. Of all the projects proposed for OTIA funds in ODOT's Region 2, which

⁹ Oregon Department of Transportation, Transportation Planning Analysis Unit, Pacific Way-Dooley Bridge (Seaside), Transportation Study, June 2001, page 12.

includes the north coast and mid-Willamette Valley, ODOT has ranked the Pacific Way – Dooley Bridge project highest in priority.

In addition, the project will substantially improve evacuation speed in the event of a tsunami. The vicinity of the project, especially Seaside, is vulnerable to tsunamis and the Necanicum River and Neawanna Creek limit the number of evacuation routes. The project will increase the capacity of US 101, including the Neawanna and Dooley Bridges, as an evacuation route and as a route for incoming emergency vehicles. Similarly, replacement bridges will more likely survive an earthquake than the existing bridges because of advances in bridge design.

For all of these reasons, need exists to establish two additional travel lanes along US 101 in Seaside and Clatsop County within the boundaries of this project.

OAR 660-012-0030(2) requires that local governments preparing local TSPs rely on the analyses of state and regional transportation needs in adopted elements of the state and county TSPs, and that local governments preparing regional TSPs rely on the analysis of state transportation needs in adopted elements of the state TSP. While neither Clatsop County nor Seaside has yet completed its TSP, ODOT has adopted a state TSP which includes the 1999 Oregon Highway Plan. As noted in the transportation need analysis above, anticipated year 2020 traffic volumes will not comply with ODOT's standards for Statewide Non-Freight Routes. Consequently, ODOT is proposing the identified improvements to US 101 to bring US 101 into compliance with its roadway performance and capacity standards.

OAR 660-012-0030(3) concerns need determinations within urban growth boundaries. It requires that need determinations be based on population and employment forecasts for periods of 20 years or longer. The needs analysis set out above is based upon 20 year forecasts obtained from the City of Seaside.¹⁰

OAR 660-012-0030(4) concerns reductions in vehicle miles traveled per capita in Metropolitan Planning Organization (MPO) areas. Because Clatsop County is not within an MPO area, this rule does not apply.

2. Measures Not Requiring an Exception

OAR 660-012-0070(4) requires consideration of whether the identified transportation need can be reasonably accommodated through one or a combination of measures *not* requiring an exception, considering (1) alternative modes of transportation; (2) traffic management measures; and (3) improvements to existing transportation facilities.

Alternative Modes

¹⁰ Seaside's population projections are based on year 2020 population forecasts generated by the Office of Economic Analysis. Those forecasts project a 2020 population of 41,788 in Clatsop County, of which 7,870 would reside within Seaside's UGB. According to the 2000 United States Census, Seaside's year 2000 population was approximately 5,900 people.

Alternative modes of transportation, which include buses, ride-sharing and vanpool programs, bike riding, and walking, do not provide a reasonable tool to improve the performance of US 101 under anticipated circumstances. Given the designation of US 101 (statewide highway), the nature of the transportation needs (improved movement of people and goods through the state and the region as well as locally), and the fact that congestion is at its worst during the summer season when tourists flock into the area by car to visit or pass through destinations along the Oregon coast, public transit and improvements to the bicycle/pedestrian network would not be appropriate, cost effective or adequate to accommodate the need. Indeed, the TPR does not even require an urban area the size of Seaside to consider using transit,¹¹ and transit services in Seaside and Clatsop County are not of a size or scale that would or could reasonably be expanded to satisfy the identified transportation needs.¹²

Traffic Management Measures

Traffic management measures include techniques for increasing the efficiency, safety, capacity or level of service of a transportation facility without increasing its size. Examples include traffic signal improvements, medians, access management, speed bumps, reduced design standards, ramp metering and high occupancy vehicle (HOV) lanes.

This project incorporates a number of traffic management measures, including signal improvements, medians and access management. Also, traffic speeds within the City of Seaside will be set below the design speed of US 101. Still, these measures are not nearly enough to accommodate the identified transportation need to move people and goods through the City of Seaside to reach statewide, regional or local destinations in a safe and efficient manner. Additional roadway capacity is needed.

Speed bumps, stop signs and similar traffic devices also can be effective at slowing traffic. However, they are inappropriate along statewide arterial highways where the primary function of the roadway is to provide inter-urban and inter-regional mobility and provide connections to large urban areas, ports, and major recreation areas that are not served by interstate highways.¹³

Improvements to Existing Transportation Facilities

The final consideration under OAR 660-012-0070(4) is whether the identified transportation need can be met through improvements to existing transportation facilities. As the project description and Figure 1 indicate, the identified need to widen and improve US 101 can and will be met predominantly through such improvements, in combination with transportation management measures. However, in Section 3 of the project (which contains the couplet), the impacts associated with widening the existing US 101 right-of-way are too adverse, justifying the need for the couplet, the northbound leg of which is located several hundred feet east of the existing US 101 right-of-way.

¹¹ See OAR 660-012-0020(2)(c).

¹² Transit is particularly effective in handling work trips. The problems along US 101 are caused mostly by through trips and by regional trips associated with out of town visitors who travel almost exclusively by private automobile.

¹³ Oregon Highway Plan, Policy 1A, Action 1A.1.

As earlier noted, ODOT studied several different alternatives for Section 3 of the Project, including a "Western Widening Alternative" and a "Weave Alternative." The Western Widening Alternative was dropped from environmental consideration in 1997 due to excessive cost and a lack of local support.¹⁴ The Weave Alternative was eliminated one year later, after the coho salmon was listed as a threatened or endangered species and it was determined that the Weave Alternative, unlike the Couplet Alternative, would result in the "taking" of coho salmon.¹⁵ The Weave Alternative, which was a proposed five lane highway section including a continuous left turn lane, also was deemed not to accomplish the project goals of reducing congestion and improving safety.

For these reasons, the identified transportation need cannot be met through transportation management measures, improvements to existing transportation facilities or other measures that do not require an exception. A small area requiring goal exceptions must be used to meet the transportation need.

3. Compliance with ORS 197.732(1)(c)(A), Goal 2 Part II(c)(1) and OAR 660-004-0020(2)(a)

ORS 197.732(1)(c)(A), Goal 2 Part II(c)(1) and OAR 660-004-0020(2)(a) and -022 parallel OAR 660-012-0070(4). ORS 197.732(1)(c)(A) and Goal 2, Part II(c)(1) require an exception to include reasons which justify why the state policy embodied in the applicable goals should not apply. OAR 660-004-0020(2)(a) interprets these requirements by explaining that the exception should set forth the facts and assumptions used as the basis for determining that a state policy embodied in a goal should not apply to a specific property or situation, including the amount of land for the use being planned and why the use requires a location on resource land.

OAR 660-04-022 gives examples of the types of reasons which may justify exceptions, including demonstrated need for the activity based on one or more requirements of Goals 3 to 19 and special features of the proposed use or activity that necessitate its location on the proposed exception site. Because this rule deals more with site-specific exceptions rather than roadways, which are linear in nature, it does not appear to be directly applicable.

