

Transportation System Plan

for
Lincoln
County,
Oregon

Volume 1 | Plan

October 2007



Volume 1

Transportation System Plan

Lincoln County, Oregon

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**Lincoln County Planning & Development Department
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CH2MHILL

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Executive Summary

Executive Summary

This Transportation System Plan (TSP) for Lincoln County considers transportation issues and guides transportation policy choices and system development for a 20-year planning period (2007-2027).

Plan Development

Development of this TSP document occurred from April 2005 to May 2007. Incorporated into this TSP are the results of an earlier, separate effort in 1999 that included public involvement to identify transportation issues in the county and develop goals and objectives for the transportation system. That earlier effort included five advisory committee meetings and three public open houses. The TSP development effort during 2005-2006 included three open houses and posting of draft TSP documents on the County's website for public comment and input. Open house announcements were placed in County newspapers and invitations to participate were mailed to almost 200 individuals and organizations with known interests in Lincoln County. This was a cooperative transportation planning effort involving the public, Lincoln County, Oregon Department of Transportation (ODOT), Oregon Department of Land Conservation and Development (DLCD), cities, ports, businesses, and the Confederated Tribes of the Siletz Indians. Involvement by these agencies was important to informing the plan's development about existing and future needs of the transportation system.

The potential improvement projects identified for the Lincoln County TSP were grouped and evaluated within the following alternatives:

- **Safety Projects.** These are design improvements to roadway segments, and include components such as realignments, widenings, access management, vegetation management, guardrail, and signage. Some safety project components may also improve capacity.
- **Capacity Projects.** These are mobility improvements to intersections of county roads with state highways, including components such as lane widening/additions, signalization, turn bays, pullouts, and bridge replacements. Components include transportation system management (TSM) measures and some may improve safety.
- **Bicycle/Pedestrian Projects.** These are improvements to better serve bicyclists, pedestrians, and people with special transportation needs. Project components include the addition of striped bike lanes, widened shoulders, trails, sidewalks, pedestrian crossings, and Americans with Disabilities Act (ADA) compliant facilities.
- **Transit and Transportation Demand Management (TDM) Projects.** These are enhancements to public transit service efficiency, connectivity, and use, and include components such as park-and-ride lots, bus shelters, pullouts, signage, vanpools/carpools, and special needs services.

- **Freight and Intermodal Projects.** These are improvements to airport, marine, railroad, and truck facilities and connections, including components such as hangars, terminals, docks, backlands, sidings, track, staging areas, access, and turn bays.

The preferred alternative for the Lincoln County TSP includes a program of improvement projects from each of these five alternative categories. The projects were selected and prioritized by the directors of the County Planning and Development Department and the Road Department, with consideration of public, ODOT, and consultant team input. In addition to improvement projects, studies are proposed at locations where potential projects could improve safety or capacity, but further analysis is needed.

Plan Elements and Organization

This TSP documents the existing and future transportation system needs in Lincoln County, and provides plans for improving and financing roadway, transit, bicycle, pedestrian, air, rail, water, and pipeline facilities, as applicable. Improvements are proposed that would address goals and objectives for the transportation system inventory (Chapter 1) as shaped by existing governmental plans and policies (Chapter 2) at several levels. Planned improvements would eliminate deficiencies and meet existing and future needs (Chapters 3 and 4, respectively).

The primary objective of this TSP is to identify the transportation system improvements and a preferred alternative (Chapter 5) that would support a safe, adequate, and connected transportation system throughout Lincoln County for the next 20 years (2007-2027). The preferred alternative of the Lincoln County TSP is a mix of operational and safety improvements to roadways, bike lanes, sidewalks, bus service, marine ports, and airports. The modal plans (Chapter 6) include the projects of the preferred alternative and address standards and policies related to State and County roadway segments and intersections, public transit and transportation options, bicycle and pedestrian facilities, and freight and intermodal facilities (involving air, rail, water, and pipelines).

The transportation improvement program and financing plan (Chapter 7) provides the estimated costs and prioritization of the projects that are proposed to be funded by federal, state, and local sources, as feasible. To facilitate implementation of the preferred alternative, the TSP also proposes the adoption of ordinances (Chapter 8) that clearly allow development of the planned transportation improvements and meet State requirements.

Plan Summary

The Lincoln County TSP addresses transportation facilities generally outside of incorporated cities' urban growth boundaries (UGBs) and within the county (Figure ES-1). Although the County has jurisdiction within a UGB until lands are annexed to a city, planning for infrastructure development within a UGB is primarily the responsibility of city government with coordination and cooperation of the county government. Lincoln County does have primary responsibility for planning and determining where development is expected to occur over the next 20 years in the 10 rural unincorporated communities, one rural service center, and one urbanization exception area of the county. However, roads in

Figure ES-1: Study Area

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Figure ES-1: Study Area

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many of the developed rural-residential-zoned areas of the county are owned, managed, and financed by 22 special road districts, which are self-governing.

Thus, this TSP considers transportation facilities owned by the State and the County. This TSP also considers plans already developed by cities, ODOT, and the County for county roads and state highways within the UGBs and city limits. Roads are a critical component of transportation not only for cars but also for bicycles, trucks, transit buses, vans, and pedestrians. Also, commodities carried by airplanes, ships, railcars, or pipeline often are transferred to trucks on roads. This TSP addresses all modes of transportation as an interconnected system, consistent with the Transportation Planning Rule (OAR 660-012). Roads require special consideration in this TSP because of the County's responsibility to provide and maintain them as part of a functional and safe system. Included for roadways, specifically, are functional classifications, design and construction standards, access management and spacing standards, mobility standards, and existing and future volume-to-capacity ratios (a measure of congestion).

Existing and Future Conditions and Needs

Population growth, land development, travel patterns, and economic activity are some of the factors shaping existing and future conditions and needs. The TSP includes extensive data and analysis of roadway conditions and needs at locations where safety and capacity are concerns because of crashes or congestion. The other modal categories also are assessed.

Population Growth and Land Development

Lincoln County is growing more slowly than the statewide average in terms of population and employment. In the next 20 years, the county is expected to continue to experience a higher rate of residential development than population forecasts would suggest. This is likely due to an influx of second-home owners and temporary occupants of homes who are not counted as part of the county's population. This increased second-home development will affect the county's transportation system because the highest occupancy of these residences occurs in the summer when traffic peaks.

Oregon statewide land use planning laws discourage development outside the UGBs. However, there are areas within the county with existing zoning and vacant lots that could develop in the next 20 years. Data from 2002 indicate that 1,863 lots could potentially be developed within the 10 rural unincorporated communities, 1,511 lots within the urbanization exception area of Lincoln Beach-Glenden Beach, and 1,049 lots in 20 rural residential exception area sites. Thus, there are approximately an equal number of developable lots in Lincoln County as are presently developed. While no analysis of possible lot creations from Measure 37 claims has been conducted, as of September 2006, there were 44 Measure 37 claims in Lincoln County involving 2,757 acres.

Because local circulation in rural residential areas (many of which have streets maintained by special road districts) often feeds to a county road, land development can potentially affect the county road system. However, even with full development of these parcels and forecasted traffic volumes, capacity standards on the associated county roads would not be exceeded.

While rural development is expected to have an impact on transportation facility needs over time, the County's transportation infrastructure will be more affected by growth within city limits and UGBs, increased tourism, and travel between communities. Forecasted average annual growth rates for the 20-year analysis period range from 1.9 percent to 2.4 percent per year. With increased traffic volumes, traffic capacity on rural county roads is forecasted to meet adopted Oregon Highway Plan (OHP) mobility standards, except at some intersections with US 101 and OR 18. Projects are recommended in this TSP to improve mobility at these intersections.

Travel Patterns and Economic Activities

The development of and demand on Lincoln County's transportation system is heavily influenced by its forest and ocean resources, the county's recreational attractions, and mild climate. Land development and settlement patterns are shaped by these influences. The scenic, recreational, and tourist attractions of Lincoln City and the north county area result in heavy traffic on OR 18 and US 101 on weekends and during the summer; and the same is true for Newport and the south county area on US 20. Many people travel to the coast from the more populated Willamette Valley to stay in second homes or at other tourist destinations, often accessed by county roads. Several road districts have been created by homeowners to serve developments in unincorporated rural residential areas along the coast. In addition, significant commerce depends on traffic between inland and coastal areas and within regions of Lincoln County. For example, trucks serving the Georgia-Pacific paper mill in Toledo have had to travel on US 101 because of safety conditions on US 20; such conditions will be corrected with completion of the realignment of US 20 in 2008 between Eddyville and Pioneer Mountain. (Ownership of the old highway segment will be transferred by ODOT to the County, and the road will continue to serve timber operations and local residents.)

The peak travel period is during the summer and is heaviest on three state highways in the county: US 101 along the coast, and US 20 and OR 18 that connect to the Willamette Valley. During times of heavy traffic on state highways, drivers on county roads at intersections with state highways must wait for opportunities to enter or cross the highway. Sight distance is also a safety concern at some county road intersections with state highways. Ten of the 28 intersections studied for this plan are expected to exceed OHP mobility standards in 2027 during the 30th highest hour.

Bicycle and pedestrian facilities within Lincoln County are mainly provided as shared roadways or shoulders on state highways and county roads. The physical condition of the state highways in Lincoln County is generally good, with the exception of narrow or nonexistent shoulders and some poor pavement on western portions of OR 34, and on OR 229 and OR 180, which are highways with low traffic volumes. The more heavily traveled county roads have been widened where practical and feasible to provide adequate shoulder widths for bicycles. Bicyclists also travel US 101, which is a designated state bike route and national scenic byway, and mostly ride south with the wind during the summer. Pedestrians rarely use county roadway shoulders except in residential areas, such as along Gleneden Loop Road, and in Siletz, where there are no sidewalks along County-owned Logsdan Road. Trails and roads through the Siuslaw National Forest provide recreational opportunities and connections that enhance tourism.

Lincoln County transit operates regularly scheduled fixed-route and dial-a-ride service in the county through nine fare zones. Ridership has shown steady growth in recent years, which is anticipated to continue.

Shipping and barge traffic at the Ports of Newport and Toledo rise and fall with the economy. Some facilities need repair and upgrades, and the bay and river channel need regular dredging. The expectation is that facility improvements will lead to more commercial activity. The Toledo Branch track maintained by the Portland & Western Railroad has been improved in recent years but still is not able to carry the heaviest standard railcars that use the Willamette Valley mainline. No natural gas pipeline improvements or expansions are needed or anticipated in Lincoln County.

Transportation Improvement Program

Projects included in the transportation improvement program are intended to increase the safety, capacity, mobility, and connectivity of the transportation system while minimizing environmental impacts, encouraging economic vitality, and making use of available funds. Figure ES-2 shows the roadway project locations. The projects improve or develop facilities or services. Tables ES-1 through ES-5 provide summaries of the improvement program's costs and development. Projects have been prioritized in four categories:

1. Critical Need (existing deficient or dangerous condition)
2. High (impending critical need or high safety concern)
3. Medium (improvement needed soon to meet standard/policy)
4. Low (nice to have improvement eventually as system enhancement)

Timing of project implementation has been categorized short-term (0-5 years), medium-term (5-10 years), and long-term (11-20 years). Duration of the projects is estimated in months and includes engineering design and construction. An order-of-magnitude cost was calculated for most projects, using planning-level assumptions, for engineering and construction but not for environmental studies/permitting.

Funding is not ensured for any of the Lincoln County projects listed in Tables ES-1 through ES-5. While some projects involving State facilities are in the current State Transportation Improvement Program (STIP), others are proposed for future work for which ODOT does not have funding. Therefore, these unfunded projects cannot be included in the TSP as being constructed within the planning horizon.

The Spencer Creek Bridge Project Unit 2, which involves realignment of US 101 eastward 50 feet and a major retaining wall, is estimated by the 2006 FEIS to have a total cost of \$13.7 million. This project also is currently unfunded.

In addition to proposed roadway construction projects, four proposed studies of potential projects are:

- **Siletz to Moolack Connector.** A new and shorter route providing Siletz with access to US 101 has been proposed for study from approximately 2 miles south of Siletz and following 6.75 miles of existing logging roads west to the vicinity of Moolack Shores at US 101. The study would evaluate the feasibility of the project, address permitting and

environmental issues, and analyze the benefits/costs of the new connector versus improvements to OR 229 north of Siletz.

- **US 101 and OR 18 Congestion Study.** This planning study would examine traffic flow improvements north of Lincoln City on US 101 and OR 18 during times of high congestion. The purposes of the study would be to model the current situation; forecast the future operating conditions; and propose specific improvements along US 101/OR 18 to relieve congestion, meet the design manual mobility standard, and improve safety.
- **US 20 and Business 20 (West) and OR 229 Intersection Refinement Plan:** The project would study realignment of the many intersections and determine whether a traffic signal or other traffic control measures are appropriate. The objective would be to identify a preferred alternative that improves intersection operations and safety.
- **US 101 (Lincoln City to Lancer Street) Widening Study.** The project would study permitting (including Statewide Planning goals exceptions) and construction of new northbound and southbound travel lanes, including intersections with Immonen Road, Salishan Drive, and Gleneden Beach Road, to create a consistent four-lane highway that would improve current capacity problems.

After completion of the above planning studies, construction may be proposed.

TABLE ES-1
Safety Project Costs and Development
Lincoln County TSP

Project Number	Location and Description	Project Timing	Project Duration (mo.) ¹	Estimated Cost ²	Priority (1 to 4)
S1	US 101 Siletz River SPIS Segment (MP 119.91 to 120.09). Problem: SPIS Site, alcohol use, intersection visibility, and possible wet/icy conditions. Solution: Increase law enforcement and improve signage..	Short-term	3	<\$10,000 ³	4
S2	US 101 at Immonen Road (MP 121.09). Problem: Truck traffic from intersecting road. Solution: Improve signage, striping adjustments (refuge/merge lane), vegetation management, add flashing yellow caution beacon	Short-term	12	\$350,000	2
S3	US 101 South Yachats Segment (MP 165.48 to 167.61). Problem: Intersection approaches, poor visibility around curves, heavy vegetation overgrowth, numerous access points, drivers ignoring recommended curve speeds. Solution: Vegetation management, improve signage, install guardrail from MP 165.87 to 165.93 (0.06 miles), and install intersection warning signs at Cummins Park Road.	Short-term	12	\$800,000	2

TABLE ES-1
 Safety Project Costs and Development
 Lincoln County TSP

Project Number	Location and Description	Project Timing	Project Duration (mo.) ¹	Estimated Cost ²	Priority (1 to 4)
S4	US 101 at Yachats River Road (MP 164.46 to 164.64). Problem: Intersection at extreme skew, which limits visibility and allows high speed entry. Solution: Lessen skew of intersection with US 101 to improve sight distance and turning movement safety. Redirect traffic turning off of US 101 to the intersection of Lori Lane instead of Yachats River Road.	Short-term	12	\$110,000	2
S5	OR 229 North Siletz Segment (MP -0.21 to 23.48). Problem: Poor visibility because of curves; guardrail lacking; poor weather conditions, access points on curves. Solution: Improve signage, manage vegetation, construct shoulders intermittently (assume 2 miles total), and install guardrail intermittently (assume 2.6 miles).	Short-term	18	\$1,920,000	3
S6	OR 229 at Drift Creek Road (MP 0.99). Problem: Gravel road, located on a curve, near several access points. Solution: Improve signage, manage access	Short-term	3	<\$10,000 ⁴	4
S7	OR 229 Kosydar SPIS Segment (MP 19.91 to 20.09). Problem: SPIS site, multiple access points around several sharp curves on flat geography. Solutions: Option A: Realign highway to eliminate curves; 0.18 mi.. Option B: Widen roadway 14' to meet current lane width and shoulder width standards; 0.18 mi. Option C: Manage vegetation, place post reflectors, improve signage	Short-term		Option A: 12 Option A: \$380,000 Option B: 12 Option B: \$140,000 Option C: 3 Option C: \$30,000	1
S8	OR 34 East Waldport Segment (MP 1.62 to 14.50). Problem: Many rear-end crashes on OR 34; poor weather conditions; poor roadway conditions (pavement, striping, shoulders) in some areas, poor visibility. Solution: Repave, add shoulder width, restripe, improve signage, add left turn pockets, and consolidate access.	Short-term	36	\$9,280,000 ⁴	4
S9	OR 18 Salmon River Segment (MP -0.22 to 10.26). Problem: Numerous access points on curves; road geometry (tight curves); wet/icy conditions Solution: Improve signage and consolidate access.	Short-term	3	<\$10,000 ⁴	4
S10	OR 18 Otis SPIS Segment (MP 1.41 to 1.59). Problem: SPIS site, wet/icy conditions, sharp curve with multiple access points, and school bus stop. Solution: Improve signage, consolidate access, and improve illumination.	Short-term	5	\$150,000 ⁴	1
S11	OR 18 at Bear Creek Road (MP 4.82). Problem: Steep downward vertical grade on side street. Solution: Manage vegetation to improve sight distance, construct an eastbound right turn lane and westbound left turn lane.	Short-term	12	\$370,000	2

TABLE ES-1
 Safety Project Costs and Development
 Lincoln County TSP

Project Number	Location and Description	Project Timing	Project Duration (mo.) ¹	Estimated Cost ²	Priority (1 to 4)
S12	OR 18 at Slick Rock Creek Road (MP 5.42). Problem: Located on a curve, north leg of intersection not visible from highway. Solution: Enforce speed, manage vegetation, re-stripe, install flashing yellow caution beacon, install reflective posts along the edge of the roadway.	Short-term	12	\$410,000 ³	2
S13	OR 18 Rose Lodge SPIS Segment (MP 5.92 to 6.09) (Near North Bank Road). Problem: SPIS site, minimal visibility because of steep slopes and sharp curve; south access point too close to curve Solution: New striping to show no passing zone, improve signage, manage vegetation, relocate private access.	Short-term	6	\$140,000	1

¹ Duration is the approximate time needed for engineering design and construction and does not include time for any necessary permitting.

² Project estimated as a single cost. Estimated costs do not include any right of way purchase or environmental studies/permitting that may be necessary for a project.

³ Cost for increased law enforcement is not included in estimated cost.

⁴ Access control needs further study and definition and therefore is not included in estimated cost.

Figure ES-2: Proposed Road Safety and Capacity Construction Projects

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Figure ES-2: Proposed Road Safety and Capacity Construction Projects

11 x 17 page 2 of 2

TABLE ES-2
 Intersection and Capacity Project Costs and Development
 Lincoln County TSP

Project Number	Location and Description	Project Timing ¹	Project Duration (mo.) ³	Estimated Cost ⁴	Priority (1 to 4)
C1	<p>OR 18 at Old Scenic Highway 101 (MP 1.31). Problem: The Old Scenic Highway operations exceed the OHP mobility standard under the 2027 No-Build scenario.</p> <p>Solution: Re-stripe the east leg (OR 18) to provide a refuge/merge lane. Some roadway widening may be necessary.</p>	2021 Long-term	3	\$30,000	4
C2	<p>OR 18 at North Bank Road (MP 5.30). Problem: The OR 18 operations exceed the OHP mobility standard under the 2027 No-Build scenario</p> <p>Solution: Construct a new westbound right-turn lane (this requires a bridge replacement or widening of Bridge 01211A). The Right-Turn Lane Criterion is met for the westbound right-turn lane in 2005.</p>	2025 Long-term	24	\$3,920,000	3
C3 ⁵	<p>US 101 Widening (Lincoln City SCL to Lancer St./Seagrove Dr) (MP 118.70 to 123.49). Problem: US 101 operations exceed the OHP mobility standard under the 2027 No-Build scenario at Drift Creek Road, Immonen Road, Salishan Drive, Gleneden Beach Road, and Lancer Street/Seagrove Drive intersections.</p> <p>Solution: Construct additional lane in each direction with intersection improvements. Separate into three sections for possible phasing:</p> <p>Section 1. Lincoln City SCL to Siletz River Highway (MP 118.70 to 120.02) This section of the project would re-stripe a refuge/merge lane on the south leg of US 101 at Drift Creek Road; construct new northbound and southbound travel lanes from the south city limits of Lincoln City to the intersection of US 101 and OR 229. This section crosses the Drift Creek Bridge. This bridge is not currently scheduled to be replaced or widened. The proposed project would require that the bridge be replaced/widened and built to accommodate two travel lanes in each direction. This is approximately 1.1 miles of widening (approximately 250' of which are bridge).</p>	2015 Medium-term	24	\$11,530,000	3

TABLE ES-2
Intersection and Capacity Project Costs and Development
Lincoln County TSP

Project Number	Location and Description	Project Timing ¹	Project Duration (mo.) ³	Estimated Cost ⁴	Priority (1 to 4)
	Section 2. Siletz River Highway to Gleneden Beach Road (MP 120.02 to 121.68) This section of the project would construct a northbound left-turn lane, and install a new traffic signal at Gleneden Beach Road and replace the signal at Salishan Drive, and new northbound and southbound travel lanes from just south of Gleneden Beach Loop to the intersection of US 101 and OR 229. This section crosses the Millport Slough and Siletz Bay Bridges. The Millport Slough Bridge is scheduled to be replaced in 2007 with no additional lanes and the Siletz Bay Bridge currently has the width to support two additional travel lanes. The proposed project would require that Millport Slough Bridge be widened. This is approximately 1.6 miles of widening (approximately 250' of which are bridge). Consider incorporating safety improvements (S2) at Immonen Road.	2015 Medium-term	24	\$10,410,000	3
	Section 3. Gleneden Beach Road to Lancer Street (MP 121.68 to 123.49) This section of the project would construct new northbound and southbound travel lanes from just south of Lancer Street/Seagrove Drive to just south of Gleneden Beach Loop. This is approximately 1.8 miles of widening.	2015 Medium-term	24	\$5,170,000	3

¹ Year listed is based on when OHP mobility standard would be exceeded by the future V/C ratio.

² PSW means the Preliminary Signal Warrant is met in the year indicated.

³ Duration is the approximate time needed for engineering design and construction (or study) and does not include time for any necessary permitting.

⁴ Project estimated as a single cost. Estimated costs do not include any right of way purchase or environmental studies/permitting that may be necessary for a project.

⁵ This project is not included as a "planned improvement" of this TSP until further study determines the necessary comprehensive plan amendments and they are approved.

TABLE ES-3
Bicycle/Pedestrian Project Costs and Development
Lincoln County TSP

Project Number	Location and Description	Project Timing	Project Duration (mo.) ¹	Estimated Cost ²	Priority (1 to 4)
BP1	Yachats to Cape Perpetua Trail	Short-term	24	\$10,000	3
BP2	Corvallis-to-the-Sea Trail	Short-term	24	\$10,000	2
BP3	General Shoulder Widening	Medium-term	60	\$100,000	1
BP4	Bicycle/Pedestrian Safety Signage	Short-term	24	\$10,000	1
BP5	US 101/OR 18 Bike Route Directional Signage	Short-term	6	\$10,000	2
BP6	Oregon Coast Trail Links	Medium-term	60	\$10,000	4
BP7	Lincoln Beach Crosswalk to Sentry Market	Medium-term	24	\$250,000	3
BP8	OR 229 and Logsdan Road Sidewalks and Bike Lanes in Siletz	Medium-term	24	\$250,000	3

¹ Duration is the approximate time needed for study, engineering design, and construction and does not include time for any necessary permitting.

² Project estimated as a single cost. Trail projects may involve volunteer labor not included in dollar estimate. Public costs for trails are mostly associated with signage and trailhead parking.

TABLE ES-4
Transit and TDM Project Costs and Development
Lincoln County TSP

Project Number	Location and Description	Project Timing	Project Duration (mo.) ¹	Estimated Cost ²	Priority (1 to 4)
T1	Extended Hours and Routes	Medium-term	12	\$100,000	2
T2	Expanded Service (new routes)	Medium-term	12	\$250,000	3
T3	Marketing Plan	Short-term	6	\$25,000	1
T4	Updated 10-Year Transit Plan	Short-term	6	\$65,000	1
T5	Construct Central Transit Facility	Long-term	24	\$750,000	3
T6	Update LCT Website	Medium-term	6	\$10,000	2
T7	Park and Ride Facilities	Short-term	12	\$100,000	2
T8	Pullouts, Signage, and Amenities	Medium-term	12	\$100,000	2
T9	Improve Connections with other Public Transportation Providers	Medium-term	6	\$10,000	3
T10	Study Alternatives to Reduce Yaquina Bay Bridge Traffic Demand	Long-term	6	\$50,000	3

¹ Duration is the approximate time needed for study, engineering design, and construction and does not include time for any necessary permitting.

² Project estimated as a single cost.

TABLE ES-5
Freight and Intermodal Project Costs and Development
Lincoln County TSP

Project Number	Location and Description	Project Timing	Project Duration (mo.) ¹	Estimated Cost ²	Priority (1 to 4)
F1	CTSI/Toledo – Mill Site Siding Restoration	Short-term	12	\$289,800	NA
F2	City of Newport – Airport Hangar	Short-term	6	\$650,000	NA
F3	City of Newport – Airport Passenger Service Terminal	Short-term	12	\$4,212,000	NA
F4	Port of Newport Terminal Access	Short-term	24	\$3,469,000	NA
F5	Port of Toledo – Intermodal/Industrial Center	Short-term	24	\$5,482,000	NA
F6	PNWR - Toledo Branch Upgrade (not 2006 ConnectOregon Appl.) ³	Medium-term	60	\$9,000,000	NA

¹ Duration is the approximate time needed for engineering design and construction and does not include time for any necessary permitting.

² Project estimated as a single cost.

³ Includes facilities only in Lincoln County, not the entire branch.

Tables ES-6 and ES-7 summarize the approved STIP funding for projects in Lincoln County from 2006-2009 and as proposed for 2008-2011. ODOT, Lincoln County, and the Confederated Tribes of Siletz Indians each have programmed improvement projects for the next 5 years or more (Table ES-6). Funding is committed to these projects. In addition to the one tribal project listed in ODOT's STIP (2006-09) in Table ES-6, 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 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. The Newport Municipal Airport, Port of Toledo, and Port of Newport each have their own long-range improvement plans.

TABLE ES-6
Programmed Roadway Improvements by State, County, and Tribe (2006-2009)
Lincoln County TSP

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	Alea Bay Bridge (#01749B)	MP 155.59 to 156.09	ODOT	Bridge Preservation	2008

TABLE ES-6
 Programmed Roadway Improvements by State, County, and Tribe (2006-2009)
Lincoln County TSP

Project ID Number	Roadway Name	Location Description	Location Milepost	Jurisdiction	Project Type	Expected Start Date
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
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	Logsdon 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

TABLE ES-7
Proposed ODOT 2008-2011 Draft STIP for Lincoln County
Lincoln County TSP

Project ID Number	Roadway Name	Location Description	Location Milepost	Jurisdiction	Project Type & Total Cost	Expected Start Date
14917	OR-18	Salmon River Hwy: Construct painted median and rumble strips	MP 5.70 to 6.00	ODOT	Safety \$621,000	2008
14002	OR-34	Alsea Hwy: Replace Lint Crk Bridge	MP 0.55 to 0.61	ODOT	Bridge \$2,372,000	2009
12808	US-20	Elk City Road to Eddyville: Jurisd. Transfer	MP 16.10 to 24.50	ODOT	Pavement Preservation \$900,000	2009
14804	US-101	Yaquina Bay Bridge Repair	MP 141.33 to 142.07	ODOT	Bridge \$10,134,000	2011
14801	US-101	Big Creek Bridge: Cathodic Protection and Repairs	MP 160.05 to 160.25	ODOT	Bridge \$1,185,000	2011
14862	US-101	US 101 @ S. 32 nd Street (Lincoln City): Realignment	MP 116.72 to 116.74	ODOT	Modernization \$5,000,000	2010
14006	US-101	Alsea Bay Bridge (#01749B)	MP 155.59 to 156.09	ODOT	Bridge \$1,632,000	2008

Policy Recommendations

As part of the TSP goals and objectives that were developed with public input, there are calls for developers to bear costs and provide specific facilities, encouragement of interagency cooperation, imposition of traffic impact fees, coordination with land use decisions, and minimization of environmental impacts. These are policy issues the County Commission, with assistance of the Planning staff, shall address, as noted below.

Policies related to the interface between county and city roads within urban growth boundaries require particular attention. Toledo is the only city within Lincoln County to have an Urban Growth Management Agreement (UGMA) within Lincoln County. A UGMA requires that the city and county coordinate with each other regarding major transportation improvement projects, county road vacations and jurisdictional transfers, and extensions of city services and annexations, which is the current practice with the Toledo UGB. The UGMA can also recommend that a city and the county consider developing a common set of road, street, and storm drainage standards to be used in the mutual interest area. 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. Nevertheless, the County shall consider UGMAs with Waldport, Newport, Siletz, Yachats, and Lincoln City, because residential, commercial, and industrial development within urban growth boundaries can affect the transportation infrastructure outside urban growth boundaries.

Regarding potential widening of US 101 between Lincoln Beach and Lincoln City, it is County policy to consider this issue (specifically related to Statewide Planning Goals exceptions) either at the next comprehensive plan update, or concurrently as a plan for the Siletz Bay National Wildlife Refuge is developed. In the interim, the County shall make land use decisions that preserve the opportunity to widen this segment of Highway 101 in the future. Additionally, the County shall make land use decisions that preserve the opportunity to develop planned improvements of this TSP.

Several amendments to the Lincoln County Code (LCC) are proposed in Chapter 8 for compliance with the Transportation Planning Rule (TPR) as codified in OAR 660-012-0045, including:

- The zoning section shall be modified to include transportation facilities as an outright use in each of the County's zones where it is appropriate. Furthermore, transportation facilities and improvements that are not part of the County's TSP and are not part of a subdivision or partition subject to site design review shall be allowed in all districts as conditional uses.
- Notice to ODOT, other agencies, and special interest groups shall be a requirement of both quasi-judicial and legislative hearings.
- Access control regulations shall include clear and objective spacing standards for different roadway functional classifications.
- To account for potential development impacts to roadways and transit corridors and to ensure that they continue to meet community needs, a provision shall be added to the LCC requiring a traffic impact study (TIS) in certain cases where the potential impact to roads is over a certain threshold.
- A provision also shall be added for an airport safety and compatibility overlay zone for public use airports with instrument approaches.
- Approval of amendments to land use designations, densities, and design standards shall be contingent on findings of consistency with the planned transportation system, as adopted in the County's TSP.
- Bicycle parking facilities, and safe and convenient circulation shall be required in multi-family residential and commercial development.

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 affect the specific needs and types of transportation and land use. Because of the delayed effects of carbon dioxide loading in the atmosphere, reductions in greenhouse gas emissions coming from cars and trucks during the next 10 years is critical to lessen the forecast impacts. The Lincoln County Comprehensive Plan already contains goals and policies to improve air quality, encourage energy conserving transportation modes, and to conserve energy in transportation. Lincoln County shall adopt, by ordinance and/or resolution, policies and actions to reduce greenhouse gases that are described in the *Oregon Strategy for Greenhouse Gas Reductions* (Governor's Advisory Group on Global Warming, State of Oregon, December 2004). Several of the 15 transportation actions are appropriate and relevant for a rural

county government such as Lincoln County (see Chapter 8, Draft Implementing Policies and Ordinances).

Financing Plan Recommendations

Overall, the projects proposed as part of the preferred alternative of this TSP – not counting currently programmed STIP, IRR, or County projects through 2009 – would cost approximately \$62 million in transportation improvements over the next 20 years, with funds coming from federal, state, county, and ports. Another \$9 million of improvements could be made to the Toledo Branch Line railroad tracks in Lincoln County.

Table ES-8 summarizes priority and costs by type of improvement, and nearly none of which are currently funded. Approximately only \$500,000 is budgeted by the State or County for associated proposed safety improvement projects, and none for the proposed capacity improvement projects. The Port of Newport was awarded in 2006 a ConnectOregon grant for \$2,775,200 for its Terminal Access Improvement project.

TABLE ES-8
Transportation System Plan Improvement Costs
Lincoln County TSP

Improvement Type	Priority				Total
	1	2	3	4	
Safety Improvements	\$520,000	\$2.04M	\$1.92M	\$9.29M	\$13.92M
Capacity Improvements	\$0	\$0	\$31.06M	\$0	\$31.06M
Bicycle and Pedestrian Improvements	\$110,000	\$220,000	\$570,000	\$10,000	\$910,000
Transit and TDM Improvements	\$90,000	\$310,000	\$1.06M	\$0	\$1.46M
Freight and Intermodal Improvements	\$14.1M	n/a	n/a	n/a	\$14.1M

This TSP assumes that funds required for transportation maintenance and capital improvements during the next 20 years (2007-2027) will be no less than at present and likely more. Additional funds are particularly needed due to reduced or eliminated revenue from the Secure Rural Schools Community Self-Determination Act (Federal Forest Revenue) and gasoline taxes (Federal and State Highway Funds) eroded by fuel efficiencies and inflationary costs. Therefore, Lincoln County will continue to need a combination of state and federal assistance in addition to local revenue to address funding needs.

To replace lost federal forest revenue and other funds anticipated to be reduced during the next 5 years--and which are necessary to maintain the existing County road system – the County shall engage the public process to study and secure new funding sources.

Going into fiscal year 2005-2006, the County Road Department over the years had built up a beginning balance of almost \$14 million. Approximately \$1 million is set aside each year as a contingency fund for unexpected repairs (typically caused by extreme weather conditions) that would be above the regular maintenance program budget. In addition, asphalt costs

have soared recently due to higher oil prices, which are expected to continue. Some of the department's reserve funds could be used in the short-term to cover declining federal forest revenue until the County secures new revenue sources.

To replace the \$3.2 million of federal forest revenue, the County should implement one or more of the options presented in Chapter 7. For example, if only an increase in vehicle registration fees were implemented, an increase of approximately \$60 annually per vehicle would be required for the approximately 55,000 registered vehicles in Lincoln County to generate \$3.2 million. Whatever funding source is decided upon, actions that support public policy should be encouraged with incentives, and actions that do not support public policy should be discouraged with disincentives.

Implementation

This TSP shall be adopted by the County Commissioners by ordinance following a public hearing process. While this TSP has a planning horizon of 20 years, conditions may change in the county that would warrant revisions. Periodic review of this TSP shall occur every 5 years. Future revisions may be adopted as TSP amendments, which also shall follow a public hearing process.

Chapter 8 of this TSP includes new or amended policies and ordinances to be adopted for implementation of this TSP.

Chapter 1
Introduction

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.

With the contracting and financial support of the Oregon Department of Transportation (ODOT), Lincoln County obtained the services of CH2M HILL and Angelo Eaton & Associates (now Angelo Planning Group) to help the County update and complete the TSP. A cooperative transportation planning effort has involved the public, Lincoln County, ODOT, Oregon Department of Land Conservation and Development (DLCD), cities, ports, businesses, and the Confederated Tribes of the Siletz.

1.2 Setting

The planning area established for the Lincoln County TSP consists of transportation facilities generally outside of incorporated cities' urban growth boundaries (UGBs) within the county. This TSP also considers plans already developed by cities, ODOT, and the County for county roads and state highways within the UGBs and city limits.

Transportation facilities include roadway, pedestrian, bicycle, transit, air, rail, water, and pipeline facilities and evacuation routes. The study area is depicted in Figure 1-1.

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 on 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 the summer and on 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

Figure 1-1: Study Area

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Figure 1-1: Study Area

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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. Appendix P provides a record of public involvement activities. 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 TPR requirements:

1.3.1 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 and 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.*

1.3.2 Goal #2 Livability

Provide a transportation system that balances transportation system needs with the community's 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

1.3.3 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

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.

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.
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. Support efforts by the 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

1.3.4 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 ongoing 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 of Lincoln County communities.

1.3.5 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.

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

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 UGBs.*
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.

1.3.6 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.

1.3.7 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.*

1.3.8 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.

1.3.9 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.

1.3.10 Goal #10 Transportation Funding

Provide reasonable and effective funding mechanisms for county transportation improvements identified in the TSP.

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 offsite and onsite transportation improvements.
3. Identify funding opportunities for a range of projects, and coordinate with county, state, and federal agencies.

1.3.11 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.
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 (see 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.

