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Introduction

1.1 Background

Over 25 years ago, in November 1979, the Lincoln County Board of Commissioners adopted the current transportation element of the County Comprehensive Plan, which includes goals (1.0140) and policies (1.0145). Updating this element with a Transportation System Plan (TSP) will allow Lincoln County's Comprehensive Plan to be consistent with changes in regulations and to evaluate future transportation needs.

Lincoln County is now required under Oregon's land use planning program, specifically the Transportation Planning Rule (OAR 660-012), to develop and adopt a TSP. The Transportation Planning Rule (TPR) became Oregon law in 1991, and since then has undergone several amendments. The most major of these amendments have addressed issues of bicycle and pedestrian connections, transportation demand management, transportation improvements on rural lands, and funding of planned transportation improvements.

The TPR requires that local governments adopt land use regulations consistent with state and federal requirements "to protect transportation facilities, corridors, and sites for their identified functions." A TSP considers transportation issues and guides transportation policy choices and system development for the next 20 years. A TSP determines the existing and future transportation needs, and plans for financing roadway, transit, bicycle, pedestrian, air, rail, water, and pipeline facilities. To avoid unnecessary land use actions and delays in developing transportation facilities and services, the TPR requires adoption of ordinances that clearly allow the improvements that have been selected in the TSP.

Work on a new TSP was started 7 years ago in 1999, but the TSP was never completed. That effort included public involvement to identify transportation issues in the county and develop goals and objectives for a TSP.

Lincoln County obtained the services of CH2M HILL and Angelo Eaton & Associates to help the County update and complete the TSP. A cooperative transportation planning effort has involved the public, Lincoln County, the Oregon Department of Transportation, all the cities, and the Confederated Tribes of the Siletz.

1.2 Setting

The project area established for the Lincoln County Transportation Systems Plan (TSP) consists of transportation facilities outside of incorporated cities' urban growth boundaries (UGBs) within the county, including roadway, pedestrian, bicycle, transit, air, rail, water, and pipeline facilities and evacuation routes. The study area is depicted in Figure 1-1.

Figure 1-1 Study Area

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With miles of public beach and scenic coastline, Lincoln County is one of the most popular tourist destinations on the Oregon Coast. There are 20 state parks and waysides, and numerous resorts, motels, and convenient campgrounds to accommodate travelers. In addition, many people who reside elsewhere during most of the year maintain second homes in Lincoln County. In some areas, out-of-county ownership of dwellings is approximately 50 percent. The summer months of July and August are the most popular times to visit, and traffic volume remains high into the early fall months of September and October. Therefore, transportation on the coast is most heavily influenced by the recreational opportunities afforded tourists and seasonal residents.

Many of Lincoln County's cities have distinguishing characteristics that draw visitors to the area and contribute to intercity and regional travel. Lincoln City offers more than 2,000 hotel/motel/bed and breakfast rooms, and resorts as well as the Siletz Tribe's Chinook Winds Casino. Depoe Bay is known as "the whale watching capital of the world." Newport, known as Oregon's oceanography research center, features numerous interpretive centers and the Oregon Coast Aquarium, along with a large fishing fleet and working bay front. Siletz is the home of the Administration Center and reservation of the Confederated Tribes of Siletz Indians of Oregon. Toledo, connected by rail to the valley, is known as Lincoln County's industrial center. Waldport features the Alsea Bay Interpretive Center and excellent crabbing and fishing. Yachats, nestled near Cape Perpetua, is known as the "Gem of the Oregon Coast."

Besides tourism, community economies are based upon fisheries, timber, and gaming. As such, drivers share Lincoln County roads with passenger cars, recreational vehicles, bicycles, travel trailers, tractor trailers, and coaches. Strong north winds encourage bicyclists to travel north to south during the summer on the designated bikeway of US 101 and other bikeways inland. Tour buses make regular trips to the casino in Lincoln City, which is the largest employer in the County. Connecting Lincoln County to the more populated Willamette Valley are two state highways cutting through lush coastal mountains, OR 18 in the north and OR 34 in the south, and a newly straightened US 20 in the middle. US 101 in Oregon is designated as part of the Pacific Coast National Scenic Byway. As such, the US 101 corridor's intrinsic scenic, historic, cultural, recreational, natural, and archaeological resources are managed by state and local agencies toward goals of enhancement, stewardship, awareness, interpretation, and access.

During summer and weekends, traffic safety on US 101 outside of urban areas is heavily influenced by numerous private accesses of residences along the highway. Some of these access points have inadequate sight distance and little opportunity to adjust to safe speeds when leaving or entering the main roadway. State parks generally have had their accesses improved over time with left-turn and acceleration lanes where physically possible; however, waysides generally lack such improvements. State highways are generally two lanes, with occasional passing lanes when geography will allow. Recreational vehicles and travel trailers tend to slow traffic during peak travel periods, which increases passenger vehicle drivers' impatience and willingness to risk a pass maneuver. The tendency of drivers to be distracted by the scenery also contributes to traffic accidents. County rural collectors and arterials intersect the highways at some points and under conditions that are less than ideal for maximum safety.

1.3 Goals and Objectives

The public input from 1999 was used as the starting point for this transportation planning effort, and additional input was invited to prepare the TSP. Three Open Houses to obtain public comment were conducted in 2006. More than 150 individuals from the public and organizations with an interest in transportation issues were mailed invitations to attend. Information was also posted on the County's website. The first Open House was January 25, 2006, and was focused on review and comment of draft goals and objectives and the existing transportation system and facilities.

The suggested language for the goals and objectives is based on a review of local, regional, and state goals and policies. Incorporated are the goals and objectives listed in Section 3.0 of the 1999 draft TSP, where appropriate. Original 1999 draft goals and objectives are indicated by an asterisk (*). The suggested draft goals and objectives have been placed into logical categories based on Transportation Planning Rule requirements:

Goal #1 Mobility

Provide a safe, convenient and economic multimodal transportation system that serves the travel needs of Lincoln County residents, businesses, visitors and freight transport.

Objectives:

1. Provide a network of arterials and collectors that are interconnected, appropriately spaced and reasonably direct.
2. Maintain functional classification standards and criteria.
3. Balance the simultaneous needs to accommodate local traffic and through-travel.
4. Minimize travel distances and vehicle-miles traveled.
5. Move motor vehicles, pedestrians, bicyclists, transit, trucks, and trains to and through the County safely, efficiently, and economically.
6. Develop and adopt design standards for major collectors, minor collectors and arterials describing minimum right-of-way width, pavement, pedestrian service, bicycle travel and other design elements.
7. Recognize and balance freight needs with needs for local circulation, safety and access.
8. Promote rail freight transportation between Toledo and the Willamette Valley.*
9. Balance the need for truck access to industrial and waterfront areas with the desire for minimization of disruptions to urban areas.
10. Improve signage for streets, bicycle and pedestrian ways, and trails as well as directional signs to points of interest.
11. Promote through-movement on US 101.
12. Require developers to bear the entire cost of new development infrastructure for roads, bicycle and pedestrian facilities associated with their development, or impacted by their development.*

13. Investigate high accident locations and locations involving traffic fatalities to determine if road improvements might benefit the safety of travel.*

Goal #2 Livability

Provide a transportation system that balances transportation system needs with the community desire to maintain a pleasant, economically viable county.

Objectives:

1. Minimize adverse social, economic, and environmental impacts created by the transportation system, including balancing the need for road capacity improvements and the need to minimize impacts to existing neighborhoods.
2. Preserve and protect the County's significant natural features and historic sites.
3. Work to develop alternate transportation facilities that will minimize disruption to existing urban areas.
4. Minimize congestion for travelers and goods movements.
5. Ensure that tourist based businesses are allowed sufficient access to the county arterial network to promote tourist spending in Lincoln County.
6. Require developers to provide landscaping along roads and within parking lots.¹

Goal #3 Coordination

Maintain a transportation system plan that is consistent with the goals and objectives of Lincoln County, Lincoln County jurisdictions, and the state.

Objectives:

1. Provide a transportation system that is consistent with other elements and objectives of the Lincoln County Comprehensive Plan.
2. Coordinate land use and transportation decisions to efficiently use public infrastructure investments to:
 - a. Maintain the mobility and safety of the roadway system;
 - b. Foster compact development patterns;
 - c. Encourage the availability and use of transportation alternatives;
 - d. Enhance livability and economic competitiveness.
3. Ensure adequate notification is given to affected agencies prior to meetings and public hearings on transportation planning and development issues.*
4. Establish and maintain zoning standards that will prevent the development of incompatible or hazardous uses around airports.
5. Work to protect airspace corridors and airport approaches.

¹ The 1999 draft TSP included an objective (2.1) that states "Provide incentive to developers to landscape roads and parking lots." The recommendation is to give the County direction through transportation policy to make landscaping a requirement for new development.

6. Support the maintenance and expansion of port and harbor facilities to keep them a viable part of Lincoln County's economy.
7. Support expansion of local boating and shipping activities in the County's cities and ports.
8. Work with the Director of Newport Municipal Airport to develop grant applications to improve airport infrastructure and support establishment of scheduled air service into the area, consistent with the facility's master plan.*
9. Coordinate with utility service providers when planning new roadway or expanding or upgrading existing roadway to explore efficient location of utilities that can be located in the public right-of-way.²

Goal #4 Public Transportation

Provide cost-effective and safe public transportation options and access to alternative transportation modes to county residents.

Objectives:

1. Ensure an appropriate level of county support for public transportation.*
2. Support Lincoln County Transit's efforts to work with ODOT to secure Federal funding for the County Transit System in a regular and on-going basis.*
3. Ensure appropriate lock-up and storage facilities for bicycles at destinations within Lincoln County.*
4. Work to improve the signage and amenities at transit stops and stations.
5. Work with Lincoln County Transit to expand transit service as necessary during summer months of peak travel.
6. Support Lincoln County Transit's coordination efforts with local jurisdictions to meet the transit needs in Lincoln County communities.

Goal #5 Pedestrian and Bicycle Facilities

Provide for an interconnected system of pedestrian and bicycle facilities in Lincoln County to serve residents and recreational users.

Objectives:

1. Continue to implement the County Bicycle Plan to provide needed shoulder width for cycling and pedestrian use in rural areas.*
2. Ensure consistency between county and city plans for bicycle and pedestrian improvements.*
3. Ensure consistency between county standards and city standards for bicycle and pedestrian facilities within urban growth boundaries.*

² The 1999 draft TSP includes a goal (Goal 7) and three stated objectives related to up-grading telecommunication facilities. These objectives are more appropriately located in Lincoln County's public facilities plan(s).

4. Develop bicycle lanes or shoulder bikeways on all arterial streets, major collectors, and minor collectors.
5. Adopt, implement, and maintain appropriate design and construction standards for pedestrian access in new subdivisions, office parks, shopping centers, and public building developments.
6. Ensure adequate pedestrian access on all streets in commercial zones.
7. Use unused rights-of-way for greenbelts, walking trails, or bike paths where appropriate.
8. Improve public access to the waterfront and trails along the waterfront.
9. Establish signage to indicate trail access points and rules.
10. Promote multimodal connections where appropriate.
11. Promote increased bicycle awareness and support safety education and enforcement programs.
12. Support and encourage increased levels of bicycling and walking.
13. Develop safe and convenient pedestrian and bicycle systems that link all land uses, provide connections to transit facilities, and provide access to publicly-owned land intended for general public use, such as the beach or park facilities.
14. Adopt and maintain development standards that support pedestrian and bicycle access to commercial and industrial development, including (but not limited to) direct pathway connections, bicycle parking facilities, and signage where appropriate.

Goal #6 Accessibility

Provide a transportation system that serves the needs of all members of the community.

Objectives:

1. Coordinate with Lincoln County Transit to encourage programs that serve the needs of the transportation disadvantaged.
2. Provide for the transportation disadvantaged by complying with state and federal regulations and cooperating with Lincoln County Transit and other agencies to provide transportation services for the disadvantaged.
3. Upgrade existing transportation facilities and work with public transportation providers to provide services that improve access for all users.

Goal #7 Environment

Provide a transportation system that balances transportation services with the need to protect the environment and significant natural features.

Objectives:

1. Promote a transportation system that encourages energy conservation, in terms of efficiency of the roadway network and the standards developed for road improvements.

2. Encourage use of alternative modes of transportation and encourage development that minimizes reliance on the automobile.
3. Work to balance transportation needs with the preservation of significant natural features and viewsheds.
4. Minimize transportation impacts on wetlands and wildlife habitat and promote the protection of rare and endangered plant and animal species.
5. Help promote the Lincoln County Public Transit system to increase its ridership.*

Goal #8 System Preservation

Work to ensure that development does not preclude the construction of identified future transportation improvements, and that development mitigates the transportation impacts it generates when appropriate.

Objectives:

1. Require developers to aid in the development of the transportation system by dedicating or reserving needed rights-of-way, by constructing half or full street improvements needed to serve new development, and by constructing off-street pedestrian, bicycle and transit facilities when appropriate.
2. Consider transportation impacts when making land use decisions, and consider land use impacts (in terms of land use patterns, densities, and designated uses) when making transportation-related decisions.
3. Ensure that development does not preclude the construction of identified future transportation improvements.
4. Discourage through-traffic and high speeds in residential areas.
5. Maintain bridges as a priority that provide community lifelines, specifically connectivity for commerce and access to hospitals by emergency vehicles.

Goal #9 Capacity

Provide a transportation system that has sufficient capacity to serve the needs of all users.

Objectives:

1. Protect capacity on existing and improved roads to provide acceptable service levels to accommodate anticipated demand.
2. Limit access points on highways and major arterials, and use techniques such as alternative access points when possible to protect existing capacity.
3. Minimize direct access points onto arterial rights-of-way by encouraging common driveways or frontage roads.
4. Update and maintain County access management standards to preserve the safe and efficient operation of roadways, consistent with functional classification.
5. Establish and maintain access spacing standards to protect capacity.

6. Consider acceleration/deceleration lanes and other special turning lanes for capacity maintenance where appropriate.

Goal #10 Transportation Funding

Provide reasonable and effective funding mechanisms for County transportation improvements identified in the Transportation System Plan.

Objectives:

1. Develop a financing program that establishes transportation priorities and identifies funding mechanisms for implementation.
2. Develop and implement a transportation impact fee program to collect funds from new developments to be used for off-site and on-site transportation improvements.
3. Identify funding opportunities for a range of projects, and coordinate with county, state, and federal agencies.

Goal #11 Safety

Provide a transportation system that maintains adequate levels of safety for all users.

Objectives:

1. Undertake, as needed, special traffic studies in problem areas, especially around tourist destination sites, to determine appropriate traffic controls to effectively and safely manage vehicle and pedestrian traffic.
2. Work to improve the safety of rail, bicycle, and pedestrian routes and crossings.
3. Identify safe connections for vehicles, bicycles, and pedestrians across US 101.
4. Coordinate lifeline and tsunami/evacuation routes with local, state, and private entities.

1.4 Transportation System Inventory

1.4.1 Land Use

Lincoln County extends approximately 60 miles north and south on the central Oregon Coast, and between 15 and 25 miles in width to the east into the Coast Range mountain range (Figure 1-1). Lincoln County encompasses 992 square miles and has a population density of 45.4 persons per square mile (2000)³. The largest city and county seat of Lincoln County is Newport, with an estimated 2004 population of 9,760.⁴

Five of the seven cities in Lincoln County are located along the Pacific Ocean. Outside these incorporated cities are areas of development that are committed to non-resource uses. Some of these areas developed along the coastline as recreational and vacation areas while others were centers of resource-based commerce.

³ United States Census, 2000

⁴ Center for Population Research and Census, Portland State University, 2005.

The topography and environmentally sensitive lands within Lincoln County have played a major role in the development and land use of the county, including the transportation system. Lincoln County is a compilation of coastline, river, stream drainages, and mountainous terrain. Table 1-1 illustrates the approximate acreage of generalized zoning designations.

TABLE 1-1
Zoning by Acres for Lincoln County

Zoning	Acres	Percent of Total
Forest	572,000	90%
Urban	18,500	3%
Farm	14,000	2%
Rural	12,000	2%
Other	17,500	3%
Total	634,000	100%

Source: Central Coast Economic Development Alliance, 2005.

Resource lands make up a large portion of Lincoln County. Approximately 90 percent of Lincoln County land is forest land; approximately 3 percent is urbanized land. Federal and State lands comprise approximately 35 percent (234,000 acres) of the total area of 634,000 acres.

Siuslaw National Forest is the largest federal land holding within Lincoln County. In total, the Forest is approximately 632,000 acres, with approximately 172,000 acres (27.2 percent) located in Lincoln County. Within Lincoln County, there are two sections of the Siuslaw National Forest. One section is located south of OR 18 and east of Lincoln City and the second section located in the Coast Range Mountains from south of Toledo to the Lane County line. The Siuslaw National Forest is administered through a Forest Supervisor's Office in Corvallis (Benton County) and two Ranger Districts: Hebo Ranger District and South Zone Ranger District. Within Lincoln County, the Hebo Ranger District administers the section of the Forest east of Lincoln City. Within Lincoln County, the South Zone Ranger District administers the section from south of Toledo to the Lane County line. There are also federal land holdings within Lincoln County administered by the Bureau of Land Management (BLM)⁵.

State land holdings within Lincoln County include land administered by the Oregon Parks and Recreation Department, Oregon Department of State Lands, and the Oregon Department of Forestry. State land holdings include H.B. Van Duzer Forest Wayside along OR 18, and several other state land holdings located along US 101 adjacent to or near the Pacific Ocean, including Gleneden Beach State Wayside, Fogarty Creek State Park, Rocky Creek State Wayside, Beverly Beach State Park, Agate Beach State Wayside, South Beach

⁵ United States Forest Service, Siuslaw National Forest, 2006.

State Park, Ona Beach State Park, Seal Rock State Wayside, Driftwood Beach State Wayside, Governor Patterson Memorial State Park, Beachside State Park, and Yachats State Park.

The northern part of Lincoln County includes the Siletz Indian Reservation. The Confederated Tribes of Siletz is a federally recognized confederation of 27 bands. The Siletz offers numerous services to tribal members, including law enforcement, planning, housing, youth, education, and social service⁶. Termination was imposed on the Siletz by the federal government in 1955, but in 1977, it was the first tribe in Oregon and the second in the United States to be fully restored to federal recognition. The current reservation totals 3,666 acres and includes land within Lincoln City, within and near the city of Siletz, and other lands within Lincoln County, including scattered pieces of timber land primarily east of Siletz in the northeastern portion of Lincoln County. Tribal timber lands are accessed by roads owned and maintained by the Siletz; however, because the tribal timber lands are scattered throughout the northern part of Lincoln County, the non-tribal road system supports tribal timber land activities.

Lincoln County data from the 2000 United States Census indicates that 62 percent of county residents (27,568 people) live inside an urban cluster⁷. The remaining 38 percent of the county's population (16,911 people) live in rural areas. Census data for 2000 also indicate that 28.2 percent (7,593 units) of the 26,925 housing units in Lincoln County are vacant⁸, compared to only 8.2 percent of housing units statewide. Of the 28.2 percent of vacant housing units, 69.5 percent are seasonal, recreational, or occasional use housing units (5,279 units). In addition to these housing units, there are over 4,500 hotel/motel rooms in the county⁹. The high percentage of hotel/rooms and seasonal, recreation, and occasional housing units indicates the importance of the tourism industry to the county and the seasonal impact of tourism to the county's transportation system.

1.4.2 Population

The population of Lincoln County in 2004 was approximately 44,400. A preliminary population estimate for 2005 is 44,405, but this estimate will not be certified until March, 2006. Anecdotal evidence (e.g., water bill addresses) indicates a large portion of homeowners with houses in the unincorporated portions of the county are people that do not live in Lincoln County full-time. These second-home owners are not counted as part of the permanent population.

Listed below are some general demographic characteristics of Lincoln County residents as obtained from the 2000 Census. Where appropriate, these characteristics are compared to the State of Oregon.

⁶ Confederated Tribes of Siletz, 2006.

⁷ Defined by the Census as an area generally consisting of a central place (city) and densely settled census blocks that together have a population of at least 2,500.

⁸ Defined by the Census as a housing unit that is unoccupied or is not the usual place of residence of the person or group of people living in the housing unit at the time of enumeration.

⁹ Central Coast Economic Development Alliance, 2005

- Approximately 90.6 percent of the population identified themselves as Caucasian. This is higher than the state proportion of 86.6 percent. Approximately 3.1 percent identified themselves American Indian or Alaska Native, higher than the state (1.3 percent). This proportion is likely higher because the Siletz Indian Reservation is located within Lincoln County.
- Approximately 19.5 percent of residents were 65 years or older. This is higher than the state's proportion (12.8 percent) and reflects the high proportion of retirees in the county.
- The median household income in 1999 was \$32,769, lower than the state median household income (\$40,916). This data reflects the higher proportion of retirees and tourism-related jobs in the county, which generally pay less than other jobs.
- The average household size was 2.27 persons. The average household size for Oregon was 2.51. Again, this reflects the higher proportion of retirees residing in Lincoln County than the state.
- Approximately 13.9 percent of residents were living below the poverty level in 1999. This is slightly higher than the state's proportion (11.6 percent).
- Approximately 20.8 percent of the adult population holds a college degree or higher; the state's proportion was 25.1 percent.

Population Growth

Between 1990 and 2000, the population of Lincoln County increased 14.3 percent (an average annual growth rate of 1.4 percent); however, between 2000 and 2004, the population of Lincoln County has remained stagnant with a slight decrease in population (Table 1-2). Lincoln County's population has increased at a slower rate since 1990 compared to the State of Oregon. The average annual population increase between 1990 and 2004 was 1.0 percent in Lincoln County. Statewide, the average annual increase during this same period was 1.9 percent.

Approximately 58 percent of Lincoln County's population resides within the seven cities in Lincoln County. The remaining 42 percent reside within the unincorporated areas of the County in 2004, which is slightly lower than the 45 percent that resided outside of cities of the County in 1990. Between 1990 and 2004, the city with the largest percent increase in population was Depoe Bay (42.5 percent). Lincoln City experienced the largest increase in total population between 1990 and 2004 (1,578 people).

TABLE 1-2
Population Data for Lincoln County, 1990/2000/2004

City	1990 Population ¹	2000 Population ¹	2004 Population ²
Newport	8,437	9,532	9,760
Lincoln City	5,892	7,437	7,470
Toledo	3,174	3,472	3,580
Waldport	1,595	2,050	2,060
Siletz	926	1,133	1,130

TABLE 1-2
Population Data for Lincoln County, 1990/2000/2004

City	1990 Population ¹	2000 Population ¹	2004 Population ²
Depoe Bay	870	1,174	1,240
Yachats	533	617	710
Unincorporated Areas	17,462	19,064	18,450
Total Population	38,889	44,479	44,400

Sources: ¹United States 1990 and 2000 Census;

²Center for Population Research and Census, Portland State University, 2005

Traveler Characteristics

The vast majority of travel by the county's population is by passenger vehicle—cars and pick-up trucks. In many locations, peak traffic occurs during the normal morning and evening rush hours, associated with commuter activity. Weekends bring significant numbers of additional passenger and recreational vehicle (RV) travelers from outside the county, especially during the summer months. Recreational travel by bicyclists and pedestrians also peaks during the summer. Transit ridership is fairly steady through all seasons, as it is nearly exclusively used by county residents. Truck traffic is steady as the economy goes. There is no rail passenger service available in the county, although people do sometimes jump-on a freight train to the interior valley. Marine travel is for recreational or commercial purposes; no ferry system exists.

Lincoln County's estimated population in 2005 is approximately 44,000 residents. There are 40,723 driver licenses issued to people with Lincoln County addresses, according to DMV records (June 2005). There are 37,639 regular Class C non-commercial licenses, 1,135 Class A commercial, 566 Class B commercial, and 63 Class C commercial licenses held by Lincoln County residents.

As of November 2005, there were 54,088 registered vehicles in Lincoln County (ODOT, 2005)¹⁰. Of the 19,296 households in Lincoln County, there are 1,390 households (7.2 percent) that have no vehicle available (Table 1-3). The total number of vehicles available to occupied housing units in the county, according to Table 1-3, is approximately 32,000, which, when compared to the 54,088 registered vehicles in Lincoln County and the 40,723 drivers licenses, would indicate many registrations and licenses belong to people without primary residence in the county.

The 2000 United States Census provides some information regarding travel characteristics of Lincoln County workers. The data indicate that:

- The primary mode of transportation to work for those aged 16 years and older was a car truck or van (93.1 percent), of which 82.9 percent drove alone. Approximately 5 percent walked or rode a bike.

¹⁰ Oregon Department of Transportation Fund Apportionments: Registered Vehicles by County. Oregon Department of Transportation. 2005. www.oregon.gov/ODOT/CS/FS/docs/HwyRev_apport/countyreg_fy06.pdf

- For workers aged 16 years and older that did not work at home, 46.7 percent have a commute of less than 15 minutes; 78.3 percent have a commute of less than 30 minutes; 6.6 percent have a commute of more than 60 minutes. The mean is 20.5 minutes.
- For workers aged 16 years and older that did not work at home, 19.7 percent left home between 7:30 AM and 7:59 AM; 12.5 percent left home between 8:00 AM and 8:29 AM. Combined, nearly one-third of all commute trips to work occur between 7:30 and 8:30 AM.
- Of all occupied housing units in the county, 92.8 percent had at least one vehicle (Table 1-3). This is slightly higher than the proportion of occupied households statewide with at least one vehicle (92.5 percent).
- There is an average of 1.65 vehicles per occupied housing unit in Lincoln County. Statewide, there is an average of 1.81 vehicles per occupied housing unit.

TABLE 1-3
Vehicle Availability by Occupied Housing Unit, 2000

Number of Vehicles Available	Number of Occupied Housing Units
No Vehicle Available	1,390
1 Vehicle Available	7,606
2 Vehicles Available	7,518
3 Vehicles Available	2,176
4 Vehicles Available	497
5 or more Vehicles Available	109

Sources: ¹United States 2000 Census

1.4.3 Employment

With approximately 35 percent of Lincoln County’s land base in Federal and State forest land ownership, public timber policies have had a dramatic impact on the county’s economy. Federal timber harvest policy changes in the mid 1990’s deepened an economic recession and eliminated several primary employers in Lincoln County. Due to this decline in timber harvesting employment, the county has increasingly become more reliant on tourism and service-oriented employment. However, Lincoln County is projected to begin harvesting timber at an increased rate over the next 10 to 20 years as replanted trees mature, which will likely reinvigorate timber-related employment¹¹.

According to the Central Coast Economic Development Alliance, Lincoln County has the highest proportion of tourism employment to total employment in Oregon. Total direct impact of the visitor industry to Lincoln County represents an estimated 6,050 direct jobs. Other elements in the economic base of the county are fishing and seafood processing, forest

¹¹ *Projections of Timber Harvest in Western Oregon and Washington by County, Owner, Forest Type, and Age Class*. United States Department of Agriculture, United States Forest Service. 2005. www.fs.fed.us/pnw/pubs/pnw_gtr633.pdf

products, forest management, ocean research, and manufacturing. Lincoln County has a higher proportion of people in the service industry (22.0 percent) than Oregon (15.2 percent) (Table 1-4).

TABLE 1-4
Lincoln County Occupation, 2000

Occupation	Lincoln County	State of Oregon
Management/Professional	27.3%	33.1%
Service	22.0%	15.3%
Sales/Office	27.5%	26.1%
Resource Industries	2.9%	1.7%
Construction/Maintenance	10.4%	9.1%
Production/Transportation	9.9%	14.7%

Source: United States Census Bureau, 2000

The largest employers in Lincoln County are the following, followed by the approximate number of employees in parentheses: Confederated Tribes of Siletz (915); Lincoln County School District (615); Samaritan Health Services (575); Georgia-Pacific (500); Lincoln County (385); Oregon State University-Hatfield Marine Science Center Campus (295); and Salishan Spa and Golf Resort (215). Lincoln County's average wage (\$26,015) (2003) was 73 percent of the state's average wage¹². The lower level of earnings in Lincoln County, is likely driven by the higher percentage of retirees than statewide and the higher proportion of people employed in the service industry.

Lincoln County has one of the largest enterprise zones in the state under a program administered by Oregon Economic and Community Development Department. The zone originally included Newport, Waldport, and beyond Toledo, extending in a triangle east to Eddyville. It was expanded in May 2004, creating a diamond-like shape with the addition of Siletz, Depoe Bay, and Lincoln City. Within it, companies engaged in eligible business activities (as defined by each city) on appropriately zoned properties can apply for a tax break if they move in or add facilities. Companies can receive a tax exemption for 3-5 years under the enterprise zone program. The exemption enables companies to not pay property taxes on new buildings or structures, additions to existing ones, and certain personal property.

In 2003, The Oregon Legislature passed a 1 percent lodging tax to promote tourism. This tax has dramatically increased spending on marketing and has led to more collaborative marketing between the state and local areas to promote industry. Because Lincoln County's economic base is dependent on tourism, this tax may boost tourism to Lincoln County, and therefore affect the capacity and mobility of the county's transportation infrastructure.

¹² *Comprehensive Development Strategy and Regional Investment Strategy*, Oregon Cascades West Councils of Government, 2005.

Employment Growth

Between 1993 and 2003, there was a 6 percent increase in total employment in Lincoln County (Table 1-5). Statewide, total employment increased by 15 percent between 1993 and 2003. Employment growth was less than population growth (11 percent) in Lincoln County between 1993 and 2003.

TABLE 1-5
Employment Growth, 1993-2003

Year	1993	1995	1997	1999	2001	2003	1993-2003 % Change
Total Employment	18,960	19,560	19,670	19,408	19,801	20,192	6%

Source: Office of Economic Development, State of Oregon, 2005

1.4.4 Future Development

Oregon statewide land use planning laws generally discourage development outside defined urban growth boundaries; however, there are areas within Lincoln County with existing zoning and vacant lots/parcels that could develop within the next 20 years. These areas are small rural communities that were established prior to Oregon's land use planning laws. Under Lincoln County's Comprehensive Plan, these unincorporated communities were identified as "exception areas" and are designated as Rural Community Centers, Rural Service Centers, or Rural Residential zones.

Rural Unincorporated Communities and Rural Service Centers

OAR 660-22-010(6) defines a Rural Community as an unincorporated community which consists primarily of residential uses but also has at least two other land uses that provide commercial, industrial, or public uses to the community, the surrounding rural area, or persons traveling through the area. Within Lincoln County, there are 10 communities (see Figure 1-1) that meet the criteria for classification as Rural Communities:

Beverly Beach

Beverly Beach is situated approximately two miles north of the City of Newport, east of US 101. The community covers an area of approximately 260 acres and includes Beverly Beach State Park, developed residential neighborhoods, and commercial uses. Beverly Beach is a fully functioning Rural Community with residential, local-commercial and public uses.

Eddyville

The community of Eddyville is situated approximately 14 miles east of Toledo, along Highway 20 at its intersection with Nashville Road. It encompasses land area surrounding the confluence of the Yaquina River and Little Elk Creek. The community covers an area of approximately 110 acres.

Elk City

Elk City is situated at the confluence of the Yaquina River and Big Elk Creek, at the intersection of Harlan Road (County Road #538) and Elk City Road (County Rd. #533). The community is approximately 11 acres.

Kernville

Kernville is situated on the north bank of the Siletz River at the intersection of Highway 229 and US 101, and is approximately 28 acres.

Otter Rock

Otter Rock is approximately 5 miles north of the City of Newport. This community is situated between US 101 and the ocean on the south side of Cape Foulweather and is approximately 302 acres.

Rose Lodge

Rose Lodge is situated approximately 1.5 miles east of the intersection of US 101 and OR 18 and extends east approximately 4 miles. The community is approximately 981 acres and includes residential lots and parcels, public parks and commercial uses.

Seal Rock

Seal Rock is situated approximately 10 miles south of Newport, encompasses area on both the east and west sides of US 101, and is approximately 223 acres.

San Marine

San Marine is situated approximately 3 miles north of the City of Yachats, east of US 101, and is approximately 168 acres.

Starr Creek

Starr Creek is situated immediately north of the City of Yachats UGB, encompassing area on both the east and west sides of US 101, and is approximately 148 acres.

Tidewater

Tidewater is situated approximately ten miles east of Waldport, adjacent to and near the head of tide of the Alsea River, and is approximately 42 acres. OAR 660-22-010(7) defines a Rural Service Center as an unincorporated community consisting primarily of commercial and industrial uses providing goods and services to the surrounding rural area or to persons traveling the area, but also includes some dwellings.

There is one Rural Service Center:

Harlan

Harlan, approximately 52 acres in size, is situated at the intersection of Harlan-Burnt Woods Road (County Road #547) Harlan Road (County Road #538) and Mary's Peak Road (County Road 618) in the eastern part of the county. These unincorporated areas (10 Rural Communities and one Rural Service Center) were identified by Lincoln County staff as areas where growth and development would be expected in the next 20 years. Table 1-6 shows the zoning, size, number of developed lots, and number of vacant lots as of 2004. However, calculations and forecasts of developable lots do not consider ownership histories (specifically, pre-1979) that might influence development potential under Measure 37 provisions. The County recently has granted at least six Measure 37 claims on rural-residential, agriculture-conservation, and timber-conservation zone properties, and 34 claims had been filed with the County as of February 2006. In addition to the above areas, residential development will occur in the Lincoln Beach-Gleneden Beach area south of Lincoln City. This area is located along US 101 approximately two miles north of Depoe Bay and three miles south of Lincoln City. The area stretches from the south end of Siletz Bay

south to Fogarty Creek, including lands both east and west of US 101, encompassing an area of approximately 1,500 acres.

This area is a Goal 14 (Urbanization) exception area with some fairly large scale residential and commercial development and includes Salishan Spa and Golf Resort. As of 2002, there were over 2,157 dwelling units currently existing within the community. There are 671 existing undeveloped lots, with the potential for the creation of approximately 840 additional lots/parcels within the community boundary (Table 1-6). Additional urban development is expected in the Lincoln Beach-Gleneden Beach area.

A summary of the zoning designations, area, number of developed lots, and number of developable lots for Rural Unincorporated Communities and the one Rural Service Center (Harlan) is illustrated in Table 1-6.

TABLE 1-6
Lincoln County Rural Unincorporated Communities' Development¹ Potential

Site	Zoning Designations*	Area (Acres)	Developed Lots (2004)	Developable Lots (2004)
Beverly Beach	R-1, P-F, C-1	260	107	60
Eddyville	R-1, I-P	110	14	10
Elk City	R-1, C-1, P-F	11	9	53
Kernville	R-1, M-P	28	21	9
Otter Rock	R-1, P-F, C-1	302	140	297
Rose Lodge	R-1, P-F, C-1	981	729	338
Seal Rock	R-1, P-F, C-T, C-2	223	236	515
San Marine	R-1, I-P	168	195	388
Starr Creek	R-1, R-4	148	213	159
Tidewater	R-1, C-1	42	56	32
Harlan	R-1, I-P	52	5	2
Lincoln Beach-Gleneden Beach	R-1, R-1 PD, R-1A, R-4, C-1, C-T P-F	1,510	1,486	1,511
Total	- - -	3,835	3,211	3,374

*Lincoln County Zoning Designations – Rural Commercial (RC), Residential (R-1, R-1A, R-4), Residential Planned Development (R-1 PD) Retail Commercial (C-1), General Commercial (C-2), Tourist Commercial (C-T), Public Facilities (P-F), Planned Marine (M-P), and Planned Industrial (I-P).

Developable lots are vacant or result from potential subdivision regardless of possible physical limitations (e.g., septic requirements).

Source: Lincoln County Planning Department, 2005

Rural Residential Exception Areas

Rural Residential Exception Areas were identified as part of the development of the Lincoln County Comprehensive Plan. These areas met the following criteria:

“...areas where the nature and extent of existing development is rural, and where there is additional opportunity under current zoning for the creation of new lots or parcels at rural densities. These areas are currently zoned rural residential and new lots or parcels created will be in the two to five acre range. The build out analysis for these areas will focus on the number of additional parcels which can be created and the degree to which these new lot creations could alter existing rural land use patterns” (Lincoln County Comprehensive Plan, 2002).

Typically, these areas are located along the US 101 corridor, and in pockets inland in the county’s major river valleys. In the next 20 years, these areas would be expected to grow at a rate similar to the county’s forecasted growth rate.

An assessment of each identified rural residential exception area in the County was performed by Lincoln County in 2002 in relation to the following factors:

- Proximity to an urban growth boundary (UGB);
- Availability of public sewer and water;
- Existing land uses;
- Number and size of existing vacant residential lots and parcels;
- The number of potential additional lots and parcels, based on existing zoning;
- Development constraints (e.g., floodplain, wetlands, geologic hazards, etc).

Identification of the potential for new lot creation made no determinations as to specific lots of the ability to provide water, sewage disposal, utilities, or access. Additional lots are not reflective of existing subdivisions or physical limitations on development. Based on these factors, each rural residential exception area was classified into one of three categories. These factors were created to provide a framework for grouping the exception areas based on existing and potential future development patterns and based on factors deemed to be relevant to the applicability of Goal 14 (urbanization) requirements. The categories and descriptions are:

Category 1

Areas where the nature and extent of current development is rural and where minimal, if any, additional residential lots or parcels could be created under existing zoning. Typically, additional development in these areas would be limited to infill on existing lots and parcels.

Category 2

Areas where the nature and extent of existing development is rural, and where there is additional opportunity under current zoning for the creation of new lots or parcels at rural densities. These areas are currently zoned rural residential and new lots or parcels created would be in the two to five acre range.

Category 3

Areas where existing lots and parcels have been created at greater than rural densities, but where minimal, if any, potential exists for the creation of additional lots or parcels. Typically these areas are partly to mostly built out; additional development is limited to infill on

existing lots or parcels. Although existing development in these areas exceeds rural densities, few, if any, new land divisions will occur¹³.

The rural residential exception areas that were classified as Category 2 areas (areas where there is additional opportunity under current zoning for the creation of new lots or parcels) are listed below. The assigned site number refers to the identification numbers on Figure 1-2 (e.g., Site 2 is identification number 2 on Figure 1-2). Under existing zoning, the potential number of additional lots (as of 2002) is identified in parentheses. The description of each site includes the general location, zoning designation, existing land use, and number of vacant parcels. All sites could potentially be accessed by publicly owned and maintained roadways, although there are a few sites where access may be provided by a Special Road District.

Site 1 (15 Lots)

The area north and south of Highway 18 and the Salmon River, zoned RR-5. This site is partially developed of rural residential use. There are 10 vacant parcels in this site. Under RR-5 zoning, there is the potential for creating 15 new lots. Publicly owned and maintained roads provide access to this site.

Site 2 (10 Lots)

The area east of US 101 between Beverly Beach and Carmel Knoll, zoned RR1-2. This area is sparsely developed in rural residential use. There are six vacant parcels ranging in size from 0.42 acres to approximately 26 acres. Under RR1-2 zoning, there is the potential for creating 10 additional lots. From US 101, publicly owned and maintained roads provide access to this site.

Site 3 (16 Lots)

The area along US 101 from Carmel Knoll to the northern boundary of the Newport UGB, zoned RR1-2. This site is predominately rural residential uses. There are 29 vacant residential parcels zoned RR1-2 that range in size from 0.09 to 18 acres. Under RR1-2 zoning, there is the potential for creating 16 additional lots. From US 101, publicly owned and maintained roads provide access to this site.

Site 4 (35 Lots)

The area east of Siletz, along Logsdan Road, zoned RR-5. This site is developed as rural residential. There are 18 vacant parcels ranging in approximate size from 0.50 to 52 acres. Under RR-5 zoning, there is the potential for creating 15 additional lots. Publicly owned and maintained roads provide access to this site.

Site 5 (35 Lots)

The Newport Heights area, east of the Newport UGB, zoned RR1-2. This site is primarily in rural residential use. There are 18 vacant residential parcels ranging in size from 0.23 to approximately 23 acres. Under RR1-2 zoning, there is the potential for the creation of 35 new lots. Publicly owned and maintained roads provide access to this site.

¹³ Lincoln County, *Goal 14 Curry County Analysis and Findings*, 2002.

Figure 1-2

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Site 6 (24 Lots)

The Old Highway 20 area east of Newport, near Benson Road, zoned RR1-2. This site is in rural residential use. Of the 90 vacant residential parcels, most are small subdivision lots. Under RR1-2 zoning, there is the potential for creating 24 additional lots. From US 20, publicly owned and maintained roads provide access to this site.

Site 7 (44 Lots)

The Yaquina Bay Road area, east of Sally's Bend Road, south of Newport, zoned RR1-2. This site is in rural residential use, with a few marine related facilities. There are 25 vacant RR1-2 zoned parcels ranging in size from approximately 0.25 to approximately 20 acres. Under RR1-2 zoning, there is the potential for creating 44 additional lots. Publicly owned and maintained roads provide access to this site.

Site 8 (13 Lots)

The Yaquina Bay Road area in the vicinity of Parker Slough, south of Newport, zoned RR1-2. This site is predominantly in rural residential use with a few marine related facilities. There are two vacant parcels. Under RR1-2 zoning, there is the potential for creating 13 additional lots. Publicly owned and maintained roads provide access to this site.

Site 9 (14 Lots)

The area southeast of Newport Municipal Airport zoned RR-5. This site is predominantly in rural residential use. There are four vacant residential parcels ranging in size from 4.96 acres to 23 acres. Under RR-5 zoning, there is the potential for creating 14 additional lots. From US 101, publicly owned and maintained roads, including a Special Roads District (For Far), would provide access to this site.

Site 10 (22 Lots)

The area between Lost Creek and the Wandamere area, south of Newport, zoned RR1-2. There is one vacant parcel 56 acres in size. Under RR1-2 zoning, there is the potential for creating 22 additional lots. From US 101, publicly owned and maintained roads would provide access to this site.

Site 11 (22 Lots)

The Wandamere area south of Newport zoned RR1-2. This is a developed residential area. There are 20 vacant residential parcels under one acre in size, except one parcel which is approximately 11 acres. Under R-1 zoning, there is the potential for creating 22 additional lots. From US 101, publicly owned and maintained roads provide access to this site.

Site 12 (25 Lots)

The area north of Toledo, north of Highway 20, zoned RR-5. This site is comprised of rural residential uses, along with a public golf course and associated single-family housing. There are 23 vacant residential parcels ranging in approximate size from one acre to 21 acres. Under RR-5 zoning, there is the potential for creating 25 additional lots. From US 20, publicly owned and maintained roads would provide access to this site.

Site 13 (15 Lots)

The area north of City of Toledo UGB from Toledo High School to Pioneer Loop Road, zoned RR-5. This site is predominately rural residential uses. There are 28 vacant residential parcels ranging in approximate size from under one to 20 acres. Under the RR-5 zoning,

there is the potential for creating 15 additional lots. From US 20 and Business US 20, publicly owned and maintained roads provide access to this site.