The reasons that justify exceptions to Goals 11 and 14 for the proposed widening and improvement of US 101 have been stated above. Those reasons relate to Goal 12 and reflect identified state, regional and local transportation needs, including mobility, capacity, safety and traffic efficiency needs.

F. Compliance with OAR 660-012-0070(5), ORS 197.732(1)(c)(B), Goal 2 Part II(c)(2) and OAR 660-004-0020(2)(b)

¹⁴ The Western Widening Alternative would have displaced 22 businesses. DEIS at 4-23.

¹⁵ The Western Widening Alternative was eliminated before the Coho Salmon was listed under the Endangered Species Act. The Western Widening Alternative also would have resulted in the taking of that protected species, since that impact is a result of proximity to the Necanicum River, which is located only about 100 feet from the existing US 101 alignment in that portion of the project extending from approximately Avenue N past Avenue U in Seaside.

OAR 660-012-0070(5) provides that to address Goal 2, Part II(c)(2), the exception must demonstrate that *non-exception* locations cannot reasonably accommodate the proposed transportation improvement or facility. Similarly, OAR 660-004-0020(2)(b) requires justification why "areas which *do not require a new exception* cannot reasonably accommodate the use."

As described above in Section III.E.2 of this application, the Western Widening and the Weave Alternatives were considered during the environmental review process but later rejected because they resulted in significant adverse impacts associated with displacements and protected fish species.

ODOT also considered shifting the northern couplet leg westward in the vicinity of the exception area in an effort to avoid taking goal exceptions. However, this alternative was rejected as not reasonable because it would result in additional right-of-way taking from properties containing the Motel 6, the Big Foot Restaurant, and the Microtel Motel. A preliminary estimate of the added cost is from \$1.3 million to \$1.7 million, according to ODOT right-of-way acquisition staff. For all practical purposes, the northern couplet leg is inside the UGB. Again, only an estimated 0.1 acre (currently measured at 0.03 acres) of land outside the UGB are affected.

G. Compliance with OAR 660-012-0070(6)

OAR 660-012-0070(6) requires the exception to justify the thresholds chosen to judge whether an alternative method or location identified under OAR 660-012-0070(4) or (5) cannot reasonably accommodate the proposed transportation need or facility. These thresholds include cost, operational feasibility, economic dislocation and other relevant factors.

The Pacific Way – Dooley Bridge Project is an ODOT project that involves the cities of Gearhart and Seaside as well as Clatsop County. The alternative that has been selected – the Couplet Alternative – is the result of environmental and economic analysis that has in particular taken into consideration impacts to the City of Seaside. This is appropriate, because the project is essentially an urban project, with only a small portion located on rural lands.

Accordingly, an initial threshold is what alternative works best inside Seaside's UGB, taking into account land availability, cost, business and residential dislocations, impacts to coastal, wetland and fish/wildlife resources, and other factors. A major consideration is compliance with the federal Endangered Species Act, which requires that the taking of endangered or threatened species be avoided where practicable. Here, both the Weave and the Western Widening Alternatives would take protected coho salmon due to their very close proximity to the Necanicum River. In contrast, the Couplet Alternative would result in minimal, if any, taking of coho salmon due to its greater separation from the Necanicum River.

The need for this exception is caused by the fact that an estimated 0.1 acres (currently measured at 0.03 acres) of right-of-way associated with the northbound couplet leg lies outside the Seaside UGB. By locating this project nearly entirely within an UGB, ODOT is acting in a manner that is consistent with and furthers the policy objectives in OAR 660-004-0020(2)(b)(B). Avoiding lands zoned for farm or forest uses is another threshold considered for this project. The vacant,

undeveloped land directly affected by this goal exception are neither farm nor forest lands. This, too, is consistent with the policy objectives in OAR 660-004-0020(2)(b)(B).

The abandoned railroad right-of-way within which the northbound couplet leg is proposed to be built is located almost entirely inside the UGB. Only in one very small area does that right-of-way extend outside the UGB. In determining whether the right-of-way could be shifted westward to avoid the exception, cost, economic dislocation and environmental impacts were used as the thresholds. Determinations were made to see if the impacts to existing uses were disproportionately large so as to justify an exception. As stated above, realigning the couplet to avoid crossing the UGB would result in additional right-of-way taking from properties containing the Motel 6, the Big Foot Restaurant and the Microtel Motel. A preliminary estimate of the added cost is from \$1.3 million to \$1.7 million. Added costs at this scale are disproportionately large compared to the impact of using the amount of rural land expected to be needed to respond to the transportation need.

H. Compliance with OAR 660-012-0070(7), ORS 197.732(1)(c)(C), Goal 2 Part II(c)(3) and OAR 660-004-0020(2)(c)

OAR 660-012-0070(7) provides that, to comply with Goal 2, Part II(c)(3), the exception must compare the economic, social, environmental and energy consequences of the proposed location with other locations requiring exceptions. The exception must discuss "whether the net adverse impacts associated with the proposed exception site are significantly more adverse than the net impacts from other locations which would also require an exception." The proposed exception would fail only if the impacts associated with it are "significantly more adverse" than the other identified exception sites. Under OAR 660-012-0070(c), the evaluation of consequences may be generalized.

OAR 660-004-0020(2)(c) is similar to OAR 660-012-0070(7). It requires a general description of the character of each alternative area and discussion of the advantages and disadvantages of the various alternatives, including positive and negative consequences. Like OAR 660-012-0070(7), the exception must explain why the use at the chosen site is not "significantly more adverse" than would typically result from the same proposal being located at one of the exception sites. Considerations include which resource lands are most productive, the ability to sustain resource uses near the proposed use, and long-term economic impacts on the general area resulting from removal of land from the resource base.

The proposed alternative is the couplet alternative. It would extend US 101 outside the Seaside UGB, affecting less than 0.1 acres of land (currently measured at 0.03 acres) that are zoned Residential Agriculture - 2. Because this alternative would impact such a small area of rural land, its impacts are comparatively slight.

The only other alternative studied that extended onto rural lands north of Dooley Bridge was the "New Alignment Alternative," which would have relocated US 101 from its existing location to the abandoned right-of-way. Because this alternative constituted a realignment of US 101 under

the TPR, it would not have required goal exceptions.¹⁶ No other potentially reasonable alternatives requiring goal exceptions were identified or studied.

An alternative mentioned but not studied was a bypass. The Seaside Comprehensive Plan contains language supporting the concept of a bypass located far enough to the east to avoid conflict with anticipated city development. However, the bypass alternative is so clearly not a "reasonable" alternative that it does not merit analysis under the standards of this section. This is so for the following reasons.