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
Lincoln County TSP

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, this 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

³ United States Census, 2000

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

second section is 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 that are 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 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 Confederation offers numerous services to tribal members, including law enforcement, planning, housing, youth, education, and social services⁶. 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

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

⁶ Confederated Tribes of Siletz, 2006.

⁷ Defined by the 2000 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 2000 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

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 2005 was estimated to be 44,405. Anecdotal evidence (for example, water bill addresses) indicates a large portion of homeowners with houses in the unincorporated portions of the county are people who 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 United States Census. Where appropriate, these characteristics are compared to the State of Oregon.

- 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). These data reflect 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
Lincoln County TSP

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
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: ¹ United States 1990 and 2000 Census

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

Traveler Characteristics

The 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, because 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 Department of Motor Vehicle (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, 1,390 households (7.2 percent) 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

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

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.
- For workers aged 16 years and older who 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; and 6.6 percent have a commute of more than 60 minutes. The mean is 20.5 minutes.
- For workers aged 16 years and older who did not work at home, 19.7 percent left home between 7:30 AM and 7:59 AM, and 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 (see 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
Lincoln County TSP

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: United 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 1990s deepened an economic recession and eliminated several primary employers in Lincoln County. As a result of 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 products, forest management, ocean research, and manufacturing. Lincoln County has a higher proportion of people in the service industry (22.0 percent) than Oregon in general (15.2 percent) (Table 1-4).

TABLE 1-4
Lincoln County Occupations, 2000
Lincoln County TSP

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 the 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 to 5 years under the enterprise zone program. The exemption enables companies to not pay

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

¹² *Comprehensive Development Strategy and Regional Investment Strategy*, Oregon Cascades West Council of Governments, 2005.

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 may affect the capacity and mobility of the county's transportation infrastructure.

Employment Growth

Between 1993 and 2003, total employment increased 6 percent 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
Lincoln County TSP

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 UGBs; however, there are areas within Lincoln County with existing zoning and vacant lots/parcels that could be developed 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 that 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 2 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 the 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 10 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 through 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 (ten 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 2 miles north of Depoe Bay and 3 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 (see 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 included in Table 1-6.

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

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 P-D, 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 a 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 (for example, floodplain, wetlands, geologic hazards, etc)

Identification of the potential for new lot creation made no determinations as to specific lots regarding 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 2- to 5-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 shown on Figure 1-2 (for example, 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 for 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-acre 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.

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 56-acre vacant parcel. 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 1 acre in size, except one parcel that 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,

Figure 1-2: Category 2 Rural Residential Exception Areas

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Figure 1-2: Category 2 Rural Residential Exception Areas

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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

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 62-mile length in Lincoln County, from the Tillamook County line to the Lane County line. 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 and carries the highest daily traffic of any road in the county.

US 20 (Corvallis-Newport Highway) is designated a rural principal arterial for its 40-mile length 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), which begins at the junction with US 101, is designated as a rural principal arterial for its entire 9-mile length in Lincoln County and is part of the National Highway System.

OR 34 (Alesia Highway) begins at Waldport and is a rural minor arterial for its 30-mile length 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

Figure 1-3: Functional Classifications

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Figure 1-3: Functional Classifications

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collectors. OR 180 is 12-miles long between Eddyville and Nashville. OR 229 is 31-miles long between Kernville and Toledo. The roadways are not part of the National Highway System.

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
Lincoln County TSP

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	Alesea 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
- Logsden 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 Road)
- 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 Road)

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.

Figure 1-4: Federal, State, County Roads, and Special Road Districts

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Figure 1-4: Federal, State, County Roads, and Special Road Districts

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- 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.
- 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.

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
Lincoln County TSP

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 (Alega 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

Figure 1-5: Pavement Conditions

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Figure 1-5: Pavement Conditions

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Byway by the Federal Highway Administration (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 UGBs, 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 1-6 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 Drift Creek (aka 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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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.

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, 6-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.

Figure 1-7: Bicycle and Pedestrian Facilities

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Figure 1-7: Bicycle and Pedestrian Facilities

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TABLE 1-9
Bicycle Route Inventory
Lincoln County TSP

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.

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.

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 on 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. Transit from one end of Newport to the other end goes through two 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

Figure 1-8: Transit Routes and Fare Zones

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Figure 1-8: Transit Routes and Fare Zones

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businesses and communities along the two highways. The Newport-Siletz/Toledo route 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 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.

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.

TABLE 1-10
Lincoln County Transit Fleet
Lincoln County TSP

#	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

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 US 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 1880s (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 Willamette & Pacific 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 in the City of Depoe Bay (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 commercial fishing fleet. The Port of Newport is a deep channel port that allows ocean-going vessels to dock. The harbor in Depoe Bay is home to a small fishing fleet consisting of both commercial and recreational boats. All four facilities are governed by separate commissions or city councils. 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 offering the most services and cargo-moving capability in any given year. The bulk of the goods moved through the port are fish and shellfish; wood in the rough was consistently the most voluminous cargo annually in prior years. 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 “Promote and support projects and programs in cooperation with other community organizations and businesses that will create jobs and increase community economic development.” The Port of Newport's primary functions are offering shipping terminal facilities, commercial and sport boat moorages, recreational vehicle parks, and support services. Along the south side of 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 145 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 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, registration/activity center building, as well as a new 92-space Marina RV Park designed to accommodate larger RV with vehicles in tow was completed in the summer of 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\Southside Marine (boat sales, repair, and supply), Newport Marina Store & Charters, The Newport Belle Bed and Breakfast, and Yaquina Bay Fruit Processors.

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 offer 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 that 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 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; 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 PSAPs have a long history of working cooperatively to provide the best overall 9-1-1 dispatch services in Lincoln County. The three PSAPs have begun the process of planning for consolidation in accordance with 2001 Oregon Laws, Chapter 740 (Enrolled House Bill 3977).

Chapter 2
Plans and Policies Review

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 U.S. Department of Agriculture (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 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 (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 2006 OTP is a major revision of the initial 1992 Plan. With 14 years of additional experience and technological advances, the 2006 OTP provides a framework to further these policy objectives with emphasis on maintaining the assets in place, optimizing the existing system performance through technology and better system integration, creating sustainable funding and investing in strategic capacity enhancements.

The 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
- 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 TPR, the ODOT State Agency Coordination Program, the OTP, the OHP, and the federal Intermodal Surface Transportation Efficiency Act (ISTEA). The Master Plan has not been adopted by the Oregon Transportation Commission and is not a regulatory plan.

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. The Interim Corridor Strategy was not presented to the Oregon Transportation Commission. All affected local governments on the route endorsed the Strategy.

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

The Interim Corridor Strategy is the first step in developing a Corridor Plan for the Hwy 99W and 18 Corridor (I-5 to US 101), 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. The western 10 miles of this corridor is in Lincoln County. The Corridor Strategy provides objectives and policy approaches for the operation, preservation and enhancement of transportation facilities and systems within the defined corridor. The Interim Corridor Strategy was endorsed by the Oregon Transportation Commission and all affected local governments on the route.

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 LCC 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 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 TSP as found in the 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.

Chapter 3
Existing Conditions and Needs

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 level of service (LOS) E at present to LOS F in 2025.

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 and 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.

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 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.

Siletz

The City of Siletz does not have a Transportation System Plan, although the Comprehensive Plan does address transportation goals. Transportation planning efforts are coordinated with and through the County and Siletz Reservation. New roads will be necessary to support housing developments in Siletz, which is a priority of the tribe, since the city is the historical center of tribal government, history, and culture. Some of the original city streets on the west side of the city, where housing is expanding, need to be upgraded to urban standards. Non-tribal roads (not part of the Indian Reservation Road (IRR) System) in the city include Metcalf, Egbert, Palmer, Scarlet, Ferry, and Darcy Avenues, and River Drive, and Fred Taylor Road. Most city streets are part of the IRR system.

A General Street Plan Map has been developed to indicate the preferred location of future streets and to serve as a general guideline. The map includes the areas north and west of the urban growth boundary, because these areas represent the logical area of city growth. The

City relies on Lincoln County for implementation of the Street Plan in areas outside of the city limits. Development of north-south through streets west of OR 229 shall be given high priority when evaluating new development proposals. New development along OR 229 is required to have a minimum 40-foot set back to allow for future improvements.

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. Logsden 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. IRR System Roads in the City of Siletz include Gather Street (OR 229) and Logsden Road, among others.

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.

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.

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 Annual Daily Traffic Volumes

The average annual daily traffic (AADT) 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 in Newport, 0.01 miles south of 15th Street. By and large, rural AADT 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 AADT during the month of August¹. Traffic volumes cited below are the most recent available.

- On the Oregon Coast Highway (US 101), 2004 AADT 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 AADT 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 AADT 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.

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

- On the Alsea Highway (OR 34), 2004 AADT 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 AADT 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 AADT 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 five 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 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 intersections shown in Table 3-1. Also refer to the table for the count dates at each intersection. Appendix C contains figures showing locations, approach views, lane geometry, and raw traffic volumes for each intersection.

TABLE 3-1
Study Intersections
Lincoln County TSP

Intersection	Count Date
Signalized	
US 101 and Salishan Drive	February 25, 2005
Unsignalized	
US 101 and Drift Creek Road	February 25, 2005
US 101 and Siletz Highway	February 25, 2005
US 101 and Immonen Road	August 6, 2005
US 101 and Gleneden Beach Loop North	August 6, 2005
US 101 and Lancer Street	August 6, 2005
US 101 and Willow Drive	March 1, 2005
US 101 and Otter Crest Loop North	August 13, 2005
US 101 and Otter Crest Loop South	August 13, 2005
US 101 and North Beaver Creek Road	August 13, 2005
US 101 and Bay View Road	March 14, 2005
US 101 and Wakonda Beach Road	August 13, 2005
US 101 and Yachats River Road	August 13, 2005

TABLE 3-1
Study Intersections
Lincoln County TSP

Intersection	Count Date
US 101 and Lori Lane	August 13, 2005
US 20 and Western Loop	August 13, 2005
US 20 and Business 20 (west)	August 13, 2005
Unsignalized (cont.)	
US 20 and OR 229	August 13, 2005
Business 20 (west) and Business 20	August 13, 2005
US 20 and Olalla Lake Road	August 13, 2005
US 20 and Business 20 (east)	August 13, 2005
OR 18 and Old Scenic Hwy 101	August 6, 2005
OR 18 and Bear Creek Road	August 6, 2005
OR 18 and North Bank Road	August 6, 2005
OR 18 and Slick Rock Road	August 6, 2005
OR 229 and Drift Creek (aka Pikes Camp) Road	August 6, 2005
OR 229 and Logsden Road	August 13, 2005
Otter Crest Lookout and Otter Crest Loop	August 13, 2005
Otter Crest Loop and 1 st Street	August 13, 2005

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 were 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 D.

Analysis Method

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

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)

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 (for example, 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 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 3-2 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 a UGB. Many of the study intersections and roads are located outside the UGB and have posted speeds between 45 and 55 mph.

TABLE 3-2
Mobility Standards Applicable to Operational Analysis
Lincoln County TSP

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	0.80

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

3.1.4 Operational Analysis of Existing Conditions

Table 3-3 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 C displays the results of the operational analysis. Appendix E provides the complete report output for each intersection.

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

Intersection	OHP Mobility Standard (Row No. from Table 3-1) ¹		2005 Existing Overall or Maximum V/C Ratio	
	Major ³	Minor ⁴	Major ⁵	Minor ⁶
Signalized				
US 101 and Salishan Drive	0.70 (6)		0.71	
Unsignalized				
US 101 and Drift Creek Road	0.70 (6)	0.80 (7)	0.65	0.52
US 101 and Siletz Highway	0.70 (6)	0.80 (7)	0.29	0.15
US 101 and Immonen Road	0.70 (6)	0.80 (7)	0.59	0.23
US 101 and Gleneden Beach Loop North	0.70 (6)	0.80 (7)	0.52	>2.0
US 101 and Lancer Street	0.70 (6)	0.80 (7)	0.53	0.30
US 101 and Willow Drive	0.70 (6)	0.80 (7)	0.22	0.30
US 101 and Otter Crest Loop North	0.70 (6)	0.80 (7)	0.40	0.26
US 101 and Otter Crest Loop South	0.70 (6)	0.80 (7)	0.39	0.23
US 101 and North Beaver Creek Road	0.70 (6)	0.80 (7)	0.37	0.25
US 101 and Bay View Road	0.70 (6)	0.80 (7)	0.27	0.22
US 101 and Wakonda Beach Road	0.70 (6)	0.80 (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)	0.80 (7)	0.36	0.07
US 20 and Business 20 (west) ⁷	0.70 (5)	0.80 (7)	0.38	0.68
US 20 and OR 229⁷	0.70 (5)	0.80 (7)	0.18	0.84
Business 20 (west) and Business 20 ^{2,7}	0.90 (3)	0.90 (3)	0.14	0.27
US 20 and Olalla Lake Road	0.70 (5)	0.80 (7)	0.15	0.09
US 20 and Business 20 (east)	0.70 (5)	0.80 (7)	0.19	0.14
OR 18 and Old Scenic Highway 101	0.70 (5)	0.80 (7)	0.56	0.41
OR 18 and Bear Creek Road	0.70 (5)	0.80 (7)	0.37	0.19
OR 18 and North Bank Road	0.70 (5)	0.80 (7)	0.54	0.23
OR 18 and Slick Rock Road	0.70 (5)	0.80 (7)	0.53	0.13
OR 229 and Drift Creek Road	0.80 (7)	0.80 (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	0.80 (7)	0.80 (7)	0.06	0.04
Otter Crest Loop and 1st Street	0.80 (7)	0.80 (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.

⁷ Intersections form a triangle surrounding the Dairy Queen on the west edge of Toledo.

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

Note: Numbers in **BOLD** highlight 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 3-3, three study intersections currently operate above the OHP mobility standard. The signalized intersection at Salishan Drive has an overall V/C ratio of 0.71 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 greater than 2.0 compared to the mobility standard of 0.80. 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 0.80.

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 records were provided by the ODOT Crash Analysis Unit for the years 2001-2005, 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 456 crashes were reported along the Oregon Coast Highway within the study area, including 169 injury, 279 property damage, and 8 fatal crashes. Tables 3-4 and 3-5 provide an overview of all traffic crashes over the five-year period.

TABLE 3-4
Historical Crash Severity (2001-2005) for US 101 in Lincoln County
Lincoln County TSP

Year	Severity of Crash			Total Crashes
	Injury	Fatality	Property Damage	
2001	29	3	50	82
2002	44	3	50	97
2003	34	0	55	89
2004	25	1	58	84
2005	37	1	66	104
Total	169	8	279	456

The table shows that during the 5-year analysis period, an average of 91 crashes occurred per year within the project study area. The highest annual total of 104 occurred in 2005. The lowest annual total of 82 occurred in 2001. In each of the five years there were 50 to 66 crashes that resulted in property damage only, 29 to 44 crashes that resulted in injuries, and zero to three crashes that resulted in fatalities. Of the eight fatal crashes, five of them occurred on a 16-mile stretch between OR 229 and Newport. The head-on collision type was the most common among the eight fatal crashes with three head-on crashes.

TABLE 3-5
Historical Crash Type (2001-2005) for US 101 in Lincoln County
Lincoln County TSP

Year	Type of Crash											
	Angle	Backing	Fixed Object	Head – On	Non – Collision	Parking	Pedestrian	Rear – End	Sideswipe Meeting	Sideswipe Overtaking	Turning	Other
2001	1	0	31	3	0	1	3	15	5	4	18	1
2002	0	0	36	0	1	1	0	37	4	1	15	2
2003	1	1	25	0	0	0	1	35	9	2	12	3
2004	0	1	22	1	0	0	3	33	5	5	13	1
2005	3	1	38	2	1	1	0	35	5	1	12	5
Total	5	3	152	6	2	3	7	155	28	13	70	12

The number of automobile collisions along the corridor ranged between 84 and 104 per year. The most common type of crash was rear-end, which comprised roughly 34 percent (155 crashes) of all crashes over the five-year period. This was followed by fixed object crashes, which comprised roughly 33 percent (152 crashes) of all crashes over the five-year period.

Segment Analysis for US 101

The study section of US 101 was divided into segments 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 2001 and 2005, as shown in Table 3-6.

TABLE 3-6
 Five-Year US 101 Crash History by Segment (January 1, 2001 to December 31, 2005)
 Lincoln County TSP

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2003 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	4,500		
5 Years					23	
(Average Annual)					5	1.16
OR 18 to Lincoln City Suburban Area	105.21	110.82	5.61	14,100		
5 Years					12	
(Average Annual)					2	0.08
Lincoln City Suburban Area to Lincoln City	110.82	111.81	0.99	15,200		
5 Years					24	
(Average Annual)					5	0.87
Within Lincoln City Limits	111.81	118.71	6.90			
5 Years						Not part of study area
(Average Annual)						
Lincoln City to OR 229	118.71	120.02	1.31	13,550		
5 Years					32	
(Average Annual)					6	0.99
OR 229 to Depoe Bay	120.02	126.45	6.43	10,780		
5 Years					69	
(Average Annual)					14	0.55
Within Depoe Bay City Limits	126.45	128.57	2.12			
5 Years						Not part of study area
(Average Annual)						
Depoe Bay to Newport	128.57	136.53	7.96	8,900		
5 Years					91	
(Average Annual)					18	0.70
Within Newport City Limits	136.53	146.46	9.93			
5 Years						Not part of study area
(Average Annual)						

TABLE 3-6
Five-Year US 101 Crash History by Segment (January 1, 2001 to December 31, 2005)
Lincoln County TSP

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2003 Average Annual Daily Traffic (AADT)	Total Crashes	Average Annual Crash Rate ¹
	From	To				
Newport to Waldport	146.46	155.46	9.00	9,050		
5 Years					119	
(Average Annual)					24	0.80
Within Waldport City Limits	155.46	156.82	1.36			
5 Years					Not part of study area	
(Average Annual)					Not part of study area	
Waldport to Yachats	156.82	163.41	6.59	5,680		
5 Years					73	
(Average Annual)					15	1.07
Within Yachats City Limits	163.41	165.48	2.07			
5 Years					Not part of study area	
(Average Annual)					Not part of study area	
Yachats to Lincoln-Lane County Line	165.48	167.61	2.13	2,400		
5 Years					13	
(Average Annual)					3	1.39
Total/Overall	102.80	167.61	42.43	9,120		
5 Years					456	
(Average Annual)*					91	0.65

¹ Crashes per Million Vehicle-Miles

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 (Yachats to Lincoln-Lane County Line) 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 0.68 for all rural principal arterials and 1.44 for all suburban principal arterials. The overall study section crash rate of 0.65 is less than the rural and suburban statewide crash rate.

Intersection Analysis for US 101

At least one crash was reported in the immediate vicinity of nine out of fourteen study intersections in the last five years. Eighteen crashes were property damage only, thirteen were injurious, and zero were fatal. Table 3-7 provides a summary of the crashes recorded by intersection location.

TABLE 3-7
 Intersection Crash Data (2001-2005) for US 101 in Lincoln County
Lincoln County TSP

Intersection with US 101	Severity of Crash			Total Crashes	Crash Rate
	Injury	Fatality	Property Damage		
Drift Creek Road	1	0	0	1	0.03
Siletz Highway	6	0	9	15	0.48
Immonen Road	0	0	0	0	0.00
Gleneden Beach Loop North	0	0	0	0	0.00
Salishan Drive	0	0	0	0	0.00
Lancer Street	0	0	2	2	0.07
Willow Drive	1	0	0	1	0.05
Otter Crest Loop North	0	0	0	0	0.00
Otter Crest Loop South	2	0	4	6	0.27
North Beaver Creek Road	1	0	1	2	0.11
Bay View Road	1	0	0	1	0.05
Wakonda Beach Road	1	0	0	1	0.07
Yachats River Road	0	0	2	2	0.15
Lori Lane	0	0	0	0	0.00

Note: crash rate is based on number of accidents and AADT at the intersection.

In Section 5.2.1, the ODOT Analysis Procedures Manual states, “At intersections a crash rate of 1.0 or greater is generally considered to be an indication that further investigation is warranted.” The high crash rate does not identify unsafe locations, but does raise the concern about a potential safety issue. The crash rates do not indicate a safety concern for study intersections along the Corvallis-Newport Highway.

Corvallis-Newport Highway (US 20) Analysis

For the five-year period, a total of 302 crashes were reported along the Corvallis-Newport Highway within the study area, including 83 injury, 203 property damage, and 16 fatal crashes. Tables 3-8 and 3-9 provide an overview of all traffic crashes over the five-year period.

TABLE 3-8
Historical Crash Data (2001-2005) for US 20 in Lincoln County
Lincoln County TSP

Year	Severity of Crash			Total Crashes
	Injury	Fatality	Property Damage	
2001	21	6	52	79
2002	19	4	43	66
2003	12	3	48	63
2004	10	1	25	36
2005	21	2	35	58
Total	83	16	203	302

TABLE 3-9
Historical Crash Data (2001-2005) for US 20 in Lincoln County
Lincoln County TSP

Year	Type of Crash											
	Angle	Backing	Fixed Object	Head – On	Non – Collision	Parking	Pedestrian	Rear – End	Sideswipe Meeting	Sideswipe Overtaking	Turning	Other
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	18	3	3	4	9
2004	0	0	20	0	1	0	0	8	2	0	3	2
2005	0	0	28	1	1	0	0	15	4	1	2	6
Total	2	1	138	6	3	0	0	70	27	8	19	28

The number of automobile collisions along the corridor ranged between 36 and 79 per year. The most common type of crash was fixed object, which comprised roughly 46 percent (138 crashes) of all crashes over the five-year period. This was followed by rear-end crashes, which comprised roughly 23 percent (70 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 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 2001 and 2005, as shown in Table 3-10.

TABLE 3-10
Five-Year US 20 Crash History (January 1, 2001 to December 31, 2005)
Lincoln County TSP

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2003 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			
5 Years (Average Annual)					Not part of study area	
Newport to Toledo	1.73	5.42	3.69	13,600		
5 Years (Average Annual)					68 14	0.74
Within Toledo City Limits	5.42	5.61	0.19			
5 Years (Average Annual)					Not part of study area	
Toledo to Sam Creek Road	5.61	9.38	3.77	5,200		
5 Years (Average Annual)					56 11	1.57
Sam Creek Road to Chitwood	9.38	14.89	5.51	4,600		
5 Years (Average Annual)					14 3	0.30
Chitwood to OR 180	14.89	23.18	8.29	4,450		
5 Years (Average Annual)					98 20	1.46
OR 180 to Lincoln-Benton County Line	23.18	34.35	11.17	4,640		
5 Years (Average Annual)					66 13	0.70
Total/Overall	0.00	34.35	32.43	5,670		
5 Years (Average Annual)*					302 60	0.90

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 0.68 for all rural principal arterials. The overall study section crash rate of 0.90 is much greater than the rural statewide crash rate.

Intersection Analysis along Corvallis-Newport Highway (US 20)

At least one crash was reported in the immediate vicinity of three out of five study intersections in the last five years. Three crashes were property damage only, zero were injurious, and one was fatal. The crash at the intersection with OR 229 was reported on OR 229. Table 3-11 provides a summary of the crashes recorded by intersection location.

TABLE 3-11
Intersection Crash Data (2001-2005) for US 20 in Lincoln County
Lincoln County TSP

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	0.06
OR 229	0	0	1	1	0.06
Olalla Lake Road	0	0	0	0	0.00
Business 20 (east)	0	0	2	2	0.19

Note: crash rate is based on number of accidents and AADT at the intersection.

A crash rate higher than 1.0 indicates a safety concern. All intersection crash rates along US 20 were at or below 0.19. 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 86 crashes were reported along the Siletz Highway within the study area, including 32 injury, 49 property damage, and 5 fatal crashes. Tables 3-12 and 3-13 provide an overview of all traffic crashes over the five-year period.

TABLE 3-12
Historical Crash Data (2001-2005) for OR 229 in Lincoln County
Lincoln County TSP

Year	Severity of Crash			Total Crashes
	Injury	Fatality	Property Damage	
2001	4	1	9	14
2002	8	0	7	15
2003	8	1	9	18
2004	6	1	12	19
2005	6	2	12	20
Total	32	5	49	86

TABLE 3-13
Historical Crash Data (2001-2005) for Siletz Highway within Lincoln County
Lincoln County TSP

Year	Type of Crash											
	Angle	Backing	Fixed Object	Head – On	Non – Collision	Parking	Pedestrian	Rear – End	Sideswipe Meeting	Sideswipe Overtaking	Turning	Other
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
2004	0	0	12	0	0	0	0	3	0	0	4	0
2005	0	0	16	0	0	0	1	1	2	0	0	0
Total	1	0	59	1	0	0	1	10	3	0	8	3

The number of automobile collisions along the corridor ranged between 14 and 20 crashes per year. The most common type of crash was fixed object, which comprised roughly 69 percent (59 crashes) of all crashes over the five-year period. This was followed by rear-end crashes, which comprised roughly 12 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 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 2001 and 2005, as shown in Table 3-14.

TABLE 3-14
Five-Year OR 229 Crash History (January 1, 2001 to December 31, 2005)
Lincoln County TSP

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2003 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	1,110		
5 Years					12	
(Average Annual)					2	2.24
Siuslaw National Forest to Cedar Creek	2.44	15.46	13.02	470		
5 Years					33	
(Average Annual)					7	2.95
Cedar Creek to Siletz City Limits	15.46	23.48	8.02	770		
5 Years					20	
(Average Annual)					4	1.77
Within Siletz City Limits	23.48	24.10	0.62			
5 Years						Not part of study area
(Average Annual)						
Siletz to US 20	24.10	31.24	7.14	4,800		
5 Years					21	
(Average Annual)					4	0.34
Total/Overall	-0.21	31.24	30.83	1,610		
5 Years					86	
(Average Annual)*					17	0.95

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 and 2.44 to 15.46 (Siuslaw National Forest to Cedar Creek) 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 1.11 for all rural major collectors. The overall study section crash rate of 0.95 is less than the rural statewide crash rate. However, three segments covering approximately 23 miles between US 101 and the Siletz City Limits have crash rates

much higher the statewide crash rate. And the segments covering approximately 16 miles have crash rates more than double the statewide crash rate for rural major collectors.

Intersection Analysis along Siletz Highway (OR 229)

Only the study intersection at US 20 experienced a crash in the last five years. It was a property damage only crash reported from OR 229. Table 3-15 provides a summary of the crashes recorded by intersection location.

TABLE 3-15
Intersection Crash Data (2001-2005) for OR 229 in Lincoln County
Lincoln County TSP

Intersection with OR 229	Severity of Crash			Total Crashes	Crash Rate
	Injury	Fatality	Property Damage		
Drift Creek Road	0	0	0	0	0.00
Logsdan Road	0	0	0	0	0.00
US 20	0	0	1	1	0.06

Note: crash rate is based on number of accidents and AADT at the intersection.

In Section 5.2.1, the ODOT Analysis Procedures Manual states, “At intersections a crash rate of 1.0 or greater is generally considered to be an indication that further investigation is warranted.” The high crash rate does not identify unsafe locations, but does raise the concern about a potential safety issue. All intersection crash rates along OR 229 were at or below 0.06. 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 78 crashes were reported along the Alsea Highway within the study area, including 39 injury, 39 property damage, and 0 fatal crashes. Tables 3-16 and 3-17 provide an overview of all traffic crashes over the five-year period.

TABLE 3-16
Historical Crash Data (2001-2005) for OR 34 in Lincoln County
Lincoln County TSP

Year	Severity of Crash			Total Crashes
	Injury	Fatality	Property Damage	
2001	11	0	6	17
2002	4	0	10	14
2003	6	0	7	13
2004	6	0	6	12
2005	12	0	10	22
Total	39	0	39	78

TABLE 3-17
Historical Crash Data (2001-2005) for OR 34 in Lincoln County
Lincoln County TSP

Year	Type of Crash											
	Angle	Backing	Fixed Object	Head – On	Non – Collision	Parking	Pedestrian	Rear – End	Sideswipe Meeting	Sideswipe Overtaking	Turning	Other
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
2004	0	0	6	0	0	0	0	1	1	0	3	1
2005	0	0	16	0	0	0	0	1	0	1	2	2
Total	0	0	47	1	0	1	0	6	2	2	9	10

The number of automobile collisions along the corridor ranged between 13 and 22 crashes per year. The most common type of crash was fixed object, which comprised roughly 60 percent (47 crashes) of all crashes over the five-year period. This was followed by other crashes, which comprised roughly 13 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 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 2001 and 2005, as shown in Table 3-18.

TABLE 3-18
Five-Year OR 34 Crash History (January 1, 2001 to December 31, 2005)
Lincoln County TSP

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2003 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)						Not part of study area

TABLE 3-18
Five-Year OR 34 Crash History (January 1, 2001 to December 31, 2005)
Lincoln County TSP

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2003 Average Annual Daily Traffic (AADT)	Total Crashes	Average Annual Crash Rate ¹
	From	To				
Waldport City Limits to Eckman Creek Road	1.62	2.62	1.00	3,400		
5 Years					15	
(Average Annual)					3	2.42
Eckman Creek Road to Scott Creek Bridge	2.62	14.50	11.88	1,520		
5 Years					48	
(Average Annual)					10	1.46
Scott Creek Bridge to Lincoln-Benton County Line	14.50	27.52	13.02	830		
5 Years					15	
(Average Annual)					3	0.76
Total/Overall	1.62	27.52	25.90	1,250		
5 Years					78	
(Average Annual)*					16	1.32

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 0.98 for all rural minor arterials. The overall study section crash rate of 1.32 is much 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 178 crashes were reported along the Salmon River Highway within the study area, including 63 injury, 111 property damage, and 4 fatal crashes. Tables 3-19 and 3-20 provide an overview of all traffic crashes over the five-year period.

TABLE 3-19
 Historical Crash Data (2001-2005) for OR 18 in Lincoln County
Lincoln County TSP

Year	Severity of Crash			Total Crashes
	Injury	Fatality	Property Damage	
2001	13	0	26	39
2002	20	3	28	51
2003	11	1	15	27
2004	4	0	25	29
2005	15	0	17	32
Total	63	4	111	178

TABLE 3-20
 Historical Crash Data (2001-2005) for OR 18 in Lincoln County
Lincoln County TSP

Year	Type of Crash											
	Angle	Backing	Fixed Object	Head – On	Non – Collision	Parking	Pedestrian	Rear – End	Sideswipe Meeting	Sideswipe Overtaking	Turning	Other
2001	0	0	17	0	0	0	0	9	3	1	8	1
2002	0	0	15	0	0	0	1	16	7	1	9	2
2003	0	0	7	1	0	0	0	13	1	0	3	2
2004	0	0	13	0	0	0	0	12	1	1	0	2
2005	0	0	16	0	1	0	0	8	2	0	2	3
Total	0	0	68	1	1	0	1	58	14	3	22	10

The number of automobile collisions along the corridor ranged between 27 and 51 crashes per year. The most common type of crash was fixed object, which comprised roughly 38 percent (68 crashes) of all crashes over the five-year period. This was followed by rear-end crashes, which comprised roughly 33 percent (58 crashes) of all crashes over the five-year period.

Segment Analysis for OR 18

The study section of OR 18 was divided into segments 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 2001 and 2005, as shown in Table 3-21.

TABLE 3-21
Five-Year OR 18 Crash History (January 1, 2001 to December 31, 2005)
Lincoln County TSP

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2003 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	11,900		
5 Years					17	
(Average Annual)					3	0.53
Otis Junction to Lincoln-Tillamook County Line	1.26	10.26	9.00	9,680		
5 Years					161	
(Average Annual)					32	1.01
Total/Overall	-0.22	10.26	10.48	10,000		
5 Years					178	
(Average Annual)*					36	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 0.68 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. Nine crashes were property damage only, three were injurious, and none were fatal. Table 3-22 provides a summary of the crashes recorded by intersection location.

TABLE 3-22
Intersection Crash Data (2001-2005) for OR 18 in Lincoln County
Lincoln County TSP

Intersection with OR 18	Severity of Crash			Total Crashes	Crash Rate
	Injury	Fatality	Property Damage		
Old Scenic Highway 101	0	0	4	4	0.17
Bear Creek Road	2	0	2	4	0.19
North Bank Road	1	0	1	2	0.09
Slick Rock Road	0	0	2	2	0.09

Note: crash rate is based on number of accidents and AADT at the intersection.

In Section 5.2.1, the ODOT Analysis Procedures Manual states, “At intersections a crash rate of 1.0 or greater is generally considered to be an indication that further investigation is warranted.” The high crash rate does not identify unsafe locations, but does raise the concern about a potential safety issue. All intersection crash rates along OR 18 were at or below 0.19. 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 five-year period, a total of 4 crashes were reported along the Eddyville-Blodgett Highway within the study area, all of which were injury crashes. Tables 3-23 and 3-24 provide an overview of all traffic crashes over the five-year period.

TABLE 3-23
Historical Crash Data (2001-2005) for OR 180 in Lincoln County
Lincoln County TSP

Year	Severity of Crash			Total Crashes
	Injury	Fatality	Property Damage	
2001	0	0	0	0
2002	2	0	0	2
2003	1	0	0	1
2004	0	0	0	0
2005	1	0	0	1
Total	4	0	0	4

TABLE 3-24
Historical Crash Data (2001-2005) for OR 180 in Lincoln County
Lincoln County TSP

Year	Type of Crash											
	Angle	Backing	Fixed Object	Head – On	Non – Collision	Parking	Pedestrian	Rear – End	Sideswipe Meeting	Sideswipe Overtaking	Turning	Other
2001	0	0	0	0	0	0	0	0	0	0	0	0
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
2004	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	1	0	0	0
Total	0	0	2	0	0	0	0	0	1	0	1	0

The number of automobile collisions along the corridor ranged between zero and two crashes per year. The most common type of crash was fixed object, which comprised roughly 50 percent (2 crashes) of all crashes over the two-year period. This was followed by turning and sideswipe-meeting crashes, which comprised roughly 25 percent (1 crash each) of all crashes over the five-year period.

Segment Analysis for OR 180

The study section of OR 180 was divided into segments 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 2001 and 2005, as shown in Table 3-25.

TABLE 3-25
Two-Year OR 180 Crash History (January 1, 2001 to December 31, 2003)
Lincoln County TSP

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2003 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					4	
(Average Annual)					1	3.59

TABLE 3-25
Two-Year OR 180 Crash History (January 1, 2001 to December 31, 2003)
Lincoln County TSP

Segment Description	Milepost (Vicinity)		Segment Length (Miles)	2003 Average Annual Daily Traffic (AADT)	Total Crashes	Average Annual Crash Rate ¹
	From	To				
Norton Peak Lookout Road to Lincoln-Benton County Line	6.10	12.53	6.43	400		
2 Years					0	
(Average Annual)					0	0.00
Total/Overall	0.00	12.53	12.53	260		
2 Years					4	
(Average Annual)*					1	0.67

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 five 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 1.11 for all rural major collectors. The overall study section crash rate of 0.67 is much less 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 3-26. 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 3-26
Three-Year County Roadway Crash History (January 1, 2002 to December 31, 2004)
Lincoln County TSP

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

TABLE 3-26
 Three-Year County Roadway Crash History (January 1, 2002 to December 31, 2004)
Lincoln County TSP

Roadway Name	Number of Crashes
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. The severity and type of the crashes is unknown.

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. The 2004 and 2006 SPIS sites were examined for this study based on crash data from the last five years. There are five locations in Lincoln County with 2004 SPIS scores in the highest 10 percent and one location in Lincoln County with 2006 SPIS scores in the highest 10 percent. There were no fatalities among the crashes at the SPIS locations. The locations shown changed because crashes were different in the years of data used for the SPIS calculations. Table 3-27 lists the locations, which are shown on Figure 3-1.

TABLE 3-27
2004 and 2006 SPIS Locations along State Highway Segments in Lincoln County
Lincoln County TSP

Highway	Begin MP	End MP	Total Crashes	ADT Volume	SPIS Year
Oregon Coast Highway (US 101)	119.91	120.09	7	14,200	2004
Corvallis-Newport Highway (US 20)	16.91	17.09	13	4,400	2004
Salmon River Highway (OR 18)	1.41	1.59	4	9,600	2004
Salmon River Highway (OR 18)	5.92	6.09	11	9,900	2004
Siletz Highway (OR 229)	19.91	20.09	3	560	2004
Oregon Coast Highway (US 101)	122.91	123.09	4	11,500	2006

Sources:

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

2006 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 Creek Road
- US 101 and Immonen Road
- OR 229 and Drift Creek (aka 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. There were four crashes, two property damage only and two injury crashes, at this intersection in the past five years.