Site 14 (8 Lots)

The Chitwood area, west of Toledo, zoned R-1. This site is developed as residential. There are 2 vacant residential parcels. Under R-1 zoning, there is the potential for creating 8 additional lots. From US 20, publicly owned and maintained roads provide access to this site.

Site 15 (39 Lots)

The RR1-2 zoned area north and south of Makai, south of Newport, zoned RR1-2. This is a developed historical rural residential area. There 7 vacant residential parcels within this site ranging in size from one to 42 acres. Under RR1-2 zoning, there is the potential for creating 39 additional lots. From US 101, publicly owned and maintained roads, including a Special Road District (Makai Road District), would provide access to this site.

Site 16 (46 Lots)

The area east and south of the Seal Rock Rural Community, zoned RR1-2. Within this site are rural residential land uses. There are 17 vacant RR1-2 parcels ranging in size from one acre to approximately 34 acres. Under RR1-2 zoning, there is the potential for creating 46 additional lots. From US 101, publicly owned and maintained roads provide access to this site.

Site 17 (46 Lots)

The residential area between Seal Rock and Sandpiper Village, east and west of US 101, zoned RR1-2. Within this site are predominately rural residential uses. There are 82 vacant parcels, ranging in size from under one acre to over 14 acres. Under RR1-2 zoning, there is the potential for creating 46 additional lots. From US 101, publicly owned and maintained roads provide access to this site.

Site 18 (17 Lots)

The area south of Waldport UGB, adjacent to Eckman Slough, zoned RR1-2. This site is mainly rural residential, but some lot sizes approximate urban density. There are three vacant RR1-2 parcels approximately six acres in size. Under RR1-2 zoning, there is the potential for creating 17 additional lots. From OR 34, publicly owned and maintained roads provide access to this site.

Site 19 (91 Lots)

The area south of Waldport UGB, zoned RR1-2. There are 122 vacant residential parcels within this site, ranging in size from under one acre to over 12 acres. Under RR1-2 zoning, there is the potential for creating 91 additional lots. From US 101, publicly owned and maintained roads provide access to this site.

Site 20 (34 Lots)

The Big Creek area south of Waldport, zoned RR1-2. This area approximately 30 percent developed with rural residences. There are 87 existing parcels within this area; 28 of these are developed with residences, and 59 are vacant, ranging in approximate size from under one acre to over six acres in size. Under the existing zoning, there is the potential for creating 34 additional two-acre lots. From US 101, publicly owned and maintained roads provide access to this site.

Urban Growth Boundary Expansions

The seven cities in Lincoln County were contacted to determine any planned or anticipated urban growth boundary (UGB) expansions. In brief, Siletz, Toledo, Depoe Bay, and Yachats do not foresee expansion of their UGBs during the 20-year planning horizon. Lincoln City is currently evaluating UGB expansion, and recommendations are expected in late spring or early summer of 2006. Newport expects expansion of its UGB in the South Beach area. Waldport also expects to expand its UGB to the south. For additional details about future development with UGBs and discussion of urban growth management agreements between the Cities and the County, see Chapter 4.

1.4.5 Roadway Inventory

Functional Classification

The Oregon Department of Transportation (ODOT) has identified the functional classification of roadways within Lincoln County (Figure 1-3). The proper classification of each roadway is important to help determine appropriate traffic control, design standards, pedestrian and bicycle facilities, and access to adjacent properties for a roadway segment.

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. Within Lincoln County, there are three ODOT designated principal arterials (US 101, US 20, and OR 18) and one minor arterial (OR 34).

US 101 (Oregon Coast Highway) is a major north-south highway which is designated as a rural principal arterial for the majority of its length in Lincoln County. Segments that are designated as an urban principal arterial occur only within the cities of Lincoln City (MP 110.82 to MP 118.71), and Newport (MP 136.53 to 142.51, 143.35 to 143.42, 145.66 to 146.27, and 146.34 to 146.46). This roadway is part of the National Highway System.

US 20 (Corvallis-Newport Highway) is designated a rural principal arterial within Lincoln County, except for the $\frac{3}{4}$ mile segment (MP 0.00 to 0.76) at its beginning in Newport, where it is categorized as an urban principal arterial. This roadway is part of the National Highway System.

OR 18 (Salmon River Highway) is designated as a rural principal arterial for its entire length in Lincoln County and is part of the National Highway System.

OR 34 (Alsea Highway) is a rural minor arterial within Lincoln County. This roadway is not considered to be part of the National Highway System.

Collector Roadways

The function of a collector roadway is to collect traffic from local streets and provide connections to arterial roadways. Generally, collectors operate with moderate speeds and provide more access in comparison to arterials. Within Lincoln County, OR 180 (Eddyville-Blodgett Highway) and OR 229 (Siletz Highway) are designated by ODOT as rural major collectors. The roadways are not part of the National Highway System.

Figure 1-3 Functional Classifications

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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. Roadways not mentioned above are local roads under local jurisdiction or unidentified/unconfirmed roads.

The functional classification of State Highways in Lincoln County is presented in Table 1-7 below.

TABLE 1-7
Functional Classification of State Highways in Lincoln County

Roadway	Oregon Highway Name and Number	Functional Classification	National Highway System
US 101	Oregon Coast Highway (No. 9)	Principal Arterial (Urban and Rural)	Yes
OR 18	Salmon River Highway (No. 39)	Principal Arterial (Rural)	Yes
US 20	Corvallis-Newport Highway (No. 33)	Principal Arterial (Rural)	Yes
OR 34	Alsea Highway (No. 27)	Minor Arterial (Rural)	No
OR 180	Eddyville-Blodgett Highway (No. 180)	Major Collector (Rural)	No
OR 229	Siletz Highway (No. 181)	Major Collector (Rural)	No

Source: Oregon Department of Transportation website, current as of June 2005.

Other major roadways not under ODOT jurisdiction occur within Lincoln County. Functional classification of these roadways is listed below.

Minor Arterials

- Bay Blvd 14th Street/Devils Lake Road

Urban Collectors/Rural Major Collectors

- Old Scenic Highway 101
- North Bank Road
- Thorpe Road
- East Devils Lake Road
- Schooner Creek Road/ Anderson Creek Road/ Drift Creek Road
- Logsdan Road
- Sams Creek Road
- Olalla Road
- Yaquina Bay Road
- Elk City Road
- Sturdevant Road
- Harlan-Burnt Woods Road
- North/South Beaver Creek Road
- Yachats River Road (west of North Fork Yachats Rd)
- Five Rivers Road

Minor Collectors

- Moonshine Park Road
- Skyline Drive
- Harlan Road/Feagles Creek Road/Fall Creek Road
- Beaver Creek Road
- Bayview Road
- Yachats River Road (east of North Fork Yachats Rd)

Special Road Districts

Lincoln County has 22 Special Road Districts; 21 of the 22 are currently active. The districts are governed by an elected or County Commission-appointed three-member board of directors, who are responsible for local road maintenance and improvements. The general locations of the 22 road districts are listed below; the number in parenthesis after the road district name refers to the road district identification number on Figure 1-4:

- Bayshore (1) - The Bayshore Drive area north of Waldport, north of Alsea Bay, west of US 101.
- Bear Valley (2) - The Bear Creek Road area, south of OR 18, east of Otis.
- Belle Mer Sigl Tracts (3) - The Ocean View Street area immediately south of Coronado Shores and north of Lincoln Beach, west of US 101.
- Boulder Creek (4) - The Boulder Creek Drive area, south of OR 18, east of Otis.
- California Street (5) - The California Street area south of Waldport, north of Yachats along US 101 in the San Marine area.
- Coronado Shores (6) - The Coronado Shores area, south of Salishan and Gleneden Beach State Wayside, southwest of Siletz Bay State Airport, and west of US 101.
- For Far (7) - The 116th Street and 118th Street area, south of South Beach, east of Lost Creek State Wayside and US 101.
- Gleneden Beach (8) - The Gleneden Beach area, south Lincoln City and Salishan, north of Gleneden Beach State Wayside, west of the Siletz Bay State Airport and US 101.
- Idaho Point (9) - The SE 35th Street area, east of South Beach, at Idaho Point on Yaquina Bay.
- Lake Point (10) - The Johns Avenue area east of West Devils Lake Road, immediately north of Devils Lake, southeast of US 101.
- Little Switzerland (11) - Along Little Switzerland Road, north of the Alsea River, south of OR 34 in Tidewater.
- Lost Creek Park (12) - The 123rd Street area south of South Beach, immediately north of Lost Creek, east of Lost Creek State Wayside and US 101.
- Makai (13) - The Estate Drive area east of Ona Beach State Park and US 101, south of Newport.

Figure 1-4

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- Miroco (14) – The Miroco Road area, south of Depoe Bay, south of Rocky Creek State Park, west of US 101.
- Pacific Shores (15) – The Abalone Street and Marine View Street area west of the Newport Municipal Airport and US 101, south of Newport.
- Panther Creek (16) – The Panther Creek area at Otis, north of North Bank Road and OR 18.
- Salmon River Park (17) – The Otis area south of North Bank Road and north of OR 18.
- Sandpiper Village (18) – The Sandpiper Drive area north of Alsea Bay and Waldport, west of US 101.
- Starr Creek (19) – The Starr Creek Drive area, north of Yachats, immediately north of Starr Creek, east of US 101.
- Surfland (20) – The Surfland Street area west of Newport Municipal Airport and US 101, south of Newport.
- Westwood Village (21) – The area east of Waldport, west of Tidewater, south of OR 34, on the north bank of the Alsea River.
- Windy Bend (22) (inactive) – Along the Siletz River and OR 229, south of Lincoln City, east of US 101.

Pavement Type and Condition

Within Lincoln County, most of the ODOT maintained roadway segments have asphalt concrete surfacing. OR 34 has a segment that is chip sealed, with another segment that is surfaced with polymer modified asphalt concrete. Figure 1-5 shows the current pavement conditions in Lincoln County.

Pavement conditions for roads under the jurisdiction of ODOT were obtained from the ODOT website (current as of June 2005). The pavement condition of US 101 is generally good or very good within Lincoln County, with spots of fair conditions in more urban areas such as Newport. US 101 within Lincoln City is categorized as having poor to fair conditions.

Lincoln County has 330 miles of roadway to maintain, of which 208 miles are paved. Over 90 percent of these paved roads are in good or very good condition, with continued plans to maintain this cycle. Some of the roadways in fair condition include the northern most segment of Moonshine Road, a segment of Logsdon Road just east of Siletz, the southern portion of East Devils Lake Road, and Yaquina Heights Drive in Newport.

Figure 1-5 Pavement Conditions

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Travel Lanes, Speed Limits, and Highway Classifications

A majority of roads within Lincoln County allow two-way traffic with one lane in each direction. Table 1-8 presents highway classifications designated by the Oregon Highway Plan and its Amendments below.

TABLE 1-8
Oregon Highway Plan Classification of Major Roadways in Lincoln County

Milepost		OHP Highway Classification	STA	NHS	Freight Route	Scenic Byway
From	To					
US 101 (Oregon Coast Highway Number 9)						
102.80	117.71	Statewide	-	NHS	-	Scenic Byway
117.71	118.05	Statewide	STA	NHS	-	Scenic Byway
118.05	127.31	Statewide	-	NHS	-	Scenic Byway
127.31	127.58	Statewide	STA	NHS	Freight Route	Scenic Byway
127.58	155.90	Statewide	-	NHS	-	Scenic Byway
155.90	156.18	Statewide	STA	NHS	-	Scenic Byway
OR 18 (Salmon River Highway Number 39)						
-0.22	10.26	Statewide	-	NHS	Freight Route	-
US 20 (Corvallis – Newport Highway Number 33)						
0.00	34.35	Statewide	-	NHS	Freight Route	-
OR 34 (Asea Highway Number 27)						
0.00	0.16	District	STA	-	-	-
0.16	27.52	District	-	-	-	-
OR 180 (Eddyville – Blodgett Highway Number 180)						
0.00	19.18	District	-	-	-	-
OR 229 (Siletz Highway Number 181)						
-0.21	31.24	District	-	-	-	-

Source: Oregon Highway Plan 1999.
STA: Special Transportation Area
NHS: National Highway System

US 101 is a major north-south highway which is designated as a rural principal arterial for the majority of its length in Lincoln County. This roadway varies from a two-lane, undivided roadway with a posted speed of up to 55 mph in its more rural areas to a four-lane, painted median-divided roadway in its more urban locations. Under these urban settings, the posted speed may be as low as 25 mph, and may include at-grade intersections with turn pockets and narrower paved shoulder widths. Guardrail is provided along the majority of US 101.

In addition, US 101 is classified by ODOT as a scenic byway within Lincoln County in the adopted 1999 Oregon Highway Plan (OHP). US 101 is also recognized as a National Scenic Byway by FHWA, and transportation projects in the byway should consider the management plan adopted by the Oregon Transportation Commission. Developed with significant public and local agency involvement, the *Pacific Coast Scenic Byway Corridor Management Plan for US 101 in Oregon* (December 1997) provides:

- Guidance for ODOT in maintaining and enhancing US 101 and its right-of-way as a scenic byway; and
- Describes how various responsible agencies, jurisdictions, and individuals will endeavor to protect, maintain, and enhance the features in the vicinity of US 101 that are identified in the plan as defining or contributing to the experience of traveling the scenic byway.

The corridor management plan identifies 30 defining and 18 contributing features with intrinsic qualities in Lincoln County, some of which are in cities. Defining features include Cascade Head, Salmon River Estuary, Devil's Lake, Siletz Bay, Fogarty Creek State Park, Devil's Lake State Park, historic Church Barn, Yaquina Head Outstanding Natural Area, several more parks and waysides, historic bridges, the Oregon Coast Aquarium, Alsea Bay Interpretive Center, special areas such as Yachats and the 804 Trail North, and Cape Perpetua. Contributing features include Salishan Resort, Mossy Creek Pottery Gallery, Spanish Head views, North Lincoln County Historical Museum, Whale Cove, the forested corridor, Beaver Creek Marsh, OSU Hatfield Marine Science Center, Burrows House Museum, and numerous recreation sites and parks. These features demonstrate intrinsic qualities (scenic, historic, natural, archaeological, recreational, and cultural) that make the identified features in the county near US 101 rewarding places to visit, explore, and learn about. The corridor management plan also provides management goals, including objectives, strategies, and implementation steps, for each of the defining and contributing features.

OR 18 is an east-west principal arterial that provides access between Lincoln City and the Salem area. This is generally a two-lane, undivided roadway with 12 foot lanes and paved shoulders, although there are segments where a center turn lane or passing lane is present.

There are no sidewalks or pedestrian amenities on this road, which is surrounded on either side by open ditch or vegetation. Access to this roadway is provided by at grade driveways.

US 20 is an east-west principal arterial that provides access between Newport and Corvallis. This roadway is similar to OR 18 in that it is generally a two-lane, undivided roadway with 12 foot lanes and paved shoulders, although there are segments where the roadway widens to four lanes. There are no sidewalks or pedestrian amenities on this road, which is lined on either side by open ditch, vegetation, or guardrail.

OR 34 is an east-west minor arterial that provides access between Waldport and the Corvallis area. This two-lane undivided roadway has lane widths of mainly 10 or 11 feet, paved shoulders, and no pedestrian amenities. The road is lined with open ditch or guardrail on either side.

OR 180 is a two-lane undivided urban collector roadway with lane widths of mainly 10 to 11 feet that runs east-west along the Portland & Western Railroad line. OR 180 intersects

with US 20 at both its endpoints (in Eddyville and Blodgett). Similar to OR 34, there are paved shoulders but no pedestrian amenities. The roadway is lined on either side with vegetation or guardrail.

OR 229 is a two-lane undivided urban collector roadway with lane widths of mainly 10 to 12 feet that runs north-south between Toledo (at US 20) and Kernville (at US 101). Paved shoulders are present on some segments of the road, but no pedestrian facilities are provided. The roadway is lined on either side with vegetation or guardrail.

1.4.6 Intersections

Figure 1-6 shows locations of county rural major collector intersections with US 101, US 20, Oregon 18, Otter Crest Loop (Old US 101), and Oregon 229. These intersections were identified as having potential safety problems due to geometry. These intersections are outside city urban growth boundaries, except for Yachats River Road. (This intersection is included, even though it is within the Yachats city limits, because it provides access to a large area of rural residences and resource lands upriver from Yachats, including the Siuslaw National Forest.) The intersections shown on Figure 1-4 are:

- US 101 and Salishan Drive
- US 101 and Drift Creek Road
- US 101 and Siletz Highway
- US 101 and Immonen Road
- US 101 and Gleneden Beach Loop North
- US 101 and Lancer Street
- US 101 and Willow Drive
- US 101 and Otter Crest Loop North
- US 101 and Otter Crest Loop South
- US 101 and North Beaver Creek Road
- US 101 and Bay View Road
- US 101 and Wakonda Beach Road
- US 101 and Yachats River Road
- US 101 and Lori Lane
- US 20 and Western Loop
- US 20 and Business 20 (west)
- US 20 and OR 229
- Business 20 (west) and Business 20
- US 20 and Olalla Lake Road
- US 20 and Business 20 (east)
- OR 18 and Old Scenic Hwy 101
- OR 18 and Bear Creek Road
- OR 18 and North Bank Road
- OR 18 and Slick Rock Road
- OR 229 and Pikes Camp Road
- OR 229 and Logsdan Road
- Otter Crest Lookout and Otter Crest Loop
- Otter Crest Loop and 1st Street

Figure 1-6 Intersections Evaluated

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County road intersections on US 20 east of the Oregon 229 intersection have low-volume traffic and low growth potential. These roads are two lanes with County road stop sign control. These intersections include the rural major collectors of Olalla Road, Sams Creek Road, Elk City Road, Nashville-Summit Road (OR 180), and Harlan-Burnt Woods Road. With the realignment of US 20 between Eddyville and Pioneer Mountain (construction begins in 2006), there will be a new intersection at Eddyville. Ownership of the existing US 20 is being transferred to Lincoln County, and will become another portion of Old Highway 20. Oregon 180, between Eddyville, Nashville, Summit, and Blodgett, will continue to intersect with the old highway at its present location.

Another low-volume rural major collector is Five Rivers Road, which intersects with Oregon 34 in the eastern portion of the county. This collector also connects to Yachats River Road leading to US 101 in Yachats. Five Rivers Road is entirely within the Siuslaw National Forest.

Emergency Access/Evacuation Routes

Lincoln County Emergency Services maintains a website with emergency information regarding earthquakes, tsunamis, storms, flooding, road conditions, and homeland security events. Evacuation routes were developed by local officials and reviewed by the Oregon Department of Emergency Management. Maps were developed for the vicinity of Yachats, Waldport, Newport, Salishan-Gleneden Beach, and Lincoln City (Appendix A). These maps are intended for emergency response and should not be used for site-specific planning.

The evacuation zones on these maps were developed by the Oregon Department of Geology and Mineral Industries in consultation with local officials. It is intended to represent a worst-case scenario for a tsunami caused by an undersea earthquake near the Oregon coast. Basic instructions to residents in tsunami zones are, if you feel an earthquake, move immediately inland (by foot if possible) to higher ground, follow evacuation route signs, and do not wait for an official warning.

The Yaquina Bay Bridge on US 101 is a major lifeline facility providing access from south of the bay to Samaritan Pacific Communities Hospital on the north side of the bay at 930 SW Abbey Street in Newport. Farther south, the Alsea Bay Bridge on US 101 at Waldport also is a major lifeline facility for the south-county area. To the north, bridges crossing Depoe Bay and Siletz Bay on US 101 also are lifeline facilities for north-county areas, providing access to Samaritan North Lincoln Hospital in Lincoln City, as needed.

The Lincoln County Code, Sections 7.805 to 7.855, governs ambulance service providers and coordination. The Lincoln County Ambulance Service Area Plan (July 2002) designates ambulance service areas (ASAs), identifies 9-1-1 dispatch agencies, and outlines disaster response procedures, including mass-casualty and terrorism incidences. Provisions for disaster response and mass casualties are intended for use when any single incident or combination of incidents depletes the resources of any single provider or providers during the normal course of daily operation. The plan also identifies the responsibilities of the provider regarding coordination, communication, move up, triage, and transportation.

There are currently three public safety answering point (PSAP) providers in Lincoln County: Lincoln City Police Dispatch/Station 50, which provides 9-1-1 dispatched calls in Lincoln City; (ii) Toledo Police-Fire Dispatch/Station 30, which provides 9-1-1 dispatched

calls in Toledo; and LinCom, which provides 9-1-1 dispatched calls in the remainder of Lincoln County, and dispatches all ambulance service calls throughout Lincoln County. The three PSAP's have a long history of working cooperatively to provide the best overall 9-1-1 dispatch services in Lincoln County. The three PSAP's have begun the process of planning for consolidation in accordance with 2001 Oregon Laws, Chapter 740 (Enrolled House Bill 3977).

1.4.7 Pedestrian Facilities

Pedestrian facilities are an essential component of the transportation system. These facilities must be accessible and comfortable to use as virtually everyone is a pedestrian at some point during the day. In some cases, the community's pedestrian system can offer recreational opportunities for both local and out-of-town users, potentially stimulating economic growth and tourism.

According to the 1995 Oregon Bicycle and Pedestrian Plan, pedestrian facilities are defined as any facilities utilized by a pedestrian. This includes walkways, traffic signals, crosswalks, curb ramps, and other amenities such as illumination or benches.

Much of Lincoln County is rural, and few pedestrian facilities exist. Pedestrian movement is somewhat difficult because travel distances tend to be great. Along many of the state highways and county roads, wide paved shoulders usually provide room for walking; however, because of higher vehicle speeds and traffic volumes, walking may not be the mode of choice. On lower traffic and lower speed county roadways, pedestrians are usually comfortably able to share the roadway with all modes of travel, although pedestrian facilities are limited. Shoulders used as walkways may be designated by a painted line on pavement in rural residential areas with local improvement districts.

The number of pedestrian facilities is very limited since the County's development code has not required construction of pedestrian facilities with land use improvements. There is a sidewalk along Sturdevant Road that was provided for added safety of school children walking to Toledo Middle School. Another sidewalk is near Lincoln Beach on Highway 101, which was built by ODOT when the Parkway was constructed. Salishan, a gated community and resort north of Lincoln Beach, has an extensive internal network of pedestrian facilities. There also are some pedestrian walkways on local streets within residential developments, such as the Bayshore neighborhood and Sandpiper Village. There are hiking trails in some County parks, the Siuslaw National Forest, and BLM land.

1.4.8 Bicycle Facilities

Bicycle travel is an important part of a multimodal transportation system as it offers people alternative ways of traveling, while still sharing the same roadways as vehicles. Bicycling also provides a transportation alternative for people who do not own vehicles.

In 1992, Lincoln County developed the Lincoln County Bicycle Plan to promote bicycle use for transportation and recreational purposes within the County, while maintaining safety and efficiently implementing new facilities. Since bicycles are legally classified as vehicles, they can be ridden on most public roadways in the County. Four basic types of bicycle facilities are described:

Shared Roadway – Bicyclists and motorists share the same travel lanes. These facilities are common on city street systems and narrow rural roads.

Shoulder Bikeway – Paved roadway shoulders that are of sufficient width provide an area for bicycling, while minimizing conflicts with motor vehicles. In Lincoln County, six foot shoulders are preferred, but narrower shoulders may be justified in some locations.

Bike Lanes – Designated lanes are provided, alongside motor vehicle lanes, for bicycle use. These facilities are common in urban areas and must be well marked and signed.

Bike Path – A path is physically separated from motor vehicle lanes by an open space or barrier. These paths are normally two-way facilities.

Bicycle facilities within Lincoln County are mainly provided by shared roadways or shoulder bikeways on state highways and city and county roads (Figure 1-7).

Table 1-9 below outlines existing bicycle routes in the county.

The Oregon Coast Bike Route is attractive to recreational cyclists as it follows US 101 along the scenic coast of Lincoln County. Thousands of cyclists use this route throughout the year. Also included in the Oregon bicycle system are US 20, OR 18, and OR 34, which provide shoulder bikeways. These roadways are asphalt paved, run through scenic territories of the County, and provide access to popular coastal destinations, which make them attractive to recreational cyclists and important to tourism. Some trails in County parks and federal lands, and logging roads, are suitable or designated for mountain bikes.

The cities of Lincoln City and Newport have their own bicycle plans, but do not have bike lanes or bike paths within the city. Facilities in these cities include signed bicycle routes along city streets. Shared roadways are appropriate as motor traffic volumes and operating speeds are low.

1.4.9 Public Transportation

A major turning point in county-wide transit service occurred in 1996 when voters approved formation of the Lincoln County Transportation Service District. This event came about 5-years after funding constraints led the City of Newport to discontinue its fixed-route transit service (NAT System) in 1991, and creation of a county Transit Master Plan in 1993. The new county-wide public transit system was initially marketed as the Central Coast Connection (CCC), but today is known simply as Lincoln County Transit.

Lincoln County Transit is “geared to enabling the public with an inexpensive and convenient way of getting around in Lincoln County.” The transit agency provides transportation to every major city within the county, including transportation for cyclists, disabled persons, and senior citizens. Buses are equipped with bike racks that can carry two, single-seat bicycles on a first come, first serve basis. All buses and vans but one are wheelchair accessible.

Figure 1-7 Bicycle and Pedestrian Facilities

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TABLE 1-9
Bicycle Route Inventory

Roadway Name	From	To	Miles	Road Width/ Surface	Comments
US 101	Tillamook Co.	Lane Co.	~ 60	32' paved	Oregon Coast Bike Route
OR 18	US 101 near Otis	Tillamook Co.	11	32' paved	Heavy traffic, good shoulder
US 20	US 101 at Newport	Benton Co.	32	22' paved	New construction W of Eddyville; heavy traffic; avoid Toledo-Newport
OR 34	US 101 at Waldport	Benton Co.	28	22' paved	Narrow road, narrow shoulders
OR 180	US 20 near Eddyville	Benton Co.	12	22' paved	Narrow road, low traffic
OR 229	US 101 at Kernville	US 20 at Toledo	32	22' paved	Narrow, curvy road
W. Three Rocks	US 101	Knight Park	3	22' paved	Narrow road, low traffic
E. Three Rocks	US 101	Scenic 101	1	22' paved	Narrow road, low traffic
Old Scenic 101	OR 18 near Otis	Tillamook Co.	4	22' paved	Narrow road, low traffic
North Bank	Otis	OR 18	4	30' paved	Good shoulders, moderate traffic
E. Devils Lake	US 101	US 101	4	30' paved	Partial bypass for Lincoln City
W. Devils Lake	US 101	US 101	2	32' paved	Good ride, partial bypass for Lincoln City, moderate traffic
Schooner Creek	US 101	Anderson Creek	2	22' paved	Scenic, low traffic
Anderson Creek	Schooner Creek	Drift Creek	1	22' paved	Scenic, low traffic
Drift Creek	US 101	Anderson Creek	2	22' paved	Scenic, low traffic
Yaquina Bay	US 101 at Newport	Toledo	12	30' paved	Good shoulders, easy ride
Logsdan – West	OR 229 at Siletz	Logsdan	8	32' paved	Good shoulders, light traffic
Logsdan – East	Logsdan	Nashville	14	28' paved (2 miles gravel)	Light traffic, easy except for gravel area
Elk City – West	Toledo	Elk City	8	22' paved	Light traffic
Elk City – East	Elk City	US 20	5	Gravel	Avoid unless off-road bike is used
Moonshine Park	Logsdan	Moonshine Park	4	32' paved	Good shoulders, easy ride, light traffic
N. Beaver Creek	US 101	S. Beaver Creek	4	28' paved	Easy ride, light traffic
S. Beaver Creek	N. Beaver Creek	Bayview	5	30' paved	Good shoulders, low traffic
Bayview	US 101	S. Beaver Creek	2	22' paved	Narrow road, light traffic
Lint Slough	US 101	Crestline Dr	1	22' paved	Hilly, narrow, light traffic
Crestline Dr	Lint Slough	Wakonda Dr	2	22' paved	Hilly, narrow, light traffic
Wakonda Beach	US 101	Crestline Dr	1	28' paved	Uphill, light traffic
Yachats River	US 101	Lane Co.	11	22' paved	Flat, easy ride, narrow road,
Eckman Creek	OR 34	Forest Hwy 53	1	22' paved	Single lane forest service road
Forest Hwy 53	Eckman Creek	Yachats River	15	12' paved (1 mile gravel)	Single lane forest service road

Source: Lincoln County Bicycle Plan, JRH Transportation Engineering, September 1992; table updated by Lincoln County Public Works, 2006.

Routes and Service

There are three fixed-route transit routes that cover the county, with Newport as the hub city (Figure 1-8). Offices are located at 410 NE Harney, Newport. Office hours are Monday through Saturday 6 a.m. to 6 p.m. Each route offers four round-trips each weekday morning and evening and Saturday, with the earliest bus departing just before 6 a.m. and the latest bus arriving at 9 p.m. There is no Sunday, Christmas, or Thanksgiving service. The second half of all routes is in the return direction. The Siletz-Toledo-Newport route follows Highway 20 and Highway 229. The Yachats-Newport route travels along Highway 101. The Newport-Lincoln City route follows US 101 and OR 18.

Lincoln County Transit also provides a dial-a-ride service, which also can function as a feeder line to the regular route service and city-to-city trips. Dial-A-Ride is a "curb to curb" coordinated and accessible transit service available to everyone. Citizens must request the service by making a phone call to the dispatch office at least one day in advance – a 2-day notice is preferred – so that the agency may secure the requested time and location. Same day service is provided on a space-available basis. On Monday, Wednesday, and Friday the system runs special routes, free of charge, to accommodate elderly nutrition/congregate meal site trips by area seniors, and to make other stops after the meal event. This continues a history of service to the county's elderly since 1968, as begun by the Council on Aging.

Fares are based upon the number of zones traveled. The Siletz-Toledo-Newport route goes through two zones, the Yachats-Newport route goes through three zones, and the Newport-Lincoln City route goes through four zones. The fare for each zone is one dollar. For example, the fare from Yachats to Rose Lodge is \$7.

The Newport-Lincoln City route travels between Newport, Depoe Bay, Lincoln Beach, Gleneden Beach, Salishan, Lincoln City, Otis, and Rose Lodge. There are 29 intermediate designated stops, although some less frequently used stops are designated "on-call or as needed." The morning northbound bus begins in Newport at the City Hall and then Avery Building, and stops at Depoe Bay, Taft, Otis, Panther Creek/Hillside, and Rose Lodge. The evening southbound bus begins in Lincoln City at Chinook Winds Casino and then the Safeway Store, and stops at Tanger Outlet Center, Depoe Bay, and Newport City Hall. One of the two morning runs and one of the two evening runs offer express service with fewer stops. The express service takes 1 hour to start to finish. Regular service takes approximately 1 hour 40 minutes in the morning and 2 hours in the evening. The last evening route northbound terminates in Lincoln City, unless there are passengers needing to go to Otis or Rose Lodge.

The Yachats-Newport route has 11 intermediate stops at communities along US 101. Service takes approximately 50 minutes in either direction. The route has 10 intermediate stops at businesses and communities along the two highways. Service takes approximately 45 minutes eastbound and 60 minutes westbound.

Lincoln County Transit passengers may connect to three of the privately operated out of county services. The Caravan Airport Transportation shuttle service goes to the Portland International Airport and back once a day via Depot Bay and Lincoln City. The Valley Retriever operates three roundtrip shuttles per day between Newport and Albany and one shuttle to Salem, Sisters, and Bend per day. Service is all days except Sundays. Stops in

Figure 1-8 Transit Routes and Fare Zones

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Lincoln County after leaving the station in Newport include Toledo, Eddyville, and Burnt Woods. There no longer is Greyhound bus service in Lincoln County. Taxi cab service is available from companies based in Lincoln City (Come And Get Me Cab, Lincoln City Cab Co., Tony's Taxi, Judy's Shuttle, Lincoln Luxury Limo, Jim's Cab Co.), Depoe Bay (Aloha Cab), Newport (Yaquina Cab Co.), and Waldport (South Lincoln Taxi). City franchise agreements can regulate operations of these companies within city limits.

Fleet and Ridership

The transit agency's fleet consists of 7 buses generally for fixed route service, 7 buses and 2 vans generally for the dial-a-ride service. Table 1-10 describes the fleet's age and capacity. The agency employs 16 drivers and has 3 administrative staff and 2 volunteers.

TABLE 1-10
Lincoln County Transit Fleet

#	Year	Model	Passengers
1	2001	Chevrolet Minivan	7
1	1995	Ford Standard Van	15*
1	1999	Ford Modified Van	22
5	2000	Ford Modified Van	14
1	2000	International Bus	33
2	2001	Ford Modified Van	22
2	2003	Freightliner Bus	32
2	2003	Champion Van	9
1	2003	Ford Modified Van	30

* not wheel chair accessible

Growth in ridership has been steadily increasing during the last 10 years. Ridership and farebox revenues are up each year. This growth is indicative of a public transportation system that continues to meet the needs of its public and serves a growing demand for mobility within the communities covered. The agency provided approximately 75,000 trips in 1996, and approximately 245,000 trips in 2004.

1.4.10 Air/Rail/Water/Pipeline

Air

Lincoln County has four recognized airports in the vicinities of Newport, Siletz Bay, Toledo, and Wakonda Beach (see Figure 1-1). Newport Municipal Airport is owned and operated by the City of Newport, while the other three airports in Lincoln County are owned and operated by the State of Oregon, Department of Aviation. In addition, Pacific Communities Hospital in Newport operates a publicly-owned 60-foot-square heliport, which is for emergency medical use only. As of 2003, there were 89 aircraft registered in Lincoln County.

Newport Municipal Airport

Newport Municipal Airport is listed as a Category 1 airport in Oregon's core system of airports. Categorization of airports is based on services and functional roles. Category 1 airports are commercial service airports and provide Oregon's primary intrastate, interstate, and international connections for commercial passenger and cargo service. These airports accommodate scheduled major/national or regional/commuter commercial air carrier service. As of 2005, there was no regularly scheduled commercial service (passenger or freight), and Sky Taxi no longer provides on-call connections to airports in Oregon. A two-lane paved access road connects the airport to U.S. 101.

Newport Municipal Airport (KONP), at elevation 157 feet, is located on 700 acres approximately 3 miles south of Newport off Highway 101. Runway 16/34 is 6000 feet in length and 150 feet wide with asphalt pavement and is lighted. Runway 2/20 is 3000' feet long and 75 feet wide, also asphalt and lighted. Aircraft based on the field are 23 single engine airplanes, 2 multi-engine airplanes, 1 jet airplane, 3 helicopters, and 1 military aircraft. Aircraft operations: average 66 per day, including 58 percent transient general aviation, 21 percent local general aviation, 12 percent military, 6 percent commercial, and 3 percent air taxi. Newport Municipal Airport in past years supported commercial commuter shuttle operations, serving Corvallis and Portland. There are 19 hangar spaces available in 21 well-maintained hangar buildings located adjacent to the central apron. Besides the terminal building, there is a building occupied by the U.S. Coast Guard, and another occupied by Central Coast Air Services (COCAS), the fixed base operator. COCAS owns the above ground fuel tanks, which were installed in 1997: the Jet A tank has a 12,000-gallon capacity, and the 100LL tank has a 10,000-gallon capacity. The airport maintains a paved vehicle parking lot of approximately 7,200 square feet next to the terminal building with a capacity of 20 vehicles.

Siletz Bay State Airport

Siletz Bay State Airport (S45) is listed as a Category 4 airport. Category 4 airports serve the needs of general and business aviation users and activities within the local area. The Salishan Resort is one-third of a mile away. The airports have the airfield facilities and services necessary to accommodate general aviation users, in light single and multi-engine aircraft weighing 12,500 pounds and less (11,000 pounds single wheel). The Siletz Bay State Airport, at elevation 62 feet, has a 3300-foot-long and 60-foot-wide asphalt runway (17/35) with pilot controlled lighting. Aircraft operations average 57 per week with 61 percent transient general aviation, 32 percent local general aviation, and 7 percent air taxi. There are approximately 17 single engine airplanes, including one ultralight, based at the field, which is unattended.

Toledo and Wakonda Beach State Airports

Both the Toledo and the Wakonda Beach State Airports are termed Warning Airports by the State and are listed as Category 5. Pilots are encouraged to make a full inquiry prior to using such airports, as special techniques, procedures, and understanding may be needed for safe use. Category 5 airports are located in communities and outlying areas with small or no population within their service area. They can have an important emergency function, and many provide access to recreational opportunities in remote areas. These airports have limited services, such as fuel and maintenance facilities, and have taxi-runway systems capable of only limited-use general aviation activity.

The Toledo State Airport (5S4), at elevation 7 feet, is located approximately 1 mile southwest of Toledo. Runway 13/31 is 1695 feet long and 40 feet wide with asphalt pavement. The airport is unattended. Aircraft based on the field are six single engine airplanes, including two ultralights. Aircraft operations average 22 per week, with 96 percent transient general aviation and 4 percent local general aviation.

The Wakonda Beach State Airport (OR04), at elevation 41 feet, is located approximately 3 miles south of Waldport. Runway 16/34 is 2000 feet long by 50 feet wide with a turf surface. The airport is unattended. Aircraft based on the field are three single engine airplanes, including one ultralight. Aircraft operations average 69 per month, with 90 percent transient general aviation and 10 percent local general aviation.

Rail

The Willamette & Pacific Railroad (reporting marks WPRR) is a short-line operator that serves the 74.7-mile rail connection between Toledo (milepost 765.6) and Albany (milepost 690.9). Willamette & Pacific was formed in 1993 on the basis of a 20-year lease of low-density Southern Pacific branch lines. These lines extend west from Albany, Oregon, and north and south from Corvallis, Oregon.

Between Philomath and Toledo, the railroad winds through the wet and rugged coastal mountains on an alignment laid out in the 1880's (see Figure 1-1). The railroad right-of-way width ranges between 65 to 100 feet and generally parallels the Yaquina River to a point where it diverges from the vicinity of Highway 20 and enters a tunnel about 0.6 miles south of the highway/Elk City Road intersection. Currently, the highway and railroad intersect only at an at-grade crossing in Eddyville. With the planned realignment of Highway 20, there will be a new grade-separated crossing of Highway 20 over the tracks in the vicinity of Trapp Creek and the Yaquina Meadow. The primary customer for this rail line service is the Georgia Pacific paper mill in Toledo. Wood chips and paper products are the primary freight. One train of approximately 40 cars typically leaves Albany in the afternoon and returns in the evening from Toledo. A mill in Philomath also ships lumber over this rail line. Currently there is no passenger service; an excursion train is run on rare occasions. Track speed is 25-30 miles per hour.

As originally conceived, the line ran from Albany to Yaquina (an abandoned site several miles west of today's Toledo) and was built in 1886 at enormous cost to accommodate passenger travel and freight. It is one of the oldest railroad lines in Oregon. Numerous trestles and several tunnels had to be constructed, but in the end, neither Yaquina nor the railroad itself ever grew to the size imagined. The railroad financiers and promoters believed Yaquina could be as big as San Francisco. The line stopped short of Newport because of a dispute between the railroad owners and the town leaders. However, during World War One, the U.S. Army needed spruce logs for airplanes, so they did build a line from Yaquina to Newport and beyond to South Beach, a total distance of about 8 miles. The line was later used for private logging but deteriorated long before the Second World War (McCamish, 2003-2004). Because there was no road between Toledo and Newport along the river, cars used the long trestles after the railroad was abandoned in 1937. Eventually, the trestles had to be dismantled for safety reasons and a real on-land road was constructed, much of it over the original grade of the railroad. Today, in some of the mud flats around Yaquina Bay, there still is evidence of several timber piles that supported the rail trestles.

Willamette & Pacific's main business goals at the time of formation were three: 1) arrest and reverse deterioration of the physical plant, 2) improve service, and 3) grow volume. By 1997 the railroad's traffic had shown significant growth (more than 35 percent). Today the line's trackage has been rehabilitated and W&P volumes exceeded 10,000 cars. The line carries one to five million gross tons of products annually.

In 1995, a sister company, the Portland & Western Railroad (reporting marks PNWR) made a similar long-term lease of SP track between Newberg and Brooklyn, Oregon, along with all other remaining SP branches in the Portland metropolitan area. Willamette & Pacific and Portland & Western were combined under one railroad name and called Portland & Western Railroad in December 2000. The "W&P" initials on locomotives and rolling stock are disappearing and being replaced with "P&W."

This railroad is one of a number of wholly-owned subsidiaries of Genesee & Wyoming Inc., a leading operator of regional railroads, switching services and rail car leasing based in Greenwich, Connecticut. GWI's family of companies has extensive operations in the Northeast, the Gulf Coast, Midwest, West and Northwest, and an interest in Canada, Mexico, Bolivia and substantial rail lines in Australia. GWI is a publicly held company and its stock is traded on NASDAQ under the initials GNWR.

Water

There are three functioning port districts within Lincoln County and one harbor (see Figure 1-1). The port facilities include the Port of Newport, the Port of Alsea, and the Port of Toledo. Fish and shellfish make up the majority of the cargo unloaded at these port facilities, and the Port of Newport has a large fishing fleet. The Port of Newport and the Port of Toledo are deep channel ports that allow ocean-going vessels to dock. The harbor in Depoe Bay is home to a small fishing fleet. All four facilities are governed by separate commissions. Overland freight connections are provided by local streets connecting to US 101, US 20, and OR 34.

Port of Newport

The Port of Newport in Yaquina Bay is by far the largest port with the most cargo moving through in any given year. The bulk of the goods moved through the port are fish and shellfish; wood in the rough is consistently the second most voluminous cargo on an annual basis. Incorporated in 1910, the Port of Newport's district covers 59 square miles, including the City of Newport. With the Pacific Ocean to the West, the boundaries of the Port of Newport reach south to Seal Rock, north to Otter Rock and east up to six miles.

The Port's mission is to "Maximize financial returns by promoting in cooperation with other regional and community organizations and businesses, the full economic development potential of the Yaquina Bay region." The Port's business goals are three: 1) fully develop the commercial fishing potential of the Yaquina Bay region, 2) develop the ocean terminal facilities adequately to fully exploit location advantages in the transit of forest products, and 3) fully develop the tourism and recreation potential of the Yaquina Bay region.