First, as explained on page 2-11 of the DEIS, a bypass feasibility study, based on a corridor developed by the project's Citizen Advisory Committee (CAC), was completed in 1991. Traffic studies of the bypass indicated that only a low level of bypass use could be expected because Seaside is a destination for many travelers and business people using US 101 in northwest Oregon. This relatively low level of use, combined with a very high price tag for construction, encouraged the CAC to continue development of an alternative that would use the existing highway corridor.

Second, had the CAC or ODOT recommended a bypass, that bypass would have required exceptions to Statewide Planning Goals 4, 11, and 14, and possibly Goals 3, 16 or 17, depending on its location. This is because: (1) the bypass would be located outside the UGB, necessitating exceptions to Goals 11 and 14; (2) the bypass would affect forest lands and possibly agricultural lands, necessitating an exception to Goal 4 and possibly Goal 3; and, (3) the bypass would still need to cross coastal creeks to rejoin the existing highway, which could involve Goal 16 or 17 exceptions.

In other words, relocating US 101 eastward would create a whole different set of issues. Given the foregoing considerations, the existing location of US 101, and the state's investment in that roadway, it makes much more sense that the additional travel lanes and other improvements be located in the vicinity of the existing roadway rather than moving US 101 eastward onto rural lands.

Third, relocating US 101 via a bypass east of Seaside would be extremely difficult if not impossible to accomplish consistent with the alternative methods or locations standard in the TPR. To justify goal exceptions for a bypass consistent with OAR 660-012-0070, Clatsop County would need to adopt findings, supported by substantial evidence, demonstrating that the identified transportation need "cannot reasonably be accommodated" by means of improvements to existing facilities that do not require exceptions to Goals 3, 4, 11 or 14.¹⁷ This would require Clatsop County to demonstrate that none of the alternatives identified in the DEIS can "reasonably accommodate" the identified transportation need. Additionally, under OAR 660-012-0070(2), Clatsop County would need to demonstrate that a bypass complies with the standards in OAR 660, Division 4. Those standards include OAR 660-012-0020(2)(b)(B)(iii),

¹⁶ The New Alignment Alternative provided for four travel lanes, a median, shoulders, bicycle lanes and sidewalks. The roadway width cross section totalled 98 feet, compared to 58 feet for the Couplet Alternative. See DEIS at Figures 2-6 and 2-7. Accordingly, the New Alignment Alternative would have extended an additional 20-40 feet farther into the rural area, affecting a considerably larger amount of rural land.

¹⁷ See OAR 660-012-0070(4)(c).

which requires demonstration that the identified need cannot “be reasonably accommodated inside an urban growth boundary.” Based on the information and analysis contained in the DEIS and other supporting documents, it is very unlikely that the County could make such a showing.

Finally, OAR 660-012-0070(7) prohibits the selection of an alternative that has significantly more adverse impacts than other alternatives requiring an exception. Given that a bypass would remove many acres of land from the resource base and impact coastal, wetland and/or important fish and wildlife habitat, its impacts are plainly substantially more adverse than the impacts associated with a couplet alternative impacting only an estimated 0.1 acres (currently measured at 0.3 acres) of rural land.

In conclusion, there is only one identified reasonable alternative that would require goal exceptions, which is the proposed couplet alternative. Under OAR 660-012-0070(7), identification and analysis of ESEE impacts is required only where there is more than one reasonable alternative requiring goal exceptions. Because no other reasonable alternative has been identified, no further analysis is required under this section.

I. Compliance with OAR 660-012-0070(8), ORS 197.732(1)(c)(D), Goal 2 Part II(c)(4) and OAR 660-004-0020(2)(d)

OAR 660-012-0070(8) provides that, to comply with Goal 2, Part II(c)(4), the exception must describe the adverse effects that the proposed transportation improvement is likely to have on the surrounding rural lands and land uses, including increased traffic and pressure for nonfarm or highway oriented development on areas made more accessible by the transportation improvement. This section also requires, as part of the exception, facility design and land use measures that minimize accessibility of rural lands from the proposed transportation facility and support continued rural use of surrounding lands.

Similarly, OAR 660-004-0020(2)(d) requires the exception to explain how the proposed use is compatible with other adjacent uses or will be rendered compatible through measures designed to reduce adverse impacts. As used in this section, "compatible" is not intended as an absolute term meaning no interference or adverse impacts of any type with adjacent uses.

The proposed northbound couplet leg will not have any direct impacts on agricultural or forest lands. It will not make rural lands more accessible, as there will be no roadway accesses within the identified exception area connecting the couplet with rural lands. And to both the south and the north of the exception area, the couplet returns inside the UGB, thus reducing pressure for nonfarm or highway oriented development on rural lands.

The roadway design places the northbound couplet leg on an old railroad right of way, thereby reducing and minimizing adverse impacts in the area and to the surrounding community in Seaside. This roadway design, which, as noted, reconnects that portion of the couplet within the exception area back into the Seaside UGB, in itself minimizes accessibility to rural lands and supports continued rural use of surrounding lands. Because the design avoids access to the surrounding rural lands, no additional measures to protect and support continued rural use of these surrounding unincorporated lands are required.

IV. Compliance with Statewide Planning Goal Requirements

Amendments to acknowledged comprehensive plans and land use regulations must be shown to comply with applicable statewide planning goals, as well as with acknowledged comprehensive plan policies and land use regulations. This section of the application discusses how the proposed plan and zoning amendments identified above comply with the statewide planning goals.

Because the affected area within Clatsop County is unincorporated land, the goals apply to this portion of the project in a different way than they apply inside the City of Seaside. For purposes of this analysis, the only area under consideration for goal compliance is the area requiring the plan amendment, i.e., the estimated 0.1 acres (currently measured at 0.03 acres) within which the northbound couplet leg would be located.

For this application, the relevant goals are Goals 1, 2, 5, 6, 7, 12 and 13.

A. Goal 1

Goal 1, Citizen Involvement, requires opportunity for citizens to be involved in all phases of the planning process. Generally, Goal 1 is satisfied when a local government follows the public involvement procedures set out in its acknowledged comprehensive plan and land use regulations. For proposed comprehensive plan amendments, those procedures include opportunity for public review and comment in proceedings before the Planning Commission and the Board of County Commissioners. Here, consistency with those procedures, together with notice to the Department of Land Conservation and Development (DLCD), as required by ORS 197.610 and 197.732(5), results in compliance with Goal 1.

B. Goal 2

Goal 2 (Land Use Planning), Part I, requires that actions related to land use be consistent with acknowledged comprehensive plans of cities and counties. Section V, below, demonstrates the proposed amendments' consistency with applicable provisions of Clatsop County's Comprehensive Plan.

