OREGON TRANSPORTATION PLAN

Technical Appendices

Adopted September 20, 2006

VOLUME 2

THE OREGON DEPARTMENT OF TRANSPORTATION

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TECHNICAL APPENDIX 1

DESCRIPTION OF THE TRANSPORTATION SYSTEM

TECHNICAL APPENDIX 1
Description of the Transportation System

Oregon's Transportation System at a Glance[1]

Aviation System

Oregon's Aviation System	
Airports with commercial service (Eugene, Klamath Falls, Medford, North Bend, Pendleton, Portland and Redmond)	7
Public-use airports (Total)	97
City-owned	29
State-owned	28
Privately-owned	15
Port-owned	11
County-owned	9
Federally-owned	2
Owned by other public organizations	3
National Plan of Integrated Airport System (NPIAS) airports (public-use)	57 (of 97)
Total public and private-use airports	Over 400

Highway and Roadway System

Oregon's Road System		
State highways	7,441 miles	
Paved (asphalt, concrete)	7,418 miles	99.7%
Gravel	23 miles	0.3%
Other state roads (campus, Fish and Wildlife, State Forests, state institutions, State Parks, other agencies)	4,664 miles	
Connection and frontage roads	620 miles	
County roads	26,861 miles	
Paved (asphalt, concrete, oil mat)	15,555 miles	57.9%

[1] Information contained in Technical Appendix 1 has been updated to reflect recent conditions. Information and statistics used in other parts of the Plan contain the information available at the time of plan development and do not necessarily match this appendix.

Oregon's Road System (continued)		
Unpaved (unimproved, graded, gravel)	11,306 miles	42.1%
Local access roads	6,467 miles	
City roads	10,011 miles	
Paved (asphalt, concrete, oil mat)	9,316 miles	93.1%
Unpaved (primitive, unimproved, graded, gravel)	695 miles	6.9%
Other government agencies: (Army Corps of Engineers, Bureau of Land Management, National Parks, U.S. National Forests, other federal agencies and tribal government lands)	38,666 miles	

State Highway Mileage by Road Classification	
Interstate	730
Statewide	3,007
Regional	1,291
District	2,413
Total Mileage	7,441
Additional Classifications	
Expressways	527
Special Transportation Areas (STAs)	38.2
Urban Business Areas (UBAs)	19.6
Commercial Centers (CCs)	1.4

Oregon Bridges[2]	
State-owned bridges	2,670
County, city and other public agency owned bridges	3,970
Total	6,640

Scenic Roadways in Oregon	
All-American Roads	4
National Scenic Byways	5
State Scenic Byways	5
State Tour Routes	9

[2] Bridge structures 20 feet or longer in length.

Bike and Sidewalk Facilities on State Highways	
Miles of highway with bike lanes and sidewalks	272 miles
Shoulder bikeways	691 miles
Separated paths within rights-of-way	21 miles

Pipelines

Pipeline Operators in Oregon	
Petroleum pipeline operators	4
Natural gas transmission line operators	2
Local natural gas distribution line operators	3

- Since no petroleum is produced in Oregon, petroleum products must be imported to the state; approximately 90 percent is moved by pipeline.

- Natural gas is available to approximately 80 percent of the state's population.

- Intermodal pipeline terminals are all located on petroleum pipelines. Natural gas is moved by pipeline only. Intermodal terminals are located at the Portland International Airport, in the Northwest Portland industrial areas, at the Port of Umatilla in Eastern Oregon and in the Eugene area.

Ports and Waterways

Oregon Ports	
Oregon port districts	23
Marine terminals	Approximately 80
Deep-draft freight terminal locations: • Columbia River system (Astoria, St. Helens, Portland) • Oregon Coast (Coos Bay-North Bend, Newport)	3 2
Shallow-draft freight terminal locations: Columbia River system (The Dalles, Arlington, Boardman, Umatilla)	4

- Commercial freight traffic uses the Columbia-Snake River system 465 miles upstream to Lewiston, Idaho. Below Portland, the river is authorized for a minimum of 40-foot channel depth with plans underway to deepen the channel to 43 feet. Upstream from Portland, the river is authorized for a minimum channel depth of 14 feet.

- There are about 80 public and private marine terminals throughout Oregon. Just over half of these terminals are located in Portland and 20 percent are located in the Coos Bay-North Bend area.

Public Transportation System

Public Transportation Services	
Percent of Oregon communities with a population of 2,500 or more with intercity bus or rail passenger service	90%
Average number of annual public transit rides per person by elderly and disabled Oregonians in 2003	6.2
Approximate number of transit vehicles operated by Oregon's four largest transit agencies (TriMet, Lane Transit, Salem Area Mass Transit, Rogue Valley Transit)	1,223
Light rail cars (TriMet) Miles of light rail track	83 44
Vehicles operated by Oregon's 36 smaller community transit providers	124
Special transportation fleet vehicles (local government and non-profit agencies)	435

Rail System

Rail System	
Number of railroads in operation	23
State-owned miles of rail	0 route miles of track 170 miles of right-of-way
Privately-owned miles of rail	2,402 route miles of track
Total	2,402 route miles of track

Rail System by Classification	
Major rail systems (Class I)	1,103 route miles of track
Class II	384 route miles of track
Class III	915 route miles of track
Total	2,402 route miles of track

In 2001, the U.S. Surface Transportation Board defined Class I railroads as having annual gross revenues of $260 million or more; Class II railroads as having annual gross revenues of more than $20.9 million, but less than $260 million; and Class III railroads as having annual gross revenues less than $20.9 million (updated annually to reflect inflation).

- Two major Class I rail systems (Union Pacific Railroad and BNSF Railway Company) account for slightly less than half of the state's rail miles.

Passenger Rail Services

Passenger Rail Service	
Coast Starlight (Seattle-Eugene-Klamath Falls-Los Angeles)	1 daily round-trip (Seattle-Klamath Falls) continues to Los Angeles
Amtrak Cascades (Vancouver B.C.-Seattle-Portland-Eugene)	3 daily round-trips (Seattle-Portland) 2 daily round-trips (Portland-Eugene)
Empire Builder (Portland-Spokane-Chicago)	1 daily round-trip (Portland-Spokane) continues to Chicago

- The passenger rail service running between Portland and Eugene is part of the federally designated Northwest High Speed Rail Corridor, which extends north to Vancouver, British Columbia.

- Daily passenger service is provided at seven Oregon train stations: Albany, Chemult, Eugene, Klamath Falls, Oregon City, Portland and Salem.

Oregon Train Station Boardings and Deboardings (Fiscal Year 2004)	
Klamath Falls	29,431
Chemult	11,631
Eugene	108,453
Albany	31,445
Salem	57,964
Oregon City	3,286
Portland	484,975

- Thruway bus services provide an opportunity for many rail passengers to reach communities in Oregon by providing connections between trains and the communities.

Thruway Bus Service	
State-supported routes	4
Private operator routes	6

The following maps are available in Technical Appendix 8:

- Oregon Air Carrier Routes and Airports with Scheduled Air Freight Service
- Oregon Aviation System Airports
- Oregon Highway System
- Cities with National Highway System (NHS) Intermodal Connectors
- Oil and Natural Gas Pipelines and Terminals
- Marine Freight Facilities
- Intercity Passenger Network
- Oregon Railroads

Sources:

- Oregon Department of Transportation (ODOT):
  - *2004 ODOT Annual Progress Report – Executive Summary (FY 2003-04)*
  - *2004 Oregon Mileage Report*
  - *Discover Oregon's Scenic Byways and Tour Routes*
  - *Freight Moves the Oregon Economy*
  - *"How We Spend Current Funds: Are We Getting A Balanced Transportation System"* Presentation, revised January 2003
  - ODOT Bicycle and Pedestrian Program statistical information
  - ODOT Rail Division statistical information updated through November 2005
  - Transportation Development Division statistical information
  - *Transportation Key Facts 2004*
- Oregon Department of Aviation Web Site
- Federal Transit Administration: *National Transit Database Profiles*

TECHNICAL APPENDIX 2

OREGON TRANSPORTATION PLAN NEEDS ANALYSIS SUMMARY

TECHNICAL APPENDIX 2
Oregon Transportation Plan Needs Analysis Summary

Introduction

Identifying statewide transportation needs is a major component of development of the Oregon Transportation Plan (OTP). The Transportation Planning Rule (TPR) and federal Transportation Equity Act (TEA-21) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) require that a minimum 20-year needs analysis be conducted. The federal acts identify factors that must be considered in the planning process, but the manner in which they are to be addressed is left to states and metropolitan areas. Oregon Administrative Rule (OAR) 660-012-0030, Determination of Transportation Needs, provides that "the transportation system plan shall identify transportation needs relevant to the planning area and the scale of the transportation network being planned including: (a) State, regional, and local transportation needs." OAR 660-012-005 defines state transportation needs as "needs for movement of people and goods between and through regions of the state and between the state and other states."

The gap between needs and revenues is a barometer for how well Oregon is funding transportation programs. The OTP Steering Committee used the needs analysis to determine funding priorities and investment strategies for the transportation system.

This appendix is the executive summary of the *Oregon Transportation Plan Transportation Needs Analysis 2005-2030, Summary Report*[3]. It summarizes the statewide transportation needs for years 2005 to 2030 for air freight and passengers, intermodal connectors, the local transportation system, natural gas and petroleum pipelines, ports and waterways, public transportation, rail freight and passengers, state highways and the associated programs (including state bicycle and pedestrian programs), and transportation options. Tables 2-1 and 2-2 summarize the forecasted mode growth, current funding, average annual feasible needs and the gap between the two.

[3] Copies of the full summary report, *Oregon Transportation Plan Transportation Needs Analysis 2005-2030, Summary Report*, are available on the Oregon Department of Transportation OTP Website (Publications Page) at https://www.oregon.gov/ODOT/Planning/Pages/Plans.aspx or by contacting the Transportation Development Division of the Oregon Department of Transportation at (503) 986-4181.

Methodology

The identified transportation needs are based on a concept of feasible needs. While feasible needs vary for each mode or program, in general, the term feasible needs refers to the funding that maintains the system at a slightly more optimal level than current levels, replaces infrastructure and equipment on a reasonable life-cycle, brings facilities up to standard, and adds capacity in a reasonable way. The standards applied that describe a "slightly more than current level" of maintenance are based on a concept of reasonableness, and in most cases the data is drawn from existing agency or program plans. This includes modal plans, capital improvement plans and master plans. With some of the modes, such as ports and pipelines, the feasible needs are narrowly defined because either the mode is privately owned and information is not available or the level of economic activity is low. For example, the majority of the pipelines and railroads in Oregon are privately owned. In the case of ports and waterways, the needs for only those ports with waterborne commerce are assessed.

The base year for most of the collected data is 2004. If data were from earlier years, the dollar amount was adjusted to 2004 dollars in order to create a consistent dollar-year. The current expenditures, current revenue and forecast revenue were also collected and calculated in order to show the funding gaps over the plan period.

For a more detailed description of the methodology, see the full *OTP Transportation Needs Analysis 2005-2030, Summary Report* available on the OTP Website.

Coordination

The program administrators or mode operators for each program or mode participated in the needs assessment. The various Oregon Department of Transportation (ODOT) divisions, including the Highway Division, Rail Division and Public Transit Division were interviewed and assisted the effort. In addition, the U.S. Army Corps of Engineers, Oregon Department of Aviation, Oregon Economic and Community Development Department, Department of Land Conservation and Development, Port of Portland, Metropolitan Planning Organizations and transit districts contributed data. The Oregon Ports Group reviewed and contributed to the ports and waterways needs report. A technical advisory committee (TAC) was formed with the assistance of the League of Oregon Cities and the Association of County Governments to guide the local system needs assessment and, in particular, to assist with the methodology.

Table 2-1 – Summary of 2005-2030 Modal Needs and Growth Forecasts (Average 2004 dollars in millions)

Mode	Forecasted Annual Growth Rate	Current Annual Expenditures	Average Annual Feasible Needs	Annual Gap
Air Freight and Passenger[4]	2.62% - freight tons 2.40% - passengers			
Portland International Airport[5]		$44.4	$115.3	$70.9
Major Modernization[6]		$13.9	$15.1	$1.2
Other Airports – Modernization and Preservation[7]		$10.7	$47.4	$36.7
Intermodal Connectors[8]	1.35% - total hwy travel 1.35% - pass. hwy travel 1.40% - freight hwy travel	N/A	$11.3	N/A
Local Roads and Bridges[9]	Reflects growth rates in state-hwy program and public transportation	$718	$1,000 - $1,200	$282 - $482
Natural Gas and Petroleum Pipelines[10]		N/A	N/A	N/A
Ports and Waterways[11]	0.97% - deep draft freight 0.29% - shallow draft freight	$51.3	$56.2	$4.9
Public Transportation[12]	3.16% - ridership	$510.0	$812.0	$302.0
Rail Freight and Passenger[13]	1.83% - freight tons 3.60% - passengers			
Mainlines		N/A	$8.82	N/A
Short Lines		more than $6.7	$10.0	less than $3.3
Passenger Rail[14]		$4.8	$9.0 - $57.0	$4.2 to $52.2
Safety Programs		$1.6	N/A	N/A
State Highway-Related Programs[15]	1.35% - total hwy travel 1.35% - pass. hwy travel 1.40% - freight hwy travel	$786.5	$1,277.5	$490.9
Transportation Options Program		$2.8	$3.6	$0.8

[4] Needs forecast address capital needs at Oregon's 101 public use airports.
[5] Needs based on Portland International Airport (PDX) Master Plan Alternative.
[6] Needs identified for eight airports other than PDX where growth is expected to exceed capacity.
[7] Needs based on *2000 Oregon Aviation Plan* and individual airport master plans.
[8] NHS Intermodal Connectors are located in Astoria, Boardman, Coos Bay/North Bend, Eugene, Medford and Portland.
[9] The county funding gap may grow because of a drop in federal forest funding. This drop may be as high as $90 million a year for county roads as early as FY 2007-08. The Association of Oregon Counties' 2006 County Road Needs Study finds the counties' current annual expenditures at $377 million, with an additional average annual funding need of $433 million a year for the next five years, increasing annually over the 25-year timeframe.
[10] Pipelines are primarily private facilities with no cost information available.
[11] Needs forecast address 9 port districts that have economic activity associated with waterborne commerce.
[12] Feasible needs are consistent with *Oregon Public Transportation Plan* Level 3 recommendation to increase ridership in accordance with service delivery plans.
[13] Only public expenditures are available. Needs are inclusive of both public and private facilities. Freight rail needs include capital costs for rehabilitation and enhancements of short line, mainline and some on-site rail facilities at ports.
[14] Number includes capital and operating costs for increased service. A range of costs given since multiple proposals currently exist.
[15] Includes state bicycle and pedestrian program. See Table 2-2 for additional information.

Table 2-2 – 2005-2030 Highway-Related Programs Summary (2004 dollars or average 2004 dollars)

Program	Current Annual Funding	Average Annual Feasible Needs	Annual Gap[16]
State Highway Modernization Program	$108,100,000	$330,300,000	$222,200,000
State Highway Preservation Program	$118,000,000	$160,000,000	$42,000,000
State Highway Bridge Program	$71,000,000	$129,600,000	$58,600,000
State Highway Operations Program	$30,350,432	$45,627,257	$15,276,825
State Highway Traffic Safety Program	$20,800,000	$40,510,000	$19,710,000
State Highway Landslide and Rockfall Program	$6,930,000	$15,000,000	$8,070,000
State Highway Maintenance Program	$143,000,000	$192,192,000	$49,192,000
ODOT Special Programs			
Access Management Program	$2,100,000	$16,600,000	$14,500,000
Fish Passage Culvert Program	$3,600,000	$9,380,000	$5,780,000
Large Culvert Program	$2,400,000	$33,000,000	$30,600,000
Scenic Byways Program	$217,900	$523,700	$305,800
Transportation Enhancements Program	$3,000,000	$8,000,000	$5,000,000
Transportation and Growth Management Program	$4,400,000	$4,000,000	-$400,000
ODOT Bicycle and Pedestrian Program	$3,456,600	$9,930,000	$6,473,600
ODOT Highway Division Administration and Indirect Program	$78,600,000	$78,600,000	$0
ODOT Transportation Program Development	$29,900,000	$30,357,344	$457,344
ODOT Transportation Safety Division	$19,000,000	$19,000,000	$0
ODOT Driver and Motor Vehicle Services	$60,882,490	$63,200,000	$2,317,510
ODOT Motor Carrier Transportation Division	$25,594,765	$26,441,689	$846,924
ODOT Central Services	$55,200,000	$65,200,000	$10,000,000
Total	**$786,532,187**	**$1,277,461,990**	**$490,929,803**

Forecasted annual growth rate for total highway travel (VMT) is 1.35% (1.35% for passenger highway travel and 1.40% for freight highway travel)

[16] $0 annual gap assumes funding increases with inflation

Air Freight and Passenger

System Description

The needs assessment considers the airport needs of Oregon's 101 public-use airports. Seven airports in Oregon (Eugene, Klamath Falls, Medford, North Bend, Pendleton, Portland and Redmond) provide commercial passenger service. The Portland International Airport (PDX) provides 90 percent of the passenger service and 97 percent of the air cargo service. In addition to these commercial service facilities, other Oregon airports provide key services for general aviation activities such as air cargo, air ambulance, military, business aviation, agricultural applications, resource management and fire suppression.

Demand

Table 2-3 – Air Freight and Passenger Growth Forecast (2004 - 2030)

Forecasts	Base Year Estimate	Forecast Value	Annual Growth Rate
Air Passenger (millions of annual enplanements)	6.7 (2002)	21.5 (2030)	2.40% (2004-2030)
Air Freight (thousands of annual tons)[17]	318 (1997)	747 (2030)	2.62% (1997-2030)

Transportation Needs

The *2000 Oregon Aviation Plan* identifies aviation needs with the objective of preserving a core system of airports based on a 1998 system preservation level. In order to capture the planned modernization airport improvements beyond those identified in the *2000 Oregon Aviation Plan*, eight airports were inventoried in addition to PDX, and the estimated annual need for Federal Aviation Administration (FAA) compliance was applied to the 70 core airports. The eight airports were selected because of forecasts showing that expected growth will exceed current facility capability. The annual major modernization needs for these eight airports totaled $15.1 million. The preservation and modernization needs described in the *2000 Oregon Aviation Plan* for all Oregon airports outside of PDX are an additional $47.4 million.

PDX's on-site improvements over the plan period are estimated to cost $3.46 billion (2004 dollars with no inflation added) and are expected to be funded through FAA grants, airline funds and airport funds. Improvements are for facilities rather than added runways. Portland International Airport demand for a third runway is beyond the OTP 2030 time horizon and has not been included. The total annual need for PDX is $115.3 million.

[17] *Oregon Commodity Flow Forecast*, prepared for the Oregon Department of Transportation, Global Insight, April 2005, page 11.

Table 2-4 – Summary of Oregon Aviation Current Annual Capital Spending and Capital Needs (Millions of 2004 dollars)

	Current Annual Expenditures	Future Annual Average Needs	Annual Gap
Portland International Airport	$44.4	$115.3	$70.9
Major Modernization – 8 Selected Airports	$13.9	$15.1	$1.2
Other Oregon Airports – Modernization and Preservation	$10.7	$47.4	$36.7
Total	$69.0	$177.8	$108.8

Revenue

Table 2-5 – Forecasted Air Freight and Passenger Revenue (Millions of 2004 dollars)

Forecast Revenue per Year	Recent Annual Average Revenue[18]	Future Annual Average Revenue
Aviation Projects	$243.8	$278.3

The revenue forecast is based on the following assumptions and sources:

- FAA grants to all airport types increase at rate of inflation.
- Future growth rates of state grants, primarily to general aviation airports, are tied to specific sources.
- Passenger facility charges are held constant at current rate of $4.50.
- Airport-specific fees, leases and airline charges increase with enplanements.
- Revenues are for both operations and capital.
- Statewide commercial airports (non-PDX) are based on expanding revenue sample (Klamath Falls, Pendleton and Redmond) using enplanement estimates for each airport.

[18] *Recent* refers to annual average revenues within the period from 1997 to 2004, usually between 2000 and 2004. *Future* refers to annual average revenues from 2006 to 2030.

Intermodal Connectors

System Description

Intermodal facilities are transfer points from or to truck, bus, air, rail and marine transportation facilities that serve passenger or freight movements. Examples include airports, rail stations, bus terminals, marine terminals and truck-rail facilities. The needs associated with the intermodal facilities themselves are addressed in this appendix by mode or as a part of the local system needs section. The focus of this section is on the needs of the "intermodal connectors," the roads that connect major intermodal facilities with the major roadway system.

The National Highway System (NHS)-designated intermodal connectors in Oregon total almost 60 miles of city, county and state roadways. These NHS intermodal connectors are located in Astoria, Boardman, Coos Bay/North Bend, Eugene, Medford and Portland. Non-NHS intermodal connectors are included in the local system needs summary.

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Table 2-6 – Intermodal Connectors Growth Forecast (Billions of annual VMT)

Forecasts	Base Year Estimate (2004)	Forecast Value (2030)	Annual Growth Rate[19]
Total Highway Travel	34.8	49.4	1.35%
Passenger Highway Travel		45.8	1.35%
Freight Highway Travel		3.6	1.40%

Transportation Needs

The total feasible needs are estimated to be $282.5 million (2004 dollars) with well over half identified for the Portland area's intermodal connectors. Due to the relatively short road lengths and the diversity of jurisdictions, it was not possible to collect current spending information. Based on 25 years, the annual feasible need is $11.3 million per year (2004 dollars).

The total $282.5 million feasible need is based on the *National Highway System Conditions and Investments Study (1998)*, a survey of 63 connectors. The purpose of the study was "to characterize the nature and extent of physical and operational problems on freight connectors" and necessary investments for the *1999 Oregon Highway Plan*. While many of the deficiencies identified have been addressed, it was assumed that the identified deficiencies provide a reasonable proxy for the improvement costs for intermodal connectors over the 2005-2030 plan period.

[19] Demand on intermodal connectors is forecast to increase at the same rate as demand on the highway system.

Table 2-7 – Summary of Current Expenditures and Feasible Needs per Year (Millions of 2004 dollars)

	Current Annual Expenditures	Annual Average Feasible Need	Annual Gap
NHS Intermodal Connectors	data not available	$ 11.3	no data

Revenue

- Dedicated revenue streams do not exist for intermodal connectors.
- Since intermodal connectors are an element of the National Highway System (NHS), capital projects on these facilities are eligible for funding under the Federal NHS program.
- Intermodal connectors are also eligible for funding under most programs available for highway modernization, preservation, maintenance, safety and operations programs.

Local Roads and Bridges

System Description

The local system, primarily owned by cities and counties, is an integral part of Oregon's transportation system and the portion of the road system most frequently experienced by Oregonians. About one-third of the 33 billion annual vehicle miles traveled in Oregon is on the local portion of the road system, but the local road system represents 65 percent of Oregon's total road centerline-miles.[20]

Table 2-8 – Local Centerline Miles of Roads

	Paved	Unpaved	Total
County Roads	15,978	17,458	33,436
City Streets	8,629	647	9,276

Demand

Table 2-9 – Local Transportation System Growth Forecast (Billions of annual VMT)

Forecasts	Base Year Estimate (2004)	Forecast Value (2030)	Annual Growth Rate
Total Highway Travel	34.8	49.4	1.35%
Passenger Highway Travel		45.8	1.35%
Freight Highway Travel		3.6	1.40%

Demand on the local street network is assumed to reflect the forecasted growth in statewide highway travel. The annual growth rate for the local transportation system is the same as those used for state highway travel later in this appendix.

Transportation Needs

Included in the needs assessment are city and county road maintenance and modernization and bridge maintenance and replacement costs. Bicycle and pedestrian needs are included in the road modernization category. Local road and bridge maintenance needs are based on data refined by the Association of Oregon Counties and League of Oregon Cities. Modernization needs are based on the Regional Transportation Plans and a broad sampling of acknowledged local transportation system plans.

[20] ODOT, *Transportation Key Facts 2002*, pages 9-10. Centerline miles are the number of miles of two-way roads including paved, unpaved and multi-lane facilities.

The annual estimated costs for needs on the local transportation system range between $1 billion and $1.2 billion (2004 dollars). Road maintenance is the largest category of need at $645 million per year followed by modernization at about half that amount. Current spending shows more funds are being spent on construction than preservation. Based on this analysis, there is a $282-$482 million annual gap between local spending and transportation needs.

Table 2-10 – Local Roads and Bridge Feasible Needs per Year (Millions of 2004 dollars)

Program	County	City	Total
Roadway Maintenance	$398	$246	$645
Bridge Maintenance	$7	$1	$8
Bridge Replacement	$124	$28	$152
Road Modernization (range – constrained and unconstrained RTPs and TSPs)			$217 to $355
Total	**$529**	**$275**	**$1,022 to $1,160**

Table 2-11 – Summary of Local Transportation System Funding Gap (2004 dollars on an annual basis)

	Current Spending	Local Need	Gap
Local Road and Bridges	$718 million	$1-$1.2 billion	$282-$482 million

Revenue

Table 2-12 – Forecasted Local Streets and Roads Revenue (Millions of 2004 dollars)

Forecast Revenue per Year	Recent Annual Average Revenue	Future Annual Average Revenue
Local Streets and Roads	$687.7	$716.5

The revenue forecast is based on the following sources and assumptions:

- Collection of local fees grows with population; fees increase with inflation.
- State highway user taxes increase with an additional $.01 per year motor fuel tax and $15 vehicle license fee increase every 8 years in accordance with ODOT forecasts.
- US Forest Service funding is reduced in 2007.

- Local and state general fund receipts grow with the state general fund, as forecast by the Oregon Department of Revenue through 2011 and at 2.6 percent thereafter.

- OTIA revenue is included (local governments receive an average of 12 percent of OTIA funds each year).

Natural Gas and Petroleum Pipelines

System Description

An extensive network of pipeline facilities plays an important role in delivering petroleum and natural gas fuels throughout Oregon. Nearly 14,000 miles of transmission and distribution pipelines make natural gas available to about 80 percent of the state's population. Approximately 320 miles of petroleum product pipelines distribute fuel products in the state. Since there are no petroleum refineries in the state, Oregon relies heavily on the Olympic Pipeline connecting refineries north of Seattle to the major population centers of Oregon and points south.

Demand, Transportation Needs and Revenue

Consumption of natural gas in the U.S. is expected to increase 52 percent between 2000 and 2020, making it likely that new pipelines, expansion projects and efficiency improvements will be needed throughout the country. To date, the U.S. natural gas pipeline industry has been able to finance and install additional infrastructure to accommodate significant growth rates. Utilizing current expansion methods, the natural gas industry should continue to be able to handle the growth anticipated over the next 25 years.

Petroleum consumption in the U.S. is expected to increase 1.2 percent annually over the next two decades, leading to significant growth in the liquid pipeline industry over the next 25 years, although not as rapid as for natural gas pipelines. Despite these increases, petroleum pipeline capacity in Oregon generally appears adequate to meet current and near term demands. As the state's population and economy continues to grow, pipeline operators may need to install larger lines or improve operational efficiency to meet increasing demand. Capacity concerns on the Olympic Pipeline will likely affect the future ability to meet petroleum needs in Oregon. As pipeline capacity issues such as these become more prevalent, trucks or barges may increasingly be needed to serve unmet petroleum demand around the state.

Ports and Waterways

System Description

Oregon's unique location along the Pacific Ocean and the Columbia-Snake River System provides valuable links for waterborne freight movement and commerce. Waterborne freight accounts for nearly 9 percent of the total 37.1 million tons of freight in Oregon. Grains, forest products and petroleum are the primary commodities shipped on the Columbia-Snake River System. Ocean-going vessels on the Columbia River transport about $14 billion worth of U.S. products annually to world markets. Oregon has five deep-draft freight terminal ports, of which Portland is the largest, and four shallow-draft freight terminals located along the Columbia River.

Demand

Table 2-13 – Ports and Waterways Growth Forecast (Millions of annual tons)

Forecasts	Base Year Estimate (2004)	Forecast Value (2030)	Annual Growth Rate
Deep Draft (Ocean) Freight	23.8	30.6	0.97%
Shallow Draft (Barge) Freight	14.0	15.1	0.29%

Transportation Needs

The scope of the identified needs focuses on port districts with waterborne commerce and improvements that are necessary to get goods to and from the port terminal. The ports included in this analysis are the deep-draft freight terminals at Coos Bay-North Bend and Newport along the Oregon Coast, and the deep-draft terminals in Astoria, the St. Helens area and Portland on the Oregon side of the Columbia River. The needs analysis also includes shallow-draft marine freight terminals along the Columbia River at The Dalles, Arlington, Boardman and Umatilla. The on-site facility needs have been limited to access roads to existing facilities, cranes and conveyors. There are additional port and waterway-related needs beyond those identified in this appendix. These include facility and infrastructure improvements associated with hundreds of acres of both developed and undeveloped land owned by port districts and private marine businesses. In the future, it may be appropriate to identify needs associated with short sea shipping. None per se have been identified as part of this report.

The port and waterway needs for the nine ports, including the maintenance and deepening of the Columbia River over the 25-year plan period, total $1.4 billion or $56.24 million per year.