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 Slick Rock Creek. There were two crashes, both property damage only, at this intersection in the past five years.

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 of truck traffic on the east leg of the 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, the curve of US 101 limits the sight distance. This sight distance issue is a concern for vehicles

Figure 3-1: Annual Average Daily Traffic (AADT) - 2005

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Figure 3-1: Annual Average Daily Traffic (AADT) - 2005

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turning in and out of Immonen Road 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. There were no crashes at this intersection in the past five years. The County would like the installation of a traffic signal or warning beacon considered at this location.

The intersection of OR 229 and Drift Creek (aka Pikes Camp) Road is another County concern. Drift Creek 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 Drift Creek Road. There were no crashes at this intersection in the past five years. The County would like significant improvements to be made at this intersection to improve sight distance, especially for slow-moving log trucks entering the highway.

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. There were nine crashes on this roadway in the past three years. 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:

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

To further evaluate whether or not these intersections pose a safety concern, Table 3-28 was created. This table summarizes information from previous sections of this chapter. No new data are introduced.

TABLE 3-28
Safety Concern Evaluation
Lincoln County TSP

Intersection	Intersection Mile Post	Exceeds Mobility Standards?	Number of Crashes at Intersection? ¹	Within a SPIS segment?
US 101 and Gleneden Beach Loop North	121.66	Yes	0	No
US 101 and Lancer Street	123.40	No	2 (0.07)	No
US 101 and Otter Crest Loop North	132.45	No	0	No
US 101 and Otter Crest Loop South	133.00	No	6 (0.27)	No
US 101 and North Beaver Creek Road	148.97	No	2 (0.11)	No
US 101 and Wakonda Beach Road	158.97	No	1 (0.07)	No
US 101 and Yachats River Road	164.46	No	2 (0.15)	No
US 101 and Lori Lane	164.64	No	0	No
US 20 and Business 20 (west)	5.58	No	1 (0.06)	No
US 20 and OR 229	5.74	Yes	1 (0.06)	No
US 20 and Olalla Lake Road	6.83	No	0	No
US 20 and Business 20 (east)	7.49	No	2 (0.19)	No
OR 18 and North Bank Road	5.30	No	2 (0.09)	No

¹ If the number of crashes at an intersection is greater than 0, it is followed by the crash rate in parentheses.

As shown in Table 3-27, two intersections have exceeded mobility standards. Projects to improve the mobility at these intersections will be covered under Capacity Projects in the Transportation System Alternatives Development section in the System Improvements and Preferred Alternative technical memorandum. Nine intersections in Table 3-27 have a history of crashes, but as stated earlier in this technical memorandum, a crash rate higher than 1.0 indicates a safety concern and all of these intersections are well below a crash rate of 1.0. Finally, Table 3-27 checks the location of each intersection to see if it is within a state designated SPIS site. None of the intersections were located within a SPIS site. After reviewing Table 3-27, it is evident that none of these intersections has a measurable safety deficiency. These intersections will not be considered for physical improvements, but the corrective measures discussed above (access management and trimming overgrown vegetation) are recommended.

3.1.6 State and Local Transportation Scheduled Improvements

The US 20 Pioneer Mountain-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.

Tables 3-29 and 3-30 summarize the approved STIP funding for projects in Lincoln County from 2006-2009 and as proposed for 2008-2011. The Spencer Creek project has been scheduled for a Phase 2. ODOT, Lincoln County, and the Confederated Tribes of Siletz Indians each have programmed improvement projects for the next 5 years or more (Table 3-29). Beside the one tribal project listed in ODOT's STIP (2006-2009) in Table 3-29, 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 3-29

Programmed Roadway Improvements by State, County, and Tribe (2006 – 2009)

Lincoln County TSP

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	Alesea Bay Bridge (#01749B)	MP 155.59 to 156.09	ODOT	Bridge Preservation	2008

TABLE 3-29
 Programmed Roadway Improvements by State, County, and Tribe (2006 – 2009)
 Lincoln County TSP

Project ID Number	Roadway Name	Location Description	Location Milepost	Jurisdiction	Project Type	Expected Start Date
10058	US-101	Spencer Creek Bridge (#06510)	MP 133.65 to 134.34	ODOT	Bridge Replacement	2006
13570	US-101	Alea 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
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

TABLE 3-29
 Programmed Roadway Improvements by State, County, and Tribe (2006 – 2009)
Lincoln County TSP

Project ID Number	Roadway Name	Location Description	Location Milepost	Jurisdiction	Project Type	Expected Start Date
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

Note: By the time this document is published it is likely that some of these projects are underway or completed.

TABLE 3-30
 Proposed ODOT 2008-2011 Draft STIP for Lincoln County
Lincoln County TSP

Project ID Number	Roadway Name	Location Description	Location Milepost	Jurisdiction	Project Type & Total Cost	Expected Start Date
14917	OR-18	Salmon River Hwy: Construct painted median and rumble strips	MP 5.70 to 6.00	ODOT	Safety \$621,000	2008
14002	OR-34	Alea Hwy: Replace Lint Crk Bridge	MP 0.55 to 0.61	ODOT	Bridge \$2,372,000	2009
12808	US-20	Elk City Road to Eddyville: Jurisd. Transfer	MP 16.10 to 24.50	ODOT	Pavement Preservation \$900,000	2009
14804	US-101	Yaquina Bay Bridge Repair	MP 141.33 to 142.07	ODOT	Bridge \$10,134,000	2011
14801	US-101	Big Creek Bridge: Cathodic Protection and Repairs	MP 160.05 to 160.25	ODOT	Bridge \$1,185,000	2011
14862	US-101	US 101 @ S. 32 nd Street (Lincoln City): Realignment	MP 116.72 to 116.74	ODOT	Modernization \$5,000,000	2010
14006	US-101	Alea Bay Bridge (#01749B)	MP 155.59 to 156.09	ODOT	Bridge \$1,632,000	2008

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, some of which may be under construction by the time of adoption of this TSP, are included in Appendix F.

- 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 Logsdan 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 Logsdan 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, some of which may be under construction by the time of adoption of this TSP, are included in Appendix F.

- 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
- Logsdan 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 pounds 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 (for example, 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.

Because of 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 a 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 pounds, double wheel 120,000 pounds, and double tandem 170,000 pounds. 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 (RPZs) 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 Federal Aviation Administration (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.

During the 2004-2008 planning period (Stage I), the capital improvement program for the Newport Municipal Airport includes completing hangar development in the southwest quadrant, widening and overlaying the existing parallel taxiway, upgrading taxiway lighting, and installing Precision Approach Path Indicator (PAPI) on Runways 16, 2, and 20. During the 2009-2013 planning period (Stage II), roadway access would be provided to the northwest area of the airport, where executive jet hangars are proposed along with taxiway, taxi lane, vehicle parking improvements. Planning period 2014-2023 (Stage III) includes development on the eastside of the airport. The plan includes an additional new access road beginning at the eastern end of 98th Street (which connects to Highway 101 at the west), then running parallel to Runway 16-34 and ending approximately 1,200 feet north of the end of Runway 34. There a new terminal building, apron, taxiway, and parking would be constructed.

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 & 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 20 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. Most of the tunnel ceiling has been reinforced with steel and gunited steel; however, a short section near the middle still has a wood-reinforced ceiling. Measurements taken by the P&W Railroad give the height in the steel section as 22.5 feet, and the height in the wood section as 19.3 feet. Intermodal containers come in heights of 9.5 and 8.5 feet, and accommodating double-stack railcars have loaded heights of 20.25 and 18.25 feet, respectively. Double-stack cars require a minimum height clearance in tunnels of 20.75 feet for the tall double-stack cars and 18.75 feet for the short double-stack cars. Therefore, the tunnel does not have clearance for both types of double-stack railcars. 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 require dredging to keep their operations going. The channel to Depoe Bay typically needs dredging every 5 years. The Port of Newport, located at the mouth of the Yaquina River, requires annual dredging. The Port of Toledo also requires dredging every 5 years by the U.S. Army Corps of Engineers 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 two deep draft ports on the Oregon coast 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. National Oceanic and Atmospheric Administration (NOAA) fisheries statistics (2004) ranks Newport as 21st in the nation in value landed (\$29.6 million) and 11th in the nation in pounds landed (111.2 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 miles 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 to the South Beach marina, causing bank erosion and facility damage. The shoaling results from waves from the main navigation channel topping the west breakwater at the marina, moving sand built up behind it into the harbor. To correct the inadequate protection within the South Beach marina channel, the Port is proposing reconstruction of five existing groins, which are deteriorating, on the south channel side of the South Jetty. The Corps, at the Port's request, is considering a reconnaissance study of the problem, contingent upon adequate federal funding.

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 is currently 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 1940s by sinking two US Navy surplus concrete hull cargo ships. One of these ship dock foundations 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 the cost to construct a new dock. There is potential environmental risk within buried compartments. This ship dock is presently closed to commerce.

The Port's most current and critical need is safe, single lane access for truck traffic on the south side of the Port's warehouse. 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 piles 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 major 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 round trips per 1 million board feet of logs (or 4,000 board feet per truckload).

Port of Toledo

The Port of Toledo was awarded \$100,000 in 2002 towards dredging Depot Slough/Yaquina River; however, the U.S. 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 Street) 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 A). 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 0.71) due to the heavy traffic volume using the shared southbound through and through/right-turn lanes.
- 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.

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 state's top 10 percent 2004 SPIS list for Region 2; while one location (Oregon Coast Highway as shown in Figure 3-1) in Lincoln County made the state's top 10 percent 2006 SPIS list for Region 2.

The average annual crash rate of the study section of the Corvallis-Newport, Alsea, and Salmon River 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 Drift Creek (aka 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 are 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 Airport 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.

Chapter 4
Future Conditions and Needs

Future 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
Lincoln County TSP

	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
Lincoln County TSP

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
Lincoln County TSP

Industry	2002-2012 Percent Changes
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 (see Figure 1-2 in Chapter 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).

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

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.

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 commenced an economic needs and UGB expansion study in 2005, which was taken to draft stage only. The draft finding was that there was no need to expand the UGB. No UGB expansions are currently planned or anticipated; the last expansion was in 1984.

Newport

According to the City of Newport, changes to the 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 G, 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

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 North Beaver Creek Road to Lori Lane: MP 154.04 to MP 155.46	Drift Creek Road to Otter Crest Loop North: 2.4% North Beaver Creek Road to Lori Lane: 2.2%	Drift Creek Road to Otter Crest Loop North: 1.52 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 Appendix C 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 (HCM). 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 H contains detailed reports for each individual intersection. Appendix C 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)
Lincoln County TSP

Intersection	OHP Mobility Standard [(No.) from Table 3-1] ¹		2005 Existing Overall or Maximum V/C Ratio		2027 No-Build Overall or Maximum V/C Ratio	
	Major ³	Minor ⁴	Major ⁵	Minor ⁶	Major ⁵	Minor ⁶
Signalized						
US 101 and Salishan Drive	0.70 (6)		0.74		1.04	
Unsignalized						
US 101 and Drift Creek Road	0.70 (6)	0.75 (7)	0.65	0.52	0.94	>2.0
US 101 and Siletz Highway	0.70 (6)	0.75 (7)	0.29	0.15	0.43	0.52
US 101 and Immonen Road	0.70 (6)	0.75 (7)	0.59	0.23	0.89	0.76

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

Intersection	OHP Mobility Standard [(No.) from Table 3-1] ¹		2005 Existing Overall or Maximum V/C Ratio		2027 No-Build Overall or Maximum V/C Ratio	
	Major ³	Minor ⁴	Major ⁵	Minor ⁶	Major ⁵	Minor ⁶
US 101 and Gleneden Beach Road	0.70 (6)	0.75 (7)	0.52	0.95	0.80	>2.0
US 101 and Lancer Street	0.70 (6)	0.75 (7)	0.53	0.30	0.80	>2.0
US 101 and Willow Drive	0.70 (6)	0.75 (7)	0.22	0.30	0.33	0.76
US 101 and Otter Crest Loop North	0.70 (6)	0.75 (7)	0.40	0.26	0.59	0.71
US 101 and Otter Crest Loop South	0.70 (6)	0.75 (7)	0.39	0.23	0.57	0.48
US 101 and North Beaver Creek Road	0.70 (6)	0.75 (7)	0.37	0.25	0.49	0.69
US 101 and Bay View Road	0.70 (6)	0.75 (7)	0.27	0.22	0.39	0.72
US 101 and Wakonda Beach Road	0.70 (6)	0.75 (7)	0.30	0.10	0.41	0.16
US 101 and Yachats River Road ²	0.90 (2)	0.95 (4)	0.29	0.13	0.38	0.18
US 101 and Lori Lane ²	0.85 (1)	0.90 (3)	0.28	0.05	0.40	0.13
US 20 and Western Loop	0.70 (5)	0.75 (7)	0.36	0.07	0.52	0.10
US 20 and Business 20 (west)	0.70 (5)	0.75 (7)	0.38	0.68	0.55	1.97
US 20 and OR 229 ⁵	0.70 (5)	0.75 (7)	0.18	0.84	0.26	>2.0
Business 20 (west) and Business 20 ²	0.90 (3)	0.90 (3)	0.14	0.27	0.20	0.46
US 20 and Olalla Lake Road	0.70 (5)	0.75 (7)	0.15	0.09	0.19	0.11
US 20 and Business 20 (east)	0.70 (5)	0.75 (7)	0.19	0.14	0.26	0.25
OR 18 and Old Scenic Highway 101	0.70 (5)	0.75 (7)	0.56	0.41	0.70	1.15
OR 18 and Bear Creek Road	0.70 (5)	0.75 (7)	0.37	0.19	0.51	0.52
OR 18 and North Bank Road	0.70 (5)	0.75 (7)	0.54	0.23	0.72	0.56
OR 18 and Slick Rock Road	0.70 (5)	0.75 (7)	0.53	0.13	0.71	0.31
OR 229 and Drift Creek Road	0.75 (7)	0.75 (7)	0.04	0.02	0.07	0.06
OR 229 and Logsdan Road ²	0.90 (3)	0.90 (3)	0.19	0.46	0.28	0.85
Otter Crest Lookout and Otter Crest Loop	0.75 (7)	0.75 (7)	0.06	0.04	0.09	0.08
Otter Crest Loop and 1st Street	0.75 (7)	0.75 (7)	0.05	0.15	0.07	0.28

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** highlight 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. Two methods were used to calculate the queue lengths. The Two-Minute Rule was used for stop-controlled approaches and uncontrolled, major street left-turns with V/C ratios less than 0.70. An average of five runs of SimTraffic was used for both signalized and unsignalized intersections with V/C ratios greater than or equal to 0.70. 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. One signalized intersection (a total of two movements) is identified where the queue length exceeds the available storage capacity. Both of the movements are through lanes. Queue lengths for all locations are provided in Appendix I.

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

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	2,010

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, the estimated vehicle queue lengths in the through lanes at Salishan Drive extend over 1,300 feet from the intersection and could create very undesirable conditions. The distances in the table are equivalent to 53 vehicles in the northbound through lane and 81 vehicles in the southbound through lane. They may block upstream intersections/driveways, thereby creating gridlock throughout the corridor. In the southbound direction at Salishan Drive, 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.

The intersection 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 (Appendix J) 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
Lincoln County TSP

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 J 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. These locations include the 2004 and 2006 SPIS locations as well as the segments within the County that have a crash rate that exceeds the statewide average. In addition to those locations, County staff identified the following intersections 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 Drift Creek Road (aka 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 TSP and is not included in this document.

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
Lincoln County TSP

	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 Rail

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-pound (112-ton) freight cars at 25-40 mph speeds, which typically requires heavier rail (132- to 136-pound rail) and stronger bridges on short lines such as the PNWR. These heavier rail cars would be transferred to or from UPRR or Burlington Northern Santa Fe (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
Lincoln County TSP

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: 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. Railroad enters Lincoln County at MP 721.9, leaves at 732.88, and re-enters county at 733.03. Total cost in county approximately \$9 million.

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.
3. 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 Water

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 U.S. 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:

- 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. The Port has conducted preliminary market, feasibility, and engineering studies..

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. Community surveys can help determine the realistic investment level, and therefore the realistic project scope that is supported by the community in the form of bonded debt. A 30-year bond measure was passed by voters in 2006.

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 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 Americans with Disabilities Act (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 Pipeline/Utilities

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.

Chapter 5
System Improvements and Preferred Alternative

System Improvements and Preferred Alternative

The primary objective of this chapter is to identify potential transportation system improvements and projects that will provide for a safe, adequate, connected transportation system throughout Lincoln County for the next 20 years (through 2027). These potential projects address operational and safety improvements to state and county roadway segments, intersections, public transit, transportation demand management, bicycle and pedestrian facilities, and freight and intermodal facilities (involving air, rail, water and pipelines). These improvements would address system goals and objectives (see Chapter 1), and eliminate deficiencies and meet needs (identified in Chapters 3 and 4). The potential projects described and evaluated in this chapter were developed through input from state, county, and city transportation planners, public meetings, previous planning documents, and the analysis of existing and future conditions. This chapter describes the process used to evaluate systemwide alternatives, potential projects, develop alternative solutions, and the results of the alternatives evaluation: a preferred alternative. Policy recommendations are included as appropriate.

5.1 Project Evaluation Process

According to Oregon planning law, a TSP shall be based on an evaluation process to identify impacts of potential projects. The project evaluation process must be consistent with ODOT's TSP guidelines and the Transportation Planning Rule (OAR 660-012-0035(3)). The TPR says that the transportation system should:

- Support urban and rural development by providing types and levels of transportation facilities and services appropriate to serve land uses identified in the acknowledged comprehensive plan
- Be consistent with state and federal standards for protection of air, land, and water quality including the State Implementation Plan under the Federal Clean Air Act and the State Water Quality Management Plan
- Minimize adverse economic, social, and environmental and energy consequences
- Minimize conflicts and facilitate connections between modes of transportation
- Avoid principal reliance on any one mode of transportation and reduce principal reliance on the automobile

ODOT's TSP guidelines state that measures of effectiveness of transportation system alternatives must be consistent with the State Transportation System Plan, and in particular, with the Oregon Highway Plan (OHP). The 2006 Oregon Transportation Plan has a focus on the need for a sustainable transportation system. In accordance with the ODOT guidelines

and the TPR, the Lincoln County TSP uses the following measures of effectiveness to evaluate alternatives:

- Mobility
- System Capacity
- Safety
- Accessibility
- Coordination
- Non-Motorized Users
- Feasibility
- Environment or Social
- Cost
- Lifeline Routes

Projects were evaluated as being positive, neutral, or negative in relation to the measures of effectiveness. The cost measure was evaluated as high if likely to be more than \$500,000; medium if \$100,000 to \$500,000; or low if less than \$100,000. Appendix K provides details of the evaluation criteria and process.

5.2 Transportation System Alternatives Development

ODOT TSP guidelines advise smaller communities, such as Lincoln County, *“to scale their analysis to a reasonable level based on the size of the community and the complexity of the transportation issues.”*¹ Based on this understanding and Lincoln County’s lack of a major metropolitan area, the potential projects developed for the Lincoln County TSP were grouped and evaluated within the following alternatives:

- **Safety Projects** are design improvements to roadway segments, and include components such as realignments, widenings, access management, vegetation management, guardrail, and signage. Some components may also improve capacity.
- **Capacity Projects** are mobility improvements to intersections of state highways and county roads, including components such as lane widening/additions, signalization, turn bays, pullouts, and bridge replacements. Components include transportation system management (TSM) measures and some may improve safety.
- **Bicycle/Pedestrian Projects** are improvements to better serve bicyclists, pedestrians, hikers, and people with special transportation needs; project components include the addition of striped bike lanes, widened shoulders, trails, sidewalks, pedestrian crossings, and ADA-compliant facilities.
- **Transit and TDM Projects** are enhancements to public transit efficiency, connectivity, and use, including transportation demand management (TDM) and components such as park-and-ride lots, bus shelters, pullouts, signage, vanpools/carpools, and special needs services.

¹ 2001 ODOT Transportation System Guidelines, page 34

- **Freight and Intermodal Projects** are improvements to airport, marine, railroad and truck facilities and connections, including components such as hangars, terminals, docks, backlands, sidings, track, staging areas, access, and turn bays.

The above alternatives comprise components to improve existing facilities or services as well as to develop new facilities or services, including different modes or a combination of modes.

In addition, a **No-action Alternative** was identified to represent the impact of doing nothing beyond maintaining the current transportation system and any already committed improvements.

These project categories as transportation system alternatives are consistent with ODOT TSP guidelines for alternatives comprising:

- Roadway and Bridge Improvements - for increased safety or capacity
- Transportation System Management (TSM) Measures - for increased operational efficiency
- Transportation Demand Management (TDM) Measures - for reduced operational demand
- Transit System Improvements - for increased public transit usage
- Land Use Management - for reduced trip generation or length

Because Lincoln County's transportation jurisdiction is primarily outside city limits, opportunities for county government to employ land use management strategies to improve transportation system performance are limited to coordinating with cities for development within urban growth boundaries and zoning land appropriately for resource and residential uses. Land use measures that are part of this TSP may be included with policy directives or recommendations.

5.3 Identified and Evaluated Projects

The following projects in alternative categories were reviewed by the Project Management Team (PMT) at a meeting held in July 2006. The PMT considered comments received from the public in identifying and evaluating projects. Selected projects have been advanced by the PMT for inclusion in the draft TSP's Preferred Alternative on the basis of how well each project would meet the needs and correct the deficiencies of the existing and future transportation system. The PMT received comments from the public on the Preferred Alternative at an Open House prior to finalizing the TSP.

The projects considered for inclusion in the Preferred Alternative are presented below by category. Tables in the following sections show how projects meet the evaluation criteria (measures of effectiveness).

5.3.1 Safety Options

Safety projects were identified consistent with the TSP goals and objectives (see Chapter 1), and evaluated according to the measures of effectiveness.

Relevant TSP Goals and Objectives

Safety projects were identified to further the goals and objectives of the TSP, the most relevant of which are:

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 either 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 #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 their 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 #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.
4. Coordinate lifeline and tsunami/evacuation routes with local, state, and private entities.

Projects

Historical crash data in Lincoln County was reviewed for years 2001-2005, including ODOT's SPIS (Safety Priority Index System) data for years 2004 and 2006. On the basis of these crash data as an indicator of possible safety improvements, the SPIS locations and other sites with elevated crashes in the county were examined for possible causes of the crashes. The County was helpful in identifying several locations where safety concerns exist but may not have yet experienced several or serious crashes. Roadway conditions and potential improvements are discussed below. Where facility improvements could be made to improve safety at these locations, potential roadway safety projects were identified (Table 5-1).

Table 5-2 evaluates the safety projects relative to the measures of effectiveness. These are subjective judgments that can be debated. The placement of warning signs on state highways is the purview of ODOT's traffic engineer. Observation of warning signs and adaptive driving in response to such signs is the purview of the motor vehicle operator. Generally, ODOT only installs "slippery when wet" warning signs when there is something unusual about the roadway segment that may make it markedly more slippery than other highway segments. It can be argued that installation of such signs wherever a crash

occurred with wet pavement conditions would make signs so common as to become ignorable to drivers. The same can be said of overusing warning beacons (flashing yellow lights). ODOT's policy regarding intersection warning signs is that such signs are not necessary and would be functionally duplicative where intersections are preceded by large green directional signs. It can be argued that drivers are made equally aware of a potentially hazardous condition by a yellow warning sign as well as a green directional sign. Reducing the speed limit on highway segments requires a very prescriptive investigation and approval by the ODOT traffic engineer. The roadside culture of rural highways with few accesses weighs toward the appropriateness of the Basic Rule. Where speed has contributed to accidents, warning of specific hazards tends to be more effective than a lowered posted speed, especially lacking consistent enforcement. ODOT does not install raised pavement markers (RPMs) on fog lines, but prefers reflective posts at the pavement edge.

There are nine highway segments with safety issues as identified by the 2004 and 2006 SPIS lists (see Figure 3-1), which consider the number and severity of crashes. Four of the SPIS segments on US 101 are several miles long with no significant facility improvements identifiable or feasible:

- US 101 northern Lincoln City 2006 SPIS Segment (MP 102.80 to 105.21)
- US 101 Depoe Bay to Newport 2006 SPIS Segment (MP 128.57 to 136.53)
- US 101 Newport to Waldport 2006 SPIS Segment (MP 146.46 to 155.46)
- US 101 Waldport to Yachats 2006 Segment (MP 156.82 to 163.41)

Most of the crashes in these four segments were the result of driver error, such as driving too fast for conditions (weather, some sharp curves, or failing to yield the right-of-way) or improper passing. Local terrain does not permit extensive changes in roadway geometry, but additional signs warning drivers of upcoming intersections, passing zones, and possible wet/icy conditions (such as W8-5, slippery when wet) might help prevent many accidents.

A fifth SPIS location, US 101 Schoolhouse Creek 2006 SPIS Segment (MP 122.91 to 123.09), is on a straight segment with no apparent roadway deficiencies. This location made the list because of driver error (improper passing).

A sixth SPIS segment, US 20 Thornton Creek 2004 SPIS Segment (MP 16.91 to 17.09), has a project in progress to increase the safety of this location by creating a new alignment for US 20 that would remove this location from the highway system. Traffic volume will be significantly reduced at this location. Thus, no additional improvements are recommended in this segment.

The two County roads with the highest number of crashes are Logsdon Road and Yaquina Bay Road. As with some of the SPIS sites, driver error, including intoxication, is the cause of these crashes, and feasible safety improvements have already been made by the County.

Locations, including three SPIS sites, identified for potential and feasible safety improvements are discussed below.

TABLE 5-1
Summary of Feasible Safety Projects
Lincoln County TSP

Project/Location	Condition/Problem	Potential Improvements													
		Add Illumination	Realign Roadway	Consolidate Access Points	Add Turn Lane, Accel/Decel, or Turn Pocket	Repave or Widen Rdwy	Increase Law Enforcement	Add/Widen Shoulder	Add Signal	Cut/Remove Vegetation	Reduce Posted Speed; add caution flasher	Add Reflectors	Add/Replace Signs	Re-stripe	Add Guardrail
US 101 Siletz River SPIS Segment (MP 119.91 to 120.09)	SPIS Site: Alcohol use, intersection visibility, and possible wet/icy conditions						X						X		
US 101 at Immonen Road (MP 21.09)	Truck traffic from intersecting road						X			X	X		X	X	
US 101 Yachats Coastal Segment (MP 165.48 to 167.61)	Intersection approaches, poor visibility around curves, heavy vegetation overgrowth, numerous access points, drivers ignoring recommended curve speeds			X						X	X		X		X
US 101 at Yachats River Road	Intersection at extreme skew, which limits visibility and allows high speed entry		X	X				X					X		
OR 229 North Siletz Segment (MP -0.21 to 23.48)	Poor visibility because of curves; guardrail lacking; poor weather conditions, access points on curves					X		X		X			X		X
OR 229 at Drift Creek Road (MP 0.99)	Gravel road, located on a curve, near several access points			X									X		
OR 229 Kosydar SPIS Segment (MP 19.91 to 20.09)	SPIS Site: Multiple access points around several sharp curves on flat geography		X			X		X		X		X	X		

TABLE 5-1
Summary of Feasible Safety Projects
Lincoln County TSP

Project/Location	Condition/Problem	Potential Improvements													
		Add Illumination	Realign Roadway	Consolidate Access Points	Add Turn Lane, Accel/Decel, or Turn Pocket	Repave or Widen Rdwy	Increase Law Enforcement	Add/Widen Shoulder	Add Signal	Cut/Remove Vegetation	Reduce Posted Speed; add caution flasher	Add Reflectors	Add/Replace Signs	Re-stripe	Add Guardrail
OR 34 East Waldport Segment (MP 1.62 to 14.50)	Many rear-end crashes on OR 34; poor weather conditions; poor roadway conditions (pavement, striping, shoulders) in some areas, poor visibility			X	X	X		X					X	X	
OR 18 Salmon River Segment (MP -0.22 to 10.26)	Numerous access points on curves; road geometry (tight curves); wet/icy conditions			X									X		
OR 18 Otis SPIS Segment (MP 1.41 to 1.59)	SPIS Site: wet/icy conditions, sharp curve with multiple access points, and school bus stop	X		X									X		
OR 18 at Bear Creek Road (MP 4.82)	Steep downward vertical grade on side street				X					X					
OR 18 at Slick Rock Creek (MP 5.42)	Located on a curve north leg of intersection not visible from highway						X			X	X	X		X	
OR 18 Rose Lodge SPIS Segment (MP 5.92 to 6.09) (North Bank Road)	SPIS Site: Minimal visibility because of steep slopes and sharp curve; south access point too close to curve			X						X			X	X	

TABLE 5-2
 Safety Projects Evaluated with Measures of Effectiveness*
 Lincoln County TSP

Project/Location	Brief Project Description	Measures of Effectiveness										Total Score**
		Mobility	System Capacity	Safety	Accessibility	Coordination	Non-motorized Users	Feasibility	Environment	Cost	Lifeline Routes	
US 101 Siletz River SPIS Segment (MP 119.91 to 120.09)	Increase law enforcement and improve signage	0	0	+	0	0	0	+	0	L	0	3
US 101 at Immonen Road (MP 21.09)	Improve signage, striping adjustments, vegetation management, add flashing yellow caution beacon	+	0	+	0	0	0	-	-	H	0	0
US 101 South Yachats Segment (MP 165.48 to 167.61)	Vegetation management, improve signage, and add guardrail	0	0	+	0	0	0	+	0	M	0	2
US 101 at Yachats River Road	Lessen skew of intersection with US 101 to improve sight distance and turning movement safety. Redirect traffic turning off of US 101 to the intersection of Lori Lane instead of Yachats River Road.	+	0	+	+	-	+	+	0	M	0	4
OR 229 North Siletz Segment (MP -0.21 to 23.48)	Improve signage, manage vegetation, construct shoulders, and install guardrail	0	0	+	0	0	0	0	0	H	0	0
OR 229 at Drift Creek Road (MP 0.99)	Improve signage, manage access	0	0	+	0	0	0	+	0	L	0	3
OR 229 Kosydar SPIS Segment (MP 19.91 to 20.09)	Realign to eliminate curves, widen lane widths to 12 feet and add 2-foot shoulders, manage vegetation, place post reflectors, improve signage	0	0	+	0	0	0	-	-	H	0	-2

TABLE 5-2
 Safety Projects Evaluated with Measures of Effectiveness*
 Lincoln County TSP

Project/Location	Brief Project Description	Measures of Effectiveness										
		Mobility	System Capacity	Safety	Accessibility	Coordination	Non-motorized Users	Feasibility	Environment	Cost	Lifeline Routes	Total Score**
OR 34 East Waldport Segment (MP 1.62 to 14.50)	Repave, add shoulders, restripe, improve signage, add left turn pockets, and consolidate access	+	0	+	0	0	0	0	-	H	0	0
OR 18 Salmon River Segment (MP -0.22 to 10.26)	Improve signage and consolidate access	0	0	+	0	0	0	+	0	L	0	3
OR 18 Otis SPIS Segment (MP 1.41 to 1.59)	Improve signage, consolidate access, and improve illumination	0	0	+	0	0	0	-	0	M	0	0
OR 18 at Bear Creek Road (MP 4.82)	Manage vegetation to improve sight distance, construct an eastbound right turn lane and westbound left turn lane	+	0	+	0	0	0	-	-	H	0	-1
OR 18 at Slick Rock Creek Road (MP 5.42)	Enforce speed , manage vegetation , re-stripe, install flashing yellow caution beacon, install reflective posts along the edge of the roadway	0	0	+	0	0	0	+	0	M	0	2
OR 18 Rose Lodge SPIS Segment (MP 5.92 to 6.09)	New striping to show no passing zone, improve signage, manage vegetation, relocate private access	0	0	+	0	0	0	+	0	L	0	3

*For definitions, see Appendix K, Measures of Effectiveness Technical Memorandum

**Evaluation Scores and Definitions:

+ Project addresses the goal and meets the goal's objectives, or Low cost = +1 point

0 Neither good, nor bad, or not applicable, or Medium cost = 0 point

- Project does not address the goal or has an adverse impact on the goal's objectives, or High cost = -1 point

US 101 Siletz River 2004 SPIS Segment (MP 119.91 to 120.09): The segment of US 101 that begins just north and ends just south of the intersection with OR 229 was identified as a top 10 percent statewide SPIS site in 2004. (In 2006, the SPIS segment was identified as MP 118.71 to 120.02.) Because OR 229 ends at this site, the intersection is T-shaped. For this segment, the road expands from the typical two-lane highway to include two southbound lanes, two northbound lanes, a southbound left-turn pocket and a northbound right-turn pocket. The seven accidents that occurred at this site were caused by driving too fast for conditions (weather and upcoming intersection) or driving while impaired by alcohol. Approaching drivers have good visibility and ample space, but there is no warning of the approaching intersection or roadway conditions. The addition of north and southbound signs warning drivers of wet/icy conditions (such as W8-5, slippery when wet) and the approaching intersection (such as W2-2, T-intersection ahead) may reduce the number of sudden stops and movements around the intersection. A stronger law enforcement presence would also reduce the speeding and alcohol use that have endangered the intersection.

US 101 at Immonen Road (MP 121.09): The intersection of US 101 and Immonen Road (MP 121.09) was noted by the County as a safety concern. This is a T-intersection located on a curve, with two through lanes, a southbound left turn pocket and a northbound right turn pocket. According to the County, there is a high percent of truck traffic on the east leg of the intersection, generated by a rock quarry located approximately 2 miles east on Immonen Road. Trucks on the westbound approach turning to the north or south could be at danger because they cannot quickly get up to highway speeds. A traffic signal is not recommended for this location because of the rural area and high speeds of the highway at Immonen Road. Driver expectancy of a signal would be very low because of these characteristics and with the additional factor that the intersection is located on a curve; a traffic signal could create a dangerous situation at Immonen Road. The crash data collected from 1999-2003 show that there were six crashes on US 101 at MP 121.00, which is directly north of the intersection. All the crashes with identified causes were shown as being caused by vehicles driving too fast. One crash directly south of the intersection at MP 121.20 was also the result of a vehicle driven too fast. None of the records indicate crashes at MP 121.09, where Immonen intersects US 101; however, the crashes mentioned are close enough to the intersection that they could be caused by some sort of activity at the intersection. The County and quarry operators have expressed concern about the intersection although none of the vehicles involved in the accidents were trucks. The addition of an acceleration lane for the slow-moving heavy vehicles turning north from Immonen Road onto US 101 may increase the safety or only move the collision point farther north. Due to the natural constraints surrounding this intersection, such as topography and the wildlife refuge, limited improvements can be made to increase the safety. The vegetation should be cut back as much as possible at this intersection. In addition, a speed reduction along US 101 should be considered at this intersection along with additional police enforcement to get drivers to adhere to the posted speed. Addition of a flashing yellow caution light on a warning signpost, perhaps actuated by approaching traffic on Immonen Road, should be considered for appropriate placement. Also, if the quarry located on Immonen Road would be generating increased truck traffic during particular periods, extra caution signs could be placed in advance of the intersection (especially to the south where visibility is most limited) to warn drivers of the increased possibility of encountering slow moving truck traffic.

US 101 at Yachats River Road. The skewed intersection of Yachats River Road with US 101 would benefit from realignment and made to function in combination with the US 101/Lori Lane intersection further south. Lori Lane would be signed for access to Yachats River Road. The County has identified the approaches of these intersections as safety concerns. Yachats River Road intersects US 101 at an extreme skew.