Goal 2, Part I, also requires coordination with affected governments and agencies; evaluation of alternatives, and an adequate factual base. In preparing the DEIS, ODOT coordinated with the Cities of Seaside and Gearhart and Clatsop County, and also with state and federal agencies. The state agencies contacted regarding this project included the Oregon Department of Fish and Wildlife, the Department of Water Resources, the Oregon Economic and Community Development Department, DLCD, the Division of State Lands, the Department of Environmental Quality, and the State Historic Preservation Office. Federal agencies contacted about the project included the Federal Highway Administration (which co-produced the DEIS), the US Fish and Wildlife Service, the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service,¹⁸ and the US Army Corps of Engineers.¹⁹

¹⁸ Until recently, this agency called itself the National Marine Fisheries Service.

The goal exceptions set out above in Section III include an analysis of alternatives as required by Goal 2. Moreover, the exceptions, together with the DEIS and with other supporting documents and evidence that ODOT will submit into the record of this land use proceeding in support of the proposed plan amendments, will provide an adequate factual base to support the proposed plan amendments. For these reasons, Goal 2, Part I, is met.

Goal 2, Part II, addresses goal exceptions. Goal 2, Part II, is satisfied for the reasons set out in Section III of this application.

C. Goal 5

Goal 5, Open Spaces, Scenic and Historic Areas, and Natural Resources, which LCDC amended in 1996, requires local governments to adopt programs to protect natural resources and conserve scenic, historic, and open space resources as provided in LCDC's Goal 5 rule, OAR 660, Division 23. The Goal 5 rule establishes procedures and standards specific to various types of natural resources that provide for their protection or development.

The portion of the northbound couplet leg located outside the Seaside UGB will impact wetlands that the County's Comprehensive Plan identifies as not significant. However, these wetlands adjoin a large wetland area that is designated significant and zoned Lakes and Wetlands. This wetland provides habitat value for fish and wildlife and functions such as flood storage, sediment trapping, nutrient retention and removal, and groundwater recharge/discharge.

OAR 660-023-0100 regulates development on wetlands. For areas located outside urban growth boundaries, the rule does not require comprehensive plan amendments in order to determine significant wetlands and complete the Goal 5 process.²⁰ Here of course, such amendments would not be required because of the prior determination that the affected wetlands are not significant. Still, because wetlands are impacted, the project will need to obtain necessary permits from the Division of State Lands or the US Army Corps of Engineers for any fill occurring within the wetlands, as provided by state and federal law, and ODOT will need to provide adequate mitigation.

D. Goal 6

Goal 6, Air, Water and Land Resources Quality, addresses the quality of air, water and land resources. A local government complies with Goal 6 by showing that planned development, when combined with existing development, will not violate or threaten to violate applicable federal and state environmental laws. These environmental laws include regulations and standards governing air pollution, water pollution, and noise.

An ODOT air quality analyst has determined that the statements and conclusions in the 1995 DEIS remain valid.²¹ It stated that the project area was in compliance with all the National

¹⁹ See DEIS at 9-3.

²⁰ See OAR 660-023-0100(6).

²¹ Message from Vince Carrow to Susan Whitney, July 26, 2002.

Ambient Air Quality Standards.²² The Department of Environmental Quality predicted that development in the project area will not increase pollution levels beyond those stated in the national ambient air standards.²³ Indeed, for this project, a quantitative, area wide air quality analysis was not considered necessary because (1) the project would improve traffic flows; (2) the build alternatives would not attract traffic volumes greater than those with the no-build alternative; and (3) the project area is currently and is anticipated to remain in attainment of the values stated in the National Ambient Air Quality Standards.²⁴

While the US Government and State of Oregon have noise standards for individual motor vehicles, they have no standards for highways, roads, or streets. The dominant source of noise throughout the project area is existing traffic along US 101. With the proposed highway improvement project, noise levels will increase above those associated with the no-build alternative, due primarily to higher traffic speeds because of reduced congestion. However, there are no noise receptors located in the exception area that would be affected. For the no-build, noise levels are predicted to decrease as a result of even more traffic congestion and slower speeds than today.

As relevant to the exception area, ODOT's water quality impact analysis states:

The proposed project has the potential to increase the pollutant loading in all of the receiving waters due to the increase in impervious surface area and the alteration of the stormwater system from a haphazard collection of ditches, storm sewers and roadside infiltration to a piped system. The proportion of highway impervious surface area to the watersheds of the Necanicum River, Mill Creek and the unnamed tributary located near the Dooley Bridge is in every case considerably lower than for Neawanna Creek. Therefore toxic impacts are even less likely to occur in those streams.

The unnamed tributary [which the Dooley Bridge spans] would suffer from the greatest proportional increase, though still only about 0.07% of its total watershed. Because the unnamed tributary is more an extended wetland than an actual stream, the impact of additional highway runoff would be more on sediment quality near outfalls than on instream water quality. The wetland would trap a large portion of the stormwater's pollutants and prevent them from reaching the Necanicum River.²⁵

The project will include water quality swales and/or detention ponds to treat stormwater runoff. Figure 1 shows their proposed location. Both depend on capture of fine grained sediments that are contaminated with chemical pollutants, and can achieve 70% removal.²⁶

²² DEIS at 3-36.

²³ DEIS at 4-73.

²⁴ DEIS at 4-73.

²⁵ ODOT, Pacific Way-Dooley Bridge Water Quality Impact Assessment, 9/17/02, page 6.

²⁶ Ibid., page 10.

In summary, the project is not expected to violate applicable air, noise or water quality standards within the exception area. For these reasons, it is reasonable to expect that the project will be able to comply with the applicable federal and state laws and thus satisfy Goal 6.

E. Goal 7

Goal 7, Areas Subject to Natural Disasters and Hazards, which LCDC amended on June 1, 2002, addresses hazards to development. As amended, the goal requires DLCD to review new hazard inventory information provided by federal or state agencies in consultation with affected state and local government representatives. Thereafter, DLCD will notify the local governments if the new hazard information requires a local response. If it does, then the local governments must (1) evaluate the risk to people and property based on the new information and other factors (including the frequency, severity and location of the hazard, its future effects on existing and future development, and the potential for development in the hazard area to increase the frequency and severity of the hazard); (2) allow opportunity for citizen review and comment on the inventory information and the results of the evaluation; and (3) adopt or amend, as necessary, plan policies and implementation measures consistent with the principles of (a) avoiding development in hazard areas where the risk to people and property cannot be mitigated; and (b) prohibiting the siting of essential facilities in identified hazard areas "where the risk to public safety cannot be mitigated, unless an essential facility is needed within a hazard area in order to provide essential emergency response services in a timely manner."

Since the amendments to Goal 7 took effect, DLCD has taken no action that, in turn, would require Clatsop County or the City of Seaside to set in motion the procedures in Goal 7. Accordingly, the proposed amendments comply with Goal 7. It is noted that the project will affect some known hazards to development, including erosion and floodplains. According to the DEIS, erosion during project construction can be controlled with proper construction practices and mitigation measures.²⁷ The project would cross the 100-year floodplain along the couplet's northbound leg, including the exception area. However, it would stay out of the floodway.²⁸ At all creek crossings, culverts and bridges would be designed to pass the design flood without increasing the flood elevations.²⁹ This will meet Federal Emergency Management Agency (FEMA) requirements to avoid impacts to flooding.