Table 2-14 – Summary of Current Expenditures and Feasible Needs per Year (Millions of 2004 dollars)

Ports Project Category	Current Annual Expenditures	Total Cost 2005-2030	Annual Average Feasible Need	Annual Gap
Maintenance Dredging	$35.25	$881.25	$35.25	$0
Roadway/Access and Port Projects	$12.88	$275.40	$11.02	- $1.86
Jetty and Pile Dike Monitoring and Repair	$3.18	$79.50	$3.18	$0
Jetty and Pile Dike Reconstruction	0	$45.90	$1.84	$1.84
Columbia River Channel Deepening (Federal portion)	0	$96.00	$3.84	$3.84
Columbia River Channel Deepening (State of Oregon portion)	0	$27.70	$1.11	$1.11
Total	**$ 51.31**	**$1,405.75**	**$56.24**	**$4.93**

Revenue

Table 2-15 – Forecasted Ports and Waterways Revenue (Millions of 2003 dollars)

Forecast Revenue per Year	Recent Annual Average Revenue	Future Annual Average Revenue
Port Projects	$131.5	$156.5

The forecast is based on the following sources and assumptions:

- Revenue is from public (federal) and private (port) sources (more inclusive than needs).
- Public revenue sources include Harbor Maintenance Trust Fund (HMTF) and Inland Waterways Trust Fund (IWTF).
- Army Corps of Engineer's federal budget appropriations are not included.
- Port revenue is for shipping activities and does not include activities such as industrial land sales, timber sales, marina revenues and others.
- Excluding Portland, few ports in Oregon receive significant revenues from cargo handling.

Public Transportation

System Description

Public transit service in Oregon is diverse with more than 230 public transportation providers ranging from large transit districts and local governments to non-profit and for-profit organizations. Large urban area systems provide transportation options that include light rail vehicles (Portland metro area), bus systems and demand response services. The focus of service in small communities and rural areas is on providing mobility options for those who cannot drive using community public transportation services and subsidized taxi services.

Demand

Table 2-16 – Public Transportation Growth Forecast (Millions of annual passengers)

Forecasts	Base Year Estimate (2002)	Forecast Value (2030)	Annual Growth Rate[21]
Public Transportation	104.0	248.5	3.16%

Transportation Needs

The public transportation needs assessment defines feasible needs as Level 3 in the Oregon Public Transportation Plan (OPTP) (See Table 2-17) expanding service through 2030 consistent with the Regional Transportation Plans. Growing public transportation service consistent with metropolitan areas' Regional Transportation Plans provides 42 trips per capita by the end of the planning cycle (2005-2030) creating a 60 percent increase in overall transit ridership. The increase in capital costs in urban areas is based on the preferred scenarios in Regional Transportation Plans (where available). Under these scenarios, by 2030 public transportation would be providing over 205 million trips annually, and the total cost to operate and expand the system would be $812 million per year.

[21] The mode growth forecast varies from the growth rate shown under Table 2-17. The 3.16 percent growth rate shown in Table 2-16 is the same as the Portland *Metro 2000 Regional Transportation Plan* financially constrained plan. This growth rate is pertinent because Portland's transit ridership accounts for about 90 percent of the statewide transit usage. The forecast data shown under Table 2-17 and annual gap under Table 2-18 are based on a slower growth rate of 1.46 percent annual growth from the *Oregon Public Transportation Plan*. Table 2-17 data was used in developing the needs work.

Table 2-17 – Summary of Public Transportation Scenarios in Year 2030[22]

Public Transportation Service	Service Level 1	Service Level 2	Service Level 3
	Freeze Service at Base Year Levels	Keep Pace with Population Growth	*Oregon Public Transportation Plan* Recommended Service Level (Feasible Need)
Annual Ridership in Million Trips	127	172	205
Trips Per Capita	26	35	42
Vehicles in Fleet	1,558	2,175	2,675
Annual Cost (millions of 1997 dollars)	$342	$525	$764
Annual Cost (millions of 2004 dollars)	$364	$558	$812

Table 2-18 – Summary of Public Transportation Expenditures and Feasible Need (Millions of 2004 dollars)

	Current Annual Expenditures[23]	Feasible Need (OPTP Level 3 Recommendation)	Annual Gap
Public Transportation	$510.0	$812.0	$302.0

Revenue

Table 2-19 – Forecasted Public Transportation Revenue (Millions of 2004 dollars)

Forecast Revenue per Year	Recent Annual Average Revenue	Future Annual Average Revenue
Public Transportation	$447.4	$612.9

[22] Based on scenarios/service levels in *1997 Oregon Public Transportation Plan.* Number of rides inflated based on 2005-2030 timeframe and conversion to 2004 dollars shown.
[23] Includes operating and vehicle replacement on a 15-year cycle.

The revenue forecast is based on the following assumptions:

- Revenue for major urban transit systems (TriMet, Lane and Salem-Keizer) is estimated from constrained plans and revenue forecasts, covering all revenue sources for these systems.
- Revenue for other large urban transit systems is estimated using the National Transit Database and ODOT's *Financial Assumptions for the Development of Metropolitan Transportation Plans, 2005-2030*. Farebox recovery is assumed at 34 percent and local funding at 24 percent of total revenue.
- For non-urban transit programs, federal formula and discretionary programs and state grants do not expire and increase at the annual population growth rate of 1.2 percent.
- TriMet will continue to attract capital funding from the 5309 federal discretionary program consistent with recent history.
- Revenues for all smaller systems are not included.

Major revenue sources include:

- Federal Transit Administration (FTA) formula funds (5307, 5310 and 5311 programs), FTA discretionary grants (5309 program) and Congressional earmarks (11 percent of total).
- State formula and discretionary grants for operations, bus replacement, and elderly and disabled services (18 percent of total).
- Local and regional taxes (49 percent of total).
- Farebox revenue (11 percent of total).

Rail Freight and Passenger

System Description

Oregon's rail system, comprised of 23 railroads and 2,402 miles of track, serves both freight and passengers. The freight system is owned by the Union Pacific, BNSF Railway Company and 21 short line railroads. Amtrak operates one passenger train between Seattle and Los Angeles and two state-sponsored trains between Portland and Eugene each day. The ODOT Rail Division ensures compliance with state rail-related regulations, manages and markets intercity passenger rail operations, and manages railroad improvement projects.

Demand

Table 2-20 – Rail Freight and Passenger Growth Forecast

Forecasts	Base Year Estimate	Forecast Value	Annual Growth Rate
Rail Passenger (thousand annual boardings + detrainings)	666 (2004)	1,670 (2030)	3.6% (2004-2030)
Rail Freight (millions of annual tons)[24]	55.2 (1997)	100.6 (2030)	1.83% (1997-2030)

Transportation Needs

Although Oregon's mainlines are in relatively good shape, its short lines have inherited a maintenance deficit and do not generate enough capital to maintain their facilities or fund improvements to handle heavier rail cars. Needs for replacing rails and bridges total close to $250 million (2004 dollars). Needed improvements to tunnels on the mainlines and to the rail facilities in the Portland area total $190.6 million. Outside the Portland area, the Ports of Coos Bay, St. Helens, Morrow and Umatilla have identified needs costing approximately $30 million.

Expenditures for passenger services for the Willamette Valley trains will steadily increase as trains are added, but operating expenditures are expected to break even when the fifth train is added. Expenditures for the Beaverton-Wilsonville commuter rail line reflect the expected opening of the line in 2008. Services extending the commuter rail to Salem and passenger trains to Boise are expected to begin before 2030. For the purposes of this needs analysis, expenditures for the proposed Wilsonville-Salem commuter line begin in 2020 and re-institution of services from Portland to Boise in 2022.

[24] *Oregon Commodity Flow Forecast*, prepared for the Oregon Department of Transportation, Global Insight, April 2005, page 11.

Table 2-21 – Summary of Current Expenditures and Feasible Needs per Year (Millions of 2004 dollars)

	Current Expenditures		Annual Feasible Needs - Public and/or Private	Annual Gap
	Public	Private		
Freight[25]				
Mainlines[26]	No data	No data	$8.82	No data
Short lines	$6.0	More than $.67	$10.0	Less than $3.33
Passenger[27]	$4.8	No data	Range from $9-$57 a year including reasonable estimate for track improvements and train sets	$4.2 to $52.2 with out private funding
Safety Programs	$1.6	No data		No data
ODOT Admin.	$0.42		$0.42	$0

Revenue

Table 2-22 – Forecasted Rail Public Revenue (Millions of 2004 dollars)

Forecast Revenue per Year	Recent Annual Average Revenue	Future Annual Average Revenue
Rail	$17.0[28]	$17.3

The forecast is based on the following assumptions and sources:

- Only public funding is included in the revenue estimate. Private rail company funding for capital upgrades is not included.
- Passenger rail farebox revenue is not included.

[25] Capital costs only.
[26] Includes port rail facilities.
[27] Capital and operating costs.
[28] Four-year average between fiscal years 2000 and 2003; excludes revenue bonds issued 2001-2003.

Sources include:

- Federal Railroad Administration grants and Federal Highway Administration Section 130 grade crossing elimination funding.
- State General Fund, fuel tax and special allocations.
- Local fees and revenue bonds.
- State passenger sources keep pace with state General Fund growth. Other state sources increase at inflation rate.
- Local sources increase at inflation rate. Revenue bonds expire in 2018.
- Federal sources increase at inflation rate.

State Highway-Related Programs

System Description

ODOT is responsible for almost 7,500 miles of state highways, ranging from eight-lane freeways to two-lane gravel roads. The state highway system is about one-third of the total road centerline miles in Oregon but carries about two-thirds of the total annual vehicle miles traveled[29]. State highway-related programs include modernization, preservation, bridge, operations, traffic safety, landslide and rockfall, maintenance, bicycle and pedestrian, and a number of special programs. In addition, specific ODOT expenditures for the Highway, Transportation Development, Transportation Safety, Driver and Motor Vehicle Services, and Motor Carrier Transportation Divisions and Central Services are a part of the expenditures and needs of the state highway system. Table 2-2 is a summary of the highway program needs, expenditures and gaps. Below are demand and revenue forecasts, and program-by-program descriptions of state highway system needs.

Demand

Table 2-23 – Highway Passenger and Freight Travel Growth Forecast (Billions of annual VMT)

Forecasts	Base Year Estimate (2004)	Forecast Value (2030)	Annual Growth Rate
Total Highway Travel	34.8	49.4	1.35%
Passenger Highway Travel		45.8	1.35%
Freight Highway Travel		3.6	1.40%

Revenue

Table 2-24 – Forecasted State Highway Revenue (Millions of 2004 dollars)

Forecast Revenue per Year	Recent Annual Average Revenue	Future Annual Average Revenue
State Highways	$786.3	$988.2

The revenue forecast is based on the following sources and assumptions:

- Highway user taxes (motor fuel tax, vehicle license fee) are used.

[29] ODOT, *Transportation Key Facts 2002*, page 10

- Federal High Priority Projects Program remains constant over 30 years ($21.6 million per year).
- An additional $.01 per year motor fuel tax is raised for operations, maintenance and preservation.
- An additional $15 per biennium vehicle license fee is raised every 8 years for modernization.
- One percent of state highway funds are reserved for bicycle and pedestrian projects.

State Highway Modernization Program

Modernization projects are those that add capacity to the highway system including added lanes, reconstruction with major alignment improvements and highways on new alignments. In 2004 the allocation for the Modernization Program (including preliminary engineering (P.E.) and right-of-way (ROW) was $108.1 million for the year including $78.1 million in regular funding and an additional $30 million from the Oregon Transportation Investment Act (OTIA) I and II.

OTIA III is funding $250 million for the Modernization Program in 2008 and 2009 through bonds. Since the bonds will have to be repaid from the Modernization Program beginning in 2008 at $25 million per year, the state-funded Modernization Program will be reduced to $26.5 million per year. This means that the Modernization Program will total $276.5 million in 2008 and 2009, but will total only about $26.5 million a year from 2010 until the bonds are repaid in 2033. This figure does not include any federal ear-marked funds but does include $3.5 million for the Immediate Opportunity Fund.

The calculation for feasible modernization needs is built upon the detailed analysis done for the *1999 Oregon Highway Plan (OHP)* using the Highway Economic Requirements System (HERS) for Oregon. The calculation assumes that population and highway needs increased faster than the projects built since 1997. It updates the analysis on the basis of traffic volume growth rates.

The 20-year OHP feasible needs investment for modernization is $6.8 billion (in 1997 uninflated dollars). Adding 7.3 percent for traffic volume growth to that number (about $496 million) increases the feasible modernization needs to $7.3 billion (1997 dollars) inflated to $8.59 billion in 2004 dollars or $330.3 per year until 2030. This figure includes P.E. and ROW costs.

State Highway Preservation Program

The Pavement Preservation Program makes improvements to rebuild or extend the service life of existing highways. The current funding strategy is intended to maintain the 1997 statewide average pavement condition of 77 percent fair-or-better through 2010. The 2003 statewide average pavement condition of 84 percent fair-or-better was the result of funding from OTIA I and II, the Low Volume Road Program and a change in rating procedures. Under the Low Volume Road

Program, ODOT provides maintenance treatments to Regional and District Highways with less than 2500 average daily travel (ADT). The goal of the Preservation Program is to preserve state highways at an average condition of 90 percent fair-or-better. Existing and feasible needs including P.E. and ROW for the Preservation Program are summarized in the following table:

Table 2-25 – Current Funding and Feasible Needs for Preservation (Millions of 2004 dollars or average 2004 dollars)

	Existing Preservation Funding (Average annual from 2001-07)	Feasible Preservation Needs (2004 dollars)
Interstate	$59	$67
Non-Interstate	$59	$91
Low Volume Road Shortfall		$2
Total	**$118**	**$160**

Although the Preservation Program steadily improved pavement conditions from 1997 to 2003, the largest gains have been to rural highways and low volume highways. In order to optimize treatment timing and condition targets, preservation investments have favored rural highways in fair condition. Highways in poor condition which need extensive rehabilitation or which require costly upgrades to meet current standards are typically too expensive to include in the State Transportation Improvement Program (STIP). Many of these highways are in higher volume urban areas. Raising conditions to feasible needs levels requires a relatively disproportionate increase in funding to make needed improvements to the higher volume sections of the highway system such as I-405 and parts of I-5 in Portland that have relatively high improvement costs.

State Highway Bridge Program

The state owns and is responsible for 2,680 bridges. These include bridges, culverts, viaducts, bicycle and pedestrian structures, and movable bridges 20 feet or longer in length. Bridge needs include improvements or work needed to rebuild or extend the service life of existing bridges and structures. While the OTIA III program will result in more new bridge construction than at any other time since the Interstate Era, those bridges will have aged in the time it takes to pay off the bonds.

Figure 2-1 – 2003 vs. 2033 Bridge Populations

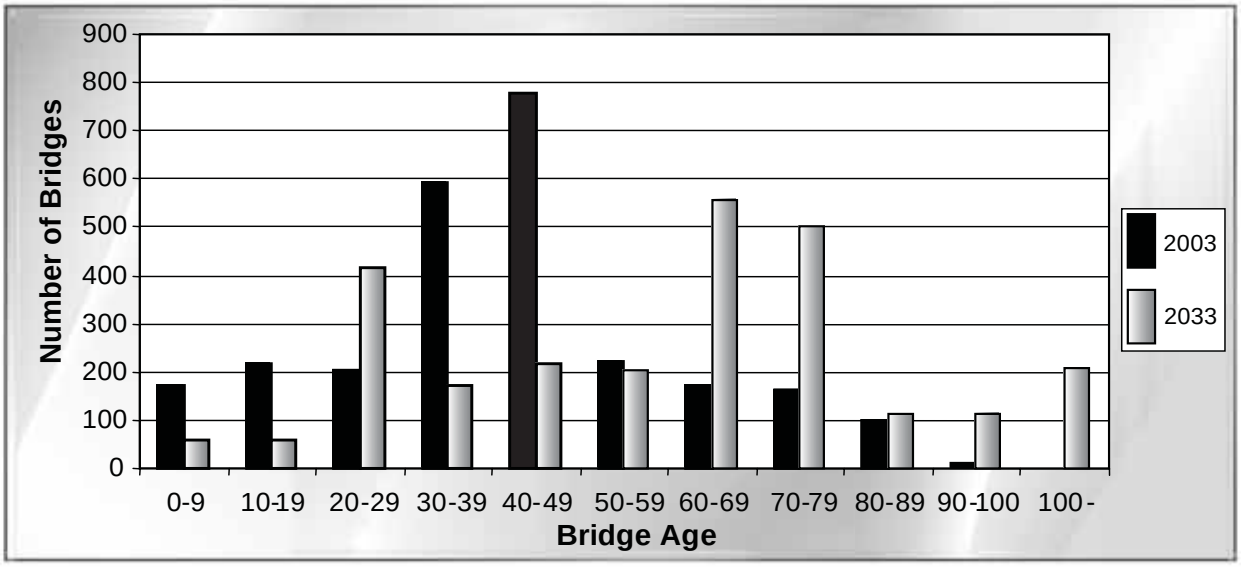

Figure 2-1 shows how the bridge population shifts from 2003 to 2033. The bridges built in the major bridge building periods still dominate the population although in lesser numbers as they are slowly being replaced. At the current funding levels, even with the money delivered through the OTIA program, the bridge population will be older in 2033 than it was in 2003.

Funding for the 2004 State Bridge Program was $71 million. The program will be reduced to approximately $54 million when OTIA III debt service begins in 2008. The analysis identifies feasible needs of approximately $129.6 million per year over the 25-year period of the OTP in addition to the $1.3 billion investment accomplished through OTIA III. This amount is for state-owned bridges and includes:

1. Replacement or rehabilitation of bridges not part of the OTIA III program.
2. Preservation of historic, moveable and coastal bridges.
3. Major bridge maintenance.

State Highway Operations Program

Operations projects enhance transportation system efficiency and safety through improvements through traffic signals and signs, Intelligent Transportation System (ITS) techniques (ramp metering, incident management, traffic management, operations centers, etc.) and transportation demand management (covered in the Transportation Options needs analysis).

The total needs exceed the current investment levels for Operations. Funding has worked satisfactorily to date because many of the Operations needs have been met through projects funded from other STIP categories, but long-term funding is needed to address replacement of operations devices and equipment.

Table 2-26 – Current Funding and Feasible Needs for Operations (2004 dollars)

	Category	2004 Funding	2004 Funding	2004 Feasible Needs	Gap
ITS Program Costs	**Traffic Operations Center and Incident Response**	$5,919,214	$3,836,039	$3,836,039	$0
	Earmarks and Grants		$965,060	$965,060	$0
	ITS Program		$818,115	$818,115	$0
	511 Operations		$300,000	$300,000	$0
Traffic Operations Program Costs	**Signal Timing**	$3,798,218	$284,575	$445,600	$161,025
	Traffic Analysis		$510,402	$510,402	$0
	Traffic Investigations		$1,120,909	$1,120,909	$0
	Speed Zones		$283,578	$383,578	$100,000
	Traffic Operations		$1,598,754	$1,598,754	$0
STIP	**Operations Undistributed**	$20,633,000	$6,893,000	$0	-$6,893,000
	SSI (Signs, Signals and Illumination)		$5,184,000	$23,728,000	$18,544,100
	SSI Replacement			$21,374,100	
	SSI Growth Annualized			$2,354,000	
	ITS		$8,040,000	$11,920,700	$3,880,700
	ITS Replacement			$700,700	
	ITS Growth Annualized			$11,220,000	
	STIP Transfers		$516,000	$0	- $516,000
	Total	**$30,350,432**	**$30,350,432**	**$45,627,257**	**$15,276,825**

Total operations funding for FY 2004 is $30,350,432. The feasible needs for FY 2004 are over $45 million. The defined feasible needs are 90 percent of what is required to meet the desired levels of service. The identified budget gap between current funding levels and feasible needs for 2004 is $15.3 million.

State Highway Traffic Safety Program

The Highway Traffic Safety Program focuses on improvements that address priority safety problems at highway locations and corridors to reduce the number of fatal and serious injury crashes. The Oregon Transportation Safety Committee and the Oregon Transportation Commission's goal is to reduce the fatality rate to 0.99 per 100 million vehicle miles traveled by year 2010. The needs for the program based on a four-year average are $40.51 million per year.

Table 2-27 – Current Annual Funding and Feasible Needs for Traffic Safety (Millions of 2004 dollars or average 2004 dollars)

Program	Current Funding	Feasible Needs
Highway Traffic Safety	$20.8 (4-year average)	$40.51 per year to 2010 $40.51 per year after 2010 to maintain goal

State Highway Landslide and Rockfall Program

The Landslide and Rockfall Program strives to improve the safety and function of the state highway system by improving slope stability and addressing problem areas along road cuts. The projects in this program are usually major and typically cost about $1 million to $5 million each. Table 2-28 identifies an annual funding gap between current funding levels and feasible needs of $8.07 million for the program.

Table 2-28 – Current Funding and Feasible Needs for Landslide and Rockfall Program (Millions of 2004 dollars or average 2004 dollars)

Program	Current Funding (2002-2005 Average)	Annual Feasible Needs	Annual Gap
Landslides and Rockfalls	$6.93	$15.00	$8.07

State Highway Maintenance Program

The Maintenance Program develops and implements programs to ensure efficient, effective and consistent maintenance of the transportation infrastructure. Typical activities include installing or repairing guardrails, applying asphalt treatments, improving drainage, maintaining bridges, roadside vegetation and traffic signals, and providing snowplow and road sanding treatments.

Table 2-29 – Current Funding and Feasible Needs for Maintenance (2004 dollars)

Program Area	Current Level of Service (2004 Funding)	Desired Level of Service (2004 Costs Plus 18 Percent)	Preferred Level (Feasible Need Level of Service)	Difference Between Current Levels and Feasible Need
Surface and Shoulders	$30,208,847	$35,646,439	$40,600,690	$10,391,843
Drainage	$10,041,424	$11,848,881	$13,495,674	$3,454,250
Roadside Vegetation	$27,269,593	$32,178,120	$36,650,334	$9,380,741
Traffic Services	$31,562,143	$37,243,329	$42,419,520	$10,857,377
Structures	$8,513,080	$10,045,434	$11,441,579	$2,928,499
Snow and Ice	$26,120,617	$30,822,328	$35,106,109	$8,985,492
Extraordinary Maintenance	$5,796,662	$6,840,061	$7,790,714	$1,994,052
Permits	$3,487,634	$4,115,408	$4,687,380	$1,199,746
Total	**$143,000,000**	**$168,740,000**	**$192,192,000**	**$49,192,000**

Table 2-29 shows a $49.2 million dollar gap between 2004 funding and preferable levels of service, or feasible needs, across the Office of Maintenance program areas. Current funding levels would need to be increased by approximately 34 percent in order to fully address the feasible needs.

In addition to the increased funding needed to meet preferable levels of service, approximately $110 million in deferred maintenance costs would need to be addressed in order to achieve 100 percent of desired levels including improving substandard guard rails, replacing culverts, bringing rest areas up to desirable levels and updating older electrical systems. Updating these electrical systems would reduce future needs by $1 to $2 million annually.

ODOT Special Programs

Access Management Program

Access management involves permitting driveway and roadway access to state highways and regulating the spacing of existing and new driveways to increase the safety and mobility of the highway. In 2004 about $2.1 million per year was allocated to the Access Management Program. If ODOT wants to pursue a more aggressive program, up to $16.6 million per year is needed. The majority of the additional funds would be used for property acquisition.

Fish Passage Culvert Program

The Fish Passage Culvert Improvements Program helps implement *The Oregon Plan for Salmon and Watersheds* by funding culvert restoration on streams where historically fish runs have existed but where the culvert has created a barrier to fish passage. In 2004 funding for the Fish Passage Culvert Program was $3.6 million per year. To replace or retrofit the culverts identified by the Oregon Department of Fish and Wildlife as being barriers to fish passage, the program would cost $244 million or $9.38 million per year from 2005 to 2030.

Large Culvert Program

The Large Culvert Program was funded at $2.4 million per year in 2004 to repair and replace the structurally deficient large culverts that are not eligible for National Bridge Inventory funding. Approximately $33 million per year is needed to replace existing culverts that have reached the end of their lifespan and to keep up with the anticipated failures each year in the future. The gap is $30.6 million annually.

Scenic Byways Program

The state and national Scenic Byways Programs highlight scenic federal, state and local highways and roads throughout Oregon. Oregon has 14 Scenic Byways covering 2,204 miles and 9 Tour Routes covering 580 miles. Funding for the Scenic Byway Program was $217,900 in FY 2003/2004.

The Scenic Byway Program is primarily federally funded with a 20 percent match by state and local governments. Using estimates for the Pacific Coast Scenic Byway needs for marketing, restoration and improvement of facilities, parking, access, safety and other facilities, ODOT staff estimated statewide needs for these purposes at $445,000 per year in 1997 dollars ($356,000 federal funds and $89,000 state and local match) or $523,700 in 2004 dollars, an annual gap of $305,800.

Transportation Enhancements Program

The Transportation Equity Act for the 21st Century (TEA-21) allowed each state to reserve 10 percent of its Surface Transportation Program (STP) allocation for the Transportation Enhancement Program; for Oregon the full 10 percent set-aside was about $8 million. In FY 2004 and 2005, the Oregon Transportation Commission (OTC) limited Enhancement funding to $3 million per year in order to make more federal funds available for pavement and bridge preservation, but increased Enhancement funding to $5 million per year beginning in FY 2006. Transportation Enhancement is a reimbursement program requiring a non-federal funding match of at least 10.27 percent.

In 2004 there were 79 applications requesting more than $50 million for the FY 2007-2008 funding cycle. The ratio of awards to requests is about one in six. If the program were to receive the full 10 percent set-aside, more of this demand could be met. Increases in the set-aside depend on increased federal appropriations and decisions on how much of the overall allocation is available for projects.

Transportation and Growth Management Program

The Transportation and Growth Management (TGM) Program provides resources to help Oregon communities prepare transportation and land use plans to respond to pressing transportation-related growth management issues and to develop transportation system plans (TSPs) and plan updates and ordinances that implement the Transportation Planning Rule and the 1999 Oregon Highway Plan. The current funding level of $4.4 million per year for the TGM program is expected to decline to $4 million per year in the future, reflecting declining needs as many TSPs have been completed.

ODOT Bicycle and Pedestrian Program

In urban areas bicycle and pedestrian facilities consist of sidewalks, crosswalks, crossing islands, pedestrian signals and marked bike lanes. In rural areas the highway shoulders serve as bikeways and walkways. The Oregon Department of Transportation's focus is on providing pedestrian and bicycle facilities primarily on urban state highways. ODOT's Bicycle and Pedestrian Program also assists cities and counties with bicycle and pedestrian funding and planning. It is estimated that 272 miles or about half of the ultimate sidewalk and bikeway system is in place on urban state highways.

The estimated feasible annual need for walkways and bikeways on specific segments of urban state highways over the plan period is $9.93 million per year (in 2004 dollars). This figure is based on an average unit cost of $700,000 per mile for sidewalk construction with curbs, drainage, crossings and ADA ramps for both sides of the 253 miles of urban highway segments. The average unit cost is relatively high because the majority of easy to construct areas have already been addressed. The 253 miles represent 3.5 percent of the total state highway system. Currently, $3.46 million is spent on state bicycle and pedestrian capital improvements and administration of the state program. This leaves a $6.47 annual gap in meeting the feasible needs.

ODOT Highway Division Administration and Indirect Program

In FY 2003/2004 administrative costs for Highway Division construction and maintenance totaled $7.3 million. Indirect costs for Highway Division construction and maintenance were $71.3 million. They include items like training, financial and clerical support staff, building and maintenance and Asset Management. The needs for these activities will increase with inflation in the future, but not increase with the amount of construction activity.

ODOT Transportation Program Development

Transportation Program Development (TPD) coordinates the future use of transportation resources among federal, state, regional and local agencies. Responsibilities include statewide plans and special studies, technical assistance and coordination, and analysis and research. Funding for FY 2004 was $29.9 million, including consultant and contract payments. The level of feasible needs is projected to increase to $30.4 million per year, a $457,344 annual gap over current expenditures.

ODOT Transportation Safety Division

The Transportation Safety Division organizes, plans and conducts a statewide transportation safety program involving educational, enforcement and engineering actions. Both current funding and feasible needs are $19 million a year with increases needed to adjust for inflation.

ODOT Driver and Motor Vehicle Services

Driver and Motor Vehicle Services (DMV) promotes driver safety, protects financial and ownership interests in vehicles, and collects revenue for Oregon's roads. DMV is in charge of licensing the 2.5 million drivers and registering the 4 million registered vehicles in Oregon. Expenditures for the DMV Driver and Vehicle Services totaled $60,882,490 for FY 2003 and are shown in Table 2-30.

Table 2-30 – Current Expenditures for DMV (2003 dollars - See below for details)

Program	Fiscal Year 2003
Vehicle	$27,850,751
Driver	$30,859,996
Administrative Costs	$2,171,743
Total	**$60,882,490**

Needs beyond 2003 expenditures for computer programs, facility upgrades and equipment replacement are expected to cost $57.7 million in 2003 dollars or $2.89 million per year over a 20-year period as shown in Table 2-31.

Table 2-31 – 20-Year Feasible Needs (Millions of 2003 dollars – See below for details)

Program	Computer Programs	Facility Upgrades	Equipment Replacement	Total
Driver	$19.4	$5.2	$8.6	$33.2
Vehicle	$18.8	$4.8	$0.9	$24.5
Total	**$38.2**	**$10**	**$9.5**	**$57.7**
Per Year				**$2.89 per year**

During the development of this needs analysis, the OTP planning period was extended to 2030 or 26 years rather than the 20 years used above, and the expenditures were changed to FY 2004 dollars. The additional feasible needs were extended over the 26-year period and inflated 2.66 percent from 2003 dollars to $59.23 million in 2004 dollars. That means DMV needs close to $2.3 million per year during the next 26 years in addition to its current expenditures of $60.9 million or a total of $63.2 million per year.