The Port of Newport's primary functions are offering shipping terminal facilities, commercial and sport boat moorages and support services. Along the bay the Port has 600 moorage slips of sizes 24, 26, 32, 40, and 48 feet, and facilities can accommodate larger vessels. There also are over 100 RV spaces with full hookups. However, this deep-water port

was originally constructed to provide shipping services to local, regional, and international vessels. The U.S. Army Corps of Engineers' authorized navigation project at Yaquina Bay includes two high-tide, rubble mound jetties 1,000 feet apart at the entrance. The north jetty is 7,000 feet long and the south jetty is 8,600 feet long. The entrance channel is 400 feet wide and 40 feet deep with an inner channel 30 feet wide and 30 feet deep. The turning basin is authorized at 30 feet deep, 900 to 1,200 feet wide, and 1,400 feet long.

Terminal facilities include 17 acres with over 1,000 feet of waterfront, 605-foot shipping berth, roll-on/roll-off concrete pad, 265-foot wooden barge berth, 20,000 square foot storage/transit warehouse, nine-acre log yard and covered storage. There is 20 acres of vacant industrial land with utilities available for development and 30 acres of bulk cargo storage available adjacent to the terminal. The Port continues working to retain the import/export opportunities at the terminal recognizing the importance of shipping activity for continued federal operations and maintenance of navigation features in Yaquina Bay.

The facilities at the Bay Boulevard commercial harbor include 1400 feet of waterfront property, a 220 foot fixed service dock with four hoists, 200 feet of floating dockside vessel repair, moorage for approximately 400 commercial fishing vessels, and operations/maintenance and administration buildings. Upland property includes about 2 acres dedicated to crab gear storage and another 3 acres slated for water-dependent/water-related development. Port land leases with Englund Marine Supply and Yaquina Bay Yacht Club are the beginning of development planned at this site.

In South Beach, the Port's holdings include approximately 50 acres leased to the Oregon State University Hatfield Marine Science Center and 40 acres to the Oregon Coast Aquarium. Facilities at the 55-acre Port of Newport Marina & RV Park currently are: 540 moorage slips including a facility designed to accommodate up to five large transient vessels, and a new four-lane launch ramp and new parking facility and a public fishing pier. A new marina store, Port operations building and registration/activity center, as well as a new 92-space Marina RV Park designed to accommodate larger RV with vehicles in tow will be complete in May 2006. The RV Park Annex, next to the Yaquina Bay Bridge, has another 60 spaces. Marina leases include Oregon Brewing Company, a full-service fuel dock, Serven Marine boat repair and supply, Newport Marina Store & Charters, The Newport Belle Bed and Breakfast, and Yaquina Bay Fruit Processors.

Adjacent to these properties is the proposed business and technology center, a cooperative planning effort between the Port of Newport, City of Newport and Greater Newport Chamber of Commerce to develop a private industry based business, technology, and research park. This park, to be sited on a 5.28-acre parcel owned by the Port, is looked at as an incubator facility that would provide a location for start-up businesses, particularly those that may emerge as a result of research conducted at the [Marine Science Center](#).

Port of Alsea

The mission of the Port of Alsea is to promote the business development potential of Port District assets; and to preserve, protect, and promote the ecological, aesthetic and economic resources of the Alsea and Yachats River systems, and the interests of those who enjoy them.

The Port District was formed in 1910 and includes the communities of Waldport, Yachats, and Tidewater. The Port holds land in public trust throughout the Alsea estuary up to mean

high tide, as surveyed in 1912. Current projects include establishment of a commercial native oyster farm, implement the Port Interpretive Master Plan, and a Port of Alsea and Central Oregon Coast Fire District cooperative building project. Alsea Bay and River annually have over 50,000 user days by boaters, including more than 5000 boats launched from the Port's launch ramp. Boaters from more than 100 Oregon cities and 10 other states typically use Port facilities each year. Virtually all of the boats using Alsea Bay and River are trailered, with the average length of the vessel between 14-18 feet overall

Port of Toledo

The Port of Toledo, upriver from Newport, offers moorage on Yaquina Bay for vessels up to 65 feet in length. The Port also offers outside storage and dry indoor storage at its Industrial Complex building. In addition, the Port has a number of prime industrial sites available for development. In 1973 the Port purchased from the City a tract of land adjacent to the athletic field, filling it immediately for industrial use. In 1975 the Port purchased from a private citizen 30 acres fronting the bay and south of the city; this parcel is usable for spoils' disposal and industrial development. A 5-acre parcel purchased by the City of Toledo and another adjacent 3 acres was purchased by the Port of Toledo that provides direct access to the PNWR tracks and the riverfront. The Port of Toledo recently opened a small RV park located about 3 miles west of Toledo on the Yaquina Bay Road, mile marker 10. There is a developed area for picnics in the center area, and 5 RV/tent spots around the sides views over the waters of the beautiful Yaquina River. Off of South Bay Road, the Port of Toledo has a well maintained boat launch with docks, on-site launch security, and a fish cleaning table. A current lessee on Depot Slough is Pacific Coast Boats, a renowned builder of catamarans, and which needs expanded facilities.

The Port of Toledo set a goal in 2002 of increasing earned revenue from existing sport and commercial fishing assets from FY 02 \$17,000 to FY 08 \$40,000. 'Earned' revenue is derived from 'active' as opposed to 'passive' Port endeavors. 'Passive' sources include taxes, grants, interest, and loans. The Port Commission and management are in general agreement that it is incumbent on the Port to make an effort to become self-sustaining and less reliant of taxes for its existence. Achieving success means increasing the portion of total Port revenue that is derived from 'active' operations – not 'passive' activities. At the same time, increasing 'earned' revenue will require a more proactive role for the Port in the region's economic development. In the most recent 5 years, 71 percent of Port revenues are from 'passive' sources. 'Earned' revenue in 2002 provided 28 percent of total income. Within 'earned' revenue, 84 percent comes from leasing and rental of upland facilities and 16 percent comes from rental of slips in the Port's marina.

Depoe Bay Harbor

Depoe Bay Harbor is a 6-acre naturally protected harbor often referred to as the "world's smallest navigable harbor." The Pacific Ocean over time has carved away at the tough basalt formation, creating the sides of the harbor, which now supports moorage for an approximate total of 60 to 70 recreational and commercial boats. Owned and operated by the City of Depoe Bay, the harbor was deeded to the City from the Port of Newport in 1976. A city council-appointed Harbor Commission oversees the harbor. The harbor is landlocked except for the harbor entrance through the basalt rocks, which can accommodate boats up to approximately fifty feet in length. The most recent harbor and channel dredging was

completed in 2005 by the U.S. Army Corps of Engineers. The harbor and channel to the harbor from the Pacific Ocean is dredged every 5 to 6 years.

U.S. Coast Guard Stations

U.S. Coast Guard Motor Lifeboat Station Yaquina Bay is located in Newport. There has been a Coast Guard station in the Newport area since 1895. The current Station was established in 1950, with barracks and boathouse rebuilt in 1983/84 following a merchant vessel collision. The bar, when breaking, is narrow and dangerous but is a short transit before entering the sheltered area of the jetties. The Port of Newport accommodates bulk carrier traffic, usually timber products, and is serviced by the Coos Bay Pilots Association. Facilities include the administration and operations building, a barracks built in 1984, and a boathouse and haulout facility.

Station Depoe Bay is located 16 miles north of Newport in the City of Depoe Bay. The station was established in 1940. The harbor entrance is approximately 450 feet long and 50 feet wide, with two dog leg turns cut between the rocks, and a minimum depth of 8 feet. The US 101 bridge overhead restricts vertical clearance to only 42 feet. In May 1996, the Commanding Officer of Motor Lifeboat Station Yaquina Bay assumed command and control of Station Depoe Bay. Facilities include the original station building with some minor upgrades, and a boat house. There is no haulout facility as the Station uses Yaquina Bay's haulout facility.

Pipeline and Utilities

Northwest Natural has a high pressure transmission pipeline that traverses the northern half of Lincoln County. The pipeline enters the county along Highway 18, turns south along the eastern edge of Devils Lake, cuts over the mountains to Siletz and proceeds south to Toledo. In Toledo the pipeline serves the paper mill for their processing, turns west, and terminates at the liquid natural gas (LNG) plant in Yaquina Bay.

This pipeline serves the residential and industrial gas needs in northern Lincoln County, and the LNG Plant. The LNG Plant was originally built to serve as an export facility, to load onto ships for transport across the Pacific. This market never developed, so the plant is now used for peak-shaving as an overflow capacity storage facility. In the summer months, Northwest Natural sends gas south to the plant for storage during low demand periods. In the winter, gas is pressurized and placed back in the pipeline to travel north to Salem and Portland to handle additional demands for gas heating and cooking and other needs that peak during the winter months.

Lincoln County has 11 rural water districts serving areas of Beverly Beach, Car-Mel Beach, Devils Lake (2), Kernville, Lower Siletz, Otter Rock, Panther Creek, Roads End, Seal Rock, and Southwest Lincoln. Pipelines often are in or near the public road right-of-way.

Consumers Power and Central Lincoln Public Utility District (PUD) provide electrical service to Lincoln County. Consumers Power is a privately owned non-profit rural electric cooperative with approximately 16,000 members in six counties. Central Lincoln PUD is the largest PUD in Oregon, with over 30,000 residential customers and over 5,000 commercial customers. Powerlines are generally above ground suspended between wooden single poles fixed with cross arm and post insulators, and perhaps at least one wooden H-frame suspension structure.

To facilitate Central Lincoln PUD's own communications and to enhance the reliability of the PUD's electric power switching network, the PUD installed a fiber optic network from Lincoln Beach to Reedsport, and from Newport to Toledo. The cable is buried generally in or near highway right-of-way. Due to the economies of scale, the PUD's fiber network has significant amounts of excess capacity. Through an intergovernmental agreement, the Economic Development of Alliance of Lincoln County has leased capacity and developed CoastNet to promote economic development and employment opportunities in Lincoln County. Lincoln County in May 2001 joined other governmental entities that belong to the Fiber South Consortium, which contracts with PCI NW (Preferred Connections, Inc.) as the service vendor.

Pioneer Telephone Cooperative provides telephone service to southern Lincoln County while Qwest provides service to northern Lincoln County. Underground telephone lines are generally located in or near highway right-of-way. Most telephone lines are above ground and suspended between single poles maintained by the cooperative or electric utility. DSL service is available for internet connections from these phone companies via CoastNet.

1.4.11 Emergency and Evacuation Routes

Primary lifeline routes in Lincoln County are US 101 and US 20, and secondary routes are OR 18, OR 229, and OR 34. Local evacuation routes, primarily in case of a tsunami, have been designated for low-lying coastal areas and communities.

Plans and Policies Review

2.1 Introduction

This chapter provides a brief abstract of the plans, policies, and other pertinent existing background data at the state, regional, and local levels that directly impact transportation planning in Lincoln County. Appendix B, upon which this chapter is based, provides a more detailed summary of the plans and policies. Although each document reviewed contains many policies, only the policies and information most pertinent to developing the Lincoln County Transportation System Plan (TSP) are included in Appendix B. Knowledge of existing plans and policies provides a framework for the planning process. New policies considered for inclusion in the Lincoln County TSP should be consistent with the currently adopted policies.

Appendix B also includes an assessment of how existing County plans and ordinances meet requirements of the Transportation Planning Rule (TPR) OAR 660, Division 12. This review serves as the basis for identifying County policies or requirements that may be out-of-date or inconsistent with each other. Chapter 8 proposes amended or new County policies and ordinances for compliance with the TPR.

In this chapter, federal and state documents and requirements with applicability to the Lincoln County TSP are listed and briefly described. Contents of local jurisdictions' policy and regulatory provisions are provided and topic areas or regulations with potential impacts to Lincoln County transportation system are noted.

2.2 Federal

2.2.1 Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU)

The Safe, Accountable, Flexible, and Efficient Transportation Equity Act (SAFETEA), legislation that renews the nation's surface transportation law (TEA-21) through fiscal year 2009,¹ was signed into law in August 2005. Federal transportation planning requirements, such as those specified in SAFETEA and its implementing regulations, are addressed through state and local plans.

¹ See the Surface Transportation Policy Project, <http://www.istea.org/>, for current information on SAFETEA; U.S. Department of Transportation, <http://www.fhwa.dot.gov/reauthorization/safetea.htm>

2.2.2 Siuslaw National Forest Road Analysis Report

The USDA Forest Service's Road Analysis Report (Report) is a compilation of information relevant to road management and does not constitute standards or guidelines under the Siuslaw Forest Plan. The two stated objectives are to (1) evaluate the Key Forest Routes (the primary and secondary road system) and validate its continued use as a tool for making decisions about road management and (2) to capture the cumulative knowledge regarding roads and road management in order to better inform land managers about the benefits and liabilities of roads, ways to mitigate risks, and sources of additional information.

Key Recommendations of the Report are categorized under Project Design, Road Construction and Maintenance, Road Treatments, Inventory and Monitoring, and Additional Analysis. A sample of these recommendations that may be relevant to Lincoln County transportation planning include site specific planning and road construction and maintenance.

2.3 State of Oregon

2.3.1 Transportation Planning Rule (TPR)

Statewide Planning Goal 12, Transportation, requires cities, counties, metropolitan planning organizations, and ODOT to provide and encourage a safe, convenient, and economic transportation system. This is accomplished through development of Transportation System Plans (TSPs) based on inventories of local, regional and state transportation needs. Goal 12 requirements state that transportation plans shall:

- consider all modes of transportation, including pedestrian, bicycle, highway, rail, mass transit, air, water, and pipeline
- be based upon an inventory of local, regional, and state transportation needs
- consider the differences in social consequences that would result from utilizing differing combinations of transportation modes
- avoid principal reliance on any one mode of transportation
- minimize adverse social, economic, and environmental impacts and costs and conserve energy
- meet the needs of the transportation disadvantaged
- facilitate the flow of goods and services so as to strengthen the local and regional economy
- conform with local and regional comprehensive land use plans
- be developed, adopted, amended and implemented in accordance with the standards set out in OAR 660, Division 12

In 1991, the Land Conservation and Development Commission (LCDC), with the concurrence of ODOT, adopted the Transportation Planning Rule, OAR 660 Division 12, to implement State Planning Goal 12, Transportation (amended in May and September 1995,

and March 2005). The TPR requires cities (with a population of 2,500 or greater) and counties to prepare and adopt a Transportation System Plan.

The TPR requires local governments to adopt land use regulations consistent with state and federal requirements “to protect transportation facilities, corridors, and sites for their identified functions OAR 660-012-0045(2).” Amendments in March 2005 address the issue of concurrency between land development and planned transportation improvements, which are determined to be reasonably likely by the end of the TSP planning period.

2.3.2 Oregon Transportation Plan (1992) (Draft 2006)

The Oregon Transportation Plan (OTP) is a policy document developed by ODOT in response to the federal and state mandates for systematic planning for the future of Oregon’s transportation system. The OTP is intended to meet statutory requirements (ORS 184.618(1)) to develop a state transportation policy and comprehensive long-range plan for a multi-modal transportation system that addresses economic efficiency, orderly economic development, safety, and environmental quality.

The Draft 2006 OTP (Sept. 2005) is a major revision of the 1992 Plan. The Draft 2006 OTP addresses issues of population growth, economic development, sustainability, global warming, and transportation system funding among other challenges. It is the state’s 25-year multimodal state transportation plan for airports, bicycles and pedestrian facilities, highways and roadways, pipelines, ports, public transportation, rail and waterways. It establishes policies, strategies and initiatives for addressing the challenges and opportunities in the next 25 years and guides transportation investment decisions.

2.3.3 Oregon Highway Plan (1999)

The 1999 Oregon Highway Plan (OHP), an element and modal plan of the state’s comprehensive transportation plan (OTP), guides the planning, operations, and financing of ODOT’s Highway Division. Policies in the OHP emphasize the efficient management of the highway system to increase safety and to extend highway capacity, partnerships with other agencies and local governments, and the use of new techniques to improve road safety and capacity. These policies also link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and local road, bicycle, pedestrian, transit, rail, and air systems. The policies found within the OHP that apply to the Lincoln County’s TSP include:

- Policy 1A: State Highway Classification System;
- Policy 1B: Land Use and Transportation;
- Policy 1C: State Highway Freight System;
- Policy 1F: Highway Mobility Standards;
- Policy 1G: Major Improvements;
- Policy 2B: Off-System Improvements;
- Policy 2F: Traffic Safety;
- Policy 3A: Classification and Spacing Standards;
- Policy 3B: Medians;
- Policy 4A: Efficiency of Freight Movement;
- Policy 4B: Alternative Passenger Modes;

- Policy 4D: Transportation Demand Management; and
- Policy 5B: Scenic Resources

2.3.4 Oregon Bicycle and Pedestrian Plan (1995)

The Oregon Bicycle and Pedestrian Plan provides guidance to regional and local jurisdictions for the development of safe, connected bicycle and pedestrian systems. The plan is a modal element of the Oregon Transportation Plan. It contains the standards used on State Highway projects and provides guidance to cities in establishing facilities on local transportation systems. These standards are recommended but are not required for use by local jurisdictions in Oregon. The plan includes two major sections: policies and implementation strategies and design, maintenance, and safety.

2.3.5 Oregon Aviation Plan (2000)

The 2000 Oregon Aviation Plan (Plan) provides an overview of the airports in the state system and the jurisdictional responsibilities at all levels of government for the management, maintenance, operation, and funding of Oregon's airports. The Plan includes policies and investment strategies for airports in Oregon.

2.3.6 Oregon Rail Plan (2001)

The Oregon Rail Plan is a modal element of the OTP. It is intended to implement the OTP's long-range vision of a viable freight and passenger rail system in Oregon. ODOT's certified State Agency Coordination (SAC) Program and Oregon Administrative Rules Chapter 31, Division 15 describe the procedures that ODOT will follow when developing and adopting plans to assure that they comply with the statewide planning goals and are compatible with acknowledged comprehensive plans. Relevant to the development of a TSP for Lincoln County, ODOT's efforts to establish compatibility with acknowledged comprehensive plans will be at the facility planning and project planning stages of the planning program

2.3.7 Oregon Public Transportation Plan (1997)

The Oregon Public Transportation Plan forms the transit modal plan of the Oregon Transportation Plan. The plan contains goals, policies, and strategies relating to the whole of the state's public transportation system. The plan is intended to provide guidance for ODOT and public transportation agencies regarding the development of public transportation systems.

2.3.8 Access Management Rule (OAR 734-051)

Oregon Administrative Rule 734-051 defines the State's role in managing access to highway facilities in order to maintain functional use and safety and to preserve public investment. The Access Management Rule is the basis for providing improvements associated with development. The provisions in the OAR apply to all roadways under Oregon State jurisdiction within Lincoln County. The access management rules include spacing standards for varying types of state roadways and provisions for developments such as commercial centers.

2.3.9 Freight Moves the Oregon Economy (1999)

This report summarizes a variety of information about issues and needs surrounding the transport of freight by roads, rail lines, waterways, aircraft, and pipelines. The document's stated purpose is to demonstrate the importance of freight to the Oregon economy and identify concerns and needs regarding the maintenance and enhancement of current and future mobility within the state of Oregon. State Highways 20 and 18 are designated freight routes; Newport is identified in this report as a marine, deep draft freight port.

2.3.10 Airport Layout Plan, Newport Municipal Airport (DRAFT 2005)

The Newport Municipal Airport is located within the city limits, along with some of the surrounding areas, and therefore is under the City of Newport zoning jurisdiction. Other nearby areas that are outside the city limits are under Lincoln County's zoning jurisdiction. The Airport Layout Plan provides an inventory of current and forecasted airport activities to assist the City of Newport and the Oregon Department of Aviation in planning for future airport-related demands. The document includes a discussion of projected airfield, land, and support requirements and identifies capital improvement projects that have been proposed to address future needs. There are several sections of the Plan that refer to surrounding transportation systems, most of which involve access to the airport from Highway 101.

2.3.11 Proposed Oregon Coast Highway Corridor Master Plan (1995)

A corridor plan is a strategy for providing transportation services on a particular route, as well as a facility plan identifying specific actions to implement already existing state plans and policies. The Proposed Oregon Coast Highway Corridor Master Plan (Master Plan) focuses on the need to coordinate land use patterns and transportation system improvements, and to address the various modes of transportation involved. The Master Plan developed from several policy directives at the state and federal levels, including the Transportation Planning Rule (TPR), the ODOT State Agency Coordination Program, the Oregon Transportation Plan (OTP), the Oregon Highway Plan (OHP), and the federal Intermodal Surface Transportation Efficiency Act (ISTEA).

2.3.12 Pacific Coast Scenic Byway Corridor Management Plan for US 101 in Oregon (1997)

The Pacific Coast Scenic Byway Corridor Management Plan (Plan) states that the purpose of the plan is to (1) serve as guidance for the Oregon Department of Transportation (ODOT) in maintaining and enhancing US 101 and its right-of-way as a scenic byway, and (2) to describe how various responsible agencies, jurisdictions, and individuals will endeavor to protect, maintain, and enhance the features in the vicinity of US 101 that are identified as defining or contributing to the experience of traveling the scenic byway. The Plan was based in part on previous planning efforts explored in the Oregon Coast Transportation Corridor Master Plan (1994). The Plan does not require amendments to local comprehensive plans and does not mandate any new requirements or regulations at any policy level. The Plan divides the corridor into regions; the Lincoln County coastal area is included within the Siletz, Yaquina, Yachats, and North Dunes Regions. Defining and contributing features were

defined for each region, and intrinsic qualities and management goals were assigned for each feature.

2.3.13 US 20/OR 34 Newport to Sweet Home Interim Corridor Strategy (1998)

The Interim Corridor Strategy is the first step in developing a Corridor Plan for the US 20/OR 34 Corridor, a corridor that has been identified as having statewide importance. This document provides objectives and policy approaches for the operation, preservation and enhancement of transportation facilities and systems within the defined corridor. There are several sections in Chapter 6, Corridor Visions, including goals and interim strategies, that are relevant to Lincoln County's TSP. Relevant items include transportation balance, regional connectivity, highway congestion, safety, economic, social, environment, and energy.

2.3.14 Portland to Lincoln City Corridor: Interim Corridor Strategy, Oregon Highways 99W and 18, I-5 to U.S. 101 (1997)

This "interim" document was intended to precede a detailed corridor plan, followed by refinement plans for each highway segment in a third phase in the corridor planning. Little technical data was available at this initial phase; opportunities for future improvements were based on "physical and service inventories" of the corridor. A small segment of this corridor runs through Lincoln County, providing a link from the Portland Metropolitan area to the Central Oregon Coast. The Corridor Strategy provides objectives and policy approaches for the operation, preservation and enhancement of transportation facilities and systems within the defined corridor.

2.4 Lincoln County Jurisdictions

There are seven incorporated cities within Lincoln County: Depoe Bay, Lincoln City, Newport, Siletz, Toledo, Waldport and Yachats. Only Depoe Bay, Lincoln City, Newport, Toledo, and Yachats have adopted (or proposed) transportation system plans. A summary of locally adopted (regulatory) or proposed ("draft" or advisory) transportation-related policies is presented in Appendix B. These plans include:

- Depoe Bay Highway 101/Downtown Refinement Plan
- City of Depoe Bay Transportation System Plan (2000-2001)
- City of Newport Transportation System Plan (1997)
- City of Newport Access Management Plan (1997)
- City of Waldport Transportation System Plan (1998-1999)
- City of Yachats Village Circulation Plan (1997)
- Siletz Reservation Transportation Improvement Program (2003)
- City of Lincoln City Transportation Master Plan (DRAFT 2005)

- Employment Lands & Conceptual Land Use Planning Project – South Beach Neighborhood (DRAFT 2005)
- City of Toledo Transportation System Plan (DRAFT 1995)

2.5 Lincoln County Ports

The Ports of Alsea, Newport, and Toledo are within Lincoln County and contain land and water transportation facilities. The document, *An Overview of Oregon Ports*, (“Overview”) completed in October 2001 and published by the Oregon Public Ports Association and the Oregon Economic and Community Development Department noted projects and goals for the Ports in this region.

2.6 Lincoln County

2.6.1 Lincoln County Code

Comprehensive Plan (1984)

The Lincoln County Comprehensive Plan is part of Chapter 1 of the Lincoln County Code (LCC). As stated in the chapter introduction, the comprehensive plan is a statement of Lincoln County’s overall policies regarding the nature of future growth and development in the County. The goals and policies will be considered for modification as part of the TSP process to achieve consistency with state, county, and city policies and regulations. In addition, background statements formulated many years ago should be reviewed and updated to reflect current conditions in Lincoln County. The following are transportation goals and policies in the Comprehensive Plan:

1.0140 Transportation Goals

Transportation goals:

- (1) *To plan for a safe, convenient and economic transportation system.*
- (2) *To provide an efficient and aesthetically pleasing system of public roads.*
- (3) *To develop a transportation system which enhances the County’s economy.*
- (4) *To encourage energy conserving transportation modes.*
- (5) *To conserve energy in transportation.*

1.0145 Transportation Policies

- (1) *Lincoln County shall coordinate its transportation plans with state transportation plans, and the city comprehensive plans.*
- (2) *The Lincoln County Road Committee shall recommend capital improvement plans for road construction, major road improvements and maintenance. Priorities shall be established on the basis of road condition, road capacity, traffic volume and effectiveness toward reducing accidents.*

- (3) *Lincoln County shall review improvements to the state highway system within the county for consistency with this plan.*
- (4) *Lincoln County shall classify roads as major and minor arterials, collectors and residential streets and designate county and public roads.*
- (5) *Major arterials shall provide regional access between communities and areas of the county and state.*
- (6) *Access to major arterials shall be via fully improved streets except where no alternative exists. Developments adjacent to arterials shall provide through access via collector or residential streets to adjacent developable lands.*
- (7) *In response to applications for highway access permits for abutting properties from the State of Oregon, Lincoln County shall respond with the following condition: "This highway access permit shall be valid only as long as alternative access from a collector or local street is not available. Upon development or improvement of a collector or local street, this permit shall be terminated and the driveway shall be abandoned."*
- (8) *Adequate setbacks from arterial and collector roads shall be required in order to provide for future purchase of additional right-of-way.*
- (9) *Existing rights-of-way shall be used where appropriate and future needed rights-of-way shall be designated to improve the safety of vehicular circulation within the county.*
- (10) *Lincoln County shall work to preserve existing rights-of-way that have been identified as having future potential as transportation corridors.*
- (11) *Lincoln County shall adopt minimum standards for road construction, improvements and maintenance for county and public roads.*
- (12) *Lincoln County shall work with road districts through inter-governmental agreements to provide programs for improvement and continual maintenance.*
- (13) *Lincoln County shall work with existing road districts to ensure improvement of public roads to minimum county standards.*
- (14) *Lincoln County may share in public road maintenance and improvement with abutting property owners. The County share shall be based upon benefit, road use, classification and priority of the County road capital improvement plan.*
- (15) *A condition of final development approval shall be that public roads providing access to proposed development be improved to minimum County standards.*
- (16) *Lincoln County shall initiate vacation or closure of county or public roads which are no longer necessary for access or which cannot be maintained as determined by the County Engineer except where such roads abut the ocean.*
- (17) *Lincoln County may reduce county roads to public road status.*
- (18) *Set-backs for development shall provide for the planned right-of-way width.*

- (19) *The establishment of private road rights-of-way to accommodate land partitioning shall be to minimum county road standards except when no further partitioning or subdividing is possible.*
- (20) *Lincoln County shall encourage the improvement of existing airports.*
- (21) *Lincoln County shall work with citizens, the Department of Transportation Aeronautics Division, and cities to develop zones which designate surrounding land uses compatible with airports.*
- (22) *Development of heliports, except for emergency use, shall be restricted to commercial, industrial, forest, and agricultural areas and residential areas where the approach and departure occur over areas where there is no potential for residential use.*
- (23) *The Lincoln County Airport Advisory Committee shall advise the County on all land use matters pertinent to airport and aircraft safety.*
- (24) *Lincoln County shall encourage:*
 - (a) *Improved transportation choices including opportunities for those who are aged or incapable due to physical or mental disorder;*
 - (b) *Establishment of a commuter airline service;*
 - (c) *Improvement and maintenance of marine facilities, where appropriate, such as docks, jetties and channels; and*
 - (d) *Designation and improvement of pedestrian and bicycle routes.*
- (25) *Lincoln County shall promote the expansion of the railway system capability.*
- (26) *Lincoln County shall review proposals to locate high voltage electrical transmission lines and high volume natural gas or oil pipelines. The review shall take into consideration land uses along and adjacent to these transmission corridors, weighing public benefit, environmental safety and the economics of alternative proposals.*
- (27) *Transmission lines and pipelines serving and linking residential, commercial, and industrial users shall be located along common corridors where feasible*
- (28) *Lincoln County shall encourage the licensing of bicycles by State of Oregon to increase revenues for bike way facilities.*
- (29) *Lincoln County shall encourage the Oregon Department of Transportation to widen and improve valley access highways.*
- (30) *Lincoln County shall require designation of car pool parking areas as part of access management plan for intersections near major collectors.*
- (31) *Permanent access to that portion of NE Harney Street between NE 32nd Street and NE 36th Street shall be limited to lands within the City of Newport Urban Growth Boundary. Access to lands outside the Urban Growth Boundary shall be limited to temporary access for forest management purposes. [1998 o.379 § 2]*

Zoning

The County's zoning regulations are also found in Chapter 1 of the County Code. This section establishes standards for the division of land and the development of public facilities improvements outside of Urban Growth Boundaries of cities within Lincoln County. Transportation-related development standards are listed in Appendix B.

Roads and Surveyor

Chapter 6 of the Lincoln County Code contains the Road Construction Standards. The construction specifications are the same as those adopted by ODOT.

2.6.2 Lincoln County Bicycle Plan (1992)

The stated purpose of this plan is to promote bicycle use for transportation and recreational purposes, provide for the efficient expenditure of County funds for this purpose, and to serve as an element of the Lincoln County Transportation System Plan as required by the Transportation Planning Rule. The Bicycle Plan reviews Oregon Revised Statute 366.514 ("reasonable amounts" of State Highway funding shall be expended to provide footpaths and bicycle facilities) and the OAR 660, Division 12 (TPR) requirements that are in place to "reduce reliance on the automobile and support the use of alternative modes of travel including bicycles." While the principal emphasis of the Bicycle Plan is on County roads (not those maintained by the State, US Forest Service or incorporated cities), the document provides an overview of designated bicycle routes in the County. In addition to the Oregon Coast Bike Route on Highway 101, three other major roads within the County are included in Oregon's bicycle system: US 20, OR 18 and OR 34. The Background section lists bicycle routes designated in the City of Newport's bicycle plan (1984) and the City of Lincoln City's Bikeway Master Plan (1987). Also discussed are US Forest Service roads in the Siuslaw National Forest that are used for mountain biking activities, although there is no comprehensive bicycle or recreational plan for the forest. The Lincoln County Bicycle Plan includes goals and objectives, and recommendations for county ordinances and standards.

2.6.3 Lincoln County Transportation System Plan (Draft, 1999)

A draft Lincoln County Transportation System Plan (TSP) was originally prepared through the financial assistance of a state Transportation and Growth Management (TGM) grant. Lincoln County never formally adopted the 1999 draft TSP, which is organized in four sections: Introduction, Existing Conditions, The Plan, and Transportation Planning Rule Compliance. The draft plan's organization would have benefited from a section specifically on Future Conditions and Needs and a section on Financing Plan that identifies funding or potential funding sources for needed transportation improvements. Appendix B includes a table summarizing the required elements of a Transportation System Plan as found in the Transportation Planning Rule (TPR) and provides comments regarding how well the 1999 draft TSP met these requirements. Recommendations for Lincoln County compliance with the implementation requirements of the TPR are reviewed as part of another table in this section of Appendix B.

Existing Conditions and Needs of the Lincoln County Transportation System

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DATE: December 12, 2005 (revised April 2006)

This technical memorandum incorporates comments and revisions from the Project Management Team's two meetings that reviewed the draft and made updates. The updated memorandum provides roadway, operational, and safety analysis for additional intersections. This document will be the basis for information ultimately included as Chapter 3 of the Lincoln County Transportation System Plan (prepared for ODOT under agreement #23238, work order #40, task 3.1). No attempt has been made to put appendixes in sequence at this point, which also may be cited in previous chapters.

The purpose of this memorandum is to document the existing roadway, bicycle, pedestrian, transit, air/rail/water/pipeline, and evacuation route conditions within Lincoln County and to identify existing transportation needs and deficiencies.

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CHAPTER 3

Existing Conditions and Needs

This chapter documents the existing roadway, bicycle, pedestrian, transit, air/rail/water/pipeline, and evacuation route conditions within Lincoln County. Existing transportation system needs and deficiencies are identified.

3.1 Existing Roadway Conditions and Needs

The analysis of existing roadway conditions (2005) focuses on geometries, safety, operational performance, bridges, and pavements outside of cities. However, because several county roads extend into city urban growth boundaries, those relationships are first discussed.

3.1.1 Interface Between County and City Roads

Various plans adopted by cities in Lincoln County include provisions related to county roads within city limits and urban growth boundaries. Coordination between the County's TSP and the Cities' TSPs is required. The plans and provisions are described in Appendix B and summarized here for each city. A brief summary of Urban Growth Management Agreements is also discussed.

Depoe Bay

Lincoln County has jurisdictional responsibility for the east-west oriented Collins Street; however, all other streets in Depoe Bay are local (city) streets or private streets. Local street improvements include improving Collins Street, located within Depoe Bay city limits, to collector street design standards and providing improved connections from this local street to Highway 101. Lincoln County is identified as a potential implementation mechanism for improvements. New double crosswalks across US 101 with curb extensions are proposed. As a collector street in the city, Collins Street is proposed to have 4-6 feet wide shoulder bikeways. Collins Street is proposed to be maintained as a two-way street with a right-turn only onto northbound US 101. If a local street system loop were implemented, an alternative would be to modify a one block section of Collins Street from Combs Street to US 101 as a one-way westbound. The intersection is forecast to degrade from LOS E at present to LOS F in 2025.

Newport

There are no identified County roadways in the Newport's TSP, adopted in 1997 and not updated as of 2006. The Newport Access Management Plan (1997) articulates the access management goals for established and developing areas and lists appropriate access management tools to be employed.

The Employment Lands & Conceptual Land Use Planning Project Report ("South Beach Neighborhood Plan") is an assessment of the City's economic conditions and future commercial and industrial growth potential, as well as a comprehensive land use plan for

the South Beach area of Newport. The Plan proposes to amend the City's urban growth boundary (UGB) to exclude 289 acres east of the airport (currently designated for high-density residential) and to include 189 acres just south of Kings Slough. Proposed comprehensive plan amendments (Exhibit 6) for the South Beach Neighborhood include additional high- and low-density residential, some reduction in industrial land in the area, and a 40-acre sight designated institutional to enable the siting of a new Oregon Coast Community College campus. The Transportation Plan (Section B, Chapter VII. South Beach Neighborhood Plan) proposes a new transportation infrastructure for the area. A new Parkway is proposed to provide access to the area proposed for addition to the UGB and that will allow north-south transportation off Highway 101. The recommended roadway configuration for South Beach includes construction of a new loop roadway through the area proposed for addition to the UGB. Future development is assumed to take access from the proposed loop road.

Waldport

Existing transportation facilities in Waldport include two roads maintained by Lincoln County: Bayview Road (just north of the Alsea Bay), located within Waldport city limits, and Crestline Drive (south of Salmon Street), located both within Waldport city limits and outside Waldport city limits but within Waldport's urban growth boundary. Crestline Drive is a minor collector and one of three streets that connect Highway 101 and Highway 34 with Waldport's upland area, where the majority of future development is expected. As nearby industrial areas develop, Crestline Drive is expected to experience additional truck traffic unless a new collector road is constructed. The City's Access Management Plan policies require "new development to minimize direct access points onto arterials and collectors by encouraging the utilization of new local streets that access arterials and collectors, and by encouraging the utilization of common driveways." The City's truck route policies state truck use on Crestline Drive could be restricted if a new collector road were constructed in south Waldport to US 101. The County is mentioned as a potential implementing mechanism for various improvement and maintenance projects.

Yachats

The Yachats Comprehensive Plan contains policies pertaining to County Road 804 (Yachats River Road, located within Yachats city limits), which is a historic Lincoln County facility. City policy is to assist the State and County in protecting the road's right-of-way and prescriptive easements and pursuing signing of existing access points.

Siletz Reservation

The 2003 Siletz Reservation Transportation Plan and Transportation Improvement Program (TIP) has a list of short-term (FY 03-FY 08) road improvements. Tribal future needs will be driven by new housing in the City of Siletz and Lincoln City, development of tribal-owned property in Salem and Toledo, and safety issues on State Route 229 (Siletz to Kernville). The Indian Reservation Road (IRR) System is divided into four classes of road based on the type of road and the land uses it serves. Lincoln County has 29.40 miles of road on the reservation, most of which (26.5 miles) are categorized as Class 4. Class 4 roads are defined as section line or stud roads that collect traffic for arterial type roads and make connections within the grid of the IRR. All of the improvement projects on County roads are identified

as “Construction Need 2,” roads that the Bureau of Indian Affairs does not have responsibility for funding and does not intend to fund. The County roads include Old River Road, S.E. Sturdevant Road, E. Logsdon Road, and Moonshine Road. There are no projects listed in the TIP where the County is identified as the responsible agency. The County is not listed as a funding source for any project listed on the IRR TIP, 2003-2008.

Lincoln City

Four roadways in Lincoln City or its Urban Growth Boundary are under County jurisdiction: East Devil’s Lake Road (minor or secondary arterial), located both within Lincoln City limits and outside Lincoln City limits but within Lincoln City’s urban growth boundary; West Devil’s Lake Road (minor or secondary arterial), entirely located within Lincoln City limits; and NW Logan Road (major collector), located both within Lincoln City limits and outside Lincoln City limits but within Lincoln City’s urban growth boundary. 51st Street (major collector) that becomes Schooner Creek Road outside of the city limits and UGB. Standards for these County roads should be reviewed for City compatibility. Two roads, NW Logan Road just north of Highway 101 and East Devil’s Lake Road just east of Highway 101, have significantly high traffic volumes. There are three County bridges in the City limits or UGB. West Devil’s Lake Bridge near NE 24th Street has no immediate problems, but it lacks sidewalks and its location in a boggy area may cause future problems. The two East Devil’s Lake Bridges (#10101 and #10102) experience high water on the road and have no sidewalks or bike lanes. The City’s bicycle route plan includes West Devil’s Lake Loop, a route that would require road widening to include two 5-foot bike lanes, and East Devil’s Lake Road Loop, which is also recommended for widening to accommodate striped and signed bike lanes. The City’s Implementation and Financing Plan includes projects on County facility and indicates the priority (high, medium or low), estimated costs, potential funding sources, and the timeframe for improvements.

Toledo

County facilities in Toledo include Sturdevant Road (located both within Toledo city limits, and outside Toledo city limits but within Toledo’s urban growth boundary), one of the principal north-south roadways serving an urbanizing area north and east of the Olalla Slough, and South Bay Road to Newport (located both within Toledo city limits and outside Toledo city limits but within Toledo’s urban growth boundary). The County also maintains the following Minor Collectors: Lincoln Way (located within Toledo city limits), Skyline Drive (located Toledo both within city limits and outside Toledo city limits but within Toledo’s urban growth boundary), Cemetery Road and Arcadia Drive (located outside Toledo city limits but within Toledo’s urban growth boundary) from Cemetery Road to U.S. Highway 20. There is a limited network of bicycle paths and no on-street bike lanes. The City would like to see a bike path established along Sturdevant Road to connect service to the urbanizing areas north and east of the Olalla Slough and the Toledo Middle and High Schools. Business Highway 20 lies completely within the City limits and is the only minor arterial. Recommendations of the Sidewalk Facility Plan set standards for new sidewalks along Business Highway 20 and local facilities; the Bicycle Facility Plan calls making Sturdevant Road a high priority bicycle corridor.

Urban Growth Management Agreements

Toledo is the only city within Lincoln County to have an Urban Growth Management Agreement (UGMA) within Lincoln County. This UGMA addresses the coordination of development activities within the Toledo UGB. The other cities within Lincoln County have jointly adopted general plan policies and/or codes that deal with urbanization and coordination of undeveloped land within the UGB.

3.1.2 Average Daily Traffic Volumes

The average daily traffic (ADT) volumes for state highways in Lincoln County vary between 6,000 and 15,300 vehicles per day. Traffic volumes within the cities are higher, up to nearly 29,000 vehicles per day. By and large, rural ADT traffic is relatively low and congestion is not a problem during most times of the day. However, travel conditions during the peak summertime period are congested with considerable delays, especially along US 20, US 101 and OR 18. These routes experience increases in traffic volumes between 120 and 130 percent of ADT during the month of August¹. Traffic volumes cited below are the most recent available.

- On the Oregon Coast Highway (US 101), 2004 ADT ranged from a low of 2,300 vehicles per day, at the Lane-Lincoln County line, to a high of 15,300 vehicles per day, 0.01 miles south of East Devils Lake Road.
- On the Corvallis-Newport Highway (US 20), 2004 ADT ranged from a low of 4,200 vehicles per day, 0.01 miles north of Elk City Road, to a high of 14,000 vehicles per day, 0.01 miles east of Benson Road.
- On the Salmon River Highway (OR 18), 2004 ADT ranged from a low of 9,100 vehicles per day, 0.01 miles west of North Bank Road at Rose Lodge, to a high of 11,900 vehicles per day, 0.40 miles east of US 101.
- On the Alsea Highway (OR 34), 2004 ADT ranged from a low of 810 vehicles per day, 0.01 miles north of Five Rivers Road to Denzer, to a high of 4,400 vehicles per day, 0.01 miles east of Moffitt Road.
- On the Eddyville-Blodgett Highway (OR 180), 2003 ADT ranged from a low of 60 vehicles per day, 0.04 miles east of Norton Peak Lookout Road, to a high of 500 vehicles per day, at the Lincoln-Benton County line.
- On the Siletz Highway (OR 229), 2003 ADT ranged from a low of 310 vehicles per day, 0.02 miles south of Mowery's Landing Road, to a high of 5,000 vehicles per day, 0.05 miles north of US 20.

3.1.3 Study Intersections and Raw Traffic Counts

Manual turning movement counts were collected for eight intersections along the Oregon Coast Highway (US 101) on typical weekdays in February and March 2005. All counts were collected during the afternoon peak period (4:00 PM to 6:00 PM), which is when traffic

¹ Source: 2004 ATR Trend Summary. <http://www.oregon.gov/ODOT/TD/TDATA/tsm/atrtremds.shtml>

volumes are highest on area roadways. These counts were collected to evaluate the existing roadways and intersection operations.

Additional intersection turning movement counts were collected at 23 locations on Saturday afternoons (3:00 PM to 5:00 PM) on August 6 or August 13, 2005. The timing of these counts coincided with the summertime peak period and the one that most closely matches the 30th highest hour traffic volume.

Traffic data were collected for the following intersections. Appendix A contains figures showing locations, approach views, lane geometry, and raw traffic volumes for each intersection.