F. Goal 12

Goal 12, Transportation, requires local governments and ODOT to provide a safe, convenient and economic transportation system. Goal 12 is met through a demonstration of compliance with the TPR. Where plan amendments are required, this includes a demonstration of compliance with the requirements in OAR 660-012-0060.

Under ORS 660-012-0060(1), amendments to acknowledged comprehensive plans and land use regulations that "significantly affect" a transportation facility must "assure that allowed land uses are consistent with the identified function, capacity, and performance standards (e.g., level of

²⁷ DEIS at 4-1.

²⁸ DEIS at 4-6.

²⁹ DEIS at 4-6.

service, volume to capacity ratio, etc.) of the facility." A plan or land use regulation amendment "significantly affects" a transportation facility if it: (1) changes the acknowledged functional classification of an existing or planned transportation facility; (2) changes standards implementing the functional classification system; (3) allows types or levels of land uses which would result in levels of travel or access inconsistent with the functional classification of the facility; or, (4) reduces the performance standards of the facility below the minimum acceptable level identified in the TSP.³⁰

The proposed plan amendments will not significantly affect transportation facilities in Clatsop County or the City of Seaside. They do not change the acknowledged functional classification of US 101 or any other roadways in the County or in Seaside or change the standards implementing the functional classification system. They do not authorize land uses (such as residential or commercial uses) that would result in levels of travel or access inconsistent with the functional classification of US 101. Likewise, they do not reduce the performance standards of US 101. Indeed, the objective of the project is to substantially improve the performance of US 101 in Seaside. Neither the new couplet leg nor the extension of Holladay Drive would have more than minor effects on traffic volumes on local streets and roads.³¹

OAR 660-012-0015 also is relevant to this application. OAR 660-012-0015(1) requires ODOT to prepare, adopt and amend a state Transportation System Plan (TSP) that identifies a system of transportation facilities and services adequate to meet identified state transportation needs. US 101 is a component of the state's TSP. The proposed widening and improvement of US 101 in Seaside and Clatsop County are consistent with state policies, set out in the 1999 Oregon Highway Plan, to maintain consistency between desired highway performance and proposed types of land development and to work with local governments to address highway performance and safety needs. The evidence here indicates that US 101 in Seaside includes several intersections that experience very high accident rates. It also shows that traffic volumes along US 101 frequently exceed the roadway's capacity, causing substantial delays and congestion. This congestion is expected to get much worse over time. With the proposed improvements, which include a small portion located outside the UGB, US 101 is expected to operate again within the performance standards set for a statewide non-freight highway, and it should operate in a much safer manner than it does today. This will substantially benefit residents of unincorporated Clatsop County as well as residents in Seaside and Gearhart.

G. Goal 13

Goal 13, Energy Conservation, calls for the management of land and land uses developed to maximize energy conservation. Taken as a whole, construction of the project is projected to consume about 750 million kilojoules of energy, equivalent to approximately 5.7 million gallons of gasoline.³² Goal 13 does not prohibit such projects, and, indeed, improvements such as the

³⁰ See OAR 660-012-0060(2).

³¹ The only streets that the project as a whole would substantially increase traffic on are Avenue G west of US 101 and Avenue F east of US 101. ODOT projects the v/c ratio on these streets to be 0.52 if the project were in place today and 0.69 in 2020. These are the same v/c ratios as US 101 at its intersection with these streets. Seaside does not have performance standards for its streets to compare these ratios against.

³² Oregon Department of Transportation, Environmental Services, Energy Technical Report, Pacific Way – Dooley, Clatsop County, July 2001.

project are authorized under Goal 12. Furthermore, the project is forecasted to reduce energy consumption by motor vehicles using US 101 and affected local streets because widening US 101 to four travel lanes will significantly reduce congestion and provide for a freer flow of traffic.

V. Consistency with Clatsop County Comprehensive Plan Policies

In addition to compliance with the statewide planning goals, comprehensive plan and land use regulation amendments, including exceptions to statewide planning goals, must comply with the unamended Comprehensive Plan provisions.

The Clatsop County Comprehensive Plan policies identified below are the policies that are relevant and applicable to the requested plan amendment. The application must demonstrate compliance with these policies to gain approval. All other policies have been reviewed and determined not to apply.

It is noted that some policies are more aspirational or general in nature, directing the County to do something or encouraging or supporting an action or result rather than requiring an applicant to do something or requiring an action or result. Because these policies do not mandate a specific result, or because they involve actions beyond the applicant's control, these policies are deemed not to constitute applicable review criteria upon which the applicant must demonstrate compliance.

Goal 1, Citizen Involvement

In general, the Citizen Involvement Policies of the Comprehensive Plan give direction to Clatsop County. Among other things, they require the Planning Commission and active Citizen Advisory Committees to hold meetings in such a way that the public is notified in advance and given the opportunity to attend and participate in a meaningful fashion (Policy 2). As noted, the amendments proposed here will be subject to public notice and hearing consistent with Clatsop County regulations. The hearings will provide opportunity for meaningful citizen participation.

Policy 3 authorizes active Citizen Advisory Committees to submit their comments to the Clatsop County Department of Planning and Development, Planning Commission and Board of Commissioners. Compliance is optional with the CACs. Policy 5 provides opportunity for citizen involvement in the planning process. This already has occurred through citizen participation in the NEPA process that led up to the selection of the Couplet Alternative as the preferred alternative, and it will continue to occur through the local public notice and hearing process initiated by this application.

Policy 6 encourages local, state and federal agencies and special districts to participate in the planning process. Agency participation already has occurred, as indicated in the findings addressing compliance with Statewide Planning Goal 2 set out above in Section IV of this application, and it can continue to occur during the public hearing process associated with this land use application. Policy 7 directs the County to use the news media, mailings, meetings and other means to communicate planning information to citizens and agencies and to publicize

notices of hearings on major plan revisions. Whether or not this proposal is deemed "major," notice will be provided in the manner required by the County's Zoning Ordinance. This policy can be satisfied through County action.

Finally, Policy 8 provides for the County to consider public ideas and recommendations submitted during the planning process and to evaluate, synthesize, quantify and utilize those ideas as appropriate. Policy 9 provides that public notices be sent to affected residents concerning plan changes and other land use actions. Both of these policies are directory to the County and can be satisfied through County action.

In summary, all of the Citizen Involvement policies can be met through issuance of required notice and the holding of public hearings and through County compliance with directory provisions.