ODOT Motor Carrier Transportation Division

The Motor Carrier Transportation Division strives to promote a safe, efficient and responsible commercial transportation industry. Its programs and services oversee the enforcement of motor carrier requirements; ensure compliance with state regulations for truck taxes and fees; conduct truck, driver and accident inspections; train enforcement officers, conduct the Green Light Program (weigh-in-motion); and register and permit trucks. The Division serves the approximately 25,000 trucking companies and 300,000 trucks that operate in Oregon.

Table 2-32 – Current Expenditures for Motor Carriers (2003 dollars – See below for details)

Program	2003
Administrative	$1,138,400
Field Services	$8,127,557
Audit	$3,325,106
Safety	$6,895,792
Salem Services	$6,197,910
Total	**$25,594,765**

Total expenditures for the Division's four program areas and administrative costs were over $25.59 million in FY 2003.

The Motor Carrier Division needs additional money to maintain/repair weigh stations, purchase portable weigh-in-motion scales, automate scale crossing analysis, add five auditors to the program, maintain and upgrade Green Light facilities, automate the over-dimension permit and routing system, install Internet kiosks and replace the headquarters' phone system.

Table 2-33 – Feasible Needs (2003 dollars – See below for details)

Program	Additional 20-year Needs
Administrative	0
Field Services	$6,200,000
Audit	$2,649,480
Safety	$8,300,000
Salem Services	$4,300,000
Total	**$21,449,480**
Total per year	**$1,072,474/yr**

During the development of this needs analysis, the OTP planning period was changed to 2030 or 26 years rather than the 20 years used above, and the expenditures were changed to FY 2004 dollars. For the purposes of this analysis, the Motor Carrier numbers do not change materially. The additional feasible needs were extended over the 26-year period and inflated 2.66 percent to 2004 dollars at $22.02 million. That means that the Motor Carrier Division needs at least an additional $847,000 per year for feasible needs or a total of about $26.4 million per year during the 26-year period.

ODOT Central Services

Revenues for the Central Services expenditures come from assessments against the various ODOT divisions. The Rail Division and the Public Transit Division assessments have been included in those division expenditures. The figure here includes assessments involving the Motor Carrier, DMV, Transportation Safety, Transportation Development and Highway Divisions. The average annual budgeted funding for Central Services for 2003-2005 was almost $55.2 million. An additional $8.9 million per year for facilities and an additional $1.1 million per year for information systems are needed over current expenditures to address feasible needs over the plan period.

Transportation Options

Transportation Options programs are carried out at the state, regional and local levels. The state programs exist in ODOT's Public Transit Division and the Oregon Department of Energy. The programs help maximize the existing transportation system and hold down transportation costs by promoting least cost options (such as walking, cycling and rideshare). Collectively, both state Transportation Options programs and local programs helped achieve an estimated statewide 209 million-mile annual reduction in vehicle miles traveled, or six percent of the state total, in 2002. Based on 2002 program costs of $2.45 million, the state spent one cent for each VMT removed. To keep pace with population growth and maintain the current programs, an estimated $3.62 million average annual investment in Transportation Options programs will be needed over the plan period. This represents a $.79 million annual funding gap over the current spending.

Table 2-34 – Summary of Current Expenditures and Feasible Needs per Year (Millions of 2004 dollars)

Program	Current Annual Expenditures	Annual Average Feasible Need	Annual Gap
Transportation Options	$2.83	$3.62	$.79

TECHNICAL APPENDIX 3

FUNDING THE OREGON TRANSPORTATION PLAN SUMMARY

TECHNICAL APPENDIX 3
Funding The Oregon Transportation Plan Summary

Introduction

Transportation in Oregon is currently funded through a number of different sources. Technical Appendix 3 is a summary of a technical report on transportation finance prepared for the Oregon Transportation Plan (OTP)[30]. The report provides an explanation of how transportation in Oregon is funded and financed. It also compares Oregon's funding mechanisms with those used in other states and presents some potential options to expand and strengthen Oregon's funding capabilities for the future based on conditions current to 2005.

Technical Appendix 3 examines:

- Oregon's existing transportation funding structure.
- Principles for funding and financing transportation in Oregon.
- Potential transportation revenue sources and mechanisms.
- Financing mechanisms.

Although the Oregon Department of Transportation (ODOT), like other state Departments of Transportation (DOTs), has a transportation planning and funding framework that emphasizes highway improvements, significant shifts in policy at both the state and federal levels have occurred since the 1992 OTP. Increasingly, there is greater emphasis on multimodal transportation planning and funding mechanisms. State DOTs across the country have begun to take a holistic approach to managing the transportation system, with the following implications for transportation funding:

- DOTs have begun to take interest in non-highway components of the transportation system, some of which are neither owned nor operated by the state or public, but which are essential to the functioning of a complete transportation system. DOTs are increasingly entering into long-term funding relationships with partners at the regional and local level as well as private-sector owners and operators of transportation facilities.
- In order to fund improvements that span multiple modes, DOTs are working through federal, state and local legislative bodies to establish multimodal funding sources and move away from the constraints of funding "silos."

[30] *Funding the Oregon Transportation Plan: Final Report*, Prepared by Cambridge Systematics, Inc. with HDR, Inc., May 5, 2005

- DOTs are focusing on both passenger and freight movements, recognizing the importance of both types of trips to the economic competitiveness of the state.

DOTs are examining connections between modes, recognizing the need to eliminate bottlenecks at transportation hubs and provide smooth and efficient transfers of passenger and goods between modes.

As states expand their planning and funding perspectives, they must confront significant and growing gaps between transportation needs and available revenues. Faced with changing economic, demographic and technological conditions, transportation providers are exploring new sources of transportation revenues, new methods of allocating transportation resources and innovative financing techniques.

Oregon's Existing Transportation Funding Structure

Prior to 1992, ODOT primarily focused its resources on planning, building and maintaining Oregon's highways while local governments traditionally were responsible for other modes. The 1992 OTP established a vision of a balanced, multimodal transportation system and called for an expansion of ODOT's role in funding non-highway modes.

Since the adoption of the 1992 OTP, ODOT has continued to direct much of its funding to state highways, primarily due to statutory constraints on the use of various state and federal funding sources which limit flexibility of the funds. Most sources of transportation funding at both the state and federal level are collected via user fees and are tied to specific programs. Highway user fee funds in Oregon are constitutionally dedicated to the State Highway Fund and must be used on roads.

The ConnectOregon program, adopted by the 2005 Oregon Legislature, provides $100 million in bonded state lottery funds for investments in air, ports and waterways, public transportation, and rail facilities. These investments are intended to facilitate transfers between modes and improve Oregon's economic competitiveness.

Sources of Funds

Airports

Oregon's commercial service and general aviation airports currently receive nearly 100 percent of their capital and operating revenue in the form of user fees such as passenger facility charges, aircraft registration fees, landing fees, terminal and gate lease fees, and parking fees.

Federal Aviation Administration (FAA) grants through the Airport Improvement Program (AIP) fund a variety of airport infrastructure improvements. AIP grants typically require a 5 percent local

match; eligible Oregon airports (expect for Portland International) can fund 95 percent of their capital improvements using federal dollars. Portland International receives 83.33 percent federal funds with a 16.67 percent local match.

Bicycle and Pedestrian Facilities

With the exception of ODOT's bicycle and pedestrian safety programs and facilities within the right-of-way of state highways, construction and maintenance of bicycle and pedestrian facilities are managed by local governments using a combination of federal grants, state highway funds and local revenues. Local governments fund bicycle and pedestrian facilities using revenue from general funds, transportation impact fees, system development charges, special assessments and state grants.

Bicycle and pedestrian facilities within street, road or highway rights-of-way that are open to motor vehicle traffic are eligible to receive funding from the Oregon Highway Fund. During any fiscal year, the amounts expended to provide walkways and bikeways must be a minimum of one percent of the State Highway Fund received by ODOT, a city or county.

Federal Transportation Enhancement grants and appropriations from the Congestion Mitigation and Air Quality Program (CMAQ) program are two common sources of federal funding for bicycle and pedestrian projects. Oregon can also use 10 percent of federal Surface Transportation Program (STP) funds for bicycle and pedestrian improvements.

Freight and Passenger Rail

Freight rail lines in Oregon are primarily owned and operated by private firms. Given the escalating costs of making rail improvements and the lack of sufficient revenue for many small rail operators to obtain favorable terms on loans or bond issues, the federal government and some states have established rail assistance programs. Federal rail assistance programs include the Rail Rehabilitation and Improvement Financing Program (RRIF) established to provide a source of capital for facility improvements for rail operators.

Several programs derived from a corporate income tax on private rail operators have been established in the state. Oregon's rail funding programs include:

- The Oregon Railroad Fund, which provides grants and loans for passenger and freight railroad improvements.
- The State Rail Rehabilitation Fund for rehabilitation and preservation of rail service in Oregon.
- The Grade Crossing Protection Account for construction, relocation or maintenance of grade separated crossings.
- The Grade Crossing Safety Improvement Fund for improving grade crossings.

- The Short Line Credit Premium Account Program, which provides funding in the form of grants for short line operators to enable them to receive a loan under RRIF.

ODOT plays a key role in funding intercity passenger rail services in Oregon through general fund or lottery revenues. The state supports two Amtrak trains making daily round trips between Eugene and Portland using Union Pacific tracks. State funds have been used to upgrade the UP rail infrastructure to better support both freight and passenger rail services.

Ports and Waterways

The majority of ports and waterway revenues are derived from user fees such as berthing fees, servicing fees and fees for loading or unloading vessels, but ports also depend on funding from land sales and local revenue sources such as property taxes.

Maintenance of waterways is funded by federal and state funds. The $136 million project to dredge the Columbia River from Portland to the Pacific Ocean is expected to receive 75 percent of its funding from the U.S. Army Corps of Engineers. The remaining 25 percent of the cost will be split between Oregon and Washington. Both states also fund port improvements and dredging projects through general revenues.

Public Transit

Public transit agencies and providers that operate urban, small area, rural and special needs transit services in Oregon are largely funded by local sources. The proportions of funding from federal, state and local sources vary between capital and operating budgets. Operating revenues are derived mainly from payroll taxes and passenger fares while the federal government may fund the majority of large capital improvement projects. Ongoing operating revenues for Oregon's transit agencies include the following funding sources:

- Payroll taxes applied in the Portland and Eugene areas accounted for 53 percent of the operating budgets for the two transit agencies during Fiscal Year 2003.

- The state assesses state agency payrolls in-lieu of the payroll tax and provides monies from the assessments to transit operators.

- Local property taxes provide most local funding for the Salem–Keizer and Rogue Valley Transportation Districts.

- Passenger fares are typically the second largest source of operating revenue for transit agencies providing scheduled service. TriMet's fares account for almost 20 percent of its total operating revenue, while other Oregon transit agencies typically cover 10 to 25 percent of operating revenue with fares.

- The Federal Transit Administration (FTA) provides grants to transit agencies for maintenance, rehabilitation and planning. Federal STP funds have been flexed to fund transit programs including community transportation and mass transit vehicle replacement.

- State funding sources for public transportation, which primarily go toward paratransit services and services in rural areas, include:
    - State cigarette taxes.
    - Revenue from the Driver and Motor Vehicle Services.
    - Motor fuel taxes collected from non-highway users.
- Grants from the state Department of Human Resources also fund local paratransit services throughout Oregon.
- Appropriations from the general funds of Oregon's cities and counties fund small portions of transit operating budgets.
- Transit agencies generate revenue through other sources such as advertising on bus shelters, at stations and inside transit vehicles, and through interest on operating and capital reserves.

There are several sources of capital revenues for public transit providers:

- The FTA's New Starts program is a competitive grant program that provides federal assistance for construction of new and expanded transit services.
- Federal STP and CMAQ grants provide funding for capital equipment purchases and construction of transit infrastructure.
- Other federal grant programs such as Transportation Enhancement funds are available for unique projects that do not conform to other funding programs.
- State lottery revenue bonds have been used to fund light rail, commuter rail and other transit projects in Oregon.
- Intercity bus services in Oregon are operated by private carriers who invest in their own terminals and equipment and fund operating expenses through fares and other user fees.

Roads and Highways

Oregon's state highways are primarily funded through user fees. Fuel taxes and administrative fees currently generate approximately two-thirds of ODOT's overall transportation revenues.

Motor fuel taxes are the largest source of user-derived revenue. The tax is assessed on vehicles less than 26,000 pounds gross vehicle weight (GVW). Motor fuel tax revenues alone make up approximately 22 percent of current ODOT revenues.

Title fees, driver's license fees, registration fees and other transportation-related fees for all types of vehicles are estimated to generate $500 million over the next two fiscal years.

Oregon has a long history of using a weight-mile tax for heavy vehicles in lieu of other taxes. The tax, which varies depending on vehicle weight, is intended to reflect the disproportionate impact that trucks and other heavy vehicles have on pavement, bridges and other parts of the transportation system. The weight-mile tax is expected to generate $455 million, or approximately 12 percent of ODOT's revenues, over the next two years.

Federal, state and local user fees provide 45 percent of the funding for county roads and 44 percent of total revenues for city streets in Oregon. Other sources of funding for local roads and streets include:

- U.S. Forest Service and Bureau of Land Management allocations, which provide over 25 percent of the funding for county road improvements. This funding source will expire in 2006 unless reauthorized by Congress.
- Property taxes and other non-user taxes, which fund 13 percent and 17 percent of county and city roads, respectively.
- Impact fees and system development charges, which have grown in use in recent years.
- Other federal funds, real estate transfer fees, private developer contributions, interest income and components of other local revenue sources.

The Oregon Transportation Investment Acts (OTIA) I, II and III are substantial bonded programs approved by the Oregon Legislature and backed by future revenues from taxes and fees. The OTIA programs provide funds to repair and replace state and local bridges, increase lane capacity, improve interchanges and preserve road pavements.

Other Transportation Divisions and Programs

Many of the revenue sources described in previous sections are collected in the form of user fees from ODOT's Motor Carrier Transportation Division, the Driver and Motor Vehicles Services Division and the motor fuel tax collection office of the Central Services Division. These fees and other revenue sources in turn support ODOT's safety programs and transportation program development, and they also are used to service ODOT's debt, cover operating expenses and make loans through the Infrastructure Bank Loan Program, a statewide revolving loan fund created to support innovative financing solutions for transportation.

How does Oregon Compare to Other States?

All 50 states and the federal government collect motor fuel taxes. In 2003, the most recent year in which state-by-state comparisons are available, Oregon's 24-cent tax on motor fuel ranked 15th among the 50 states. Taking into account volumes of fuel purchased in each state, the national average motor fuel tax was 20.3 cents in 2003.[31] Oregon is one of 17 states that does not assess a sales tax on motor fuel sales and is one of the few states without any form of a sales tax.

[31] U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2003*.

Federal funding is projected to account for 15 percent of Oregon's transportation revenues through 2008. In 2003, Oregon received 98.78 percent of what the state contributed to the Federal Highway Trust Fund, which includes revenues from federal motor fuel taxes as well as other federal taxes and fees assessed on commercial vehicles. The rate of return on apportionments was 102.93 percent for Fiscal Year 2004. Under the SAFETEA-LU legislation Oregon's rate of return is estimated to range from 101.87 percent to 103.99 percent between Fiscal Years 2005 and 2009.

Oregon has the nation's highest weight-mile tax among all states, collecting both the largest absolute revenues and the largest share of total transportation revenues from the tax. However, Oregon's titling and registration fees for commercial vehicles are well below regional and state averages. Oregon ranks 45th out of 50 states in registration fees for passenger cars and 34th in title fees when the length of the registration period is taken into account.

In addition to the weight-mile tax, direct user fees such as passenger facility charges collected at Oregon's commercial service airports and passenger fares collected on transit systems are important sources of revenue for Oregon and other states. Transit fares on Oregon's largest urban transit systems compare favorably with the rest of the nation. Public transit funding mechanisms vary from city to city within Oregon, making it difficult to compare local sources across agencies. At the state level in most states, transit funding is a small portion of the total transportation budget. Oregon ranks 17th among the 50 states in terms of per capita spending on transit at the state level.

The federal government has emphasized funding for other non-highway modes since the passage of the original Intermodal Surface Transportation Efficiency Act (ISTEA). The level of state funding for Oregon's locally-owned airports and marine ports is small, both as a percentage of the state's total transportation budget and as a percentage of the facilities' income. Oregon's spending on non-highway modes is consistent with most other states' funding for these modes. However, several states are beginning to establish state-level programs to improve intermodal access to marine ports, airports, and other freight and passenger hubs.

Tolling and pricing revenues constitute a small or nonexistent share of Oregon's total transportation funding, but these sources make up a large or growing share of revenues in many other states.

Other funding mechanisms, such as value capture, property taxes, sales taxes, income taxes and developer impact fees, are not utilized at the state level in Oregon, but do provide important sources of revenue for local transportation improvements.

Future Needs and Limitations of the Status Quo

The 2001 Oregon Legislature formed the Road User Fee Task Force and charged it with investigating methods of providing long-term stability and viability for highway finance. In its final report to the legislature, the task force found that:

- Oregon is heavily dependent on state and federal motor fuel taxes to provide revenues for the maintenance and construction of roads.

- Although the motor fuel tax has periodically been increased by the legislature, revenues have failed to keep pace with inflation.

- As advances in technology increase the average fuel efficiency of the motor vehicle fleet, motor fuel tax revenues are in danger of decreasing over time.

- Motor fuel tax revenues in Oregon are expected to level off over the next decade before declining permanently.

At the same time as revenues for highway improvements are threatening to decline, Oregon is faced with an increasing role in funding improvements to non-highway modes. Investments in Oregon's key passenger and freight facilities can make the state a more attractive place to do business. In addition to its existing responsibilities for the Oregon state highway system, the state will have an increasingly important role in:

- Ensuring that Oregon's rail system can efficiently move freight into and out of ports, and into and out of the state by helping to eliminate system bottlenecks.

- Maintaining the competitiveness of Oregon's deepwater ports and air cargo terminals.

- Maintaining and growing facilities and services that offer modal options for passenger and freight trips, both in urban areas and along intercity corridors.

- Reducing congestion and maintaining mobility across all modes and in all regions of the state.

Since transportation revenue sources are often tied to specific funding programs, Oregon currently has little flexibility to divert funding from one program to another in order to make up for funding shortfalls or meet shifting needs.

Principles for Funding and Financing Transportation in Oregon

The first step in developing a new transportation funding and financing framework is to determine basic principles that will guide the state's investments. Below are potential principles that could provide a foundation for a new way of funding transportation projects in Oregon.

Characteristics of an Optimal Transportation Funding Package

There are six general characteristics of an optimal funding package:

- **Diverse** – A diverse portfolio of funding sources allows a state to mix sources that perform well in a growing economy (e.g., property tax) with sources that are progressive (e.g., vehicle registration fees) or non-cyclical (e.g., license fees).

- **Flexible** – Most states suffer with constraints on how their funding sources may be used. Fund restrictions include statutory requirements to spend funds from a specific source only on roadway construction or bridge maintenance or bicycle facilities, etc. ODOT will not be able to prioritize the state's needs with objective performance measures if every funding source is linked to a single, specific program. But a desire for flexibility must be balanced with equity concerns; equity mechanisms that guarantee a level or share of funding to a mode or a region reduce the state's ability to direct its limited resources to the greatest transportation needs.

- **Bondable** – A reliable and constant revenue stream will enable ODOT to reduce the coverage ratio or margin needed to issue bonds for capital construction.

  ODOT's debt coverage ratio has declined from the time when the first Highway User Tax Revenue Bonds were issued. With additional bonds being issued through the OTIA program, ODOT will likely reach debt capacity in 2012 or 2013 and may not be able to issue the last portion of the OTIA bonds in the same manner. ODOT could consider issuing the remaining bonds through other methods which could be subject to slightly higher interest rates.

- **Adjustable** – All state DOTs struggle to maintain revenues at a level commensurate with need. Motor fuel taxes and other types of revenue sources suffer from some erosion due to political opposition to higher taxes, inflation in capital and operating costs, increasing fuel economy of vehicles and more sophisticated evasion. Being able to adjust the funding source to keep up with need will become more critical as the size and diversity of Oregon's transportation system expands.

- **Efficient** – The cost of collecting, simplicity and hassle of paying state transportation revenues from different sources varies significantly. Existing taxing mechanisms (e.g., vehicle registration fees, property tax, etc.) add only modest collection costs and require no extra effort on the part of the taxpayer. One of a kind sources (e.g., smog certificates, tolls

and parking fees) force motorists to follow another procedure, may involve complicated calculations or may be more susceptible to evasion.

- **Linked to Statewide Goals and Policies** – Funding mechanisms should be linked to OTP goals and may also be linked to other statewide goals and policies.

Potential Transportation Revenue Sources and Mechanisms

All potential transportation revenue sources have pros and cons. Whatever changes are made to Oregon's structure for transportation revenues, they must reflect the political climate in which transportation providers operate. The transportation funding sources can be grouped into six general categories:

- Fuel taxes, including taxes on motor fuel, aviation fuel, rail locomotive fuel and other types of fuel taxes.
- Administrative fees, such as registration fees, licensing fees and vehicle transfer or sale fees.
- Activity-based user fees, including weight-mile taxes, tolls, airport passenger facility charges and landing fees, port/gateway fees and public transit fares.
- Value capture and property taxes, such as right-of-way leases and air rights development, airport terminal and rental car facility fees, system development charges, property taxes and special assessments.
- General income and consumption taxes, including sales taxes, payroll taxes and other revenue sources that support general government activities.
- Joint participation where, from ODOT's perspective, revenues are generated by local governments or private-sector partners.

Fuel Taxes

Most commonly, fuel taxes are collected from motor vehicles that travel on roads and highways. Federal and state fuel taxes also can be collected from aviation fuel sales and from operators of diesel locomotives. Motor fuel sales are also subject to state sales taxes in many states, but not in Oregon.

Advantages of Motor Fuel Taxes

- The motor fuel excise tax is a direct user fee for roads and highways since the tax is assessed per gallon of fuel purchased and places a burden on the user in rough proportion with the amount the user drives.

- The motor fuel excise tax is an established tax that is accepted by highway users.
- Fuels used by heavier commercial vehicles (e.g., diesel) can be taxed at a higher rate; thus, more maintenance costs can be collected from the vehicles that do the most damage to roads.
- Because these revenues are generated from an ongoing activity as opposed to a one-time charge, they create a steady stream of revenue that may be bonded or used for maintenance and operations on a pay-as-you-go basis.
- Regardless of income, owners of more fuel-efficient vehicles pay less per mile or trip than owners of less fuel-efficient vehicles, encouraging fuel efficiency.
- Drivers may also reduce the amount of fuel excise tax they pay by driving less, carpooling or using transit.

Disadvantages of Motor Fuel Taxes

- Not only do revenues from motor fuel excise taxes fail to keep up with inflation, revenue growth is actually declining over time due to the improving fuel-efficiency of most new automobiles. Finding the political support to raise gas and diesel taxes, however, is increasingly difficult.
- Motor fuel taxes are regressive; people with lower income tend to pay disproportionately more of their income on fuel taxes than higher-income people.
- While fuel taxes are proportional to the amount of driving, they are far less proportional to whether the driving occurs in peak periods.
- The excise tax is often collected from a relatively small number of distributors; thus, it has been possible for organized crime and others to evade the tax.

Administrative Fees

Motor Vehicle Registration Fees

After motor fuel taxes, motor vehicle registration fees represent the second largest source of revenue for most state DOTs, including Oregon. Vehicle registration fees are assessed at varying levels based on vehicle class in many states. For heavier vehicles, registration fees usually increase rapidly with some measure of weight.

Advantages of Motor Vehicle Registration Fees

- Vehicle registrations provide a reasonably stable and reliable source of funding.

- In the absence of much higher registration fees and a drastic shift of travel mode, revenue would be expected to grow with population.

- The stability of income stream from vehicle registration fees allows for issuance of bonds and provides a reliable source of operating or maintenance funds.

- Unlike motor fuel taxes, revenues from vehicle registration fees are not likely to be eroded with advancement in vehicle and/or fuel technology.

- The registration fees can be indexed to many vehicle characteristics to make the fees progressive relative to income or produce a socially desirable goal.

Disadvantages of Motor Vehicle Registration Fees

- If the registration fee is a flat fee per vehicle class, inflation will erode its value. Some states and localities base registration fees for light vehicles on estimated vehicle value to adjust for inflation to some degree.

- Registration fees based on weight or horsepower may fluctuate up or down based on consumer preference. These trends are rarely consistent with roadway capacity demand, operating costs or maintenance needs.

- Since registration fees are based on vehicle ownership, the relationship between the burden and the use is relatively weak. There is no correlation between registration fees and peak versus off-peak usage.

- Since registration fees not based on vehicle values are relatively regressive, the lower-income groups spend a higher percentage of their income on the fees.

Driver's License Fees

Driver's license fees often are intended to cover administrative costs rather than provide a source of funding for capital projects or maintenance.

Advantages of Driver's License Fees

- Driver's license fees are easy to collect and produce a reliable and predictable stream of revenue.

- Driver's license fees are direct user fees; thus, they impact all users of roads and highways equally.

Disadvantages of Driver's License Fees

- Since this revenue stream is usually modest, it is not dependable for backing bonds or other forms of financing.

- Since the fees are collected uniformly, they are regressive.
- Although driver's license fees are acceptable to the general public as a way to cover administrative costs and some safety programs, excessive driver's license fees used for the general transportation budget could be seen as an additional tax.
- The fees cannot be applied to encourage off-peak period usage or transit usage.

Vehicle Transfer or Sales Taxes

Vehicle transfer or sales taxes are levied as a percentage of the sales price of a vehicle when it is purchased or first registered in a state. These taxes differ from general sales taxes in that revenue generated from these taxes is deposited in the highway fund while revenue from a general sales tax usually is treated as general revenue. Currently, few states have a vehicle sales tax that is specifically dedicated to transportation use.

Advantages of Vehicle Transfer or Sales Tax

- Because vehicle transfer taxes are levied as a percentage of vehicle sales prices, revenues from these taxes rise automatically with inflation.
- Vehicle sales taxes are somewhat equitable as they are linked to vehicle values.

Disadvantages of Vehicle Transfer or Sales Tax

- Purchases of new cars respond to fluctuations in the business cycle.
- A tax on new vehicles might have the initial effect of delaying purchases as people find it more worthwhile to maintain the existing fleet, potentially creating negative impacts on environmental quality.
- The tax is only minimally responsive to road usage.
- Since Oregon lacks a sales tax, political support for this tax may be limited.

Activity-Based User Fees

Tolls

States have embraced toll road construction as a way to reduce overall construction time and allow for more self-sufficiency in operation and maintenance costs. While the revenues produced by most toll facilities are dedicated to the exclusive maintenance and operation of the facility from which they are collected, some states use excess toll revenues to finance transit, other capital transportation projects or the state general fund. Mechanisms for assessing tolls include the following:

- Electronic Toll Collection (ETC) systems enable non-stop toll collection by utilizing an in-vehicle transmitter. Tolls are deducted from a prepaid debit account when the vehicle passes a toll barrier.

- ETC systems have also been used to collect tolls from single-occupant vehicles that are willing to pay to use High-Occupancy Vehicle (HOV) lanes to avoid congestion, creating a High-Occupancy Toll (HOT) lane.

- Cordon tolls have been implemented in such areas as the central business districts of Singapore and London and the entire country of Switzerland. With cordon tolls, vehicles are charged a toll for traveling in a specified area. The tolls can be a flat charge or varied by location within the area.

Advantages of Tolls

- Tolls are the most direct user fee for highway transportation because they are collected at the time and location of travel, similar to a transit fare.

- With increasing consciousness of the highway funding shortage, the construction of new toll facilities is gaining support among politicians and their constituents.

- It is possible to implement a toll on an existing highway if a major capacity expansion occurs.

- While traffic volumes are not easily forecasted, toll revenues can be used to finance bonds if conditions are correct. Excess toll revenues can be used for non-highway purposes, such as funding transit capital or operating costs in the corridor in which the toll road is located or in other regions of the state.

- Electronic toll collection systems allow for non-stop toll collection, eliminating the need for toll barriers that impede the flow of traffic.

- Toll roads often attract private investors and thus allow the state DOT to leverage its funding and federal funding.

- The U.S. DOT Innovative Finance program (TIFIA) provides a number of mechanisms to leverage toll revenues.

Disadvantages of Tolls

- Toll revenues may not provide an adequate stream of revenues to cover operating and capital costs.

- The use of toll revenues may be restricted to the facility from which they are collected by bonding agreements. Additionally, once construction bonds are paid off and an adequate maintenance fund is established, political pressure may require the toll to be lifted.

- Tolls have been attacked by various user advocacy groups as a double tax.
- Others have attacked ETC systems and vehicle miles traveled tolls as an invasion of privacy since the government could potentially track the movement of an individual.
- Currently, federal law allows limited implementation of tolls on newly constructed portions of the Interstate Highway System. In addition, conversion of existing facilities from non-toll to toll is politically impossible except in the circumstance described above.
- All tolls are regressive since they do not vary with income.
- Cordon tolls are costly to implement and administer in some parts of the state due to geography and the number of roads that would have to be tolled.
- Cordon tolls could potentially discourage development and economic growth in the cordon area due to increased cost of travel and reduced traffic in the area.

Weight-Mile Fees

Several states, including Oregon, levy taxes on the number of miles traveled by heavy vehicles. The rate at which this tax is levied is based on registered gross vehicle weight.

Advantages of Weight-Miles Fees

- Weight-mile taxes have been designed to reflect the effect of distance traveled on cost responsibility and that of weight on cost responsibility per mile.
- The administrative and compliance costs of weight-mile taxes can be modest.
- Revenue from weight-mile fees is relatively predictable, as freight activities are highly correlated to the state's economy.