Signalized

- US 101 and Salishan Drive

Unsignalized

- US 101 and Drift Creek Road
- US 101 and Siletz Highway
- US 101 and Immonen Road
- US 101 and Gleneden Beach Loop North
- US 101 and Lancer Street
- US 101 and Willow Drive
- US 101 and Otter Crest Loop North
- US 101 and Otter Crest Loop South
- US 101 and North Beaver Creek Road
- US 101 and Bay View Road
- US 101 and Wakonda Beach Road
- US 101 and Yachats River Road
- US 101 and Lori Lane
- US 20 and Western Loop
- US 20 and Business 20 (west)
- US 20 and OR 229
- Business 20 (west) and Business 20
- US 20 and Olalla Lake Road
- US 20 and Business 20 (east)
- OR 18 and Old Scenic Hwy 101
- OR 18 and Bear Creek Road
- OR 18 and North Bank Road
- OR 18 and Slick Rock Road
- OR 229 and Pikes Camp Road
- OR 229 and Logsden Road
- Otter Crest Lookout and Otter Crest Loop
- Otter Crest Loop and 1st Street

Planned Roadway Improvement Projects

The US 20 Pioneer Mtn-Eddyville project would realign a 10.25-mile segment of the Corvallis-Newport Highway (US 20) from Pioneer Mountain to just east of Eddyville in

Oregon's Coast Range. (Intersections currently within this segment were not made part of this study because the future realignment would make data irrelevant.) The project was let for bid on a design-build basis in spring 2005 and construction is expected to be completed by 2010. To increase highway safety and improve traffic flow, major segments of the highway would be realigned to reduce the relatively sharp curves, rolling course, and number of direct accesses. A higher than average accident rate occurs on this segment of the highway. The project is divided into two segments. The Unit 1 segment would follow alongside the existing US 20 alignment with horizontal geometry improvements. The Unit 2 segment would provide a new alignment across mountainous timberland with deep cuts and fills. Toward the east end of the project, a new intersection on US 20 will be created for access to the unincorporated community of Eddyville, along with a new intersection toward the west end of the project approximately a half-mile east of Elk City Road on US 20. Ownership of the old alignment will be transferred to Lincoln County. US 20 is an important route for trucks serving the Georgia-Pacific mill in Toledo and the Port of Newport docks, as well as timber harvest in the Siuslaw National Forest and private timber holdings. Many trucks currently must use OR 18 and US 101 to reach coast locations because the existing alignment will not safely accommodate the length of the trailers.

Analysis of the Automated Traffic Recorder Sites

ODOT traffic analysis procedures require the 30th highest hour traffic volumes be used for planning, project design, and to calculate volume to capacity (V/C^2) ratios for intersections and street segments. The 30th highest hour represents the 30th highest recorded traffic volumes during a one-year period. Data from three nearby Automated Traffic Recorder (ATR) sites³ were used to determine seasonal factors and to calculate 30th highest hour traffic volumes from traffic counts collected.

For the counts collected in August 2005, the data was collected nearest to when the 30th highest hour traffic volume actually occurs, so no seasonal adjustments were made. Methods and assumptions used in this analysis are summarized in Appendix C.

Analysis Method

Operational analysis of existing conditions for the study intersections, using 30th highest hour traffic volumes, was performed using Synchro analysis software. Appendix B provides an overview of the traffic analysis methodology.

State Highway Mobility Standards

State Highway Mobility Standards were developed for the 1999 Oregon Highway Plan (OHP) as a method to gauge reasonable and consistent standards for traffic flow along state highways. These mobility standards consider the classification (e.g., freeway, district) and location (rural, urban) of each state highway. Mobility standards are based on V/C ratios. County roadways do not fall under the same mobility standards as State highways unless they are adopted as part of the TSP. In the absence of county mandated mobility standards, state mobility standards will be applied to both state highways and county roads for this

² V/C ratios are defined as the number of vehicles passing through a roadway segment during the peak hour, divided by the capacity of that roadway segment.

³ *ibid* (1)

analysis. On August 17, 2005, amendments to the 1999 OHP mobility standards were adopted by the Oregon Transportation Commission. The adopted mobility standards will be used in this TSP.

Based on the functional designation of the state highways and local roadways evaluated with this study, only the state mobility standards listed in Table 3-1 apply to the study area intersections and roads. There are no study intersections or roads part of the analysis with posted speeds greater than 35 mph that are inside an Urban Growth Boundary (UGB). Many of the study intersections and roads are located outside the UGB and have posted speeds between 45 and 55 mph.

TABLE 3-1
Mobility Standards Applicable to Operational Analysis

Row No.	Highway Category	Land Use	Speed Limit	Applicable V/C Ratio
Inside Urban Growth Boundary				
1	Statewide (NHS) Non-Freight Routes	Non-MPO	≤35 mph	0.85
2	Statewide (NHS) Non-Freight Routes	STA	N/A	0.90
3	District/Local Road, Arterial-Collector	Non-MPO	≤35 mph	0.90
4	District/Local Road, Arterial-Collector	STA	N/A	0.95
Outside Urban Growth Boundary				
5	Statewide (NHS) Freight Routes	Rural Lands	N/A	0.70
6	Statewide (NHS) Non-Freight Routes	Rural Lands	N/A	0.70
7	District/Local Road, Arterial-Collector	Rural Lands	N/A	0.75

Source: Adopted Oregon Highway Plan Amendments, August 17, 2005.

3.1.4 Operational Analysis of Existing Conditions

Table 3-2 presents the OHP mobility standards and observed intersection V/C ratios for each of the study intersections under existing (2005) 30th highest hour traffic volumes. The overall intersection results are reported for signalized intersections. For unsignalized intersections, the movement with the worst operating performance on both the major and minor approaches is reported. V/C ratios that are higher than the mobility standard are highlighted in bold type. Appendix A displays the results of the operational analysis. Appendix C provides the complete report output for each intersection.

TABLE 3-2
Operational Analysis of Study Intersections – 30th Highest Hour (Year 2005)

Intersection	OHP Mobility Standard (Row No. from Table 3-1) ¹		2005 Existing Overall or Maximum V/C Ratio	
Signalized				
US 101 and Salishan Drive	0.70 (6)		0.74	
Unsignalized				
	Major ¹	Minor ²	Major ³	Minor ⁴
US 101 and Drift Creek Road	0.70 (6)	0.75 (7)	0.65	0.52

TABLE 3-2
Operational Analysis of Study Intersections – 30th Highest Hour (Year 2005)

Intersection	OHP Mobility Standard		2005 Existing	
	(Row No. from Table 3-1) ¹		Overall or Maximum V/C Ratio	
US 101 and Siletz Highway	0.70 (6)	0.75 (7)	0.29	0.15
US 101 and Immonen Road	0.70 (6)	0.75 (7)	0.59	0.23
US 101 and Gleneden Beach Loop North	0.70 (6)	0.75 (7)	0.52	0.95
US 101 and Lancer Street	0.70 (6)	0.75 (7)	0.53	0.30
US 101 and Willow Drive	0.70 (6)	0.75 (7)	0.22	0.30
US 101 and Otter Crest Loop North	0.70 (6)	0.75 (7)	0.40	0.26
US 101 and Otter Crest Loop South	0.70 (6)	0.75 (7)	0.39	0.23
US 101 and North Beaver Creek Road	0.70 (6)	0.75 (7)	0.37	0.25
US 101 and Bay View Road	0.70 (6)	0.75 (7)	0.27	0.22
US 101 and Wakonda Beach Road	0.70 (6)	0.75 (7)	0.30	0.10
US 101 and Yachats River Road ²	0.90 (2)	0.95 (4)	0.29	0.13
US 101 and Lori Lane ²	0.85 (1)	0.90 (3)	0.28	0.05
US 20 and Western Loop	0.70 (5)	0.75 (7)	0.36	0.07
US 20 and Business 20 (west)	0.70 (5)	0.75 (7)	0.38	0.68
US 20 and OR 229	0.70 (5)	0.75 (7)	0.18	0.84
Business 20 (west) and Business 20 ²	0.90 (3)	0.90 (3)	0.14	0.27
US 20 and Olalla Lake Road	0.70 (5)	0.75 (7)	0.15	0.09
US 20 and Business 20 (east)	0.70 (5)	0.75 (7)	0.19	0.14
OR 18 and Old Scenic Highway 101	0.70 (5)	0.75 (7)	0.56	0.41
OR 18 and Bear Creek Road	0.70 (5)	0.75 (7)	0.37	0.19
OR 18 and North Bank Road	0.70 (5)	0.75 (7)	0.54	0.23
OR 18 and Slick Rock Road	0.70 (5)	0.75 (7)	0.53	0.13
OR 229 and Pikes Camp Road	0.75 (7)	0.75 (7)	0.04	0.02
OR 229 and Logsdan Road ²	0.90 (3)	0.90 (3)	0.19	0.46
Otter Crest Lookout and Otter Crest Loop	0.75 (7)	0.75 (7)	0.06	0.04
Otter Crest Loop and 1st Street	0.75 (7)	0.75 (7)	0.05	0.15

¹ The numbers in parentheses refer to the row number of the applicable mobility standard in Table 3-1.

² The intersection is located within a city limit and/or UGB.

³ Indicates OHP Mobility Standard V/C ratio for uncontrolled roadway approach.

⁴ Indicates OHP Mobility Standard V/C ratio for stop controlled roadway approach.

⁵ Indicates worst measured v/c ratio for uncontrolled roadway approach.

⁶ Indicates worst measured v/c ratio for stop controlled roadway approach.

SOURCE: CH2M HILL, Synchro Highway Capacity Manual (HCM) Signals and Unsignalized reports.

NOTE: Numbers in **BOLD** indicate higher than acceptable mobility levels.

Intersection V/C ratios higher than OHP mobility standards indicate areas of congestion and longer-than-acceptable vehicle delay. Intersection V/C ratios lower than OHP mobility standards indicate intersections operating at acceptable levels of mobility. As shown in Table 3-2, three study intersections currently operate above the OHP mobility standard. The signalized intersection at Salishan Drive has an overall V/C ratio of 0.74 compared to the mobility standard of 0.70. The stop-controlled approach of Gleneden Beach Road at US 101 has an overall V/C ratio of 0.95 compared to the mobility standard of 0.75. The stop-controlled southbound approach of OR 229 (Siletz Highway) at US 20 has an overall V/C ratio of 0.84 compared to the mobility standard of 0.75.

The V/C ratio provides only one measure-of-effectiveness of the intersection operation. Vehicle queuing in the turn-lanes shows where there is deficient vehicle storage at intersections. No intersections are identified where 95th percentile queue lengths exceed available storage capacity.

3.1.5 Safety Analysis

Crash history statistics were provided by the ODOT Crash Analysis Unit for the years 1999-2003, which are the most recent five years available. These data were analyzed to identify crash patterns that could be a result of existing geometric or operational deficiencies along the six state highways in Lincoln County. Crash rates, expressed in “crashes per million vehicle-miles traveled,” are used to compare the crash experience of one roadway segment to another. This rate expresses how many crashes might be expected of vehicles traveling through a particular section of roadway for a cumulative total of one million miles. Each highway is presented separately and both segments and study intersections are analyzed in the study area.

Oregon Coast Highway (US 101) Analysis

For the five-year period, a total of 412 crashes were reported along the Oregon Coast Highway within the study area, including 169 injury, 236 property damage, and 7 fatal crashes. Tables 3-3 and 3-4 provide an overview of all traffic crashes over the five-year period.

TABLE 3-3
Historical Crash Severity (1999-2003) for US 101 in Lincoln County

Year	Severity of Crash			Total Crashes
	Injury	Fatality	Property Damage	
1999	35	1	57	93
2000	29	1	28	58
2001	28	3	47	78
2002	43	2	50	95
2003	34	0	54	88
Total	169	7	236	412

TABLE3-4
Historical Crash Type (1999-2003) for US 101 in Lincoln County

Year	Type of Crash											
	Angle	Backing	Fixed Object	Head - On	Non - Collision	Parking	Pedestrian	Rear - End	Sideswipe Meeting	Sideswipe Overtaking	Turning	Other
1999	1	0	26	3	3	0	0	31	3	6	13	7
2000	1	1	26	0	0	1	0	16	3	2	8	0
2001	0	0	31	3	0	1	3	13	4	4	18	1
2002	0	0	36	0	1	1	0	37	4	1	13	2
2003	1	1	25	0	0	0	1	34	9	2	12	3
Total	3	2	144	6	4	3	4	131	23	15	64	13

The number of automobile collisions along the corridor ranged between 58 and 95 per year. The most common type of crash was fixed object, which comprised roughly 35 percent (144 crashes) of all crashes over the five-year period. This was followed by rear-end crashes, which comprised roughly 32 percent (131 crashes) of all crashes over the five-year period.

Segment Analysis for US 101

The study section of US 101 was divided into segments (with similar ADT volumes) in order to quantify the crash rate. The crash rate was computed for each segment and for the entire length of the study section based on reported crashes between 1999 and 2003, as shown in Table 3-5.

TABLE 3-5
Five-Year US 101 Crash History by Segment
January 1, 1999 to December 31, 2003

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2001 Average Annual Daily Traffic (AADT)	Total Crashes	Average Annual Crash Rate ¹
	From	To				
Tillamook-Lincoln County Line to OR 18	102.80	105.21	2.41	4,970		
5 Years					23	
(Average Annual)					5	1.05
OR 18 to Lincoln City Suburban Area	105.21	110.82	5.61	15,900		
5 Years					12	
(Average Annual)					2	0.07
Lincoln City Suburban Area to Lincoln City	110.82	111.81	0.99	16,500		
5 Years					25	

TABLE 3-5
Five-Year US 101 Crash History by Segment
January 1, 1999 to December 31, 2003

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2001 Average Annual Daily Traffic (AADT)	Total Crashes	Average Annual Crash Rate ¹
	From	To				
(Average Annual)					5	0.84
Within Lincoln City Limits	111.81	118.71	6.90	*	*	*
5 Years (Average Annual)						
Lincoln City to OR 229	118.71	120.02	1.31	14,350		
5 Years (Average Annual)					22	
OR 229 to Depoe Bay	120.02	126.45	6.43	12,000	4	0.64
5 Years (Average Annual)					56	
Within Depoe Bay City Limits	126.45	128.57	2.12	*	*	*
5 Years (Average Annual)					11	0.40
Depoe Bay to Newport	128.57	136.53	7.96	8,900		
5 Years (Average Annual)					89	
Within Newport City Limits	136.53	146.46	9.93	*	*	*
5 Years (Average Annual)					18	0.69
Newport to Waldport	146.46	155.46	9.00	8,870		
5 Years (Average Annual)					107	
Within Waldport City Limits	155.46	156.82	1.36	*	*	*
5 Years (Average Annual)					21	0.73
Waldport to Yachats	156.82	163.41	6.59	5,800		
5 Years (Average Annual)					64	
Within Yachats City Limits	163.41	165.48	2.07	*	*	*
5 Years (Average Annual)					13	0.92
Yachats to Lincoln-Lane County Line	165.48	167.61	2.13	2,000		
5 Years (Average Annual)					11	
					2	1.41
Total/Overall	102.80	167.61	42.43	9,590		
5 Years (Average Annual)*					409	
					82	0.55

¹ Crashes per Million Vehicle Miles

* Not part of study area

Note: Average annual "total" column may not agree with component total due to rounding.

The section of US 101 from between mileposts 165.48 and 167.61 (Tillamook-Lincoln County Line to Salmon River Highway) has the highest incidence of crashes in the last five years when compared to the entire length. The study section of US 101 is classified as a Rural Principal Arterial, except for one section (MP 110.82 to 111.81) that is classified as a Suburban Principal Arterial. ODOT has computed a statewide crash rate of 0.72 for all rural principal arterials and 1.34 for all suburban principal arterials. The overall study section crash rate of 0.55 is less than the rural and suburban statewide crash rate.

Intersection Analysis for US 101

Only five of the thirteen study intersections experienced a crash in the last five years. All crashes, except one, were property damage only. The crash at Willow Drive had an injury. Table 3-6 provides a summary of the crashes recorded by intersection location.

TABLE 3-6
Intersection Crash Data (1999-2003) for US 101 in Lincoln County

Intersection with US 101	Severity of Crash			Total Crashes	Crash Rate
	Injury	Fatality	Property Damage		
Drift Creek Road	0	0	0	0	0.00
Siletz Highway	0	0	0	0	0.00
Immonen Road	0	0	0	0	0.00
Gleneden Beach Loop North	0	0	0	0	0.00
Salishan Drive	0	0	1	1	0.05
Lancer Street	0	0	2	2	0.09
Willow Drive	1	0	0	1	0.04
Otter Crest Loop North	0	0	0	0	0.00
North Beaver Creek Road	0	0	0	0	0.00
Bay View Road	0	0	1	1	0.06
Wakonda Beach Road	0	0	1	1	0.10
Yachats River Road	0	0	0	0	0.00
Lori Lane	0	0	0	0	0.00

A crash rate higher than 1.0 indicates a safety concern. All intersection crash rates along US 101 were at or below 0.10. The crash rates do not indicate a safety concern for study intersections along the Oregon Coast Highway.

Corvallis-Newport Highway (US 20) Analysis

For the five-year period, a total of 335 crashes were reported along the Corvallis-Newport Highway within the study area, including 103 injury, 219 property damage, and 13 fatal crashes. Tables 3-7 and 3-8 provide an overview of all traffic crashes over the five-year period.

TABLE 3-7
Historical Crash Data (1999-2003) for US 20 in Lincoln County

Year	Severity of Crash			Total Crashes
	Injury	Fatality	Property Damage	
1999	32	0	38	70
2000	18	0	34	52
2001	21	6	52	79
2002	19	4	43	66
2003	13	3	52	68
Total	103	13	219	335

TABLE 3-8
Historical Crash Data (1999-2003) for US 20 in Lincoln County

Year	Type of Crash											
	Angle	Backing	Fixed Object	Head - On	Non - Collision	Parking	Pedestrian	Rear - End	Sideswipe Meeting	Sideswipe Overtaking	Turning	Other
1999	2	0	25	6	5	0	0	16	2	2	8	4
2000	1	0	22	1	0	0	0	13	4	0	7	4
2001	0	0	30	3	0	0	0	17	10	4	8	7
2002	2	1	35	1	1	0	0	12	8	0	2	4
2003	0	0	25	1	0	0	0	21	3	3	6	9
Total	5	1	137	12	6	0	0	79	27	9	31	28

The number of automobile collisions along the corridor ranged between 52 and 79 per year. The most common type of crash was fixed object, which comprised roughly 41 percent (137 crashes) of all crashes over the five-year period. This was followed by rear-end crashes, which comprised roughly 24 percent (79 crashes) of all crashes over the five-year period.

Segment Analysis along Corvallis-Newport Highway (US 20)

The study section of US 20 was divided into segments (with similar ADT volumes) in order to quantify the crash rate. The crash rate was computed for each segment and for the entire length of the study section based on reported crashes between 1999 and 2003, as shown in Table 3-9.

TABLE 3-9
Five-Year US 20 Crash History
January 1, 1999 to December 31, 2003

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2001 Average Annual Daily Traffic (AADT)	Total Crashes	Average Annual Crash Rate ¹
	From	To				
US 101 to Newport City Limits	0.00	1.73	1.73	14,020	*	*
5 Years (Average Annual)						
Newport to Toledo	1.73	5.42	3.69	12,000	72	
5 Years (Average Annual)					14	0.89
Within Toledo City Limits	5.42	5.61	0.19	9,500	*	*
5 Years (Average Annual)						
Toledo to Sam Creek Road	5.61	9.38	3.77	4,970	81	
5 Years (Average Annual)					16	2.37
Sam Creek Road to Chitwood	9.38	14.89	5.51	4,650	16	
5 Years (Average Annual)					3	0.34
Chitwood to OR 180	14.89	23.18	8.29	4,380	91	
5 Years (Average Annual)					18	1.37
OR 180 to Lincoln-Benton County Line	23.18	34.35	11.17	4,510	75	
5 Years (Average Annual)					15	0.82
Total/Overall	0.00	34.35	32.43	5,410	335	
5 Years (Average Annual)*					67	1.05

¹ Crashes per Million Vehicle Miles

* Not part of study area (shaded row in table)

Note: Average annual "total" column may not agree with component total due to rounding.

The section of US 20 from between mileposts 5.61 and 9.38 (Toledo to Sam Creek Road) has the highest incidence of crashes in the last five years when compared to the entire length. The study section of US 20 is classified as a Rural Principal Arterial. ODOT has computed a statewide crash rate of 0.72 for all rural principal arterials. The overall study section crash rate of 1.05 is much greater than the rural statewide crash rate.

Intersection Analysis along Corvallis-Newport Highway (US 20)

Four of the five study intersections experienced a crash in the last five years. Seven crashes were property damage only, four were injurious, and one was fatal. The crashes at the intersection with OR 229 include one crash from OR 229 and five from US 20. Table 3-10 provides a summary of the crashes recorded by intersection location.

TABLE 3-10
Intersection Crash Data (1999-2003) for US 20 in Lincoln County

Intersection with US 20	Severity of Crash			Total Crashes	Crash Rate
	Injury	Fatality	Property Damage		
Western Loop	0	0	0	0	0.00
Business 20 (west)	0	1	0	1	0.09
OR 229	3	0	3	6	0.57
Olalla Lake Road	0	0	3	3	0.32
Business 20 (east)	1	0	1	2	0.21

A crash rate higher than 1.0 indicates a safety concern. All intersection crash rates along US 20 were at or below 0.57. The crash rates do not indicate a safety concern for study intersections along the Corvallis-Newport Highway.

Siletz Highway (OR 229) Analysis

For the five-year period, a total of 79 crashes were reported along the Siletz Highway within the study area, including 35 injury, 40 property damage, and 4 fatal crashes. Tables 3-11 and 3-12 provide an overview of all traffic crashes over the five-year period.

TABLE 3-11
Historical Crash Data (1999-2003) for OR 229 in Lincoln County

Year	Severity of Crash			Total Crashes
	Injury	Fatality	Property Damage	
1999	8	1	11	20
2000	7	1	4	12
2001	4	1	9	14
2002	8	0	7	15
2003	8	1	9	18
Total	35	4	40	79

TABLE 3-12
Historical Crash Data (1999-2003) for Siletz Highway within Lincoln County

Year	Type of Crash											
	Angle	Backing	Fixed Object	Head - On	Non - Collision	Parking	Pedestrian	Rear - End	Sideswipe Meeting	Sideswipe Overtaking	Turning	Other
1999	0	0	10	1	4	0	0	3	0	1	1	0
2000	0	0	7	0	0	0	0	1	0	1	2	1
2001	0	0	9	0	0	0	0	3	0	0	1	1
2002	0	0	10	1	0	0	0	1	1	0	1	1
2003	1	0	12	0	0	0	0	2	0	0	2	1
Total	1	0	48	2	4	0	0	10	1	2	7	4

The number of automobile collisions along the corridor ranged between 12 and 20 crashes per year. The most common type of crash was fixed object, which comprised roughly 61 percent (48 crashes) of all crashes over the five-year period. This was followed by rear-end crashes, which comprised roughly 13 percent (10 crashes) of all crashes over the five-year period.

Segment Analysis along Siletz Highway (OR 229)

The study section of OR 229 was divided into segments (with similar ADT volumes) in order to quantify the crash rate. The crash rate was computed for each segment and for the entire length of the study section based on reported crashes between 1999 and 2003, as shown in Table 3-13.

TABLE 3-13
Five-Year OR 229 Crash History
January 1, 1999 to December 31, 2003

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2001 Average Annual Daily Traffic (AADT)	Total Crashes	Average Annual Crash Rate ¹
	From	To				
US 101 to Siuslaw National Forest	-0.21	2.44	2.65	1,150		
5 Years					14	
(Average Annual)					3	2.52
Siuslaw National Forest to Cedar Creek	2.44	15.46	13.02			
5 Years				480	27	

TABLE 3-13
Five-Year OR 229 Crash History
January 1, 1999 to December 31, 2003

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2001 Average Annual Daily Traffic (AADT)	Total Crashes	Average Annual Crash Rate ¹
	From	To				
(Average Annual) Cedar Creek to Siletz City Limits 5 Years	15.46	23.48	8.02	740	5	2.37
(Average Annual) Within Siletz City Limits 5 Years	23.48	24.10	0.62	*	4	1.75
(Average Annual) Siletz to US 20 5 Years	24.10	31.24	7.14	4,300	19	
(Average Annual) Total/Overall 5 Years	-0.21	31.24	30.83	1,490	79	0.34
(Average Annual)*					16	0.94

¹ Crashes per Million Vehicle Miles

* Not part of study area (shaded row in table)

Note: Average annual "total" column may not agree with component total due to rounding.

The section of OR 229 from between mileposts -0.21 and 2.44 (US 101 to Siuslaw National Forest) has the highest incidence of crashes in the last five years when compared to the entire length. The study section of OR 229 is classified as a Rural Major Collector. ODOT has computed a statewide crash rate of 1.20 for all rural major collectors. The overall study section crash rate of 0.94 is less than the rural statewide crash rate.

Intersection Analysis along Siletz Highway (OR 229)

Only the study intersection at US 20 experienced a crash in the last five years. Three crashes were property damage only and three were injurious. The crashes at the intersection with US 20 include five crashes from US 20 and one from OR 229. Table 3-14 provides a summary of the crashes recorded by intersection location.

TABLE 3-14
Intersection Crash Data (1999-2003) for OR 229 in Lincoln County

Intersection with OR 229	Severity of Crash			Total Crashes	Crash Rate
	Injury	Fatality	Property Damage		
Pikes Camp Road	0	0	0	0	0.00
Logsdan Road	0	0	0	0	0.00
US 20	3	0	3	6	0.57

A crash rate higher than 1.0 indicates a safety concern. All intersection crash rates along OR 229 were at or below 0.57. The crash rates do not indicate a safety concern for study intersections along the Siletz Highway.

Alsea Highway (OR 34) Analysis

For the five-year period, a total of 74 crashes were reported along the Alsea Highway within the study area, including 38 injury, 33 property damage, and 3 fatal crashes. Tables 3-15 and 3-16 provide an overview of all traffic crashes over the five-year period.

TABLE 3-15
Historical Crash Data (1999-2003) for OR 34 in Lincoln County

Year	Severity of Crash			Total Crashes
	Injury	Fatality	Property Damage	
1999	10	1	4	15
2000	7	2	6	15
2001	11	0	6	17
2002	4	0	10	14
2003	6	0	7	13
Total	38	3	33	74

TABLE 3-16
Historical Crash Data (1999-2003) for OR 34 in Lincoln County

Year	Type of Crash											
	Angle	Backing	Fixed Object	Head - On	Non - Collision	Parking	Pedestrian	Rear - End	Sideswipe Meeting	Sideswipe Overtaking	Turning	Other
1999	0	0	7	2	2	0	1	3	0	0	0	0
2000	0	0	7	0	0	0	0	3	0	0	3	2
2001	0	0	12	1	0	0	0	1	0	0	0	3
2002	0	0	6	0	0	1	0	2	1	1	1	2
2003	0	0	7	0	0	0	0	1	0	0	3	2
Total	0	0	39	3	2	1	1	10	1	1	7	9

The number of automobile collisions along the corridor ranged between 13 and 17 crashes per year. The most common type of crash was fixed object, which comprised roughly

53 percent (39 crashes) of all crashes over the five-year period. This was followed by rear-end crashes, which comprised roughly 14 percent (10 crashes) of all crashes over the five-year period.

Segment Analysis for OR 34

The study section of OR 34 was divided into segments (with similar ADT volumes) in order to quantify the crash rate. The crash rate was computed for each segment and for the entire length of the study section based on reported crashes between 1999 and 2003, as shown in Table 3-17.

TABLE 3-17
Five-Year OR 34 Crash History
January 1, 1999 to December 31, 2003

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2001 Average Annual Daily Traffic (AADT)	Total Crashes	Average Annual Crash Rate ¹
	From	To				
Within Waldport City Limits	0.00	1.62	1.62	*	*	*
5 Years (Average Annual)						
Waldport City Limits to Eckman Creek Road	1.62	2.62	1.00	3,270		
5 Years (Average Annual)					18	3.02
Eckman Creek Road to Scott Creek Bridge	2.62	14.50	11.88	1,490		
5 Years (Average Annual)					41	1.27
Scott Creek Bridge to Lincoln-Benton County Line	14.50	27.52	13.02	810		
5 Years (Average Annual)					15	0.78
Total/Overall	1.62	27.52	25.90	1,220		
5 Years (Average Annual)*					74	
					15	1.28

¹ Crashes per Million Vehicle Miles

* Not part of study area (shaded row in table)

Note: Average annual "total" column may not agree with component total due to rounding.

The section of OR 34 from between mileposts 1.62 and 2.62 (Waldport City Limits to Eckman Creek Road) has the highest incidence of crashes in the last five years when compared to the entire length. The study section of OR 34 is classified as a Rural Minor Arterial. ODOT has computed a statewide crash rate of 0.97 for all rural minor arterials. The overall study section crash rate of 1.28 is greater than the rural statewide crash rate.

Intersection Analysis for OR 34

No study intersections are present along OR 34.

Salmon River Highway (OR 18) Analysis

For the five-year period, a total of 170 crashes were reported along the Salmon River Highway within the study area, including 66 injury, 98 property damage, and 6 fatal crashes. Tables 3-18 and 3-19 provide an overview of all traffic crashes over the five-year period.

TABLE 3-18
Historical Crash Data (1999-2003) for OR 18 in Lincoln County

Year	Severity of Crash			Total Crashes
	Injury	Fatality	Property Damage	
1999	17	1	17	35
2000	5	1	12	18
2001	13	0	27	40
2002	20	3	27	50
2003	11	1	15	27
Total	66	6	98	170

TABLE 3-19
Historical Crash Data (1999-2003) for OR 18 in Lincoln County

Year	Type of Crash											
	Angle	Backing	Fixed Object	Head - On	Non - Collision	Parking	Pedestrian	Rear - End	Sideswipe Meeting	Sideswipe Overtaking	Turning	Other
1999	0	0	13	1	2	0	1	8	1	1	4	4
2000	0	0	11	0	0	0	0	3	2	0	2	0
2001	0	0	17	0	0	0	0	10	3	1	8	1
2002	0	0	15	0	0	0	1	15	7	1	9	2
2003	0	0	7	1	0	0	0	13	1	0	3	2
Total	0	0	63	2	2	0	2	49	14	3	26	9

The number of automobile collisions along the corridor ranged between 18 and 50 crashes per year. The most common type of crash was fixed object, which comprised roughly 37 percent (63 crashes) of all crashes over the five-year period. This was followed by rear-end crashes, which comprised roughly 29 percent (49 crashes) of all crashes over the five-year period.

Segment Analysis for OR 18

The study section of OR 18 was divided into segments (with similar ADT volumes) in order to quantify the crash rate. The crash rate was computed for each segment and for the entire length of the study section based on reported crashes between 1999 and 2003, as shown in Table 3-20.

TABLE 3-20
Five-Year OR 18 Crash History
January 1, 1999 to December 31, 2003

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2001 Average Annual Daily Traffic (AADT)	Total Crashes	Average Annual Crash Rate ¹
	From	To				
US 101 to Otis Junction	-0.22	1.26	1.48	11,400		
5 Years (Average Annual)					25 5	0.81
Otis Junction to Lincoln-Tillamook County Line	1.26	10.26	9.00	9,250		
5 Years (Average Annual)					145 29	0.95
Total/Overall	-0.22	10.26	10.48	9,560		
5 Years (Average Annual)*					170 34	0.93

¹ Crashes per Million Vehicle Miles

Note: Average annual "total" column may not agree with component total due to rounding.

The section of OR 18 from between mileposts 1.26 and 10.26 (Otis Junction to Lincoln-Tillamook County Line) has the highest incidence of crashes in the last five years when compared to the entire length. The study section of OR 18 is classified as a Rural Principal Arterial. ODOT has computed a statewide crash rate of 0.72 for all rural principal arterials. The overall study section crash rate of 0.93 is greater than the rural statewide crash rate.

Intersection Analysis for OR 18

All the study intersections experienced a crash in the last five years. Eight crashes were property damage only, three were injurious, and one was fatal. Table 3-21 provides a summary of the crashes recorded by intersection location.

TABLE 3-21
Intersection Crash Data (1999-2003) for OR 18 in Lincoln County

Intersection with OR 18	Severity of Crash			Total Crashes	Crash Rate
	Injury	Fatality	Property Damage		
Old Scenic Highway 101	1	0	4	5	0.25
Bear Creek Road	0	0	2	2	0.12
North Bank Road	2	0	1	3	0.16
Slick Rock Road	0	1	1	2	0.11

A crash rate higher than 1.0 indicates a safety concern. All intersection crash rates along OR 18 were at or below 0.25. The crash rates do not indicate a safety concern for study intersections along the Salmon River Highway.

Eddyville-Blodgett Highway (OR 180) Analysis

For the two-year period, a total of 3 crashes were reported along the Eddyville-Blodgett Highway within the study area, all of them injury crashes. Only two years of crash data was available for this highway. Tables 3-22 and 3-23 provide an overview of all traffic crashes over the five-year period.

TABLE 3-22
Historical Crash Data (2002-2003) for OR 180 in Lincoln County

Year	Severity of Crash			Total Crashes
	Injury	Fatality	Property Damage	
2002	2	0	0	2
2003	1	0	0	1
Total	3	0	0	3

TABLE 3-23
Historical Crash Data (2002-2003) for OR 180 in Lincoln County

Year	Type of Crash											
	Angle	Backing	Fixed Object	Head - On	Non - Collision	Parking	Pedestrian	Rear - End	Sideswipe Meeting	Sideswipe Overtaking	Turning	Other
2002	0	0	1	0	0	0	0	0	0	0	1	0
2003	0	0	1	0	0	0	0	0	0	0	0	0
Total	0	0	2	0	0	0	0	0	0	0	1	0

The number of automobile collisions along the corridor ranged between 2 and 1 crashes per year. The most common type of crash was fixed object, which comprised roughly 67 percent (2 crashes) of all crashes over the two-year period. This was followed by turning crashes, which comprised roughly 33 percent (1 crash) of all crashes over the two-year period.

Segment Analysis for OR 180

The study section of OR 180 was divided into segments (with similar ADT volumes) in order to quantify the crash rate. The crash rate was computed for each segment and for the entire length of the study section based on reported crashes between 2002 and 2003, as shown in Table 3-24.

TABLE 3-24
Two-Year OR 180 Crash History
January 1, 2002 to December 31, 2003

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2001 Average Annual Daily Traffic (AADT)	Total Crashes	Average Annual Crash Rate ¹
	From	To				
US 20 to Norton Peak Lookout Road	0	6.10	6.10	100		
2 Years (Average Annual)					3	
Norton Peak Lookout Road to Lincoln-Benton County Line	6.10	12.53	6.43	400		
2 Years (Average Annual)					0	0.00
Total/Overall	0.00	12.53	12.53	260		
2 Years (Average Annual)*					3	1.26

¹ Crashes per Million Vehicle Miles

Note: Average annual "total" column may not agree with component total due to rounding.

The section of OR 180 from between mileposts 0.00 and 6.10 (US 20 to Norton Peak Lookout Road) has the highest incidence of crashes in the last two years when compared to the entire length. The study section of OR 180 is classified as a Rural Major Collector. ODOT has computed a statewide crash rate of 1.20 for all rural major collectors. The overall study section crash rate of 1.26 is slightly greater than the rural statewide crash rate.

Intersection Analysis for OR 180

No study intersections are present along OR 180.

County Roads Analysis

A total of 75 crashes were reported along Lincoln County roadways for the three-year period between 2002 and 2004. One crash was reported in 2002, 39 were reported in 2003, and 35 in 2004. The number of crashes per county road is shown in Table 3-25. Yaquina Bay

Road (along Yaquina Bay) and Logsdan Road had the most crashes reported with nine and eight, respectively. All other locations had five crashes or less over the three-year period.

TABLE 3-25
Three-Year County Roadway Crash History

Roadway Name	Number of Crashes
Yaquina Bay Road	9
Logsdan Road	8
NE East Devils Lake Road	5
Hidden Valley Road	4
S Schooner Creek Road	3
Sams Creek Road	3
East Devils Lake Road	2
N Alder Court	2
N Slick Rock Creek Road	2
S Crestline Drive	2
SE 35th Street	2
South Bay Road	2
1000 Line Road, Elk City Road, Five Rivers Road, Harlan-Burnt Wood Road, Immonen Road, Lincoln County Boulevard, Moonshine Park Road, N East Three Rocks Road, N North Bank Road, N Old Scenic Hwy 1, NE Clarke Street, NE Idaho Street, NE Newport Heights Road, NE Sturdevant Road, NE Williams Avenue, NE Yaquina Heights Road, New Bridge Court, North Bank Road, North Beaver Creek Road, NW Hemlock Street, Plum Creek 216, SE 98th Street, SE Beech Street, SE Midge Lane, Siletz Gorge Road, SW Beach Street, W 3rd Street, and Yachats River Road	1 each

Three additional records were listed for Some Road, Private Property, and Parking Lot.

Very little information was included in the records when compared to the state's records.

SPIS

In addition to crash rates, ODOT also assesses roadway safety via the Safety Prioritization Index System (SPIS), generated annually and based on the most recently available three years of crash data, to identify hazardous locations along state highways. The SPIS system can be used to calculate a relative score that takes into account crash frequency, crash rate, and crash severity. The scores for different roadway segments can be compared to determine where safety improvement funds might best be spent. Typically, ODOT places the highest priority locations where SPIS scores fall within the top 10 percent in the entire state. There are five locations in Lincoln County with 2004 SPIS scores in the highest 10 percent. There were no fatalities among the crashes at the SPIS locations. Table 3-26 lists their locations, which are shown on Figure 3-1.

Insert Figure 3-1 (8-1/2 x 11)

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TABLE 3-26
2004 SPIS Locations along State Highway Segments in Lincoln County

Highway	Begin MP	End MP	Total Crashes	ADT Volume
Oregon Coast Highway (US 101)	119.91	120.09	7	14,200
Corvallis-Newport Highway (US 20)	16.91	17.09	13	4,400
Salmon River Highway (OR 18)	1.41	1.59	4	9,600
Salmon River Highway (OR 18)	5.92	6.09	11	9,900
Siletz Highway (OR 229)	19.91	20.09	3	560

Source: 2004 SPIS Report, Top 10 Percent SPIS Sites Ordered by Highway Number, Region 2 SPIS Site, ODOT.

Non-Data Evident Safety Concerns

A familiarity with the geometry of various intersections in the county raises safety concerns that are not necessarily reflected in the aforementioned crash data. Some intersections have alignments with such poor site distance, apparently only drivers' special caution or a low volume of oncoming traffic has kept the crash rate at a low level. The worst of such intersections include:

- OR 18 and Bear Creek Road
- OR 18 and Slick Rock Road
- US 101 and Immonen Road
- OR 229 and Pikes Camp Road

The intersection of OR 18 and Bear Creek Road is another County concern. Bear Creek Road has a steep downward vertical grade towards the highway. This steep grade could be a hazard especially in icy road conditions.

The intersection of OR 18 and Slick Rock Creek is also a County concern. The north leg of the intersection is a driveway that has a steep upward vertical grade towards the highway and is not visible from the main roadway. This intersection is mid curve along OR 18, affecting the sight distance from North Slip Rock Creek.

The intersection of US 101 and Immonen Road was noted by the County as a safety concern. According to the County, there is a high percent truck traffic on the east leg of intersection, generated by a rock quarry located approximately two miles east on Immonen Road. Trucks on the westbound approach turning to the north or south could be in danger because they cannot quickly get up to highway speeds. To the south of the intersection, US 101 curves, affecting the sight distance. This sight distance issue is a concern for vehicles turning in and out of Immonen as well as for the high speed vehicles coming around the corner and possibly encountering a slow moving vehicle that has just turned onto the highway. The County would like the installation of a traffic signal considered at this location.

The intersection of OR 229 and Pikes Camp Road is another County concern. Pikes Camp Road is a gravel road and intersects OR 229 on a curve. Vegetation and terrain make for

poor sight distance when turning onto OR 229 from Pikes Camp Road. The County would like significant improvements to be made at this intersection.

Access management efforts along OR 18, OR 20, OR 34, OR 229, and US 180 would be expected to improve safety along the highways. Access control efforts should begin with accesses located in areas with poor sight distance, such as along curves. In addition, overgrown vegetation can often reduce visibility and sight distance from side streets and driveways. This issue should be paid special attention in areas near the coast, where vegetation growth can occur rapidly.

Many of the SPIS sites are located along curved sections of the highways with multiple access points. The shoulders are typically quite narrow and illumination is for the most part non-existent. Striping is generally in good condition, but there are several locations without any fog lines.

The entire length of Yaquina Bay Road is also a County concern. This is a two-lane roadway with numerous access points which are at times located on curves. The roadway is next to water most of the time, and there can be very high wind gusts in poor weather conditions.

Other intersections with less severe alignment and visibility problems are nevertheless still hampered at times by the high volume and speed of oncoming traffic, and include:

- OR 18 and North Bank Road
- US 20 and Olalla Lake Road
- US 20 and Business 20 east and west
- US 20 and OR 229
- US 101 and Gleneden Beach Loop North
- US 101 and Lancer Road
- US 101 and Otter Crest Loop
- US 101 and North Beaver Creek Road
- US 101 and Wakonda Beach Road
- US 101 and Yachats River Road
- US 101 and Lori Lane

3.1.6 State and Local Transportation Scheduled Improvements

The US 20 Pioneer Mtn-Eddyville project would realign a 10.25-mile segment of the Corvallis-Newport Highway (US 20) from Pioneer Mountain to just east of Eddyville in Oregon's Coast Range. This major state highway improvement project was let for bid on a design-build basis in spring 2005 and construction is expected to be completed by 2010. To increase highway safety and improve traffic flow, major segments of the highway would be realigned to reduce the relatively sharp curves, rolling course, and number of direct accesses. A higher than average accident rate occurs on this segment of the highway. The project is divided into two segments. The Unit 1 segment would follow alongside the existing US 20 alignment with horizontal geometry improvements. The Unit 2 segment would provide a new alignment across mountainous timberland with deep cuts and fills. Toward the east end of the project, a new intersection on US 20 will be created for access to the unincorporated community of Eddyville, along with a new intersection at the west end of the project near Yaquina Meadows. Ownership of the old alignment will be transferred to

Lincoln County. US 20 is an important route for trucks serving the Georgia-Pacific mill in Toledo and the Port of Newport and Port of Toledo docks, as well as timber harvest in the Siuslaw National Forest and private timber holdings.