Goal 2, Land Use Planning

The Land Use Planning Policies direct Clatsop County to place land and water resources into one of six Comprehensive Plan designations (Development, Rural Agricultural Lands, Conservation Forest Lands, Conservation Other Resources, Natural, and Rural Lands). The Rural Lands category, applicable here, is intended for lands which are "outside the urban growth boundary and are not agricultural lands or forest lands. Rural lands includes lands suitable for sparse settlement, small farms or acreage home sites with no or hardly any public services, and which are not suitable, necessary or intended for urban use."³³

The Land Use Planning portion of the Comprehensive Plan identifies those areas for which goal exceptions have been taken to certain statewide planning goals and guidelines.³⁴ This application would amend this section to include a Goal 11/14 exception authorizing the modification of US 101 east of the Seaside UGB to allow construction of a leg of US 101 on approximately 0.03 acres of rural land located approximately 0.2 miles north of the Dooley Bridge.

Goal 3, Agricultural Lands

Not applicable.

Goal 4, Forest Lands

Not applicable.

³³ Clatsop County Comprehensive Plan Goals and Policies, p. 4.

³⁴ Clatsop County Comprehensive Plan Goals and Policies, p. 8.

Goal 5, Open Spaces, Scenic & Historic Areas and Natural Resources

The area affected by this application is a wetland area that is also fish and wildlife habitat. However, Clatsop County's plan does not protect this wetland from future development.³⁵

Fish and Wildlife Policy 7 provides for the County to rely on the Division of State Lands' (DSL) permit process under the Fill and Removal Law to insure that proposed filling does not adversely affect a stream's integrity or its value as fish habitat. While the proposed area does not contain a stream, ODOT nonetheless will need to obtain a fill permit from DSL or the Corps of Engineers to construct the northbound couplet leg.

Other fish and wildlife policies do not apply. The area is not designated big game habitat, although deer and elk have been observed migrating under US 101 at the Dooley Bridge, approximately one-quarter mile to the south. No endangered species have been identified within the exception area. It is noted that ODOT has coordinated with both the Oregon Department of Fish and Wildlife and the US Fish & Wildlife Department on this project.

Wetlands Policy 1 provides for the County to protect identified significant wetlands for which no conflicting uses has been identified. Wetlands Policy 1 does not apply to the subject property because the County previously decided not to protect the wetlands on this site from conflicting uses. But even if the County had decided otherwise (as it did for the nearby wetland area zoned Lakes and Wetlands), the County could permit the proposed new conflicting use (highway) without need to amend its Goal 5 element under LCDC's Goal 5 wetlands rule, OAR 660-023-0100(6).

Goal 6, Air, Water and Land Quality

Goal 6, Policy 1(c) provides for Clatsop County to encourage the maintenance of a high quality of air, water and land through "cooperating with the State Highway Department to provide an efficient transportation system." This proposal supports that policy by providing a safer and much more efficient US 101 through the Gearhart/Seaside urban area. This proposal also complies with Policy 1(a) because it supports an alternative that is almost entirely located inside Seaside's UGB.

Policy 8 directs the County to cooperate with ODOT in implementing best management practices to reduce non-point pollution. ODOT will employ best management practices when constructing the northbound couplet leg.

Policy 12 requires that the District Conservationist be used to provide a technical evaluation of all development activities that could create erosion and sedimentation problems with his recommendations incorporated into planning approvals. It is not clear whether roadway improvements fall within the meaning of "development" as that term is used in this policy. If

³⁵ The wetland adjoins an old gravel extraction area that appears to be abandoned. This area (including the wetland) is designated Rural Land and zoned RA-2. In contrast, nearby lands to the south are designated Conservation Other Resources and zoned Lakes and Wetlands. These other lands are protected under Clatsop County's program to implement Goal 5.

they do, then this provision is directory towards the County and can be met through the District Conservationist's participation during the public hearing process.

Policy 13 provides that any development or land or change in the use of land shall not occur until it is assured that such change or development complies with applicable state and federal environmental standards. For this project, ODOT has demonstrated compliance with those standards through the environmental documents it has prepared and through its demonstration of consistency with the statewide planning goals.

Policy 14 provides that waste discharges from a development not result in a violation of state or federal environmental quality statutes, rules or standards. As explained in the findings addressing compliance with Statewide Goal 6, this application can comply with applicable state and federal environmental quality requirements.

Goal 7, Natural Hazards

Flood Hazard Policy 11 requires that transportation systems constructed in floodplains shall be designed so as to cause the least adverse hydraulic effect considering expected flood flows and debris loads. To comply with City of Seaside requirements, which apply to most of the project, it will be designed to cause no increase in flood hazards or elevations. This exceeds the requirement of Clatsop County's policy.

Goal 8, Recreation

Not applicable. However, an improved US 101 will improve access to Clatsop County parks and recreational areas.

Goal 9, Economy

Not applicable.

Goal 10, Population and Housing

Not applicable.

Goal 11, Public Facilities and Services

Not applicable.

Goal 12, Transportation

There are a number of Transportation policies that apply to this application.

Policy 2 requires that all transportation related decisions be made in consideration of land use impacts, including but not limited to adjacent land use patterns, both existing and planned, and their designated uses and densities. This application complies with this policy. The adjacent rural

land use pattern consists of undeveloped rural lands zoned RA-2 and nearby undeveloped areas zoned Lakes and Wetlands. The RA-2 zone allows agricultural uses, single family dwellings on lots that are a minimum of two acres in size, certain non-farm uses that are also permitted in exclusive farm use zones, and some other low intensity non-farm uses like bed and breakfasts, while the Lakes and Wetlands zone permits only low intensity uses.³⁶ Initially, ODOT considered alternative designs and the impacts those designs would have on existing and planned land uses in both the City of Seaside and unincorporated Clatsop County. ODOT identified affected lands and land use impacts in a draft environmental impact statement that was reviewed and commented upon by the public and by interested organizations and agencies. Based on identified impacts, including displacements, impacts to endangered or threatened species, and impacts to wetlands, fish and wildlife habitat and coastal resources, ODOT selected a preferred alternative, which consists primarily of US 101 widening and improvement inside Seaside's UGB but includes a small area outside the boundary. ODOT's actions are consistent with and carry out Policy 2.

Policy 3 provides for the County, in cooperation with ODOT and the cities of Clatsop County, to establish a comprehensive list of recommended road improvements throughout the County. Transportation Policies 17 and 18 provide a list of state and county roadway improvements that Clatsop County supports. That list includes Policy 17(j), expressly supporting improvements to US 101 between Pacific-Way – Dooley Bridge.

Policy 5 provides that development of new access points onto major arterials such as US 101 "shall be kept to a minimum number as possible." This project is consistent with that policy. It provides for no new access points in the Clatsop County exception area. Moreover, it provides for access management in Seaside and Gearhart to reduce the overall number of accesses and improve traffic safety. By doing so, ODOT will reduce the number of accidents occurring on the roadway and more efficiently maintain roadway capacity.

Policy 18 requires ODOT to apply for and receive local land use approval for the Pacific Way – Dooley Bridge project prior to its construction. This application has been filed for that purpose.