US 101 South Yachats Segment (MP 165.48 to 167.61): The segment of US 101 between Yachats and the Lane County border is a two-lane highway with sharp curves, heavy surrounding vegetation, and numerous access points for private driveways, public parks, and forest roads. There are many curve warning signs in the segment with recommended speeds. The 2004 average daily traffic (ADT) for this segment was 5,700 vehicles. A total of 13 crashes occurred on this segment during the 5-year study period (2001-2005). Of these crashes, most occurred because drivers were driving too fast for conditions (sharp curves, weather) or driving on the wrong side of the road. The poor visibility in the sharp curves substantially contributed to each accident. It would be very difficult and expensive to remove curves because of the local terrain (steep slopes), but there are a number of vegetation obstructions that need to be removed. Signs should be placed at multiple points in the segment warning drivers of possible wet/icy conditions (such as W8-5, slippery when wet). North and southbound intersection warning signs should be placed prior to the Cummins Peak Road intersection (milepost 167.0) to offset the poor visibility of the intersection around the sharp curve. Guardrail should be added between mileposts 165.87 and 165.93 to prevent vehicles from going over the steep cliff if they veer off the roadway.

OR 229 North Siletz Segment (MP -0.21 to 23.48): The segment of OR 229 between Siletz and Kernville (US 101 connection) is a curvy, hilly, two-lane highway with no shoulders and numerous access points for private driveways and forest roads. The pavement from milepost -0.21 to 20.00 has been recently paved and striped, and is in good condition. The pavement in the rest of the segment is in fair condition. A total of 62 crashes occurred on this segment during the 5-year study period (2001-2005) and the 2004 ADT ranged between 310 and 810 vehicles.

Most of these crashes on OR 229 were caused by drivers going too fast for conditions (roadway deterioration, weather), failing to yield the right-of-way, or driving on the wrong side of the road. In these cases, driver error was amplified by the poor condition of the road (much of which has been fixed with the recent repave) and poor visibility because of the highway's numerous curves and hills. Most of the curves and hills cannot be realigned because of high cost and constraining terrain (steep slopes, and rivers). Because many of the accidents were influenced by poor weather conditions, wet/road condition signs need to be added throughout the segment to warn drivers (such as W8-5, slippery when wet). Vegetation should also be cut back where it impedes visibility and sight distance. The addition of shoulders throughout the entire segment, where feasible, would improve safety. Further study will be required to figure out exactly where shoulders are feasible. They should be concentrated in the northern more populated end of the segment. Signs should be added to warn drivers of sharp curves, especially at milepost 2.34 (site of fatality accident). Guardrail should be added as recommended in the *Siletz Highway Road Assessment Safety Analysis & Report* (Lancaster Engineering, January 2002). This report states that approximately 2.6 miles of guardrail should be installed between mileposts -0.21 to 24.00.

OR 229 at Drift Creek Road (MP 0.99): The intersection of OR 229 and Drift Creek Road (MP 0.99) is a County concern. Drift Creek Drive is a gravel road and intersects OR 229 on a curve. Drift Creek Drive has a downward vertical grade toward the highway. OR 229 is a two-lane roadway and there are several driveways and uncontrolled access points near the intersection. The County would like significant improvements to be made at this intersection. Safety improvements could include adding caution signs (such as W1-10 in the westbound direction and W2-2 in the eastbound direction) along OR 229 to warn drivers of the upcoming intersection. Access control near the intersection would also help decrease confusion for drivers on US 229. This would include limiting the width of access as well as reducing the number of access points for properties with more than one.

OR 229 Kosydar 2004 SPIS Segment (MP 19.91 to 20.09): This is the seventh SPIS site of the study period. The segment of OR 229 that intersects Kosydar Road was identified as a top 10 percent SPIS site in 2004. The two-lane highway has no shoulders and limited visibility because of multiple curves and vegetation overgrowth. Both directions are signed to warn drivers of the curves and recommend a 35 MPH speed. The three accidents that occurred at this site from 1999 – 2003 primarily resulted from driving too fast for wet/icy conditions on curved roadway with limited visibility. The surrounding geography is flat, so the curves could be eliminated to improve sight distance. Another method to improve safety would be to widen the roadway and stripe for 12-foot travel lanes with 6-foot shoulders. Current roadway width is 22 feet, so this would be an additional 14 feet of pavement width.

If these options are too expensive, safety could be improved by cutting back surrounding vegetation to increase sight distance, adding reflective posts, and adding signs and making sure existing signs are in good condition and have full reflectivity. The following signs should be considered:

- W1-5 – Curve warning sign
- W13-1 – Speed Advisory
- W1-8 – Chevron Alignment
- W13-5 – Rectangular curve warning sign with speed
- W8-5 – Slippery When Wet warning sign

OR 34 East Waldport Segment (MP 1.62 to 14.50): The OR 34 segment between Waldport and the Scott Creek Bridge is a curvy, two-lane highway with small shoulders and numerous access points for private driveways, forest roads, and a few small businesses. Some areas are newly paved and striped, while others have very faded striping and eroded pavement. During the study period, the ADT was 3,000 vehicles (2004) and a total of 61 accidents took place (2001-2005).

Most of the accidents were caused by driving too fast for conditions (curves, weather, roadway deterioration and turning vehicles) and failing to yield right-of-way. Signs warning drivers of wet/icy conditions should be placed at several locations in the segment (such as W8-5, slippery when wet). Conditions could be improved at several older sections of the segment (mileposts 2.6 to 3.2, 3.6 to 4.0, 4.8 to 5.2, and 6.8 to 7.0) with new pavement, shoulders, and new striping. At milepost 2.0, the intersection could be improved by adding intersection warning signs and left turn pockets along the highway, if warranted. This was not a study intersection where counts were collected, so there is insufficient data to determine whether the left turn pockets are warranted. The intersection at milepost 2.6

could be enhanced with intersection warning signs and an eastbound left turn lane. The curved section around milepost 3.0 has seven private driveway access points that could be consolidated to reduce possible accidents.

OR 18 Salmon River Segment (MP 1.26 to 10.26): The segment of OR 18 within the limits of Lincoln County is a two-lane highway with shoulders, occasional passing lanes, and numerous access points for forest roads, private driveways, and a few small businesses. There are a few curves and hills, and the roadway and the vegetation in the segment are very well-maintained. The segment's 2004 ADT was 10,400 vehicles and there was a total of 160 accidents (including four fatalities) during the 2001-2005 study period.

Most of the accidents were caused by driving too fast for conditions (weather, curves, and hills), failing to yield right-of-way, or driving left of the center stripe. Warning signs should be placed at numerous points in the segment to warn drivers of wet/icy conditions, especially around sharp curves and major access points (such as W8-5, slippery when wet). While most of the segment has adequate warning signs for curves, there are no signs in either direction for the curves between mileposts 8.0 and 9.5. Access consolidation should also be applied where possible on curvy segments of roadway; this part of the project will take additional study.

OR 18 Otis 2004 SPIS Segment (MP 1.41 to 1.59): The Otis segment of OR 18 was identified as a top 10 percent SPIS site in 2004. The two-lane segment has a school bus stop and two access points for private roads. The sharp curve limits visibility, but the roadway is well-maintained and there are numerous signs in both directions warning drivers of the curve and the school bus stop. Of the four accidents at this location, three were the result of drivers losing control of their vehicles in wet or icy conditions. The fourth accident was a driver error rear-ending accident on one of the driveways. Two of the four accidents occurred in dark conditions. Adding signs warning drivers of icy/wet conditions (such as W8-5, slippery when wet) would improve the safety of the segment. The curve cannot be substantially straightened because of local geography (steep slopes). Access point consolidation would also help improve roadway safety. Another more costly consideration is adding on to the existing illumination at this intersection and extending it through the SPIS site. This would be an additional 0.3-mile of illumination.

OR 18 at Bear Creek Road (MP 4.82): The intersection of OR 18 and Bear Creek Road (MP 4.82) is another County concern. Bear Creek Road has a steep downward vertical grade toward the highway. At this location, US 18 is a fairly straight, two-lane segment with shoulders. The crash data collected from 2001-2005 show that there were five crashes on OR 18 within a tenth of a mile of the intersection. The vegetation at the intersection needs to be cut back to ensure a clear line of sight for vehicles turning onto OR 18. Also, an eastbound right turn lane and a westbound left turn lane could reduce the number of rear-end accidents occurring at the intersection. A turn lane warrant analysis was done and both the left and right turn lanes are warranted under 2005 volumes (see Appendix J).

OR 18 at Slick Rock Creek Road (MP 5.42): The intersection of OR 18 and Slick Rock Creek Road (MP 5.42) is also a County concern. The north leg of the intersection is a driveway that has a steep upward vertical grade toward the highway and is not visible from the main roadway. This intersection is mid-curve along OR 18, affecting the sight distance from Slick Rock Creek Road. The crash data collected from 2001-2005 show that there were five crashes

on OR 18 within a tenth of a mile of the intersection; however, the records indicate that only two of the crashes occurred very near the intersection at MP 5.40. Most of the crashes were caused by drivers traveling too fast and crashing into fixed objects. Speed enforcement may be necessary at this location to improve the safety and reduce the number of crashes. Other improvements could include trimming vegetation back to clear the line of sight, re-striping worn paint lines, adding an intersection control beacon, and adding reflective posts along the edge of the roadway.

OR 18 Rose Lodge 2004 SPIS Segment (OR 18: MP 5.92 to 6.09): The OR 18 segment near Rose Lodge (and North Bank Road) was identified as top 10 percent SPIS site in 2004. The two-lane segment is made up of a straight-away and a sharp curve. It also has small shoulders and three private road access points. This segment has very little visibility because of the sharp curve and high surrounding slopes. The 11 accidents that occurred at this site were caused primarily by improper passing, driving too fast for conditions, or failing to yield the right-of-way. In the straight-away portion of this segment, passing is allowed in the westbound direction. Because several accidents have resulted from improper passing, this segment should be turned into a no passing zone with double yellow centerline striping. Lack of visibility was also a major cause of several accidents. Eastbound drivers can see the access points but are not warned of the curve. Westbound drivers are warned of the curve by signs but are not warned of the access points that they cannot see. In both directions, large reflective signs giving proper warning would help improve the safety of a curve that cannot be straightened because of local topography (steep slopes). The following signs should be considered:

- W1-2a – Curve warning sign with speed
- W1-8 – Chevron alignment (already exist in westbound direction, but should be checked to ensure they are in good condition)
- W13-5 – Rectangular curve warning sign with a reduced speed

Moving the southern access point just west of the curve to a location 50 to 100 feet further west would also provide more time for drivers entering the highway from that road to get up to roadway speed. Near MP 6.00, there is a trailer park access on the north side of the road. This location is particularly dangerous because it is located on a curve where potentially slow moving vehicles could be entering and exiting the facility. The driveway is also quite steep, sloping up toward the road, and foliage obstructs the view from the driveway to the west. The vegetation should be trimmed to clear the line of sight from this driveway.

5.3.2 Capacity Options

Capacity projects were identified consistent with the TSP goals and objectives (see Chapter 1), and evaluated according to the measures of effectiveness.

Relevant TSP Goals and Objectives

The relevant TSP goals and objectives for capacity projects are the same as previously cited for safety projects.

Projects

The proposed capacity improvement projects are discussed in terms of meeting the design manual mobility standard and/or the OHP mobility standard. The design manual mobility standard (Table 5-3) is not applicable until improvements are designed. That is, improvements that are proposed on the basis of future conditions must be built to meet the design manual mobility standard instead of the OHP mobility standard, which is still the relevant standard for the future No Build scenario analysis (see Table 4-5).

The County was helpful in identifying several county road intersections with state highways where capacity (and safety) concerns exist. Capacity improvement projects are characterized and evaluated in Table 5-4. In addition, Appendix L includes plan views of proposed improvements at intersections on US 101 and OR 18.

Because the OHP mobility standards on US 101 would be exceeded under 2027 No-Build conditions at every studied intersection location between Lincoln City and Lincoln Beach, a combining of the projects listed in Table 5-4 into logical construction packages would be appropriate, as identified in Chapter 7.

Installing traffic signals on US 101 at Gleneden Beach Road and on US 20 at Business 20 (west) and OR 229 would be the most effective improvements in response to V/C ratios forecasted to exceed the OHP mobility standard and to then meet the design manual mobility standard. However, the distance between Salishan Drive and Gleneden Beach Road does not meet the desirable spacing requirement in the ODOT Traffic Signal Policy and Guidelines. Only the State Traffic Engineer could approve the new signal at US 101 and Gleneden Beach Road after a traffic signal progression analysis is completed along with other remedial measures. Further study and monitoring of field conditions would be required before the state engineer approves a traffic signal. There is a safety issue concerned with providing adequate sight distance to the proposed signals and driver expectation to stop.

Because rural roadways owned by Lincoln County have no forecast capacity deficiencies (except at identified intersections with state highways), no capacity improvement projects to rural county roadway segments are proposed. The County is expected to continue routine and programmed maintenance and paving projects as funds allow.

Another unfunded project on US 101 is the Spencer Creek Bridge Project Unit 2. As described in the 2006 Final Environmental Impact Statement (FEIS), Unit 2 involves highway improvements between NE 123rd Street to just north of Wade Creek. There are erosion and drainage problems with the existing alignment. The Unit 2 project would shift the existing alignment of US 101 eastward about 50 feet. The project includes a retaining wall approximately 1,950 feet long and up to 55 feet high located east of the highway and south of the US 101/NE Beverly Drive intersection. At the US 101 and NE 123rd Street intersection, the existing turn lane configuration would be retained; however, NE 123rd Street (not a County-owned road) would be widened slightly for a short distance to provide additional storage space for vehicles turning left onto the highway. By 2025, this movement would have a V/C >1 during the mid-day and PM peak hours, according to the FEIS. Right of way and permanent easements must be acquired as part of the Unit 2 project. The 2006 FEIS estimates the Unit 2 total cost to be \$13.7 million.

TABLE 5-3
 20-Year Design Manual Mobility Standards (V/C Ratios)
 Lincoln County TSP

Highway Category	Inside Urban Growth Boundary				Outside Urban Growth Boundary	
	STAs	MPO	Non-MPO Outside of STAs Where Non-freeway Speed Limit <45 mph	Non-MPO Where Non-freeway Speed Limit >= 45 mph	Unincorporated Communities	Rural Lands
Interstate Highways and Statewide (NHS) Expressways	N/A	0.75	0.70	0.65	0.60	0.60
Statewide (NHS) Freight Routes	0.85	0.75	0.70	0.70	0.60	0.60
Statewide (NHS) Non-Freight Routes and Regional or District Expressways	0.90	0.80	0.75	0.70	0.60	0.60
Regional Highways	0.95	0.85	0.75	0.75	0.70	0.65
District/Local Interest Roads	0.95	0.85	0.80	0.75	0.75	0.70

TABLE 5-4
Capacity Projects Evaluated with Measures of Effectiveness*
Lincoln County TSP

Project Location (Milepost)	Brief Project Description	Mobility	System Capacity	Safety	Accessibility	Coordination	Non-motorized Users	Feasibility	Environment	Cost	Lifeline Routes	Score**
US 101 & Drift Creek Road (MP 119.10)	Deficiency: Both US 101 and Drift Creek Road operations exceed OHP mobility standards under the 2027 No-Build scenario.											
	Improvement: Construct one new northbound and southbound through lane on US 101 and provide a refuge/merge lane on the south leg of US 101. The additional lanes would improve US 101 and Drift Creek Road operations to meet design manual mobility standards.	+	+	+	0	0	0	-	-	H	+	2
US 101 & Immonen Road (MP 121.09)	Deficiency: US 101 operations exceed the OHP mobility standard under the 2027 No-Build scenario.											
	Improvement: Construct one new northbound and southbound through lane on US 101. The additional lanes would improve US 101 operations to meet the design manual mobility standard. Immonen Road operations would continue to meet the OHP mobility standard.	+	+	+	0	0	0	-	-	H	+	2
US 101 & Salishan Drive (MP 121.44)	Deficiency: Overall intersection operations exceed the OHP mobility standard under both the 2005 Existing and 2027 No-Build scenarios.											
	Improvement: Construct one new northbound and southbound through lane on US 101. The additional lanes would improve overall intersection operations to meet the design manual mobility standard.	+	+	+	0	0	0	-	-	H	+	2
US 101 & Gleneden Beach Road (MP 121.66)	Deficiency: US 101 operations exceed the OHP mobility standard under the 2027 No-Build scenario and Gleneden Beach Road operations exceed the OHP mobility standard under both the 2005 Existing and 2027 No-Build scenarios.											
	Improvement: Construct one new northbound and southbound through lane on US 101, a northbound left-turn lane, and install a traffic signal. Overall intersection operations with the additional lanes, new signal, and channelization improvements would meet the design manual mobility standard.	+	+	+	0	0	0	-	-	H	+	2

TABLE 5-4
Capacity Projects Evaluated with Measures of Effectiveness*
Lincoln County TSP

Project Location (Milepost)	Brief Project Description	Mobility	System Capacity	Safety	Accessibility	Coordination	Non-motorized Users	Feasibility	Environment	Cost	Lifeline Routes	Score**
US 101 & Lancer Street/Seagrove Drive (MP 123.40)	Deficiency: Both US 101 and Lancer Street/Seagrove Drive operations exceed OHP mobility standards under the 2027 No-Build scenario.											
	Improvement: Construct one new southbound through lane on US 101 and an exclusive westbound left-turn lane. The additional lanes would improve both US 101 and Lancer Street/Seagrove Drive operations to meet the design manual mobility standards.	+	+	+	0	0	0	-	-	H	+	2
US 20 and Business 20 (west) and OR 229 Refinement Study (MP 5.63 and MP 5.74)	Deficiency: The Business 20 (west) operations exceed the OHP mobility standard under both the 2005 Existing and 2027 No-Build scenarios.											
	Improvement: The project would study potential realignment of Western Loop as the north leg of a new 4-leg signalized intersection and construct new eastbound right turn and northbound left turn lanes, and other alternatives, such as proposed in the Toledo TSP. Installation of a traffic signal at OR 229 would be an alternative. The objective would be to identify alternatives that would improve intersection operations and channelization to meet the design manual mobility standard.	+	0	+	0	0	0	-	-	M	0	0
OR 18 and Old Scenic Highway 101 (MP 1.31)	Deficiency: The Old Scenic Highway operations exceed the OHP mobility standard under the 2027 No-Build scenario.											
	Improvement: Re-stripe the east leg (OR 18) to provide a refuge/merge lane; widen roadway as necessary. This would improve Old Scenic Highway operations to meet the design manual mobility standard, but the OR 18 operations would not meet the design manual mobility standard. However, OR 18 operations would continue to meet the OHP mobility standard.	0	0	+	0	0	0	+	0	L	0	2

TABLE 5-4
Capacity Projects Evaluated with Measures of Effectiveness*
Lincoln County TSP

Project Location (Milepost)	Brief Project Description	Mobility	System Capacity	Safety	Accessibility	Coordination	Non-motorized Users	Feasibility	Environment	Cost	Lifeline Routes	Score**
OR 18 and North Bank Road (MP 5.30)	<p>Deficiency: The OR 18 operations exceed the OHP mobility standard under the 2027 No-Build scenario.</p> <p>Improvement: Construct a new westbound right-turn lane, which would necessitate a bridge replacement or widening. This would improve OR 18 operations to meet the OHP mobility standard but would not meet the design manual mobility standard. North Bank Road operations would continue to meet both OHP and design manual mobility standards.</p>	0	0	+	0	0	0	-	-	H	0	-1
US 101 Widening (Drift Creek Road to Gleneden Beach Road) (MP 119.10 – 121.66)	<p>Deficiency: US 101 operations exceed the OHP mobility standard under the 2027 No-Build scenario at Drift Creek Road, Immonen Road, Salishan Drive, and Gleneden Beach Road intersections.</p> <p>Improvement: The project would construct new northbound and southbound travel lanes at these intersections and in-between to create a consistent four-lane highway to meet the design manual mobility standard. Widen/replace bridges. Along the approximately 2.6-mile section between Drift Creek Road and Gleneden Beach Road (and through the Siletz Bay National Wildlife Refuge), US 101 currently has 0.4 miles of 4-lane road in the northbound direction and 0.7 miles in the southbound direction. This leaves approximately 2.2 miles to widen in the northbound direction and 1.9 miles to widen in the southbound direction.</p>	+	+	+	0	0	0	-	-	H	+	1
OR 18 and US 101 Congestion Study	<p>Deficiency: OR 18 currently experiences congestion on weekend days that is not reflected with the current analysis methodology and the OR 18 approaches exceed the OHP mobility standard under the 2027 No-Build scenario.</p> <p>Alternative: A more comprehensive study of OR 18, including the interchange with US 101 to Lincoln City UGB, would use a microscopic method of analysis to fully model the current situation and forecast the future operating conditions. The study would propose specific improvements along OR 18/US 101 to relieve congestion, meet the design manual mobility standard, and improve safety.</p>	+	+	+	0	0	0	+	0	L	0	4

TABLE 5-4
Capacity Projects Evaluated with Measures of Effectiveness*
Lincoln County TSP

Project Location (Milepost)	Brief Project Description	Mobility	System Capacity	Safety	Accessibility	Coordination	Non-motorized Users	Feasibility	Environment	Cost	Lifeline Routes	Score**
Siletz-Moolack (OR 229- US 101) Connector Feasibility Study	Deficiency: Many residents of Siletz work in Lincoln City. Although OR 229 has adequate capacity north to Kernville and US 101, the road is slow and curvy. For Siletz residents to reach the shopping area in north Newport or Depoe Bay, they must travel south to the US 20 intersection, then onto US 101 north.	+	+	+	0	+	0	+	0	L	0	6
	Improvement: The project would study permitting and building a connector road between OR 229 and US 101 north of Newport. There presently is a private, gravel logging road. The new 2-lane paved road would be approximately 6.74 miles in length, intersect OR 229 about 2 miles south of the City of Siletz, and intersect US 101 near Moolack Beach State Wayside. If constructed, the connector would provide a faster route to communities along US 101 and relieve some congestion at the US 20/OR 229 intersection. The study would analyze the benefits/ costs of the project versus improvements to OR 229 north of Siletz.											

*For definitions, see Appendix K, Measures of Effectiveness Technical Memorandum

**Evaluation Scores and Definitions:

+ Project addresses the goal and meets the goal's objectives; or Low cost = +1 point

0 Neither good, nor bad, or not applicable; or Medium cost = 0 point

- Project does not address the goal or has an adverse impact on the goal's objectives; or High cost = -1 point

5.3.3 Bicycle/Pedestrian Options

Bicycle and pedestrian projects were identified consistent with the TSP goals and objectives (see Chapter 1), and evaluated according to the measures of effectiveness. Goal #1 Mobility, Goal #5 Pedestrian and Bicycle Facilities, and Goal #11 Safety, and associated objectives, of the TSP are the most relevant.

Projects

Several projects have been identified that would enhance an interconnected system of pedestrian and bicycle facilities in Lincoln County and better serve residents and recreational users. The benefits to Lincoln County citizens of implementing these projects include transportation options, safety, economic development, recreation, and health. The following projects were evaluated and scored (Table 5-5) with the measures of effectiveness.

TABLE 5-5
Bicycle and Pedestrian Projects Evaluated with Measures of Effectiveness*
Lincoln County TSP

Project Title	Mobility	System Capacity	Safety	Accessibility	Coordination	Non-motorized Users	Feasibility	Environment or Social	Cost	Lifeline Routes	Score**
Yachats to Cape Perpetua Trail	+	+	0	+	+	+	+	+	L	0	8
Corvallis-to-the-Sea Trail	+	+	0	+	+	+	+	+	L	0	8
General Shoulder Widening	+	+	+	+	+	+	+	+	L	0	9
Bicycle/Pedestrian Safety Signage	+	+	+	+	+	+	+	+	L	0	9
US 101/OR 18 Bike Route Directional Signage	+	+	0	+	+	+	+	+	L	0	8
Oregon Coast Trail Links	+	+	0	+	+	+	+	+	L	0	8
Lincoln Beach and Gleneden Beach Crossings	+	+	+	+	+	+	+	+	L	0	9
North Bank Road Shoulder Widening	+	+	+	+	+	+	+	+	L	0	9
OR 229 and Logsdan Road Sidewalks and Bike Lanes in Siletz	+	+	+	+	+	+	+	+	L	0	9

*For definitions, see Appendix K, Measures of Effectiveness Technical Memorandum

**Evaluation Scores and Definitions:

+ Project addresses the goal and meets the goal's objectives, or Low cost = +1 point

0 Neither good, nor bad, or not applicable, or Medium cost = 0 point

- Project does not address the goal or has an adverse impact on the goal's objectives, or High cost = -1 point

Yachats to Cape Perpetua Trail: This project would construct a north-south trail that links state parks in the City of Yachats with the Cape Perpetua Scenic Area (managed by the U.S.

Forest Service) through County-zoned rural residential areas. The trail is part of the Village Circulation Plan and identified as a priority project in the *Pacific Coast Scenic Byway Corridor Management Plan for US 101 in Oregon* (for CPACT and ODOT by CH2M HILL, 1997).

Corvallis-to-the-Sea Trail: This project, proposed by a coalition of groups known as the C2C Partnership, would potentially use existing county roads and trails for the route's western end. The project would support Lincoln County's tourism industry and link to the Oregon Coast Bike Route along US 101 and Oregon Coast Trail along the beach and shorelands. Lincoln County would cooperate with the C2C Partnership in establishing trail signage, identifying county rights-of-way, and creating links to county bikeways and trails.

General Shoulder Widening: Roadway widening and paving projects by the County should construct wide shoulders to serve pedestrian and bicycle needs and improve safety. Unpaved roads serving rural communities and in Special Road Districts also should be wide enough to safely accommodate pedestrians/bicyclists and two lanes of motor vehicles. Pedestrian Improvement projects should be considered in the Gleneden Beach and Lincoln Beach Areas, and other unincorporated rural communities (Bayshore, Sandpiper Village, Seal Rock, South Beach, Otter Rock, Ona, Salishan, Kernville, Neotsu, Otis, Little Switzerland, Tidewater, and Eddyville). Shoulder widening for bicycles should be considered farther east on North Beaver Creek Road to meet access point with proposed Corvallis-to-the-Sea Trail.

Bicycle/Pedestrian Safety Signage: This project would identify county and state roads with significant bicycle use and areas of pedestrian/hiker/beachcomber crossings. Some of these roads were jurisdictionally transferred to the county by the state, such as Otter Crest Loop Drive (Old Scenic Hwy 101) and potentially Old US 20 (Eddyville to Trapp Creek Road). Signage would caution motor vehicle drivers about bikes on the roadway where there has been a change between bicycles in a bike lane/striped shoulder and bicycles sharing the travel lane. Signage also would be placed at pedestrian/hiker/beachcomber crossings. Signs also would identify particular roads as scenic bikeways and points of access to trailheads.

US 101/OR 18 Bike Route Directional Signage: Although the Oregon Coast Bike Route along US 101 in Lincoln County is signed for its length, a directional signage project north of the OR 18/US 101 intersection would better identify the route that is difficult to follow through the complex intersection. This project, depending on locations, would entail County and/or ODOT funds and management.

Oregon Coast Trail Links: This trail, administered by the Oregon Parks and Recreation Department, generally follows the beach and adjacent shorelands. This project would investigate potential links, facilities improvements, and alternative routes involving other bike/pedestrian trails, and State and County parks and waysides in the vicinity. County facilities could include Knight Park, Logan Road Wayside, Mike Miller Educational Park, and Seal Rock Wayside.

Lincoln Beach and Gleneden Beach Crossings: This project would study the addition of flashing yellow pedestrian-activated crossings and median refuges as part of Section 1 of the US 101 Widening Project.

North Bank Road Shoulder Widening: This project would study widening the shoulders along North Bank Road to provide improved safety for pedestrians, and could be associated with improvements of the intersection with US 101.

OR 229 and Logsdan Road Sidewalks and Bike Lanes: This project would study the addition of sidewalks and bike lanes from OR 229 to Grooms Road to serve tribal housing in the City of Siletz. The project could be associated with other proposed improvements to OR 229 or Logsdan Road.

5.3.4 Transit and TDM Options

Transit and TDM projects were identified consistent with the TSP goals and objectives (see Chapter 1), and evaluated according to the measures of effectiveness. Goal #1 Mobility, Goal #4 Public Transportation, Goal #6 Accessibility, and Goal#7 Environment, and associated objectives, of the TSP are the most relevant.

Projects

Several projects have been identified that would improve public transportation in Lincoln County and better serve residents and tourists. Improvements to the public transportation system also will offer transportation options for the transportation disadvantaged.

The following projects were evaluated and scored (Table 5-6) with the measures of effectiveness. Many of the projects identified below are general and the responsibility of LCT. The identification of specific projects would require additional study and analysis that are outside of the scope of this TSP.

Extended Fixed Route and Dial-a-Ride Service: Extending the hours of operation of existing LCT service would allow users with alternative work schedules to use LCT. In addition, extending existing LCT routes and dial-a-ride service would meet the needs of patients for extended service in the late afternoon and evenings to Samaritan Pacific Communities Hospital in Newport and Good Samaritan Hospital in Corvallis (Benton County). Expanded fixed route service should be linked with the planning of park-and-ride facilities.

Expanded Fixed Route Service: This project consists of two components: 1) expanded LCT service to the rural areas of the county, including the more outlying areas of Lincoln County, which would increase the service area of LCT; and 2) expanded LCT service to high-priority areas, such as the Newport Bayfront and Nye Beach.

LCT Marketing Plan: Develop a marketing plan to help educate the public (residents and tourists) about LCT service to increase ridership. In addition, advertise and promote LCT services in cooperation with commercial and hospitality businesses.

Updated LCT 10-Year Transit Plan: LCT's existing plan expired in the year 2000. An updated existing transit plan would help prioritize needs and develop strategies for meeting identified needs.

TABLE 5-6
Transit and TDM Projects Evaluated with Measures of Effectiveness*
Lincoln County TSP

Project Title	Mobility	System Capacity	Safety	Accessibility	Coordination	Non-motorized Users	Feasibility	Environment or Social	Cost	Lifeline Routes	Score**
Extended Hours and Routes	0	0	0	+	0	+	+	0	L	0	4
Expanded Service (new routes)	0	0	0	+	0	+	+	0	M	0	3
Marketing Plan	0	0	0	0	0	0	+	0	L	0	2
Updated 10-Year Transit Plan	0	0	0	0	0	+	0	0	L	0	2
Construct Central Transit Facility	0	0	0	0	0	+	+	0	M	0	2
Update LCT Website	0	0	0	0	0	+	+	0	L	0	3
Park and Ride Facilities	0	0	0	+	0	+	+	+	L	0	5
Pullouts, Signage, and Amenities	0	0	+	0	0	+	+	0	L	0	4
Improve Connections with other Public Transportation Providers	0	0	0	+	0	+	+	0	L	0	4
Study Alternatives to Reduce Yaquina Bay Bridge Traffic Demand	0	0	0	+	0	+	+	+	L	0	5

*For definitions, see Appendix K, Measures of Effectiveness Technical Memorandum

**Evaluation Scores and Definitions:

+ Project addresses the goal and meets the goal's objectives, or Low cost = +1 point

0 Neither good, nor bad, or not applicable, or Medium cost = 0 point

- Project does not address the goal or has an adverse impact on the goal's objectives, or High cost = -1 point

Update and Improve the LCT Website: Currently, LCT information is located on Lincoln County's main website. This project consists of developing a website specifically for LCT for riders to easily access routes, schedules, and other information, and to promote public transportation in the county. In addition, this project would update the existing LCT website to include a system map and other more comprehensive LCT information in a format that is easy to navigate and easy to read and understand. The website could also include information on TDM programs in Lincoln County to promote transportation options.

Construct New Central Transit Facility: Construct a central facility for LCT to serve LCT's system as well as out-of-county services and other modes. Because Newport is the hub for LCT service, a transit facility in Newport should be considered.

Construct Park-and-Ride Facilities: There are no officially established park-and-ride facilities in Lincoln County, although there are some locations in the county that serve as unofficial park-and-ride facilities. The *Lincoln County Transportation Demand Management*

Plan (Cascades West Council of Governments [CWCOG], 2006) identifies approximately 20 locations in Lincoln County that have key features desired for a park-and-ride facility, such as easy bus stop access, paved surface, lighting and sufficient vehicular access. Specifically, 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. Park-and-ride facilities should be coordinated and linked with the existing and planned transit service.

New Pullouts, Signage, and Amenities: Amenities would make the transit system more visible to potential users and possibly attract new riders. Transit pullouts on state and county facilities would increase safety for drivers and transit riders. Installing new signs would include schedule information for all designated stops. Amenities include providing other transit amenities such as covered benches, signage, overhangs or transit shelters, concrete landing pads, restrooms, storage facilities, and bike racks. These amenities should be considered for stops with high ridership. In addition, all transit stops should be accessible to all potential riders per ADA standards.

Improved Connections with other Public Transportation Providers: Public transportation service to adjacent counties is currently limited to dial-a-ride service a few days a week. This project would extend fixed route public transportation service to connect with the other providers in adjacent counties (Benton, Lane, Polk and Tillamook). Coordinated service and connections between LCT and public transportation service providers in adjacent counties, such as Tillamook County Transportation District in Tillamook County, would improve connectivity of the public transportation system between counties.

Study Alternatives to Reduce Yaquina Bay Bridge Traffic Demand: Currently, high volumes of local traffic travel across the Yaquina Bay Bridge between Newport and the South Beach area. Traffic volumes will increase with the proposed development in the South Beach area. To reduce traffic volumes across the Yaquina Bay Bridge, opportunities should be explored to improve public transportation service within the City of Newport from the northern city limits to the South Beach area and proposed community college site.

In addition to the public transportation projects listed above, Lincoln County should continue to support a TDM program to accommodate more traffic on the existing system and address the transportation needs of Lincoln County residents and tourists. Beyond public transportation service, a comprehensive TDM program would include carpooling, vanpooling, park-and-ride facilities, bicycle and pedestrian facilities, alternative work schedules, and telecommuting. Opportunities may exist for transportation providers in the private sector to help reduce transportation demand, such as buses stopping at major hotels/motels in cities along US 101 to transport patrons of casinos and major shopping centers.

5.3.5 Freight and Intermodal Options

Intermodal and freight projects (involving air, rail, water, pipelines) were identified consistent with the TSP goals and objectives (see Chapter 1), and evaluated according to the measures of effectiveness. Goal #1 Mobility and Goal #3 Coordination, and associated objectives, of the TSP are the most relevant.

Projects

The projects summarized below, except for the Portland and Western Railroad (PNWR) Toledo Branch Upgrade project, were submitted for consideration in the 2006 ConnectOregon program. The projects would support Lincoln County's economy and improve air, water, rail and truck freight transportation between Newport and Toledo and the major transportation corridor in the Willamette Valley and hub in Portland.

Appendix M describes the projects more fully. Of these projects, the Port of Newport Terminal Access program was awarded the only grant as part of this program. Funding for the other projects will need to be sought from other programs. **Confederated Tribes of Siletz Indians /Toledo - Mill Site Siding Restoration:** Timber harvest volumes are increasing again in Lincoln County, and the existing mill has capacity to double production by 2009, which would be supported by additional shipping options. This rail siding rehabilitation project would allow shipping by rail of up to 6 million board feet of timber from the Tribe's Toledo Mill site to inland markets. This would mean that 6 to 12 trucks could be removed from US 20 on a bi-weekly basis.

City of Newport - Airport Hangar: Hangar space at the airport has been at capacity for several years. This project would allow several aircraft owners to relocate their business aircraft to the Newport Airport and support economic development in the county. Because the airport is adjacent to US 101, additional hangar spaces would increase system connectivity.

City of Newport - Airport Passenger Service Terminal: No scheduled air passenger service is currently available from the central coast to Portland International Airport (PDX). This project by Newport Municipal Airport would be in coordination with the Port of Astoria's airport to provide scheduled airline service to PDX via an agreement with Cape Air, Inc. Modal connections would be improved between the state highway system, airports, and marine facilities.

Port of Newport - Terminal Access: The current all-wooden dock structure is deteriorating and cannot support heavy truck loads. This project would improve access, efficiency, and safety to and from the intermodal terminal by replacing the wooden structure with steel piling and concrete decking. Connections between marine and truck transportation would be facilitated and potential markets for the Port expanded.