ODOT, Lincoln County, and the Confederated Tribes of Siletz Indians each have programmed improvement projects for the next 5 years or more (Table 3-27). Beside the one tribal project listed in ODOT's STIP (06-10) in Table 3-27, the Siletz Reservation has a Transportation Improvement Program (June 2003) listing another 13 Indian Reservation Road (IRR) projects on state, county, or city roadways, of which 3 more are in Lincoln County, 3 are in the City of Siletz, 2 are on the casino site in Lincoln City, 2 are in the City of Toledo, and 3 are in the City of Salem.

TABLE 3-27
Programmed Roadway Improvements by State, County, and Tribe
2006-2010

Project ID Number	Roadway Name	Location Description	Location Milepost	Jurisdiction	Project Type	Expected Start Date
2006-2009 Region 2 STIP Federal Submittal						
14194	US-20	Yaquina River Bridge in Eddyville	MP 23.30 to 23.40	ODOT	Bridge Preservation	2006
13225	US-20	Pioneer Mtn to Eddyville	MP 14.50 to 24.75	ODOT	Modernization	2005
12808	US-20	Elk City Road to Eddyville	MP 16.10 to 24.50	ODOT	Pavement Preservation	Unknown
14212	US-20	Toledo Frontage Road	MP 7.86 to 9.07	ODOT	Jurisdictional Transfer	2006
12810	US-20	US 101 to John Moore Road	MP 0.00 to 0.63	Newport	Pavement Preservation	Unknown
12802	US-101	Millport Slough Bridge (#06579)	MP 120.82 to 120.84	ODOT	Bridge Replacement	2007
14006	US-101	Alsea Bay Bridge (#01749B)	MP 155.59 to 156.09	ODOT	Bridge Preservation	2008
10058	US-101	Spencer Creek Bridge (#06510)	MP 133.65 to 134.34	ODOT	Bridge Replacement	2006
13570	US-101	Alsea Bay Bridge to William P. Keady State Wayside	MP 155.80 to 156.55	Waldport	Operations Enhancement	2006
12825	US-101	Logan Road to NE 29th Street	MP 112.78 to 113.44	Lincoln City	Modernization	Env. Doc. in 2006
12673	US-101	11th Street and 20th Street	MP 139.32 to 139.80	Newport	Operations Enhancement	2006
12806	US-101	Coronado Shores to Boiler Bay State Wayside	MP 123.20 to 126.41	ODOT	Pavement Preservation	Unknown
13569	US-101	William P. Keady State Wayside to Cooks Chasm Bridge	MP 156.55 to 167.40	ODOT	Pavement Preservation	2006
14002	OR-34	Lint Creek Bridge (#04166)	MP 0.55 to 0.61	ODOT	Bridge Replacement	2009

TABLE 3-27
Programmed Roadway Improvements by State, County, and Tribe
2006-2010

Project ID Number	Roadway Name	Location Description	Location Milepost	Jurisdiction	Project Type	Expected Start Date
11972	Alder Springs Road	Canal Creek Bridge (#41C28)	N/A	Lincoln County	Bridge Replacement	2006
13674	OR-18	US-101 to Oldsville Road	MP 0.41 to 40.44	ODOT	Pavement Preservation	2008
2005-2009 Lincoln County Road Department Project Priority List						
424	Sams Creek Road (#424)	N/A	4.5 Miles in Length	Lincoln County	Improvement	Unknown
35	Fall Creek Road (#714)	OR-34 to Fish Hatchery	2.4 Miles in Length	Lincoln County	Improvement	Unknown
105	Clem Road (#544)	N/A	4.34 Miles in Length	Lincoln County	Improvement	Unknown
21	Logsdan Road (#410)	2.25 miles Over Nash Mtn.	2.3 Miles in Length	Lincoln County	Reconstruction	Unknown
108	Bear Creek Road (#106)	E.O.P. on Schooner Creek Road (#111) to E.O.P. on Bear Creek Road (#106)	6.49 Miles in Length	Lincoln County	Reconstruction	Unknown
109	Wade Road (#408)	From OR-229 to E.O.P.	1.25 Miles in Length	Lincoln County	Preparation for Improvements	Unknown
24	Hidden Valley Road (#516)	To Bottom of Hill	0.25 Miles in Length	Lincoln County	Preparation for Improvements	Unknown
37	Criteser Loop (#560)	E.O.P North 1 Mile	1.0 Mile in Length	Lincoln County	Preparation for Improvements	Unknown
22	Wilima Ridge Road (#508)	From Fruitvale Road NW 0.9 Miles	0.90 Miles in Length	Lincoln County	Preparation for Improvements	Unknown
Indian Reservation Roads TIP						
46100	Grooms Road-Siletz Access	N/A	0.2 Miles in Length	Siletz Reservation	New Construction	Unknown

E.O.P. = end of pavement
N/A = Information Not Available

3.1.7 Bridge Conditions and Needs

Bridges are inspected every two years. The Lincoln County Road Department and ODOT regularly review bridge inspection reports and schedule bridge improvement projects accordingly. The following bridge replacement projects are included in the 2006-2009 STIP list by ODOT. Details of the projects are included in Appendix E.

- US 101: Millport Slough Bridge (#06579), STIP Project #12802
- US 101: Spencer Creek Bridge(#06510), STIP Project #10058
- OR 34: Lint Creek Bridge (#04166), STIP Project #14002
- Canal Creek (Alder Springs Road) Bridge (#41C28), STIP Project #11972

Lincoln County currently is planning to replace Logsden Bridge (#41001), which had a Sufficiency Rating of 13.5 in January 2005. This bridge had the lowest Sufficiency Rating of the 19 Lincoln County bridges out of 91 with a rating below 50. A rating below 50 (out of 100) is generally held by bridge engineers to warrant further investigation as to the causes of the low rating. A rating below 50 of itself does not signify insufficient or dangerous conditions. The five Lincoln County bridges with the next lowest sufficiency ratings (in the 20's) generally are near the end of gravel roads with very low traffic volume, with the exception of South Beaver Creek Bridge (#60302), the second bridge southbound on paved South Beaver Creek Road at milepost 1.06.

3.1.8 Pavement Conditions and Needs

Some of the County roadways in fair condition include the northern most segment of Moonshine Road, a segment of Logsden Road just east of Siletz, the southern portion of East Devils Lake Road, and Yaquina Heights Drive in Newport.

The following pavement preservation projects are included in the 2006-2009 STIP list. Details of the projects are included in Appendix E.

- US 20: Elk City Road – Eddyville, STIP Project #12808
- US 20: US 101 – John Moore Road (Newport), STIP Project #12810
- US 101: Coronado Shores – Boiler Bay State Wayside, STIP Project #12806
- US 101: William P. Keady State Wayside - Cooks Chasm Bridge, STIP Project #13569

Pavement improvement and reconstruction projects are listed in the 2005-2009 Lincoln County Road Department Project Priority List. They are:

- Sams Creek Road (#424), Project ID #424
- Fall Creek Road (#714), Project ID #35
- Clem Road (#544), Project ID #105
- Logsden Road (#410), Project ID #21
- Bear Creek Road (#106), Project ID #108

3.2 Existing Pedestrian and Bicycle Facilities Conditions and Needs

3.2.1 Existing Pedestrian Facilities

Much of Lincoln County is rural, and few exclusive pedestrian facilities exist outside of city limits (see Figure 1-7). Roadway shoulders, designated by a painted line on pavement, often serve as walkways in rural residential areas and local improvement districts. Rural residents on the ocean side have the choice of using the beach or the shoulder of US 101 to access neighboring properties by foot. Pedestrian destinations are located in the following areas of the county:

- Schools – Toledo Middle School and Eddyville Charter School.
- Unincorporated Communities – Bayshore, Sandpiper Village, Seal Rock, South Beach, Otter Rock, Ona, Salishan, Lincoln Beach, Kernville, Neotsu, Otis, Little Switzerland, Tidewater, Eddyville.
- State Parks and Waysides – Driftwood, Seal Rock, Ona Beach, Lost Creek, Beachside, Beverly Beach, Devils Punch Bowl, Gleneden Beach, and Fogarty Creek, among others

A County program of widening and paving shoulders has increased pedestrian safety outside of the urban growth boundaries. Exclusive pedestrian facilities generally have not been built to support travel within rural residential areas, between recreational sites and the occasional nearby service/commercial center, nor between residential areas and recreational sites. Pedestrian travel between such areas is most hazardous when it involves crossing US 101, which has no designated crossing points outside of city limits.

Sidewalks are rare outside of city limits. There is a sidewalk along Sturdevant Road that was provided for added safety of school children walking to Toledo Middle School. Another sidewalk is near Lincoln Beach on Highway 101, which was built by ODOT when the Parkway was constructed. Salishan, a gated community and resort north of Lincoln Beach, has an extensive internal network of pedestrian facilities. In the Yachats area, the 804 Trail winds along beachfront properties connecting points north and south of the city.

Lincoln County maintains 12 parks, including campgrounds, and waysides. Some parks include nature trails. Most parks and campgrounds are located generally in the eastern, inland areas of the County, with Waysides providing public access to the beach. The Siuslaw National Forest and Bureau of Land Management maintain several campgrounds and recreational trails on federal lands within Lincoln County.

3.2.2 Existing Bicycle Facilities

The Oregon Coast Bike Route is attractive to recreational cyclists as it follows US 101 along the scenic coast of Lincoln County. Thousands of cyclists use this route throughout the year. The route is signed for its length; however, signage north of the OR 18/US 101 intersection identifies a route that is difficult to follow through the complex intersection. Also included in the Oregon bicycle system are US 20, OR 18, and OR 34, which provide shoulder bikeways (see Table 1-9 in the Transportation System Inventory). These roadways are asphalt paved, run through scenic territories of the County, and provide access to popular coastal destinations, which make them attractive to recreational cyclists and important to tourism. Federal forest lands have trails and roads used for mountain biking.

The cities of Lincoln City and Newport have their own bicycle plans, but do not have separate bike lanes or bike paths within the city. Facilities in these cities include signed bicycle routes along city streets, and an alternate route for the Oregon Coast Bike Route goes through Lincoln City. Shared roadways are appropriate as motor traffic volumes and operating speeds are low.

Shoulders along the state highways and county roads serve as the bicycle paths (see Figure 1-7). Specifically marked bike paths are shoulders on US 101. These widened paved shoulders increase the safety for bicycles and pedestrians. The County has completed a

program of adding paved shoulders to County roads for such purposes, which can provide inland alternatives to US 101 in some cases.

Major destinations for bicyclists are primarily the same as those for pedestrians: schools, parks, beaches, and communities.

3.3 Existing Public Transit Conditions and Needs

Lincoln County Transit's 16 buses/vans are fairly new and are regularly cleaned. They are maintained by Lincoln County Fleet Services. Bike racks on the buses are not available to tricycles, tandem bicycles, or motor powered vehicles. Lincoln County Transit has three routes: north-south between Yachats and Newport; Newport and Rose Lodge; and east-west between Newport and Siletz (see Figure 1-8). Currently the fixed route transit does four roundtrip loops per route per day.

Passengers using the Dial-A-Ride call to schedule the service and are picked up and delivered to the curb of their choice. Passengers must be fairly self-motive, as they are not assisted with getting up or down stairs, into or out of your house, or to and from the bus/van. Drivers may leave their vehicle to provide minimal assistance in boarding and/or disembarking; however, drivers are restricted from picking up any item weighing 25 lbs. or more. The driver can remove groceries and/or other items from the bus to the curb only. Drivers are prohibited from carrying items of any kind further than the curb (e.g., front door of residence). Securing additional assistance is the responsibility of the passenger. If a passenger needs an aid to assist with the above mentioned items the aid rides with the passenger at no additional cost. Drivers are authorized to use their discretion and may refuse to stop at locations that they feel may be unsafe or inaccessible. If there is any question regarding the drivers decision the stop is again checked by transit management to ensure the stop is, indeed, unsafe or inaccessible.

Due to the high demand of this service, Dial-A-Ride accepts ride reservations on a "first-call, first-serve" basis. Rides are restricted to a maximum of a two-stop limit per passenger per day. All riders must pay a fare upon boarding the transit bus. The cost is \$1 for a one-way ride plus \$1 per each additional stop. Outside of Newport is based on the current fare schedule. Fares may be paid in cash or by ride coupon. Discounted coupon books may be purchased at the transit office or through the bus driver.

The availability of public transportation to Samaritan Pacific Communities Hospital in Newport and to Good Samaritan Hospital in Corvallis does not always meet the needs of patients in the County. Dial-a-Ride hours are not always adequate for some patients late in the day or evenings. Taxi fares are an additional financial burden on some patients, and some franchise agreements with cities prohibit pick-up/drop-off in communities of competing taxi service. Some taxi companies have a voucher program in place with the hospital. Ride-Line, a service of Cascades West Council of Governments, provides a non-medical emergency transportation brokerage service for people on the Oregon Health Plan-Plus.

The Lincoln County Transportation Service District has been providing public transportation services since 1968. In 1996, the County passed a ballot measure forming the Lincoln County Transportation Service District and giving the transit agency a funding base.

The passage of Measure 50 made possible a permanent funding base that no longer requires voter renewal. The district also receives funds through various state and federal programs.

Ridership has increased approximately three-fold since 1996. The total number of passengers for fixed-route service in 1996 was 32,014, while in 2004 total ridership was 88,380. For Dial-A-Ride service, the 1998 senior/disabled rides totaled 61,594, while in 2004 senior/disabled rides totaled 101,661. Total units of service (stops) went from 72,994 in 1996 to 234,581 in 2004.

A funding base and increased ridership have made possible specific improvements to the transit system in recent years.

- Bus shelters and passenger benches have been installed in strategically located areas.
- Transit scheduling software has been procured, which has assisted greatly with tracking increased ridership and producing reports for statistical and grant writing purposes.
- Program information brochures have been completed.

Beyond regular and improved fleet maintenance, vehicle purchases, rider education, and efficiency increases, Lincoln Transit has developed a list of unmet needs. Most of these needs could be met with additional funding, which is an ongoing search process by agency staff. The following needs have not been prioritized, but are based upon normal transit system operations and patron requests:

- **Extended Hours and Routes.** The system would like to add between one and three additional loops per day to provide more midday, and later evening services. Requests for extended hours and routes are received on regular basis from all areas of the county (north, south, and east).
- **Updated 10-Year Transit Plan.** The system's current plan expired in the year 2000. A plan would help prioritize needs and develop strategies for fulfilling them.
- **Bus Stop Signs.** Signs should include schedule information for all designated stops.
- **Marketing Plan.** A marketing plan would help educate the public about the service and increase ridership.
- **Central Transit Facility.** A central facility for Lincoln County would serve the County's transit system as well as out-of-county services and other modes.
- **State Purchasing Assistance.** The State of Oregon issues a statewide request for proposals (RFP) for certain types of transit vehicles. Although smaller transit systems can take advantage of this RFP for replacement vehicles, the State presently only does this for modified vans and 22 passenger vehicles, not for larger transit coaches.
- **Park-and-Ride Facilities.** The need for park-and-ride services has been identified in the Newport area. Currently, both Nye Beach Area Merchants and the Bayfront Merchants Association have identified a lack of available parking in Nye Beach and on the Newport bayfront as a critical element that needs to be addressed. As time goes by, it is expected that other areas in the county may need to turn to park and rides to accommodate the ever increasing traffic in Lincoln County.

Bus stop signage, transit system master plan update, and a marketing plan are identified current deficiencies.

3.4 Existing Air/ Rail/ Water/ Pipeline Conditions and Needs

3.4.1 Air

There are four General Aviation airports in Lincoln County, including Newport Municipal Airport, Toledo State Airport, Wakonda Beach State Airport, and Siletz Bay State Airport (see Figure 1-1). The Newport field is the only one with an Instrument Flight Rules (IFR) approach; the other three are Visual Flight Rules (VFR). The 1999 Oregon Aviation Plan lists deficiencies of the state's airports. Regarding land use compatibility, all four airports are deficient in terms of there being water impoundments near the airport and adequate runway safety areas, and all except for Wakonda State have open landfills nearby. These deficiencies are not correctible.

Newport Municipal Airport

The Newport Municipal Airport would like to attract commercial service, and the runway is capable of supporting full-size jet service. The airport is a Part 139 airport for scheduled air services. The two asphalt runways, 16/34 and 2/20, are in good condition. Weight limitations are single wheel 75,000 lbs, double wheel 120,000 lbs, and double tandem 170,000 lbs. Runway 16/34 has 1,400-foot medium intensity approach lighting system with runway alignment indicator lights and an instrument landing system (Runway 16).

According to the Newport Municipal Airport Layout Plan (2005), a land use plan has been developed for the airport and the surrounding area that addresses zoning and noise from airport operations. The City of Newport zoning ordinance contains an "Airport Restricted Area" zone that identifies allowed uses at and near the airport. The airport also uses runway protection zones (RPZ's) to limit the types of uses allowed in the areas surrounding the runways. New roads are allowed in an RPZ under limited circumstances. New residential developments and public assembly facilities are prohibited in RPZ according to the Oregon Department of Aviation's model "Public Use Airport Safety and Compatibility Overlay Zone. Nevertheless, the City of Newport zoning for some land within the RPZ but not owned by the airport is designated for Public Buildings and Structures, Planned Industrial, Rural Residential, Single Family Residential, Resort Land, and Agriculture. Regarding noise, F.A.R. Part 150 provides guidelines for noise levels around airports, as measured by decibels in day-night average sound levels (DNL). The measured noise levels on the airport property are below 65 DNL, which is the level of concern. Current needs include an array of minor facilities improvements, in some cases to comply with FAA standards, as listed in the Airport Layout Plan. These include taxiway widening, lighting, and marking improvements, and expanded hangar capacity. However, all airside needs have been met for 5010 Inspection. Of most relevancy to multimodal connectivity is the identified need to improve roadway access from Highway 101 to the northwest area of the airport. New vehicle parking will be constructed at the end of the access road. The Capital Plans calls for construction within the next 5 to 10 years. Planning period 2014-2023) includes an additional new access road beginning at 98th Street (which connects to Highway 101) and ending at the north end of Runway 34.

Siletz Bay State Airport

At Siletz Bay State Airport, Runway 17/35 is marked and in fair condition. There are tree obstructions on one end of the runway and brush at the other end. It is located approximately one mile southeast of Gleneden Beach. Deficiencies listed in the 1999 Oregon Aviation Plan include taxiway access, lighting, visual guidance, services, and runway safety area.

Toledo State Airport

The Toledo State Airport (5S4) has an advisory warning that the airport has a short runway, trees and steep terrain adjacent to both approaches, and numerous deer and waterfowl in the vicinity of the airport. The field requires a non-standard approach and departure, and pilots should have short-field landing skills to use the airport. Runway markings are smaller than standard. Runway markings are non-standard (small) and in poor condition. There are no taxiways or services. Deficiencies listed in the 1999 Oregon Aviation Plan are runway pavement strength, length, width, safety area, safety area, obstructions, and protection zones.

Wakonda Beach State Airport

The Wakonda Beach State Airport (OR04) is unattended and landings to the south and takeoff to the north on Runway 16/34 are not recommended. There are a road and trees in the clear zone at the north end and rising terrain to the south. There are power lines to the north and high terrain and trees to the east. White tires mark the end of Runway 34. Deficiencies listed in the 1999 Oregon Aviation Plan include runway length/width, safety area, obstructions, and protection zones.

3.4.2 Rail

The Portland & Western Railroad (PNWR) (aka, Willamette and Pacific Railroad) has a line that serves Lincoln County daily from Albany to Toledo. The line is very curvy with tight radii turns along the Yaquina River (see Figure 1-1). The only stop in Lincoln County is in Toledo to load and unload at the Koch Forest Products (formerly Georgia-Pacific) paper mill. The line carries one to five million gross tons of products annually. This corridor is the subject of the recent *Final Toledo Sweet Home Rail Corridor Feasibility Study* (April 2005), which examined the potential of the railway corridor to support future economic development. However, frequent derailments in the past have encouraged paper mill managers to supplement their ships with truck freight, which depending upon load limits, travels by US 20 or Oregon 18. When the realignment of US between Eddyville and Pioneer Mountain is completed, truck freight is expected to increase.

The Toledo Branch, the portion of the line from Corvallis to Toledo (63.4 miles), is in generally good condition—75 percent of the crossties are good. PNWR has put considerable work into the track and roadbed. Steel crossties have been placed in most curves (every third tie), and most curves have been recently surfaced and lined. Much of the ballast has been replaced with crushed rock. Some of the track has drainage problems, including pumping, which is aggravated by low maintenance on the track ditches. Nearly 50 percent of the rail is continuous welded rail (CWR), which includes 112-, 113-, 132-, and 136-pound rail. Some of the track has drainage issues. The rail line recently did some tie replacement and is endeavoring to keep the line up to Class 2 standards with a maximum speed of

25 miles per hour. There is a restrictive ascending grade at Summit (2.58 percent eastbound) near the Benton-Lincoln county line and numerous curves limit operating speed and tonnage. At least one minor timber open deck trestle needs repair. PNWR has a program of replacing one trestle deck per year along the Toledo Branch. Annual maintenance budget for PNWR's Toledo Branch is around \$2 million or approximately \$26,600 per mile, which is higher than average due to the high freight tonnage on the branch line.

There are several private road and rural public crossings and many need upgrading. The tunnel at MP 752.4 is in fair condition, but it does not have clearance for double-stack cars. The track in the Toledo yard is in the worst condition of the entire branch line. Only 50 percent of the crossties are in good condition, there are major drainage issues, and the condition of the ballast and many of the turnouts is deficient.

3.4.3 Water

Lincoln County has three active ports, and one harbor (see Figure 1-1). The ports include the Port of Alsea, Port of Toledo, and Port of Newport. The harbor is located in Depoe Bay and is home to a U.S. Coast Guard Station, recreational boats, and a very small commercial fleet for fishing, charters, and whale watching. This harbor is land-locked and space constrained; it cannot expand or provide additional moorage without reconfiguring/reconstructing the existing facilities.

The Port of Alsea, the Port of Toledo, and the harbor in Depoe Bay serve primarily as recreational ports, with some modest commercial activities. While all have commercial fishing vessels that dock in these facilities, their numbers are few. The absence of a fish buyer at these docks keeps commercial fishing fleets small. Alsea Bay has no maintained channel or jetties to provide safe navigation to or from the ocean. Dangerous conditions exist at the mouth of the Alsea on ebb tides.

The harbor in Depoe Bay and the Ports of Newport and Toledo need dredging to keep their operations going. The channel to Depoe Bay typically needs dredging every 5 years. The Port of Newport and Port of Toledo also need dredging by the U.S. Army Corps of Engineers every 5 years to keep the Yaquina River channel navigable. Sea-going and river barges, as well as cargo vessels, can be accommodated at the Port of Newport, while only river barges could navigate the Yaquina River channel to the Port of Toledo. There has been no river channel maintenance to Toledo for more than 15 years.

Oregon's ports operate under a unique structure that allows them to act as a governmental entity and as a business enterprise. Legal authority permits port districts to levy taxes and issue bonds (among other governmental functions) to further local and state economic development goals. Sometimes the programs are related to direct business assistance, providing buildings and facilities in incentive financing arrangements, providing for expected public utilities at available business sites, and providing advocacy and technical assistance to the private sector.

Port of Newport

The Port of Newport, on Yaquina Bay, is one of nine deep draft ports in the Oregon that is capable of moving freight and goods, and providing services through intermodal marine terminals. The Port owns and operates commercial and recreational moorage and support

facilities, deep water terminal, paved staging area, container freight station, storage area, and industrial and commercial property, with major holdings in the South Beach area. The Port is actively engaged in providing support services for one of the largest commercial fishing fleets on the West Coast, which regularly produces over 50 thousand tons of fish and seafood products annually. NOAA fisheries statistics (2003) ranks Newport as 26th in the nation in value landed (\$24.4 million) and 17th in the nation in pounds landed (69.8 million pounds). Regionally, commercial fishing has declined in terms of the fisherman and fishing boat population. However, while Oregon's landed catch weight reached a nadir in 2002 during a catcher and buyer disagreement about crab prices, the landed catch value, the price per ton, has increased. The size of the fishing fleet is stabilizing.

The Port has a 40-foot-deep ocean entrance and a 30-foot-deep ship channel and turning basin at the terminal, which is only 1.3 mile from the ocean. The channel and bar are open year-round and currently maintained by the Corps of Engineers, with annual dredging. Located within the deep water basin are three deep water berths plus extensive moorages for small pleasure craft and related launching facilities.

There is a problem with shoaling within the access channel and marina, causing bank erosion and facility damage. The shoaling results from waves from the main navigation channel topping the west breakwater, moving sand built up behind it into the harbor. To correct the inadequate protection within the main navigation channel, the Port is proposing construction of two breakwaters, one 1,800 feet long (west) and one 700 feet long (north), and an access channel, 10 feet deep, 100 feet wide and 2,035 feet long. In addition, five groins on the channel side and an 800-foot-long spur jetty on the South Jetty are deteriorating. A solution would be to restore the south jetty groins and spur jetty, and review the effectiveness of the Marina's west breakwater. The Corps is, at the Port's request, beginning a reconnaissance study of the problem.

The Port is capable to service both cargo vessels and barges for import/export, including coastwise cargo between Alaska and Newport, and Newport to California, as well as international cargo on the Pacific Rim. There is the option to roll-on or roll-off ("ro/ro") cargo to or from barges. Also, a top-pick option, using a lightweight forklift on a concrete ramp, could lift cargo into and out of barges.

Freight from the Port of Newport facilities is shipped over US 20, or US 101 to OR 18, to connect with I-5 in the Willamette Valley. The pending realignment of US 20 between Eddyville and Pioneer Mountain will provide critically needed safety improvements for tractor trailers. Although the Port's terminal facility is only $\frac{3}{4}$ of a mile from US 20, tractor trailers with heavy loads are not able to fully serve Port facilities. In 1997, the Port of Newport adopted a terminal plan to maintain competitiveness in the business of loading barges and ships over the next 25 years. The plan recommended several improvements to the Port's facilities, and the Port is phasing in these improvements as funds allow.

The Port today is restricted in providing shipping services due to failing terminal infrastructure. However, the Port has moved ahead with design and engineering and is seeking funds for major upgrades to the terminal facility.

A private company built the terminal's ship dock in the late 1940's by sinking two US Navy surplus concrete hull cargo ships. The ship dock has been moving outward toward Yaquina

Bay causing damage to the hull, surrounding structures, and surface pavements. Geotechnical investigations in 2000 found a two-foot vertical crack about 135 feet forward of the stern of the vessel, or about 40 percent of the ship length, exposing rebar to the elements in the south side of the hull. Whereas the ship hull was considered a solid, single item before, it now has all the appearances of being two. Ongoing movement of the ship hull is irreversible toward the south with a continuing increase in tilt toward the bay. The existence of the expanding crack and differential movements between the fore and aft portions of the hull has rendered the cost of repairing the dock more than costs to construct a new dock. There is potential environmental risk from buried compartments. The ship dock is closed to commerce.

The Port's most current and critical need is a safe, single lane for truck traffic on the south side of the Port's warehouse on Bay Street; this improvement would be the first phase of other presently needed improvements to the Port's barge dock. The overall need is complete rehabilitation of the terminal facility, which is currently estimated to cost \$15 million. The barge dock is a pile supported structure. More than 80 percent of the wood pile are failing and need to be replaced, as does the existing wood surface. This existing fixed pier has been the only route for the Port to move loaded trucks, cranes, and other service equipment into place to efficiently load and discharge vessels. The pier presently has weight limits imposed, which prevents fully loading trucks on the dock. This project has already been engineered, and design plans are ready to proceed upon funding. The engineer's estimate for this project is \$2,702,500.

Although the barge dock still has some capability, the Port is not currently marketing or soliciting cargo movement at this time because of the inefficiencies and structural deficiencies of the present facility. Nevertheless, some shippers are still expressing interest in offloading logs from barges at the facility. Historically, the Port's biggest commodity has been wood products, lumber, and logs. Barge payloads typically vary from 1.5 to 3 million board feet depending on market conditions. This volume equates to approximately 500 truck roundtrips per 1 million board feet of logs (or 4,000 board feet per load).

Port of Toledo

The Port of Toledo was awarded \$100,000 in 2002 towards dredging Depot Slough/Yaquina River; however, the US Army Corps of Engineers used the funds for a study of Yaquina Bay and collected core soil samples in late 2003. The Depot Slough has not been dredged since 1994-95, and the depth is currently less than the 10-foot optimal depth. The Port is responsible for securing a site for the dredged mineral rich soil to be deposited, and two potential sites have been identified. The Marina Boardwalk project was completed in late 2004. Also in late 2004, hundreds of man and boat hours put into a river clean-up project, with support from a grant from the Siletz Tribe. The Port is continuing to construct docks along Depot Slough from the concrete dock outside the Port's shop down to the fishing fleet docks. Old pilings will be removed and replaced with a floating dock. Removal of the old wooden pilings also will improve navigation.

The Port of Toledo's first available sources of increased earned revenue (to support its goal) are from current operations. The basic elements for increasing earned revenue are raising prices, charging fees for services in lieu of being free, adding value to current services, adding capacity to current facilities, reconfiguring current facilities to increase revenue

potential, and developing undeveloped facilities. The Port is considering investments in large vessel repair and moorage facilities, and sport vessel launch, moorage, and support facilities.

Port of Alsea

The Port of Alsea has made facilities improvements during the last 5 years. The Port's goal is to fully develop the business potential of the port's waterfront properties and real estate holdings by promoting their "highest & best use," maintaining public use fishing facilities on the port's properties, and supporting regional tourism and recreational development efforts. There is very little shoreline space available for traditional port operations. The Alsea estuary is a designated conservation estuary; therefore, many uses of the waterfront are restricted or not allowed by the estuary Management Plan. The Port currently has two half-time year round staff: a port manager and a maintenance worker. The Port presently is seeking a consultant for design and engineering services for a shared Port/Fire District public facility building. No formal agreements exist with other agencies. The Port needs to develop a long range plan.

Depoe Bay Harbor

Depoe Bay Harbor provides moorage for primarily commercial fishing boats. The Harbor also provides moorage for recreational boats and whale-watching, scenic, and sport boat chartering/excursion boats.

Existing Depoe Bay Harbor facilities include a United States Coast Guard station, a new marine fueling facility, new boat ramp, vacant sea food processing facility, public parking lot, public restrooms, fish cleaning station, and private chartering offices. The City of Depoe Bay is currently seeking a tenant for the vacant fish processing plant. Existing harbor moorage supports approximately 60 to 70 assigned slips and approximately five unassigned slips.

Increased interest and demand for fishing has increased the demand for Depoe Bay harbor moorage. Another attraction of the harbor is the proximity of the docks to the ocean. The Harbor Commission, which oversees harbor activity, is considering reconstructing harbor docks and reconfiguring the harbor to increase the number of moorage spaces.

A majority of the land adjacent to the harbor is developed. However, there is a small area of private undeveloped land on the east side of the harbor zoned Commercial and a "slit" of undeveloped property on the steep north slope of the harbor zoned Marine Commercial.

3.4.4 Pipeline/Utilities

Natural gas pipelines, water pipelines, and communication lines in Lincoln County, are described in Chapter 1. These facilities are regularly maintained. Existing conditions are satisfactory for their designated uses and no existing needs beyond regular maintenance are identified.

3.5 Existing Emergency Routes and Evacuation Condition and Needs

US 101 and US 20 are lifeline routes in Lincoln County. The Yaquina Bay Bridge on US 101 is a major lifeline facility providing access from south of the bay to Samaritan Pacific Communities Hospital on the north side of the bay at 930 SW Abbey Street in Newport. Farther south, the Alsea Bay Bridge also is a major lifeline facility for the south-county area. There is no other roadway connection from US 101 south of Yaquina Bay across the Yaquina River to Toledo and US 20 north of the bay as an alternative route to the Newport hospital. The Peace Harbor Hospital in Florence, 34 miles south of Waldport, is the nearest hospital should access to the Newport hospital be cut-off. There is no other roadway connection from US 101 or Oregon 34 south of Alsea Bay across the river to reconnect to US 101. Alternatively, south-county residents could travel on Oregon 34 to the Good Samaritan Regional Medical Center in Corvallis. To the north, bridges on US 101 at Depoe Bay and Siletz Bay are lifeline facilities providing access to Samaritan North Lincoln Hospital in Lincoln City (3043 NE 28th St.) or the Newport hospital. Simultaneous closure of the Depoe Bay Bridge and Siletz Bay Bridge on US 101, or minor bridges in between, would leave people between those facilities without access to hospitals in Newport or Lincoln City.

Lincoln County Emergency Services Department maintains a website (www.lincolncoemergencyservices.us) with emergency information regarding earthquakes, tsunamis, storms, flooding, road conditions, and homeland security events. Evacuation routes were developed by local officials and reviewed by the Oregon Department of Emergency Management. Evacuation maps were developed for the vicinity of Yachats, Waldport, Newport, Salishan-Gleneden Beach, and Lincoln City (see Appendix C). These maps are available on the county website and printed copies are variously distributed to residents, such as at neighborhood association meetings and in water bills, and to tourists who often can find them in their motel rooms. Placement of the maps in lodging facilities is voluntary.

Signage throughout the county is also used to facilitate evacuation. ODOT pays for signs indicating tsunami hazard zones, while local agencies pay for signs indicating evacuation routes and evacuation safe sites. Unfortunately, these signs are popular “souvenir” items, and agencies have found it difficult to keep them posted. The Oregon Department of Geology and Mineral Industries initially paid for many signs through grants and gave them to agencies to post.

Lincoln County Emergency Services has a new mobile Communications Support Vehicle (CSV) thanks to local volunteers and donated equipment. The CSV can communicate with fishing boats, airplanes, every local law enforcement agency, and just about anybody they would need to during an emergency or natural disaster.

Lincoln County Communications (LinCom) does tsunami warnings and other emergency services communications among fire and police agencies for the county. LinCom’s mission is to “provide accurate, prompt and professional emergency dispatch/call coordination services to the Lincoln county public and its service agencies/municipalities.” Lincoln County Emergency Services Department notifies LinCom when a tsunami warning is received from the West Coast and Alaska Tsunami Warning Center. The warning is also

posted on the department's website. Announcement of the warning also is relied on to be made by local agency sirens, fire and police vehicle public address systems, and radio and television stations through the Emergency Broadcast System.

A 7.2 magnitude earthquake west of Crescent City, California, on June 14, 2005 at 7:51 p.m. initiated a tsunami warning for Lincoln County residents and all of the U.S. west coast. Thankfully, no tsunami occurred; nevertheless, this tsunami warning was an excellent test of the County's alert system and preparedness and residents' response. Without going into the details of weaknesses uncovered in the alert systems throughout the county, it can be said that communications could have been clearer and equipment more reliable. Many people heeded the warning and evacuated by foot or car to safe sites. Lines to 9-1-1 were jammed by people seeking directions. Some people never heard the alert because of faulty sirens, or failed to evacuate because they had erroneously heard there was no warning in spite of the earthquake. Unbelievably, after the 2004 devastation in Sumatra from a tsunami, some people in Lincoln County flocked to the beaches on foot to see an expected giant wave. This occurred at the D River Wayside in Lincoln City (a location where a warning siren failed to sound).

There were no reports of traffic congestion along evacuation routes leading to safe sites, but remarkably in some locations in Oregon (not in Lincoln County), traffic was congested on the evacuation routes leading to the beach. For example, near the Winchester Bay lighthouse in Douglas County, the Sheriff patrol car was tied up with 60 cars crowding a road that was a designated evacuation route. People are encouraged to evacuate on foot to higher ground whenever possible for speed, and to keep roads open for emergency vehicles. Approximately 50 percent of residents in the Yachats and Seal Rock areas evacuated properly. Near Toledo, people and cars gathered at the Dairy Queen parking lot near the city's east junction with US 20. Waldport successfully evacuated people from the Bayshore area. In Newport, which has no sirens, the Fire Department's vehicles were able to reach the beach to warn people. Lincoln City Police and Fire vehicles also were able to warn people at Siletz Bay and the D River Wayside areas.

Lessons learned by emergency response personnel, increased tsunami evacuation education, and improved alert systems should over time lessen the possibility of people creating traffic congestion during an emergency evacuation. Additional posting of evacuation route signs and their continued maintenance is an existing need. Signage on the routes could be improved according to local Fire District officials, which would require the cooperation of ODOT, and perhaps relaxation of federal standards, in some locations.

Ongoing political tensions and war in the middle-east or other oil-producing regions could result in fuel shortages from other countries being unable or unwilling to export petroleum. Such fuel shortages could limit emergency vehicle operations, critical commercial deliveries, and personal supply trips. The Oregon Department of Energy maintains emergency fuel reserve depots. It is indeterminable how such fuel supplies would be allocated among state and local jurisdictions under various scenarios.

3.6 Summary of Identified Deficiencies

Deficiencies are identified relevant to a functional and safe multimodal transportation system. A “deficiency” is defined as the difference between an existing transportation system characteristic and the adopted standard for the characteristic.

Roadway Deficiencies

Pavement conditions are generally good along state highways. Some of the County roadways in fair condition include the northern most segment of Moonshine Road, a segment of Logsdan Road just east of Siletz, the southern portion of East Devils Lake Road, and Yaquina Heights Drive in Newport.

Traffic Operations Deficiencies

Three of the study intersections currently operate at a higher than acceptable mobility standard. They are:

- US 101 and Salishan Drive. This signalized Intersection operates poorly (V/C ratio of 0.74) due to the heavy traffic volume using the shared southbound through/right-turn lane.
- US 101 and Gleneden Beach Loop North. The stop-controlled approach of Gleneden Beach Road operates poorly (V/C ratio of 0.95) due to heavy conflicting volume on US 101 allowing few gaps for the minor street left-turn movement.
- US 20 (Corvallis-Newport Highway) and OR 229 (Siletz Highway). The stop-controlled southbound approach of Siletz Highway operates poorly (V/C ratio of 0.84) due to heavy volume sharing a one-lane approach.

Safety Deficiencies

Five locations (Oregon Coast, Corvallis-Newport, Salmon River x 2, and Siletz Highways, as shown in Figure 3-1) in Lincoln County made the states SPIS list for Region 2.

The average annual crash rate of the study section of the Corvallis-Newport, Alsea, Salmon River, and Eddyville-Blodgett Highways exceed the statewide crash rates for similarly classed facilities.

Regardless of the crash data, there are several intersections with poor visibility and geometry that create a hazard to drivers. The worst of these locations (see Figure 1-6) are:

- OR 18 and Bear Creek Road
- OR 18 and Slick Rock Road
- US 101 and Immonen Road
- OR 229 and Pikes Camp Road

Pedestrian Facility Deficiencies

Most of the arterials and collectors in Lincoln County have adequate existing pedestrian facilities, due to a County program of widening and paving shoulders. There are few

exclusive pedestrian walkways. No deficiencies identified; however, there may be County facilities that are not accessible to people with disabilities.

Bicycle Facility Deficiencies

Facilities for bicycle travel are generally adequate (see Table 1-9 of the Transportation Systems Inventory). Most of the well-traveled County arterials and collectors have adequate existing bicycle facilities, due to a County program of widening and paving shoulders. There are few exclusive bicycle lanes physically separated by distance or barrier from the vehicle roadway. No deficiencies identified.

Transit Deficiencies

Bus stop signage, transit system master plan update, and a marketing plan are identified current deficiencies.

Air/Rail/Water/Pipeline Deficiencies

All four airports are deficient in terms of their being water impoundments near the airport and runway safety areas, and all except Wakonda State have open landfills nearby; however, these deficiencies are not correctible. According to the Oregon Department of Aviation's Management Control Program (November 16, 2005), Toledo Airport is deficient in terms of fencing and obstruction, Siletz Bay Airport with fencing, and Wakonda State Airport with obstructions. Newport Municipal Airport passed the FAA 5010 Inspection and is a certified Part 139 airport.

The Portland & Western Railroad line between Albany and Toledo is now in reasonably good condition, requiring routine tie replacement to keep the line up to Class 2 standards with a maximum speed of 25 miles per hour. No deficiencies identified.

No deficiencies are identified for Lincoln County ports and harbors, except for dredging of Depot Slough for the Port of Toledo.

No deficiencies are identified for pipeline and utility facilities.

Evacuation Routes and Emergency Access

Alert systems are now being regularly tested. Identified deficiencies are additional posting of evacuation route signs along with their continued maintenance/replacement.

Future Conditions and Needs of the Lincoln County Transportation System

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DATE: April 17, 2006

This memorandum presents the future conditions, needs, and deficiencies of Lincoln County's multimodal transportation system. Transportation needs and deficiencies identified in this memorandum will be considered during the development of alternatives in the subsequent tasks of this project. This draft memorandum was prepared for ODOT under agreement #23238, work order #40, task 3.9. This memorandum is intended to be included in the Lincoln County Transportation System Plan (TSP) as Chapter 4, Future Transportation Conditions and Needs. Figure, table, and appendix numbers will be redesignated as appropriate for the final document.

Appendixes include:

Appendix A: Methodology Memo
Appendix B: Synchro Reports
Appendix C: Queue Results Table
Appendix D: Preliminary Signal Warrant Analysis Worksheets

CHAPTER 4

Future Transportation Conditions and Needs

Discussion in this chapter assumes that population growth, tourism and other resource based economic expansion will continue to largely influence future transportation conditions and needs in Lincoln County. This section summarizes the anticipated future transportation system deficiencies and multimodal system needs for the County through the year 2027.

Although gasoline costs have risen dramatically in recent years, and are predicted not to decline but continue to increase, travel behavior on the Oregon Coast does not appear to be significantly affected so far by higher fuel costs, according to local travel industry representatives. However, fuels and designs of possible future vehicles over the next 20 years, modal choices, and the amount of discretionary travel – responding to needs to economize on fuel costs and limit greenhouse gas emissions – could potentially alter the baseline conditions shaping the forecasts herein.

A report issued by scientists of Oregon and Washington universities in 2004 included consensus statements about the effects of global warming (Associated Press report, Albany Democrat-Herald, October 30, 2004). They “agree that climate change is underway” and “that since 1975 the warming is best explained by human-caused changes in greenhouse gases.” They forecast average annual temperature increases of 3 degrees Fahrenheit by 2030 and 5.5 degrees Fahrenheit by 2050. They conclude that higher temperatures will result in wetter winters and drier summers, longer growing seasons, a higher elevation treeline, increased vulnerability to forest fire, plant disease, and insect pests. Sea levels, they say, likely will rise on the central and northern Oregon coast at a rate of .06 to .08 inches annually on average, which eventually will impact estuary ecology, increase wave height, and hasten erosion in coastal areas. Other scientists recently have described “dead zones” off the Oregon coast, where normal marine life has been drastically reduced, as a result of climate change mediated through changes in ocean circulation (OSU News Service, Corvallis Gazette-Times, August 5, 2005).