Disadvantages of Weight-Mile Fees

- The weight-mile fees, like many other fees discussed, are not inflation-responsive.
- The trucking industry is strongly opposed to these fees and has been successful in reducing or eliminating them in other states through its national and state lobbies.

Vehicle Miles Traveled (VMT) Fee

The Oregon Road User Fee Task Force recommended adoption of a VMT fee in their final report to the Oregon Legislature. As its name suggests, a VMT fee is levied based on one's distance traveled. VMT fees can be set proportional to vehicle size and weight or other vehicle characteristics, including emissions, equivalent single-axle loads, vehicle value, energy consumption or fuel type, or varied by time of day or route.

Advantages of VMT Fees

- A VMT fee would be relatively stable. VMT is projected to continue to grow as population and vehicle ownership grow, barring any unforeseen fuel shortages.
- There is a strong linkage between the burden and the relative cost responsibility.
- Because VMT is highly related to the needs for capacity expansion or system preservation, a VMT fee will tend to mirror needs better than current sources.
- A VMT fee is equitable in that users are charged for only the trips they make. VMT fees can be used in combination with congestion pricing to influence route choice and departure time.

Disadvantages of VMT Fees

- As with any new fee, the political acceptability is questionable. Vehicles that pay the VMT tax would be exempt from motor fuel taxes, allowing a transition period when Oregon's vehicle fleet would transition from motor fuel taxes to VMT fees.
- Inflation would erode the value of this fee, so it might become necessary to alter the tax rate to obtain a targeted yield.
- A VMT fee is regressive, as it will have a disproportionate impact on lower-income households, despite their relatively low VMT.
- VMT growth rates will be under pressure in areas that fail to meet air quality standards.

Congestion Pricing

Congestion pricing allows a toll collector to regulate the demand for road or runway capacity by charging a higher price for travel during peak periods. The level of congestion pricing may be set such that it falls anywhere along a continuum from a level high enough to change driving behavior or an airline's scheduling decisions significantly to a level low enough that people do not change their driving or scheduling patterns.

Advantages of Congestion Pricing

- Congestion pricing implements an efficiency approach to highway or airport taxation by charging a price equal to the marginal social cost of the trip.
- If implemented successfully, congestion pricing can eliminate or postpone some of the needs for capacity expansion.

Disadvantages of Congestion Pricing

- Congestion fees are not responsive to inflation unless they are indexed.
- Revenue from congestion pricing is not likely to be stable. If the tax succeeds in reducing congestion, either through reducing trips or diverting them to alternative facilities or different times of the day, the revenue yield will fall.
- Congestion pricing fees are regressive.
- Substantial administrative issues exist. Congestion pricing will have to be applied jointly to state and other facilities to avoid shifts in traffic to non-priced facilities.
- The political resistance to roadway and airport congestion pricing may be strong.

Passenger Facility Charges

Passenger facility charges (PFCs) are assessed by commercial service airports on passengers enplaning from that airport. The proceeds from PFCs can be used to finance FAA-approved, eligible airport-related projects.

Advantages of Passenger Facility Charges

- PFCs are direct user fees that are collected at the time and location of travel.
- PFCs can be implemented relatively easily via an application process evaluated by the FAA.
- It is possible to forecast passenger volumes and revenues anticipated from a PFC, making PFCs bondable.

Disadvantages of Passenger Facility Charges

- Because demand for air travel is extremely sensitive to price, airlines are resistant to any fees that increase ticket prices.
- PFCs are not responsive to inflation. Since the U.S. Congress is the only body with the authority to increase PFCs, it is difficult to increase revenues from PFCs.
- Federal law requires PFCs to have a defined start and end date and be tied to a specific project.
- PFCs are regressive, but since air travelers tend to belong to higher income groups, the effect of the fee does not have as much variance across incomes.

Terminal Use Fees

Airports and marine ports generate most of their revenue from terminal use fees such as landing fees and berthing fees.

Advantages of Terminal Use Fees

- Landing and berthing fees are the most direct user fee for air and water modes.
- Terminal use fees are bondable so long as airports and marine ports can generate reliable forecasts of future travel demand.
- Terminal use fees are controlled by facility operators, and decisions regarding increases can usually be made outside the political arena.

Disadvantages of Terminal Use Fees

- Terminal use fees are not responsive to inflation and must be raised periodically.
- Airline ticket prices are extremely sensitive to price fluctuations, and therefore airlines may be forced to absorb the cost of landing fee increases rather than pass the cost on to consumers.

Fares

Fares collected by urban transit service providers, intercity bus services, passenger rail, air carriers and other public transportation providers are a direct user fee.

Advantages of Fares

- Like tolls, fares are directly tied to the use of a transportation facility or service and therefore are among the most efficient forms of revenue.
- Since fares can be forecast into the future, fare revenues are often bondable.
- Local, state and federal agencies can apply excise taxes and a variety of fees to many fares, generating additional revenue for related programs.

Disadvantages of Fares

- Due to the many options available to intra and intercity travelers, it is difficult or impossible to set fares at a high enough level to recoup all operating costs.
- Due to a variety of economic factors, fares are no longer adequate to cover operating and capital costs for any mode, with the exception of airfares between some markets.

- Fare increases can have negative effects on ridership of public transportation services, which may lead to conflicts with other transportation-related goals.

- Fare collection can be costly, requiring personnel, equipment and accounting mechanisms.

Value Capture and Property Taxes

Right-of-Way Leasing

Some states have allowed the placement of cellular towers on state right-of-way in exchange for the ability to house its own communication facilities for its Intelligent Transportation System (ITS) network on the towers. Other states have allowed telecommunications firms to lay underground fiber optic cable in state highway or transit agency rights-of-way in exchange for bandwidth that they will use in their own ITS systems.

Station and vehicle advertisements are common to most transit systems. Advertising has proven to be the most lucrative and widespread form of right-of-way leasing. Station leases for newsstands and food vendors generate revenue for transit agencies in addition to providing services for passengers. In major cities, the sale or lease of air rights above freeways, transit lines and train stations have generated significant revenue.

ODOT has limited experience in leasing right-of-way and does not have a systematic program. In the 1990s the agency investigated the potential for placing fiber optics in Interstate rights-of-way and systematically leasing space for cellular technology. Legal uncertainty prevented these from going forward at that time.

Advantages of Right-of-Way Leasing

- Right-of-way leasing generates revenue using existing transportation assets.

- Air rights over freeways or transit lines in urban areas can reunite divided neighborhoods while providing a reliable source of income for an agency.

- Leasing right-of-way for telecommunications cable and transmitters not only provides revenue but also may be exchanged for telecommunications services.

Disadvantages of Right-of-Way Leasing

- Legal and constitutional issues may arise from some right-of-way leases.

- Developments over air space can limit or prohibit future highway or transit expansions or create constraints due to noise abatement, view corridor preservation, vibration or other nuisance issues.

Impact Fees and Exactions

Local governments in Oregon have the authority to assess a transportation system development fee on developers. The system development fee covers the local government's cost of providing transportation infrastructure to new development.

Property Taxes, Special Assessments and Value Capture

Property taxes are collected in most states at the state or local level, but revenues from property taxes are usually not dedicated to transportation. Special assessments, however, may be imposed on property owners to pay for government programs designed primarily to benefit the owners of that property, such as the construction of roads.

Value capture refers to cases where the public is able to capture some of the increased value resulting from public investment. The most basic methods of funding capital facility costs involve development impact fees, assessment districts and special taxes.

Advantages of Property and Development Fees

- By internalizing infrastructure costs related to new developments, impact fees and exactions promote economic efficiency.
- Costs that would otherwise be funded through state or local government sources are shifted to a group of property owners in return for the special benefit that accrues to their property as a result of nearby public improvements.
- Fees or assessments on new development have often helped to convince the electorate to support sales tax initiatives because voters see that new development is paying its fair share.
- Impacts fees may be converted to assessment districts where the one time fee is amortized as periodic payments. These payments may be bonded and thus used to fund immediate construction of transportation improvements.

Disadvantages of Property and Development Fees

- The state DOT or local government must conduct a study to determine a proportional impact fee structure that precisely captures the relationship between the development impacts and amount of fees or exactions.
- Before the implementation of these fees, state enabling legislation is required.
- The one-time fee, if not converted into an assessment district with amortized payments, cannot be bonded and is an erratic pay-as-you-go income stream.

- Almost all fees are collected at time of building permit issue or approval of a master development agreement; thus, the fee falls under the purview of local governments. This local control places a state DOT in a weak position to demand a developer's participation.

- Requiring private developers to fund state transportation infrastructure or services may either decrease the incentive to build new homes or job-producing development or raise the price of housing or both.

General Income and Consumption Taxes

The sources of revenues that fund all types of government services can also be used to fund transportation. Often allocations to transportation from general revenues are derived from income and consumption taxes.

A portion of payroll taxes in Eugene and Portland is set aside to fund transit service. The use of dedicated payroll and income taxes specifically for transportation purposes is rare in the United States. Many state and local governments around the country do, however, set aside a share of sales tax revenues to fund transit, highways and other infrastructure improvements. Vehicle transfer taxes and excise taxes on commercial airplane tickets are both forms of transportation-specific sales taxes. Oregon does not have a sales tax, and it is unlikely that such a tax could be established in Oregon to fund transportation.

Advantages of General Income and Consumption Taxes

- General revenues can be directed to any mode of transportation in any region of the state. They are among the most flexible forms of transportation revenues.

- Payroll and income taxes are established methods of financing government programs, including transportation. They can be structured to reduce their burden on lower income populations. Payroll and income tax collections increase with an expanding economy, as long as per capita income increases.

- Sales taxes can generate a steady, predictable stream of revenues that are bondable. Sales tax revenues also increase with an expanding economy.

Disadvantages of General Income and Consumption Taxes

- Although general income and consumption taxes can spread the costs of infrastructure over the entire population that benefits at least indirectly from the investment, it is difficult to link the amount of tax paid to levels of transportation system use or benefits.

- General revenue allocations must be approved through legislative action and thus are difficult to forecast.

- Preparation of tax forms and other related paperwork related to payroll and income tax reporting and payment can be burdensome.

- The burden of sales taxes falls disproportionately on lower income populations, who pay a higher tax as a percentage of income than high-income consumers.

Joint Participation

Joint participation refers to opportunities for ODOT to leverage funding from other transportation facility owners and operators or from other stakeholders. The Oregon Innovative Partnerships Program (OIPP) allows ODOT to receive proposals for public-private partnerships. Eligible projects include any mode of transportation or service that facilitates transport of people, goods, services or information. Procedures must be in place to ensure projects continue to meet standards and goals of the state.

Advantages of Joint Participation Agreements

- Joint participation agreements can allow ODOT and other transportation agencies in the state to leverage funding for highway and non-highway modes.

- OIPP opens new revenue sources and financing mechanisms to both ODOT and its potential partners.

- OIPP has the potential to spur innovation and more market-based solutions to transportation problems.

- OIPP allows for contractors and partners to be selected on the basis of qualifications instead of least cost.

Disadvantages of Joint Participation Agreements

- Agreements must be carefully negotiated to protect the state from exposure to risks, including cost overruns and delays.

- For competitive reasons, private-sector firms often are reluctant to release information that would reveal future plans.

Financing Mechanisms

Unlike revenue sources, which generate the funding used to pay for transportation investments, financing mechanisms are ways to more efficiently spend money that agencies already have. Financing mechanisms fall into three broad categories:

- Pay-as-you-go.
- Short-term borrowing, known as limited leveraging.
- Long-term financing, including bonding.

Pay-As-You-Go Financing

Pay-as-you-go is the most common form of financing for transportation projects. Under a pay-as-you-go structure, a small project may be funded in the year of construction, and a larger project might be split into phases, each of which is paid for as funding becomes available. Pay-as-you-go currently remains ODOT's primary method of financing for modernization projects although the state is establishing other financing mechanisms that will shift more transportation financing by ODOT and its partners to debt instruments. The federal government allows for flexibility in the management of federal funding.

Innovative financing techniques associated with pay-as-you-go include:

- Flexible or tapered match, wherein the federal contribution to a project can be accelerated, with a larger proportion of federal funding in early years of construction and a larger proportion of state and/or local funding in later years.
- Toll credits that allow states to accumulate credits to be applied to the non-federal share of certain highway and transit projects.
- Third-party donations and federal funds match that allow states to credit the fair market value of third-party right-of-way or other in-kind donations, or funding received from other federal agencies, to the non-federal share of the project.
- Advance construction that allows a state to use non-federal funds to advance a federal-aid project while preserving its eligibility to receive federal-aid reimbursements in the future. Congress grants each state a fixed level of "obligational authority" each fiscal year, which limits the value of federal-aid projects that a state may undertake in a single year.

Short-Term Borrowing

Most states, including Oregon, enjoy superior credit ratings and have access to favorable terms on short-term instruments. Also known as "limited leveraging," short-term borrowing instruments for transportation include the following:

- ODOT could undertake short term borrowing in the form of commercial paper, variable rate debt, notes or other financial instruments in the national financial markets; ODOT could also establish a line of credit through a commercial bank.

- A State Infrastructure Bank (SIB) is a revolving fund capitalized by the state that, much like a private bank, can offer a range of loans and credit assistance enhancement products to public and private sponsors of highway and transit construction projects. ODOT has an active SIB.

- Similar to a SIB, a state can make a Section 129 loan to a public, quasi-public or private project sponsor, obtain federal-aid reimbursement for the loaned funds, and then recycle the repaid principal from the loan as matching funds for other federal-aid-eligible projects. Unlike SIBs, Section 129 loans are only applicable to projects that have a means of generating revenue with which to repay the loan.

- Transportation Infrastructure Financing and Innovation Act (TIFIA) loans were established as a way for the federal government to provide credit assistance in place of grants to projects of national significance. In general, eligible projects must have budgets of $100 million or more and must be able to generate revenue from user charges or other sources in order to repay the loan.

- The Railroad Rehabilitation Improvements Financing (RRIF) program is administered by the Federal Railroad Administration and provides loan guarantees for railroad infrastructure improvements.

Long-term Debt

A variety of long-term financing instruments are available to state governments. Projectable, reliable revenue sources such as motor fuel taxes, passenger facility charges and tolls can be used as collateral for long-term revenue bonds. States and transportation authorities have been issuing toll revenue bonds for more than a century to help finance large-scale projects. With the advent of airport passenger facility charges, dedicated property taxes for transit, and other stable transportation revenue sources, the use of revenue bonds has expanded beyond roads and highways to other modes. Transportation providers use three subcategories of revenue bonds:

- Revenue bonds are authorized by state law and are secured and repaid from revenue streams designated for that purpose. Revenue bonds enable the state to distribute the cost of a highway project to be borne by users over the life of the project.

- Grant Anticipation Notes (GANs) and Grant Anticipation Vehicles (GARVEEs) Bonds allow states to issue bonds backed by future estimates of federal transportation revenues. Use of GARVEEs and GANs was authorized by the 2003 Oregon Legislature, but they have not been used by ODOT. Such bonds, if issued as stand-alone bonds, are considered a weaker credit than ODOT's Highway User Tax Revenue Bonds.

- States can team with private sector partners or consortiums to form a non-stock, not-for-profit entity called a 63-20 corporation, which can then issue tax-exempt revenue bonds for transportation projects. 63-20 corporations considerably reduce financing costs for projects that would primarily be financed by the private sector. Oregon has not used a 63-20 corporation for any purpose; the most likely use would be for public-private partnership projects.

In addition to infusing transportation construction programs with large sources of capital, long-term debt provides an additional advantage of spreading the cost of transportation facilities among both current and future facility users.

TECHNICAL APPENDIX 4

OREGON TRANSPORTATION PLAN POLICY ANALYSIS SUMMARY

TECHNICAL APPENDIX 4
Oregon Transportation Plan Policy Analysis Summary

Introduction

The Oregon Transportation Plan (OTP) Policy Analysis evaluated the impacts of high fuel prices, relaxed land use controls, different funding levels and varying transportation improvements on the economy, land use and transportation system at the statewide level. The OTP Steering Committee used the analysis to inform their decisions about policies, investment strategies and key initiatives.

Scenario Descriptions

The OTP Steering Committee evaluated seven scenarios, which can be grouped into three types:

- The **reference scenario** served as the basis to which all other scenarios were compared. It assumed continued purchasing power and required modest levels of new or expanded sources of revenue. For the purposes of this scenario, the policy analysis followed the assumptions used in *Financial Assumptions for the Development of Metropolitan Transportation Plans: 2005-2030*, a coordinated effort between ODOT and Oregon metropolitan planning organizations (MPOs) that included the following assumptions:
    - The equivalent of an annual one penny per gallon fuel tax increase, beginning in 2006. These additional funds would be dedicated to roadway operations, preservation and maintenance activities.
    - The equivalent of a $15.00 increase in the state vehicle license fee in 2010 and every eight years to 2030. These funds would be available for modernization activities.
    - An amount equivalent to state funds being used for existing transit systems would continue to be dedicated to urban transit capital, raising $7.1 million in 2010 and $10 million per year thereafter.
- The **sensitivity scenarios** examined the impacts of two major external changes on the transportation system:

- The **high fuel price scenario** investigated the impact of increases in fuel prices during the plan period.

- The **relaxed land use scenario** investigated the impact of increased availability of land for development across the urban fringe and rural areas throughout Oregon.

- The **policy scenarios** examined the impact of policy decisions such as revenue levels and priorities, and potential alternate revenue generation. Four policy scenarios were considered:

  - The **flat funding scenario** evaluated the impact of the declining purchasing power due to inflation that would result if no additional funds were raised to support transportation.

  - The **maximum operations scenario** assumed operational improvements would be made instead of capacity expansion as assumed in the reference scenario. These improvements included highway operational investments made by Oregon Department of Transportation (ODOT) and enhanced transit services made by local and regional agencies. This scenario improved system operations through technological improvements.

  - The **major improvements scenario** evaluated the impacts of projects that were beyond the scope of the reference scenario, including projects identified in existing MPO plans and potential new lanes on I-5 and I-205 between Eugene and Portland. This scenario assumed ODOT and other agencies could raise the funding necessary to meet many of the feasible needs for all transportation modes across the state.

  - The **roadway pricing scenario** examined the impact of road pricing strategies in Oregon, primarily focused on the I-5 and I-205 corridor between Eugene and the Oregon/Washington border.

Performance Criteria

Eight performance criteria were used to evaluate the OTP scenarios. These reflect the values in the OTP Vision statement:

1. **Mobility and Accessibility** were defined as reaching desired destinations with relative ease, within a reasonable time, at a reasonable cost, with reasonable choices, including access to regional, national and international markets, as well as within a community. Mobility means an ability to move people and goods to their destinations quickly.
2. **Economic Vitality** meant having a diversified and competitive regional economy with healthy and efficient markets and potential for long-term economic growth, including efficient and competitive movement of people, goods and ideas.
3. **Effectiveness and Efficiency** were defined as maximizing the current and future public and private transportation investments over time; reaching the right target; use of lower cost alternatives; optimal utilization and system integration.
4. **Equity** was defined as distributing benefits and burdens fairly; consideration of the benefits afforded to and costs borne by all social, economic and geographic groups of people.
5. **Public Support for the System and Financial Feasibility** were defined as Oregonians agreeing with the policy direction; providing for the planning, development, operation and maintenance of the transportation system; and/or supporting adequate funding.
6. **Reliable and Responsive** were defined as providing dependable levels of service by mode within established expectations; having flexibility or ability to react appropriately.
7. **Safety** was defined as reducing the risk of death, injury or property loss.
8. **Sustainability** was defined as a transportation system that meets present needs without compromising the ability of future generations to meet their needs. The system is operated, maintained and improved on the basis of positively affecting both the natural and built environments.

Each criterion was further defined through performance measures that were used to analyze each scenario.

Methods of Analysis

The OTP staff used several tools to analyze the scenario policy directions and the impacts of different levels of funding. These tools included the ODOT statewide transportation, land use and economic model, findings from metropolitan planning organization travel demand models, and other research and expertise. The statewide model is designed to compare and contrast state and regional impacts of different transportation investments and changes in policy. The model allows analysts to compare the magnitude and direction of different combinations of policies and investments side by side. The statewide model does not provide the information needed to evaluate specific projects addressing local bottlenecks and other local capacity problems. These effects are addressed through other tools, such as metropolitan models and detailed traffic analyses.

Staff used other analytical tools and research to evaluate operations and modes other than highways and transit. Again, the focus was at the statewide level and included interviews with the Oregon Department of Aviation, Port of Portland, metropolitan planning organizations and ODOT staff.

Overall Scenario Findings

Reference Scenario

The reference scenario provided the baseline data for comparison with other scenarios. Table 4-1 provides a summary of reference scenario impacts by mode.

Table 4-1 – Reference Scenario Impacts over Time by Mode

Performance Criteria	Passenger Surface Transportation	Trucking	Rail Freight	Aviation	Ports
Mobility	▼	—	▼	—	▼
Accessibility	—	▼	—	—	▼
Economic Vitality	▲		▼	—	▼
Effectiveness & Efficiency	—	▲[32]	▼	—	—
Reliable	—	—			
Equity	—	—	—	—	▼
Safety	—	—	▼		
Sustainability	—		▼	—	▼
Public Support & Financial Feasibility	—	—			

▲ Improves over time; — No change over time; and ▼ Worsens over time.

[32] Based on a measure of VMT per ton.

Transportation modes that are relatively self supporting, like aviation, are expected to look relatively similar in the future. Modes, like rail with a major existing bottleneck in the Portland area and insufficient funding, are expected to see declines across the board. The slightly increased investments in this scenario would keep the passenger transportation system functioning in much the same way it does today.

Major Findings:

Overall, travel times are expected to increase across the state, but there is no significant change in travel time for freight movements. Because truck movements tend to be spread across the day, peak congestion periods impact trucks less overall.

- Economic growth is based on the Oregon Office of Economic Analysis forecast. The state as a whole is expected to see over 30 percent economic growth over the plan period.
- More workers would be accessible to employers than in the base year.
- The average ton-mile of travel for trucks is expected to decline over time, suggesting that freight activity is concentrating or growing faster in existing urban areas.
- Businesses are expected to use land more efficiently, getting more production out of the same amount of land.

Sensitivity Scenarios

High Fuel Cost Scenario

Increasing fuel prices would dampen economic activity in Oregon. Growth in employment and gross state product would slow for the state overall. The Portland region would be less affected than other regions due to its large size and more compact development pattern. The further an area is from the major trade hub of Portland, the more high fuel prices would lead to economic concentration and isolation. A rapid fuel price increase could have significant impacts on choice of mode for both passengers and freight, with more passengers choosing, for example, public transportation and more freight moving to rail.

Relaxed Land Use Scenario

At the statewide level, there appears to be a sufficient supply of land available in the reference scenario for development. Thus, increased availability of land for development across the urban fringe and rural areas throughout Oregon would have no significant effect on the Oregon economy as a whole. However, this is not likely to be the case at the local level where infrastructure might not provide sufficient capacity to serve new development that follows a less compact pattern.

Policy Scenarios

Flat Funding Scenario

If funding were to remain the same nominally, purchasing power would decline by 40 to 50 percent by 2030 in the flat funding scenario.

Major Findings:

- The state would fall behind on system maintenance and preservation more quickly than in the reference scenario.
- Gains that the state has made through recent investments would be set back, especially through the deterioration of pavement and bridge conditions. Long term costs for rehabilitation and replacement would increase.
- Although the decline in statewide highway mobility is not severe, local impacts would be significant.

Maximum Operations Scenario

Gains from operational improvements would be significant, especially when improvements are made to transit operations and frequency. However, much of the gains from operational improvements are already being realized with current operations. In addition to operational improvements to the freeway system in the Portland area, Oregon is expanding these efforts to other parts of the state and to the arterial system.

Major Findings:

- Travel times and transport costs would be reduced, and future development would likely be more compact than in the reference scenario.
- The most positive impacts of operations would be in the Portland Metro, Salem/Keizer, Eugene/Springfield and other metropolitan areas.
- Nationally, accidents, stalled vehicles, weather, work zones and other incidents cause about 50 percent of travel delay. Thus, safety and operational improvements would reduce delay.
- In the Portland area, currently transit saves 28 to 40 percent of delay while existing operational strategies save 10 percent.
- With full Intelligent Transportation System (ITS) deployment, nationally there is a 4 percent improvement in travel times as well as benefits to safety and reduced emissions.

Major Improvements Scenarios

Two major improvements options were considered:

- Additional regional transportation plan projects and projects of statewide significance, beyond those included in the reference scenario. These included improvements to all modes, but most of the capacity-adding projects were located in the Portland area, the Willamette Valley and Central Oregon.

- The above projects, plus additional lanes between Eugene and Portland on I-5 and I-205.

Major Findings:

- Modernization of highways and freight rail in the Portland area and the Willamette Valley would have a positive impact on the rest of the state because of connections to commercial centers.

- Travel times would be reduced when major improvements are made, but the benefits tend to be largest in the Willamette Valley.

Roadway Pricing Scenario

The roadway pricing scenario examined the impact of tolling lanes on I-205 and I-5 between Portland and Eugene.

Major Findings:

- Of all the strategies including major improvements, tolling would have the greatest impact on travel times.

- Pricing would tend to concentrate land use and economic activity into existing urban areas.

In major urban centers (such as Los Angeles), tolled facilities are generating sufficient revenue to cover operating and capital costs. In medium-sized urban areas (such as Portland), tolled facilities may be able to pay operating costs but probably not capital costs. Across the nation, tolled facilities have had a positive impact on congestion.

Summary of Performance Criteria Findings

Mobility

Except for those scenarios involving widening of I-5 and I-205, the OTP scenarios do not reveal major differences in statewide mobility. Continued declines in regional air services would reduce passenger mobility while additional rail passenger trains would improve mobility.

At the local and regional level improved transit service, operations measures and modernization improvements would have a positive impact on mobility by reducing delay.

Economic Vitality

Maximum operations, major improvements and pricing scenarios all would have positive economic impacts. High fuel prices and flat funding would depress economic growth.

Effectiveness and Efficiency

Relative to other scenarios, the major improvements scenario tends to decrease trip costs for all income groups. These effects would be most significant for low income commuters in the Portland metro area. Average trip lengths do not change significantly for most scenarios, except for roadway pricing. For this scenario, some commuters would take longer routes to avoid tolls, while others would save significant time due to reduced congestion.

Equity

Most of these scenarios do not impact equity. The maximum operations scenario would shift investments from rural areas to metropolitan areas. All areas of the state would benefit from investments that solve major capacity bottlenecks in urban areas. Major improvements would improve trip costs for low income commuters in the Portland metro area.

Public Support

The reference scenario assumes that the public would continue to support maintenance and preservation of the state transportation system and, therefore, new or increased sources of revenue. The flat funding scenario assumes little public support. Major improvements and tolling would increase costs substantially, although the former impacts everyone and the latter, specific users. These would require increased public support for taxes, fees or tolls.

Reliable and Responsive

Transit use would be increased most significantly by the maximum operations scenario due to the improvements in transit operations. Improved operations on roadways should improve traffic flow and reliability.

Safety

None of the scenarios showed a change in safety on a statewide basis. Safety improvements relate more to solving specific behavioral issues like DUII and speed than to general investment strategies.

Sustainability

Across all of the scenarios, land consumption per unit of economic output would decrease, suggesting an overall improvement in sustainability. Measured in terms of land consumption per unit of output, road pricing had a slightly greater impact on sustainability by encouraging more concentrated land use, but the impacts would vary by region.

Key Findings by Mode

Aviation

The most significant aviation issue for statewide mobility may be the potential loss of service at Pendleton and other small cities. Flat funding would result in declining maintenance for general aviation airports. High fuel prices would depress air travel, especially to smaller commercial and general aviation airports.

State Highways

For statewide mobility the most significant impacts resulted from widening of I-5 and I-205, with the greatest impact from pricing. Flat funding would result in severe declines in road conditions over time but, compared to the reference case, would not significantly impact mobility in the statewide general sense.

Many of the major improvements in current plans primarily would impact local and regional travel by solving spot delay problems at interchanges and other congested areas.

Local Streets and Roads

The statewide model used for this analysis is focused on the interregional transportation system and includes limited representation of streets and roads. Travel demand models for Portland, Salem/Keizer, Eugene/Springfield and Medford can better reveal the impacts on local roads. However, since state and local funding of roads are tied together, it is clear that flat funding would have similar negative impacts on the conditions of these roads as well as the associated bicycle and pedestrian facilities. Analysis of the maximum operations scenario indicates that the greatest opportunities to reduce delays and improve mobility are at the local and regional level.

Ports and Waterways

Ports and waterway facilities would face a major crisis if current expected funding is withdrawn and the Columbia channel is not deepened and the jetties not repaired. A breach of the jetties at the mouth of the Columbia River could jeopardize the use of this water channel for shipping.

Public Transportation

Public transportation is key to using a scenario with an operations emphasis. Transit provides a significant portion of existing congestion relief in the Portland metro area and has the potential to provide similar relief in other large urban areas. A challenge is to provide adequate funding to acquire and maintain buses and trains.

Under the flat funding scenario, the most severely impacted transit services would be demand responsive services for elderly and handicapped where only legally mandated service would be available and for urban fixed services where routes and services may be cut to adjust to reduced funding.

Rail Freight

The rail freight industry is currently constrained by lack of capacity, particularly in the Portland area and along the I-5 corridor. Additional capacity is needed to take advantage of competitive opportunities due to rising fuel prices. Some capacity improvement could be gained by consolidating dispatching services in the Portland area.

The flat funding scenario would not severely affect mainline railroads since most railroad funding is private. However, the inability to assist short line railroads with public funding would ultimately result in loss of service for communities not on rail mainlines.