Policy 18 also requires that exceptions to pertinent Statewide Planning Goals be requested where appropriate at the time of application. Consistent with this policy, this application is requesting exceptions to Goals 11 and 14.

Goal 13, Energy Conservation

Not applicable. However, the goal of this policy (to conserve energy) is achieved for the reasons set out above in the analysis of compliance with Statewide Planning Goal 13.

Goal 14, Urbanization

³⁶ Adjacent lands to the west lie inside the City of Seaside urban growth boundary. These lands have been identified for urban scale development. To the immediate west of the subject rural property is the old abandoned railroad right of way that ODOT is proposing to use for the couplet. West of that in the vicinity of this proposal are commercial uses, including a Motel 6, the Big foot Restaurant, and Microtel.

Not applicable.

Goal 16 and 17, Estuarine Resources and Coastal Shorelands

Not applicable.

Goal 18, Beaches and Dunes

Not applicable.

Clatsop Plains Community Plan

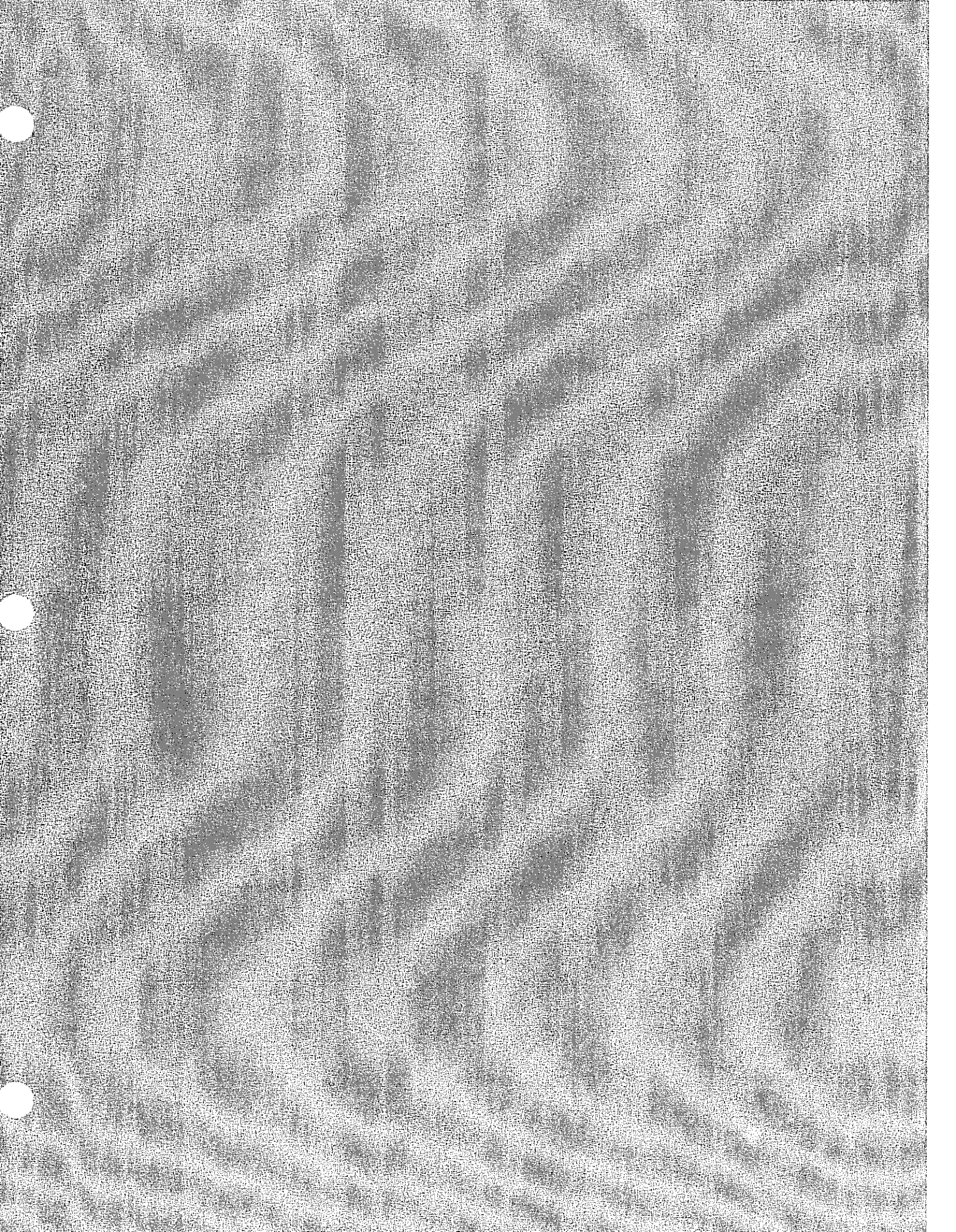
The Clatsop Plains Community Plan policies identified below are the only policies that are relevant and applicable to the requested plan amendment. All other policies have been reviewed and determined not to apply.