Therefore, climate change induced by increasing amounts of greenhouse gases could alter the ecology of Lincoln County and lead to changes in resource-based economies, which could impact transportation and land use. However, major changes to the coastal and inland ecology would not be expected to occur until outside of the 20-year planning horizon of this TSP, most probably in 20 to 50 years in the future, should reductions in greenhouse gas emissions not occur during the planning horizon. Because of the delayed effects of carbon dioxide loading in the atmosphere, reductions in greenhouse gas emissions during the next 10 years is critical to lessen the forecast impacts.

4.1 Future Development

4.1.1 Population and Employment

Population and employment are typically critical in determining roadway impacts and the impacts of growth on the transportation system. While rural development is expected to be part of the cumulative effect on transportation facility needs, the County’s transportation infrastructure will be more affected by growth within city limits and urban growth boundaries, increasing tourism, and travel between communities.

Population Forecasts

Stagnant economic growth over the last decade appears to have resulted in a slowing of regional population growth. Modest population growth is forecasted between 2005 and 2027 in Lincoln County. Growth projections through 2027 are that the county will continue to grow more slowly than the overall state.

Table 4-1 illustrates the forecasted average annual population growth rates in 5-year increments to 2025 and the 2027 planning horizon year, developed by the State of Oregon’s Office of Economic Development (2004); Lincoln County uses this forecast since the County does not develop its own population forecast. The forecasted population for Lincoln County in 2027 is 51,570, corresponding to an annual average growth rate between 0.65 percent and 0.77 percent between 2005 and 2027 (0.68 percent average). This forecasted growth rate is lower than the average annual growth rate experienced in Lincoln County between 1990 and 2004 (1.0 percent). The forecasted annual growth rate for Lincoln County is less than the State of Oregon’s annual growth rate between 2005 and 2027.

TABLE 4-1

Forecasted Average Annual Growth Rates, 2005-2027

	2005	2010	2015	2020	2025	2027
Lincoln County Annual Growth Rate	0.68%	0.77%	0.65%	0.65%	0.63%	0.63%
Lincoln County Population	44,405	45,935	47,731	49,303	50,926	51,570
State of Oregon Annual Growth Rate	1.21%	1.27%	1.25%	1.19%	1.11%	1.11%

Source: Office of Economic Development, State of Oregon, 2005

The estimate of 7,165 new residents by 2027 for Lincoln County includes growth in unincorporated portions of the county as well as within cities. Currently, the present-day population distribution includes 58.5 percent of residents living in urban areas and 41.5 percent in percent unincorporated communities. If the same relationship for the year 2027 population forecast is assumed, the result is an expected increase of 2,974 residents in unincorporated areas of the county. Using the current average household size of 2.27 persons per household, this translates into a need for 1,309 new households in unincorporated portions of the County through the year 2027.

Employment Forecasts

The Oregon Department of Employment forecasts employment growth for the state and 15 regions; Lincoln County uses this forecast since the County does not develop its own employment forecasts. Region 4 consists of Lincoln, Benton, and Linn counties. The forecast for Region 4 contains employment forecasts for 2002 to 2012. The employment growth rate for the three-county area (Region 4) is forecasted to be 10.2 percent, less than the State of Oregon (13.7 percent) (Table 4-2).

TABLE 4-2

Employment Forecast, 2002-2012

Area	2002	2012	Percent Change
Benton, Lincoln, Linn Counties (Region 4)	94,270	101,900	10.2%
State of Oregon	1,573,200	1,788,000	13.7%

Source: Office of Economic Development, State of Oregon, 2005

If employment in Lincoln County in 2003 (20,192 jobs, Oregon Office of Economic Development, 2005) were to continue to increase by 6 percent every 10 years as it did in the previous 10 years (1993-2003), then employment in Lincoln County would be 22,960 in 2025, an increase of 2,268 jobs. Employment growth for all industries, except durable goods manufacturing, are forecasted to increase between 2002 and 2012 in Region 4 (Table 4-3). Service industry employment is forecasted to increase the most (19.6 percent); durable goods manufacturing is forecasted to decrease by 1.8 percent.

TABLE 4-3

Region 4 Employment Forecast by Industry, 2002-2012

Industry	2002-2012 Percent Change
Durable Goods Manufacturing	-1.8%
Nondurable Goods Manufacturing	1.9%
Government	6.0%
Transportation & Public Utilities	10.7%
Wholesale Trade	10.8%
Construction & Mining	11.6%
Retail Trade	12.6%
Finance, Insurance, & Real Estate	12.7%
Services	19.6%

Source: Office of Economic Development, State of Oregon, 2005

4.1.2 Land Use

Rural Development

Within the unincorporated areas of Lincoln County, there are 10 Rural Communities and one Rural Service Center; these areas were identified by Lincoln County staff as areas where growth and development would be expected in the next 20 years. In total, these areas have 3,374 developable lots, which is slightly more than equal to the 3,211 already developed lots in 2004. These calculations and forecasts of developable lots do not consider ownership histories (specifically, pre-1979) that might influence development potential under Measure 37 provisions. The County recently has granted at least six Measure 37 claims on rural-residential, agriculture-conservation, and timber-conservation zone properties, and 34 claims had been filed with the County as of February 2006.

Also identified within Lincoln County are 20 rural residential exception areas (Figure 4-1) that were classified as Category 2 areas (areas where there is additional opportunity under current zoning for the creation of new lots or parcels). The areas are zoned RR1, RR1-2, or RR-5. In 2004, these areas had 570 vacant parcels, with the potential of creating an additional 571 lots. However, identification of the potential for new lot creation made no determinations as to specific lots of the ability to provide water, sewage disposal, utilities, or access. (See Chapter 1 for a description of these areas.) All sites could potentially be accessed by publicly owned and maintained roadways, although there are a few sites where access may be provided by a Special Road District.

Thus, total available potentially developable new lots number 3,945 under existing Lincoln County zoning. This number is adequate to absorb the projected 1,309 new rural residences by 2027 to house the additional 2,974 residents in unincorporated areas of Lincoln County, assuming 2.27 persons per residence. These figures do not include development of lots for second homes by less than full-time residents, who are not counted as part of the permanent population.

Anecdotal evidence indicates a large portion of residential permitting activity in the unincorporated portions of the county is from people that do not live in Lincoln County full-time. This is due to a large influx of second-home owners who are not counted as part of the permanent population. Even though this development is not reflected in the forecasted population growth, sustained second-home development in Lincoln County is expected, which will affect the county's transportation system because the highest occupancy of these residences occurs in the summer when traffic peaks. Census data for 2000 indicate that 28.2 percent of the housing units (7,593 total units) in Lincoln County are vacant¹, compared to only 8.2 percent of housing units statewide. Of the 28.2 percent of vacant housing units, 69.5 percent are seasonal, recreational, or occasional use housing units (5,279 total units).

¹ Defined by the Census as a housing unit that is unoccupied or is not the usual place of residence of the person or group of people living in the housing unit at the time of enumeration.

Figure 4-1 8 ½ x 11

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Urban Development

In general, Oregon's land use planning laws steer commercial and industrial zoned land uses to areas within an urban growth boundary; however, commercial and industrial development within urban growth boundaries can affect the transportation infrastructure outside urban growth boundaries, especially if this land is located on the urban fringe. Population in urban areas of the county is forecast to grow by another 4,191 people by 2027, which would result in another 1,846 residences. This increase does not consider growth in homes without regular occupancy and used primarily for vacations. The seven cities in Lincoln County were contacted to determine any planned or anticipated urban growth boundary expansions.

Depoe Bay

According to the City of Depoe Bay, no UGB expansions are planned or anticipated.

Lincoln City

According to the City of Lincoln City, the City has commenced an economic needs and UGB expansion study. Recommendations to change the UGB and where to expand, if recommended, will be finalized as part of this study in late spring to early summer of 2006.

Newport

According to the City of Newport, changes to UGB are anticipated in the South Beach area.

The South Beach area, located south of Yaquina Bay and north of Newport Municipal Airport, is an area targeted for urbanized growth. The City of Newport has undertaken the South Beach Conceptual Land Use Plan to guide development in the South Beach area. Oregon Coast Community College has purchased a 30-acre parcel for a new central campus in the South Beach area. Future development adjacent to the development will include retail, office-related, and residential land uses, in addition to transportation system and public facility infrastructure improvements. While some of the targeted development area is located outside the Newport UGB, this land is expected to be annexed into the UGB prior to development to enable urban uses. When built, trip generation from the college and the other development in this area will affect county and state transportation facilities in the South Beach area.

Siletz

According to the City of Siletz, no changes to the UGB are planned or anticipated other than potential requests by property owners on a parcel by parcel basis.

Toledo

According to the City of Toledo, the most recent UGB expansion was in 2001. Other than potential property-owner requests on a parcel by parcel basis, no changes to Toledo's UGB are planned or anticipated.

Waldport

According to the City of Waldport, the city limits and UGB may be expanded to the south as part of a development that will include a mixed use village, 18-hole golf course, and 500+ residential units. The expanded city limits and UGB will be accessed from within the proposed development and possibly Crestline Drive. The primary access will be from

US 101 where the existing ODOT weigh station is located, at the existing southern city limits of Waldport.

The Waldport Industrial Park, located at the south end of Waldport east of US 101, is largely undeveloped because of the lack of sewer. Once sewer service becomes available, development could occur fairly rapidly. The Waldport TSP recommends a future new road connection between US 101 and the industrial park. If built, this new road would likely be located outside the city limits and UGB.

Yachats

According to the City of Yachats, no UGB expansions are planned or anticipated. Any expansion would likely occur at the northern boundary of the UGB, along the Highway 101 corridor, although there is currently ample developable land within the existing UGB.

4.2 Future Roadway Conditions and Needs

4.2.1 Motor Vehicle Facilities – Future No-Build Condition

Forecasted Year 2027 Traffic Volumes

Travel demand forecasts for study intersections in the Lincoln County TSP were determined by analyzing the ODOT Future Volume Tables. The latest tables provide current year traffic volumes, forecast traffic volumes for the year 2024, and a statistical descriptor (R-squared value) that provides the reliability of the forecast for all state highways. Consistent with ODOT guidelines, growth rates for future forecasts have been developed using Future Volume Table estimates with R-squared values above 0.75 for the 22-year planning period. The forecasting process is described in more detail in Appendix A, Traffic Forecasting Methods and Assumptions. Table 4-4 shows the milepost ranges used for forecasting data, average annual growth rate, and overall factor for each of the four state highways with study intersections. Study intersections along Oregon Coast Highway are split into two groups, Drift Creek Road to Otter Crest Loop North and North Beaver Creek Road to Lori Lane, for the purpose of averaging annual growth rates.

TABLE 4-4
Travel Demand Forecast Growth Rates
Lincoln County TSP Study Highways

Highway Name	Milepost Data Used	Average Annual Growth Rate	22-Year Growth Factor
Oregon Coast Highway, No. 9	Drift Creek Road to Otter Crest Loop North: MP 119.22 to MP 124.36	Drift Creek Road to Otter Crest Loop North: 2.4%	Drift Creek Road to Otter Crest Loop North: 1.52
	North Beaver Creek Road to Lori Lane: MP 154.04 to MP 155.46	North Beaver Creek Road to Lori Lane: 2.2%	North Beaver Creek Road to Lori Lane: 1.49
Corvallis-Newport Highway, No. 33	MP 5.29 to MP 5.79	2.3%	1.50
Salmon River Highway, No. 39	MP 0.40 to 5.31	1.9%	1.42
Siletz Highway, No. 181	MP 23.75 to 31.19	2.1%	1.45

Source: ODOT Future Volume Tables, 2004-2024 version (<http://www.oregon.gov/ODOT/TD/TP/TADR.shtml>).

Average annual growth rates range from approximately 1.9 percent per year to 2.4 percent per year. This converts to an overall 22-year growth factor of 1.42 to 1.52. These growth factors will be applied to the balanced 2005 30th highest hour intersection turning movement volumes to determine 2027 30th highest hour volumes for operational analysis of the study intersections within the County. See Figures 1-28 for the existing and future turning movement volumes at each intersection.

Operational Analysis - Future (2027) No-Build Conditions

An operational analysis was conducted for the forecasted year 2027 No-Build conditions with 30th highest hour traffic volumes using Synchro, Version 6. This software package is based on the Highway Capacity Manual. Results from the Synchro HCM Signalized and Unsignalized Reports are reported in this section.

For No-Build conditions, the Oregon Highway Plan (OHP) Mobility standards apply. Because there are no known programmed improvements that directly affect the study intersections, the No-Build condition assumes the current traffic control and lane channelization at the intersection.

Similar to the existing conditions analysis for the signalized intersections, the OHP designates the V/C ratio by intersection, not approach, and requires the state standard be the V/C ratio threshold. For the unsignalized intersections, the OHP designates the V/C ratio by approach, and requires the state standard be the V/C ratio threshold for the state road approaches.

Table 4-5 presents the OHP mobility standard and V/C ratio for each intersection analyzed under future 2027 30th highest hour conditions. For highways in Lincoln County, the 30th highest hour conditions typically occur during weekend afternoons in August, as opposed to urban areas in other parts of the state when such conditions are the result of afternoon commutes. Table 4-5 reports the 2027 No-Build intersection results for the 28 study intersections. For comparison, Table 4-5 also presents the 2005 existing conditions intersection results as reported in Chapter 3. Appendix B contains detailed reports for each individual intersection. Appendix __ includes figures showing an aerial view, configuration, and the V/C ratios (existing and future) of each intersection.

TABLE 4-5
Operational Analysis of Study Intersections – 30th Highest Hour (Year 2005 and 2027)

Intersection	OHP Mobility Standard (No. from Table 1)		2005 Existing Overall or Maximum V/C Ratio		2027 No-Build Overall or Maximum V/C Ratio	
	Major ¹	Minor ²	Major ³	Minor ⁴	Major ³	Minor ⁴
Signalized						
US 101 and Salishan Drive	0.70 (5)		0.71		1.04	
Unsignalized						
US 101 and Drift Creek Road	0.70 (5)	0.80 (6)	0.65	0.52	0.94	>2.0
US 101 and Siletz Highway	0.70 (5)	0.80 (6)	0.29	0.15	0.43	0.52
US 101 and Immonen Road	0.70 (5)	0.80 (6)	0.59	0.23	0.89	0.76
US 101 and Gleneden Beach Road	0.70 (5)	0.80 (6)	0.52	>2.0	0.80	>2.0

TABLE 4-5
Operational Analysis of Study Intersections – 30th Highest Hour (Year 2005 and 2027)

Intersection	OHP Mobility Standard (No. from Table 1)		2005 Existing Overall or Maximum V/C Ratio		2027 No-Build Overall or Maximum V/C Ratio	
	Major ¹	Minor ²	Major ³	Minor ⁴	Major ³	Minor ⁴
US 101 and Lancer Street	0.70 (5)	0.80 (6)	0.53	0.30	0.80	>2.0
US 101 and Willow Drive	0.70 (5)	0.80 (6)	0.22	0.30	0.33	0.76
US 101 and Otter Crest Loop North	0.70 (5)	0.80 (6)	0.40	0.26	0.59	0.71
US 101 and Otter Crest Loop South	0.70 (5)	0.80 (6)	0.39	0.23	0.57	0.48
US 101 and North Beaver Creek Road	0.70 (5)	0.80 (6)	0.37	0.25	0.49	0.69
US 101 and Bay View Road	0.70 (5)	0.80 (6)	0.27	0.22	0.39	0.72
US 101 and Wakonda Beach Road	0.70 (5)	0.80 (6)	0.30	0.10	0.41	0.16
US 101 and Yachats River Road	0.85 (2)	0.90 (3)	0.29	0.13	0.38	0.18
US 101 and Lori Lane	0.85 (2)	0.90 (3)	0.28	0.05	0.40	0.13
US 20 and Western Loop	0.70 (4)	0.80 (6)	0.36	0.07	0.52	0.10
US 20 and Business 20 (west) ⁵	0.70 (4)	0.80 (6)	0.38	0.68	0.55	1.97
US 20 and OR 229 ⁵	0.70 (4)	0.80 (6)	0.18	0.84	0.26	>2.0
Business 20 (west) and Business 20 ⁵	0.90 (3)	0.90 (3)	0.14	0.27	0.20	0.46
US 20 and Olalla Lake Road	0.70 (4)	0.80 (6)	0.15	0.09	0.19	0.11
US 20 and Business 20 (east)	0.70 (4)	0.80 (6)	0.19	0.14	0.26	0.25
OR 18 and Old Scenic Highway 101	0.70 (4)	0.80 (6)	0.56	0.41	0.70	1.15
OR 18 and Bear Creek Road	0.70 (4)	0.80 (6)	0.37	0.19	0.51	0.52
OR 18 and North Bank Road	0.70 (4)	0.80 (6)	0.54	0.23	0.72	0.56
OR 18 and Slick Rock Road	0.70 (4)	0.80 (6)	0.53	0.13	0.71	0.31
OR 229 and Pikes Camp Road	0.75 (6)	0.80 (6)	0.04	0.02	0.07	0.06
OR 229 and Logsdan Road	0.90 (3)	0.90 (3)	0.19	0.46	0.28	0.85
Otter Crest Lookout and Otter Crest Loop	0.75 (6)	0.80 (6)	0.06	0.04	0.09	0.08
Otter Crest Loop and 1st Street	0.75 (6)	0.80 (6)	0.05	0.15	0.07	0.28

SOURCE: CH2M HILL, Synchro Highway Capacity Manual (HCM) Signals and Unsignalized reports.

¹ Indicates OHP Mobility Standard V/C ratio for uncontrolled roadway approach.

² Indicates OHP Mobility Standard V/C ratio for stop controlled roadway approach.

³ Indicates worst calculated v/c ratio for uncontrolled roadway approach.

⁴ Indicates worst calculated v/c ratio for stop controlled roadway approach.

⁵ Intersections form a triangle surrounding the Dairy Queen on the west edge of Toledo.

NOTE: Numbers in **BOLD** indicate higher than acceptable mobility levels.

As shown in Table 4-5, 10 of the 28 study intersections are expected to exceed OHP mobility standards in 2027 during the 30th highest hour. Intersection V/C ratios higher than OHP mobility standards indicate areas of congestion and longer-than-acceptable vehicle delay. Intersection V/C ratios lower than OHP mobility standards indicate intersections operating at acceptable levels of mobility. The following list describes the approaches that contributed to the intersections forecasted to operate above the mobility standard.

Oregon Coast Highway (US 101)

- The signalized intersection at Salishan Drive is forecasted to have an overall V/C ratio of 1.04 compared to the mobility standard of 0.70. This can be attributed to the demand exceeding capacity in the northbound and southbound through lanes.
- The US 101 approaches at Drift Creek Road, Immonen Road, Gleneden Beach Road, and Lancer Street are forecasted to have V/C ratios above the mobility standard of 0.70. This can be attributed to high demand volumes in the northbound and southbound through lanes.
- The stop-controlled approach of Drift Creek Road is forecasted to have a V/C ratio greater than 2.0 compared to the mobility standard of 0.75. There is a low traffic volume on Drift Creek Road, but the high traffic volumes along US 101 make it extremely difficult to find sufficient gaps between vehicles to enter into the traffic flow on US 101.
- The stop-controlled approach of Gleneden Beach Loop North is forecasted to have a V/C ratio greater than 2.0 compared to the mobility standard of 0.75. There is a low traffic volume on Gleneden Beach Road, but the high traffic volumes along US 101 make it extremely difficult to find sufficient gaps between vehicles to enter into the traffic flow on US 101.
- The stop-controlled approach of Seagrove Drive is forecasted to have a V/C ratio greater than 2.0 compared to the mobility standard of 0.75. There are low traffic volumes on Lancer Street and Seagrove Drive, but the high traffic volumes along US 101 make it extremely difficult to find sufficient gaps between vehicles to enter into the traffic flow on US 101.

Corvallis-Newport Highway (US 20)

- The stop-controlled approach of Business 20 (west) is forecasted to have a V/C ratio of 1.97 compared to the mobility standard of 0.75. There is a high left-turn volume from Business 20 to westbound US 20 and there are insufficient gaps along US 20 for vehicles to enter into the traffic flow.
- The stop-controlled approach of OR 229 (Siletz Highway) is forecasted to have a V/C ratio greater than 2.0 compared to the mobility standard of 0.75. There is a high approaching volume sharing one lane on OR 229 and there are insufficient gaps along US 20 for vehicles to enter into the traffic flow.

Salmon River Highway (OR 18)

- The stop-controlled approach of Old Scenic Highway 101 is forecasted to have a V/C ratio of 1.15 compared to the mobility standard of 0.75. There is a low traffic volume on Old Scenic Highway 101, but the high traffic volumes along OR 18 make it extremely difficult to find sufficient gaps between vehicles to enter into the traffic flow on OR 18.
- The westbound OR 18 approach at North Bank Road is forecasted to have a V/C ratio slightly above the mobility standard of 0.70. OR 18 is forecasted to remain under capacity and have sufficient gaps for vehicles from North Bank Road to enter into the traffic flow on OR 18.

- The westbound OR 18 approach at Slick Rock Road is forecasted to have a V/C ratio slightly above the mobility standard of 0.70. OR 18 is forecasted to remain under capacity and have sufficient gaps for vehicles from Slick Rock Road to enter into the traffic flow on OR 18.
- The westbound OR 18 approach at Bear Creek Road is forecasted to have a V/C ratio much lower than the mobility standard and inconsistent with the westbound approaches at Old Scenic Highway 101, North Bank Road, and Slick Rock Road. This is because the westbound approach at Bear Creek Road is a shared through/left-turn lane and the HCM methodology analyzes the major street left-turn volume independently of the through volume (HCM2000, pg. 17-13). Performing a separate calculation as if the through volume had an exclusive lane results in a V/C ratio of 0.68 for the future 2027 30th highest hour condition. This approximation of the forecasted operating conditions is less than the mobility standard, but is much closer to the other westbound approaches along OR 18.
- Intersections along OR 18 currently experience congested conditions on weekend days with casino patrons traveling to and from the Chinook Winds Casino in Lincoln City. The macroscopic nature of the HCM methodology used to analyze the 30th highest hour traffic volumes does not reveal the full range of operational conditions experienced on OR 18. This can be explained by the single hour of traffic volumes modeled, the use of flow rates by the HCM methodology instead of individual vehicle movements, and the limited number of study intersections analyzed. The V/C ratios reported in Table 4-5 do indicate future operations at or above the mobility standard. A more comprehensive study of OR 18, including the interchange with US 101, using a microscopic method of analysis would be necessary to fully model the current situation and to forecast the future conditions. This is outside the scope of the Transportation System Plan and is not included in this memorandum.

Chapter 5 of this TSP addresses alternatives to improve these and other deficiencies, based upon the project's goals and objectives, including preservation of the state highway system.

Vehicle Queuing Analysis - Future (2027) No-Build Conditions

The V/C ratio provides only one measure-of-effectiveness of the intersection operation. Vehicle queuing overflow in the turn lane indicates locations with deficient vehicle storage. Below, Table 4-6 shows each movement in the study area that has a 95th percentile vehicle queue length that exceeds the available storage length. Two intersections (a total of three movements) are identified where the queue length exceeds the available storage capacity. Two of the movements are through lanes and one is a right-turn lane. Queue lengths for all locations are provided in Appendix C.

TABLE 4-6
2027 30th Highest Hour Queue Lengths (that exceed storage)

Intersection	Approach	Lane Group	V/C Ratio ¹	Analysis Method ²	Existing Storage ³ (feet)	Queue Length ⁴ (feet)
US 101 and Salishan Drive						
	Northbound	Thru	1.01	SimTraffic	1,200	1,320
	Southbound	Thru	1.01	SimTraffic	1,900	2,380
US 101 and Gleneden Beach Road						
	Southbound	Right	0.77	2 Minute Rule	50	130

¹ For signalized intersections, overall intersection V/C ratio reported. For unsignalized intersections, highest V/C ratio per lane group reported.

² Queue lengths not reported for free-flowing, uncontrolled movements.

³ Existing storage for through-lanes displayed only when queue is expected to surpass the distance to the upstream intersection.

⁴ Queue lengths were rounded up to the nearest ten feet. Highest queue length reported per lane group.

As shown in Table 4-6, some of the estimated vehicle queue lengths extend a considerable distance from the intersection and could create very undesirable conditions. They may block upstream intersections/driveways, thereby creating gridlock throughout the corridor. Along US 101 at Salishan Drive, queue blocking could be an issue. In the southbound direction, the queue length exceeds the storage, thus blocking Immonen Road. In the northbound direction, the queue length also exceeds the storage, thus blocking Gleneden Beach Road.

At US 101 and Gleneden Beach Road, the length of the southbound right turn queue exceeds the length of the turn pocket. The southbound right turning vehicles will extend into the through lane, thereby blocking traffic from traveling past the intersection in the southbound direction.

Both of the intersections identified above as having queue length deficiencies also reported V/C ratios higher than ODOT mobility standards.

4.2.2 Motor Vehicle Facilities - Future Needs

This subsection summarizes the operational and safety deficiencies identified through analysis of existing and future conditions and describes the short- and long-term (22-year planning horizon) motor vehicle facility needs in Lincoln County. Mobility and safety needs were identified on the basis of the analyses of existing and forecasted, 2027 No-Build (30th highest hour) conditions and projects that have been recommended in relevant planning documents and policies. The needs included in this subsection have not been prioritized. In Chapter 5 of the TSP, projects are developed to address the needs described in this section.

Deficiencies are identified relevant to a functional and safe multimodal transportation system. A “deficiency” is defined as the difference between an existing transportation system characteristic and the adopted standard for the characteristic. Potential roadway improvements by Lincoln County, with potential cooperation by other jurisdictions, to address the roadway deficiencies identified in this chapter will be discussed in the next chapter.

Traffic Operations Deficiencies – 30th Highest Hour Conditions

Three of the study intersections currently operate at a higher than acceptable mobility standard during 30th highest hour conditions. They are:

- US 101 and Salishan Drive. This signalized intersection operates poorly (V/C ratio of 0.71) due to the heavy traffic volume using the shared southbound through/right-turn lane.
- US 101 and Gleneden Beach Loop North. The stop-controlled approach of Gleneden Beach Road operates poorly (V/C ratio greater than 2.0) due to heavy conflicting volume on US 101 allowing few gaps for the minor street left-turn movement.
- US 20 (Corvallis-Newport Highway) and OR 229 (Siletz Highway). The stop-controlled southbound approach of Siletz Highway operates poorly (V/C ratio of 0.84) due to heavy volume sharing a one-lane approach.

Ten of the study intersections are forecasted to operate at a higher than acceptable mobility standard under the future 2027 30th highest hour conditions. They are:

- US 101 and Salishan Drive. This signalized intersection is forecasted to continue to operate poorly (V/C ratio of 1.04) due to heavy traffic volumes using the northbound and southbound through lanes.
- The US 101 approaches at Drift Creek Road, Immonen Road, Gleneden Beach Road, and Lancer Street. The main travel lanes on US 101 are forecasted to experience high traffic volumes and have V/C ratios above the mobility standard of 0.70.
- US 101 and Drift Creek Road. The stop-controlled approach of Drift Creek Road is forecasted to operate poorly (V/C ratio greater than 2.0) due to heavy conflicting volume on US 101 allowing few gaps for the minor street left-turn movement.
- US 101 and Gleneden Beach Loop North. The stop-controlled approach of Gleneden Beach Road is forecasted to continue to operate poorly (V/C ratio greater than 2.0) due to heavy conflicting volume on US 101 allowing few gaps for the minor street left-turn movement.
- US 101 and Lancer Street. The stop-controlled approach of Seagrove Drive is forecasted to operate poorly (V/C ratio of 1.88) due to heavy conflicting volume on US 101 allowing few gaps for the minor street movements.
- US 20 and Business 20 (west). The stop-controlled approach of Business 20 is forecasted to operate poorly (V/C ratio of 1.97) due to a high left-turn volume and some conflicting volumes on US 20 combining to provide insufficient gaps for the minor street left-turn movement.
- US 20 and OR 229. The stop-controlled approach of Siletz Highway is forecasted to operate poorly (V/C ratio greater than 2.0) due to a high approaching volume and heavy conflicting volume on US 20 combining to provide few gaps for the minor street movements.

- OR 18 and Old Scenic Highway 101. The stop-controlled approach of Old Scenic Highway 101 is forecasted to operate poorly (V/C ratio of 1.15) due to heavy conflicting volume on OR 18 allowing few gaps for the minor street left-turn movement.
- The westbound OR 18 approach at North Bank Road. The shared through/ right-turn lane is forecasted to have a V/C ratio slightly above the mobility standard of 0.70.
- The westbound OR 18 approach at Slick Rock Road. The through lane is forecasted to have a V/C ratio slightly above the mobility standard of 0.70.

Channelization improvements and roadway widening would be considered before installing a traffic signal. Installing a traffic signal at unsignalized intersections would not be proposed unless the intersection meets preliminary signal warrants. If additional through and/or turn lanes do not improve the forecasted operating conditions to acceptable levels, then a traffic signal could achieve an acceptable intersection V/C ratio.

Preliminary Traffic Signal Warrant Analysis

The preliminary traffic signal warrant analysis is based on Warrant 1 (Eight-Hour Vehicular Volume), Case A and Case B, from the Manual on Uniform Traffic Control Devices (MUTCD). The analysis was based on forecasted, 2027 30th-highest-hour volumes converted to ADT using conversion factors from ATR station data.

Case A of Warrant 1 (Minimum Vehicular Volume) is designed to warrant the installation of traffic signals at intersections where there are high volumes of intersecting traffic on the minor street. Case B of Warrant 1 (Interruption of Continuous Traffic) is designed to warrant the installation of a traffic signal at intersections where high volumes on the major street restrict movements to and from the minor street. A location must meet one of these two conditions to advance to a more detailed examination of the installation of a traffic signal. Even if a location meets one of the two cases, it does not guarantee a signal installation. The MUTCD Millennium Edition provides more discussion on specifics of the warrant analysis.

As described in the TPAU procedure manual, the preliminary traffic signal warrant analysis can be performed under the 70 percent column “if the 85th percentile speed of major street traffic exceeds 40 mph in either an urban or rural area, or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000”². The posted speed limits on the state highways at each of the intersections analyzed exceeded 40 mph. Therefore, the 70 percent column for the preliminary signal warrant analysis was used as the threshold. The MUTCD Millennium Edition provides more discussion on specifics of the warrant analysis.

The preliminary traffic signal warrant analysis was based on forecasted, 2027 30th-highest-hour volumes converted to ADT using conversion factors from ATR station data. As shown in Table 4-7, three of the unsignalized intersections failing to meet the OHP mobility standard met the preliminary signal warrant.

² Based on the Manual of Uniform Traffic Control Devices, MUTCD.

TABLE 4-7
Results of Preliminary Traffic Signal Warrant Analysis (2027)—No-Build Conditions

Intersection	Case Met in Preliminary Warrant Analysis (70%)
US 101 & Gleneden Beach Road	Case B
US 20 & Business 20 (west)	Case B
US 20 & OR 229	Case A

See Appendix D for the preliminary signal warrant analysis worksheets.

4.2.3 Safety Conditions and Needs

The existing county road/state highway intersections with safety concerns that were noted in Chapter 3 are still applicable for future conditions. County staff identified the following intersections as those that should receive priority when deciding which safety concerns to address first.

- OR 18 and Bear Creek Road
- OR 18 and Slick Rock Road
- US 101 and Immonen Road
- OR 229 and Pikes Camp Road

As traffic volumes increase in the future, safety concerns at these locations will continue if not corrected.

4.2.4 Capacity Needs on Local and State Roadway Segments

Major widening of US 101 to two travel lanes in each direction would address capacity needs from Gleneden Beach Road to Drift Creek Road (approximately 2.5 miles). This is based on forecasted 2027 30th highest hour conditions exceeding the OHP mobility standard. Other channelization improvements are needed to address capacity along US 101 at the Drift Creek Road, Gleneden Beach Road, and Lancer Street intersections, along US 20 from Business 20 (west) to OR 229, and along OR 18 from Old Scenic Highway 101 to Slick Rock Road.

Congested conditions experienced by drivers on OR 18 on weekend days are not fully revealed by the intersection approaches forecasted to operate above the OHP mobility standard. A more comprehensive study of OR 18, including the interchange with US 101, using a microscopic method of analysis would be necessary to fully model the current situation, to forecast the future conditions, and determine whether major widening is needed. This is outside the scope of the Transportation System Plan and is not included in this memorandum.

4.2.5 Bridge Improvement Needs

Nineteen of Lincoln County's 91 bridges in 2005 had Sufficiency Ratings below 50 (out of 100), a level at which investigation into the causes of the low rating should be undertaken. A rating below 50 does not of itself mean a bridge is insufficient or dangerous. Most bridges are expected to have a lifetime of approximately 50 years. Deterioration of the bridges is

discovered from bridge inspections conducted every 2 years. There has been little deterioration found in county-owned bridges during 2000-2005, as shown by the Sufficiency Ratings. The County Road Department regularly reviews bridge inspection reports and plans bridge improvements accordingly. Bridges with wooden structural members are expected to be gradually replaced during the next 20 years with bridges having more enduring elements such as concrete.

4.3 Future Pedestrian and Bicycle Conditions and Needs

Bicyclists and pedestrians are expected to continue to use widened roadway shoulders as their principal paved paths of travel during the next 20 years. No improvements are planned for the Coast Bike Route other than through cities in Lincoln County. Usage will increase as population increases and as outdoor activities continue to grow in popularity for their health and recreation benefits. This would include the use of gravel county roads, as well as logging roads, for mountain-bike recreation. As additional county roads may be paved in the future, the County intends to construct wide shoulders, when appropriate and feasible, for maintenance and safety reasons that will also serve pedestrian and bicycle needs. Recreation in Lincoln County over the next 20 years often will involve increased use of county or federal roads and lands. Development of recreational facilities, particularly parks and trails, in the interior of the county could broaden the tourist-based economy and provide economic opportunities to county residents.

Mike Miller Educational Park is a 40-acre parcel of land with a well-maintained woodland nature trail, which is the main attraction of this park. There are bridges, observation decks, and benches along the trail to sit and listen to bird calls, watch small animals, and enjoy the beauty of native coastal vegetation. At the trailhead there are bike racks and shoulder parking for vehicles.

The Pacific Coast Scenic Byway Corridor Management Plan (ODOT, 1997) identifies a priority project in the Cape Perpetua Scenic Area, which is managed by the U.S. Forest Service (USFS). The project would establish a north-south trail that links state parks in the City of Yachats with Cape Perpetua through County-zoned rural residential area. The trail is part of the Village Circulation Plan.

The Oregon State Parks and Recreation Department (OPRD) surveyed a wide range of outdoor activity among Oregonians while creating its 2003-2007 Statewide Comprehensive Outdoor Recreation Plan (SCORP). Data show an increasing trend over a 14-year period in running/walking for exercise or pleasure, nature observation activities, and bicycling. These are among the most popular activities and reflect a population that is aging, more concerned about fitness, increasingly metropolitan, and with more time available for recreation. Thus, besides the ever popular ocean beaches, recreation on National Forest and Bureau of Land Management (BLM) lands (see Figure 1-2) in Lincoln County is expected to increase on a trail and logging road system used by hunters, naturalists, hikers, bikers, and horseback riders. Increased use of common trail systems can lead to conflicts, especially among mountain bikers, equestrians, and hikers. This situation can be managed by creating limited use trails, single purpose trails, or by signage indicating the trail's primary and secondary uses. Signage is also useful to inform users of trail courtesy, safety, and other issues.

A network of pedestrian paths and trails could be created and maintained through cooperative agreements between federal agencies, OPRD, city and county Parks Departments, the Siletz Tribe, and port authorities. Cooperation with private landowners also is possible through appropriate easement agreements or outright purchase. Given suitable terrain and adequate funding, these trails could also be constructed for the physically challenged.

The Siuslaw National Forest manages approximately 150 miles of forest trails. Funds are very limited for trail maintenance, and thus, no new trails are considered for the future unless maintenance and construction can be provided, such as by volunteer groups.

The concept of a trail stretching from the mid-Willamette Valley to the Pacific Ocean has been considered by hiking enthusiasts and resource managers for more than 30 years. In 1993, the BLM Salem Office directed their staff to work with local governments on the "Corvallis-to-the-Sea Trail" concept. Public forums were held, and OPRD placed the trail in the State Trails Plan. Recently, volunteers from the Corvallis to the Sea (C2C) Trail Group, with advice from the USFS and National Coast Trail Association, have mapped alternative routes from the Mary's Peak area to three potential termini on the coast. The proposed trail of approximately 60 miles would be wholly or partly open for hiking, biking, and horseback riding, utilizing mostly county roads and existing and decommissioned forest roads. The trail group has had discussions with city, county, and federal officials and private landowners to determine potential cooperation in establishing, constructing, and maintaining the trail. One potential route would have termini at the Benton County Fairgrounds and the vicinity of Mike Miller County Park, a Lincoln County facility located approximately 1.2 miles south of the Yaquina Bay Bridge and east of US 101. Sites proposed in the South Beach area for the Oregon Coast Community College and housing could influence the trail's route in this area. Other potential coastal termini include the vicinity of Ona Beach and Alsea Bay, accessed by county roads. Portions of the trail proposed for construction on federal lands would require approvals under the National Environmental Policy Act (NEPA).

The existing BLM Salem District Regional Management Plan (RMP), covering the northwest corner of western Oregon including Lincoln and Benton Counties, includes the addition of 11 recreational trails to the existing 8 trails. The proposed Corvallis-to-the-Sea Trail is included as a High Development Priority (top 5). Moderate Development Priority is assigned to trails on the North Fork Alsea River and the South Fork Alsea River, both in Lincoln County. No new recreation sites are proposed in Lincoln County by the existing Salem District RMP. The Yaquina Head is an Existing Special Recreation Management Area. The North Fork Siletz River is a Proposed Special Recreation Management Area. The existing RMP would continue to facilitate, manage, and promote public use of the South Fork Alsea River National Back Country Byway (Lincoln County).

4.4 Future Public Transit Conditions and Needs

Lincoln County Transit does not have an existing long-range planning document. Creation of such a plan for transit services would require a visioning process, and an understanding of forecast trends and conditions that would help guide the evolution of the transit system. The large and increasing amount of low-wage, service-type employment in the county could

conceivably substantiate a need for low-cost public transportation to and from tourist facility work sites. County-wide population forecasts (see Table 4-1) and demographic trends toward an older population indicate a need to expand the existing vehicle inventory and service schedules in the future to accommodate a larger and older population in the next 20 years. From 1990-2004, the Lincoln County population grew on average at 1.0 percent annually. Lincoln County has and will likely continue to have a higher than state average percentage of residents older than 65 (19.5 percent) or living below the poverty level (13.9 percent). These two groups are typically heavy users of public transit. For 2005-2025 the population is forecast to grow on average at 0.69 percent annually.

Using the county's annual population growth rate through 2027 (see Table 4-1) to project Dial-A-Ride ridership, the Dial-A-Ride ridership will have increased by 7,513 in 2014 and by 17,878 in 2027 (Table 4-8). Similarly, fixed-route ridership will have increased by 6,531 in 2014 and by 20,380 in 2027 (Table 4-8). An effective transit marketing program, growing percentage of older residents, and increasing private vehicle fuel and ownership costs could increase ridership even more. As Lincoln County residents become more aware and convinced of the importance of reducing greenhouse gas emissions, this, too, may increase transit ridership.

TABLE 4-8

Public Transit Ridership Forecasted Growth, 2004-2027

	2004	2014	2027
Dial-A-Ride Service	101,661	109,174	119,539
Fixed Route Service	88,380	94,911	109,253

Source: Office of Economic Development, State of Oregon, 2005

Creation of a long-range transit development plan is beyond the scope of work for this Lincoln County Transportation System Plan; however, such an effort has been identified by Lincoln County Transit as a priority for future funding. Through the development of a 10-year Transit Development Plan, Lincoln County Transit could create a vision for a system that would serve the most riders at the most efficient cost. A partial list of issues that the plan should cover includes:

- Appropriate hours of scheduling
- Long-term capital needs (capital improvement plan)
- Route structure
- Demographic shifts that predict ridership trends
- Coordination with carpool, vanpool, and taxi services already in the county
- Appropriate limits to deviation off of the fixed route
- Bus stop passenger amenities
- Fare box recovery
- Dead head times
- Vehicle storage and maintenance
- Security
- Driver needs

- Passenger needs
- Community needs
- Non-medical emergency transport
- Social service agency needs

Future activities of the Transit Program would be efforts to provide more Dial-A-Ride services to the rural areas of the county, including the more outlying areas. Federal Section 5311 funds going to the County were recently increased, which will help to fund existing and planned operations. There is a need to better educate the public on the available services and how to use them as the population grows and changes, particularly linking services for the aged and disabled. Buses will continue to need replacement to keep operational costs down and efficiencies/reliabilities up. As new dispatch and routing technologies become available for smaller transit programs, these should be acquired as appropriate to ensure and enhance the efficiency of operations. The Lincoln County TDM Plan, being prepared by Cascades West Council of Governments, is expected to have additional information related to future (and existing) transit conditions and needs.

4.5 Future Air/Rail /Water/Pipeline Conditions and Needs

Managers of air, rail, port, and other freight facilities in the county are expected to continue to seek grants from such state programs as ConnectOregon and federal sources. for improvement projects. Future conditions will be greatly determined by the success of grant applications and changes in Lincoln County's economy.

4.5.1 Air

Newport Municipal Airport

The Newport Municipal Airport Layout Plan (2005) provides a wealth of information about the airport's future conditions and needs. Average growth rate of registered aircraft is one measure of general aviation demand. Since 1994, registered aircraft in Lincoln County has grown from 66 to 89 in 2004, representing average annual growth of 3.4 percent. Forecast aircraft registrations in Lincoln County are 105 by 2008, 125 by 2013, 175 by 2023, and 201 by 2027.

The number of based aircraft at the municipal airport, another measure of demand, has remained relatively steady for 10 years, from 22 in 1994 to 24 in 2004. The Layout Plan assumes a market share capture of 27 percent in Lincoln County (the current rate) and forecasts airport-based aircraft would be 47 by 2023 and thus 54 by 2027. Variations in market share would yield anywhere from 35-66 based aircraft by 2027. Other measures of demand noted in the Newport Airport Layout Plan (2005) include per capita ownership in the County and share of U.S. general aviation aircraft; These measures forecast ownership is in the range of 35-40 based aircraft by 2027. Associated increases in aircraft parking apron spaces, hangars, and vehicle parking spaces for airport patrons will be needed.