Rail Passenger

The impacts of the alternative scenarios on rail passenger services do not show up clearly. Improvements in rail freight mainline capacity and additional passenger trains would improve passenger services and accessibility. Flat funding would reduce services by at least one round trip daily between Portland and Eugene.

TECHNICAL APPENDIX 5

OREGON TRANSPORTATION PLAN INVESTMENT SCENARIO TABLES

TECHNICAL APPENDIX 5
Oregon Transportation Plan Investment Scenario Tables

The following tables provide additional detail about the investment scenario levels described in the Oregon Transportation Plan (OTP), Volume 1, Implementation Section. The intent of the tables is to illustrate possible investment choices and the resulting impacts. Impacts are listed by mode with an overall summary of impacts at the end of the description for each level. The possible investment choices described are only examples and are not intended to represent policy. The costs included in the tables are primarily from the transportation needs analysis described in the Summary Description of Transportation Needs Section of the OTP Volume 1 and represent public funds in 2004 dollars. It is important to recognize that in practice, not all modes will function at the same investment level. The modes funded at higher levels will function at a different investment scenario level than modes whose funding has not increased.

Investment Scenario Level 1 – Response to Flat Funding				
System Element	**Strategy**	**Cost**	**Funding**	**Impact**
STATE HIGHWAYS				
Maintenance and Preservation	Maintain system as well as possible. Maintain Interstate Highways and National Highway System Highways at higher levels than Regional and District Highways.	No increase.	State Highway Fund.	Road surface quality and bridges decline significantly, especially toward 2030.
Operations	Make additional operational improvements that can reduce modernization needs. Use land use planning, TDM and access management to preserve system function.	Funding attempts to keep up with inflation.	Shift funds from other highway programs. Consider flexing STP funds to benefit system.	Some improvement in operations, but cannot keep up with increased traffic.
System Expansion	Keep at minimum mandated levels.	Level mandated by state law minus bond payments plus federal funds, or about $50 million per year.	After 2010, consider reducing or eliminating required modernization funding. Shift resources to operations and preservation.	Significant increase in congestion and travel delay.

LOCAL ROAD SYSTEM				
Maintenance and Preservation	Maintain the local road system as well as possible. Preserve bridges and road surfaces.	No increase.	Current funding sources.	Arterial congestion increases. Surface conditions decline.
PUBLIC TRANSIT				
Maintenance, Preservation and Operations	Minimize decline in existing services. Preserve special transportation services as the highest statewide priority.	No net increase.	Additional fare increases not sufficient to keep up with inflation. Consider flexing STP funds to benefit system.	Service quality declines as existing services fail to keep up with population growth.
System Expansion	Light rail and bus rapid transit capital projects funded through 2010 are completed. No further expansion after 2010.	All system expansion curtailed after 2010.[33]		The economic vitality of centers planned for but not served by light rail or bus rapid transit would be negatively affected.
INTERCITY BUS AND RAIL				
Maintenance, Preservation and Operations	Cut back services as required to keep within existing funding. Cascade trains reduced from a potential of five to eight round-trips daily to one round trip daily after 2015. Wilsonville to Beaverton commuter rail completed, but future extension to Salem is not constructed.	Continuation of existing program without inflation adjustment. Commuter rail line from Wilsonville to Beaverton costs approximately $105 million in capital expenditures.	State general funds.	Service does not keep pace with population growth. Passenger rail and bus services to rural areas decline. Only major metropolitan areas retain intercity bus service and only with reduced schedules.
RAIL FREIGHT				
Maintenance and Preservation	Continue grade crossing program and short line assistance within existing funding.	Existing program declines with inflation.	State general funds.	More short line companies fail to adequately maintain track and companies fail.
AVIATION				
Maintenance and Preservation	Assist general aviation airports in runway preservation.	Projected $10.7 million per year for general aviation airports. No inflation adjustments.[34]	State aviation and jet fuel taxes.	General aviation airports are maintained to extent possible.

PORTS AND WATERWAYS				
Maintenance, Preservation and System Expansion	Maintain existing major port channels. No modernization occurs beyond existing commitment to deepen channel on Lower Columbia River.	Oregon's portion is $27.5 million.	Federal, state and private sources.	Failure of jetties at mouth of Columbia damages state's position as a major port and jeopardizes use of smaller ports.
Summary of Level 1 Impacts	• The ability to get to places by all forms of transportation would decline because of declining infrastructure conditions and services and lack of funding for projects that relieve congestion. • Deterioration of the state and local road and bridge system cannot be avoided and increases user costs. If bridges deteriorate again to the point of load limits, then commerce would be interrupted. • Traffic congestion would hurt the economy because of longer travel times, need for duplicate inventories at more locations, need for additional delivery fleet and drivers, and reduced market areas. • Transit service to new job centers and population centers may not be adequate. Transit fares and wait times would increase. • The most vulnerable populations, such as the elderly, persons with disabilities and those with low incomes, would lose transportation services. • Reduction of intercity bus, rail freight, aviation and ports all would leave rural communities at an economic disadvantage. • The inability to maintain desirable service levels for road surfaces, signage and traffic operations would reduce the safety of the road system and hurt emergency response. • Air quality conformity would decline with declines in transit and increased congestion. • Job retention and creation would be hurt by lack of modern highway and transit facilities. • Local governments may be forced to assess all costs of new local roads against industry and housing. • Failure of the jetties at the mouth of the Columbia could leave Columbia River ports, including the Port of Portland, without access to ocean shipping. This would be devastating both to industries dependent on ocean shipping and to Oregon's transportation and warehousing industry.			

Investment Scenario Level 2 – Maintaining and Improving Existing Infrastructure and Services				
System Element	**Strategy**	**Cost**	**Funding**	**Impact**
STATE HIGHWAYS				
Maintenance and Preservation	Maintain the state highway system and preserve bridges and road surfaces.	Keeping existing investment levels of $261 million for pavements and maintenance will prevent major deterioration for the next 25 years. 2005 bridge funding at $71 million will be inadequate long-term.[35]	Approximately 3.1 percent ($.01) per year increase in the State Highway Fund to stay even with inflation. Generates an annual average $139 million in new revenue for state highways to compensate for inflation.[36]	Surface conditions remain at current levels. Some decline in bridges and other features as all needs are not met.
Operations	Invest in ITS and TDM to improve operations. Plan for Vehicle-Infrastructure Integration (VII) strategy. Use land use planning and access management to preserve system function.	Shortfall for meeting existing operations program needs is $15.3 million per year.[37]	Shift funding from other programs.	Operational improvements and coordination with local roads and transit expand.
System Expansion	Invest in freight and passenger bottlenecks.	Focus existing modernization program on removing bottlenecks rather than construction of new facilities.	Existing modernization program. All major capacity-adding projects should consider value capture.	Focus on bottlenecks slows, but does not stop, growth of congestion and delay.
LOCAL ROADS SYSTEM				
Maintenance, Preservation, Operations and System Expansion	Preserve bridges and road surfaces within inflation adjusted budget. Operational improvements and correction of some bottlenecks on arterial roads.	$282-482 million per year in unmet needs for operations, bridges, pavement, maintenance and modernization.[38]	Half of the increase in State Highway Fund would go to cities and counties. Generates an annual average of $139 million in new revenues for local roads.[39]	Keeps pace with inflation but not demand. General improvement in road surface conditions, but arterial modernization cannot keep pace with traffic growth.
PUBLIC TRANSIT				
Maintenance, Preservation and Operations	Preserve existing service levels by keeping up with population growth, including expansion of special transportation services in both rural and urban areas. Use ITS and other operational strategies to help expand and preserve capacity to meet demands.	$195 million per year over existing resources in 2004 dollars.[40] This represents a new way of doing business and is assumed to be covered in the needs analysis.	Fares, local revenue, federal and state assistance. State lottery fund source for capital includes bonded funds equivalent to $7.1 million in 2010 and $10 million per year after 2010.[41]	Services keep pace with population growth. Improvements in the quality of services with better operations.

System Expansion	Add planned buses and light rail lines.		Fares, local revenues and state assistance.	Services keep pace with population growth.
INTERCITY BUS AND RAIL				
Operations and System Expansion	Expand rail and bus services to meet demand growth. Operate Wilsonville to Beaverton commuter rail line.	Expand Cascades rail service to three trains per day (one additional train over 2005 level) at a cost of $2.4 million per year.[42] Wilsonville to Beaverton commuter rail operations cost $2 million annually.	Fares and state general funds.	Intercity bus services grow with population. Better information and coordination of services attracts more customers.
RAIL FREIGHT				
Maintenance, Preservation and System Expansion	Assist short line railroads in track and bridge preservation. Improve operations in Portland area.	$6 million per year to continue the existing program. $95.3 million (approximately half of the original estimate of $190.6 million needed is already committed) over first 5 years.[43]	State general funds. Lottery and state general funds.	Short line track conditions improve. As preservation progresses freight weight capacity improves. Reduction of major bottlenecks on mainlines leads to growth of rail freight.
AVIATION				
Maintenance and Preservation	Preserve commercial service at smaller airports.	Unknown. Strategies have included air service subsidies or terminal concessions.	Unknown.	Airport system keeps up with demand but with no new major facilities.
System Expansion	Assist general aviation airports in meeting future aviation needs.	$36.7 million per year for general aviation airports.[44]	State aviation and jet fuel taxes.	
PORTS AND WATERWAYS				
Maintenance and Preservation	Maintain and monitor channel and jetties. Maintain roadway and rail access.	Currently at $51.3 million and inadequate, and in danger of being cut. Needed replacement of jetties is estimated at $45.9 million, with no funding identified.[45]	Channel and jetty maintenance by the U.S. Army Corps of Engineers. Both could require state/local matching contribution.	Port facilities and access improved. Small port market share continues to decline for market reasons.

Summary of Level 2 Impacts	• Roadway and bridge conditions would be maintained and operational improvements made, so safety is improved and user costs are reduced compared to Level 1. • Public transit would keep pace with population growth and complete new bus rapid transit and planned light rail construction (I-205 and Milwaukie lines). • Special transit services to the elderly and persons with disabilities would be preserved. • Intercity rail service is limited but offers an alternative to highway travel. • Rail freight shipping costs would be reduced by elimination of some bottlenecks. Preservation of rail services would assist job retention in rural areas and outside the Willamette Valley. • Funding would prevent further cutbacks of short line rail service and maintain rural air service, maintaining rural access to freight and passenger services. • Ports would have the opportunity to deepen channels, protect jetties and address highway and rail congestion around marine terminals. But the economy would not grow to full potential because congestion at truck, rail and port facilities would prevent expansion and efficient handling of growing amounts of cargo. • Air quality would be somewhat improved by better highway operations. • Security improvements would be possible with better operational infrastructure. • Some congestion would be addressed through improvements to bottlenecks and through more aggressive implementation of operational improvements such as intelligent transportation systems (ITS). • Major capacity needs for roads and highways would still go unaddressed. Road users would still experience rising costs due to increased travel delay because of congestion. Freight accessibility would be lessened by lack of capacity-adding projects. The inability of local areas to expand arterial roads would hurt their development opportunities.

Investment Scenario Level 3 –Expanding Facilities and Services[46]				
System Element	**Strategy**	**Cost**	**Funding**	**Impact**
STATE HIGHWAYS				
Operations	Use operational techniques to reduce capacity needs.	$45.6 million per year.	From tolling and other value capture techniques.	State of the art highway system with automated tolls on special lanes and integrated VII system.
System Expansion	Develop projects of statewide significance.	Current projects of statewide significance estimated at more than $2 billion.	Pay for costs from tolling and other value capture techniques.	
LOCAL ROAD SYSTEM				
System Expansion	Improve local road system to manage additional demands. Primarily invest in arterials and operations.	Modernization needs estimated at $217 to $355 million per year.[47] Current highway fund, local revenues and federal funds available are estimated at $80-120 million per year through 2012, dropping to $45 million per year from 2013 through 2030.[48]	Additional costs covered using value capture, including local development fees and tolling.	Arterial roads integrated with state highway network. Traffic moves smoothly due to reduction in bottlenecks and information systems that improve trip planning.
PUBLIC TRANSIT				
System Expansion	Build out light rail, bus rapid transit and commuter rail. Expand bus service to meet demand. Expand special needs systems to meet latent demands in rural and urban areas.	$302 million per year more than just keeping up with inflation.[49]	Combination of state, federal and local funding, portion of operating costs covered by fares.	Keeps pace with growth in urban and rural areas. Mode share for transit improves with the build out of light rail transit and bus rapid transit system. Special transportation needs are generally met.

INTERCITY BUS AND RAIL				
System Expansion	Add two round trips to rail service between Eugene and Portland. Add Eastern Oregon Rail and commuter rail between Wilsonville and Salem after 2020.	No projected increase in operating costs from the additional trains between Eugene and Portland. Eastern Oregon rail would cost approximately $31 million in capital expenditures and $5 million in annual operating costs. Extending commuter rail to Salem would cost about $85 million in capital expenditures and nearly $4 million annually for operations.[50]	State general funds and fares.	Keeps pace with growth in urban and rural areas.
RAIL FREIGHT				
System Expansion	Upgrade short lines to handle 286,000 lbs. cars. Assist railroads in implementing specialized services such as those requiring tipping or intermodal freight transfer. Remove bottlenecks from mainline system.	Up to $19 million annually including removing bottlenecks under expansion category.[51]	Value capture from shippers, railroads and other beneficiaries. Repayment of some financing from increased fees. State lottery and general funds.	Improved infrastructure and service creates potential for 2nd day freight service to Southern California and attracts new shippers.
AVIATION				
System Expansion	Modernization of airports. Enhancement of regional services in smaller markets.	Port of Portland does not rely on state funds. For other airports, funding gap between preservation and modernization needs and resources totals $37.9 million per year.[52]	State and federal aviation funds or local taxes or fees.	Modernization of key airports improves ability to retain regional air service in smaller communities.
PORTS AND WATERWAYS				
System Expansion	No additional capital expansion beyond those already included in Levels 1 and 2 is anticipated.			

Summary of Level 3 Impacts	With its focus on expansion of infrastructure and services, Level 3 has very positive impacts on the economy: • Statewide mobility would be enhanced by improvements throughout the system. Development of expanded road, transit, intercity passenger service, rail freight and airports would occur throughout the state. • Public transit and rail improvements would make greater contributions to congestion relief. • Better transit services would increase the economic vitality of downtowns and other employment centers. • Rural areas would be better able to retain air and rail services and related jobs. • Rural areas would be better connected via public transportation to communities with full services, ensuring better quality of life, retention of population and improved economies. • Adequate maintenance of local streets and roads would improve access for pedestrians, bicyclists and persons with disabilities. • Improved rail freight, marine port facilities and airports would enhance the economy in urban and rural areas. • Highway congestion is not eliminated, but it would no longer be a threat to the economy. • Highway users would pay for some capacity improvements through tolls. Added cost is partially offset by savings in travel time and costs.

Notes to Technical Appendix 5 Tables:

[33] Derived from *Financial Assumptions for the Development of Metropolitan Transportation Plans*, Forecast Tables, page 7.

[34] From *Transportation Needs 2005-2030, Executive Summary*, Table 5, Oregon Aviation Current Annual Capital Spending and Capital Needs.

[35] All figures are from *Transportation Needs 2005-2030, Executive Summary*, June 29, 2005, Table 22, page 21.

[36] Derived from *Financial Assumptions for the Development of Metropolitan Transportation Plans*, Revenue Tables, page 4.

[37] From *Transportation Needs 2005-2030, Executive Summary*, Table 23.

[38] From *Transportation Needs 2005-2030* (Full report), Table 5.

[39] Derived from *Financial Assumptions for the Development of Metropolitan Transportation Plans*, Revenue Tables, page 4.

[40] Derived from, *Transportation Needs Analysis, 2005-2030, Executive Summary,* Table 13, Summary of Public Transportation Scenarios 2005-2030. The difference between current service levels and the level required to keep pace with population growth.

[41] Derived from *Financial Assumptions for the Development of Metropolitan Transportation Plans*, Forecast Tables, page 20.

[42] From *Transportation Needs Analysis, 2005-2030, Executive Summary*, Table 17. One additional train would represent a 50 percent increase in the current passenger program.

[43] Derived from *Transportation Needs*, page 15.

[44] From *Transportation Needs Analysis, 2005-2030, Executive Summary*, Table 5.

[45] From *Transportation Needs Analysis, 2005-2030, Executive Summary*, Table 10.

[46] Investment Scenario Level 3 assumes Investment Scenario 2 for maintenance and preservations enhancements to keep pace with expansion.

[47] From *Transportation Needs Analysis, 2005-2030, Executive Summary,* Table 33.

[48] From *Financial Assumptions for the Development of Metropolitan Transportation Plans, 2005-2030*, Revenue Tables, page 8.

[49] From *Transportation Needs Analysis, 2005-2030, Executive Summary*, Table 14.

[50] From *Transportation Needs Analysis*, 2005-2030 (Full Report). There is no projected increase in operating costs as a result of the fourth and fifth passenger trains between Portland and Eugene.

[51] From *Transportation Needs Analysis*, 2005-2030, *Executive Summary,* Table 17, including both mainline and short lines.

[52] From *Transportation Needs Analysis*, 2005-2030, *Executive Summary*, Table 5.

TECHNICAL APPENDIX 6

OREGON TRANSPORTATION PLAN REFERENCE LIST

TECHNICAL APPENDIX 6
Oregon Transportation Plan Reference List

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[53] Oregon Transportation Plan (OTP) background papers and technical documents were developed using numerous sources applicable to each subject area. Key sources used in the development of OTP background material are listed in the Key Documents and Sources Consulted During OTP Development section of this appendix. The complete set of sources are cited in each of the background materials. Full documents can be obtained from the Oregon Department of Transportation, Transportation Development Division, Planning Section.

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- *Note: Thirteen county transportation system plans and 18 city transportation system plans were consulted and sampled to assess local transportation system modernization needs.*

TECHNICAL APPENDIX 7

OREGON TRANSPORTATION PLAN FINDINGS OF COMPLIANCE WITH OREGON'S STATEWIDE PLANNING GOALS

TECHNICAL APPENDIX 7
Oregon Transportation Plan Findings of Compliance with Oregon's Statewide Planning Goals

Findings of Compliance with State Agency Coordination Agreement

The Oregon Department of Transportation's (ODOT) State Agency Coordination Agreement (SAC) requires that the Oregon Transportation Commission (OTC) adopt findings of fact when adopting long-range policy plans (OAR 731-015). Pursuant to these requirements the following findings support the OTC adoption of the Oregon Transportation Plan (OTP). The SAC program describes what agencies will do to comply with Oregon's land use planning program. Specifically, it describes how an agency, that is, ODOT will meet its obligations under ORS 197.180 to carry out its programs affecting land use in compliance with the statewide planning goals and in a manner compatible with acknowledged comprehensive plans.

Coordination Procedures for Adopting the Final Transportation Policy Plan, OAR 731-015-0045

(1) Except in the case of minor amendments, the Department shall involve DLCD, metropolitan planning organizations, and interested cities, counties, state and federal agencies, special districts, and other interested parties in the development or amendment of the transportation policy plan. This involvement may take the form of mailings, meetings, or other means that the Department determines are appropriate for the circumstances. The Department shall hold at least one public meeting on the plan prior to adoption.

FINDING: The development of the OTP used an open and ongoing public and agency involvement process which included the Department of Land Conservation and Development (DLCD), the metropolitan planning organizations (MPOs), Area Commissions on Transportation (ACTs), cities, counties, state and federal agencies, numerous modal and stakeholder interest groups and interested citizens. The OTP public process is detailed in OTP Appendix C.

(2) The Department shall evaluate and write draft findings of compliance with all applicable statewide planning goals.

FINDING: The OTP Findings of Compliance with Oregon's Statewide Planning Goals, demonstrate compliance. The OTP supports all 19 statewide planning goals. No statewide goal conflicts have been identified with the OTP.

(3) The Department shall present to the Transportation Commission the draft plan and findings of compliance with all applicable statewide planning goals.

FINDING: The draft findings were presented to the Commission for review at the August 24, 2006 OTC meeting.

(4) The Transportation Commission shall adopt findings of compliance with all applicable statewide planning goals when it adopts the final transportation policy plan.

FINDING: Final findings were presented at the September 20, 2006 OTC meeting for Commission consideration for adoption.

(5) The Department shall provide copies of the adopted final transportation policy plan and findings to DLCD, the metropolitan planning organizations, and others who request to receive a copy.

FINDING: The final Oregon Transportation Plan and final findings will be distributed to DLCD, the metropolitan planning organizations and others who request a copy following adoption and available on the OTP webpage.

Oregon's Statewide Planning Goals and Guidelines

The State of Oregon has established 19 statewide planning goals to guide state, local and regional land use planning. The goals express the state's policies on land use and related topics. The Planning and Implementation Guidelines for each goal were reviewed. In some cases, findings were developed from the planning guideline language as noted. Goal 12 includes findings of compliance with the Goal 12 Planning and Implementation Guidelines and the applicable provisions of the Transportation Planning Rule (TPR), OAR 660-012.

The findings are based on the content of the Oregon Transportation Plan. Included in the Plan is background information, goals, policies, strategies and key iniativates. The Plan policies are expressed by the goals, policies and strategies.

1. **Citizen Involvement** - Goal 1 calls for "the opportunity for citizens to be involved in all phases of the planning process." The purpose of Goal 1 (OAR 660-015-0000(1)) is "To provide a citizen involvement program that ensures the opportunity for citizens to be involved in all phases of the planning process."

   FINDING: The development and review of the OTP provided extensive opportunities for citizen involvement as demonstrated in OTP Appendix C. The OTP itself is in compliance with Goal 1 in that it establishes comprehensive planning processes that seek and engage citizen involvement. These include:

   - *OTP Goal 7, Coordination, Communication and Cooperation, Policy 7.3, Public Involvement and Consultation, states, "It is the policy of the State of Oregon to involve Oregonians to the fullest practical extent in transportation planning and implementation in order to deliver a transportation system that meets the diverse needs of the state."*

   - *OTP Goal 7, Coordination, Communication and Cooperation, Strategy 7.3.2 states, "Consult with federal and state agencies, Area Commissions on Transportation, Metropolitan Planning Organizations, affected non-metropolitan officials, tribal governments and other stakeholder groups in the development and implementation of the Oregon Transportation Plan."*

   - *Policy 7.4, Environmental Justice, states, "It is the policy of the State of Oregon to provide all Oregonians, regardless of race, culture or income, equal access to transportation decision-making so all Oregonians may fairly share in benefits and burdens and enjoy the same degree of protection from disproportionate adverse impacts."*

   The OTP is the overriding policy and investment strategy for the state. The state modal/topic plans are elements of the state transportation system. When the modal/topic plans are updated, they will be subject to and will carry out the provisions of the OTP including OTP Goal 7.

   The OTP is in compliance with and supportive of Statewide Goal 1, Citizen Involvement.

2. **Land Use Planning** - The purpose of Goal 2 (OAR 660-015-0000(2)) is "To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions." Goal 2 outlines the basic procedures of Oregon's statewide planning program.

   FINDING: The Oregon Transportation Plan, the umbrella policy document of the state transportation plan, is in compliance with and supportive of Goal 2. Local and regional transportation system plans were used to identify the local transportation needs (OTP Technical Appendix 2, OTP Needs Analysis Summary, Local Roads and Bridges). As a result of the Goal 2 planning provisions, local transportation system plans, an element of local comprehensive plans, are made consistent with the state transportation plan and the state plan are made compatible with the local transportation plans. Several OTP policies demonstrate consistency with Statewide Goal 2.

   - *OTP Goal 4, Sustainability, and elements of the associated policies recognize the relationship between the nature of urban development and an efficient transportation system. Strategy 4.3.1 supports efficient land uses and compact development. It states, "Support the sustainable development of land with a mix of uses and a range of densities, land use intensities and transportation options in order to increase the efficiency of the transportation system…."*

   - *OTP Goal 6, Funding the Transportation System, Policy 6.2, Achievement of State and Local Goals, supports Goal 2 (and the other statewide planning goals) by stating that the planning and management of the transportation finance structure is to "contribute to the accomplishment of state and local environmental, land use and economic goals and objectives." This OTP policy supports Goal 2 and the other statewide planning goals by clearly stating that a fundamental objective is support for the state's land use goals.*

   - *The OTP includes key initiatives to help frame plan implementation and assist in updating the modal/topic plans. OTP Key Initiative C promotes coordinated land use planning. It states, "Integrate transportation, land use, economic development and the environment. Encourage and support land use plans and policies to enhance overall transportation system efficiency and transportation choices…."*

   The OTP is in compliance with and supportive of Statewide Goal 2, Land Use Planning.

3. **Agricultural Lands** - The purpose of Goal 3 (OAR 660-015-0000(3)) is "To preserve and maintain agricultural lands." It requires counties to inventory such lands and to "preserve and maintain" them through exclusive farm use (EFU) zoning (per ORS Chapter 215).

   FINDING: The OTP does not plan for specific uses on EFU lands and is supportive of the statewide planning policies to protect EFU lands. Oregon agricultural goods move by barge, rail, ship, truck and airplane. The OTP provides a policy framework for the development of a multimodal transportation system to support the movement of agricultural goods as well as other commodities. The OTP lists agriculture as one of the major commodities that makes Oregon's economy diverse. The Plan also recognizes that "transportation infrastructure often

encroaches on rural landscapes, affecting prime farm and forest lands." The key OTP policies supporting a multimodal and efficient transportation system are listed below.

- *Goal 1, Mobility and Accessibility, Policy 1.1, Development of an Integrated Multimodal System, states, "It is the policy of the State of Oregon to plan and develop a balanced, integrated transportation system with modal choices for the movement of people and goods."*

- *Goal 3, Economic Vitality, Policy 3.1, An Integrated and Efficient Freight System, states, "It is the policy of the State of Oregon to promote an integrated, efficient and reliable freight system involving air, barges, pipelines, rail, ships and trucks to provide Oregon a competitive advantage by moving goods faster and more reliably to regional, national and international markets."*

- *Goal 6, Funding the Transportation System, Policy 6.2, Achievement of State and Local Goals, supports Goal 3 (and the other statewide planning goals) by stating that the planning and management of the transportation finance structure is to "contribute to the accomplishment of state and local environmental, land use and economic goals and objectives." This support for the state's land use goals includes the preservation of agricultural land.*

The OTP is in compliance with and supportive of Statewide Goal 3, Agricultural Lands.

4. **Forest Lands** – The purpose of Goal 4 (OAR 660-015-0000(4)) is "To conserve forest lands by maintaining the forest land base and to protect the state's forest economy by making possible economically efficient forest practices that assure the continuous growing and harvesting of forest tree species as the leading use on forest land consistent with sound management of soil, air, water, and fish and wildlife resources and to provide for recreational opportunities and agriculture."

FINDING: The OTP does not propose specific uses to be located on forest lands but has policies that protect forest lands. Statewide Goal 4 protects forest lands primarily for economic purposes. The OTP provides a policy framework that recognizes that a viable and efficient transportation system is necessary to support Oregon's forest economy. The Plan's "Oregon's Transportation Challenges" section notes that forest products are a key contributor to Oregon's diverse economy. As noted above, the Plan recognizes that transportation infrastructure encroaches on rural landscapes, affecting prime forest land.

OTP policies that support and demonstrate Statewide Goal 4 consistency:

- *Goal 3, Economic Vitality, Policy 3.1, An Integrated and Efficient Freight System, states, "It is the policy of the State of Oregon to promote an integrated, efficient and reliable freight system involving air, barges, pipelines, rail, ships and trucks to provide Oregon a competitive advantage by moving goods faster and more reliably to regional, national and international markets."*

- *Goal 6, Funding the Transportation System, Policy 6.2, Achievement of State and Local Goals, supports Statewide Goal 4. Policy 6.2 states, "It is the policy of the State of Oregon to plan and manage the transportation finance structure to contribute to the accomplishment of state and local environmental, land use and economic goals and objectives."*

- *Strategy 7.1.3 promotes consultation with state agencies to achieve transportation goals. It states, "Consult with federal and state agencies to achieve transportation goals. This may include linking state economic, energy, housing, human services, land use, natural resource and transportation policies and activities; collaborating on siting facilities like prisons and state office buildings; and working with federal and state natural resource agencies on environmental stewardship." This provision includes consultation with the State Forester regarding the preservation of forest lands impacted by transportation construction.*

The OTP is in compliance with and supportive of Statewide Goal 4, Forest Lands.

5. **Open Spaces, Scenic and Historic Areas, and Natural Resources** - The purpose of Goal 5 (OAR 660-015-0000(5)) is "To protect natural resources and conserve scenic and historic areas and open spaces." Goal 5 encompasses 12 different types of resources, including wildlife habitats, mineral resources, wetlands and waterways.