Port of Toledo - Intermodal/Industrial Center: There currently is no direct link between barge traffic in Yaquina Bay and the PNWR tracks that terminates in Toledo. This project would extend a rail spur to allow freight transfer from barge to rail or truck, expand an access road, create and pave a staging area, construct a new 9,800-square-foot warehouse, and provide drainage and sewer improvements.

PNWR Railroad - Toledo Branch Upgrade: This project would upgrade the line to allow the safe and maintainable operation of 286,000-pound (112-ton) freight cars at 25 to 40 MPH speeds, which requires heavier rail (132- to 136-pound rail). Strengthening of the steel bridge over the Willamette River at Albany, a critical component of upgrading the Toledo Branch, is a separate project funded with \$15 million from the SAFETEA-LU appropriation. No 2006 ConnectOregon grant application was made for this project.

5.4 Policy Direction

The TSP goals and some objectives cite development of design and construction standards, requirements for developers to bear costs and provide specific facilities, encouragement of interagency cooperation, establishment of access management and spacing standards, imposition of traffic impact fees, coordination with land use decisions, and minimization of environmental impacts.

Recommendations for policy decisions or code amendments relative to project development to address land use, environmental, economic, and transportation issues in the county are discussed in Chapter 6, Transportation System Modal Plans, and developed in Chapter 8, Draft Implementing Policies and Ordinances.

5.5 Selection of a Preferred Alternative

The directors of the Lincoln County Public Works Department and Planning and Development Department and the senior planner for ODOT Region 2, as members of the PMT, evaluated the projects based on the measures of effectiveness, the TSP goals and objectives, and public comments from the Open Houses in their selection of a Preferred Alternative. The Preferred Alternative is a combination of projects from the five alternative categories. Identification of such projects as part of the Preferred Alternative does not necessarily bind the County or State to funding participation. The PMT determined that the No-action Alternative would be the least-effective alternative to meet the long-term transportation system goals and objectives of Lincoln County.

Projects of the Preferred Alternative need to be consistent with, and are included as part of, the Modal Plans (see Chapter 6). These projects form the basis of the Transportation Improvement Program and Financing Plan (see Chapter 7), which includes identification of priorities, costs, and timing, among other project development details.

Appendix L includes project description sheets for the roadway safety and capacity projects. Projects listed in TSPs of cities in Lincoln County are included in Appendix N. Figure 5-1 shows the location of the roadway projects. In some cases – for example, shoulder widening projects – further studies would be required to determine exact locations, feasibility, and impacts.

5.6 Projects Considered But Not Included

The following projects were discussed by the PMT but are not recommended as part of the Preferred Alternative:

- The deficiencies of US 20 east of Toledo to the Benton County line will be improved to acceptable conditions following completion of the US 20 Pioneer Mountain-Eddyville highway modernization project. Improvements to the “Old US 20” between Eddyville and Trapp Creek Road will be completed by ODOT prior to jurisdictional transfer to the County. Safety at the intersection with Thornton Creek Road is expected to improve significantly with only local traffic; however, the County should monitor the new traffic conditions.

Figure 5-1 Proposed Roadway Safety and Capacity Projects
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Figure 5-1 Proposed Roadway Safety and Capacity Projects

11 x 17 - Page 2 of 2

- The OR 180 segment between Eddyville and Norton Peak Lookout Road (MP 0.00 to 6.10) is a curvy, two-lane highway with heavy vegetation overgrowth and numerous access points for private driveways and forest roads. The curves and vegetation reduce visibility, but there are many warning signs with 25 MPH recommended speeds to provide more reaction time. The crash data collected from 2001-2005 show that there were four crashes on OR 180 within the Eddyville-Norton segment. Two of these crashes were the result of driving too fast for conditions (roadway deterioration and sharp curves) and two were the result of crossing over the centerline. Straightening the curves is not the best option because of cost and local terrain. Visibility could be improved with better vegetation maintenance, and roadway conditions could be improved by repaving deteriorated pavement at mileposts 1.4 to 2.3, 2.6 to 2.8, 3.3 to 3.7, and 4.4 to 4.8. Because the 2004 ADT for this segment ranged between 80 and 160 vehicles, any changes besides improved maintenance would not be cost-effective.
- Yaquina Bay Road has the highest number of crashes (nine) in the County roadway system during the 3-year period from 2002 to 2004. The majority of the crashes (six) occurred between mileposts 8.0 and 11.9. Two crashes occurred between mileposts 2.6 and 2.8, and one crash occurred at milepost 6.5. This is a two-lane roadway with varying shoulder widths and continuous fog line striping. Much of the time, the roadway is next to water and there can be high wind gusts in poor weather conditions. There are numerous access points along the roadway, and at times they are located on curves. Measures such as access control, straightening, and widening could be taken to improve safety of this road if it were not so topographically constrained. The County has made such improvements where feasible. Other actions involve routine maintenance, such as regularly trimming overgrown vegetation to improve sight distance from side streets and driveways. Areas where existing striping becomes worn should be repainted.
- Although Logsdon Road had the second highest number of accidents (eight) on County roads during 2002-2004 Logsdon Road has been improved recently and there appear to be no accident "hot spots." Most accidents are attributable to driver error or impairment that are not mitigable by additional roadway improvements.
- The intersection of Logsdon Road with OR 229 is forecast to operate at a V/C ratio of 0.85 in 2027, near but not exceeding the mobility standard of 0.90. Should the Siletz population and traffic grow faster than anticipated, intersection improvements could be needed sooner than anticipated. Such a project could include sidewalk and bike lane improvements to serve tribal housing.

Chapter 6
Transportation System Modal Plans

Transportation System Modal Plans

This chapter presents modal plans for the transportation system envisioned for Lincoln County. Earlier chapters of this TSP have inventoried and mapped the facilities, and described the existing and future conditions and needs of Lincoln County's transportation modes. The modal plans, improvements, standards, and policies described in this chapter include the projects selected for the Preferred Alternative. This chapter contains the following sections:

- Roadway Plan
- Bicycle and Pedestrian Plan
- Public Transit Plan (Transportation Demand Management)
- Freight and Intermodal Plan (Air, Rail, Water, Pipelines)

Each section provides an overview of plan objectives, a list of proposed improvements, and relevant standards and policies established at the state and local levels for the transportation mode. Revisions to plans and policies that would be needed or appropriate for implementation of the Lincoln County TSP and the modal plans are the subject of Chapter 8.

6.1 Roadway Plan

The objectives of the Roadway Plan are to provide safe and efficient roads for livability and economic viability for Lincoln County. State and local governments share responsibility for the road system and will work together with the public in planning and decision-making. Roadway improvements will be implemented in accordance with available funds, relevant agreements, regulations, designations, and classifications, as described below.

6.1.1 Access Management

To improve access management and to comply with the state Transportation Planning Rule (TPR), modifications have been proposed for Lincoln County's Land Use Ordinance. Specifically, procedural reviews in the ordinance have been modified to allow closer evaluation of transportation projects and the impact of development projects on transportation facilities.

Several state highway projects that have been identified in this TSP to improve safety and operating conditions will have access management components. County roads also would benefit from access management, which should be considered as part of land use decisions and permits for construction and approach roads. Safety can be improved with appropriate siting of access points. The Oregon Highway Plan (OHP) Action 1B.3 addresses the option of ODOT and local governments entering into intergovernmental agreements to allow Lincoln County, for example, to issue approach road permits on state Regional and District Highways.

6.1.2 Highway Segment Designation

The Oregon Highway Plan (OHP) provides for special designation of certain highway segments to guide future planning and management decisions, and to balance the needs of through traffic with local traffic and development. The designations, which include Special Transportation Areas (STAs), Commercial Centers, and Urban Business Areas (UBAs), have specific objectives for access management, automobiles, pedestrian and bicycle accommodation, transit amenities, and development.

The STA designation is a tool developed and supported by the Oregon Transportation Commission (OTC) designed to make a downtown district function well when the state highway is also the community's main street. For example, an STA may have special features that result in lower speeds, narrower lane widths and wider sidewalks on the state highway. In Lincoln County, the cities of Lincoln City, Depoe Bay, Waldport, and Yachats have STAs. An STA designation generally is not appropriate for rural areas. Some STA designations, such as those on Statewide Highway Freight Routes, require a detailed management plan (as described in OHP Action 1B.3). No Commercial Center or Urban Business Area exists in Lincoln County, although Seal Rock and Lincoln Beach could be considered for UBA designation.

6.1.3 Expressway Classification

No state highway in Lincoln County is classified as an expressway. OR 18 is currently classified as an expressway outside the county from the Little Rogue River Bridge to its terminus with OR 99W northeast of Dayton. ODOT has previously identified as a *potential* expressway the section of OR 18 from Grande Ronde to US 101, which serves the communities of Neotsu, Otis, and Rose Lodge in Lincoln County and through traffic from the Willamette Valley to the Oregon Coast. An expressway classification means the highway is to function as a continuous safe, efficient, high-speed, and high-volume route..

Implementation of an expressway may result in changes to access management and local circulation. The classification of OR 18 as an expressway by the OTC would take place in consultation with local government.

6.1.4 Maintenance/Preservation/Operations

There are several locations on state and county facilities where flooding or landslide issues exist. The TSP does not recommend specific maintenance, preservation, and operations projects, but leaves these to the state and county staff to identify and implement on an as-needed basis. However, if a roadway is recommended for other roadway improvements, it may be beneficial to include improvements for maintenance needs at that time. Installation of warning signs on curves, guardrail, restriping, and widened shoulders and additional speed and DUII enforcement may contribute to fewer accidents at locations with a history of accidents on state and county roads.

6.1.5 Functional Classifications

No change to the functional classifications (see Figure 1-3) of the state highways and roads in Lincoln County is recommended. The proper classification of each roadway in Lincoln County is important to help determine the appropriate traffic control, design standards, pedestrian and bicycle facilities, and access to adjacent properties for a roadway segment.

The surrounding roadway network, access, speed, and volume shall be considered when determining functional classifications. The following shall be the functional classification definitions for Lincoln County:

- **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. Minimum average daily traffic (ADT) volume is 1,000.
- **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. Minimum ADT volume is 300-1000.
- **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 compared with other roadway classifications. Minimum ADT volume is 0-300.

The County's roadway network includes collectors and locals. County roads that carry relatively high bicycle and vehicle volumes shall be classified as collectors. County roads with low bicycle and vehicle volumes should be classified as local facilities, with a lower design standard.

The County intends to make jurisdictional transfers of county roads that are within city limits.

6.1.6 Parking Improvements

No specific parking improvements are recommended in unincorporated communities of Lincoln County. However, future development of properties shall comply with off-street parking provisions of the Lincoln County Development Code (Section 1.1415). The code says, "At the time a structure is erected or enlarged or the use of an existing structure is changed, off street parking spaces, loading areas and access thereto shall be provided as set forth in this section unless greater requirements are established. If such facilities have been provided in connection with an existing use, they shall not be reduced below the requirements of this section. "

6.1.7 Emergency, Evacuation, and Lifeline Routes

Lincoln County shall continue to work with ODOT and cities to ensure that all identified emergency, evacuation, and lifeline routes are adequately maintained and identified for use by emergency services personnel, county residents, and visitors. No additional roadway projects other than sign maintenance have been identified specific to improving roadways for emergency, evacuation, and lifeline conditions.

6.1.8 Facility Improvements

Chapter 5 includes a description of proposed roadway improvements, as shown on Figure 5-1. Roadway safety and capacity projects are proposed at:

- US 101 Siletz River SPIS Segment (MP 119.91 to 120.09)
- US 101 Immonen Road (MP 121.09)
- US 101 South Yachats Segment (MP 165.48 to 167.61)
- US 101 Yachats River Road (MP 164.46 to 164.64)
- OR 229 North Siletz Segment (MP -0.21 to 23.48)
- OR 229 Drift Creek Road (MP 0.99)
- OR 229 Kosydar SPIS Segment (MP 19.91 to 20.09)
- OR 34 East Waldport Segment (MP 1.62 to 14.50)
- OR 18 Salmon River Segment (MP -0.22 to 10.26)
- OR 18 Otis SPIS Segment (MP 1.41 to 1.59)
- OR 18 Bear Creek Road (MP 4.82)
- OR 18 Slick Rock Creek Road (MP 5.42)
- OR 18 Rose Lodge SPIS Segment (MP 5.92 to 6.09)
- US 101 & Drift Creek Road (MP 119.10)
- US 101 & Salishan Drive (MP 121.44)
- US 101 & Gleneden Beach Road (MP 121.66)
- OR 18 and Old Scenic Highway 101 (MP 1.31)
- OR 18 and North Bank Road (MP 5.30)

Facility improvements shall be consistent with the mobility standards and policies of the Highway Design Manual, and will be designed to enhance roadway safety for travelers in Lincoln County. State and County facilities that currently do not meet roadway design standards should be upgraded as feasible and as budget priorities allow. For example, some sections of OR 229 from US 101 to Siletz, and OR 34 east to Tidewater generally lack shoulders of standard width.

6.1.9 Planning Studies

There are two planning studies for proposed projects that are included as planned improvements in this TSP. The following planning studies should be conducted by ODOT within the next 5 years:

US 20 and Business 20 (West) and OR 229 Intersection Refinement Plan: The intersections of Business 20 (west) and OR 229 with US 20, with pending capacity problems, needs a refinement plan to study modifying the intersection and identifying a preferred alternative. The project would study realignment of the many intersections and determine whether a traffic signal or other traffic control measures are appropriate. The objective would be to identify a preferred alternative that improves intersection operations and safety. The Business 20 (west) and OR 229 intersection operations are worse than the OHP mobility standard under both the 2005 Existing and 2027 No-Build scenarios. Alternative improvements to this intersection are included in the City of Toledo TSP. The US 20 Toledo segment (MP 1.73 to 5.42, 5.61 to 9.38) includes 7.5 miles of the highway and a short section within the urban growth boundary of Toledo. A total of 122 accidents, including five fatalities, occurred on this segment during the 5-year study period (2001-2005). Improvements to this segment of US 20 should be considered as part of the proposed Refinement Plan for the US 20 intersection with Business 20 (West) and OR 229.

US 101 and OR 18 Congestion Study: This study would examine traffic flow improvements north of Lincoln City on US 101 and Oregon 18 during times of high congestion. The purposes of the study would be to model the current situation; forecast the future operating conditions; and propose specific improvements along US 101/OR 18 to relieve congestion, meet the design manual mobility standard, and improve safety.

There are two locations in the county where additional studies and County actions (consideration of plan amendments) are needed before projects can be included in this TSP as a “planned” improvement for design and construction:

Siletz-Moolack Connector Study. OR 229 between Siletz and US 101 is presently a narrow, curvy roadway with a Safety Prioritization Index System (SPIS) site at MP 20 and a crash rate above the statewide average for the first 20 miles. However, average daily traffic is relatively low. To reach jobs in Lincoln City and Newport, residents of Siletz must use OR 229. A new and shorter route providing Siletz with access to US 101 has been proposed for study from OR 229 approximately 2 miles south of Siletz and following 6.75 miles of existing logging roads west to the vicinity of Moolack Shores at US 101. The route would cross lands zoned Timber Conservation. The study would evaluate the feasibility of the project, address permitting and environmental issues, and analyze the benefits/costs of the project versus improvements to OR 229 north of Siletz. Because of the need for additional evaluation, including exception to Statewide Planning Goal 4, the project is not included as a planned improvement in the TSP at this time.

US 101 (Lincoln City SCL to Lancer Street) Widening Study. The project would study permitting and construction of new northbound and southbound travel lanes between MP 118.70 to MP 123.49 including intersections with Immonen Road, Salishan Drive, and Gleneden Beach Road, to create a consistent four-lane highway to meet the design manual mobility standard. Because of issues with the associated protected resources (particularly the Siletz Bay National Wildlife Refuge), exceptions to Statewide Planning Goals 16 and 17 and the County’s Comprehensive Plan would be needed to include the highway widening in the TSP as a planned improvement. Along the approximately 2.6-mile section between Drift Creek Road and Gleneden Beach Road, US 101 currently has 0.4 miles of 4-lane road in the northbound direction and 0.7 miles in the southbound direction. This leaves approximately 2.2 miles to widen in the northbound direction and 1.9 miles to widen in the southbound direction.

6.1.10 Standards and Policies

Policies related to the interface between county and city roads within urban growth boundaries require particular attention. Toledo is the only city within Lincoln County to have an Urban Growth Management Agreement (UGMA) with Lincoln County. A UGMA requires that the city and county coordinate with each other regarding major transportation improvement projects, county road vacations, extensions of city services and annexations, which is the current practice with the Toledo UGB. The UGMA can also recommend that a city and the county consider developing a common set of road, street and storm drainage standards to be used in the mutual interest area. 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. Nevertheless, the County shall consider additional UGMAs with Waldport, Newport, and Lincoln City, because residential,

commercial, and industrial development within urban growth boundaries can affect the transportation infrastructure outside urban growth boundaries.

Regarding potential widening of US 101 between Lincoln Beach and Lincoln City, the County would consider this issue (specifically related to Statewide Planning Goals exceptions) either at the next comprehensive plan update, or subsequent to ODOT providing a more developed concept of the project that documents needed land use approvals. Of relevance also will be potential project impacts to the Siletz Bay National Wildlife Refuge. In the interim, County land use decisions should preserve the opportunity to widen this segment of Highway 101 in the future. Additionally, the County land use decisions should preserve the opportunity to develop the planned improvements of this TSP.

The Lincoln County Comprehensive Plan contains goals and policies to improve air quality, encourage energy conserving transportation modes, and to conserve energy in transportation. Because gasoline and diesel engines powering vehicles in the county are a major source of carbon dioxide emissions, a gas contributing to global warming, Lincoln County needs to renew efforts implementing these goals and policies. The Governor's Advisory Group on Global Warming has issued the report *Oregon Strategy for Greenhouse Gas Reductions* (State of Oregon, December 2004) that includes 15 transportation actions to reduce greenhouse gases.

Mobility design standards for Lincoln County roads are the volume-to-capacity ratios listed in the ODOT Design Manual and as shown in Table 5-3 of this TSP; proposed improvements in Chapter 5 are consistent with those standards.

Roadway design standards were not developed for state facilities. Applicable standards for state roads are provided in the ODOT Design Manual. Roadway design standards were not developed for each functional classification (arterial, collector, local) for county facilities. Rather, the County prefers to maintain a flexible design standard, as set forth in Chapter 1 of the Lincoln County Code; Section 1.0145 (6) (c) requires street designs to comply with "standards set forth in the American Association of State Highway and Transportation Officials (AASHTO) manual or other acceptable design principles and construction specifications consistent with generally accepted engineering practices."

Chapter 6 of the Lincoln County Code contains the Road Construction Standards. The construction specifications are the same as those adopted by ODOT. Two provisions relating to expansions of the county road system are Section 6.380, which governs construction and location details for local access roads within a Special Road District, and Section 6.405 and 6.410 which address new county roads. Section 6.405 provides that "public roads less than fifty feet in width may be accepted into the county road system if the following standards are met:

- (1) The traveled portion of the road must be at least 28 feet;
- (2) Culverts shall be installed in all driveways and cross the road right-of-way if necessary for drainage;
- (3) Roads less than fifty feet in width may be no longer than 1,000 feet in length; and

- (4) Roads less than fifty feet in width shall have no vertical or horizontal curvature in excess of ten degrees.”

The Lincoln County Comprehensive Plan and Code includes the following policies:

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.

Lincoln County Code section 1.3230 includes general requirements and minimum standards of design and development for subdivisions, partitions and replats; several subsections relate streets and roadways:

(2) Relation to Adjoining Street System:

- (a) A subdivision or partition shall provide for the continuation of existing and projected streets and roads. If, in the opinion of the Division or the Commission, topographic or other site conditions make such continuation or conformity impractical, exceptions may be made.
- (b) When a tract is divided into lots or parcels of a size which could allow for further re-division under current zoning, the Planning Division or Commission may require an arrangement of lots and streets such as to permit a later redivision in conformance with the street requirements and other requirements contained in this chapter.

(3) Access:

A subdivision, partition or replat shall provide each lot or parcel with not less than 25 feet of frontage on a public or private road or street, except that where necessitated by adverse sight distances or other factors, greater frontage may be required.

(4) Private Streets:

- (a) No street or road which connects existing public streets or which would serve as a collector from existing public or private streets shall be approved as a private street.

- (b) The establishment of a private street shall not be allowed if it will deny the public access to public areas such as beaches or parks.
- (c) No road or street shall be approved as a private road in a case where such a road or street presently is or will in the future be needed to provide access to development on adjacent properties or to serve as a collector for other subdivisions or partitions in the area.
- (d) All private streets or roads established for the purpose of subdividing, partitioning or replatting land shall be surveyed and monumented.
- (e) Right-of-way widths and improvements on private roads serving two or three parcels shall be the same as those for public roads providing access to similar developments. Private roads serving only one parcel shall be exempt from standards for improvements.

(5) Road Right-of-Way Requirements:

<u>(a) Type of Road</u>	<u>Right-of-Way Width</u>
Arterials and collectors	60 to 80 feet
Local roads and streets	50 feet
All other roads	50 feet

- (b) Where topographical requirements necessitate either cuts or fills for the proper grading of roads, additional right-of-way or slope easements may be required.

(6) Street Design and Improvements:

- (a) All plans and specifications for street and road improvements shall be prepared by an engineer licensed in the State of Oregon.
- (b) The layout of streets shall give suitable recognition to surrounding topographical conditions in accordance with the purpose of this chapter.
- (c) Street improvements, street grades, and centerline radii on curves shall meet standards set forth in the American Association of State Highway and Transportation Officials (AASHTO) manual or other acceptable design principles and construction specifications consistent with generally accepted engineering practices.
- (d) All bridges shall have a 30 year minimum life expectancy and shall be constructed to load limit standards approved by the County Director of Public Works.
- (e) All roads proposed to be developed within a city's urban growth boundary shall be developed to the standards of the city where such standards require greater levels of improvements than the standards contained herein.

(7) Street Intersections:

- (a) Streets shall intersect one another at an angle as near to a right angle as is practical considering the topography of the area and previous adjacent layout.

- (b) Intersections shall be designed so that no danger to the traveling public is created as a result of staggered intersections; in no case shall intersections be offset less than 100 feet.

(8) Cul-de-Sacs and Turn-a-Rounds:

- (a) In general, dead-end (cul-de-sac) streets in partitions or subdivisions with an average lot size of under one acre shall not exceed 400 feet in length.
- (b) Approved turn-a-rounds shall be provided on all dead-end streets.

(9) Utility Easements:

Where alleys are not provided, easements of not less than six feet in width may be required on each side of the rear line or side line for necessary utility lines, wires, conduits, storm and sanitary sewers, gas and water. Easements of the same or greater widths may be required along boundary lines or across lots where necessary for the extension of utility lines, waterways, and walkways and to provide necessary drainage ways or channels.

(10) Public Access Ways:

When necessary for public convenience and safety, the Planning Commission may require the land divider to dedicate to the public access ways 10 to 20 feet in width to connect to cul-de-sacs, to pass through oddly shaped or unusually long blocks, to provide for networks of public paths according to adopted plans or to provide access to schools, parks, beaches or other public areas, of such design and location as reasonably required to facilitate public use.

6.2 Bicycle and Pedestrian Plan

The Bicycle and Pedestrian Plan identifies facility improvements that will contribute to a safe and well-connected bicycle and pedestrian system. This, in turn, will promote bicycling and walking as a viable transportation mode. Development of Lincoln County's bicycle and pedestrian facilities shall be consistent with the 1995 Oregon Bicycle/Pedestrian Plan. Much of Lincoln County is rural, and few exclusive bicycle or pedestrian facilities exist outside of city limits. Bicycle and pedestrian facilities within Lincoln County are mainly provided by shared shoulders, designated by a painted line on pavement, on state highways and city and county roads (see Figure 1-7). For example, rural residents on the ocean side of US 101 have the choice of using the beach or the shoulder of US 101 to access neighboring properties by foot or bike. 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. Sidewalks built to ADA standards should be provided in areas of high population density and vehicular traffic.

Providing a connected network of bicycle/pedestrian facilities in Lincoln County is important to:

- Serve shorter trips from neighborhoods to area recreational and activity centers, such as schools, churches, beaches, and neighborhood commercial uses.
- Provide access to public transit.

- Meet residents' and visitors' recreational needs.
- Provide circulation within town and community centers and more densely populated areas of the county.

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. The 1992 Bicycle Plan (included by reference as part of this TSP) has a stated purpose 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 support the use of alternative modes of travel including bicycles.

While the principal emphasis of the 1992 Bicycle Plan is on County roads (not those maintained by the State, USFS, or incorporated cities), the document provides an overview of designated bicycle routes in the county. Many of the projects identified in the 1992 plan have been implemented (see Table 1-11). 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 of the 1992 Plan 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.

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, 6-foot shoulders are preferred, but narrower shoulders of approximately 3 feet are common and 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.

In addition, to meet with the standards stated in the Oregon Bicycle and Pedestrian Plan, bicycle parking should be installed at significant bicycle generators, such as schools and parks in rural areas.

The county's scenic character promotes bicycle and pedestrian activity around natural features (such as beach accesses and hiking trailheads) and other significant landmarks (viewpoints and historical markers). However, because of the distances between cities and rural communities, there is relatively little bicycle or pedestrian activity between communi-

ties. Therefore, the Bicycle and Pedestrian System Plan focuses on improving connections within communities and enhancing pedestrian and bicycle access to the numerous recreational features of Lincoln County. Where shoulder widths on State and County facilities are deficient, they should be widened where feasible.

6.2.1 Facility Improvements

Proposed improvement projects are described in Chapter 5 and are as follows:

- Yachats to Cape Perpetua Trail
- Corvallis-to-the-Sea Trail
- General Shoulder Widening
- Bicycle/Pedestrian Safety Signage
- US 101/OR 18 Bike Route Directional Signage
- Oregon Coast Trail Links
- Lincoln Beach and Gleneden Beach Crossings
- North Bank Road Shoulder Widening
- OR 229 and Logsden Road Sidewalks and Bike Lanes in Siletz

In general, signage is recommended along state highways and county roads with significant bicycle and pedestrian traffic and where sight distance is limited.

6.2.2 Standards and Policies

Overall, policies facilitating bicycle and pedestrian safety, connectivity and mobility have been included in the Comprehensive Plan. Lincoln County encourages biking and walking as a means of transportation by addressing the following objectives:

- **Connectivity.** The County shall work to develop a connected network of bicycle and pedestrian facilities. Connected networks are important to provide continuity between communities and to improve safety.
- **Safety.** The County shall work to provide a secure biking and walking environment. For residents to use the bicycle/pedestrian system, it must be perceived as safe.
- **Design.** The County shall ensure bicycle/pedestrian-oriented design by adopting policies and development standards that integrate human scale, facilities, access, and circulation into the design of residential, commercial, and industrial projects.

The 1992 Lincoln County Bicycle Plan includes goals and objectives, and recommendations for county ordinances and standards. A paved shoulder width of 2 to 3 feet to accommodate bicycles and pedestrians is the minimum in most cases of roadway overlays, although 4 to 6 feet is preferred. As is consistent with the Bicycle Plan (page 25), the County minimum standard for shoulders on new roads or extensive reconstruction is 4 feet with 6 feet preferred. In addition, bikeway designs should include paved driveways and feathered paved shoulder construction, and avoid two-way bike lanes (on one side of road), as cited in the Oregon Bicycle Plan.

Lincoln County cooperates with city, tribal, port, state, and federal agencies, citizen advisory committees, and advocacy groups in developing and maintaining bicycle and pedestrian trails, as well as facilities such as benches, shelters, bike racks, and lockable

storage. Lincoln County supports improvements to bicycle and pedestrian facilities that provide improved safety, recreation, mobility, connectivity, and healthful activities. Projects conducted by the County Public Works Department include improvements to bicycle and pedestrian facilities whenever practicable and appropriate.

Lincoln County Code Section 6.642 addresses allocation of costs of sidewalk or curb construction and other improvements. The code says, “Notwithstanding any provision to the contrary in LCC 6.605 to 6.660, the cost of construction of sidewalks under those sections shall be assessed in proportion to the front footage of the land or otherwise, as provided in those sections, to the owners of land abutting on the side of the street or road on which the sidewalks are constructed and fronting on such sidewalks. The cost of construction of all other improvements under those sections shall be assessed, in the manner provided in those sections, to the owners of land benefited by the improvement.”

Lincoln County Code Section 1.3230 (10) has provisions for public access ways: “When necessary for public convenience and safety, the Planning Commission may require the land divider to dedicate to the public access ways 10 to 20 feet in width to connect to cul-de-sacs, to pass through oddly shaped or unusually long blocks, to provide for networks of public paths according to adopted plans or to provide access to schools, parks, beaches or other public areas, of such design and location as reasonably required to facilitate public use.”

6.3 Public Transit Plan

Development of Lincoln County’s transit system shall be consistent with the 1997 Oregon Public Transportation Plan and the 2000 Intercity Passenger Policy. Improvements to the public transportation system will offer car-less citizens, tourists, commuters, children, the elderly, the ill, the disabled, and others more options for transportation and better service in Lincoln County.

Lincoln County Transit is “geared to enabling the public with an inexpensive and convenient way of getting around in Lincoln County.” The transit agency shall provide transportation to every major city within the county, including transportation for cyclists, disabled persons, and senior citizens.

Implementation of transportation demand management (TDM) measures such as carpooling and vanpooling in the county should be explored by Lincoln County Transit, Lincoln County, and ODOT. The Lincoln County TDM Plan (2006), prepared by Cascades West Council of Governments, has information related to future (and existing) transit conditions and needs, carpool/vanpool/shuttle opportunities, and services for the elderly, ill, and disadvantaged.

Lincoln County supports a comprehensive TDM program and expanded transit services to accommodate the transportation needs of Lincoln County residents and tourists. Lincoln County Transit should investigate cooperative ventures with businesses to provide employee shuttle service between Siletz and Chinook Winds Casino in Lincoln City, and tourist shuttle service between Newport motels and the casino.

6.3.1 Facility Improvements

As described in Chapter 5, Lincoln County Transit should improve public transportation facilities and services as follows:

- Extend hours and routes
- Expand service (new routes)
- Develop a Marketing Plan
- Update 10-year Transit Master Plan
- Construct central transit facility
- Update LCT website
- Construct park and ride facilities
- Add pullouts, signage, and amenities
- Improve connections with other public transportation providers
- Study alternatives to reduce Yaquina Bay Bridge traffic demand

6.3.2 Standards and Policies

Lincoln County's Comprehensive Plan and Code support public transit, including ADA standards, and transportation demand management.

6.4 Freight and Intermodal Plan

Objectives of the Freight and Intermodal Plan are to balance the need for movement of goods with other uses of the highway system and to provide linkages to air, rail, maritime, and pipeline systems. US 20 and OR 18 are designated freight routes traversing Lincoln County. The County works with ODOT, cities, and ports to improve roadways and minimize the impacts of local and through freight truck traffic in downtown commercial areas and in residential areas. Roadway design improvements shall accommodate large vehicles (including large recreational vehicles) where they are prevalent. Design of improvements to County roads shall consider potential truck loads and needed turning radii associated with semi-trailers, intermodal transfers, and economic enterprises of Lincoln County, including timber harvesting, boat building, and various manufacturing and processing activities.

The County shall cooperate with the Ports of Newport and Toledo, their respective cities, and ODOT should planning studies by these agencies indicate a need for alternative routes and improvements to accommodate large vehicles. The priorities of projects included in the Lincoln County TSP may shift if potential freight and intermodal solutions involve improvements on County facilities.

Lincoln County shall support the efforts of the Ports of Newport and Toledo to seek funds, through the ConnectOregon program or other sources, to develop their plans to increase marine cargo through their facilities.

Lincoln County shall support track improvements to the Toledo Branch of the Portland & Western Railroad, which could lead to increased rail shipping from the Port of Toledo facilities.

The Newport Municipal Airport Layout Plan (2005) is the planning document for the airport. Lincoln County shall support the airport management's efforts to provide local cargo and passenger service and implement the Layout Plan. Because the Newport runway is capable of supporting full-size jet service, the airport can provide passenger service and be an intermodal transfer point between truck and air freight services.

Projects at the three State airports are included in the Oregon Department of Aviation's State System Plan Update 2005. Lincoln County shall cooperate with the Department as needed to support improvements to the three State airports in the county.

6.4.1 Facility Improvements

Freight and intermodal improvement projects are:

- Mill Site Siding Restoration, Port of Toledo and Confederated Tribes of Siletz Indians
- Airport Hangar, Taxiway, and Terminal Improvements, Newport Municipal Airport, City of Newport (see details below)
- Terminal Access, Port of Newport
- Intermodal/Industrial Center, Port of Toledo
- Toledo Branch Upgrade, Portland & Western Railroad

6.4.2 Standards and Policies

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 (RPZs) 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.

According to the Lincoln County Code section 1.1940, airports are an important community asset and investment, they must be protected from encroaching incompatible uses which may subsequently have a deleterious effect on the expansion or future operation of the facility. Thus, development guidelines have been prepared in order to achieve the potential of all airports. The operation of airports shall not be placed in jeopardy or be limited by future standards that would be enacted to provide for the safety and health of structures and inhabitants when they should initially have been limited or prevented from locating in proximity to the airport facility.

The County shall enforce zoning restrictions in the vicinity of all the county's airports to ensure safe operations. At the present time there are four public airport or landing facilities in the county which warrant the provision of some means of protection. They are located at Siletz Bay, Toledo, Newport, and Wakonda Beach. Areas of concern around each of these

facilities are delineated on County Zoning Maps. Private landing strips and heliports are not delineated but may still be subject to applicable restrictions.

The development guidelines of Lincoln County Code section 1.1940 are applicable to those areas in close proximity to airports within the county, and particularly in approach pattern areas. According to subsection (3) (a), "...no structure shall be erected, altered, or maintained, and no tree shall be allowed to grow to a height in excess of the applicable height herein established. Such height limitations shall be established in accordance with regulations of the Federal Aviation Administration relating to objects affecting navigable airspace, 14 CFR Part 77." Other provisions address use restrictions, marking and lighting, future uses, exceptions, existing uses, variances, and land uses within airport areas, specifically approach zones, clear zones, and moderate and substantial noise impact zones.

Chapter 7
Transportation Improvement Program and Financing Plan

Transportation Improvement Program and Financing Plan

This chapter provides timing, duration, and cost estimates for the projects of the preferred alternative, an evaluation of the projects' potential environmental impacts, and an overview of existing and potential federal, state, and local funding sources to implement prioritized projects of the Lincoln County TSP. A brief qualitative implementation summary of the potential local funding sources is also provided at the end of this chapter.

7.1 Project Costs and Development

The preferred alternative of the Lincoln County TSP includes projects to improve roadway safety and capacity, bicycle/pedestrian facilities, transit and travel demand management, and freight and intermodal facilities. The TSP contains provisions for transportation financing programs (OAR 660-12-040) for county TSPs (not including metropolitan areas) to include:

- (a) A list of planned transportation facilities and major improvements
- (b) A general estimate of the timing for planned transportation facilities and major improvements
- (c) A determination of rough cost estimates for the transportation facilities and major improvements identified in the TSP

To provide guidance for scheduling and financing the projects, each project has been prioritized by the Project Management Team (PMT) for the Lincoln County TSP. The list of prioritized projects was presented for public comment at an Open House and on the County's website, prior to presentation to the County Commission as part of the final TSP. Because not all of the projects are likely to be funded by existing revenue sources, each project is given a priority (1 to 4). The priorities are based on the measures of effectiveness (evaluation criteria) and input from stakeholders, including the PMT. Projects have been prioritized in four categories:

1. Critical Need (existing deficient or dangerous condition)
2. High (impending critical need or high safety concern)
3. Medium (improvement needed soon to meet standard/policy)
4. Low (nice to have improvement eventually as system enhancement)

More information on transportation project need is available in Section 5.3.

Timing of project implementation has been categorized short-term (0-5 years), medium-term (5-10 years), and long-term (11-20 years). Duration of the projects is estimated in months

and includes engineering design and construction. An order-of-magnitude cost was calculated for most projects, using planning-level assumptions, for engineering and construction but not environmental studies/permitting.