The forecast mix of based aircraft was determined in the Layout Plan by comparing existing and forecast U.S. general aviation trends. The trend in general aviation is toward a greater percentage of large, more sophisticated aircraft as part of the national fleet. The Newport Municipal Airport is projected to have an increase in multi-engine, jet, helicopter aircraft

from 1 each (in 2003) to 3 multi-engine, 3 jets, 2 helicopters, and 2 “other” in the next 20 years. Single-engine aircraft would increase from 20 (in 2003) to 24 in 2027.

According to the Newport Airport Layout Plan (2005), airport local and itinerant operations will continue at their historic mix. Approximately one-quarter of airport operations are forecast to be a local operation, that is, a take-off or landing performed by an aircraft that operates within sight of the airport. The other three-quarters of operations are forecast to be an itinerant operation, that is, one with aircraft arrival at the subject airport while originating at another airport. Local operations often are for training or recreational purposes, whereas itinerant operations often are associated with business and commercial use.

The estimated number of aircraft stored in enclosed hangar facilities is expected to remain the same in the future as currently (90 percent). The airport built 10 nested T-hangars in one building during the summer of 2006 and may build an additional 8 nested T-hangars in another building. According to the Layout Plan, another 15 T-hangars will be needed within 10-15 years,, while reducing the number of executive hangars to 15 and then 11. In cooperation with other airports in Oregon, Newport Municipal Airport submitted a ConnectOregon grant application to provide financial support for scheduled commuter air service in Oregon.

Planning period 2014-2023, of the Newport Municipal Airport Layout Plan (2005), includes an additional new access road beginning at 98th Street (which connects to Highway 101) and ending at the north end of Runway 34.

Other Airports

Due to several deficiencies in existing conditions at the other three airfields (Wakonda Beach, Siletz Bay, and Toledo) in Lincoln County, no significant growth in air traffic is expected. Therefore, future conditions and needs are expected to be the same as existing conditions and needs. Interest has been expressed recently to the Oregon Department of Aviation (ODA) about leasing Wakonda Beach Airport.

The Aviation Master Plan Committee of the ODA intends to address development priorities, recommendations, and implementation strategies for future development for the State airports. The ODA also intends to develop a plan for local and state emergency responders to implement when an incident or accident occurs at State-owned airports.

4.5.2 Future Rail Conditions and Needs

Freight

The local Area Commission on Transportation (ACT), which includes county commissioners and others from Lincoln, Benton, and Linn Counties, is chartered to address not only highway improvements but rail transport in addition to other modes. The ACT has studied impediments to rail transport, particularly on short-line railroads such as the Portland & Western Railroad (PNWR) between Toledo and Albany, “the Toledo Branch.”

Lincoln County’s interest in regional rail line improvements is significant. While increased rail freight demand is not expected to grow significantly in the short-term, in 20 years increased freight through the Port of Toledo and Port of Newport is expected that could

potentially increase rail traffic on the Toledo Branch. Freight traffic through ports of the West Coast is expected to double in the next 15 years, which would create a need to expand freight logistics beyond the Portland freight centers. In addition, timber harvest is expected to increase significantly in Lincoln County in the next 10-20 years, which could increase rail shipments.

A rail car can transport 3-4 times more than an average truck. A train crew can handle 50 to 100 or more rail cars. Thus, shipment by train represents an opportunity to take 150-400 trucks off a highway with additional environmental benefits accrued. The PNWR's approximate 455 rail car loads per week would require 1,365 truck trips to move the same tonnage.

The most current analysis of rail conditions was commissioned by Cascades West Council of Governments and completed in April 2005 by HDR Engineering, Inc. Titled, "*Final Toledo-Sweet Home Rail Corridor Feasibility Study*" (HDR, 2005), the report determined what rail investments are needed to take full advantage of the rail system. The recommendation in the report is for upgrades to allow the safe and maintainable operation of 286,000-lb (112-ton) freight cars at 25-40 mph speeds, which typically requires heavier rail (132- to 136-lb rail) and stronger bridges on short lines such as the PNWR. These heavier rail cars would be transferred to or from UPRR or BNSF in Albany. A tunnel on the Toledo Branch in the vicinity of Elk City Road and US 20 is too low to allow passage of double-stack containers on flat cars, although single-stack containers could be accommodated. Costs to raise the tunnel height were not estimated because the need to raise the height is unlikely.

All needs identified in the report for the short line system totaled \$155 million. The cost to upgrade the core rail system is approximately \$80 million. For the Toledo Branch, the investment required is estimated to be \$34.2 million, \$14 million of which would be for repairs and strengthening of the critical bridge over the Willamette River in Albany. A SAFETEA-LU earmark project will fix this bridge. Priority objectives, replacing rail less than 130 pounds and fixing the bridge, could be achieved for approximately \$23.8 million. Table 4-9 presents the improvement needs identified for the Toledo branch portion of the line serving the County.

In addition to the PNWR rail line improvements, the study also identified benefits associated with development of an intermodal facility at the Port of Toledo. The Port of Toledo has a rail connection and is capable of handling barge and truck traffic connecting to the Port of Newport's ocean cargo vessels. The Yaquina River is not deep enough for ocean cargo ships to navigate up-river to Toledo; hence, there would be a need to offload to barges or trucks to reach Toledo, but which would not be cost-effective. The benefit of an intermodal facility at Toledo would be to provide additional, and potentially less costly, shipping options for local manufacturers and suppliers.

TABLE 4-9
Toledo Branch Upgrade Costs¹

M.P. to M.P.	Furnish & Install Rail ²	Construct New Track Complete	Furnish & Install Timber Crossties	Surface & Line	Reconstruct Grade Crossing	Bridge & Timber Trestle Repair	Ditching & Drainage	Furnish & Install Ballast, 2" lift	Special Track Work
691.35 to 691.65	40,000	0	36,960	9,510	525,000	0	0	1,585	100,000
691.7 to 692.4	0	444,600	0	0	0	14,820,000 ³	0	0	0
692.4 to 702.7	1,746,600	0	1,268,960	326,304	875,000	30,000	52,800	54,384	400,000
702.7 to 703.28	0	0	55,440	19,008	0	0	0	3,168	200,000
703.3 to 728.5	63,360	0	2,328,480	63,360	1,750,000	120,000	79,200	15,840	0
728.5 to 765	295,680	0	4,496,800	95,040	1,750,000	120,000	264,000	26,400	200,000
765 to 766.7	0	950,400	0	0	350,000	30,000	13,200	0	200,000
Subtotal	\$2,145,640	\$1,395,000	\$8,186,640	\$513,222	\$5,250,000	\$15,120,000	\$409,200	\$101,377	\$1,100,000
Grand Total = \$34,221,079									

Source: Appendix C, Toledo Sweet Home Rail Corridor Feasibility Study, HDR Engineering 2005.

¹ Costs to allow for the safe and maintenance operation of 286,000 lb freight cars.

² No. 1 relay 136RE continuous weld rail (CWR).

³ Steel bridge over Willamette River at Albany. To be replaced with SAFETEA-LU earmark funds.

1. PNWR has provided technical assistance in the layout and design of a rail spur and intermodal freight facility for the Port of Toledo. The railroad has also provided marketing support and guidance to develop cargo sources including two immediate opportunities.
2. A nearby sawmill is in discussions with the Port of Toledo to provide the equivalent of 10 railcar loads of package lumber products each week – a total of 520 annual railcar loadings.

A food processor is discussing with the Port of Toledo an expanded operation that will generate up to 5 two-way rail car shipments each week – a total of 260 railcars per year. A first shipment was made in January 2006.

In addition, a ferrous metal recycler is considering with the Port of Toledo an expanded operation to gather and processes autos and white goods – a total of 2 railcars per week or 104 per year.

Passenger

Consideration of establishing passenger service between Toledo and the mid-Willamette Valley has arisen periodically over the years. An ODOT study in 2002 found that for an excursion train to operate such a distance (approximately 128 miles) per day for a 50-day season would cost approximately \$5,000 per day or \$39.14 per mile. On the Toledo Branch, additional track upgrades would be required to accommodate trains at speeds more than 30 miles per hour. Special single-day excursions could be run with leased equipment and higher cost. All passenger trains would have to be scheduled to enable continued freight rail service.

4.5.3 Future Water Conditions and Needs

The ability of a port to receive, process, and clear commodities, personnel, and equipment – its throughput capability – is a critical planning factor in future port operations. Ports must be capable of receiving planned strategic flow, considering not only the port's capability, state of repair, and congestion, but its throughput capability.

Ports operate in a competitive business environment; however, their authority provides maximum flexibility in responding to current and future market opportunities. This authority extends into the areas of land leases and sales, negotiating development projects and constructing infrastructure and other job-creating improvements. Each of these economic development measures provides an opportunity to lower business formation and relocation costs, and as such, is an incentive to attracting businesses and easing change for communities. It is usually the objective that businesses will provide new jobs at wage levels and skill requirements for lost occupations so that individuals and families are not dislocated.

The volume of cargo being handled by all ports in the United States is expected to double by 2020. The major US ports are running out of waterfront land for expansion. With increased highway congestion, particularly near deepwater ports, more cargo that is not time-sensitive – such as forest products and recycled metals – will be moved by barge to reduce port congestion. U.S. Department of Transportation, with a large transportation industry coalition, is encouraging growth in multi-modal transport that involves short-sea shipping by barge – the 'Short Sea Shipping Initiative'. Using port infrastructure, short-sea shipping connects both highway and rail cargo movement. Waterborne transportation is the least cost method of moving goods. Liquid and dry bulk commodities, containers, and break bulk cargoes are all increasing their use of 'alternate ports' to add capacity, improve efficiency, and reduce pollution. Short-sea shipping is used extensively between the deepwater ports of Europe and to a lesser extent to move cargo between U.S. ports.

Although there is a strong desire to increase cargo handling through the Ports of Newport and Toledo, Ports are finding that recreational boating and sport fishing are the growing industries on the Oregon coast. Oregon has 100,000 registered power and sail boats over 16 feet in length. Boat registrations are increasing at 4.2 percent per year – about the same rate as the general population. The waiting list for recreational boating moorage is growing. Surveys of marina facilities indicate that the size and complexity of recreational boats is increasing. Many of these boats cannot be moved by conventional trailer and lend themselves moorage. All Lincoln County ports and harbors are looking to invest in sport vessel launch, moorage, and support facilities.

Port of Newport

Opportunities for the Port of Newport to grow as a shipping port are limited. Modern container ships are not able to clear the Yaquina Bay Bridge. If containers were unloaded from a ship, to be loaded on railcars, they would have to be barged or trucked to Toledo— an uneconomical activity. The port does have log loading capabilities, and with the expected increase in timber harvests locally in the next 20 years, regular log shipments could reappear.

To prepare for the future, the Port has made structural changes to address past downturns in the commercial fishing and wood products industries, and growth in retail and wholesale trade and tourism. These changes challenge Port administration and the Port Commission to maintain a balance within the Port's economic development capacity and contributions to the Port District. The Port's Strategic Business Plan (January 2001 update) is the Port's guide to ensure it is properly positioned with its limited financial resources to maximize District benefits in the form of new employers and jobs.

During the course of the Port's strategic business reassessment, the Port Commission identified the following *critical success factors* that are vital to accomplishing the Port's mission and to the financial health of the Port. These critical factors provide guidance to the Commission when setting and updating Port priorities and developing future Port budgets:

- Maintenance of deep-water ocean access.
- Maintenance of adequate water depth at Port berths and moorage sites.
- Adequate inventory of developable land.
- Policy and regulatory climate that provides reasonable access to fishery stocks and natural resources.
- Competitive Port facilities and services.

It is important to note that federal involvement may influence the outcome of more than one of these critical factors.

Strategic projects for the Port of Newport to develop are:

- Recreational Boat Launch Relocation and Parking – Completed 05
- Newport Event Center Development
- Commercial Marina (Port Dock 7) Restrooms
- Terminal Ship Dock Rehabilitation
- Terminal Barge Dock Rehabilitation
- RV Park Redevelopment – FY 2005/06
- Port Dock 7X, E and F Improvements
- Maintenance Dredging at both commercial and sport marinas
- New Port Administration Building
- Fishermen's Market
- Strategic Property Development: Hall Property, Port Dock 7
- Yaquina Bay Road Wood Lot Sale
- Port Equipment Replacement and Upgrade

Issues associated with these projects include land development as impacted by zoning, Goal 17 (Coastal Shorelands) and permitted uses in W-1/W-2 zones; environmental permitting in marine environment; resource management issues such as harvest restrictions; aging infrastructure; and available funding.

One of the challenges of future operations concerns the Yaquina Bay North Jetty. The North Jetty was capped for 100 feet where approximately 450 feet eroded in 2001. Since then the U.S. Army Corps of Engineers has been monitoring the cap's performance, but in 2001 it was considered an interim measure to stop the erosion. There are potentially dangerous safety issues remaining due to the jetty's shorter length, and extending the jetty again to its full length is considered the future solution.

Another issue of future concern is the availability of maintenance dredging and a minimum dredge fleet. There is concern about ongoing appropriation for the operation and maintenance from Congress to the Corps. Corps Dredges *Essayons* and *Yaquina* have proved to be the most efficient, responsive and effective dredges designed particularly for navigation projects in the Pacific Northwest. The Port would like to see assurance for: 1) no further operating restrictions; 2) repeal of existing statutory, regulatory or policy restrictions on the number of days the Corps dredges are allowed to operate each year; and 3) dredges *Essayons* and *Yaquina* maintained to a level consistent with the safe and efficient performance of their mission.

The Port has received broad support in its efforts to secure funding for terminal redevelopment in recent years from Lincoln County, City of Newport, Newport Chamber of Commerce, Newport Fishermen's Wives, International Longshore and Warehouse Union Newport Local 53 and Portland Local 40, Oregon State University Hatfield Marine Science Center, Pacific Rim Trade Association, Pacific Northwest Waterways Association and the State of Oregon. However, beyond preliminary market, feasibility, and engineering studies, these efforts have been unsuccessful.

The Port of Newport board of commissioners has agreed, as a matter of good public policy, to perform adequate due diligence with the residents of the port district to determine the willingness and ability to finance needed improvements. This due diligence, in the form of a community survey, will determine the realistic investment level, and therefore the realistic project scope that is supported by the community in the form of bonded debt.

Port of Toledo

As a developed location with potential for expansion, the Port of Toledo is positioning to participate in the growth of barge short-sea shipping, short-line railroad shipping, boat repair and building, recreational boating. Activities at the Port of Toledo are expected to increase over the next 20 years, as facilities are improved and expanded according to the Port's business plan, and capacity at other ports is constrained on the West Coast. The Port of Toledo has the advantage of freshwater moorage, safe harbor from coastal storms, and a rail connection.

The Port of Toledo intends to buy property and fully develop a marine, industrial, and multi-modal facility, the Toledo Industrial & Intermodal Center (TIIC) that serves the transportation needs of Port district and region. The owner of Fred Wahl Marine and Construction is offering to sell the facility and has entered exclusive negotiations with the

Port of Toledo for that sale. The 20-acre site includes three rail spurs for stacking cars, which the Port would rebuild one spur for loading instead. This would enable moving lumber and other products. Altree Lane would be vacated as a City street to increase safety and security.

The business plan calls for making prudent capital improvements to the current shipyard and making several new carefully planned capital improvements to the adjacent industrial property to realize the intermodal transportation center. The TIIC will provide new opportunities, reduce freight costs, maximize economic impact, and expand job creation. The Port has submitted a ConnectOregon grant application to support development these facilities.

Completed as planned, the facilities will be owned, marketed, managed, and operated by the Port as two different and fully integrated businesses: the Toledo Shipyard and the Toledo Industrial & Intermodal Center (TIIC). To make the fullest use of the combined intermodal and industrial center, parts of each physical plant and all of the Port's management, maintenance, and operating personnel will be shared between these operations. For instance, the existing 130-foot, 100-ton capacity shipyard Barge Dock will be used for the import and export of waterborne cargoes for short-sea shipment by barge. When the Barge Dock is not used for cargo handling it will not remain idle – it will be employed by vessels under repair or for idle vessels awaiting further employment.

To absorb the normal and eventual seasonal and cyclical swings in business activity, portions of the shipyard may be used to fill peak needs for upland cargo storage space. Similarly, portions of the intermodal facility may be used to fill peak needs for upland vessel repair and refurbishment space.

The Toledo Shipyard is the largest capacity haul-out facility between Reedsport, Oregon and Rainier, Oregon. The business plan calls for the shipyard to be operated as a public facility. It will be used by multiple proven service providers under Port-approved long-term leases. The repairer-lessees will contract directly with commercial and recreational ship and boat owners to perform repair and refurbishment services afloat, ashore, and in the floating drydock. Recreational boat owners and smaller service-provider businesses will also be able to use the Travel-lifts and adjacent upland repair locations, under a more restrictive Port-approved right of entry permit.

Port-employed personnel would market, schedule, operate, and maintain all of the major assets at the Fred Wahl Marine site, including the 300-ton drydock, 85-ton Travel-lift, 45-ton Travel-lift, and 25-ton crane on a fee-for-hire basis. The Port would restrict, by the terms of leases and right of entry permits, the user-introduction of competing basic infrastructure such as cranes and other heavy lift equipment. As requested by users, the Port may provide other labor, material, and services entering to their individual projects. Common areas inside the facility will be shared by all Port-authorized customers. Maintenance and upkeep of common areas will be sustained by a 'mall charge'. This charge will be a percentage added to all Port lease invoices and all invoices for Port-provided services, labor, and materials.

The TIIC on Tokyo Slough will create a new transportation link at the Port-provided intersection of highway, rail, and water access – a unique intersection that also enables cost-effective, short sea shipping by barge to and from deep-draft Coos Bay and Columbia River

ports, and West Coast ports beyond. The Port will make well-planned capital improvements to the currently under-utilized property that adjoins the shipyard and will offer a public freight station for intermodal cargo, to and from onsite rail, highway, and waterborne sources—joining three transport modes.

TIIC will provide a highway truck loading and unloading area, add improved outside storage, and modern warehouse storage facilities in a secure and security-lit environment. The use of these facilities will create jobs during cargo handling and during the process of adding value and processing the cargo being sent or received. The Port will construct a new rail spur that will connect to the PNWR.

Port-employed personnel will market, operate, maintain, and manage the major intermodal infrastructure including the 25-ton crane, forklifts, top-loaders, warehouse, and storage space. Contracting for freight services will be the cargo owner's responsibility, with Port-provided help. The TIICs convenient location will provide many more choices for rail, waterborne, and highway services. Adding value to the cargo will be undertaken by users with access to the facility under a Port-approved lease or right of entry permit. TIIC facilities, equipment, labor, and other services will be paid for by Port-approved lessees and right of entry users under a Port-approved price list, and the 'mall charge'.

The marina docks will be rebuilt with a used float-system purchased from the Port of Coos Bay. Funds for dredging have not been reauthorized by Congress at this time. Dredging typically costs about \$800,000, if spoils are disposed in the ocean, and should be done every 5 years. The Port has now identified a disposal site on the existing industrial park property and a potential site on the other side of Depot Slough, which could reduce costs. The Georgia Pacific paper mill has a barge dock on the slough. To fully utilize Depot Slough in the future for barge traffic, it must be dredged.

Port of Alsea

The Port of Alsea has no long-range plan, but the Port manager looks forward to developing one soon. The Port does plan to acquire property to provide additional off-street parking and to support development of business in the Old Town area of Waldport. The Port would like to develop a pedestrian and bicycle pathway along the bay in Waldport from the Interpretive Center to the Port of Alsea dock facilities. The Port is in the planning stages of developing multiuse facilities at the east end of the parking lot. Should the facilities of the Port be expanded, there will be an even greater need for additional Port personnel, which could grow to one full-time manager, two part-time maintenance workers year-round, and one additional seasonal maintenance worker.

The Port of Alsea will soon construct a Port and Fire District Public Facility that will house marine rescue and safety equipment, provide living quarters for security and support staff for the Port, and provide additional shop and office space. Partners in the project are the Central Oregon Coast Fire & Rescue District and the Yachats Rural Fire Protection District.

Depoe Bay Harbor

Due to the tough basalt formations and existing development surrounding Depoe Bay Harbor, harbor expansion is infeasible. Harbor moorage demand has increased over the last few years and demand is expected to continue. To accommodate this demand, the Harbor

Commission is considering reconstructing harbor docks and reconfiguring the harbor to increase the number of moorage spaces. Coast Guard station expansion is not planned or anticipated. Continued dredging of the harbor and the channel from the Pacific Ocean to the harbor will be needed.

A \$4.5 million dollar project to install pedestrian walkways along the Depoe Bay has been proposed by a local ad-hoc group to provide social, safety, economic, and environmental benefits for residents, safety personnel, and tourists. The harbor walkway project includes the following elements:

- Installing ADA-accessible public-access walkways along the harbor
- Creating water level access points for emergency rescue operations
- Providing public access to otherwise inaccessible harbor areas
- Providing additional boat moorage

The City of Depoe Bay is currently seeking federal funding appropriation for this project.

4.5.4 Future Pipeline/Utilities Conditions and Needs

As lots are developed within the County, land uses change, and population increases, construction of various utility facilities will be required. Adequate supplies water, natural gas, and electricity to meet the needs of future growth are assumed. Supplies of electrical energy and natural gas are assumed to continue to originate outside of the County. However, there may be sites suitable within the County for wind-powered or ocean-powered electrical generation facilities. These sites could be developed by the existing electrical utility companies or private investors, and would likely require land use zone changes and special permits.

Market conditions of the natural gas industry have been changing in recent years, that is, domestic demand is increasing and supplies are short. Thus, some suppliers are investigating importation of LNG at various port locations in the northwest and piping LNG from port storage facilities to major distribution pipelines in the state's interior. Pacific Gas & Electric recently announced plans to build a LNG storage facility supplied by ocean vessels at Coos Bay. No similar plans have been announced by Northwest Natural for facilities in Newport; nevertheless, market conditions could change the company's plans and current uses of the facility in the future.

When physically and economically feasible, it would be desirable to locate or relocate utility lines underground to minimize aesthetic impacts to scenic resources. It also would be desirable to place utility lines outside of road right-of-ways, because maintenance and expansion of these lines can temporarily affect traffic operations. Such utility activities require coordination with ODOT and the County's Public Works Department, as appropriate.

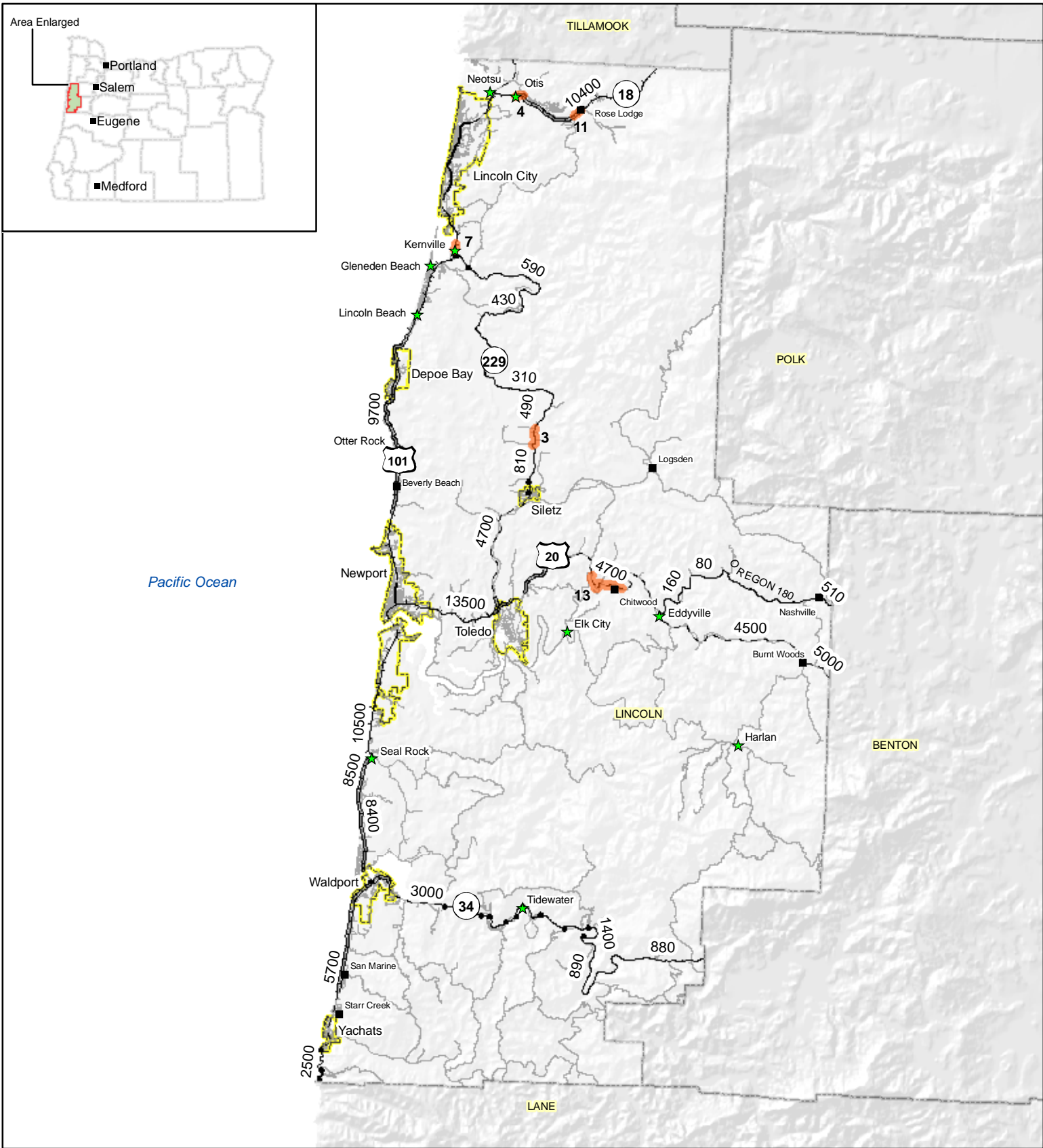
4.6 Future Emergency Routes and Evacuation Conditions and Needs

Although the population and land use in Lincoln County will grow and change during the next 20 years, it is not expected that the need for emergency routes and evacuation plans

will change significantly. There may be some benefit to identifying an alternative route around Yaquina Bay or providing emergency medical vessels to cross the bay should the Yaquina Bay Bridge become unserviceable. The need for new emergency routes is not anticipated. Lincoln City has recently distributed district maps to residents of the Taft and Cutler City areas. Area-specific maps, showing evacuation routes, tsunami inundation areas, and emergency shelters, are expected to be supplied to other areas as funds become available. In the future, these maps should help reduce vehicle traffic and unnecessary evacuation when sirens sound. Emergency preparedness is expected to continue with increased emphasis on education and notification improvements. Under consideration by the cities and county is a program, hopefully supported by federal funds, to provide NOAA warning radios to residents at selected critical locations where sirens may not be especially audible.

Future geo-political conditions could result in fuel shortages from other countries being unable or unwilling to export petroleum or overall inadequate supply to meet demand. Such fuel shortages could limit emergency vehicle operations, critical commercial deliveries, and personal supply trips. However, the Oregon Department of Energy maintains emergency fuel reserve depots. County emergency preparedness officials would need to update response plans for fuel shortages under various future scenarios.

D R A F T



Legend

- ★ Unincorp. Town
- Locale/Site
- ADT - 2004
- 0 - 1,000
- 1,001 - 2,500
- - 2,501 - 5,000
- ≡ 5,001 - 10,000
- ⎓ 10,001 - 15,000
- ⎓ 15,001 - 20,000
- ⎓ 20,001 - 30,000
- ⎓ Other Roads
- 🟡 Urban Growth Boundary
- ▭ Counties
- 🛣️ US Highway
- 🛣️ Oregon Highway
- 🟠 SPIS Locations (# of crashes)

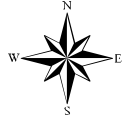
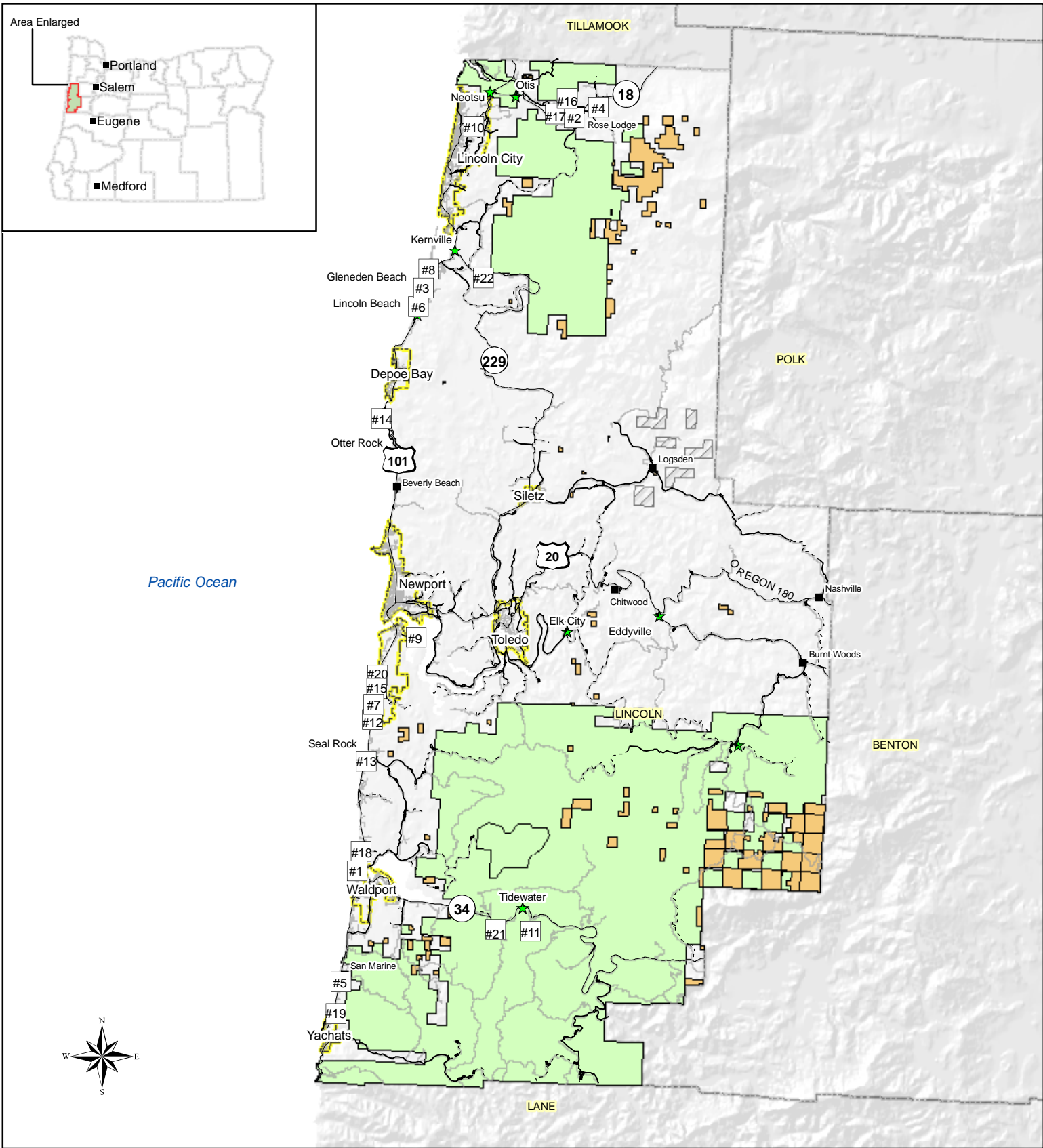


Figure 3-1

Average Daily Traffic (ADT) - 2004

Transportation System Plan
Lincoln County, OR

Sources: Lincoln County, ODOT



Legend

- ★ Unincorp. Town
- Locale/Site
- US Highway
- Oregon Highway
- Special Road Districts
- County Roads
 - Solid
 - - - - Gravel
 - ~ Other/Logging Roads
- Counties
- Urban Growth Boundary

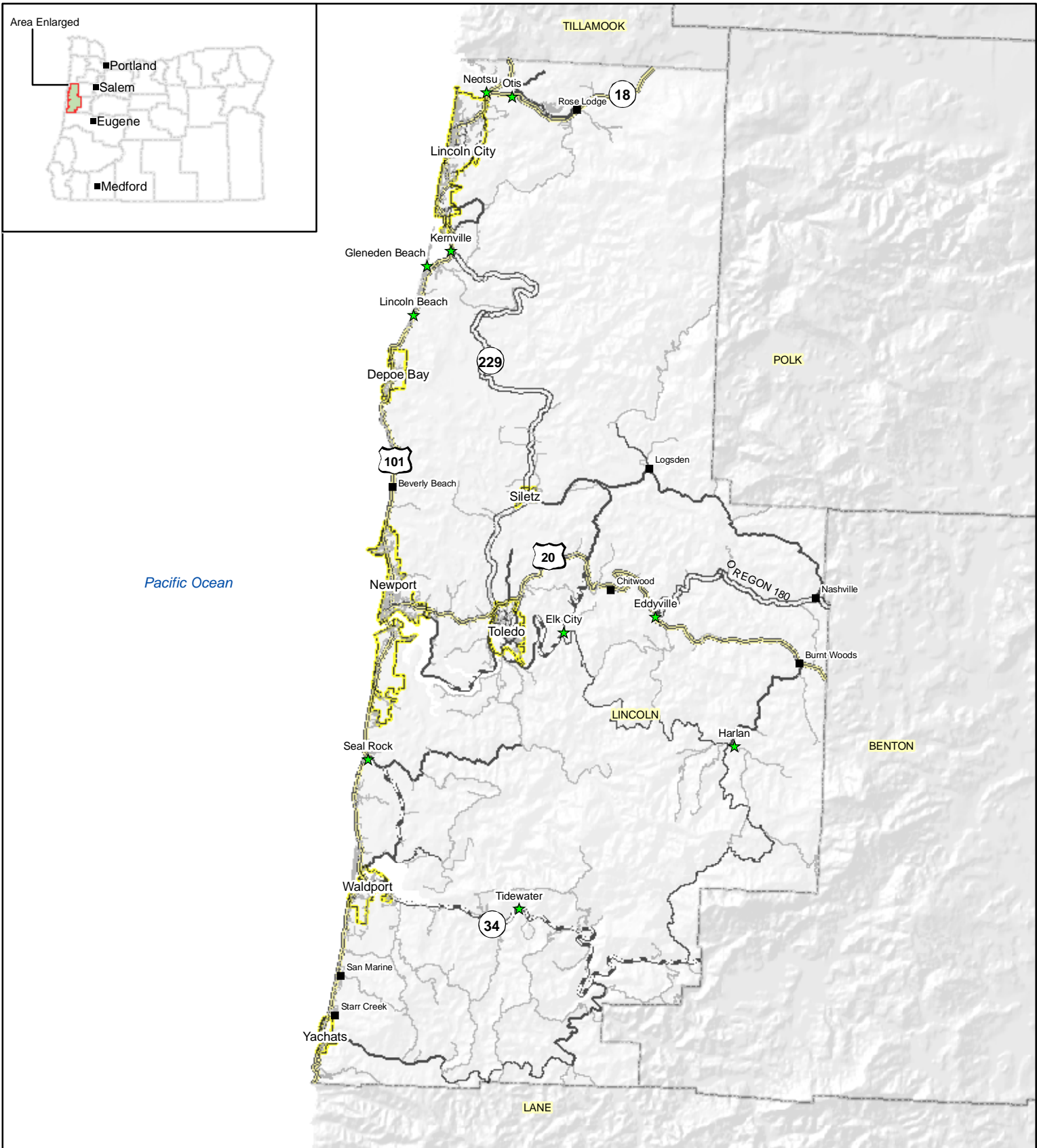
- BLM
- National Forest
- Confederated Tribes of the Siletz Reservation

0 2.5 5 10 Miles



Figure 1-4
Federal, State, County Roads and Special Road Districts
 Transportation System Plan
 Lincoln County, OR

Sources: Lincoln County, ODOT, BLM, U.S. Forest Service

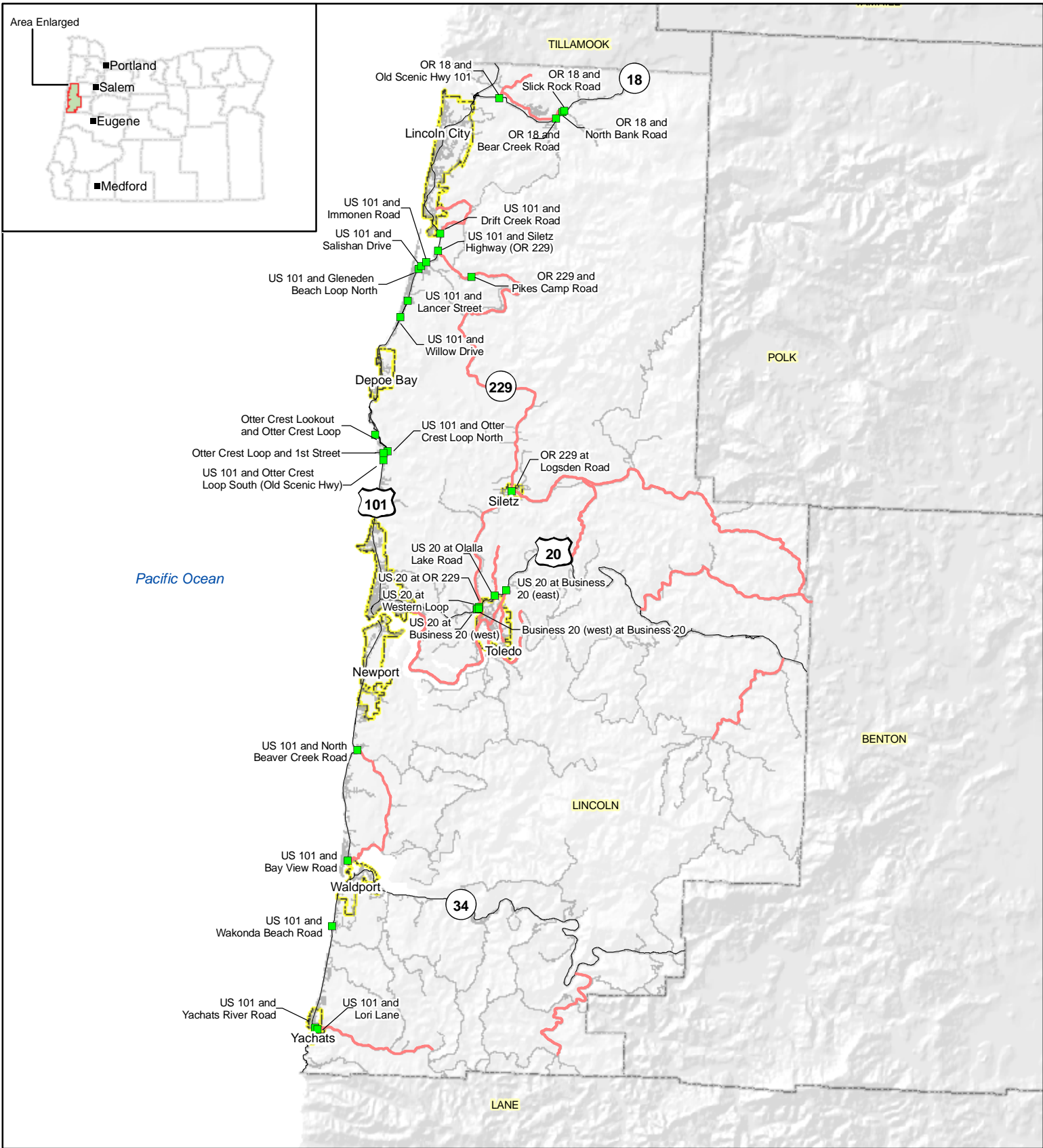


Legend

★ Unincorp. Town	▬▬▬ Principal Arterial - State Functional Classification
■ Locale/Site	▬▬▬ Minor Arterial - State Functional Classification
▭ Urban Growth Boundary	▬▬▬ Minor Arterial - Other Functional Classification
▭ Counties	▬▬▬ Urban/Rural Major Collector - State Functional Classification
101 US Highway	▬▬▬ Urban/Rural Major Collector - Other Functional Classification
34 Oregon Highway	▬▬▬ Functionally Classed Road within Federal
	▬▬▬ Minor Collector
	▬▬▬ All other Roads

Figure 1-3
Functional Classifications
Transportation System Plan
Lincoln County, OR

Sources: Lincoln County, ODOT



Legend

- Detailed Analysis Intersections
- ~ Urban/Rural Major Collector
- ~ Local Roads
- Urban Growth Boundary
- Counties
- 101 US Highway
- 34 Oregon Highway

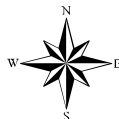


Figure 1-6

Intersections Evaluated

Transportation System Plan
Lincoln County, OR

Sources: Lincoln County, ODOT

US 101/SALISHAN DRIVE



US 101 & Salishan Drive



Southbound US 101 Approach



Northbound US 101 Approach



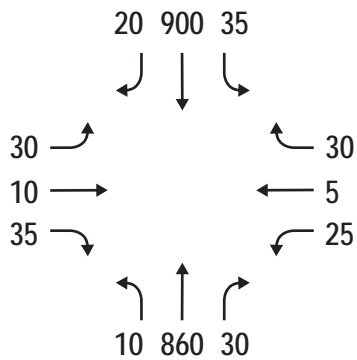
Eastbound Salishan Drive Approach



Westbound Salishan Drive Approach

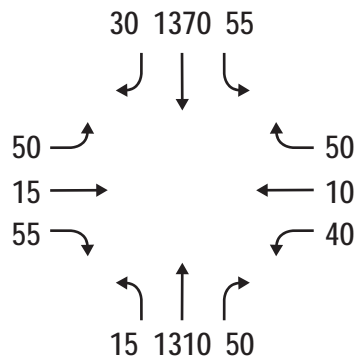
TRAFFIC OPERATIONS 30TH-HIGHEST HOUR CONDITIONS

2005



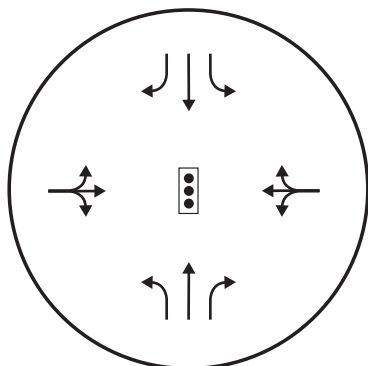
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 Delay = 14
 LOS = B