   FINDING: The OTP does not plan specific uses that would be located on lands protected by Goal 5. It further supports Statewide Goal 5 by including the following policies:

   - *OTP Goal 4, Sustainability, Policy 4.1, Environmentally Responsible Transportation System, states, "It is the policy of the State of Oregon to provide a transportation system that is environmentally responsible and encourages conservation and protection of natural resources."*

   - *OTP Strategy 4.1.1 further details Policy 4.1: "Practice stewardship of air, water, land, wildlife and botanical resources. Take into account the natural environments in the planning, design, construction, operation and maintenance of the transportation system. Create transportation systems compatible with native habitats and species and help restore ecological processes, considering such plans as the Oregon Conservation Strategy and the Oregon Plan for Salmon and Watersheds. Where adverse impacts cannot reasonably be avoided, minimize or mitigate their effects on the environment. Work with state and federal agencies and other stakeholders to integrate environmental solutions and goals into planning for infrastructure development and provide for an ecosystem-based mitigation process."*

   - *OTP Strategy 4.1.4 sets a policy framework for streamlining permit procedures while meeting or exceeding environmental benefits or regulations. It states, "Work collaboratively to streamline permit procedures and gain efficiencies to transportation system improvements while meeting or exceeding environmental benefits or regulations."*

- *OTP Strategy 4.1.5 promotes reducing environmental impacts. It states, "In the construction and maintenance of transportation infrastructure and facilities, reduce the consumption of non-renewable construction materials, promote their efficient use and reuse, and reduce other environmental impacts such as stormwater impacts where appropriate."*

- *Goal 6, Funding the Transportation System, Policy 6.2, Achievement of State and Local Goals, supports Goal 5 by explicitly stating that the purpose of the finance structure (for transportation investments) is to accomplish state and local environmental, land use and economic goals and objectives. Policy 6.2 states, "It is the policy of the State of Oregon to plan and manage the transportation finance structure to contribute to the accomplishment of state and local environmental, land use and economic goals and objectives." This provision helps ensure that environmental goals and objectives at both state and local levels, including resource protection, will be considered when transportation investment decisions are made.*

- *Key Initiative C calls for the integration of "transportation, land use, economic development and the environment" and includes a provision for expanding the use of and consistently applying context sensitive and sustainable solutions in transportation and facility planning and design. This includes protecting Goal 5 resources.*

The OTP is in compliance with and supportive of Statewide Goal 5, Open Spaces, Scenic and Historic Areas, and Natural Resources.

6. **Air, Water and Land Resources Quality** - The purpose of Goal 6 (OAR 660-015-0000(6)) is "To maintain and improve the quality of the air, water and land resources of the state."

FINDING: The OTP provides a broad policy framework for the protection of environmental resources as integral to the development and maintenance of the transportation system.

- *Goal 4, Sustainability, Policy 4.1, Environmentally Responsible Transportation System, states, "It is the policy of the State of Oregon to provide a transportation system that is environmentally responsible and encourages conservation and protection of natural resources." This policy language applies to Statewide Goal 6 resources.*

- *OTP Strategy 4.1.1 further details Policy 4.1: "Practice stewardship of air, water, land, wildlife and botanical resources. Take into account the natural environments in the planning, design, construction, operation and maintenance of the transportation system. Create transportation systems compatible with native habitats and species and help restore ecological processes, considering such plans as the Oregon Conservation Strategy and the Oregon Plan for Salmon and Watersheds. Where adverse impacts cannot reasonably be avoided, minimize or mitigate their effects on the environment. Work with state and federal agencies and other stakeholders to integrate environmental solutions and goals into planning for infrastructure development and provide for an ecosystem-based mitigation process."*

- *OTP Strategy 4.1.2 states, "Encourage the development and use of technologies that reduce greenhouse gases."*

The OTP is in compliance with and supportive of Statewide Goal 6, Air, Water and Land Resources Quality.

7. **Areas Subject to Natural Disasters and Hazards** - The purpose of Goal 7 (OAR 660-015-0000(7)) is "To protect people and property from natural hazards." This goal deals with development in places subject to natural hazards such as floods or landslides.

FINDING: Several OTP policies support Statewide Goal 7 and efforts to protect people and property.

- *OTP Policy 4.1, Environmentally Responsible Transportation System, and Strategy 4.1.3 support Statewide Goal 7. Strategy 4.1.3 specifically addresses natural disasters and hazards. It states, "Evaluate the impact of geological hazards and natural disasters including earthquakes, floods, landslides and rockfalls, on the efficiency and sustainability of the location and design of new or improved transportation facilities as appropriate."*

- *OTP Strategy 4.1.1 states, "Practice stewardship of air, water, land, wildlife and botanical resources. Take into account the natural environments in the planning, design, construction, operation and maintenance of the transportation system. Create transportation systems compatible with native habitats and species and help restore ecological processes, considering such plans as the Oregon Conservation Strategy and the Oregon Plan for Salmon and Watersheds. Where adverse impacts cannot reasonably be avoided, minimize or mitigate their effects on the environment. Work with state and federal agencies and other stakeholders to integrate environmental solutions and goals into planning for infrastructure development and provide for an ecosystem-based mitigation process."*

- *OTP Strategy 4.1.5 promotes reducing environmental impacts. It states, "In the construction and maintenance of transportation infrastructure and facilities, reduce the consumption of non-renewable construction materials, promote their efficient use and reuse, and reduce other environmental impacts such as stormwater impacts where appropriate."*

The OTP is in compliance with and supportive of Statewide Goal 7, Areas Subject to Natural Disasters and Hazards.

8. **Recreational Needs** - The purpose of Goal 8 (OAR 660-015-0000(8)) is "To satisfy the recreational needs of the citizens of the state and visitors and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts." This goal calls for each community to evaluate its areas and facilities for recreation and develop plans to deal with the projected demand for them.

FINDING: The OTP recognizes recreation as one of the reasons people travel and several of its policies support Goal 8.

- *Policy 3.2, Moving People to Support Economic Vitality, states, "It is the policy of the State of Oregon to develop an integrated system of transportation facilities, services and information so that intrastate, interstate and international travelers can travel easily for business and recreation."*

- *OTP Strategy 3.2.3, calling for air, bus and rail services to facilitate recreation travel states, "Support intercity bus and intercity, interstate and international rail and air services to facilitate business and recreational travel."*

- *OTP Strategy 3.2.4, calls for the support of connections to parks and recreation areas. It states, "…support state and federal Scenic Byways and Tour Routes and connections to parks and recreation areas."*

The OTP is in compliance with and supportive of Statewide Goal 8, Recreational Needs.

9. **Economic Development** - The purpose of Goal 9 (OAR 660-015-0000(9)) is "To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens." This goal calls for diversification and improvement of the economy. Under this goal communities are required to inventory commercial and industrial lands, project future needs for such lands, and plan and zone enough land to meet those needs.

FINDING: The OTP recognizes that an efficient transportation system can help reduce business costs and help Oregon businesses to more effectively compete in the world economy.

The OTP policies, transportation needs analysis and key initiatives support Statewide Goal 9.

- *The OTP Goal 3, Economic Vitality overview describes the role of transportation in Oregon's economy and explains that the purpose of the "goal is to give Oregon a competitive advantage by moving high value goods faster and by moving all commodities efficiently and reliably across modes." The concept of providing a competitive advantage through transportation is reiterated in Policy 3.1, An Integrated and Efficient Freight System. It states, "It is the policy of the State of Oregon to promote an integrated, efficient and reliable freight system involving air, barges, pipelines, rail, ships and trucks to provide Oregon a competitive advantage by moving goods faster and more reliably to regional, national and international markets." The policy has an additional eleven strategies to help achieve the policy objectives.*

- *OTP Policy 3.2, Moving People to Support Economic Vitality, states, "It is the policy of the State of Oregon to develop an integrated system of transportation facilities, services and information so that intrastate, interstate and international travelers can travel easily for business and recreation."*

- *OTP Policy 3.3, Downtowns and Economic Development, states, "It is the policy of the State of Oregon to provide transportation improvements to support downtowns and to coordinate transportation and economic development strategies."*

- *OTP Strategy 3.3.1 further elaborates stating, "Coordinate private and public resources to provide transportation improvements and services to help stimulate active and vital downtowns, economic centers and main streets."*

- *OTP Strategy 3.3.2 supports more closely tying transportation planning and economic development strategies. It states, "Integrate transportation planning and investments with state and local economic development strategies and plans."*

- *The OTP supports a diversified economy and an efficient multimodal transportation system to serve commercial and industrial land. OTP Technical Appendix 2, OTP Needs Analysis Summary, estimates the needs of the major modes of transportation. This includes consideration of the commercial and industrial lands of the state through the transportation system plans used to identify the needs.*

- *OTP Key Initiative C calls for the integration of "transportation, land use, economic development and the environment." This provision supports Statewide Goal 9.*

The OTP is in compliance with and supportive of Goal 9, Economic Development.

10. <u>Housing</u> - The purpose of Goal 10 (OAR 660-015-0000(10)) is "To provide for the housing needs of citizens of the state." This goal specifies that each city inventory its buildable residential lands, project future needs for such lands, and plan and zone enough buildable land to meet those needs.

FINDING: OTP support for Statewide Goal 10 can be found under OTP Goal 4, Sustainability, and specifically Policy 4.3, Creating Communities, and several of its strategies.

- *Policy 4.3 supports a variety of housing densities, compact development, and transportation options within communities and neighborhoods. Policy 4.3 states, "It is the policy of the State of Oregon to increase access to goods and services and promote health by encouraging development of compact communities and neighborhoods that integrate residential, commercial and employment land uses to help make shorter trips, transit, walking and bicycling feasible. Integrate features that support the use of transportation choices."*

- *Strategy 4.3.1 supports a variety of residential densities which encourage housing variety and, in some cases, housing affordability. It states, "Support the sustainable development of land with a mix of uses and a range of densities , land use intensities and transportation options in order to increase the efficiency of the transportation system. Support travel options that allow individuals to reduce vehicle use."*

- *Strategy 4.3.2 promotes "safe and convenient bicycling and walking networks in communities" with three strategy points to achieve the policy objectives.*

- *Strategy 4.3.3 promotes housing ownership by advocating for the promotion of residential location efficient mortgages. Location efficient mortgages allow a buyer to purchase more*

house (or have a larger mortgage) because assumed transportation expenses are discounted due to the availability and proximity to transit services. Strategy 4.3.3 states, "Promote location-efficient incentives in Oregon to help increase the opportunities for individuals and families to purchase homes and businesses within areas well-served by transit."

The OTP is in compliance with and supportive of Statewide Goal 10, Housing.

11. <u>Public Facilities and Services</u> - Goal 11 calls for efficient planning of public services such as sewer, water, law enforcement and fire protection. The stated purpose of Goal 11 (OAR 660-015-0000(11)) is "To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development."

FINDING: The Oregon Transportation Plan is a policy and investment strategy document. No project proposals are included. The transportation needs identified are based on acknowledged regional transportation plans and local transportation system plans and other sources such as port master plans. These plans were used to estimate the dollar investment needed to fund the existing and future transportation system (to year 2030) rather than to determine the location of future public facilities. Goal 11 Planning Guidelines A.1-7 do not apply to the OTP because the Plan lacks public facility or service proposals. The OTP does, however, provide a policy framework that is supportive and consistent with Goal 11. The policies that apply to the seven Statewide Goal 11 planning guidelines are outlined below.

1. Plans providing for public facilities and services should be coordinated with plans for designation of urban boundaries, urbanizable land, rural uses and for the transition of rural land to urban uses.

   FINDING: *The OTP includes no site specific plans for public facilities or services in which to be coordinated with plans for designation of urban boundaries, urbanizable land, rural uses or for the transition of rural land to urban uses. OTP Policy 6.2 does, however ensure that as transportation investment decisions are made and carried out, they will be consistent with state land use policy. OTP Policy 6.2 states, "It is the policy of the State of Oregon to plan and manage the transportation finance structure to contribute to the accomplishment of state and local environmental, land use and economic goals and objectives." The OTP supports the intent of this Goal 11 provision.*

2. Public facilities and services for rural areas should be provided at levels appropriate for rural use only and should not support urban uses.

   FINDING: The OTP includes no site specific plans for public facilities or services so no determination of the appropriate level can be assessed. The OTP does contain policy that is supportive of Statewide Goal 11, A.2 planning guideline.

   - *OTP Policy 6.2 ensures that as transportation investment decisions are made and carried out, they will be consistent with state land use policy. OTP Policy 6.2 states, "It is the policy of the State of Oregon to plan and manage the transportation finance structure to contribute to the accomplishment of state and local environmental, land use and economic goals and objectives." The OTP supports the intent of this Goal 11 provision.*

3. Public facilities and services in urban areas should be provided at levels necessary and suitable for urban uses.

   FINDING: As noted above, the OTP includes no site specific plans for public facilities or services in which to determine if the level is necessary and suitable for urban uses. OTP Policy 6.2 does however ensure that as transportation investment decisions are made and carried out, they will be consistent with state land use policy. OTP Policy 6.2 states, "It is the policy of the State of Oregon to plan and manage the transportation finance structure to contribute to the accomplishment of state and local environmental, land use and economic goals and objectives." The OTP supports the intent of Statewide Goal 11, A.3 planning guideline.

4. Public facilities and services in urbanizable areas should be provided at levels necessary and suitable for existing uses. The provision for future public facilities and services in these areas should be based upon: (1) the time required to provide the service; (2) reliability of service; (3) financial cost; and (4) levels of service needed and desired.

   FINDING: The Oregon Transportation Plan is a policy and investment strategy document. No project proposals are included or described. The transportation needs identified are based on acknowledged regional transportation plans and local transportation system plans and other sources such as port master plans. These plans were used to estimate the dollar investment needed to fund the existing and future transportation system rather than to determine the location of future public facilities. The OTP provides a policy framework that is supportive and in compliance with Goal 11, A.4 planning guideline.

   - *OTP Policy 1.1, Development of an Integrated Multimodal System, Strategy 1.1.1 encompasses the concepts of timely, orderly and efficient delivery of transportation facilities and services. It states, "Plan and develop a multimodal transportation system that increases the efficient movement of people and goods for commerce and production of goods and services that is coordinated with regional and local plans." The coordination with regional and local plans contributes to timeliness and orderliness. Strategy 1.1.1 also specifies that regional and local transportation plans are required to address "existing and future centers of economic activity, routes and modes connecting passenger facilities and freight facilities, intermodal facilities and industrial land, and major intercity and intra-city transportation corridors and supporting transportation networks." This provision helps optimize transportation and land use resources, increasing the efficiency of both.*

   - *Goal 11, A.4 planning guideline states, "Public services in urban areas should be provided at levels necessary and suitable for urban uses." OTP Strategy 1.2.1 supports this planning guideline with respect to public transportation facilities and services being provided at levels appropriate to the community size. The Strategy 1.2.1 and the first bullet under it state, "Develop and promote inter and intra-city public transportation. Optimize existing services and find innovative ways to augment public transportation infrastructure and travel options to levels appropriate to the community size and to an effective network of connections."*

5. A public facility or service should not be provided in an urbanizable area unless there is provision for the coordinated development of all the other urban facilities and services appropriate to that area.

   FINDING: The OTP includes no site specific plans for public facilities or services. No determination of urban development coordination is possible or appropriate at the policy level of the OTP. OTP Policy 6.2 does, however, ensure that as transportation investment decisions are made and carried out, they will be consistent with state land use policy. OTP Policy 6.2 states, "It is the policy of the State of Oregon to plan and manage the transportation finance structure to contribute to the accomplishment of state and local environmental, land use and economic goals and objectives." The OTP supports the intent of Goal 11, A.5 planning guideline.

6. All utility lines and facilities should be located on or adjacent to existing public or private rights-of-way to avoid dividing existing farm units.

   FINDING: The OTP includes no site plans for utility lines or facilities. OTP Policy 6.2 does, however, ensure that as transportation investment decisions are made and carried out, they will be consistent with state land use policy. OTP Policy 6.2 states, "It is the policy of the State of Oregon to plan and manage the transportation finance structure to contribute to the accomplishment of state and local environmental, land use and economic goals and objectives." The OTP supports the intent of this Goal 11, A.6 planning guideline.

7. Plans providing for public facilities and services should consider as a major determinant the carrying capacity of the air, land and water resources of the planning area. The land conservation and development action provided for by such plans should not exceed the capacity of such resources.

   FINDING: The OTP is in compliance with Goal 11, A.7 planning guideline. As the major policy element of the state transportation system plan, the OTP includes provisions for the consideration of the carrying capacity limits of air, land and water resources. OTP Goal 4, Sustainability, and its policies and strategies seek to the protect natural resources and reinforce the state environmental and land use policies.

   - *OTP Goal 4 states, "To provide a transportation system that meets present needs without compromising the ability of future generations to meet their needs from the joint perspective of environmental, economic and community objectives. This system is consistent with, yet recognizes differences in, local and regional land use and economic development plans. It is efficient and offers choices among transportation modes. It distributes benefits and burdens fairly and is operated, maintained and improved to be sensitive to both the natural and built environments."*

   - *OTP Policy 4.1, Environmentally Responsible Transportation System, states, "It is the policy of the State of Oregon to provide a transportation system that is environmentally responsible and encourages conservation and protection of natural resources."*

- *OTP Strategy 4.1.1 promotes ecosystem-based mitigation in cases where impacts cannot be avoided. This approach is consistent with Goal 11, A.7 planning guideline to not exceed land, air and water carrying capacity. Strategy 4.1.1 states, "Practice stewardship of air, water, land, wildlife and botanical resources. Take into account the natural environments in the planning, design, construction, operation and maintenance of the transportation system. Create transportation systems compatible with native habitats and species and help restore ecological processes, considering such plans as the Oregon Conservation Strategy and the Oregon Plan for Salmon and Watersheds. Where adverse impacts cannot reasonably be avoided, minimize or mitigate their effects on the environment. Work with state and federal agencies and other stakeholders to integrate environmental solutions and goals into planning for infrastructure development and provide for an ecosystem-based mitigation process."*

The OTP supports and is in compliance with the applicable provisions of Statewide Goal 11, Public Facilities and Services.

12. <u>Transportation</u> - The purpose of Goal 12 (OAR 660-015-0000(12)) is "To provide a safe, convenient and economic transportation system."

A. Goal 12 Planning Guidelines

1. All current area-wide transportation studies and plans should be revised in coordination with local and regional comprehensive plans and submitted to local and regional agencies for review and approval.

   FINDING: The OTP is not an area study. It is the major policy element of the state transportation system plan. Local and regional transportation system plans will be revised during periodic plan updates to be consistent with the OTP.

2. Transportation systems, to the fullest extent possible, should be planned to utilize existing facilities and rights-of-way within the state provided that such use is not inconsistent with the environmental, energy, land-use, economic or social policies of the state.

   FINDING: As a way to understand how the transportation system functions under various types of investments, the OTP Summary of Financial and Technical Analyses section examines possible future scenarios of development. In each scenario analysis the emphasis is on the use of existing facilities and rights-of-way within the state. OTP Goal 2, Management of the System, supports using the existing transportation system to the fullest extent possible as discussed in this guideline.

   - *OTP Goal 2 states, "To improve the efficiency of the transportation system by optimizing the existing transportation infrastructure capacity with improved operations and management."*

- *Policy 6.2, Achievement of State and Local Goals, reinforces the Goal 12 Planning Guideline, A.2 objective for consistency with state environmental, energy, land-use, economic or social policies. Policy 6.2 states, "It is the policy of the State of Oregon to plan and manage the transportation finance structure to contribute to the accomplishment of state and local environmental, land use and economic goals and objectives."*

3. No major transportation facility should be planned or developed outside urban boundaries on Class I and II agricultural land, as defined by the U.S. Soil Conservation Service unless no feasible alternative exists.

   FINDING: The OTP includes no plans for major transportation facilities. The OTP is a policy framework and investment strategy for future investments.

4. Major transportation facilities should avoid dividing existing economic farm units and urban social units unless no feasible alternative exists.

   FINDING: As noted above, the OTP includes no site specific plans for major transportation facilities.

5. Population densities and peak hour travel patterns of existing and planned developments should be considered in the choice of transportation modes for trips taken by persons. While high density developments with concentrated trip origins and destinations should be designed to be principally served by mass transit, low-density developments with dispersed origins and destinations should be principally served by the auto.

   FINDING: The OTP is in compliance with and goes beyond the Goal 11, A.5 planning guideline to promote travel options for the movement of people and goods throughout the state in low and high density developments.

   - *Policy 1.2, Equity, Efficiency and Travel Choices, states, "It is the policy of the State of Oregon to promote a transportation system with multiple travel choices that are easy to use, reliable, cost-effective and accessible to all potential users, including the transportation disadvantaged."*

   - *Strategy 1.2.1, recognizes public transportation is needed to transport people between and within cities but systems should be appropriate to the size of the community. Strategy 1.2.1 states, "Develop and promote inter and intra-city public transportation. Optimize existing services and find innovative ways to augment public transportation infrastructure and travel options to levels appropriate to the community size and to an effective network of connections...."*

6. Plans providing for a transportation system should consider as a major determinant the carrying capacity of the air, land and water resources of the planning area. The land conservation and development actions provided for by such plans should not exceed the carrying capacity of such resources.

FINDING: The OTP is in compliance with the Goal 12, A.6 planning guideline. As the major policy element of the state transportation system plan, the OTP includes Goal 4, Sustainability, and its policies that seek to the protect natural resources and reinforce the state environmental and land use policies.

- *OTP Goal 4 states, "To provide a transportation system that meets present needs without compromising the ability of future generations to meet their needs from the joint perspective of environmental, economic and community objectives. This system is consistent with, yet recognizes differences in, local and regional land use and economic development plans. It is efficient and offers choices among transportation modes. It distributes benefits and burdens fairly and is operated, maintained and improved to be sensitive to both the natural and built environments."*

- *Policy 4.1, Environmentally Responsible Transportation System, states, "It is the policy of the State of Oregon to provide a transportation system that is environmentally responsible and encourages conservation and protection of natural resources."*

- *Strategy 4.1.1, promotes ecosystem-based mitigation in cases where impacts cannot be avoided. This approach is consistent with the Goal 12, A.6 planning guideline to not exceed land, air and water carrying capacity. Strategy 4.1.1 states, "Practice stewardship of air, water, land, wildlife and botanical resources. Take into account the natural environments in the planning, design, construction, operation and maintenance of the transportation system. Create transportation systems compatible with native habitats and species and help restore ecological processes, considering such plans as the Oregon Conservation Strategy and the Oregon Plan for Salmon and Watersheds. Where adverse impacts cannot reasonably be avoided, minimize or mitigate their effects on the environment. Work with state and federal agencies and other stakeholders to integrate environmental solutions and goals into planning for infrastructure development and provide for an ecosystem-based mitigation process."*

B. Goal 12 Implementation Guidelines

1. The number and location of major transportation facilities should conform to applicable state or local land use plans and policies designed to direct urban expansion to areas identified as necessary and suitable for urban development. The planning and development of transportation facilities in rural areas should discourage urban growth while providing transportation services necessary to sustain rural and recreational uses in those areas so designated in the comprehensive plan.

   FINDING: As noted above, the OTP includes no site specific plans for major transportation facilities. Policy 6.2 ensures that investments in transportation infrastructure will be consistent with state land use policy. Policy 6.2 states, "It is the policy of the State of Oregon to plan and manage the transportation finance structure to contribute to the accomplishment of state and local environmental, land use and economic goals and objectives."

2. Plans for new or for the improvement of major transportation facilities should identify the positive and negative impacts on: (1) local land use patterns, (2) environmental quality, (3) energy use and resources, (4) existing transportation systems and (5) fiscal resources in a manner sufficient to enable local governments to rationally consider the issues posed by the construction and operation of such facilities.

   FINDING: As noted above, the OTP includes no site specific plans for new or improved major transportation facilities in which to identify the positive and negative impacts.

3. Lands adjacent to major mass transit stations, freeway interchanges, and other major air, land and water terminals should be managed and controlled so as to be consistent with and supportive of the land use and development patterns identified in the comprehensive plan of the jurisdiction within which the facilities are located.

   FINDING: The OTP includes no site specific plans for major transportation facilities, mass transit or otherwise. The Plan does recognize the importance of land use planning relative to transportation. Policy 6.2 ensures that investments in transportation infrastructure will be consistent with state land use policy. Policy 6.2 states, "It is the policy of the State of Oregon to plan and manage the transportation finance structure to contribute to the accomplishment of state and local environmental, land use and economic goals and objectives." The OTP also states under Strategy 6.2.1 that priority should be given "to funding those transportation needs identified in state, regional and local transportation system plans." This means acknowledged plans (where applicable) and assumes that plans that have been acknowledged would be consistent with the Goal 12, B.3 guideline.

4. Plans should provide for a detailed management program to assign respective implementation roles and responsibilities to those governmental bodies operating in the planning area and having interests in carrying out the goal.

   FINDING: The Plan calls for the future development of an OTP Implementation Plan to "outline affected programs and policies, define specific implementation actions and clarify roles and responsibilities." The Implementation Plan will be submitted to the Oregon Transportation Commission for their approval as required by ORS 184.618.

Transportation Planning Rule OAR 660-012

- **Purpose, OAR 660-012-0000**

The Statewide Planning Goal 12 (Transportation) administrative rule has several purposes. The findings below address consistency between the Oregon Transportation Plan and the Transportation Planning Rule (TPR) purpose statement.

The purpose of the TPR is "to provide and encourage a safe, convenient and economic transportation system…."

FINDINGS: The Oregon Transportation Plan has 7 goals and associated policies that together carry out the objectives of the TPR.

- *OTP Goal 5, Safety and Security, states the goal is "To plan, build, operate and maintain the transportation system so that it is safe and secure."*

- *OTP Policy 5.1 states that "It is the policy of the State of Oregon to continually improve the safety and security of all modes and transportation facilities for system users including operators, passengers, pedestrians, recipients of goods and services, and property owners."*

- *The intent of OTP Goal 3, Economic Vitality, is "To promote the expansion and diversification of Oregon's economy through the efficient and effective movement of people, goods, services and information in a safe, energy-efficient and environmentally sound manner." In the OTP Goal 3 and throughout the Plan increasing efficiency of transportation services is promoted. This is analogous to providing a "convenient" transportation system, as called for under the TPR purpose statement.*

The OTP is consistent with and supportive of this provision of the TPR.

Another purpose of the TPR is to "Promote the development of transportation systems adequate to serve statewide, regional and local transportation needs and the mobility needs of the transportation disadvantaged.…"

FINDING: The OTP identifies transportation needs for statewide, regional and local transportation systems. The OTP also provides a policy framework that promotes the development of an adequate transportation system to meet the identified needs including the needs of the transportation disadvantaged.

- *Goal 1, Mobility and Accessibility, provides a policy framework for the type of transportation services desired in the state. The stated goal is "To enhance Oregon's quality of life and economic vitality by providing a balanced, efficient, cost effective and integrated multimodal transportation system that ensures appropriate access to all areas of the state, the nation and the world, with connectivity among modes and places."*

- *OTP Policy 1.1, Development of an Integrated Multimodal System, states, "It is the policy of the State of Oregon to plan and develop a balanced, integrated transportation system with modal choices for the movement of people and goods."*

- *Policy 1.2, Equity, Efficiency and Travel Choices, states that "It is the policy of the State of Oregon to promote a transportation system with multiple travel choices that are easy to use, reliable, cost-effective and accessible to all potential users, including the transportation disadvantaged."*

- *OTP Strategy 3.1.1 provides a policy framework for regional and local plans to identify freight needs. It states, "Develop coordinated state, regional and local transportation*

plans and master plans that address current and future freight needs, issues and economic strategies. Co-locate economic activities and appropriate transportation facilities with convenient and reliable access to freight transportation options."

The OTP is consistent with and supportive of this provision of the TPR.

The TPR also seeks to "Encourage and support the availability of a variety of transportation choices for moving people that balance vehicular use with other transportation modes, including walking, bicycling and transit in order to avoid principal reliance upon any one mode of transportation…." The TPR also describes the nature of facilities. It states, "Provide for safe and convenient vehicular, transit, pedestrian, and bicycle access and circulation…."

FINDING: The OTP includes several policies that support these TPR objectives.

- *Policy 1.2, Equity, Efficiency and Travel Choices, states, "It is the policy of the State of Oregon to promote a transportation system with multiple travel choices that are easy to use, reliable, cost-effective and accessible to all potential users, including the transportation disadvantaged."*

- *A component of Strategy 1.2.2 is to "Design new roadways and retrofit existing roadways to support multimodal functions (e.g. construct Americans with Disabilities Act (ADA) ramps, sidewalks, crossings, bus pullouts and bicycle facilities) within existing urban and rural communities, new developments, and especially locations where public transportation exists or will likely exist. Design roads to support operations that give priority to transit vehicles as appropriate."*

- *OTP Goal 5, Safety and Security, is "To plan, build, operate and maintain the transportation system so that it is safe and secure."*

- *Strategy 4.3.2 supports the development of networks that support safe and convenient and bicycling and walking. It states, "Promote safe and convenient bicycling and walking networks in communities. Fill in missing gaps in sidewalk and bikeway networks, especially to important community destinations such as schools, shopping areas, parks, medical facilities and transit facilities. Enhance walking, bicycling and connections to public transit through appropriate community and main street design. Promote facility designs that encourage walking and biking."*

The OTP is consistent with and supportive of this provision of the TPR.

The TPR seeks to "Facilitate the safe, efficient and economic flow of freight and other goods and services within regions and throughout the state through a variety of modes including road, air, rail and marine transportation…"

FINDING: The OTP is consistent with this provision as demonstrated by the following policies.

- *OTP Goal 3, Economic Vitality, calls attention to promoting an efficient freight transportation system to expand and diversify Oregon's economy. The goal is "To promote the expansion and diversification of Oregon's economy through the efficient and effective movement of people, goods, services and information in a safe, energy-efficient and environmentally sound manner."*

- *OTP Policy 3.1, An Integrated and Efficient Freight System, states that "It is the policy of the State of Oregon to promote an integrated, efficient and reliable freight system involving air, barges, pipelines, rail, ships and trucks to provide Oregon a competitive advantage by moving goods faster and more reliably to regional, national and international markets."*

- *Strategies 3.1.1 through 3.1.7 of Policy 3.1 further detail the characteristics of, and ways to achieve, a safe and efficient freight system involving road, air, rail and marine transportation.*

The OTP is consistent with this provision of the TPR.