The list of projects does not represent a financially constrained plan. Because the proposed future projects on the state highway system do not have funding at present, this TSP does not assume construction will occur within the 20-year planning period. State, County, and Reservation projects currently identified for funding during approximately the next 5-years are listed in Chapter 3.

7.1.1 Safety Projects

Table 7-1 presents cost and project development information for roadway safety improvements along state highways and county roads in Lincoln County. The projects are numbered and shown in Appendix O. The estimated costs, which total approximately \$14 million for safety improvements, are shown in 2007 dollars.

TABLE 7-1
Safety Project Costs and Development
Lincoln County TSP

Project Number	Location and Description	Project Timing	Project Duration (mo.) ¹	Estimated Cost ²	Priority (1 to 4)
S1	US 101 Siletz River SPIS Segment (MP 119.91 to 120.09). Problem: SPIS Site, alcohol use, intersection visibility, and possible wet/icy conditions. Solution: Increase law enforcement and improve signage..	Short-term	3	<\$10,000 ³	4
S2	US 101 at Immonen Road (MP 121.09). Problem: Truck traffic from intersecting road. Solution: Improve signage, striping adjustments (refuge/merge lane), vegetation management, add flashing yellow caution beacon	Short-term	12	\$350,000	2
S3	US 101 South Yachats Segment (MP 165.48 to 167.61). Problem: Intersection approaches, poor visibility around curves, heavy vegetation overgrowth, numerous access points, drivers ignoring recommended curve speeds. Solution: Vegetation management, improve signage, install guardrail.from MP 165.87 to 165.93 (0.06 miles), and install intersection warning signs at Cummins Park Road.	Short-term	12	\$800,000	2
S4	US 101 at Yachats River Road (MP 164.46 to 164.64). Problem: Intersection at extreme skew, which limits visibility and allows high speed entry. Solution: Lessen skew of intersection with US 101 to improve sight distance and turning movement safety. Redirect traffic turning off of US 101 to the intersection of Lori Lane instead of Yachats River Road.	Short-term	12	\$110,000	2

TABLE 7-1
 Safety Project Costs and Development
 Lincoln County TSP

Project Number	Location and Description	Project Timing	Project Duration (mo.) ¹	Estimated Cost ²	Priority (1 to 4)
S5	OR 229 North Siletz Segment (MP -0.21 to 23.48). Problem: Poor visibility because of curves; guardrail lacking; poor weather conditions, access points on curves. Solution: Improve signage, manage vegetation, construct shoulders intermittently (assume 2 miles total), and install guardrail intermittently (assume 2.6 miles).	Short-term	18	\$1,920,000	3
S6	OR 229 at Drift Creek Road (MP 0.99). Problem: Gravel road, located on a curve, near several access points. Solution: Improve signage, manage access	Short-term	3	<\$10,000 ⁴	4
S7	OR 229 Kosydar SPIS Segment (MP 19.91 to 20.09). Problem: SPIS site, multiple access points around several sharp curves on flat geography. Solutions: Option A: Realign highway to eliminate curves; 0.18 mi.. Option B: Widen roadway 14' to meet current lane width and shoulder width standards; 0.18 mi. Option C: Manage vegetation, place post reflectors, improve signage	Short-term		Option A: 12 Option A: \$380,000 Option B: 12 Option B: \$140,000 Option C: 3 Option C: \$30,000	1
S8	OR 34 East Waldport Segment (MP 1.62 to 14.50). Problem: Many rear-end crashes on OR 34; poor weather conditions; poor roadway conditions (pavement, striping, shoulders) in some areas, poor visibility. Solution: Repave, add shoulder width, restripe, improve signage, add left turn pockets, and consolidate access.	Short-term	36	\$9,280,000 ⁴	4
S9	OR 18 Salmon River Segment (MP -0.22 to 10.26). Problem: Numerous access points on curves; road geometry (tight curves); wet/icy conditions Solution: Improve signage and consolidate access.	Short-term	3	<\$10,000 ⁴	4
S10	OR 18 Otis SPIS Segment (MP 1.41 to 1.59). Problem: SPIS site, wet/icy conditions, sharp curve with multiple access points, and school bus stop. Solution: Improve signage, consolidate access, and improve illumination.	Short-term	5	\$150,000 ⁴	1
S11	OR 18 at Bear Creek Road (MP 4.82). Problem: Steep downward vertical grade on side street. Solution: Manage vegetation to improve sight distance, construct an eastbound right turn lane and westbound left turn lane.	Short-term	12	\$370,000	2
S12	OR 18 at Slick Rock Creek Road (MP 5.42). Problem: Located on a curve, north leg of intersection not visible from highway. Solution: Enforce speed, manage vegetation, re-stripe, install flashing yellow caution beacon, install reflective posts along the edge of the roadway.	Short-term	12	\$410,000 ³	2

TABLE 7-1
Safety Project Costs and Development
Lincoln County TSP

Project Number	Location and Description	Project Timing	Project Duration (mo.) ¹	Estimated Cost ²	Priority (1 to 4)
S13	OR 18 Rose Lodge SPIS Segment (MP 5.92 to 6.09) (Near North Bank Road). Problem: SPIS site, minimal visibility because of steep slopes and sharp curve; south access point too close to curve Solution: New striping to show no passing zone, improve signage, manage vegetation, relocate private access.	Short-term	6	\$140,000	1

¹ Duration is the approximate time needed for engineering design and construction and does not include time for any necessary permitting.

² Project estimated as a single cost. Estimated costs do not include any right of way purchase or environmental studies/permitting that may be necessary for a project.

³ Cost for increased law enforcement is not included in estimated cost.

⁴ Access control needs further study and definition and therefore is not included in estimated cost.

7.1.2 Capacity Projects

Table 7-2 presents cost and project development information for intersection and capacity improvements along state highways and county roads in Lincoln County. The projects are numbered and shown in Appendix O. The estimated costs, which total approximately \$31 million for capacity improvements, are shown in 2007 dollars.

The intersection and widening projects recommended along US 101 would logically combine to become a more comprehensive project of 4.75 miles from Lincoln City's south city limits (SCL) to just south of Lancer Street/Seagrove Drive. US 101 would be widened to a four-lane section with intersection improvements at Drift Creek Road, Salishan Drive, Gleneden Beach Road (North), and Lancer Street. This US 101 Widening project is proposed to be broken into three sections for phased implementation.

The north limit of the US 101 Widening project is recommended to be Lincoln City's south city limits (SCL) because of its proximity to Drift Creek Road (0.4 miles) and ODOT's planned project to widen US 101 through Lincoln City. The extension would thus prevent a bottleneck from being constructed as drivers enter/leave Lincoln City.

The Spencer Creek Bridge Project Unit 2, which involves realignment of US 101 eastward 50 feet and a major retaining wall, is estimated by the 2006 FEIS to have a total cost of \$13.7 million. The project currently is unfunded.

Construction of additional capacity projects may be proposed after completion of planning studies for the Siletz-Moolack Connector, US 101 Widening (Lincoln City SCL to Lancer Street), US 20 and Business 20 (West) and OR 229 Intersection, and US 101/OR 18 Congestion.

TABLE 7-2
 Intersection and Capacity Project Costs and Development
 Lincoln County TSP

Project Number	Location and Description	Project Timing ¹	Project Duration (mo.) ³	Estimated Cost ⁴	Priority (1 to 4)
C1	<p>OR 18 at Old Scenic Highway 101 (MP 1.31). Problem: The Old Scenic Highway operations exceed the OHP mobility standard under the 2027 No-Build scenario.</p> <p>Solution: Re-stripe the east leg (OR 18) to provide a refuge/merge lane. Some roadway widening may be necessary.</p>	2021 Long-term	3	\$30,000	4
C2	<p>OR 18 at North Bank Road (MP 5.30). Problem: The OR 18 operations exceed the OHP mobility standard under the 2027 No-Build scenario</p> <p>Solution: Construct a new westbound right-turn lane (this requires a bridge replacement or widening of Bridge 01211A). The Right-Turn Lane Criterion is met for the westbound right-turn lane in 2005.</p>	2025 Long-term	24	\$3,920,000	3
C3 ⁵	<p>US 101 Widening (Lincoln City SCL to Lancer St./Seagrove Dr) (MP 118.70 to 123.49). Problem: US 101 operations exceed the OHP mobility standard under the 2027 No-Build scenario at Drift Creek Road, Immonen Road, Salishan Drive, Gleneden Beach Road, and Lancer Street/Seagrove Drive intersections.</p> <p>Solution: Construct additional lane in each direction with intersection improvements. Separate into three sections for possible phasing:</p> <p>Section 1. Lincoln City SCL to Siletz River Highway (MP 118.70 to 120.02) This section of the project would re-stripe a refuge/merge lane on the south leg of US 101 at Drift Creek Road; construct new northbound and southbound travel lanes from the south city limits of Lincoln City to the intersection of US 101 and OR 229. This section crosses the Drift Creek Bridge. This bridge is not currently scheduled to be replaced or widened. The proposed project would require that the bridge be replaced/widened and built to accommodate two travel lanes in each direction. This is approximately 1.1 miles of widening (approximately 250' of which are bridge).</p>	2015 Medium-term	24	\$11,530,000	3

TABLE 7-2
Intersection and Capacity Project Costs and Development
Lincoln County TSP

Project Number	Location and Description	Project Timing ¹	Project Duration (mo.) ³	Estimated Cost ⁴	Priority (1 to 4)
	Section 2. Siletz River Highway to Gleneden Beach Road (MP 120.02 to 121.68) This section of the project would construct a northbound left-turn lane, and install a new traffic signal at Gleneden Beach Road and replace the signal at Salishan Drive, and new northbound and southbound travel lanes from just south of Gleneden Beach Loop to the intersection of US 101 and OR 229. This section crosses the Millport Slough and Siletz Bay Bridges. The Millport Slough Bridge is scheduled to be replaced in 2007 with no additional lanes and the Siletz Bay Bridge currently has the width to support two additional travel lanes. The proposed project would require that Millport Slough Bridge be widened. This is approximately 1.6 miles of widening (approximately 250' of which are bridge). Consider incorporating safety improvements (S2) at Immonen Road.	2015 Medium-term	24	\$10,410,000	3
	Section 3. Gleneden Beach Road to Lancer Street (MP 121.68 to 123.49) This section of the project would construct new northbound and southbound travel lanes from just south of Lancer Street/Seagrove Drive to just south of Gleneden Beach Loop. This is approximately 1.8 miles of widening.	2015 Medium-term	24	\$5,170,000	3

¹ Year listed is based on when OHP mobility standard would be exceeded by the future V/C ratio.

² PSW means the Preliminary Signal Warrant is met in the year indicated.

³ Duration is the approximate time needed for engineering design and construction (or study) and does not include time for any necessary permitting.

⁴ Project estimated as a single cost. Estimated costs do not include any right of way purchase or environmental studies/permitting that may be necessary for a project.

⁵ This project is not included as a "planned improvement" of this TSP until further study determines the necessary comprehensive plan amendments and they are approved.

7.1.3 Bicycle/Pedestrian Projects

Bicycle and pedestrian projects, as shown in Table 7-3, are generally estimated to be low cost and perhaps supported by community volunteers. Total costs of bike/pedestrian projects are approximately \$700,000. It is not expected the County would contribute to directly funding these projects, but would address bicycle and pedestrian mobility needs in association with other County roadway and parks improvements as appropriate.

TABLE 7-3
Bicycle/Pedestrian Project Costs and Development
Lincoln County TSP

Project Number	Location and Description	Project Timing	Project Duration (mo.) ¹	Estimated Cost ²	Priority (1 to 4)
BP1	Yachats to Cape Perpetua Trail	Short-term	24	\$10,000	3
BP2	Corvallis-to-the-Sea Trail	Short-term	24	\$10,000	2
BP3	General Shoulder Widening	Medium-term	60	\$100,000	1
BP4	Bicycle/Pedestrian Safety Signage	Short-term	24	\$10,000	1
BP5	US 101/OR 18 Bike Route Directional Signage	Short-term	6	\$10,000	2
BP6	Oregon Coast Trail Links	Medium-term	60	\$10,000	4
BP7	Lincoln Beach Crosswalk to Sentry Market	Medium-term	24	\$250,000	3
BP8	OR 229 and Logsdan Road Sidewalks and Bike Lanes in Siletz	Medium-term	24	\$250,000	3

¹ Duration is the approximate time needed for study, engineering design, and construction and does not include time for any necessary permitting.

² Project estimated as a single cost. Trail projects may involve volunteer labor not included in dollar estimate. Public costs for trails are mostly associated with signage and trailhead parking.

7.1.4 Transit and TDM Projects

Transit and TDM projects, as shown in Table 7-4, are in total are generally estimated to cost approximately \$1 million. The update to the Transit Master Plan and development of a marketing plan are priority 1 projects to be implemented in the short term. All other transit and TDM projects have a priority of 2 or 3 and would be implemented in the next 10 years or as funding becomes available. The Lincoln County Transportation District has its own property tax assessment for improvements, and County General Funds are not typically allocated to transit operations.

TABLE 7-4
 Transit and TDM Project Costs and Development
Lincoln County TSP

Project Number	Location and Description	Project Timing	Project Duration (mo.)¹	Estimated Cost²	Priority (1 to 4)
T1	Extended Hours and Routes	Medium-term	12	\$100,000	2
T2	Expanded Service (new routes)	Medium-term	12	\$250,000	3
T3	Marketing Plan	Short-term	6	\$25,000	1
T4	Updated 10-Year Transit Plan	Short-term	6	\$65,000	1
T5	Construct Central Transit Facility	Long-term	24	\$750,000	3
T6	Update LCT Website	Medium-term	6	\$10,000	2
T7	Park and Ride Facilities	Short-term	12	\$100,000	2
T8	Pullouts, Signage, and Amenities	Medium-term	12	\$100,000	2
T9	Improve Connections with other Public Transportation Providers	Medium-term	6	\$10,000	3
T10	Study Alternatives to Reduce Yaquina Bay Bridge Traffic Demand	Long-term	6	\$50,000	3

¹ Duration is the approximate time needed for study, engineering design, and construction and does not include time for any necessary permitting.

² Project estimated as a single cost.

7.1.5 Freight and Intermodal Projects

Five freight and intermodal projects in Lincoln County, totaling approximately \$14 million, were proposed to the Oregon Transportation Commission (OTC) for funding in 2006 as part of the ConnectOregon Program (Appendix M). Of the projects in Table 7-5, only the Port of Newport Terminal Access was approved by the OTC (July 2006) for \$2,775,200. Project costs and development information for the projects are presented in Appendix M. Prioritization and timing of projects for airports and ports of the county are included, if available, in separate master planning documents for such agencies. It is not expected the County would contribute to directly funding these projects, but would address freight mobility needs in association with other County roadway improvements as appropriate.

TABLE 7-5
Freight and Intermodal Project Costs and Development
Lincoln County TSP

Project Number	Location and Description	Project Timing	Project Duration (mo.) ¹	Estimated Cost ²	Priority (1 to 4)
F1	CTSI/Toledo – Mill Site Siding Restoration	Short-term	12	\$289,800	NA
F2	City of Newport – Airport Hangar	Short-term	6	\$650,000	NA
F3	City of Newport – Airport Passenger Service Terminal	Short-term	12	\$4,212,000	NA
F4	Port of Newport Terminal Access	Short-term	24	\$3,469,000	NA
F5	Port of Toledo – Intermodal/Industrial Center	Short-term	24	\$5,482,000	NA
F6	PNWR - Toledo Branch Upgrade (not 2006 ConnectOregon Appl.) ³	Medium-term	60	\$9,000,000	NA

¹ Duration is the approximate time needed for engineering design and construction and does not include time for any necessary permitting.

² Project estimated as a single cost.

³ Includes facilities only in Lincoln County, not the entire branch.

7.2 Environmental Evaluation

Identified projects were evaluated broadly for potential environmental issues as part of the measures of effectiveness evaluation (see tables in Chapter 5). Several of the projects are small in scale and of maintenance-type activities or minor widenings in the right-of-way that are unlikely to impact environmental resources. This section provides a more detailed but still conceptual-level evaluation of the potential environmental impacts for the major projects (involving construction of additional travel lanes or bridge replacement/widening) of the preferred alternative. No other alignment of US 101 is likely with any project, given the boundaries of the national wildlife refuge and extent of estuarine and freshwater wetlands. Evaluations are based on general knowledge about the project's environment, field investigation (wetlands, biology, cultural/historic), and review of published information. The larger projects, either on new alignments or requiring bridge replacements, will likely require botanical and archaeological surveys, review of species lists, wetland delineations, and the submittal of biological assessments to NMFS, USFWS, or both. Work done already to meet those requirements is included in Appendix R. In cases where roadway drainage provides a ditch wetland, wetland delineation and a mitigation plan may be required.

Environmental elements that were evaluated are consistent with NEPA and ODOT's Environmental Checklist (Attachment to Part 3 of Project Prospectus – see Appendix R). ODOT uses the checklist for an initial assessment of which class of NEPA action applies: Class 1, Environmental Impact Statement (known to likely have significant environmental impact); Class 2, Categorical Exclusion (known to likely have no significant environmental

impact); or Class 3, Environmental Assessment (unknown to likely have significant environmental impact). NEPA applies only to projects involving federal funds.

The evaluation considered environmental constraints resulting from federal regulations. These include provisions of the Federal Endangered Species Act, U.S. Department of Transportation Act Section 4(f) and 6(f), U.S. Clean Water Act Section 404, and Coastal Zone Management Act (Public Law 92-583; COMA).

The federal Coastal Zone Management Act (CZMA) requires state coastal management program review of several categories of federal actions. Direct federal actions, federal licenses and permits, and federal financial assistance are the categories that require consistency review. However, federal financial assistance is difficult to review as a category without a specific project and detailed design and environmental information. The state coastal program has not previously reviewed federal financial assistance provided to ODOT. The coastal program has focused its federal consistency review on projects that require a federal license or permit (e.g. Corps Section 404 permit under the Clean Water Act or Corps Section 10 Permit under the Rivers and Harbors Act). This allows the state to focus on specific projects with adequate design and environmental information. These projects are more likely to have specific and easily identified effects on coastal uses and resources, which is the focus of CZMA review. The review mechanism associated with projects requiring federal licenses or permits is the project sponsor's consistency certification. A consistency certification is a detailed review of the reasonably foreseeable effects of a project against the applicable coastal program requirements (e.g. Statewide Planning Goals; acknowledged local government comprehensive plans and land use regulations; and state agency regulatory authorities). Although some federal lands are excluded from the definition of the state's coastal zone (e.g. wildlife refuges; BLM land; Forest Service land) projects on excluded federal land may still require CZMA review. This occurs in situations where there are reasonably foreseeable effects on coastal uses and resources located on other lands within the coastal zone. This determination is generally made in consultation with the state coastal management program staff based on the specific circumstances of a given project.

Provisions of the Endangered Species Act (Section 7) requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and/or the US Fish and Wildlife Service (USFWS) to ensure that any federal action "is not likely to jeopardize the continued existence" of any endangered or threatened species or result in the degradation of critical habitat. This Section 7 consultation may require a biological assessment (BA). Provisions of the National Historic Preservation Act (Section 106) require projects with federal involvement to "take into account" the effects on historical or archaeological resources and require consultation with the State Historic Preservation Office (SHPO).

7.2.1 Safety Projects

None of the safety projects are anticipated to have potential for significant environmental impacts. Construction activities normally would be required to include erosion control measures to protect streams. Vegetation removal and/or cut-back would be minimal to widen the roadway and improve sight distance. However, vegetation removal would require review of species lists and botanical surveys if listed species are in the area (unlikely for the projects identified). If vegetation removal requires disturbance of the ground surface, such as by digging and grubbing, an archaeological reconnaissance survey would be

required. Vegetation removal also may require Erosion and Sediment Control Plans and Pollution Control Plans, prepared in conformance with the NPDES 1200-CA permit for discharge of stormwater from construction sites.

Safety project sites evaluated for possible environmental impacts were US 101 and Yachats River Road (S4), OR 229 and Kosydar Road (S7), and OR 18 and Bear Creek Road (S11). Projects proposed for segments of OR 229 (S5) and OR 34 (S-8) would involve only minor and intermittent shoulder, guardrail, or turn-pocket improvements with no probable environmental impacts.

S4 - Yachats River Road (MP 164.46 to 164.64): In addition to ORNHIC and StreamNet identified species, the distant Yachats River is also important habitat for cutthroat trout, fall chinook salmon, and Pacific lamprey. This area probably doesn't support nesting habitat for the listed bird species but does provide habitat for diverse bird use near the river mouth. There may be silverspot butterfly use in the vicinity. The fish species are identified in the Yachats River where no project impacts are anticipated. ORNHIC identifies no plant species. The NWI map identifies an estuarine intertidal unconsolidated shore irregularly flooded (E2USP) wetland about 500 feet west of US 101 across from the intersection of Yachats River Road. Potential palustrine forested wetlands are associated with the drainage channel at the bottom of a steep ravine just south of Lori Lane, east of US 101. Oregon SHPO file search, consultation with Lincoln County Historical Society, and field reconnaissance identified no archaeological or historical impacts. No archaeological surveys have been conducted.

S7 - OR 229 Kosydar SPIS Segment (MP 19.91 to 20.09): In addition to ORNHIC and StreamNet identified species, Siletz River is also important habitat for cutthroat trout, spring- and fall-run chinook salmon, Pacific lamprey. There is forested riparian vegetation west of the road along the Siletz River. Habitat within 300 feet of the project may have potential for nesting use. Murrelet nest trees are typically mature conifers with large diameter branches with moss. These types of trees are not uncommon in the road right-of-way due to absence of timber harvest. The NWI map identifies palustrine forested broad-leaved deciduous intermittently flooded (PFO1J) wetlands along the banks of the Siletz River. At this location, the river and associated wetlands are at the base of an approximately 50-foot embankment adjacent to the road. No other wetland areas were immediately adjacent to the road. Oregon SHPO file search, consultation with Lincoln County Historical Society, and field reconnaissance identified no archaeological or historical impacts. No archaeological surveys have been conducted.

S11 - OR 18 and Bear Creek Road: In addition to ORNHIC and StreamNet identified species, Bear Creek is also important habitat for cutthroat trout, chinook salmon and Pacific lamprey. The general area is possible habitat for marbled murrelet and spotted owl. A field visit indicated forested riparian vegetation and potential emergent wetlands are present on a high terrace north of the road within 100 feet. Oregon SHPO file search, consultation with Lincoln County Historical Society, and field reconnaissance identified no archaeological or historical impacts. No archaeological surveys have been conducted.

7.2.2 Capacity Projects

With the exception of improvements in the area of the Siletz Bay National Wildlife Refuge, none of the capacity projects are anticipated to have potential for significant environmental impacts. Section 4(f) of the Transportation Act requires consideration of prudent and

feasible alternatives that avoid impacts to wildlife refuges, public parks and recreation areas, and some historic properties. Construction activities normally would be required to include erosion control measures to protect streams. Vegetation removal would be minimal to widen the roadway and improve sight distance, which is not anticipated to involve protected species. Construction to realign the intersection of US 20 and Business 20 would likely have temporary economic impacts to businesses in the area.

Capacity project sites evaluated for possible environmental impacts were US 101 Widening from Lincoln City South City Limits to Lancer Street/Seagrove Drive (C3, Sections 1, 2, and 3; inclusive of intersections at US 101 and Drift Creek Road, US 101 and Salishan Drive, and US 101 and Gleneden Beach Road),, and OR 18 and North Bank Road (C2). In addition, environmental impacts were evaluated in the project vicinity of the US 20/Bus 20/OR 229 Intersection Refinement Study.

C2 - OR 18 and North Bank Road: In addition to species identified by the Oregon Natural Heritage Information Center (ORNHIC) and StreamNet, Slick Rock Creek is also important habitat for cutthroat trout, steelhead, and Chinook salmon. The general area is possible habitat for marbled murrelet and spotted owl. Oregon State Historic Preservation Office (SHPO) file review, consultation with Lincoln County Historical Society, and field reconnaissance identified no apparent impacts. No archaeological or historic survey has been conducted.

C3, Section 1 US 101 Widening – Lincoln City SCL to Siletz River Highway (including US 101 and Drift Creek Road): In addition to ORNHIC and StreamNet identified species, Drift Creek is also important habitat for cutthroat trout, chinook salmon, and Pacific lamprey. Drift Creek is a very important tidal area for rearing area for juvenile salmonids. ODFW is doing lots of restoration to improve tidal exchange. While the bald eagle may be the only ESA-listed species recorded within 2 miles this is also likely historical murrelet habitat. Any mature trees being removed or where loud noise would occur within the 1 April to September 15 murrelet breeding season within 300 feet of loud project activities would require some level of ESA consultation. Eagles are currently listed under the ESA and those sites within 2 miles are probably nest sites. Loud noise within 0.25 miles and visual activity within 0.5 miles may rise to the level of harassment and will likely require some level of ESA consultation. In addition, there are many fish and wildlife resources of concern to ODFW and the USFWS in the Siletz Bay area. Much of this area is also part of the Siletz Bay National Wildlife Refuge and has high fish and wildlife use. Drift Creek is identified as estuarine subtidal unconsolidated bottom subtidal (E1UBL) on the National Wetland Inventory Map (NWI) for Lincoln City, Oregon (1995). Potential estuarine wetlands are present on both sides of the highway within 100 feet. The NWI map identifies estuarine intertidal emergent regularly flooded (E2EMN) wetlands west of the highway. No cultural sites (archaeological or historic) are listed at Oregon SHPO. This is a potentially sensitive area, and few archaeological surveys have been conducted on this stretch of US 101.

C3, Section 2, US 101 Widening – Siletz River Highway to Gleneden Beach Road US 101 and Gleneden Beach Road: Fish passage at Sijota Creek is undetermined. Cutthroat trout use is documented in this creek upstream of US 101. The same avian habitat and cautions apply at this site as at Drift Creek (C1). The NWI map identifies an estuarine intertidal unconsolidated shore regularly flooded (E2USN) stream (presumably Sijota Creek) west of the highway, but not crossing it. The topography map for the Lincoln City, Oregon

quadrangle (1984) also shows a channel west of, but not crossing the highway. No cultural sites (archaeological or historic) are listed at Oregon SHPO. This is a potentially sensitive area, and few archaeological surveys have been conducted on this stretch of US 101.

C3 Section 3, US 101 Widening -- South of Gleneden Beach Loop North to Lancer Street/Seagrove Drive : In addition to the other ORNHIC and StreamNet identified species, Schoolhouse Creek is also important habitat for cutthroat trout and Pacific lamprey. The same avian habitat and cautions apply at this site as at Drift Creek (C1). Large wetland areas are immediately adjacent to US 101 on both sides of the road in the drainage of Schoolhouse Creek. No cultural sites (archaeological or historic) are listed at Oregon SHPO. This is a potentially sensitive area, and few archaeological surveys have been conducted on this stretch of US 101.

US20/Bus 20/OR229: Depot Creek and Depot Slough are present in the vicinity of the project area. OR 229 and US 20 both cross Depot Creek in this area. Depot Slough is the continuation of Depot Creek south of US 20. Depot Slough drains to the Yaquina River approximately 1.5 miles downstream of US 20. In addition to ORNHIC and StreamNet identified species, Depot Creek. The City of Toledo Local Wetland Inventory (LWI) (1993) identifies jurisdictional wetlands south of US 20 and Toledo Frontage Road and north of US 20, north of Depot Creek and west of OR 229. The LWI identifies a large area of probable jurisdictional wetlands northeast of the intersection of US 20 and OR 229. Depot Slough is also important habitat for cutthroat trout, Chinook salmon, and Pacific lamprey. Avian habitat conditions are generally the same as for project S7. The project area was part of survey conducted for replacement of Bridge 07534 (Little Beaver Creek); no cultural resources were identified in that investigation.

7.2.3 Bicycle/Pedestrian Projects

Bike/pedestrian projects would potentially involve the addition of striped bike lanes, widened shoulders, trails, sidewalks, pedestrian crossings, and ADA-compliant facilities. Significant environmental impacts would be a concern for new routes that would cross through federal forest lands, wetlands, parks, recreational areas, or historic sites. Of the bike/pedestrian projects that are part of the preferred alternative, such projects would include the Corvallis-to-the-Sea Trail and the Yachats to Cape Perpetua Trail. Potential environmental impacts might include wetlands and habitat to threatened or endangered species. There also may be historic and archaeological resources in the area. However, these potential impacts possibly could be avoided when selecting a route.

7.2.4 Transit and TDM Projects

None of the projects related to improved transit service and trip reduction in Lincoln County are anticipated to have significant environmental impacts.

7.2.5 Intermodal and Freight Projects

Projects involving airport, marine, railroad and truck facilities and connections include improvements to hangars, terminals, docks, backlands, sidings, track, staging areas, access, and turn bays. The Ports of Newport and Toledo want the U.S. Army Corps of Engineers (USCOE) to deepen the river and harbor channels to support their proposed improvement projects. The Ports say that USCOE dredging is approved under a programmatic EIS.

Section 404 of the U.S. Clean Water Act requires consideration of alternatives that avoid, minimize, or mitigate impacts to waters of the State/US, including wetlands. Deposition of dredge spoil materials from channel deepening would be subject to Section 404 requirements through the USCOE and Department of State Lands (DSL) regulations. None of the other intermodal and freight projects proposed as part of the preferred alternative is anticipated to have potential for significant environmental impacts. Construction activities normally would be required to avoid contamination, spoils, and spills into the river and bay.

7.3 Land Use Regulations

State and local regulations focus primarily on land use approvals, such as provisions of Statewide Planning Goals (ORS 195, 196, 197), Forest Practices Act (OAR 629), Department of State Lands Removal-Fill Law (OAR 141-102), the Transportation Planning Rule (OAR 660-012), and the Lincoln County Comprehensive Plan.

Land use approvals require special consideration. At the federal level, permits or clearances would be required for projects on the west side of the Coast Range because the projects would be in a Coastal Zone Management Area. The Department of Land Conservation and Development (DLCDD) is the designated coastal zone management agency in Oregon. All consistency determinations, consistency certifications and proposals for federal assistance must be sent to and reviewed by the Department for consistency with the approved Oregon Coastal Management Program (OCMP). Although federal property (such as a wildlife refuge) is not included in the definition of the states' coastal zones, activities occurring on federal property that directly affect the states' coastal zones must comply with the Coastal Zone Management Act.

Currently, the Lincoln County Code (LCC) allows transportation projects either outright or as a conditional use in some land use districts. If a project proposal is inconsistent with the adopted TSP or the State TPR, then a plan and/or zoning amendment must be requested in conjunction with the conditional use permit application. If the project involves a possible exception to the Statewide Planning Goals, then the exception will also be subject to the notice and hearing requirements of LCC Section 1.1250. This land use approval process is applied to projects that are inside Lincoln County, but outside of any city boundaries. Projects that fall within a UGB, but outside of city boundaries are also subject to the Lincoln County land use approval process. In those cases, there is some coordination between the County and city, but the decision-making power lies with the County. Proposed revisions to the LCC are addressed in Chapter 8.

Improvements to the US 20 and Business 20 intersection could potentially touch the Toledo UGB, a situation that would need further study at the time of project preliminary design; the project is included in the City of Toledo TSP.

The Siletz-Moolack Connector, if it were to be developed after the proposed feasibility study project, would require an exception to Statewide Planning Goal 4 (Forest Lands) because it would cross lands zoned Timber Conservation. The project also would require an exception to the Transportation Planning Rule because it would be a new arterial/collector road.

Widening improvements and bridge replacements on US 101 in the area of the Siletz Bay National Wildlife Refuge would need to be consistent not only with federal laws but also Statewide Planning Goals regarding estuarine resources (Goal 16) and coastal shorelands

(Goal 17). The northern end of widening improvements to US 101 in the vicinity of Drift Creek would cross into the Lincoln City UGB, but such widening is already part of the City's Draft Transportation Master Plan. Adoption of an exception to statewide planning goals would be required to allow the project to be included as a planned improvement in the county's comprehensive plan. Authorization to widen the highway would require findings under federal law. Neither the County nor ODOT were able to complete the necessary studies and evaluations at the time this TSP was prepared. Consequently, widening of Highway 101 in this segment is not included as a planned improvement as part of this TSP.

Designated planned land uses in the Lincoln County Comprehensive Plan and Land Development Code include classifications of agricultural (conservation), timber (conservation), residential, and industrial, commercial, and public facilities (public schools, public recreational areas, government use). The Lincoln County Code does not include transportation as a land use classification; however, it does include goals and policies for transportation (LCC 1.0140 and 1.0145) that address railroad and highway uses.

7.4 Financing Plan

This section provides an overview of existing and potential federal, state, and local funding sources to implement prioritized projects of the Lincoln County TSP. A brief qualitative implementation summary of the potential local funding sources is also provided.

7.4.1 Existing Budgets

Lincoln County currently has approximately 158 miles of county operational and jurisdictional roads and 91 county bridges to maintain. Lincoln County road revenues for fiscal year 2004 were approximately \$5.72 million (Table 7-6). Lincoln County's primary sources of transportation revenue for its road system are the State Highway Fund and federal funding through the U.S. Forest Service, which represent approximately 36 and 56 percent, respectively.

TABLE 7-6
Lincoln County Road Revenue Sources, 2004-05
Lincoln County TSP

Source	FY 2004 Revenue
Property Taxes	\$0
Other Local Revenues	\$526,763
State Highway Fund	\$2,271,812*
Other State Revenues	\$173,368
Federal Forest Revenue	\$3,270,110
Other Federal Revenues	\$8,167
Total Revenues	\$6,250,220

Source: Lincoln County Assessor, 2006

* Does not include OTIA III payment of \$3,157,000

In addition to county-owned roads, Lincoln County has created 25 road improvement districts that have independent administration and operating budgets funded by property tax assessments. Table 7-7 lists the annual revenue (2004) for the road districts in Lincoln County. In total, the road districts receive approximately \$360,000 annually.

TABLE 7-7
Lincoln County Road District Revenue, 2005-2006
Lincoln County TSP

Road District	Total Amount Received	Road District (cont.)	Total Amount Received
Bayshore	\$52,596	Makai	\$25,967
Bear Valley	\$7,084	Miroco	\$6,211
Belle Mer Sigl	\$0	Pacific Shores	\$14,210
Boulder Creek Retreat	\$11,294	Panther Creek	\$16,712
California Street	\$3,672	Peterson Park	\$0
Coronado Shores	\$0	Salmon River Park	\$3,875
Echo Mountain Park	\$0	Sandpiper Village	\$19,474
For Far	\$8,766	Starr Creek	\$10,847
Gleneden Beach	\$18,536	Surfland	\$5,617
Idaho Point	\$5,490	Waldport	\$98,564
Lake Point	\$13,821	Westwood	\$4,266
Little Switzerland	\$12,652	Windy Beach	\$0
Lost Creek Park	\$19,899		
Total			\$359,553

Source: Lincoln County Assessor, 2006

The Lincoln County Transit System currently has three fixed routes, plus Newport shuttle and dial-a-bus services, to maintain and expand for a growing customer base. Federal funds, farebox revenue, and a county-wide property tax assessment (0.0974 permanent rate limit) for the Lincoln County Transportation Service District (enacted in 1996) provide operating revenue for the transit system. Fiscal year 2005-2006 budget was \$2.9 million, of which \$443,086 came from property taxes.

7.4.2 Funding Needs for TSP Projects

Overall, the projects proposed as part of the preferred alternative of this TSP – not counting currently programmed STIP, IRR, or County projects through 2009 – would cost approximately \$62 million in transportation improvements over the next 20 years, with funds coming from federal, state, county, and ports. Another \$9 million of improvements could be made to the Toledo Branch Line railroad tracks in Lincoln County.

This TSP assumes that funds required for transportation maintenance and capital improvements during the next 20 years will be no less than at present and likely more. The need for additional funds is anticipated by reduced revenue from the Secure Rural Schools Community Self-Determination Act (Federal Forest Revenue) and gasoline taxes (Federal

and State Highway Funds) as fuel efficiencies increase, inflationary costs, and expanded facilities to serve a larger population. Therefore, Lincoln County will continue to need a combination of state and federal assistance in addition to local revenue to address funding needs.