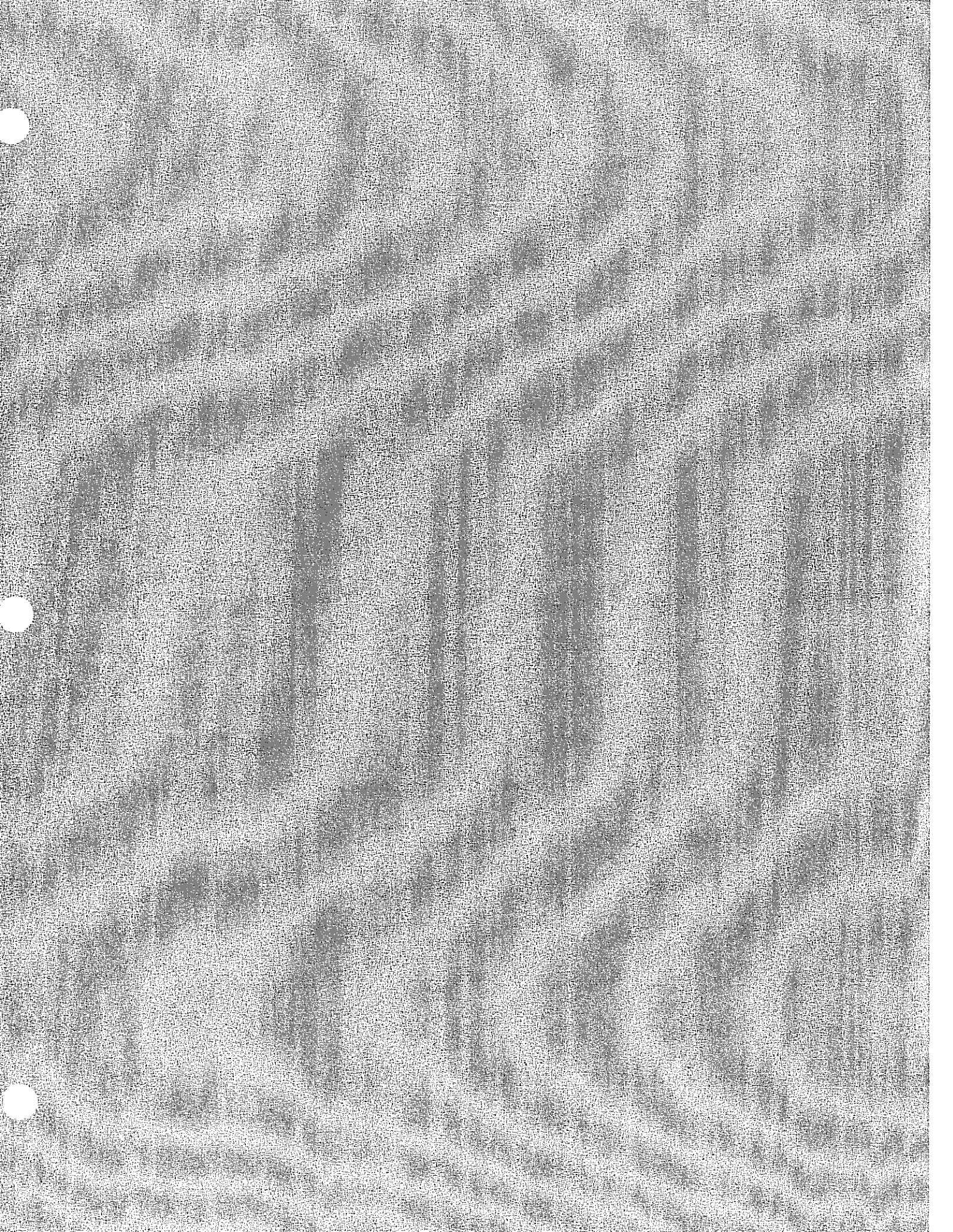
Clatsop Plains Transportation Policies

The Clatsop Plains Transportation Policy 1 calls for minimizing access points on US 101. Because no new access points will be located on the subject property, this policy is met. Similarly, Policy 6 directs the County to restrict direct access to US 101 where alternative access is available. Direct access to US 101 should not be necessary at this location.

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APPENDIX C
Letters







Oregon

Theodore R. Kulongoski, Governor

Sept. 26, 2003

Oregon Department of Transportation
Highway Division
District 1
350 W. Marine Drive
Astoria, OR 97103
Telephone (503) 325-7222
FAX (503) 325-1314

Debra D. Kraske,
Interim County Administrator
Clatsop County
800 Exchange St., Suite 310
Astoria, OR 97103

File Code:

RE: Lewis and Clark Road Connection to US 101,
Pacific Way - Dooley Bridge Project

Dear Debra:

I appreciate the comments of concerns and challenges the county was facing with the proposed design to allow no left turns at the subject intersection.

ODOT has reconsidered the project design of the intersection and will move forward with the change allowing both left and right turn movements to US 101 from Lewis and Clark Road, a county road jurisdiction. It will go back to review for adjustment of the design for lane configuration and spacing of the existing road connections. When completed, a draft will be forwarded to Clatsop County for review and comments.

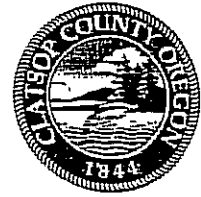
ODOT will continue to monitor the subject location for accident history and access issues in the future. In the event this change requires mitigation, both ODOT and Clatsop County will be involved for redirection and appropriate action.

If you have further questions I can be contacted at (503) 325-7222.

Sincerely,

Michael A. Spaeth
Interim Area 1 Manager

Cc: City of Gearhart
City of Seaside
Nathan Potter
Rick Garrison
Jeff Scheick
Eric Havig



800 Exchange St., Suite 310
Post Office Box 179
Astoria, Oregon 97103

August 13, 2003

Mike Spaeth
Interim Area Manager
Oregon Department of Transportation
350 W. Marine Drive
Astoria, OR 97103

Dear Mr. Spaeth:

The Clatsop County Board of Commissioners respectfully requests the Oregon Department of Transportation reconsider its planned design for the intersection of U.S. Highway 101 and Lewis and Clark Road in the Pacific Way-Dooley Bridge project.

The proposed design would eliminate the ability for traffic on Lewis and Clark Road to turn south onto U.S. 101. Instead, all traffic on Lewis and Clark Road that wants to go south would be forced to use Wahanna Road and 12th Avenue, thereby increasing traffic through on a narrow street through a residential neighborhood and by the busy shopping outlet mall.

As it exists now, the intersection is unsafe for traffic wanting to turn left from Lewis and Clark Road onto U.S. 101. But this proposed redesign does not resolve the problem but creates another safety problem.

Wahanna Road has a 24-foot paved surface and no paved shoulders. The right-of-way is only 30 feet and there is not enough space for paved shoulders or sidewalks. Wahanna Road was not designed for heavy truck traffic.

Traffic on Wahanna Road has more than doubled in recent years, from a daily average of 948 vehicles in 1996 to 2,590 in 2000. Traffic is expected to increase more with the completion of the Lewis and Clark Road improvements. The Clatsop County Transportation System Plan, which has been endorsed by ODOT, identifies Lewis and Clark Road as a north-south truck route. Wahanna Road is also crucial as an alternate route for emergency vehicles going to Providence Seaside Hospital. Forcing even more traffic, especially loaded log trucks, to use Wahanna Road makes no sense.

A couple years ago, ODOT's plans for this project called for a new bridge across the Neawanna River and a four-way, light-controlled intersection at U.S. 101, Lewis and Clark and Holladay Drive. This would be a safer design.

Board of
County Commissioners

Phone (503) 325-1000
Fax (503) 325-8325

The Clatsop County Board of Commissioners and the Clatsop County Public Works Advisory Committee are unanimous in requesting ODOT redesign the intersection to allow traffic to safely turn from Lewis and Clark Road south onto U.S. 101. Implementing this design change would provide an important safety asset to one of Clatsop County's busiest roads.

If this is not feasible, we ask ODOT make improvements to Wahanna from Lewis and Clark Road to 12th Avenue with sidewalks or shared shoulders and to accommodate the weight of heavy truck traffic.

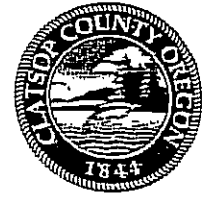
The Board of Commissioners looks forward to receiving your response to these concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Helen Westbrook". The signature is fluid and cursive, with a large, stylized "R" at the end.

Helen Westbrook
Chairperson

Clatsop County



August 13, 2003

Richard Garrison
Project Team Leader
Oregon Department of Transportation
350 W. Marine Drive
Astoria, OR 97103

800 Exchange St., Suite 310
Post Office Box 179
Astoria, Oregon 97103

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Sincerely,

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Helen Westbrook
Chairperson