The TPR also states, "Protect existing and planned transportation facilities, corridors and sites for their identified functions.…"

FINDING: OTP Goal 2, Management of the System, and the associated policies provide a policy framework for the protection of existing and planned transportation facilities, corridors and sites for their identified functions. OTP Strategy 2.1.2 calls for the state to "Protect the integrity of statewide transportation corridors and facilities from encroachment by such means as managing access to state highways, limiting interchanges, creating safe rail crossings and controlling incompatible land use around airports, ports, pipelines and other intermodal passenger and freight facilities." OTP Strategy 3.1.1 also provides a policy framework for identifying freight needs and issues. This inventory and evaluation process will help protect the transportation facilities throughout Oregon for their planned functions. Several OTP policies call for coordinated planning efforts to help develop and protect Oregon's multimodal transportation system.

- *OTP Strategy 1.1.1 states, "Plan and develop a multimodal transportation system that increases the efficient movement of people and goods for commerce and production of goods and services that is coordinated with regional and local plans. Require regional and local transportation plans to address existing and future: Centers of economic activity, routes and modes connecting passenger facilities and freight facilities, intermodal facilities and industrial land, and major intercity and intra-city transportation corridors and supporting transportation networks."*

- *OTP Policy 7.1, A Coordinated Transportation System, states, "It is the policy of the State of Oregon to work collaboratively with other jurisdictions and agencies with the objective of removing barriers so the transportation system can function as one system."*

The OTP is consistent with and supportive of this provision of the TPR.

The TPR addresses project implementation. It states, "Provide for the construction and implementation of transportation facilities, improvements and services necessary to support acknowledged comprehensive plans…"

FINDING: Goal 6, Funding the Transportation System, is one of seven OTP goals. It focuses on transportation funding with a stated purpose of carrying out state and local goals. This provision and Strategies 6.1.2 and 6.2.1 are consistent with and support the TPR's objective to support acknowledged comprehensive plans.

- *OTP Goal 6 states, "To create a transportation funding structure that will support a viable transportation system to achieve state and local goals today and in the future."*

- *OTP Strategy 6.1.2 states, "Develop and maintain adequate resources for demonstrated and proven transportation needs for all transportation modes and jurisdictions." Proven needs are typically demonstrated through the regional and local transportation system plans.*

- *OTP Policy 6.2, Achievement of State and Local Goals, states, "It is the policy of the State of Oregon to plan and manage the transportation finance structure to contribute to the accomplishment of state and local environmental, land use and economic goals and objectives."*

- *OTP Strategy 6.2.1 states, "Give priority to funding those transportation needs identified in state, regional and local transportation system plans."*

The OTP is consistent with and supportive of this provision of the TPR.

The TPR stipulates, "Identify how transportation facilities are provided on rural lands consistent with the goals."

FINDING: Statewide Goals 3, 4, 11 and 14 of this appendix list the OTP policies that demonstrate consistency with the statewide goals in terms of how transportation facilities are provided on rural lands. A key policy is OTP Policy 6.2, which demonstrates the state's policy intent is to "contribute to the accomplishment of state and local environmental, land use and economic goals and objectives." These include the nineteen statewide goals.

The OTP is consistent with and supportive of this provision of the TPR.

The TPR states, "Ensure coordination among affected local governments and transportation service providers and consistency between state, regional and local transportation plans…." The TPR also calls for changes to comprehensive plans to be supported by adequate planned transportation facilities.

FINDING: OTP Goal 7, Coordination, Communication and Cooperation, supports coordination among affected local governments and transportation service providers. The Implementation section of the Plan stipulates that consistency between state, regional and local transportation plans is an expectation of the TPR and includes a diagram illustrating the relationships between the OTP and the state, regional and local transportation plans. Evaluation of comprehensive plan changes and adequacy of planned transportation facilities does not pertain to the Oregon Transportation Plan.

As noted above, the OTP reinforces the TPR planning coordination provisions.

The TPR further stipulates that in "meeting the purposes described in section (1), coordinated land use and transportation plans should ensure that the planned transportation system supports a pattern of travel and land use in urban areas that will avoid the air pollution, traffic and livability problems faced by other large urban areas of the country through measures designed to increase transportation choices and make more efficient use of the existing transportation system."

FINDING: The OTP policy framework advocates for the development of a multimodal transportation system under OTP Goal 1 as noted above. One of the chief purposes is "To provide a transportation system that meets present needs without compromising the ability of future generations to meet their needs from the joint perspective of environmental, economic and community objectives. This system is consistent with, yet recognizes differences in, local and regional land use and economic development plans. It is efficient and offers choices among transportation modes. It distributes benefits and burdens fairly and is operated, maintained and improved to be sensitive to both the natural and built environments" as set forth by OTP Goal 4, Sustainability.

The OTP is consistent with and supportive of this provision of the TPR.

The TPR also states, "For all communities, the mix of planned transportation facilities and services should be sufficient to ensure economic, sustainable and environmentally sound mobility and accessibility for all Oregonians."

FINDING: OTP Goal 1, Mobility and Accessibility, and Goal 4, Sustainability, provide consistency in OTP policy objectives. Goal 1 seeks to provide mobility and accessibility for Oregonians while Goal 4 ensures that mobility and accessibility will be provided in a sustainable way where economic, environmental and social values are considered.

The OTP is consistent with and supports this provision of the TPR.

The TPR also stipulates that "In all urban areas, coordinated land use and transportation plans are intended to provide safe and convenient vehicular circulation and to enhance, promote and facilitate safe and convenient pedestrian and bicycle travel by planning a well-connected network of streets and supporting improvements for all travel modes."

FINDING: OTP Goal 5, Safety and Security, provides a policy framework for the construction and maintenance of a safe and secure transportation system. The OTP also recognizes the role and importance of building transportation networks. Policy 1.2, Equity, Efficiency and Travel Choices, advocates for the development of a multimodal system that is convenient ("easy to use" and "reliable") and OTP Strategies 2.1.4 and 4.3.2, advocate for the development of street networks.

- *Strategy 2.1.4 states, "…Provide for a network of arterials and highways to efficiently move goods and services while enhancing safety and community movements on local streets…."*

- *Strategy 4.3.2 states, "Promote safe and convenient bicycling and walking networks in communities" and lists ways to achieve a complete network.*

The OTP is consistent with and supports this provision of the TPR.

The TPR promotes that transit be provided in certain communities and that a greater performance of the existing transportation system be achieved through system management and demand management measures.

FINDINGS: The OTP advocates for more transit and improved accessibility to transit facilities to enhance convenience and ridership. Policy 1.2, Equity, Efficiency and Travel Choices, and OTP Strategy 1.2.1 promote transit. Goal 2, Management of the System, calls for "optimizing the existing infrastructure capacity" to achieve greater system performance.

The OTP is consistent with and supportive of these TPR provisions.

The TPR promotes a reduction of auto-dependence within metropolitan areas through increased planning for alternative modes and street connectivity.

FINDING: The TPR objective to reduce reliance on the automobile is supported by several OTP policies. Developing a multimodal system is essential to reducing reliance on the automobile and a major theme of the OTP.

- *OTP Policy 1.1, Development of an Integrated Multimodal System, states that "It is the policy of the State of Oregon to plan and develop a balanced, integrated transportation system with modal choices for the movement of people and goods."*

- *Policy 1.2, Equity, Efficiency and Travel Choices, states that "It is the policy of the State of Oregon to promote a transportation system with multiple travel choices that are easy to use, reliable, cost-effective and accessible to all potential users, including the transportation disadvantaged."*

- *A key point of OTP Strategy 1.2.2 is to "Design new roadways and retrofit existing roadways to support multimodal functions (e.g. construct Americans with Disabilities Act (ADA) ramps, sidewalks, crossings, bus pullouts and bicycle facilities) within existing*

urban and rural communities, new developments, and especially locations where public transportation exists or will likely exist. Design roads to support operations that give priority to transit vehicles as appropriate."

- *OTP Policy 4.3, Creating Communities, promotes increasing the feasibility of using alternative modes through the development of compact communities. Policy 4.3 states that "It is the policy of the State of Oregon to increase access to goods and services and promote health by encouraging development of compact communities and neighborhoods that integrate residential, commercial and employment land uses to help make shorter trips, transit, walking and bicycling feasible. Integrate features that support the use of transportation choices."*

- *Strategy 4.3.1 states, "Support the sustainable development of land with a mix of uses and a range of densities , land use intensities and transportation options in order to increase the efficiency of the transportation system. Support travel options that allow individuals to reduce vehicle use."*

- *The OTP defines "compact development" as "community development patterns with a mix of land uses and a supporting transportation system that make transportation convenient. The use and character of compact development varies depending on community size and circumstances."*

- *Strategy 4.3.2 supports the development of networks that support safe and convenient and bicycling and walking. It states, "Promote safe and convenient bicycling and walking networks in communities. Fill in missing gaps in sidewalk and bikeway networks, especially to important community destinations such as schools, shopping areas, parks, medical facilities and transit facilities. Enhance walking, bicycling and connections to public transit through appropriate community and main street design. Promote facility designs that encourage walking and biking."*

The OTP is consistent with and supportive of these TPR provisions.

- Transportation Planning, OAR 660-012-0010

  FINDING: Section 10 of the Transportation Planning Rule recognizes that ODOT's TSP is composed of a number of elements as described in the Department's State Agency Coordination Program. The SAC states, "(1)(a) The state TSP shall include the state transportation policy plan, modal systems and transportation facility plans as set forth in OAR 731, Division 15." The Oregon Transportation Plan is the state transportation policy plan. The modal/topic and facility plans are separate documents, but along with the Oregon Transportation Plan, form the state transportation system plan.

  The OTP is consistent with this section of the TPR.

- Preparation and Coordination of Transportation System Plans, OAR 660-012-0015

FINDING: Section 10 of the Transportation Planning Rule states that the state TSP shall include the state transportation policy plan, modal systems plans and transportation facility plans. The OTP is the state transportation policy plan. As noted above, the modal systems plans and transportation facility plans are separate documents that together make up the state transportation system plan. The OTP proposes no projects.

The OTP is consistent with this section of the TPR.

- Elements of Transportation System Plans, OAR 660-012-0020

  Section 20 of the TPR stipulates that a TSP "shall establish a coordinated network of transportation facilities adequate to serve state, regional and local transportation needs…." This section also stipulates specific considerations for facility analyses including capacity analysis. This section of the TPR applies to aspects of the modal/topic plans that are elements of the state transportation system plan.

  FINDING: This section does not apply to the OTP because the OTP does not include any projects. It is a policy and investment strategy document.

- Complying with the Goals in Preparing Transportation System Plans; Refinement Plans, OAR 660-012-0025

  TPR Section 25 states that the adoption of a TSP is a land use decision regarding the need for transportation facilities, services and major improvements and their function, mode, and general location.

  FINDING: TPR Section 25 does not apply to the OTP because the OTP includes no proposals for transportation facilities, services or major improvements.

  TPR Section 25, subsection 2 requires findings of compliance with applicable statewide planning goals.

  FINDING: The OTP is in compliance with the applicable statewide goals as documented in this appendix.

- Determination of Transportation Needs, OAR 660-012-0030

  Section 30 of the TPR requires that TSPs identify transportation needs relevant to the planning area and the scale of the transportation network being planned including state, regional, and local transportation needs.

  FINDING: The Oregon Transportation Plan addresses state, regional, and local public and private transportation facilities as a network that forms one system. The Plan states, "The OTP considers all modes of Oregon's transportation system as a single system and addresses the future needs of Oregon's airports, bicycle and pedestrian facilities, highways and roadways, pipelines, ports and waterway facilities, public transportation and railroads through 2030."

The OTP identifies state, regional and local transportation needs as evidenced by Tables 1 and 2. An annual investment of $3.5 billion (Level 3) has been identified as adequate to meet the state, regional and local transportation system needs. Specific projects for development are addressed in the modal/topic and facility plans, sub-elements of the state Transportation System Plan. Policy 6.5, Triage in the Event of Insufficient Revenue, provides a policy framework for addressing revenue shortfall. It states, "It is the policy of the State of Oregon to resolve revenue shortfalls by means that maximize public acceptance and that minimize undesirable long-term consequences to the overall transportation system in urban and rural areas."

The OTP is consistent with this section of the TPR.

Section 30 of the TPR requires the needs of the transportation disadvantaged be included as a part of the determination of need.

FINDING: The needs of the disadvantaged are encompassed in the Oregon Transportation Plan needs analysis work and as policy.

- *The needs of the disadvantaged are primarily represented in the public transportation needs of the OTP Needs Analysis Summary, Technical Appendix 2. As noted in the summary report,[54] "Under the American Disabilities Act (ADA), transit districts must offer special needs transportation in all routes/corridors with regular transit services. Special needs transportation services are provided by transit districts, local government agencies, and private services. ODOT oversees grants to transit districts, local governments and other providers to support and improve the quality and quantity of special needs transportation services." Cost factors associated with ADA compliance are also reflected in the State Highway-Related needs and forecasts, the ODOT Bicycle and Pedestrian Program, and Local Roads and Bridges needs of the OTP needs analysis.*

- *Policy 1.2, Equity, Efficiency and Travel Choices, states, "It is the policy of the State of Oregon to promote a transportation system with multiple travel choices that are easy to use, reliable, cost-effective and accessible to all potential users, including the transportation disadvantaged." Strategy 1.2.1 focuses on the development and promotion of inter and intra-city public transportation. It directs collaboration with human service agencies as a method to ensure the transportation needs of disadvantaged population are being met. It states, "Where opportunities for coordination with other transportation service providers exist, work to integrate programs and align investments of service providers involved with the design, delivery and funding of mobility services. Collaborate with human service agencies to meet transit needs of seniors, persons with disabilities, low income and non-English speaking populations. Focus on the mobility management and customer needs of all potential users."*

[54] The full *Oregon Transportation Plan Transportation Needs Analysis 2005-2030, Summary Report*, July 14, 2005 is available through the Oregon Department of Transportation, Planning Section, Transportation Development Division, 555 13th Street NE, Suite 2, Salem, Oregon 97301-4178

The OTP is consistent with this section of the TPR.

TPR Section 30 requires the needs for movement of goods and services to support industrial and commercial development is to be included in the needs assessment.

FINDING: The needs for movement of goods and services to support industrial and commercial development is included in the OTP needs analysis and addressed in policy. Findings of compliance with Statewide Goal 9, Economic Development, OAR 660-009 have been included in this appendix. See Statewide Goal 9 findings for details.

- *The OTP transportation needs-related data was collected using acknowledged regional and local transportation system plans. By using this method, the modal needs of commercial and industrial land were included. Port plans and the state rail modal plan were also used. These plans are based in part on existing and future land use designations.*

- *OTP Goal 3, Economic Vitality, calls attention to providing an integrated and efficient freight system (Policy 3.1), moving people to support economic vitality (Policy 3.2), downtowns and economic development (Policy 3.3), and the development of the transportation industry (Policy 3.4).-*

The OTP is consistent with this section of the TPR.

- Evaluation and Selection of Transportation System Alternatives, OAR 660-012-0035

  TPR Section 35 stipulates that TSPs shall be based upon evaluation of potential impacts of system alternatives.

  FINDING: This section of the TPR does not apply to the OTP. The OTP is not a project-based plan, but a policy and investment strategy plan. The development of the OTP did include a system analysis (OTP Summary of Financial and Technical Analyses Section) that encompassed most of the provisions of this section of the TPR. The full provisions of TPR Section 35 are not appropriate to the scale of the statewide transportation network.

- Implementation of the Transportation System Plan, OAR 660-012-0045

  FINDING: TPR Section 45 does not apply to the OTP because the OTP includes no projects. An OTP Implementation Plan will be developed following Plan adoption. It will be subject to the Oregon Transportation Commission's review and approval.

- Transportation Improvements on Rural Lands, Exceptions. OAR 660-012-0065-00070

  FINDING: TPR Sections 65 and 70 do not apply to the OTP because it does not include a development plan for rural areas or otherwise. Findings of compliance with Statewide Goals 3, 4, 5, 11 and 14, which could include rural land, have been made in this appendix.

The OTP is in compliance with and supportive of Statewide Goal 12, Transportation including the applicable sections of the Transportation Planning Rule.

13. <u>Energy Conservation</u> - Goal 13 declares that "land and uses developed on the land shall be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principles." The purpose of Goal 13 (OAR 660-015-0000(13)) is "To conserve energy."

FINDING: The OTP is in compliance with and supports Statewide Goal 13 through several policies and a key initiative.

- *OTP Policy 4.2, Energy Supply, states, "It is the policy of the State of Oregon to support efforts to move to a diversified and cleaner energy supply, promote fuel efficiencies and prepare for possible fuel shortages."*

- *Policy 4.3, Creating Communities, promotes energy efficiency through land use and transportation by advocating for compact communities with mixes of land use types in order to make trips shorter and by alternative means. Policy 4.3 states, "It is the policy of the State of Oregon to increase access to goods and services and promote health by encouraging development of compact communities and neighborhoods that integrate residential, commercial and employment land uses to help make shorter trips, transit, walking and bicycling feasible. Integrate features that support the use of transportation choices." Policy 4.3 has six supporting strategies that further detail methods to encourage shorter trips and make transit, walking and bicycling feasible.*

- *The OTP requires "consideration of energy supply assumptions" as part of the "Requirements for State Multimodal and Modal/Topic Plans" in the Implementation Section. This provision supports Goal 13.*

- *OTP Key Initiative C, bullet four, calls for discussion about energy issues and for the development of a "contingency plan for dealing with fuel shortages."*

- *The OTP is in compliance with and supportive of Statewide Goal 13, Energy Conservation.*

14. <u>Urbanization</u> – *The purpose of Goal 14 (*OAR 660-015-0000(14)) is "To provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities."

FINDING: The OTP is in compliance with and supports Statewide Goal 14 through Policy 4.3, Creating Communities, Policy 6.2, Achievement of State and Local Goals, and Key Initiatives C and D.

- *Policy 4.3 states, "It is the policy of the State of Oregon to increase access to goods and services and promote health by encouraging development of compact communities*

and neighborhoods that integrate residential, commercial and employment land uses to help make shorter trips, transit, walking and bicycling feasible. Integrate features that support the use of transportation choices."

- *Policy 6.2, Achievement of State and Local Goals, supports Statewide Goal 14 by stating that the planning and management of the transportation finance structure is to "contribute to the accomplishment of state and local environmental, land use and economic goals and objectives." This clearly states that a fundamental objective is support for the state's land use goals including Goal 14.*

- *Several key initiatives included in the OTP to frame plan implementation support Goal 14. Key Initiative C states, "Integrate transportation, land use, economic development and the environment." Key Initiative D states, "Integrate the transportation system across jurisdictions, ownerships and modes. Manage the transportation system efficiently across transportation modes and jurisdictions. Work with transportation providers, including federal and state agencies, cities, counties, transit districts and the private sector, to create a strategic plan to more efficiently and effectively manage and develop the transportation system…."*

The OTP is in compliance with and supportive of Statewide Goal 14, Urbanization.

15. <u>Willamette Greenway</u> - Goal 15 sets forth procedures for administering the 300 miles of greenway that protects the Willamette River. The purpose of Goal 15 (OAR 660-015-0005) is "To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway."

FINDING: The OTP does not plan for specific uses on lands protected in the Willamette River Greenway but includes policies consistent with the protection of the Willamette River Greenway. The following OTP policies demonstrate consistency with and support of Goal 15.

- *OTP Strategy 3.2.4 calls for the support of connections to parks and recreation areas. It states, "Address scenic values in state, regional and local planning, improvements and maintenance. Support state and federal Scenic Byways and Tour Routes and connections to parks and recreation areas."*

- *OTP Strategy 4.3.4 states, "Promote transportation facility design, including context sensitive design, which fits the physical setting, serves and responds to the scenic, aesthetic, historic and environmental resources, and maintains safety and mobility."*

- *Policy 3.2, Moving People to Support Economic Vitality, recognizes the importance of an integrated system of transportation facilities to support travelers accessing places for recreational and business purposes. It states, "It is the policy of the State of Oregon to develop an integrated system of transportation facilities, services and information so that intrastate, interstate and international travelers can travel easily for business and recreation."*

- *The OTP supports the protection of ecological resources protected under Goal 15 (and Goal 5) through Policy 4.1, Environmentally Responsible Transportation System. It states, "It is the policy of the State of Oregon to provide a transportation system that is environmentally responsible and encourages conservation and protection of natural resources." OTP Strategy 4.1.1 further details the nature of the environmental protection. It states, "Practice stewardship of air, water, land, wildlife and botanical resources. Take into account the natural environments in the planning, design, construction, operation and maintenance of the transportation system. Create transportation systems compatible with native habitats and species and help restore ecological processes, considering such plans as the Oregon Conservation Strategy and the Oregon Plan for Salmon and Watersheds. Where adverse impacts cannot reasonably be avoided, minimize or mitigate their effects on the environment. Work with state and federal agencies and other stakeholders to integrate environmental solutions and goals into planning for infrastructure development and provide for an ecosystem-based mitigation process."*

The OTP is in compliance with and supportive of Statewide Goal 15, Willamette River Greenway.

16. <u>Estuarine Resources</u> - The purpose of Goal 16 (OAR 660-016-0010(1)) is "To recognize and protect the unique environmental, economic, and social values of each estuary and associated wetlands; and to protect, maintain, where appropriate develop, and where appropriate restore the long-term environmental, economic, and social values, diversity and benefits of Oregon's estuaries."

NOTE: This Plan proposes no land uses that would impact estuarine resources. The OTP policies that support estuarine resource protection and that demonstrate goal compliance are listed after Goal 19 below.

17. <u>Coastal Shorelands</u> - The purpose of Goal 17 (OAR 660-017-0010(2)) is "To conserve, protect, where appropriate, develop and where appropriate restore the resources and benefits of all coastal shorelands, recognizing their value for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources and recreation and aesthetics. The management of these shoreland areas shall be compatible with the characteristics of the adjacent coastal waters; and to reduce the hazard to human life and property, and the adverse effects upon water quality and fish and wildlife habitat, resulting from the use and enjoyment of Oregon's coastal shorelands."

NOTE: This plan proposes no land uses that would impact coastal shoreline resources. The OTP policies that support coastal shoreline protection and that demonstrate goal compliance are listed after Goal 19 below.

18. <u>Beaches and Dunes</u> - The purpose of Goal 18 (OAR 660-015-0010(3)) is "To conserve, protect, where appropriate develop, and where appropriate restore the resources and benefits of coastal beach and dune areas; and to reduce the hazard to human life and property from natural or man-induced actions associated with these areas." Goal 18 sets planning standards for development on various types of dunes. It prohibits residential development on beaches and active foredunes, but allows other types of development if they meet key criteria.

NOTE: This Plan proposes no land uses that would impact beach and dune resources. The OTP policies that support beach and dune protection and that demonstrate goal compliance are shown below.

19. <u>Ocean Resources</u> - The purpose of Goal 19 (OAR 660-015-0000(19)) is "To conserve marine resources and ecological functions for the purpose of providing long-term ecological, economic, and social value and benefits to future generations." It deals with matters such as dumping of dredge spoils and discharging of waste products into the open sea.

FINDINGS: This Plan proposes no land uses that would impact ocean resources. The OTP includes policies that support ocean resource protection which are listed below.

Statewide Goals 16-19, as noted above, seek to protect unique environmental resources associated with coastal lands. Highway 101 is the major coastal highway in Oregon. In some areas, particularly in the northern and central areas of the coast, the highway is adjacent to or associated with Oregon beaches and dunes. For this reason, it is important the OTP be in compliance with Goals 16-19. The OTP goals and policies are supportive of Statewide Goals 16-19 in several ways.

- *Goal 4, Sustainability, Policy 4.1, Environmentally Responsible Transportation System, states that "It is the policy of the State of Oregon to provide a transportation system that is environmentally responsible and encourages conservation and protection of natural resources." This includes Goals 16-19 resources.*

- *Goal 6, Funding the Transportation System, Policy 6.2, Achievement of State and Local Goals, supports Goals 16-19 by stating that the planning and management of the transportation finance structure is to "contribute to the accomplishment of state and local environmental, land use and economic goals and objectives." This clearly states that a fundamental objective is support for the state's land use goals including Goals 16-19.*

The OTP is in compliance with and supportive of Statewide Goals 16-19.

Conclusion

The Oregon Transportation Plan is the overarching state transportation policy and investment strategy document. It addresses all major modes of transportation and considers the local, regional, state and private aspects of transportation in Oregon, treating the system as one. Along with the modal/topic and facility plans, the OTP forms the state transportation system plan (TSP). As the state TSP, the OTP must be in compliance with the statewide planning goals (ORS 197.180). Based on an analysis of each statewide goal represented by the findings in this appendix, the Oregon Transportation Plan is in compliance with and supportive of all 19 statewide goals.

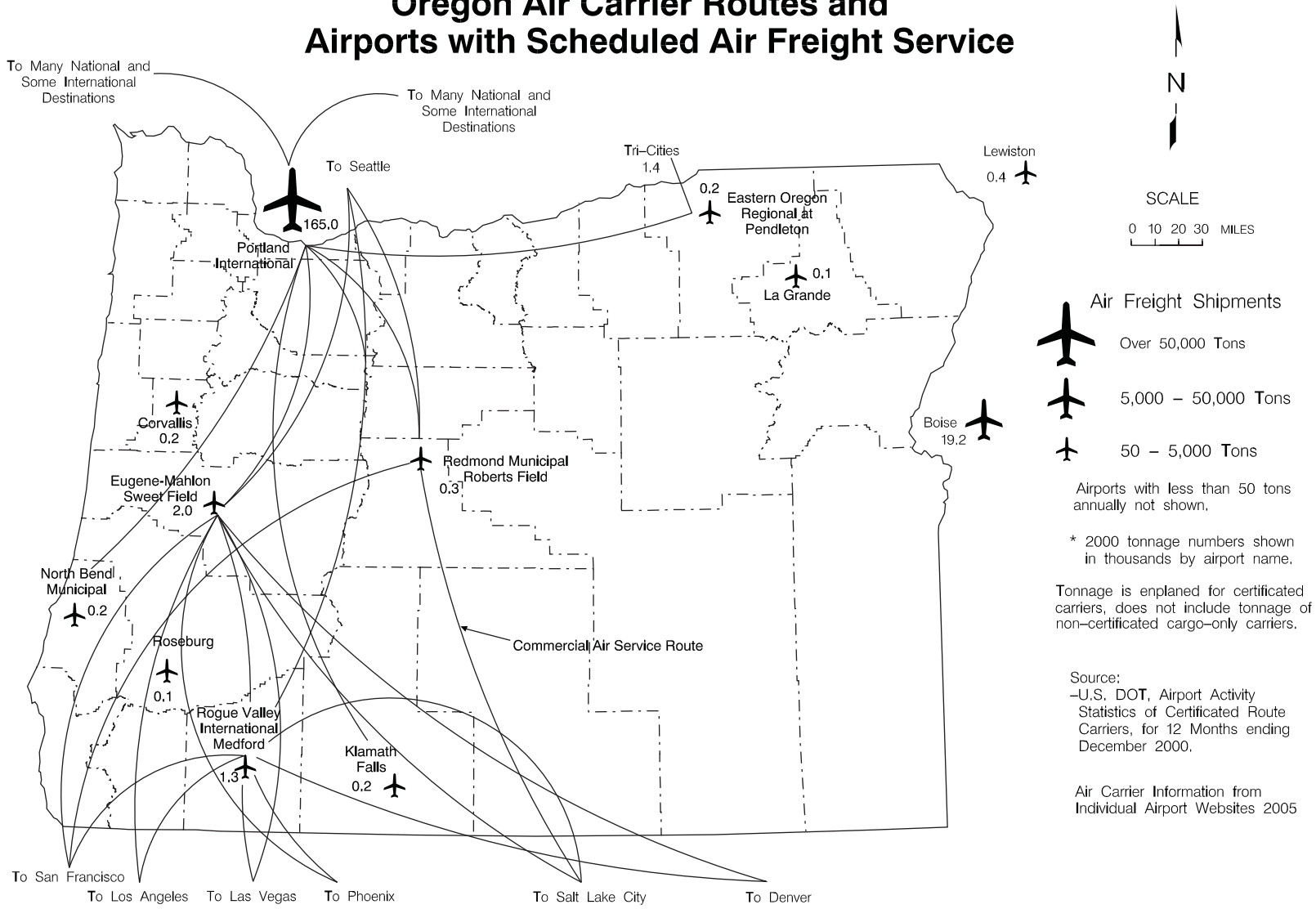
The Oregon Transportation Plan, Volume 2, Technical Appendices 1-7
Errata (both on-line and print versions)

This errata sheet corrects the following error(s).