Table 7-8 summarizes priority and costs by type of improvement, and nearly none of which are currently funded. Approximately only \$500,000 is budgeted by the State or County for associated proposed safety improvement projects, and none for the proposed capacity improvement projects. The Port of Newport was awarded in 2006 a ConnectOregon grant for \$2,775,200 for its Terminal Access Improvement project.

TABLE 7-8
Transportation System Plan Improvement Costs
Lincoln County TSP

Improvement Type	Priority				Total
	1	2	3	4	
Safety Improvements	\$520,000	\$2.04M	\$1.92M	\$9.29M	\$13.92M
Capacity Improvements	\$0	\$0	\$31.06M	\$0	\$31.06M
Bicycle and Pedestrian Improvements	\$110,000	\$220,000	\$570,000	\$10,000	\$910,000
Transit and TDM Improvements	\$90,000	\$310,000	\$1.06M	\$0	\$1.46M
Freight and Intermodal Improvements	\$14.1M	n/a	n/a	n/a	\$14.1M

7.4.3 Federal Funding Sources

Federal funding sources account for approximately 21 percent of transportation project funding within the state of Oregon. The most significant federal sources have been the Federal Highway Trust Fund and federal forest revenues.

Federal Forest Revenue

Since 2000, Lincoln County has received federal Forest Service funds authorized by the Secure Rural Schools Community Self-Determination Act. This Act was passed to replace funding lost from the declining sale of timber cut from federal lands. Some federal forest revenues are used for roads, and are distributed directly to counties and earmarked for specific projects. Of total federal forest revenues, approximately 65 percent of federal forest revenues are distributed to the county where the revenue was produced, and then this is redistributed among the local taxing districts, including to the county itself. In 2004, Lincoln County received approximately 3.2 million in forest revenue for transportation improvements (see Table 7-7). Continued distribution of funds at current or any amount under this act was in jeopardy in 2007.

Federal Highway Trust Fund

These revenues come from motor vehicle fuel taxes, sales taxes for heavy trucks and trailers, tire taxes, and annual heavy truck use taxes. Funds are appropriated to individual states on an annual basis. These revenues are used by the state, counties, and cities and must be matched with state and local funds.

Federal Transit Administration

Funding is available through the Federal Transit Administration (FTA) for public transit. The various programs include funds for capital improvements (FTA Section 5309), funds for capital projects for programs that serve elderly and disabled persons (FTA Section 5310), funds for general public transit services in small urban and rural areas (FTA Section 5311), and funds for intercity passenger services (FTA Section 5311).

National Scenic Byway Program (FHWA)

Because US 101 in Oregon is designated as a National Scenic Byway, improvement projects associated with management actions identified in the byway's Corridor Management Plan are eligible for federal funding via a grant application.

Federal Office of Coastal and Ocean Resources Management

The Oregon Department of Land Conservation and Development's Coastal Management Program administers planning assistance grants supported by federal funds. Coastal planning grants are awarded in three categories, usually for one year: coastal planning, special planning and technical assistance, and stormwater and non-point pollution control. All jurisdictions are eligible for a minimum \$3,000 coastal planning grant and need only complete the standard grant agreement; a 1:1 local match is required. Special planning grants may be up to \$30,000, and a grant application is required.

U.S. Department of Homeland Security

Several agencies formerly under the U.S. Department of Transportation now reside in the U.S. Department of Homeland Security (DHS), and funding for such agency projects has increased. The DHS's focus is on reducing the nation's vulnerability to terrorism, and minimizing the damage and recovering from attacks that may occur. Funding for projects that involve military operations, port security/operations, and lifeline routes could be pursued through the DHS.

7.4.4 State Funding Sources

The two most significant state funding sources are the State Highway Fund and the Oregon Transportation Investment Act (OTIA). Another source of potential funding for transportation projects that would enhance economic activity and freight movement is the ConnectOregon Program.

State Transportation Improvement Program

The State Transportation Improvement Program (STIP) is the primary programming document that identifies transportation priorities for federal and state funding in Oregon. The STIP provides a schedule and identifies funding for projects throughout the state. The

STIP lists projects that are planned for construction during a 4-year period. Projects that are included in the STIP are regionally significant and have been given a high priority through planning efforts.

Transportation projects in the STIP are generally categorized into six main categories:

- **Modernization Projects:** Improvements to accommodate existing traffic and/or projected traffic growth. Total: \$216.7 million.
- **Safety Projects:** Improvements to priority hazardous highway locations and corridor in order to reduce the number of fatal and serious injury crashes. Projects funded through this program meet strict benefit/cost criteria. Total: \$105.3 million.
- **Pavement Preservation Projects:** Improvements to rebuild or extend the service life of existing facilities, and rehabilitate work on roadways. Preservation projects add useful life to the road without increasing capacity. Total: \$471.1 million.
- **Bridge Projects:** Improvements to rebuild or extend the service life of existing bridges and structures beyond the scope of routine maintenance. Total: \$318.1 million.
- **Operations Projects:** System management and improvements that lead to more efficient and safer traffic operations and greater system reliability. Total: \$85.5 million.
- **Special Programs:** Bicycle and Pedestrian, Congestion Mitigation and Air Quality Improvement, Federal Lands Highways, Fish Passage and Large Culvert Improvement, Immediate Opportunity Fund, Indian Reservation Roads, Public Transit, Railroad Crossing Safety, Scenic Byways, Transportation Enhancement, Transportation Safety. Total: \$70.1 million.

All federally funded transportation projects, as well as all state and locally funded projects that are deemed “regionally significant” must be included in the STIP. The adopted 2006-2009 STIP contains \$1.26 billion of transportation projects. Approximately 80 percent of STIP projects are federally funded. The following is a summary of how a project gets into the STIP¹:

- ODOT monitors the state’s transportation system using technical and objective methods
- Public involvement (ongoing throughout all stages of the STIP process)
- Citizen input and ideas for new projects
- Transportation planning and local priority process (corridor plans, region plans, system plans)
- Area Commissions on Transportation (ACTs) and OTC review
- ODOT ranks conditions and needs across the state
- OTC considers needs expressed by citizens, cities, counties, councils of governments, and ACT

¹ A more detailed explanation is available at <http://www.oregon.gov/ODOT/HWY/STIP/generalstip.shtml>.

- OTC sets funding levels for different types of projects
- OTC prioritizes projects and matches to available funding levels
- Draft STIP is created
- Public review of proposed projects
- OTC and United States Department of Transportation (USDOT) approval Final STIP
- Oregon STIP is published (every other year)

The 2006-2009 STIP generates more than \$201 million dollars in project work in Lincoln County, although approximately \$158 million (78 percent) is for one project (US 20 Pioneer Mountain to Eddyville). Tables 3-28 and 3-29 (in Chapter 3) summarize the approved STIP funding for projects in Lincoln County from 2006-2009 and as proposed for 2008-2011. The following is a summary of funding by STIP category for all jurisdictions in Lincoln County from 2006-2011.

- **Modernization:** \$172.7 million
- **Safety:** \$1.21 million
- **Pavement Preservation:** \$5.00 million
- **Bridge:** \$41.8 million
- **Operations:** \$1.1 million
- **Special Programs:** \$1.7 million

State Highway Fund

Revenues are received from a combination of state fuel taxes, vehicle registration and title fees, and the truck weight-mile tax. State Highway Trust Fund revenues may be used only for construction and maintenance of state and local highways, bridges, and roadside rest areas, but a reasonable amount of the fund must be spent on walkways and bikeways. State Highway Fund revenues are appropriated by the OTC on an annual basis. Appropriation is based on population for cities and registered vehicles for counties; net revenues are distributed in the following manner:

- State - 60 percent
- Counties - 24 percent (by number of vehicles registered)
- Cities - 16 percent (by population)

Oregon Transportation Investment Act (OTIA) of 2001

OTIA revenues are derived from automobile and truck registration and title fees, as well as a net increase in the weight-mile tax, to finance construction bond sales. OTIA funds are not typically used for construction of new highway facilities. In the future, debt service on the OTIA program will be funded in part through a portion of Oregon's transportation modernization program, which is otherwise used to bring existing highway facilities to current safety and operational standards. The remaining modernization program budget for use on other projects is \$23 million annually (state and federal funds combined) for the entire state.

A newer source of potential highway project funding is the Oregon Innovative Partnerships Program (OIPP), which allows the creation of public-private partnerships to fund highway projects. This program gives ODOT the freedom to ask for proposals, or accept unsolicited proposals for transportation projects from private firms and governmental organizations. Private companies can participate at the conceptual stage of project development, allowing innovative techniques and finance plans to be proposed early in the project. Though public-private partnerships can be funded a number of ways, tolling is a common consideration.

A potential future state funding source would be some form of fees collected on the miles driven by each vehicle or person in the state. Although efforts are underway to explore such a program, no proposals exist at this time.

ODOT Bicycle and Pedestrian Program

ODOT's Bicycle and Pedestrian Program awards grants on an annual basis to construct improvements in public right of way to improve bicycle and pedestrian safety. Grants awarded for the FY 2006-2007 amounted to approximately \$5 million. Projects receiving funding from this program are expected to receive a local match. There is a minimum 10 percent match required.

ConnectOregon Program

ConnectOregon is a lottery-bond-based initiative (\$100 million) approved by the Oregon Legislative Assembly to invest in air, rail, marine and transit infrastructure to ensure Oregon's transportation system is strong, diverse, and efficient. It is focused on improving the connections between the highway system and the other modes of transportation to better integrate the components of the system, improve flow of commerce and remove delays. ConnectOregon is the first major funding initiative targeted at multimodal or non-highway transportation in Oregon. The OTC selects the projects on the basis of grant applications.

State Highway Safety Plan Program

The FHWA and AASHTO have established a goal of reducing the national fatality rate to 1.0 fatality per HMVMT, which will prevent about 9000 deaths each year nationally. To achieve this goal, each state must develop and implement a State Highway Safety Plan (SHSP) by October 1, 2006. One of the key provisions of the federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy of Users Act (SAFETEA-LU) is that to take full advantage of available safety funds. Because the SHSP must be systematic and implemented across all jurisdictions (state, county, and city), any funds for implementation of the plan might be applicable to this TSP's safety projects. The plan must focus on the four E's: Engineering, Education, Enforcement, and Emergency Medical Services. Implementation must be system-wide and proactive. A small subset of strategies that are low-cost and effective and can be broadly deployed on rural roads will be more effective than high-cost solutions implemented at a few high-crash locations.

7.4.5 Local Funding Sources

Oregon counties and cities have the power to devise their own non-property tax and other local revenue structures without specific state enabling legislation. Although these sources

are typically implemented at the city level, some are also applicable at a regional or multi-jurisdictional level as well. The institution of some of these revenue sources could make available some of the transportation fund revenue that currently goes towards maintenance and preservation. Existing and potential local funding sources are listed and described below.

Urban Renewal Districts

Urban renewal districts are formed in selected areas, creating a tax-increment financing (TIF) mechanism to generate urban renewal funds. TIF works by 'freezing' property values at the beginning of an urban renewal plan, and assessing a fee only on the incremental growth in property value observed since the beginning of the urban renewal district plan. The revenues generated within an urban renewal district are used to secure bonds to finance projects and programs within the district. Use of the funds is not limited to transportation projects. Funds generated within each district must be spent within that urban renewal district.

Before an urban renewal district can be established, the needs and required funding must be identified. This would typically take the form of an urban renewal plan. The urban renewal plan would specify the boundaries for the urban renewal district, the proposed improvements to be made, the costs associated with these improvements, and the amount and source of funding. A new urban renewal area would require approval by the jurisdiction's designated urban renewal agency, and cannot overlap with existing urban renewal plans. Areas outside UGBs would need to be brought into the UGB before an Urban Renewal Plan went into effect.

Local Improvement Districts

Local Improvement Districts (LIDs) are created by property owners within a portion of a county to raise revenues for constructing street improvements within the same district. LIDs may be used to assess property owners for improvements that benefit properties. Property owners typically enter into LIDs because they see economic advantage to the improvements. Assessments are secured by property liens. LIDs could be implemented to fund new connector roads that will benefit one or more groups of property owners at a higher rate than a city or county as a whole.

The formation of LID districts is governed by state law and local jurisdictional development codes. LID revenues could be used solely for capital costs. Similar to TIF revenues, LID revenues could be combined with other revenue sources.

Revenue and General Obligation Bonds

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

General Obligation Bonds pay for construction of large capital improvements. This method is typically used to fund road improvements that will benefit a large portion of the county. General Obligation Bonds add the cost of the improvement to property taxes over a period of time. Oregon State law requires a double majority voter approval for instituting General Obligation Bonds. Revenue is collected in property tax billings.

System Development Charges and Developer Exactions

System Development Charges (SDCs) are a one-time fee assessed on new development, to compensate for increased traffic associated with new development. SDCs are limited to those capital improvements that will be or were required to increase capacity because of increased demand due to current or expected development. This method is commonly acceptable to the public because new residents, rather than current residents, pay for the improvements. It is applied to capital improvement projects that increase transportation system capacity as necessary to serve new development. Revenues provided by this method are variable because they are linked to the amount of new development.

With developer exactions, an improvement is paid for or built by the developer to County standards and then deeded to the County as a condition for development approval. Developer exactions and contributions can pay for portions of roads in, adjacent, or through new developments.

Transportation Utility/Impact Fees

Similar to water, sewer, and other utility fees, these fees allocate costs to the system's users, based on their use of the system. Revenues are directed towards maintenance and preservation of the existing transportation network. These fees are typically attributed to each property based on the land use of the property and the number of trips generated. Fees are administered in a similar fashion to other utilities (for example, sewer, water, electricity). Several cities in Oregon have already implemented this system, including Grants Pass, Ashland, Medford, Wilsonville, and Philomath. Much of the revenue from these fees would be expected to go to preservation and maintenance of the existing roadway network, which could make some of the street revenue that currently goes to preservation and maintenance available for new projects.

General Fund

The general fund for a given jurisdiction is comprised of discretionary revenues. As a result, application toward transportation capital improvement projects is very limited in most jurisdictions. A substantial majority of general fund revenues are applied to operating expenses for public safety and other public services.

County Vehicle Registration Fee

Vehicle registration fees are generally, but not directly, related to actual transportation system use. With voter approval, Oregon counties may impose a vehicle registration fee that is no more than the state's vehicle registration fee (currently \$54 for two years). HB 3018, pending before the 2007 Oregon Legislature, would remove the requirement for voter approval. For a County registration fee, ODOT would collect revenue from the fees and pay the revenue back to the counties that establish registration fees. The Oregon Constitution requires all revenues to be used for the construction and maintenance of highways, roads, and streets. There are 55,004 registered vehicles in Lincoln County². Each dollar of a county registration fee would therefore generate about \$55,000, minus the administrative collection

² ODOT, 2006. *Oregon Department of Transportation Fund Apportionments: Registered Vehicles by County*. http://www.oregon.gov/odot/cs/fs/countyreg_fy06.pdf

cost by ODOT. Thus, a \$10 annual registration fee could generate a gross of approximately \$550,000.

To incentivize the purchase of fuel-efficient and light-weight vehicles by county residents that would lessen greenhouse gas emissions, vehicle registration fees could be made proportional to vehicle characteristics such as engine displacement (e.g., number of cylinders), fuel efficiency, gross vehicle weight, or vehicle type. Adoption of such a scheme is known as “feebates.” As shown in Chapter 1, the number of vehicles registered in Lincoln County is disproportional to the number of vehicles determined available (approximately 32,000) to the resident population. This disproportion is indicative of the prevalence of second homes in Lincoln County and perhaps the avoidance of fees in metropolitan or other jurisdictions, including out-of-state.

Road User Fee

This method would implement a fee on a portion of a roadway for use of that roadway. Since tourism can account for significant seasonal traffic volume changes on roadways in Lincoln County, in theory the county could employ a road user fee or toll to support transportation related improvements as a result of the seasonal traffic volume changes.

Tolling

Tolling, used in many states to recover road and bridge construction, operation, and maintenance costs, is a way to provide needed revenue for road improvements in Lincoln County. Bridges can be effective tolling locations because there typically is no reasonable alternative to using the bridge. Tolls collected at bridges typically are used to recover the cost associated with bridge construction and maintenance, but these locations also serve as effective locations for collection of any toll. The toll could be removed when construction has been paid in full or could remain in place for the continued operation and maintenance of the bridge.

Traffic Impact Fees

This method is used to finance necessary road improvements associated with new development. The fee, which can vary for different land uses, is calculated based on the estimated number of vehicle trips generated by the proposed development. Revenues are generated in this manner and must be used for capital improvements and not maintenance activities.

Parking Tax

This method would impose a business tax based on the number of parking spaces at a business, such as a motel. One option would be to impose the parking tax similar to the room tax (see Hotel/Lodging Tax below). Oregon state law does not preclude local governments from developing a city or regional parking tax based on the number of parking spaces at a business. However, it has not been determined if a parking tax collected through business licenses fees could legally be used for transportation projects. There could be a high administrative cost since a database of the parking spaces for subject properties and an accounting system would need to be developed.

Gas Tax

Gas tax revenues can be used to fund either operating or capital costs, but the Oregon Constitution restricts gas tax revenue to road or bridge projects, not transit. Gas taxes generally measure demand for use of transportation facilities, so the equity is fairly high. However, fuel revenues are expected to level off in the short-term and then drop permanently, as the purchasing power of fuel revenues decreases with inflation and more fuel-efficient vehicles are purchased.

Parking Fees

This funding method would implement parking fees (and parking fines) in selected areas of the county. Parking fees could be implemented at boat launches, county parking lots, or within unincorporated communities to generate revenue for transportation-related improvements. Generated revenue would also be used to offset the costs of installation, operation, and maintenance of public parking lots.

Hotel/Lodging Tax

Many Oregon jurisdictions impose a local hotel tax (also known as a transient room tax). Presently, there are at least four jurisdictions in Oregon (Lake Oswego, Lincoln City, Umatilla County, and Union County) that specifically dedicate revenue from a hotel/lodging tax to transportation projects.

Sales or Income Tax

This method would impose a sales tax on goods sold or income earned within Lincoln County. Oregon counties and cities have the power to implement a sales or income tax, but no jurisdiction in Oregon currently imposes either. Lane County will have an income tax measure on the November 2006 ballot; funds would be dedicated to public safety operations (police and fire) not transportation projects.

Payroll Tax

Transit and transportation districts can levy income taxes up to 1 percent of payroll and 0.6 percent of self-employment to fund public transit. Tri-Met in the Portland metropolitan area and Lane County use payroll and self-employment taxes.

7.4.6 Implementation

Table 7-9 is a qualitative (low, medium, and high) and subjective assessment of the revenue potential and implementation feasibility, and if voter approval is required by law, for the local revenue and funding sources identified previously. To replace anticipated lost federal forest revenue and other funds – and which are necessary to maintain the existing County road system – it is recommended that the County begin now to engage in a public process to study and secure new funding sources.

Going into fiscal year 2005-2006, the County Road Department over the years had built up a beginning balance of almost \$14 million. Approximately \$1 million is set aside each year as a contingency fund for unexpected repairs (typically caused by extreme weather conditions) that would be above the regular maintenance program budget. In addition, asphalt costs have soared recently due to higher oil prices, which are expected to continue. Some of the

department’s reserve funds could be used in the short-term to cover declining federal forest revenue until the County secures a new revenue source.

To replace the \$3.2 million of federal forest revenue, the County may decide to implement one or more of the options presented in Table 7-9. For example, if only an increase in vehicle registration fees were implemented, an increase of approximately \$60 annually would be required for the 55,000 registered vehicles in Lincoln County, if applied equally among them. Whatever funding source is decided upon, consideration should be given to incentivizing actions that support public policy and disincentivizing actions that do not.

TABLE 7-9
Local Funding Options: Potential Funding/ Revenue and Implementation Feasibility
Lincoln County TSP

Potential Funding/ Revenue Source	Revenue Potential ¹	Public Perception/ Approval	Administrative Costs	Legally Feasible?	Voter Approval Required?
Urban Renewal District	Medium to High	Medium	Medium	Yes	Yes
Local Improvement District	Low to Medium	Medium	Medium	Yes	No
Revenue and General Obligation Bonds	Medium to High	Medium	Medium	Yes	Yes
System Development Charges	Low to High	Medium	Medium	Yes	No
Transportation Utility/ Impact Fees	Low to Medium	Low	Medium	Yes	No
General Fund	N/A ²	Medium	Low	Yes	No
County Vehicle Registration Fee	Low to Medium	Low	Medium	Yes	Yes
Road User Fee/ Toll	Low to High	Low	High	Yes	No
Traffic Impact Fee	Low to Medium	Medium	High	Yes	No
Parking Tax	Low to Medium	Low	Medium	Yes	Yes
Gas Tax	Low to High	Low	Medium	Yes	Yes
Parking Fees	Low	Low	Medium	Yes	No
Hotel Tax	Low to Medium	Medium	Medium	Yes	Yes
Sales or Income Tax	Medium to High	Low	High	Yes	Yes
Payroll Tax	Low to Medium	Low	High	Yes	No

¹ Revenue potential for many of the funding sources would vary and depend on the extent of implementation (for example, tax rate, fee, toll, etc) and extent of new development (for system development charges and traffic impact fees).

² This is not a new revenue source; money is redistributed from the general fund to fund transportation projects.

Chapter 8
Draft Implementing Policies and Ordinances

Draft Implementing Policies and Ordinances

This chapter includes recommendations for policy and code amendments to address air quality, energy, land use, environmental, and transportation issues in the county.

8.1 Comprehensive Plan Amendments

The Lincoln County Comprehensive Plan (Chapter 1 of the Lincoln County Code) provides County goals (consistent with the 19 statewide planning goals) and associated County policies. Section 1.0040 of the Code provides goals for air, land, and water quality, and states that “(1) Lincoln County shall work to solve identified air, land, and water quality problems...” which would include greenhouse gas (GHG) emissions associated with global warming. Related goals are land use (Section 1.0010), transportation (Section 1.0140), and energy (Section 1.0150). Lincoln County should adopt, as would be appropriate and relevant for a rural county government, some of the 15 transportation actions to reduce greenhouse gases, such as carbon dioxide and methane, that are described in the *Oregon Strategy for Greenhouse Gas Reductions* (Governor’s Advisory Group on Global Warming, State of Oregon, December 2004). Transportation Actions most appropriate and relevant for the Lincoln County Commission to adopt as new policies (underlined below) under the goals of the Comprehensive Plan include:

TRAN-2: Integrate land use and transportation decisions with greenhouse gas consequences.

Add the following to Section 1.0015, Land Use Planning Policies:

(9) Lincoln County supports incorporation of “Smart Growth” principles in decision-making process. Concepts include promoting transit-oriented development, mixed-use development, minimum street connectivity standards, and minimum densities and/or minimum floor-area ratios and parking standards.

TRAN-3: Promote biofuel use and production.

Add the following to Section 1.0155, Energy Policies:

(10) Lincoln County shall buy biodiesel for County maintenance, fleet, and transit vehicles, and as practicable, provide a fueling station.

TRAN-4: Consider local incentives for citizens purchasing high efficiency vehicles.

Add the following to Section 1.0155, Energy Policies:

(11) Lincoln County shall consider incentives, such as reduced county vehicle registration fees (if implemented), for smaller engines, electric vehicles, and biofueled vehicles.

TRAN-5: Incorporate GHG emission impacts into transportation planning decisions.

Add the following to Section 1.0145, Transportation Policies:

(32) Lincoln County shall account for GHG emissions in transportation and air quality modeling, and as ranking criterion in planning decisions.

TRAN-6: Expand “Transportation Choices Programs” and “Travel Smart Pilots.”

Add the following to Section 1.0145, Transportation Policies:

(33) Lincoln County shall support programs providing transportation choices and reduction of single-occupancy vehicle trips.

[This action is recommended in the draft Transit and TDM modal plan prepared for the County by Cascades West Council of Governments.]

TRAN-8: Reduce GHG emissions from government fleet purchase and vehicle use.

Add the following to Section 1.0045, Air, Land, and Water Quality Policies:

(9) Lincoln County shall purchase vehicles with low or zero GHG emissions whenever practicable.

TRAN-9: Local governments should switch to “clean diesel” fuel, vehicle purchase, and retrofits.

Add the following to Section 1.0155, Energy Policies:

(12) Lincoln County government shall switch its fleet to “clean diesel” fuel, vehicle purchase, and retrofits.

TRAN-10: Adopt local incentives for high efficiency vehicles.

Add the following to Section 1.0155, Energy Policies:

(13) Lincoln County shall adopt local incentives for high efficiency vehicles.

[Examples of this policy would include designations of preferred parking or free parking for such vehicles.]

TRAN-15: Improve mass transit and inter-city transit links.

Add the following to Section 1.0145, Transportation Policies:

(34) Lincoln County shall improve mass transit and inter-city transit links.

[Example actions by the County would be consistent with the facility improvements and transportation demand management strategies proposed in planning documents for Lincoln County Transit.]

8.2 Zoning Code Amendments

The presentation of recommended changes to the Lincoln County Code (LCC) is organized through references to the applicable section(s) of the TPR that prompt a change in the County’s implementing ordinances, followed by the recommended revisions. Revisions are presented with deletions shown in strikethrough font (~~strikethrough~~) and additions shown as underlined (underlined). The new code language is proposed to meet TPR requirements using the existing regulatory framework in Lincoln County. In some instances, language from the Model Development Code & Users Guide for Small Jurisdictions (2005)¹ has been modified and used to satisfy recommended code revisions. Only areas of OAR 660-12-0045 that the County does not currently comply with are included in this memorandum.

Included in the recommendation for code revisions is an indication of which ordinance or ordinances should be amended and where suggested (new) language might best fit within the adopted document, given the existing organization and content. To the extent possible,

¹ <http://www.oregon.gov/LCD/TGM/modelCode05.shtml>

the suggested text is organized using the numbering hierarchy provided by the existing ordinance/code.

Some terms used in the proposed language are not already defined in the County's ordinance. In these cases, new definitions to update the Zoning Ordinance are included in the last section of the implementation memorandum.

The County may find that suggested language is more appropriately placed elsewhere in a document, or may wish to include implementation language in more than one document. In both instances, the County will need to revise the section and subsection headings and numbering accordingly. The TPR compliance review did not find substantial inconsistencies within adopted County implementation language. The County is advised to review the recommendations carefully to ensure that proposed language does not conflict with existing language and, where conflicts do exist, to identify additional areas that should be modified to better comply with the TPR. Some additional amendments to the suggested code language may be necessary to more adequately express the County's needs.

This TSP's compliance with the TPR is summarized in Appendix S.

Presented below are comments on the existing zoning code and its compliance with the TPR. Following the commentary is a section on proposed revisions to the code.

8.2.1 Zoning Code Commentary

OAR 660-12-0045 (1) Each local government shall amend its land use regulations to implement the TSP.

- (a) The following transportation facilities, services and improvements need not be subject to land use regulations except as necessary to implement the TSP and, under ordinary circumstances do not have a significant impact on land use:***
- (A) Operation, maintenance, and repair of existing transportation facilities identified in the TSP, such as road, bicycle, pedestrian, port, airport and rail facilities, and major regional pipelines and terminals;***
 - (B) Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards;***
 - (C) Uses permitted outright under ORS 215.213(1)(m) through (p) and 215.283(1)(k) through (n), consistent with the provisions of 660-012-0065; and***
 - (D) Changes in the frequency of transit, rail and airport services.***
- (b) To the extent, if any, that a transportation facility, service or improvement concerns the application of a comprehensive plan provision or land use regulation, it may be allowed without further land use review if it is permitted outright or if it is subject to standards that do not require interpretation or the exercise of factual, policy or legal judgment;***

The zoning section of the LCC should be modified to include transportation facilities as an outright use in each of the County's zones where it is appropriate. Transportation facilities include public improvements for streets, transit, parking, and bicycle and pedestrian facilities. A series of revisions are needed to enable the development of these facilities within land use districts in order to comply with this section of the TPR. Because many revisions are required, in multiple sections of the code, the recommended changes to the permitted use sections of the code are not presented here.

When permitted by Statute or Rule, the County should list transportation facilities as permitted uses in the County Code. Per OAR 660-012-0045(1)(a), transportation facilities, services, and improvements that do not need to be subject to land use regulations include operation, maintenance, and repair of existing transportation facilities identified in the TSP, such as road, bicycle, pedestrian, port, airport and rail facilities, and major regional pipelines and terminal. Uses permitted outright under ORS 215.213(1)(m) through (p) and 215.283(1)(k) through (n) may also be considered permitted uses. These include, climbing and passing lanes within the right of way existing as of July 1, 1987, reconstruction or modification of public roads and highways, temporary public road and highway detours, and minor betterment of existing public road and highway related facilities, such as maintenance yards, weigh stations and rest areas, within right of way.

Furthermore, transportation facilities and improvements that are not part of the County's TSP and are not part of a subdivision or partition subject to site design review should be allowed in all districts as conditional uses. In order to fully address transportation facilities, it is recommended that the County include a new section, Conditional Uses and Criteria for Certain Transportation Facilities and Improvements. Including this section would eliminate the necessity of listing transportation facilities as a conditional use under specific zoning districts. If this section is adopted, references to transportation facilities as conditional uses under specific zone designations should be struck.

Section 1.1115 Definitions, includes street and road related terms, but does not include terminology for relating to pedestrian, bicycle or transit uses. Definitions should be added to the LCC to address these uses. Additional clarification could be added to distinguish between land based and water based transportation.

OAR 660-12-0045(1)

(c) In the event that a transportation facility, service or improvement is determined to have a significant impact on land use or to concern the application of a comprehensive plan or land use regulation and to be subject to standards that require interpretation or the exercise of factual, policy or legal judgment, the local government shall provide a review and approval process that is consistent with 660-012-0050. To facilitate implementation of the TSP, each local government shall amend its land use regulations to provide for consolidated review of land use decisions required to permit a transportation project.

To comply with the above TPR requirement, the following provisions for noticing ODOT should be added to the proposed notice procedures under Administration in LCC Chapter 1, Section 1.1250 Notice of Public Hearings. Notice to ODOT should be a requirement of both quasi-judicial and legislative hearings.

OAR 660-12-0045

(2) Local governments shall adopt land use or subdivision ordinance regulations, consistent with applicable federal and state requirements, to protect transportation facilities, corridors and sites for their identified functions. Such regulations shall include:

(a) Access control measures, for example, driveway and public road spacing, median control and signal spacing standards, which are consistent with the functional

classification of roads and consistent with limiting development on rural lands to rural uses and densities;

Access control is addressed in Section 1.1605, Authorization to Grant, Deny or Revoke Conditional Use Permit, and gives the Planning Director or Planning Commission the right to impose additional conditions, including (c) controlling the location and number of vehicle access points. The LCC provides little guidance on access management for local streets to aid decision-makers in determining appropriate vehicular access solutions.

In order to better meet the TPR requirement, access control regulations should include clear and objective spacing standards for different roadway functional classifications. A new Subsection 1.3260, Access Control, is recommended for inclusion under the Land Divisions section in Chapter 1. The access spacing standards are consistent with the draft Lincoln County TSP.

OAR 660-12-045(2)

- (b) Local governments shall adopt ... Standards to protect future operation of roads, transit ways and major transit corridors;*
- (e) Local governments shall adopt ... A process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities, corridors or sites;*

These sections of the TPR address the need to account for potential development impacts to roadways and transit corridors and to ensure that they continue to meet community needs. In addition to coordination with affected agencies, access management, and adherence to road design standards, requiring a traffic impact study ("TIS") in certain cases where the potential impact to roads is over a certain threshold is one way to meet this requirement. Essentially, it is a way to measure when there is significant impact to a transportation facility and when conditions of approval may be required.

The addition of a new procedural section under Special Requirements in Chapter 1 of the LCC is recommended. The new section 1.1530, Traffic Impact Study, would require a traffic study under prescribed conditions and lists the required elements of such a study. [Note: The recommendation from the Lincoln County TSP Draft Plan and Policy Review called for the amendment of Section 1.3230, General Requirements and Minimum Standards of Design and Development, to include a TIS provision. The County should make the determination of which section of the code is most appropriate for this new provision.]

OAR 660-12-045(2)

- (c) Local governments shall adopt ... Measures to protect public use airports by controlling land uses within airport noise corridors and imaginary surfaces, and by limiting physical hazards to air navigation;*

The adopted Lincoln County Zoning Ordinance manages land use and development in the vicinity of airports through Section 1.1940, Airport Areas. Standards in Subsection 3 include height limitations in accordance with regulations of the Federal Aviation Administration relating to objects affecting navigable airspace, 14 CFR Part 77 (a) and limitations on use (b), including prohibiting uses that create electrical interference, glare or impair visibility. The Lincoln County Planning Commission or Planning Division must approve a conditional use permit before any "material

change” is made in any airport area. Subsection (h) includes permitted land uses within airport areas, defined as Approach Zones, Clear Zones, Moderate Noise Impact Zones and Substantial Noise Impact Zones.

The TPR compliance matrix (Table 2, TPR Requirements and Lincoln County Compliance, in the Draft Plan and Policy Review, October 2005) identified some amendments to this section in order to better meet the requirements of the TPR. These recommendations included eliminating the prohibited uses list, including an allowed uses list (prohibit all uses not on list), clarifying the conditional use provisions, and providing clear definitions of the airport areas.

To a large extent, the LCC is consistent with land use compatibility requirements suggested by model ordinance language in the 2003 Oregon Airport Land Use Compatibility Guidebook (<http://www.aviation.state.or.us/Aviation/landuseguidebook.shtml>.) However, to ensure that all of the “Land Use Compatibility Requirements” contained in the model language are clearly identified in the LCC, Lincoln County should consider amending Section 1.1940, following the structure suggested by the Guidebook for an airport overlay code section. Appendix D of the Guidebook contains model language for an airport safety and compatibility overlay zone for public use airports with instrument approaches. In particular, to clarify what uses are allowed in each of the airports’ imaginary surface zones, the County should consider including a table similar to Table A-1 in Appendix D. The model language in this appendix also includes a definitions section.

OAR 660-12-045(2)

- (d) Local governments shall adopt ... A process for coordinated review of future land use decisions affecting transportation facilities, corridors or sites;*
- (f) Regulations to provide notice to public agencies providing transportation facilities and services, MPOs, and ODOT of:*
 - (A) Land use applications that require public hearings;*
 - (B) Subdivision and partition applications;*
 - (C) Other applications which affect private access to roads; and*
 - (D) Other applications within airport noise corridors and imaginary surfaces which affect airport operations.*

Adopted County ordinances do not provide a process for coordinated review of future land use decisions that affect transportation facilities. The language recommended to comply with OAR 660-12-045(1)(c) would require notification to ODOT for land use amendments that affect state facilities. New language has been included in this report under OAR Section 660-12-0045(1)(c) above as a new subsection 1.2250(3), see. In addition, notification requirements should include language that requires notice to other public agencies providing transportation facilities and services. Appendix C of the Draft Lincoln County TSP (Section 3.4.3) also states that it should be County policy to notify special interest transportation groups such as truckers, bicyclists and the disabled of any roadway or other transportation project.

OAR 660-12-045(2)

- (g) Local governments must adopt... Regulations assuring that amendments to land use designations, densities, and design standards are consistent with the functions, capacities and levels of service of facilities identified in the TSP.*

This TPR requirement ensures that amendments to the comprehensive plan and land use regulations are reviewed for their impact on transportation facilities identified in the TSP. The LCC notification procedures, with the addition of suggested amendments, require referral of applications to affected agencies and specifically require notice to ODOT. Neither the County's current requirements, nor suggested amendments to this point, include specific provisions for amendments that impact transportation facilities.

To comply with the TPR, it is recommended that the County amend the code to include clarification that approval of amendments to land use designations, densities, and design standards is contingent on findings of consistency with the planned transportation system, as adopted in the County's TSP.

To comply with the Rule, it is recommended that a new Section 1.1240, Transportation Planning Rule Compliance, new numbering be added to the Amendments section of Chapter 1. The purpose of this subsection is to specify how land use amendments are to comply with the TPR. New language is included to provide guidance in determining when a code amendment is considered to have an impact on transportation facilities. The new subsection also discusses how to ensure that proposed amendments to the comprehensive plan or to the development code are consistent with the TSP when the amendment significantly affects a transportation facility.