2027

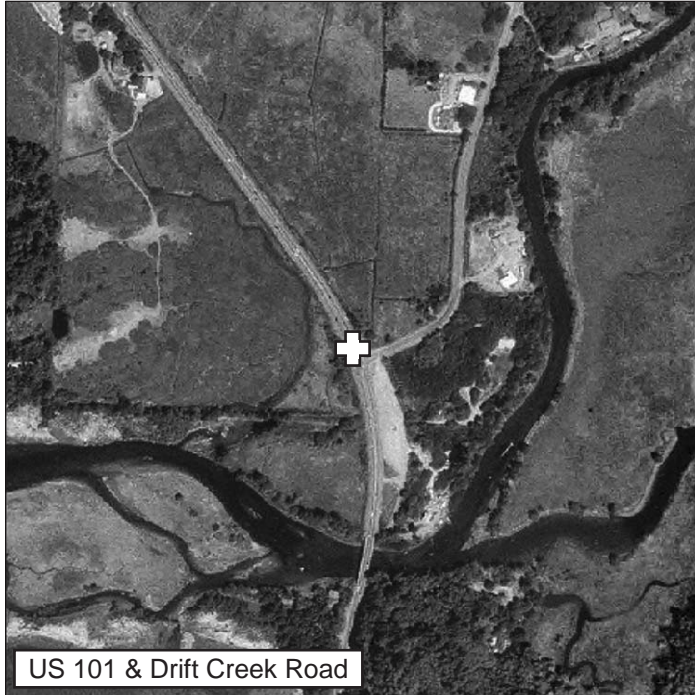


V/C = 1.04
 Delay = 93
 LOS = F

LANE GEOMETRY



US 101/DRIFT CREEK ROAD



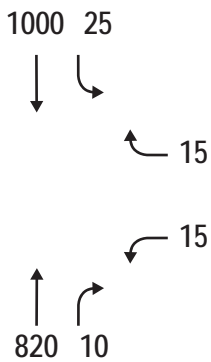
Southbound US 101 Approach



Northbound US 101 Approach

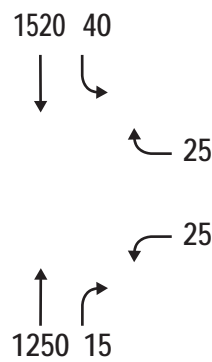
TRAFFIC OPERATIONS 30TH-HIGHEST HOUR CONDITIONS

2005



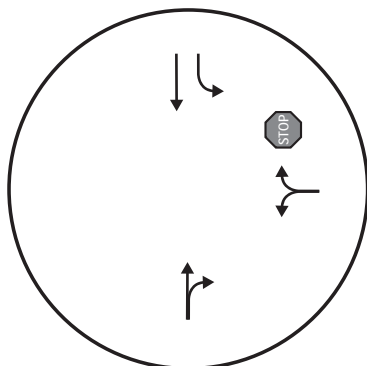
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V/C	= 0.65	0.52
Delay	= 1	78
LOS	= A	F

2027



	MAJOR	MINOR
V/C	= 0.94	>2.0
Delay	= 13	>150
LOS	= B	F

LANE GEOMETRY



Westbound Drift Creek Road Approach

US 101/IMMONEN ROAD



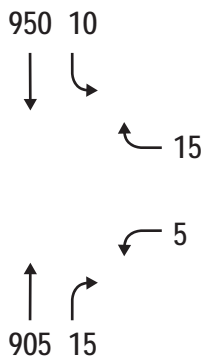
Southbound US 101 Approach



Northbound US 101 Approach

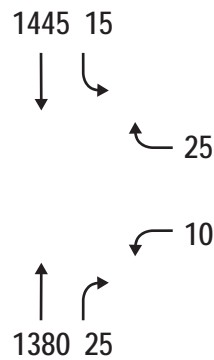
TRAFFIC OPERATIONS 30TH-HIGHEST HOUR CONDITIONS

2005



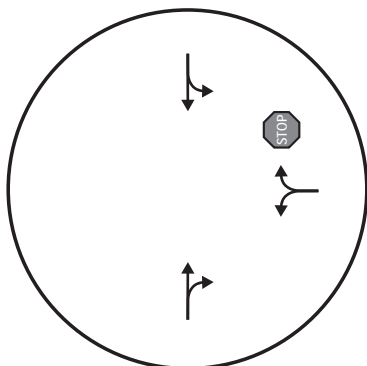
	MAJOR	MINOR
V/C	= 0.59	0.23
Delay	= 1	35
LOS	= A	D

2027



	MAJOR	MINOR
V/C	= 0.89	0.76
Delay	= 14	>150
LOS	= B	F

LANE GEOMETRY



Westbound Immonen Road Approach

US 101/GLENEDEN BEACH LOOP NORTH



US 101 & Gleneden Beach Loop North



Southbound US 101 Approach



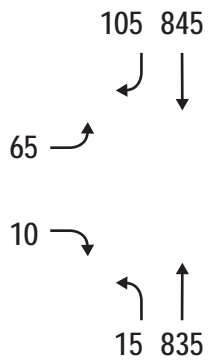
Northbound US 101 Approach



Eastbound Gleneden Beach Loop North Approach

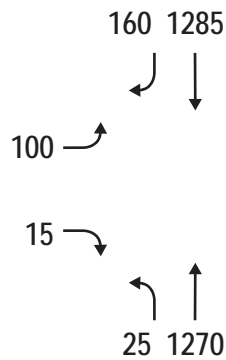
TRAFFIC OPERATIONS 30TH-HIGHEST HOUR CONDITIONS

2005



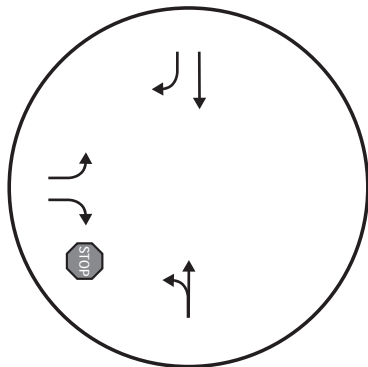
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V/C	= 0.52	>2.0
Delay	= 1	>150
LOS	= A	F

2027



	MAJOR	MINOR
V/C	= 0.80	>2.0
Delay	= >150	>150
LOS	= F	F

LANE GEOMETRY



US 101/LANCER STREET-SEAGROVE DRIVE



US 101 & Lancer Street/Seagrove Drive



Southbound US 101 Approach



Northbound US 101 Approach



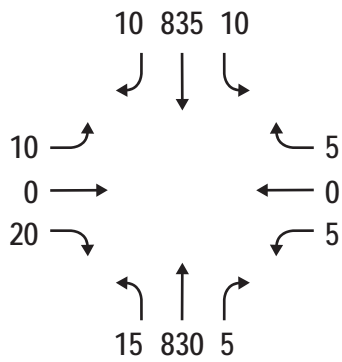
Eastbound Lancer Street Approach



Westbound Lancer Street Approach

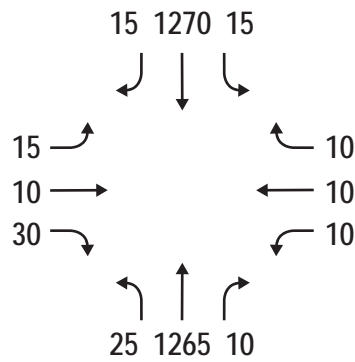
TRAFFIC OPERATIONS 30TH-HIGHEST HOUR CONDITIONS

2005



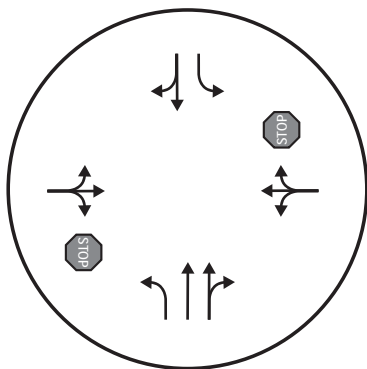
	MAJOR	MINOR
V/C	= 0.53	0.30
Delay	= 1	63
LOS	= A	F

2027



	MAJOR	MINOR
V/C	= 0.80	>2.0
Delay	= 13	>150
LOS	= B	F

LANE GEOMETRY



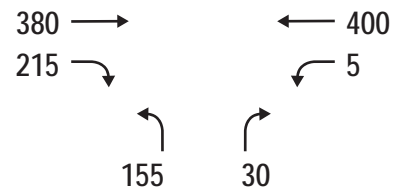
US 20/BUSINESS 20 (WEST)



US 20 & Business 20 (West)

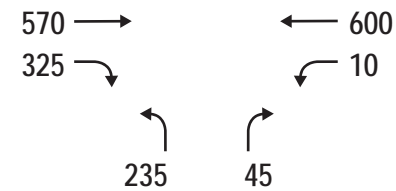
TRAFFIC OPERATIONS 30TH-HIGHEST HOUR CONDITIONS

2005



	MAJOR	MINOR
V/C	= 0.38	0.68
Delay	= 1	39
LOS	= A	E

2027



	MAJOR	MINOR
V/C	= 0.55	1.97
Delay	= 1	>150
LOS	= A	F

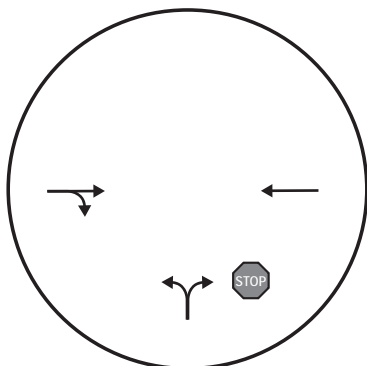


Northbound Business 20 Approach



Eastbound US 20 Approach

LANE GEOMETRY



Westbound US 20 Approach

US 20/OR 229



Southbound OR 229 Approach



Northbound OR 229 Approach



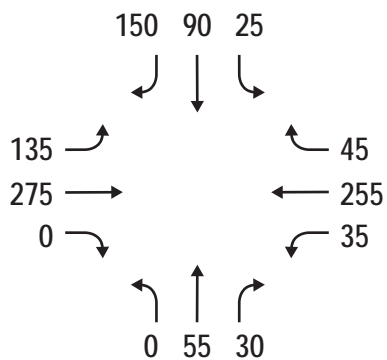
Eastbound US 20 Approach



Westbound US 20 Approach

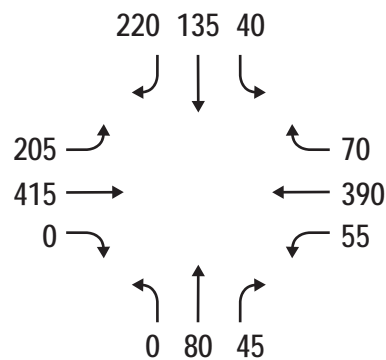
TRAFFIC OPERATIONS 30TH-HIGHEST HOUR CONDITIONS

2005



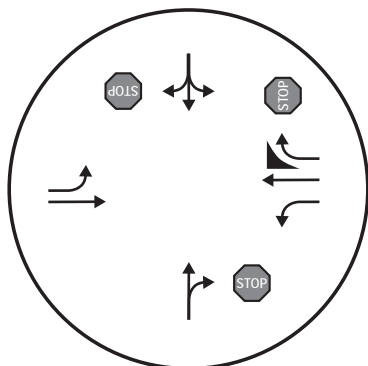
	MAJOR	MINOR
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Delay	= 3	54
LOS	= A	F

2027

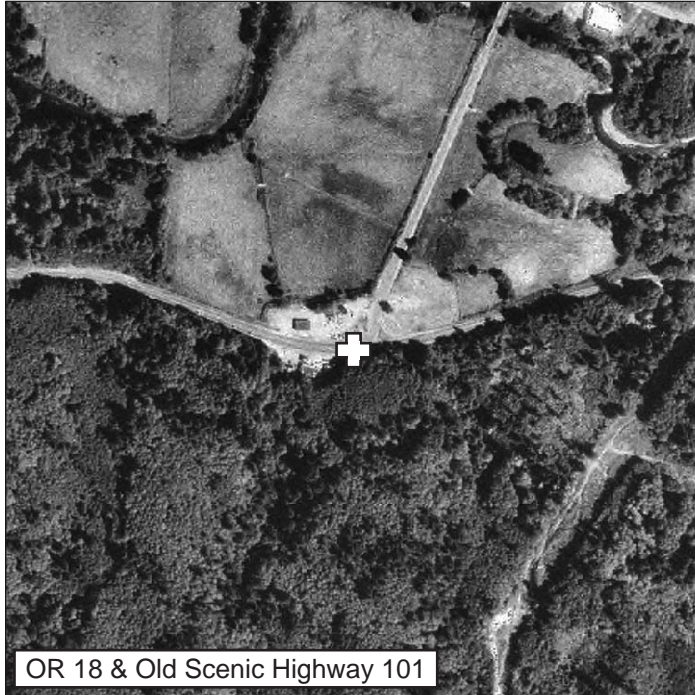


	MAJOR	MINOR
V/C	= 0.26	>2.0
Delay	= 9	>150
LOS	= A	F

LANE GEOMETRY



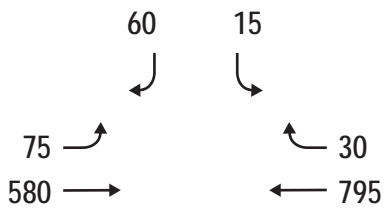
OR 18/OLD SCENIC HIGHWAY 101



Southbound Old Scenic Highway Approach

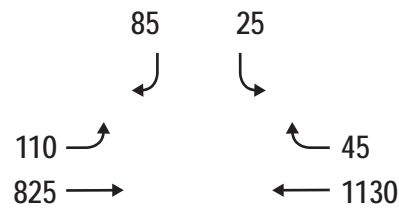
TRAFFIC OPERATIONS 30TH-HIGHEST HOUR CONDITIONS

2005



	MAJOR	MINOR
V/C	= 0.56	0.41
Delay	= 2	34
LOS	= A	D

2027

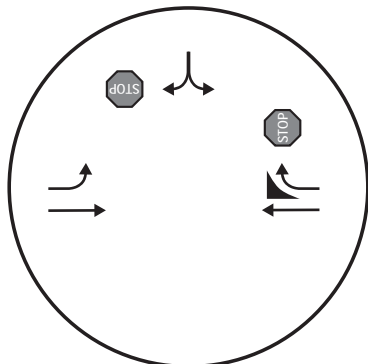


	MAJOR	MINOR
V/C	= 0.70	1.15
Delay	= 13	>150
LOS	= B	F



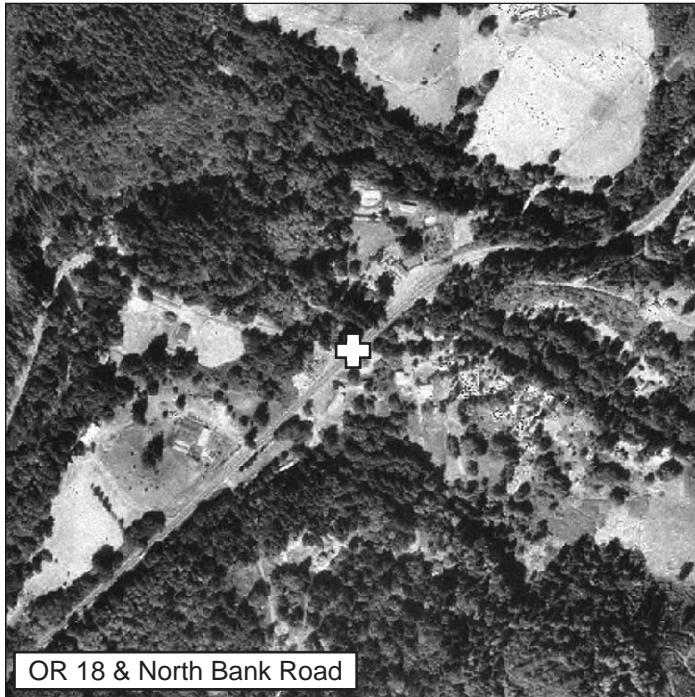
Eastbound OR 18 Approach

LANE GEOMETRY



Westbound OR 18 Approach

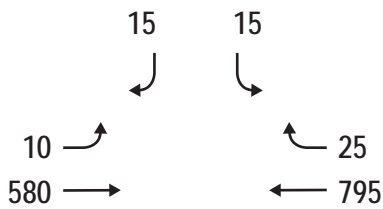
OR 18/NORTH BANK ROAD



Southbound North Bank Road Approach

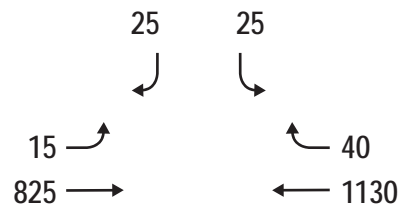
TRAFFIC OPERATIONS 30TH-HIGHEST HOUR CONDITIONS

2005



	MAJOR	MINOR
V/C	= 0.54	0.23
Delay	= 1	31
LOS	= A	D

2027

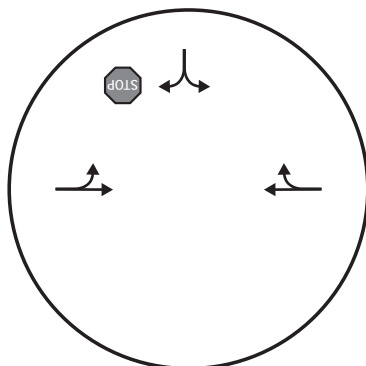


	MAJOR	MINOR
V/C	= 0.72	0.56
Delay	= 1	88
LOS	= A	F



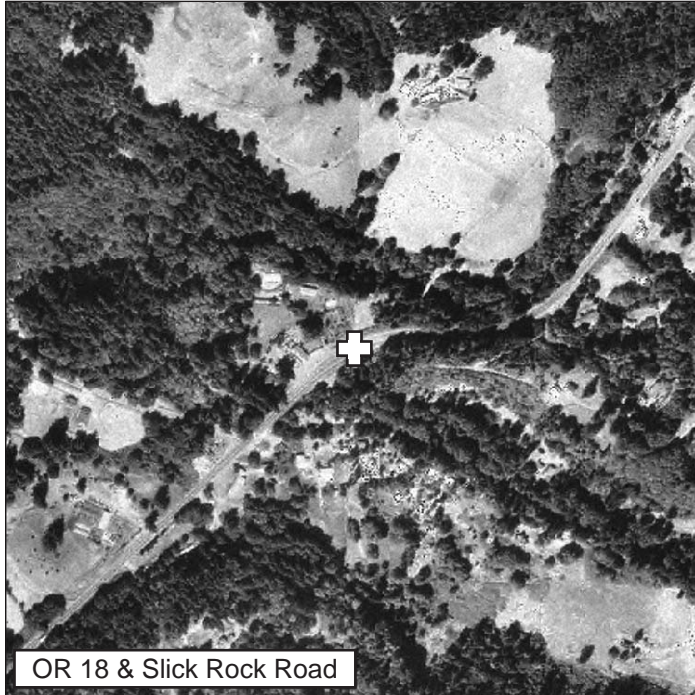
Eastbound OR 18 Approach

LANE GEOMETRY



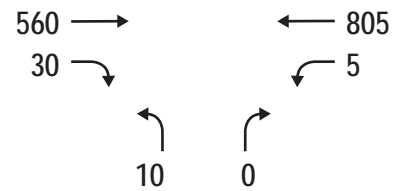
Westbound OR 18 Approach

OR 18/SLICK ROCK ROAD



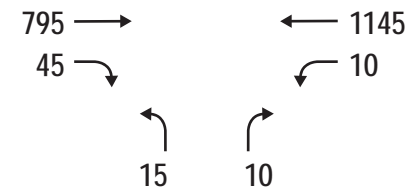
TRAFFIC OPERATIONS 30TH-HIGHEST HOUR CONDITIONS

2005



	MAJOR	MINOR
V/C	= 0.53	0.13
Delay	= 1	39
LOS	= A	E

2027



	MAJOR	MINOR
V/C	= 0.52	0.31
Delay	= 10	67
LOS	= A	F

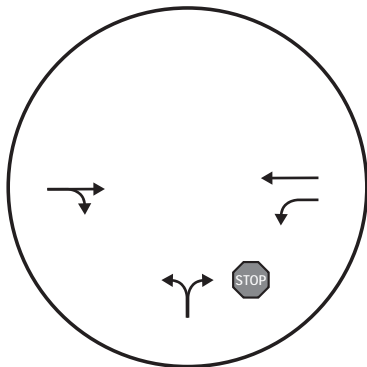


Northbound Slick Rock Road Approach



Eastbound OR 18 Approach

LANE GEOMETRY



Westbound OR 18 Approach

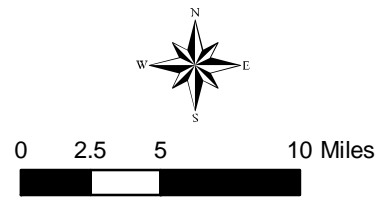
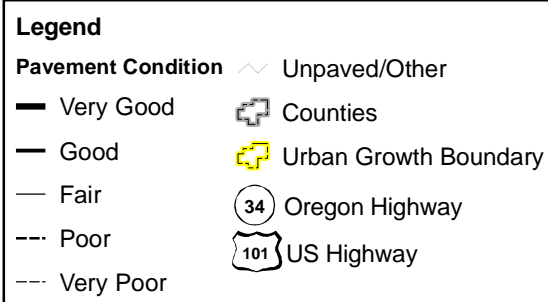
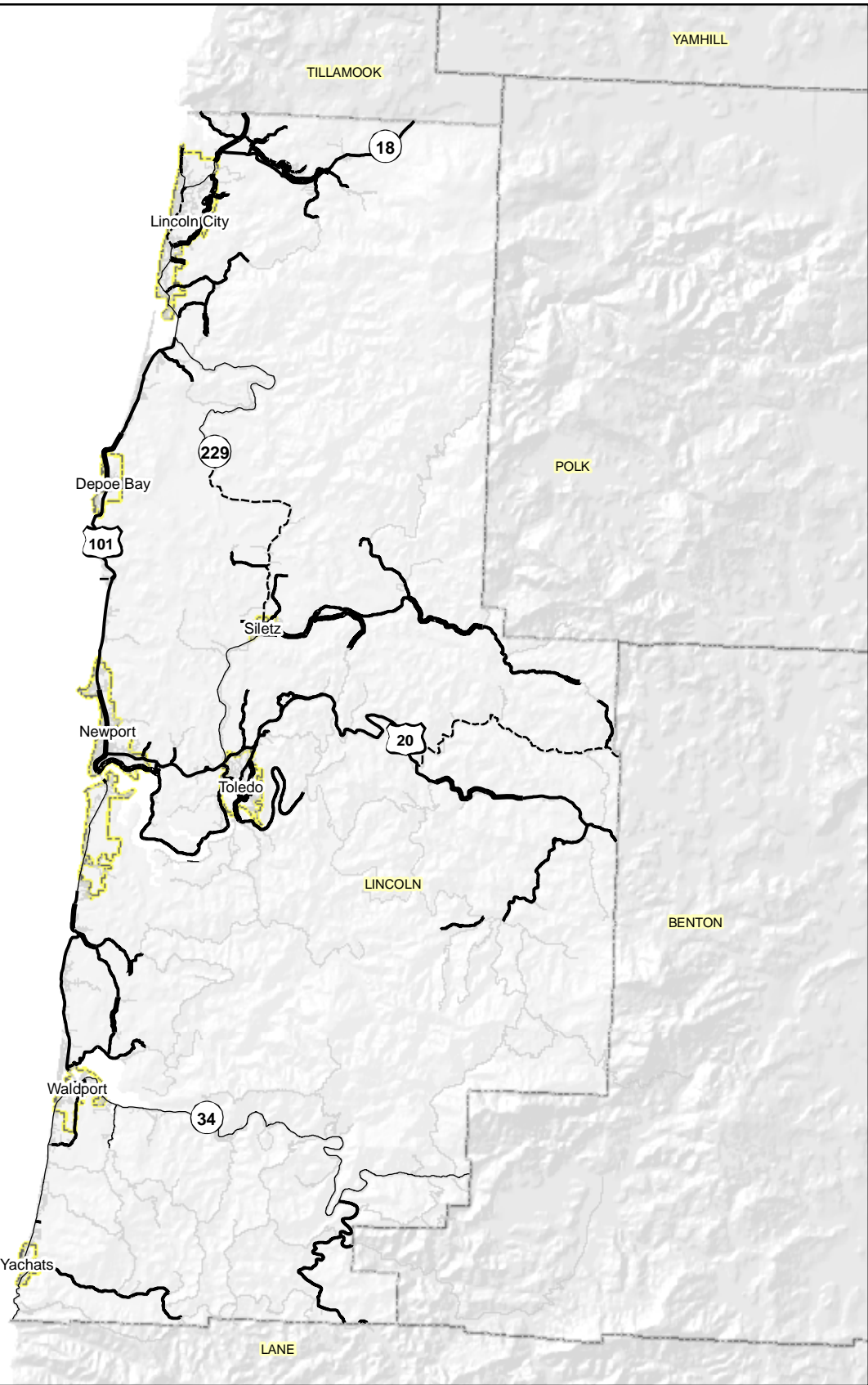
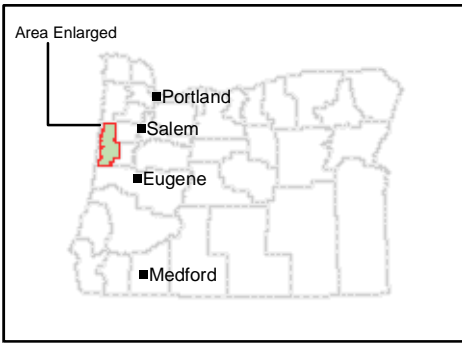
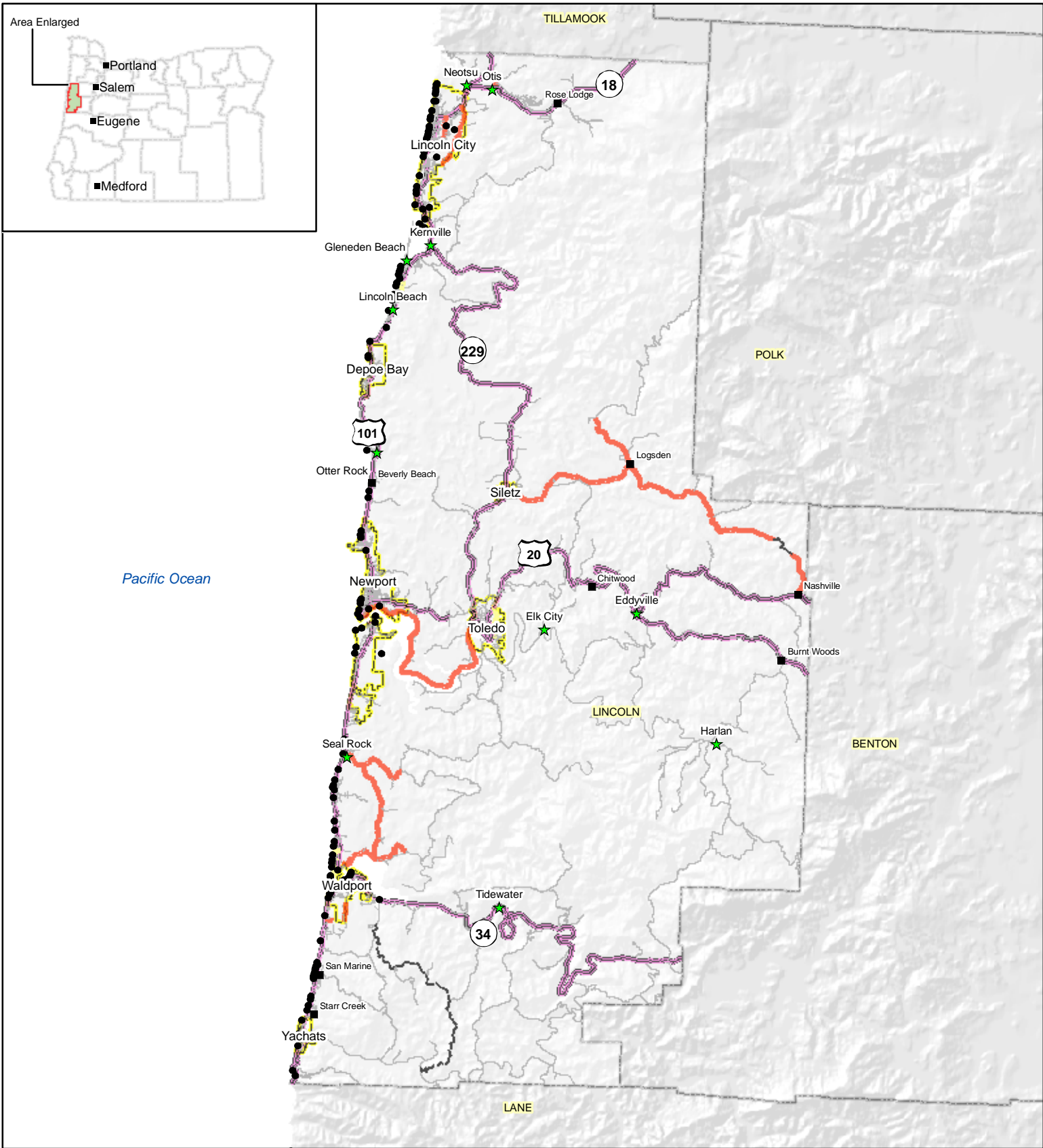


Figure 1-5
Pavement Conditions
 Transportation System Plan
 Lincoln County, OR
 Sources: Lincoln County, ODOT



Legend

- Pedestrian Beach Access Points
- ★ Unincorp. Town
- Locale/Site
- 🏠 Urban Growth Boundary
- 🗺️ Counties
- 🛣️ US Highway
- 🛣️ Oregon Highway
- 🛣️ Roads
- 🛣️ County Pedestrian Facilities
- 🛣️ State Highway - Bike
- 🛣️ Forest Highway Bike Trail
- 🛣️ Completed Bike and Pedestrian Improvements

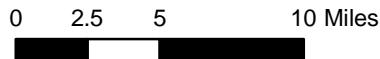
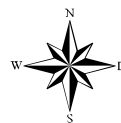
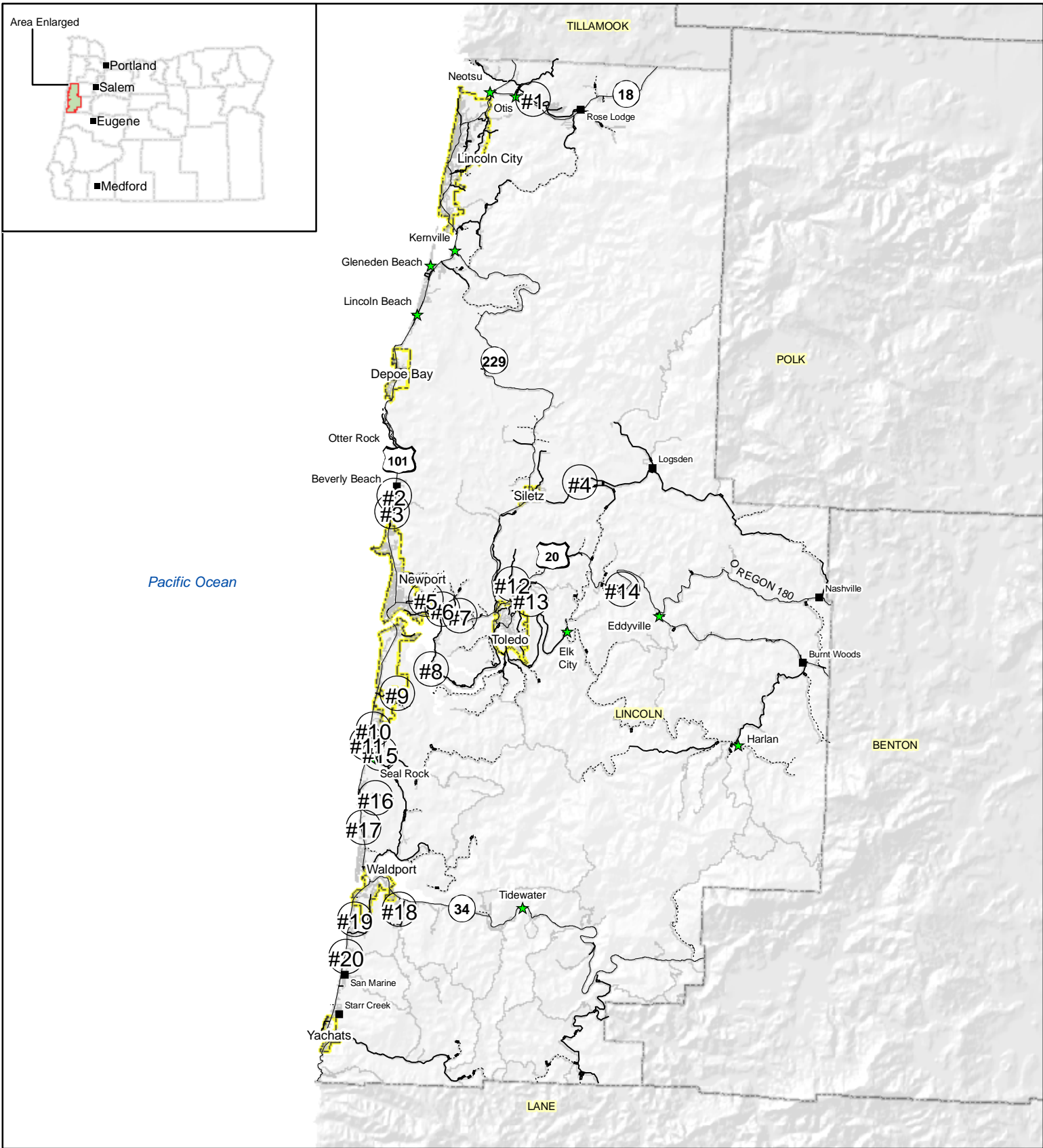


Figure 1-7

Bicycle and Pedestrian Facilities

Transportation System Plan
Lincoln County, OR

Sources: Lincoln County, ODOT



- Legend**
- ★ Unincorp. Town
 - Locale/Site
 - #1 Rural Residential Exception Areas
 - 101 US Highway
 - 34 Oregon Highway
 - County Roads
 - Paved
 - ⋯ Gravel
 - Other/Logging Roads
 - Urban Growth Boundary
 - Counties

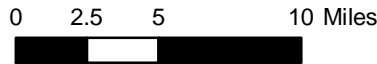
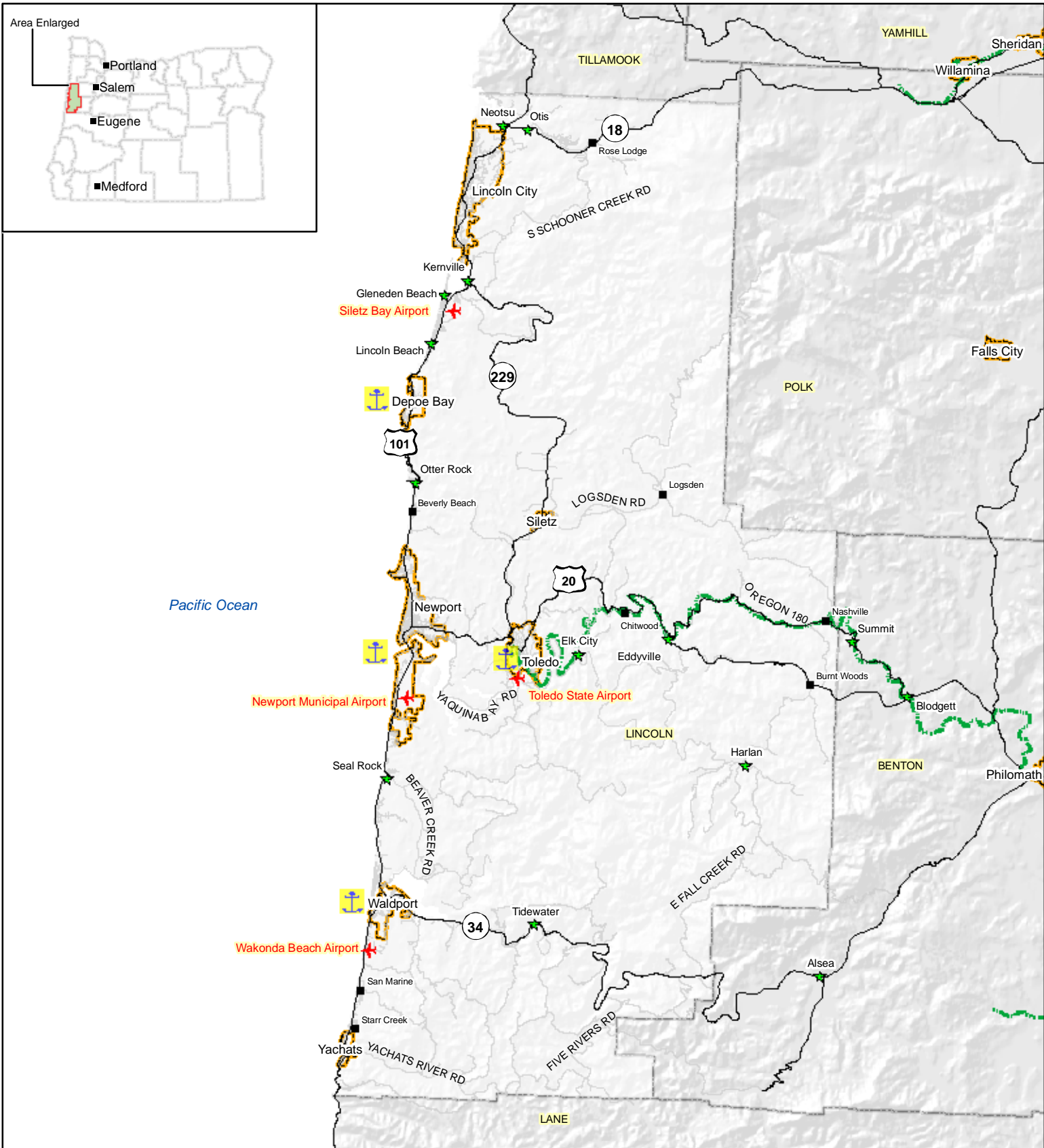












Figure 1-2
Category 2 Rural Residential Exception Areas
 Transportation System Plan
 Lincoln County, OR

Sources: Lincoln County, ODOT



Legend

-  Port / Harbor
-  Unincorp. Town
-  Locale/Site
-  Airport
-  Road/Highway
-  Railroad
-  County Boundary
-  Urban Growth Boundary
-  US Highway
-  Oregon Highway

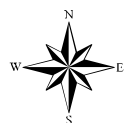
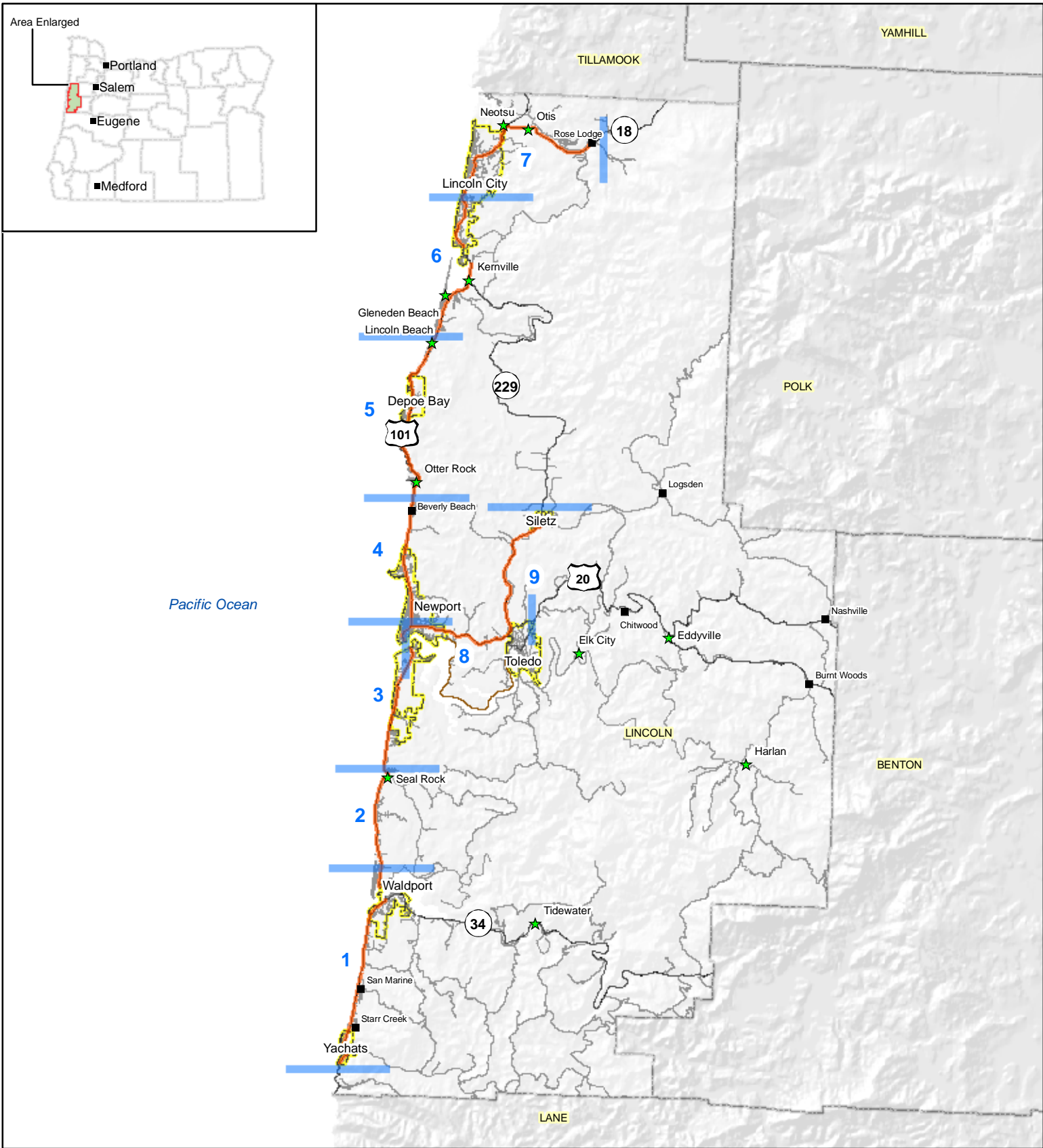


Figure 1-1

Study Area

Transportation System Plan
Lincoln County, OR

Sources: Lincoln County, ODOT



Legend

- ★ Unincorp. Town
- Locale/Site
- 101 US Highway
- 34 Oregon Highway
- 5 Route
- Approximate Zone Boundary
- Existing Transit Routes
- No Existing Transit Routes
- Urban Growth Boundary
- Counties

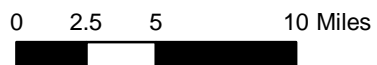


Figure 1-8

Transit Routes and Fare Zones

Transportation System Plan
Lincoln County, OR

Sources: Lincoln County, ODOT