These proposed code amendments are consistent with OAR 660-12-0060, which requires that amendments to functional plans, acknowledged comprehensive plans, and land use regulations that significantly affect an existing or planned transportation facility must ensure that the allowed land uses are consistent with the identified function, capacity, and performance standards of the facility.

OAR 660-12-045(3)

Local governments shall adopt land use or subdivision regulations for urban areas and rural communities as set forth below. The purposes of this section are to provide for safe and convenient pedestrian, bicycle and vehicular circulation consistent with access management standards and the function of affected streets, to ensure that new development provides on-site streets and accessways that provide reasonably direct routes for pedestrian and bicycle travel in areas where pedestrian and bicycle travel is likely if connections are provided, and which avoids wherever possible levels of automobile traffic which might interfere with or discourage pedestrian or bicycle travel.

- (a) Bicycle parking facilities as part of new multi-family residential developments of four units or more, new retail, office and institutional developments, and all transit transfer stations and park-and-ride lots;*

The purpose of this TPR requirement is to ensure that bicycle facilities are provided within new multi-family residential and commercial development. Section 1.1415 of the LCC includes off-street parking requirements; bicycle parking is not included in this section and is not a requirement in any of the zone classifications. It is recommended that a new Section 1.1420 Bicycle Parking Requirements, be inserted to address bicycle parking.

OAR 660-12-045(3)

- (b) On-site facilities shall be provided which accommodate safe and convenient pedestrian and bicycle access from within new subdivisions, multi-family developments, planned developments, shopping centers, and commercial districts to*

- adjacent residential areas and transit stops, and to neighborhood activity centers within one-half mile of the development. Single-family residential developments shall generally include streets and accessways. Pedestrian circulation through parking lots should generally be provided in the form of accessways.*
- (A) "Neighborhood activity centers" includes, but is not limited to, existing or planned schools, parks, shopping areas, transit stops or employment centers;*
 - (B) Bikeways shall be required along arterials and major collectors. Sidewalks shall be required along arterials, collectors and most local streets in urban areas, except that sidewalks are not required along controlled access roadways, such as freeways;*
 - (C) Cul-de-sacs and other dead-end streets may be used as part of a development plan, consistent with the purposes set forth in this section;*
 - (D) Local governments shall establish their own standards or criteria for providing streets and accessways consistent with the purposes of this section. Such measures may include but are not limited to: standards for spacing of streets or accessways; and standards for excessive out-of-direction travel;*
 - (E) Streets and accessways need not be required where one or more of the following conditions exist:

 - (i) Physical or topographic conditions make a street or accessway connection impracticable. Such conditions include but are not limited to freeways, railroads, steep slopes, wetlands or other bodies of water where a connection could not reasonably be provided;*
 - (ii) Buildings or other existing development on adjacent lands physically preclude a connection now or in the future considering the potential for redevelopment; or*
 - (iii) Where streets or accessways would violate provisions of leases, easements, covenants, restrictions or other agreements existing as of May 1, 1995, which preclude a required street or accessway connection.**
 - (c) Where off-site road improvements are otherwise required as a condition of development approval, they shall include facilities accommodating convenient pedestrian and bicycle travel, including bicycle ways along arterials and major collectors;*
 - (d) For purposes of subsection (b) "safe and convenient" means bicycle and pedestrian routes, facilities and improvements which:

 - (A) Are reasonably free from hazards, particularly types or levels of automobile traffic which would interfere with or discourage pedestrian or cycle travel for short trips;*
 - (B) Provide a reasonably direct route of travel between destinations such as between a transit stop and a store; and*
 - (C) Meet travel needs of cyclists and pedestrians considering destination and length of trip; and considering that the optimum trip length of pedestrians is generally 1/4 to 1/2 mile.**
 - (e) Internal pedestrian circulation within new office parks and commercial developments shall be provided through clustering of buildings, construction of accessways, walkways and similar techniques.*

The purpose of these sections of the TPR is to ensure that safe and convenient circulation and facilities are provided for pedestrians and bicyclists, within new residential and

commercial development and on public streets. The zoning code should include development standards that require pedestrian and bicycle connections between residential developments and connecting new housing to activity centers. An appropriate location for these standards is Section 1.3230, General Requirements and Minimum Standards of Design and Development.

Subsection (6), Street Design and Improvements, of this Section includes provisions that apply to the creation of a new street. It is recommended that this section address sidewalks and bicycle facilities to express the intent to provide these facilities as part of new road construction.

Also recommended is including a new section to address pedestrian and bicycle access and circulation, Subsection 7, Pedestrian and Bicycle Access and Circulation.

OAR 660-12-045(7)

Local governments shall establish standards for local streets and accessways that minimize pavement width and total right-of-way consistent with the operational needs of the facility. The intent of this requirement is that local governments consider and reduce excessive standards for local streets and accessways in order to reduce the cost of construction, provide for more efficient use of urban land, provide for emergency vehicle access while discouraging inappropriate traffic volumes and speeds, and which accommodate convenient pedestrian and bicycle circulation. Notwithstanding subsection (1) or (3) of this section, local street standards adopted to meet this requirement need not be adopted as land use regulations.

The Land Divisions Chapter, Section 1.3230, General Requirements and Minimum Standards of Design and Development, contains the road right-of-way requirements. The TPR matrix recommended narrowing the existing right-of-way standards in order to comply with the TPR requirement of “minimizing pavement width.

The County should consider adding some general road and access policies to Section 1.3230 of the LCC that emphasizes the County’s intent to utilize land efficiently and provide for convenient pedestrian and bicycle circulation. It is recommended that the County adopt a new subsection (6), General Road and Access Policies, (sample language below) and renumber subsequent sections of Section 1.3230.

The Street Design and Improvements subsection (renumbered as (7) below), should be amended to make clear that road improvements must be consistent with the standards in the County’s adopted TSP and the provisions of this section of the County Code.

A new subsection 8, Pedestrian and Bicycle Improvements, states that the location and dimensions of the pedestrian circulation plan and the location of bicycle parking need to be shown on improvement plans.

Definitions

Some terms used in the proposed language have not been previously defined in the County Code. Specifically, terminology relating to pedestrian, bicycle and transit uses should be included to clarify new sections added to the Code. New definitions should be added to Section 1.115 Definitions of the LCC.

8.2.2 Proposed Code Revisions

1.1640 Conditional Uses and Criteria for Certain Transportation Facilities and Improvements

- (1) Construction, reconstruction, or widening of highways, roads, bridges or other transportation facilities that are (1) not designated in the adopted Lincoln County Transportation System Plan (“TSP”), or (2) not designed and constructed as part of an approved subdivision or partition are allowed in all zoning districts subject to a conditional use permit and satisfaction of all of the following criteria:
- (a) The project and its design are consistent with Lincoln County’s adopted TSP and consistent with the State Transportation Planning Rule, OAR 660-012 (“the TPR”).
 - (b) The project design is compatible with abutting land uses in regard to noise generation and public safety and is consistent with the applicable zoning and development standards and criteria for the abutting properties.
 - (c) The project design mitigates environmental impacts to identified wetlands, wildlife habitat, air and water quality, cultural resources, and scenic qualities.
 - (d) The project preserves or improves the safety and function of the facility through access management, traffic calming, or other design features.
 - (e) The project includes provisions for bicycle and pedestrian access and circulation consistent with the comprehensive plan, the requirements of this ordinance, and the TSP.

1.1250 Notice of Public Hearings

Note: The following recommended language includes subsection numbers to indicate an appropriate location for the new or revised language in the LCC. Subsequent subsections are not listed, but will need to be renumbered to accommodate the new section in the recommended location.

- (3) If subject property being considered for a comprehensive plan or zone change is within 500 feet of a state highway, notice of the hearing pursuant to the application shall be provided to the Oregon Department of Transportation (ODOT).

1.3260 Access Control

- (1) Purpose. The following access control standards apply to industrial, commercial and residential developments including land divisions. Access shall be managed to maintain an adequate level of service and to maintain the functional classification of roadways as required by the Lincoln County Transportation System Plan. Major roadways, including arterials, and collectors, serve as the primary system for moving people and goods within and through the county. Access management is a primary concern on these roads. Local streets and alleys provide access to individual properties. If vehicular access and circulation are not properly designed, these roadways will be unable to accommodate the needs of development and serve their transportation function.

The regulations in this section further the orderly layout and use of land, protect community character, and conserve natural resources by promoting well-designed road and access systems and discouraging the unplanned subdivision of land.

(2) Access Control Standards.

- (a) Traffic Impact Study Requirements. The County or other agency with access jurisdiction may require a traffic study prepared by a qualified professional to determine access, circulation and other transportation requirements.
- (b) The County or other agency with access permit jurisdiction may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system. Access to and from off-street parking areas shall not permit backing onto a public street.
- (c) Access Options. When vehicle access is required for development (i.e., for off-street parking, delivery, service, drive-through facilities, etc.), access shall be provided by one of the following methods (a minimum of 10 feet per lane is required). These methods are “options” to the developer/subdivider.
 - (A) Option 1. Access is from an existing or proposed alley or mid-block lane. If a property has access to an alley or lane, direct access to a public street is not permitted.
 - (B) Option 2. Access is from a private street or driveway connected to an adjoining property that has direct access to a public street (i.e., “shared driveway”). A public access easement covering the driveway shall be recorded in this case to assure access to the closest public street for all users of the private street/drive.
 - (C) Option 3. Access is from a public street adjacent to the development parcel. If practicable, the owner/developer may be required to close or consolidate an existing access point as a condition of approving a new access. Street accesses shall comply with the access spacing standards in Subsection 7, below.
- (d) Subdivisions Fronting Onto an Arterial Street. New residential land divisions fronting onto an arterial street shall be required to provide alleys or secondary (local or collector) streets for access to individual lots. When alleys or secondary streets cannot be constructed due to topographic or other physical constraints, access may be provided by consolidating driveways for clusters of two or more lots (e.g., includes flag lots and mid-block lanes).
- (e) Double-Frontage Lots. When a lot has frontage onto two or more streets, access shall be provided first from the street with the lowest classification. For example, access shall be provided from a local street before a collector or arterial street. Except for corner lots, the creation of new double-frontage lots shall be prohibited in *< list applicable zones here>*, unless topographic or physical constraints require the formation of such lots. When double-frontage lots are permitted, a landscape buffer with trees and/or shrubs and ground cover not less than 20 feet wide shall be provided between the back yard fence/wall and the sidewalk or street; maintenance shall be assured by the owner (i.e., through homeowner’s association, etc.).
- (f) Reverse Frontage Lots. When a lot has frontage opposite that of the adjacent lots, access shall be provided from the street with the lowest classification.

- (g) Access Spacing. Minimum access spacing standards apply to newly established public street intersections, private drives, and non-traversable medians, as listed in Section 13230 (3).
 - (h) Number of Access Points. For single-family (detached and attached), two-family, and three-family housing types, one street access point is permitted per lot, when alley access cannot otherwise be provided; except that two access points may be permitted for two-family and three-family housing on corner lots (i.e., no more than one access per street), subject to the access spacing standards in Subsection (g), above. The number of street access points for multiple family, commercial, industrial, and public/institutional developments shall be minimized to protect the function, safety and operation of the street(s) and sidewalk(s) for all users. Shared access may be required, in conformance with Subsection (i) below, in order to maintain the required access spacing, and minimize the number of access points.
 - (i) Shared Driveways. The number of driveway and private street intersections with public streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The County shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes in accordance with the following standards:
 - (A) Shared driveways and frontage streets may be required to consolidate access onto a collector or arterial street. When shared driveways or frontage streets are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway or street temporarily ends at the property line, but may be extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).
 - (B) Access easements (i.e., for the benefit of affected properties) shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.
 - (C) Exception. Shared driveways are not required when existing development patterns or physical constraints (e.g., topography, parcel configuration, and similar conditions) prevent extending the street/driveway in the future.
- (3) Street Connectivity and Formation of Blocks Required. In order to promote efficient vehicular and pedestrian circulation throughout the county, land divisions and large site developments shall produce complete blocks bounded by a connecting network of public and/or private streets, in accordance with AASHTO design standards.
- (4) Fire Access and Parking Area Turn-Arounds. A fire equipment access drive shall be provided for any portion of an exterior wall of the first story of a building that is located more than 150 feet from an existing public street or approved fire equipment access drive. Parking areas shall provide adequate aisles or turn-around areas for service and delivery vehicles so that all vehicles may enter the street in a forward manner.
- (5) Vertical Clearances. Driveways, private streets, aisles, turn-around areas and ramps shall have a minimum vertical clearance of 13' 6" for their entire length and width.

- (6) Vision Clearance. See Section 1.1401 Clear-Vision Areas, under Special Requirements in Chapter 1.
- (7) Construction. The following development and maintenance standards shall apply to all driveways and private streets, except that the standards do not apply to driveways serving one single-family detached dwelling:
- (a) Surface Options. Driveways, parking areas, aisles, and turn-arounds may be paved with asphalt, concrete or comparable surfacing, or a durable non-paving material may be used to reduce surface water runoff and protect water quality. Paving surfaces shall be subject to review and approval by the Planning Director.
 - (b) Surface Water Management. When a paved surface is used, all driveways, parking areas, aisles and turn-arounds shall have on-site collection or infiltration of surface waters to eliminate sheet flow of such waters onto public rights-of-way and abutting property. Surface water facilities shall be constructed in conformance with County standards.
 - (c) Driveway Aprons. When driveway approaches or “aprons” are required to connect driveways to the public right-of-way, they shall be paved with concrete surfacing.

1.1530 Traffic Impact Study (TIS).

- (1) Purpose. The purpose of this section of the code is to implement Section 660-012-0045 (2) (e) of the State Transportation Planning Rule that requires the County to adopt a process to apply conditions to development proposals in order to minimize adverse impacts to and protect transportation facilities. This section establishes the standards for when a proposal must be reviewed for potential traffic impacts; when a Traffic Impact Study must be submitted with a development application in order to determine whether conditions are needed to minimize impacts to and protect transportation facilities; what must be in a Traffic Impact Study; and who is qualified to prepare the Study.
- (2) Typical Average Daily Trips. The latest edition of the Trip Generation manual, published by the Institute of Transportation Engineers (ITE) shall be used as standards by which to gauge average daily vehicle trips.
- (3) When Required. A Traffic Impact Study may be required to be submitted to the County with a land use application, when the following conditions apply:
 - (a) The development application involves one or more of the following actions:
 - (A) A change in zoning or a plan amendment designation; or
 - (B) Any proposed development or land use action that ODOT states may have operational or safety concerns along a state highway; and
 - (C) The development shall cause one or more of the following effects, which can be determined by field counts, site observation, traffic impact analysis or study, field measurements, crash history, Institute of Transportation Engineers Trip Generation manual; and information and studies provided by the local reviewing jurisdiction and/or ODOT:
 - (i) An increase in site traffic volume generation by 500 Average Daily Trips (ADT) or more (or as required by the County Engineer); or
 - (ii) An increase in use of adjacent streets by vehicles exceeding the 20,000 pound gross vehicle weights by 10 vehicles or more per day; or

- (iii) The location of the access driveway does not meet minimum intersection sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles queue or hesitate on the State highway, creating a safety hazard; or
- (iv) The location of the access driveway does not meet the access spacing standard of the roadway on which the driveway is located; or
- (v) A change in internal traffic patterns that may cause safety problems, such as back up onto the highway or traffic crashes in the approach area.

(4) Traffic Impact Study Requirements.

- (a) Preparation. A Traffic Impact Study shall be prepared by a professional engineer in accordance with OAR 734-051-180.
- (b) Transportation Planning Rule Compliance. See Section 1.1240 Transportation Planning Rule Compliance.
- (c) Pre-application Conference. The applicant will meet with Lincoln County Public Works prior to submitting an application that requires a Traffic Impact Study. This meeting will determine the required elements of the TIS and the level of analysis expected.

(5) Approval Criteria.

- (a) Criteria. When a Traffic Impact Study is required, approval of the development proposal requires satisfaction of the following criteria:
 - (A) The Traffic Impact Study was prepared by a professional engineer in accordance with OAR 734-051-180; and
 - (B) If the proposed development shall cause one or more of the effects in Section 3.a.C, above, or other traffic hazard or negative impact to a transportation facility, the Traffic Impact Study includes mitigation measures that meet County's Level-of-Service standard of "D" or volume-to-capacity ratio of 0.90 and satisfactory to the County Engineer, and ODOT when applicable; and
 - (C) The proposed site design and traffic and circulation design and facilities, for all transportation modes, including any mitigation measures, are designed to:
 - (i) Have the least negative impact on all applicable transportation facilities; and
 - (ii) Accommodate and encourage non-motor vehicular modes of transportation to the extent practicable; and
 - (iii) Make the most efficient use of land and public facilities as practicable; and
 - (iv) Provide the most direct, safe and convenient routes practicable between on-site destinations, and between on-site and off-site destinations; and
 - (v) Otherwise comply with applicable requirements of the Lincoln County Code.

(6) Conditions of Approval. The County may deny, approve, or approve the proposal with appropriate conditions.

- (a) Dedication of land for streets, transit facilities, sidewalks, bikeways, paths, or accessways shall be required where the existing transportation system will be impacted by or is inadequate to handle the additional burden caused by the proposed use.
- (b) Improvements such as paving, curbing, installation or contribution to traffic signals, construction of sidewalks, bikeways, accessways, paths, or streets that serve the proposed use where the existing transportation system may be burdened by the proposed use may be required.

1.1250 Notice of Public Hearings

- (4) Notice of the receipt of an application will be sent to surrounding property owners and to public agencies and local jurisdictions, including those providing transportation facilities and services that may be affected by the proposed action. Affected jurisdictions could include the Department of Environmental Quality, the Oregon Department of Aviation, cities within Lincoln County, and neighboring jurisdictions.
- (5) Notice of the receipt of an application will be sent to special interest transportation groups as appropriate. Special interest transportation groups could include trucking organizations, bicycle and pedestrian interest groups, and disabled persons interest groups. Information that should be conveyed with the notice includes the following:
 - (a) Project location
 - (b) Proposed land use action
 - (c) Location of project access point(s)

1.1240 Transportation Planning Rule Compliance

- (1) Review of Applications for Effect on Transportation Facilities. When a development application includes a proposed comprehensive plan amendment zone change or land use regulation change, the proposal shall be forwarded to ODOT for review to determine whether it significantly affects a transportation facility, in accordance with Oregon Administrative Rule (OAR) 660-012-0060 (the Transportation Planning Rule - "TPR"). "Significant" means the proposal would:
 - (a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);
 - (b) Change standards implementing a functional classification system; or
 - (c) As measured at the end of the planning period identified in the adopted transportation system plan:
 - (A) Allow land uses or levels of development that would result in types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;
 - (B) Reduce the performance of an existing or planned transportation facility below the minimum acceptable performance standard identified in the TSP or comprehensive plan; or

(C) Worsen the performance of an existing or planned transportation facility that is otherwise projected to perform below the minimum acceptable performance standard identified in the TSP or comprehensive plan.

(2) Amendments That Affect Transportation Facilities. Amendments to the comprehensive plan and land use regulations that significantly affect a transportation facility shall ensure that allowed land uses are consistent with the function, capacity, and level of service of the facility identified in the TSP. This shall be accomplished by one or a combination of the following:

- (a) Adopting measures that demonstrate allowed land uses are consistent with the planned function, capacity, and performance standards of the transportation facility.
- (b) Amending the TSP or comprehensive plan to provide transportation facilities, improvements or services adequate to support the proposed land uses consistent with the requirements of -0060 of the TPR.
- (c) Altering land use designations, densities, or design requirements to reduce demand for automobile travel and meet travel needs through other modes of transportation.
- (d) Amending the TSP to modify the planned function, capacity or performance standards of the transportation facility.

(3) Traffic Impact Study. A Traffic Impact Study shall be submitted with a plan amendment or land use district change application. (See Section 1.1530, Traffic Impact Study (TIS).

1.1420 - Bicycle Parking Requirements²

Note: The following recommended language includes a new section number to indicate an appropriate location for the new language in the LCC. Subsequent sections are not listed, but will need to be renumbered to accommodate the new section in the recommended location

In addition to new retail, office, and institutional development in rural communities, and transit transfer and park and ride lots, all uses which are subject to Design Review shall provide bicycle parking, in conformance with the following standards:

- (1) Number of Bicycle Parking Spaces. A minimum of two (2) bicycle parking spaces per use is required for all uses with greater than 10 vehicle parking spaces. The following additional standards apply to specific types of development:
 - (a) Multi-Family Residences. Every residential use of four (4) or more dwelling units provides at least one (1) sheltered bicycle parking space for each dwelling unit. Sheltered bicycle parking spaces may be located within a garage, storage shed, basement, utility room or similar area. In those instances in which the residential complex has no garage or other easily accessible storage unit, the bicycle parking

² The proposed text for this Section is largely based on the 1999 Model Development Code and User's Guide for Small Cities. The updated Model Development Code (2005) provides bicycle parking requirements for a wider variety of uses in a table. Generally speaking, tables are more user-friendly, but the assumption is that the recommended language for a new Section 1.1420 adequately covers the County's needs, while at the same time fits in better with the current code structure.

- spaces may be sheltered from sun and precipitation under an eave, overhang, an independent structure, or similar cover.
- (b) Parking Lots. All public and commercial parking lots and parking structures provide a minimum of one (1) bicycle parking space for every 10 motor vehicle parking spaces.
- (c) Schools. Elementary and middle schools, both private and public, provide one (1) bicycle parking space for every 10 students and employees. High schools provide one bicycle parking space for every 5 students and employees. All spaces shall be sheltered under an eave, overhang, independent structure, or similar cover.
- (d) Colleges and trade schools provide one (1) bicycle parking space for every 10 motor vehicle spaces plus one space for every dormitory unit. Fifty percent (50%) of the bicycle parking spaces shall be sheltered under an eave, overhang, independent structure, or similar cover.
- (e) County Commercial. Within the County Commercial zone, bicycle parking for customers shall be provided along the street at a rate of at least one (1) space per use. Individual uses shall provide their own parking, or spaces may be clustered to serve up to six (6) bicycles. Bicycle parking spaces shall be located in front of the stores along the street, either on the sidewalks or in specially constructed areas such as pedestrian curb extensions. Inverted "U" style racks are recommended. Bicycle parking shall not interfere with pedestrian passage, leaving a clear area of at least 36 inches between bicycles and other existing and potential obstructions. Customer spaces may or may not be sheltered. When provided, sheltered parking (within a building, or under an eave, overhang, or similar structure shall be provided at a rate of one (1) space per 10 employees, with a minimum of one space per store.
- (f) Multiple Uses. For buildings with multiple uses (such as a commercial or mixed use center), bicycle parking standards shall be calculated by using the total number of motor vehicle parking spaces required for the entire development. A minimum of one (1) bicycle parking space for every 10 motor vehicle parking spaces is required.
- (2) Exemptions. This Section does not apply to single family, two-family, and three-family housing (attached, detached or manufactured housing), home occupations, agriculture and livestock uses, or other developments with fewer than 10 vehicle parking spaces.
- (3) Location and Design. Bicycle parking shall be conveniently located with respect to both the street right-of-way and at least one building entrance (e.g., no farther away than the closest parking space). It should be incorporated whenever possible into building design and coordinated with the design of street furniture when it is provided. Street furniture includes benches, street lights, planters and other pedestrian amenities.
- (4) Visibility and Security. Bicycle parking shall be visible to cyclists from street sidewalks or building entrances, so that it provides sufficient security from theft and damage;
- (5) Options for Storage. Bicycle parking requirements for long-term and employee parking can be met by providing a bicycle storage room, bicycle lockers, racks, or other secure storage space inside or outside of the building;
- (6) Lighting. Bicycle parking shall be least as well lit as vehicle parking for security.

(7) Reserved Areas. Areas set aside for bicycle parking shall be clearly marked and reserved for bicycle parking only.

(8) Hazards. Bicycle parking shall not impede or create a hazard to pedestrians. Parking areas shall be located to avoid conflict with vision clearance standards (Section 1.1401 Clear-Vision Areas).

1.3230 General Requirements and Minimum Standards of Design and Development

Note: The following recommended language includes a new section number to indicate an appropriate location for the new language in the LCC. Subsequent sections are not listed, but will need to be renumbered to accommodate the new section in the recommended location.

(6) Street Design and Improvements:

- (f) Street improvements shall include related improvements such as curbs, shoulders, sidewalks, and median strips to the extent those are required.
- (g) Sidewalks shall be required as part of a new road when a proposed development or land division is within an urban growth boundary, or when:
 - (A) The subject property is located within one-quarter mile of a school, shopping center, recreation area, or other use likely to create pedestrian traffic; or
 - (B) The surrounding area is developed with sidewalks or is zoned for commercial, industrial or urban residential uses.
- (h) The sidewalk(s) shall be constructed to applicable city standards. Sidewalk requirements may not be waived, but may be deferred through a road improvement agreement when, in the opinion of the County, sidewalks would not be immediately necessary to accommodate pedestrian traffic.
- (i) Bicycle facilities shall be required along new roads when necessary to extend an existing bicycle route, or when a bicycle route or way is proposed within an adopted Transportation System Plan.

(7) Pedestrian and Bicycle Access and Circulation:

- (a) Purpose. To ensure safe, direct and convenient pedestrian and bicycle circulation, all new development in rural communities, except single family detached housing (i.e., on individual lots), shall provide a continuous pedestrian and/or multi-use system. (Pathways only provide for pedestrian circulation. Multi-use pathways accommodate pedestrians and bicycles.) The system of pathways shall be designed based on the standards in Subsections A-C below:
 - (A) Continuous Pathways. The pathway system shall extend throughout the development site, and connect to all future phases of development, adjacent trails, public parks and open space areas whenever possible. The developer may also be required to connect or stub pathway(s) to adjacent streets and private property, in accordance with the provisions of 1.3260 Access Control.

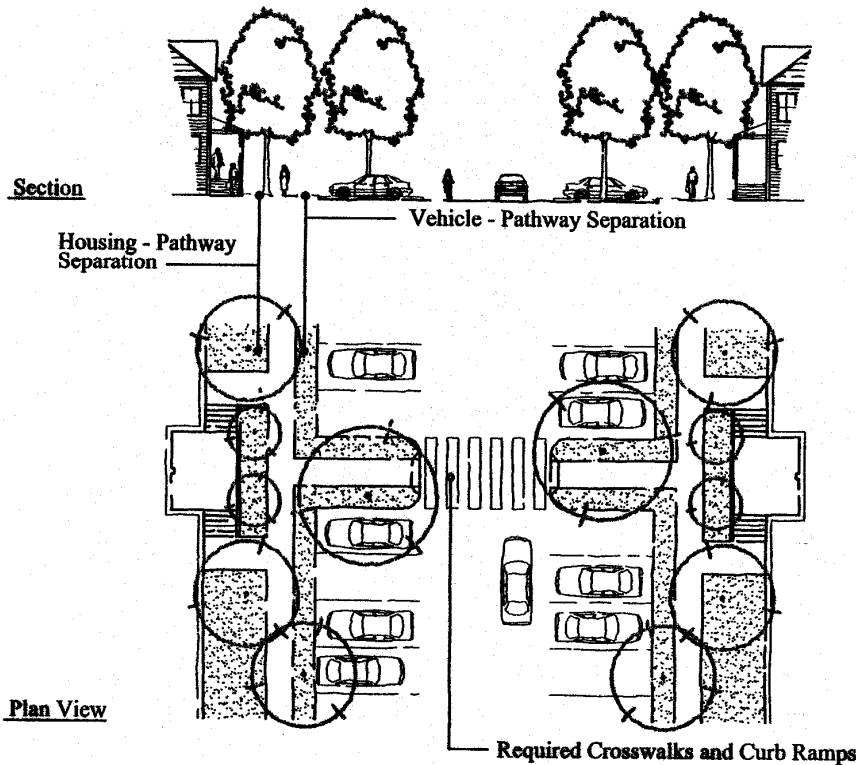
- (B) Safe, Direct, and Convenient Pathways. Pathways within developments shall provide safe, reasonably direct and convenient connections between primary building entrances, and all adjacent streets based on the following definitions:
- (i) Reasonably direct. A route that does not deviate unnecessarily from a straight line or a route that does not involve a significant amount of out-of-direction travel for likely users.
 - (ii) Safe and convenient. Bicycle and pedestrian routes that are reasonably free from hazards and provide a reasonably direct route of travel between destinations.
- (C) Connections Within Development. Connections within developments shall be provided as required in subsections a and b, below:
- (i) Walkways shall connect all building entrances to one another to the extent practicable.
 - (ii) Walkways shall connect all on-site parking areas, storage areas, recreational facilities and common areas, and shall connect off-site adjacent uses to the site to the extent practicable. Topographic or existing development constraints may be cause for not making certain walkway connections.
- (b) Street Connections Pathways (for pedestrians and bicycles) shall be provided at or near mid-block where the block length exceeds 600 feet.³ Pathways shall also be provided where cul-de-sacs or dead-end streets are planned, to connect the ends of the streets together, to other streets, and/or to other developments. Pathways used to comply with these standards shall conform to all of the following criteria:
- (A) Multi-use pathways (i.e., for pedestrians and bicyclists) are no less than 8-foot wide and located within a 12 foot right-of-way or easement that allows access for emergency vehicles;
 - (B) If streets within a subdivision or neighborhood are lighted, pathways shall also be lighted;
 - (C) Stairs or switchback paths using a narrower right-of-way/ easement may be required in lieu of a multi-use pathway where grades are steep;
 - (D) The decision-maker may determine, based upon facts in the record, that a pathway is impracticable due to: physical or topographic conditions (e.g., freeways, railroads, extremely steep slopes, sensitive lands, and similar physical constraints); buildings or other existing development on adjacent properties that physically prevent a connection now or in the future, considering the potential for redevelopment; and sites where the provisions of recorded leases, easements, covenants, restrictions, or other agreements recorded as of the effective date of this Code prohibit the pathway connection;
 - (E) Vehicle/Pathway Separation. Where pathways are parallel and adjacent to a driveway or street (public or private), they shall be raised 6 inches and curbed, or separated from the driveway/street by a 5-foot minimum strip with bollards, a landscape berm, or other physical barrier. If a raised path is used, the ends of the raised portions must be equipped with curb ramps.
 - (F) Housing/Pathway Separation. Pedestrian pathways shall be separated a minimum of 5 feet from all residential living areas on the ground floor, except at

³ Chapter 3, Design Standards, in the Model Development Code and User's Guide for Small Cities recommends limiting block sizes in residential and commercial zones to 600 feet in length in order to promote efficient vehicular and pedestrian circulation (see p. 3-47 in the Model Development Code).

building entrances. Separation is measured from the pathway edge to the closest dwelling unit. The separation area shall be landscaped in conformance with the provisions of the Zoning Ordinance, Article 414.4 Required Landscape Areas. No pathway/building separation is required for commercial, industrial, public, or institutional uses.

- (G) Crosswalks. Where pathways cross a parking area, driveway, or street ("crosswalk"), they shall be clearly marked with contrasting paving materials, humps/raised crossings, or painted striping. An example of contrasting paving material is the use of a concrete crosswalk through an asphalt driveway. If painted striping is used, it should consist of thermo-plastic striping or similar type of durable application.
- (H) Pathway Surface. Pathway surfaces shall be concrete, asphalt, brick/masonry pavers, or other durable surface, at least 5 feet wide, and shall conform to ADA requirements. Multi-use paths (i.e., for bicycles and pedestrians) shall be the same materials, at least 8 feet wide.
- (I) Accessible routes. Pathways shall comply with the federal Americans With Disabilities Act (ADA), which requires accessible routes of travel from the parking spaces to the accessible entrance. The route shall be compliant with the following standards:
 - (i) Shall not contain curbs or stairs;
 - (ii) Must be at least 3 feet wide;
 - (iii) Is constructed with a firm, stable, slip resistant surface; and
 - (iv) The slope shall not be greater than 1:12 in the direction of travel.

Pathway Standards



(10) Public Access Ways:

~~When necessary for public convenience and safety, the Planning Commission may require the land divider to dedicate to the public access ways 10 to 20 feet in width to connect to cul de sacs, to pass through oddly shaped or unusually long blocks, to provide for networks of public paths according to adopted plans or to provide access to schools, parks, beaches or other public areas, of such design and location as reasonably required to facilitate public use.~~

1.3230 General Requirements and Minimum Standards of Design and Development

Note: The following recommended language includes subsection numbers to indicate an appropriate location for the new or revised language in the LCC. Subsequent subsections are not listed, but will need to be renumbered to accommodate the new section in the recommended location.

(6) General Road and Access Policies

- (a) The purpose of this Chapter is to establish the criteria to be used in Lincoln County for evaluating the appropriateness of proposed roads which are intended to provide access to lots or parcels. These criteria shall form the basis for determining what requirements are necessary to ensure that there will be adequate provisions available now, and in the future, to provide for the transportation needs of lots, parcels, or developments.
- (b) The Lincoln County Road Standards are the standards intended to be met to provide access to new development in such a manner that reduces construction cost, makes efficient use of urban land, allows emergency vehicle access while discouraging inappropriate traffic volumes and speeds, and that accommodates convenient pedestrian and bicycle circulation. The standards apply to County roads, dedicated roads and private roads.
- (c) Conditions of Development Approval. No development may occur unless required transportation facilities are in place or guaranteed, in conformance with the provisions of this document. Improvements required as a condition of development approval, when not voluntarily accepted by the applicant, shall be roughly proportional to the impact of development on public facilities and services. Findings in the development approval shall indicate how the required improvements are roughly proportional to the impact.

(6) (7) Street Design and Improvements:

- (a) All plans and specifications for street and road improvements shall be prepared by an engineer licensed in the State of Oregon.
- (b) The layout of streets shall give suitable recognition to surrounding topographical conditions in accordance with the purpose of this chapter.
- (c) Street improvements, street grades, and centerline radii on curves shall meet standards set forth in the American Association of State Highway and Transportation Officials (AASHTO) manual or other acceptable design principles and construction specifications consistent with generally accepted engineering practices.

- (d) All bridges shall have a 30 year minimum life expectancy and shall be constructed to load limit standards approved by the County Director of Public Works.
- (e) All roads proposed to be developed within a city's urban growth boundary shall be developed to the standards of the city where such standards require greater levels of improvements than the standards contained herein.
- (f) Road development and access shall be in accordance with the adopted Transportation System Plan and the provisions of Section 1.3230.

(8) Pedestrian and bicycle improvements.

- (a) Improvement plans shall show the location and dimensions of the pedestrian circulation system.
- (b) Improvement plans shall show the location and dimensions of bicycle parking, when required.

Section 1.1115 Definitions

Note: The following recommended language includes subsection numbers to indicate an appropriate location for the new or revised language in the LCC. Subsequent subsections are not listed, but will need to be renumbered to accommodate the new section in the recommended location.

- (3) “Accessway” is a walkway that provides pedestrian and bicycle passage either between streets or from a street to a building or other destination such as a school, park, or transit stop. Accessways generally include a walkway and additional land on either side of the walkway, often in the form of an easement or right-of-way, to provide clearance and separation between the walkway and adjacent uses. Accessways through parking lots are generally physically separated from vehicle pathways by curbs or similar devices and include landscaping, trees, and lighting. Where accessways cross driveways, they are generally raised, paved, or marked in a manner that provides convenient access for pedestrians.
- (10) “Bicycle” is a vehicle designed to operate on the ground on wheels, propelled solely by human power, upon which any person may ride, and with two tandem wheels at least 14 inches in diameter.
- (11) “Bicycle Facilities” is a general term denoting improvements and provisions made to accommodate or encourage bicycling, including parking facilities and all bikeways.
- (12) “Bikeway” is any road, path, or way that is in some manner specifically open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are shared with other transportation modes.
- (60) “Multi-use Path” is a paved 10 to 12-foot wide way that is physically separated from motorized vehicular traffic; typically shared with pedestrians, skaters, and other non-motorized users.
- (94) “Walkway” is a hard-surfaced area intended and suitable for pedestrians, including sidewalks and the surfaced portions of accessways.

Transportation System Plan

for
Lincoln
County,
Oregon

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October 2007



Volume 2

Transportation System Plan

Lincoln County, Oregon

Prepared for
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Lincoln County Transportation System Plan – Volume 2

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