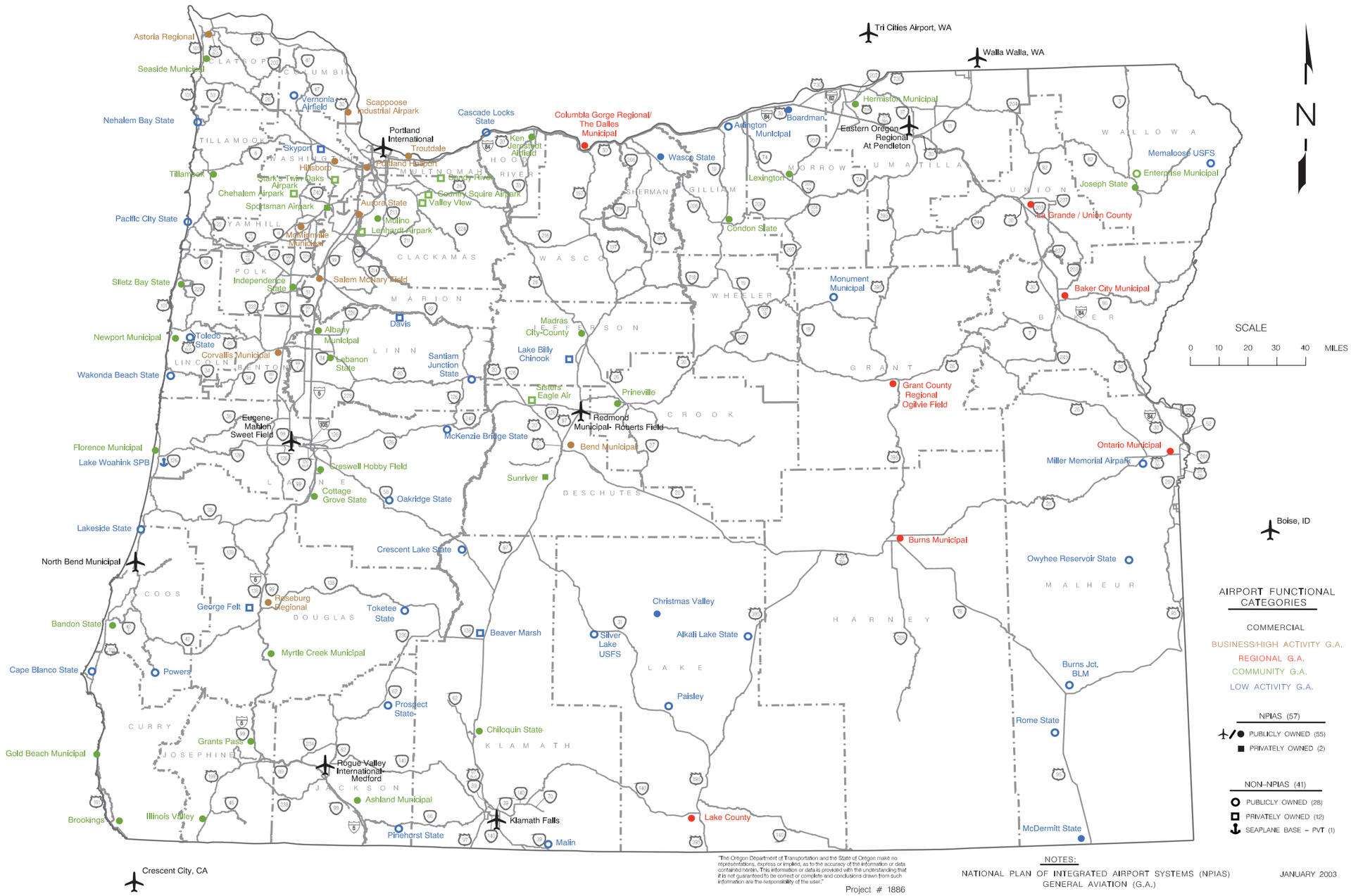
2006 Oregon Transportation Plan, Volume 2, Technical Appendices – Section Name	Page #	Location on Page	Current Text	Corrected Text	Date of Correction
Technical Appendix 2 – Oregon Transportation Needs Analysis – **Transportation Options**	43	Line 6	….. million-mile annual reduction in vehicle miles traveled, or **six percent** of the state total, in 2002.	[1]…. million-mile annual reduction in vehicle miles traveled, or **0.6 percent** of the state total, in 2002.	January 2009

[1] This correction does not impact the current annual expenditures, the average annual feasible need estimate, or the annual gap estimates in Table 2-34 – Summary of Current Expenditures and Feasible Needs per Year (Millions of 2004 dollars), or other tables in Volume 2.

Oregon Air Carrier Routes and Airports with Scheduled Air Freight Service



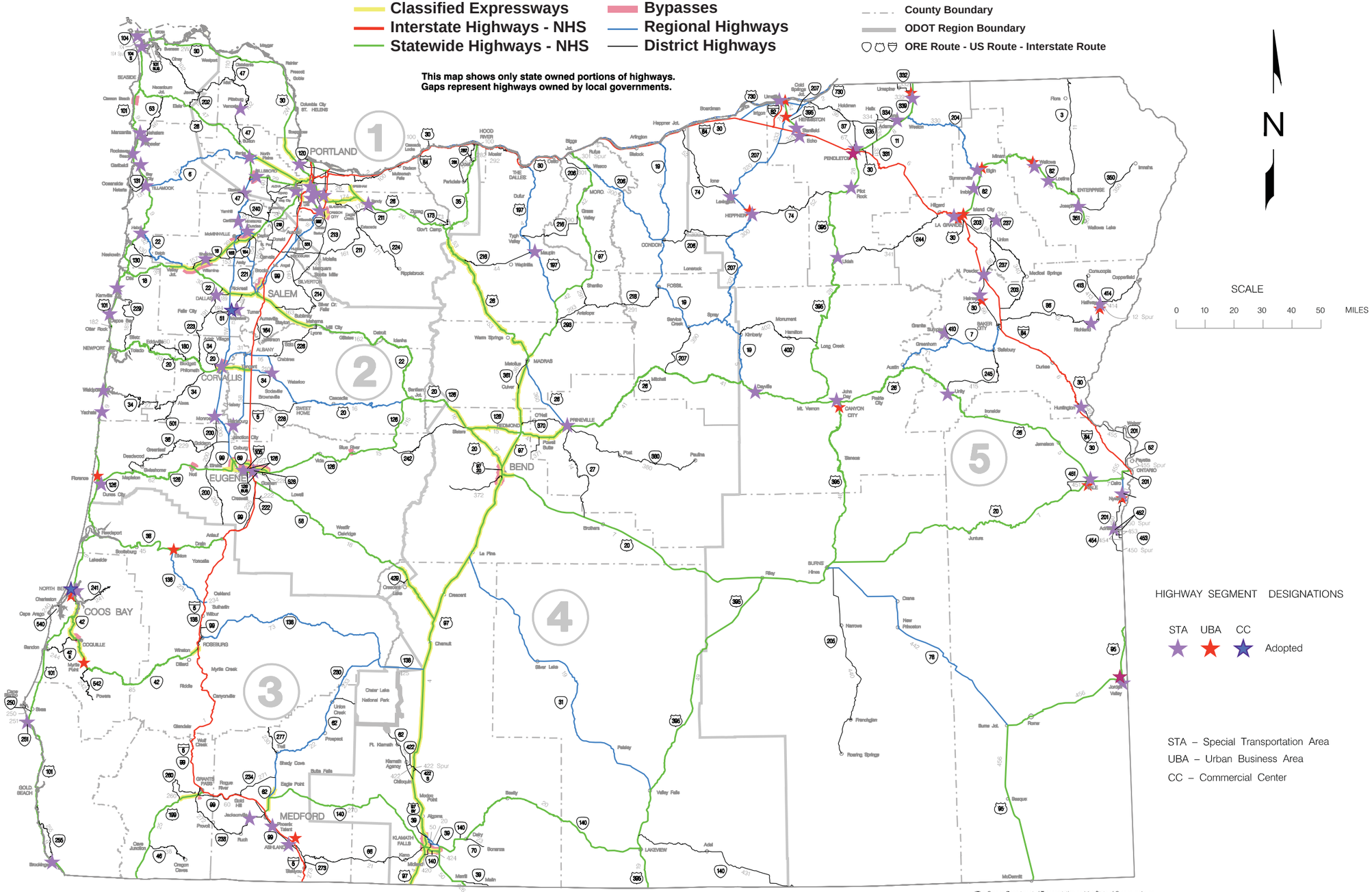
Oregon Aviation System Airports



Oregon Highway System

Classified Expressways
Interstate Highways - NHS
Statewide Highways - NHS
Bypasses
Regional Highways
District Highways
County Boundary
ODOT Region Boundary
ORE Route - US Route - Interstate Route

This map shows only state owned portions of highways.
Gaps represent highways owned by local governments.



Transportation Geographic Information Services Unit, Mill Creek Office Bldg., Salem, OR 97301-4178

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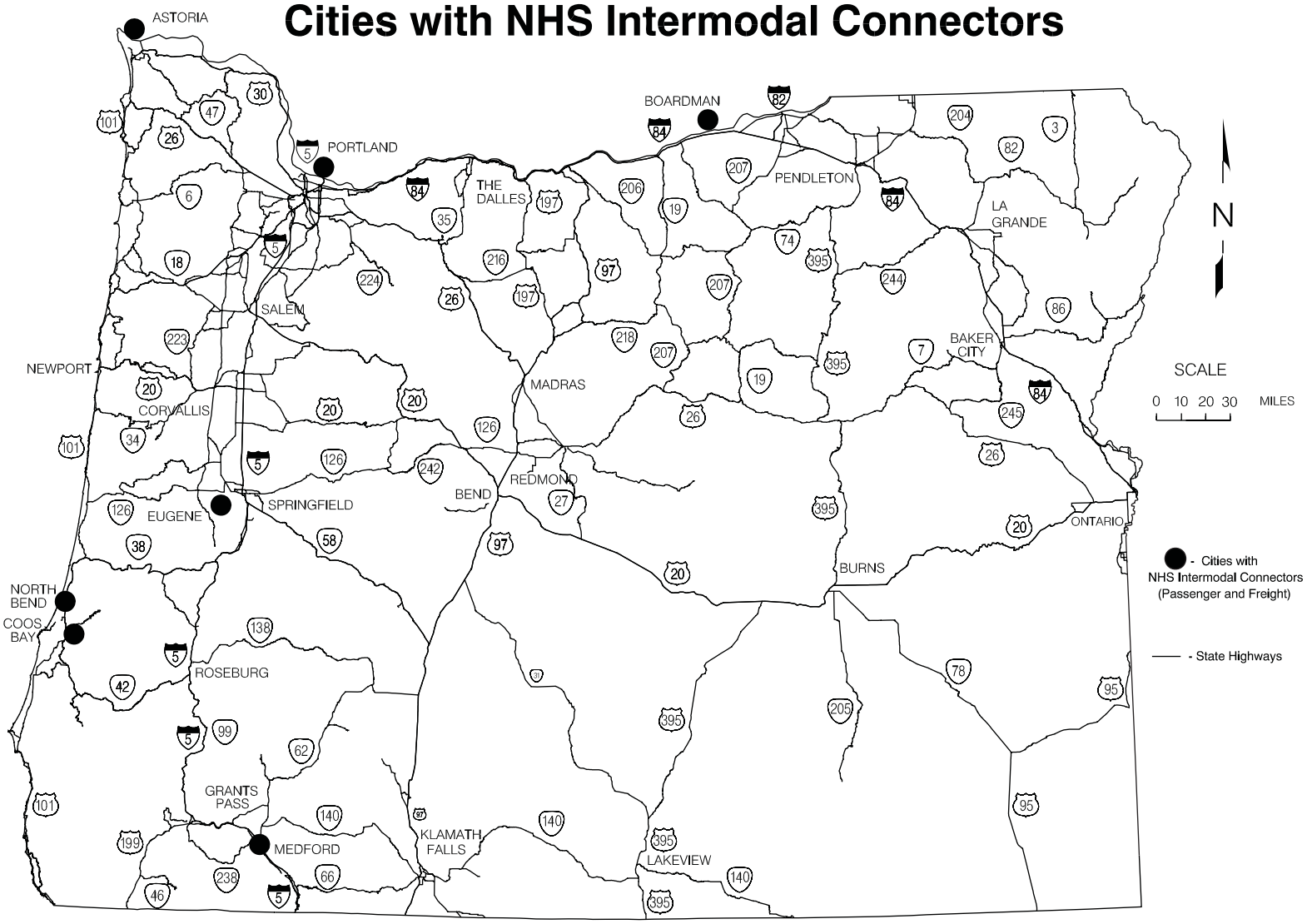
SPECIAL PROJECT #1886

NOVEMBER 2005

Cities with NHS Intermodal Connectors



Large scale maps of the NHS Intermodal Connectors can be found at:
http://www.oregon.gov/ODOT/TD/TDATA/rics/NationalHighwaySystem.shtml#Maps

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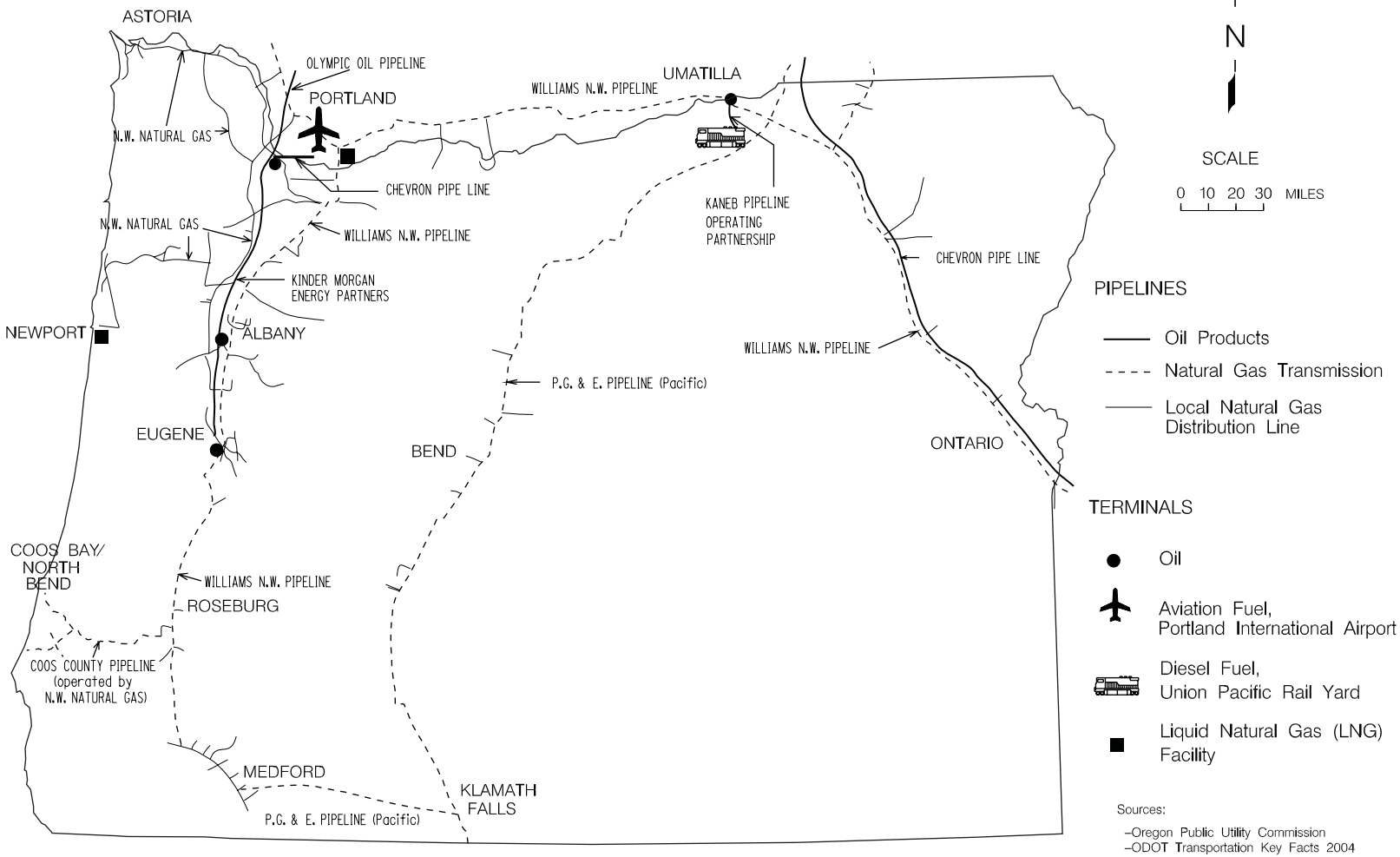
Project # 1886 DECEMBER 2003

Oil & Natural Gas Pipelines and Terminals



Sources:

–Oregon Public Utility Commission
–ODOT Transportation Key Facts 2004
–Oregon Department of Energy
–Freight Moves the Oregon Economy (ODOT)
–Industrial Gas Service, Inc.

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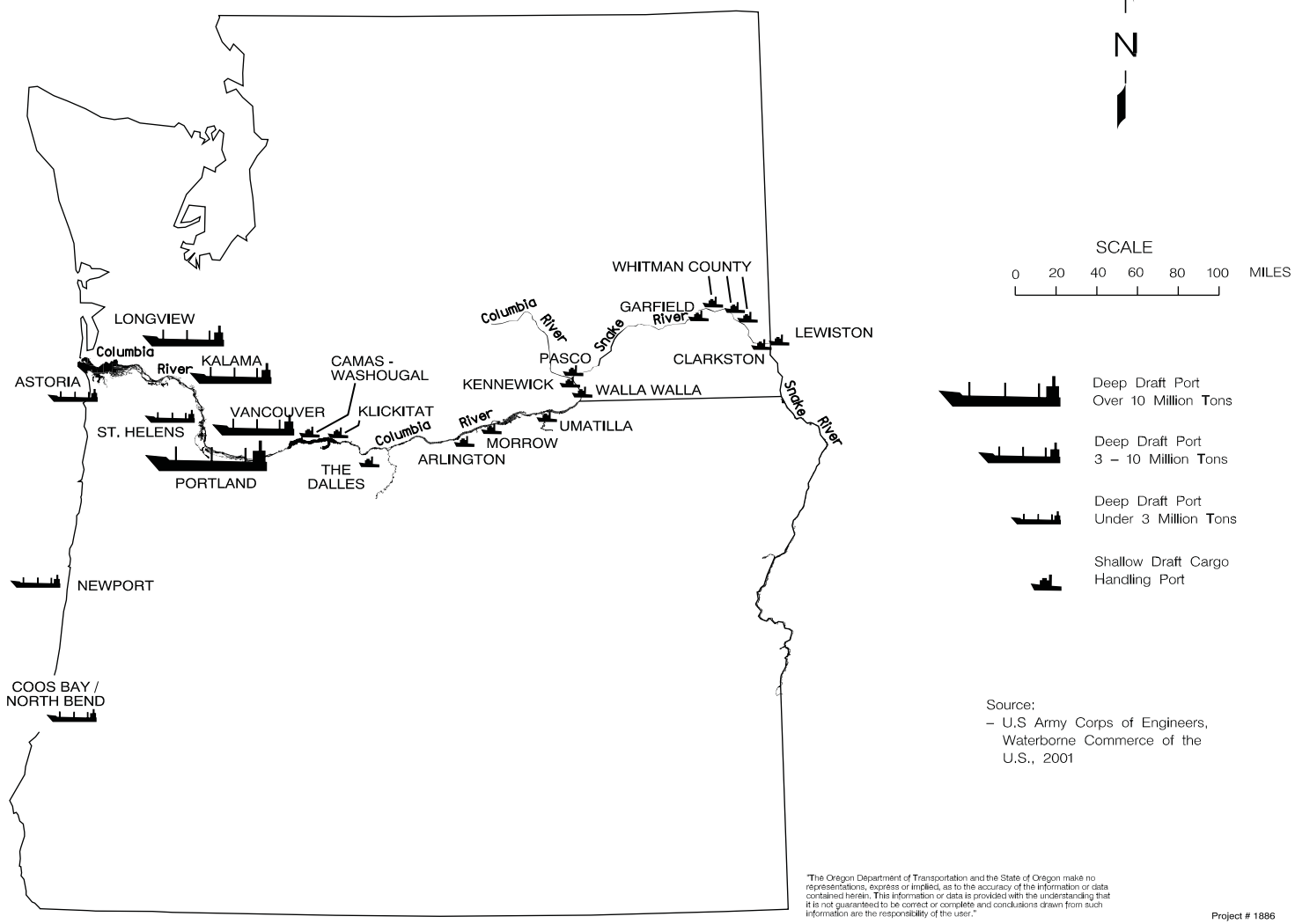
APRIL 2005

Project # 1886

Marine Freight Facilities

Oregon Coast and Columbia - Snake River System



Source:
– U.S Army Corps of Engineers, Waterborne Commerce of the U.S., 2001

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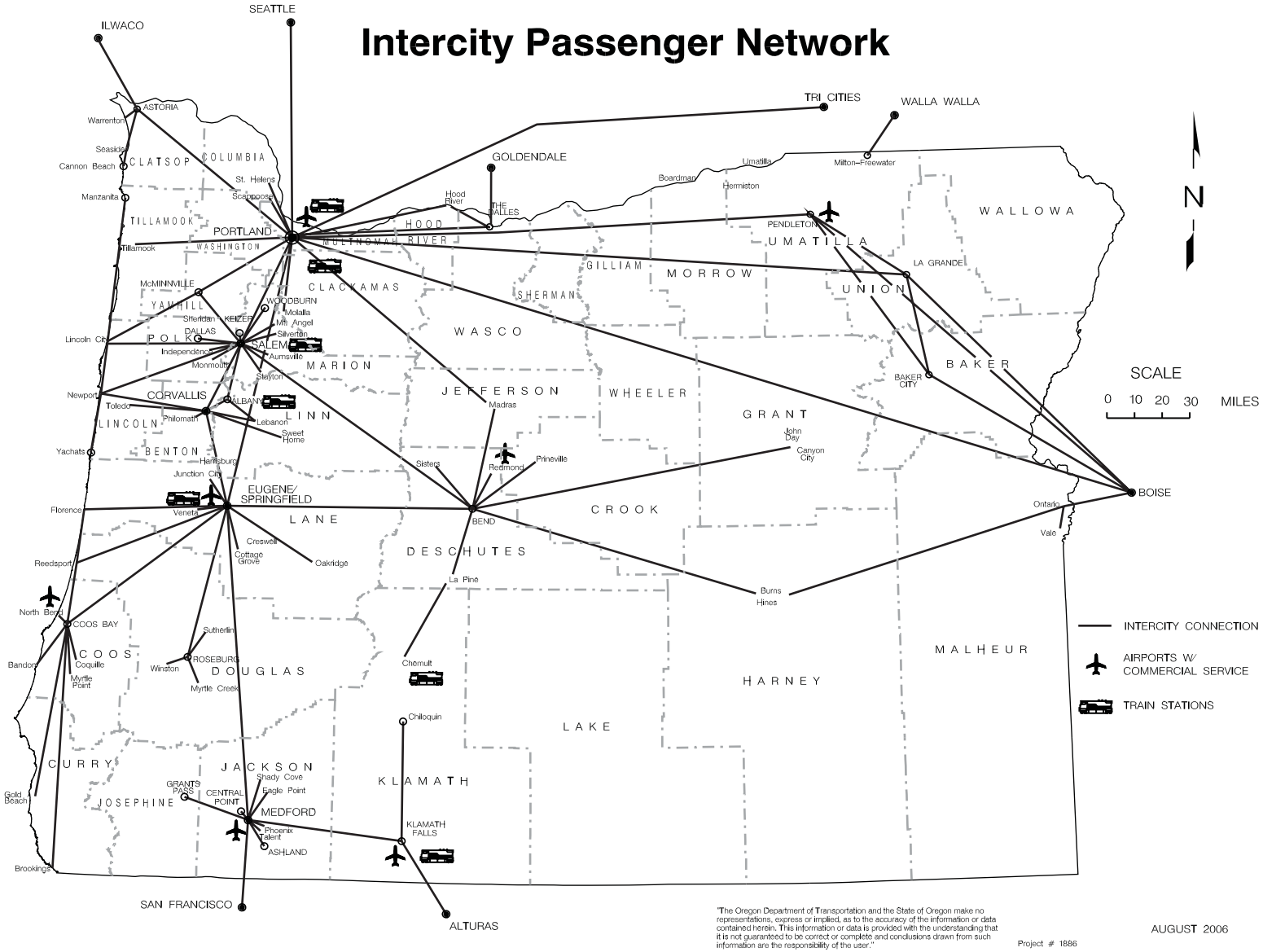
Project # 1886

FEBRUARY 2005

Intercity Passenger Network



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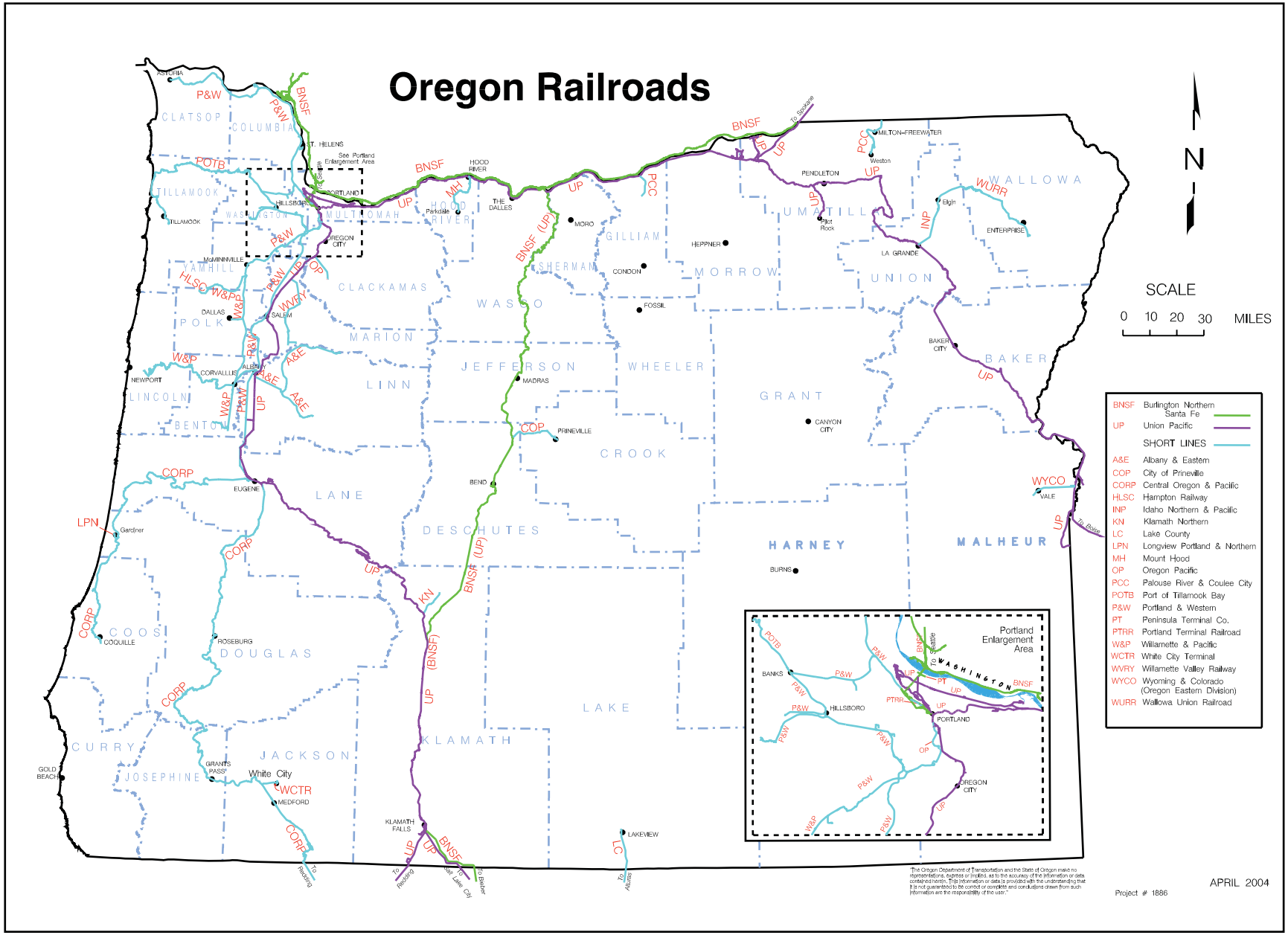
AUGUST 2006


Oregon Railroads
N
SCALE
0 10 20 30 MILES
BNSF Burlington Northern Santa Fe
UP Union Pacific
SHORT LINES
A&E Albany & Eastern
COP City of Prineville
CORP Central Oregon & Pacific
HLSC Hampton Railway
INP Idaho Northern & Pacific
KN Klamath Northern
LC Lake County
LPN Longview Portland & Northern
MH Mount Hood
OP Oregon Pacific
PCC Palouse River & Coulee City
POTB Port of Tillamook Bay
P&W Portland & Western
PT Peninsula Terminal Co.
PTRR Portland Terminal Railroad
W&P Willamette & Pacific
WCTR White City Terminal
WVRY Willamette Valley Railway
WYCO Wyoming & Colorado (Oregon Eastern Division)
WURR Wallowa Union Railroad
Portland Enlargement Area
To Seattle
WASHINGTON
BANKS
HILLSBORO
PORTLAND
OREGON CITY
CLATSOP
COLUMBIA
TILLAMOOK
WASHINGTON
MULTNOMAH
HOOD RIVER
YAMHILL
CLACKAMAS
WASCO
POLK
MARION
SHERMAN
GILLIAM
MORROW
UMATILLA
WALLOWA
UNION
LINCOLN
LINN
JEFFERSON
WHEELER
GRANT
BENTON
CROOK
BAKER
LANE
DESCHUTES
HARNEY
MALHEUR
COOS
DOUGLAS
LAKE
CURRY
JACKSON
JOSEPHINE
KLAMATH
ASTORIA
ST. HELENS
See Portland Enlargement Area
HILLSBORO
PORTLAND
TILLAMOOK
McMINNVILLE
OREGON CITY
DALLAS
SALEM
ALBANY
CORVALLIS
NEWPORT
EUGENE
Gardiner
COQUILLE
ROSEBURG
GOLD BEACH
GRANTS PASS
White City
MEDFORD
KLAMATH FALLS
LAKEVIEW
THE DALLES
Parkdale
HOOD RIVER
MORO
CONDON
FOSSIL
HEPPNER
PENDLETON
Pilot Rock
MILTON-FREEWATER
Weston
Elgin
ENTERPRISE
LA GRANDE
BAKER CITY
MADRAS
PRINEVILLE
BEND
CANYON CITY
BURNS
VALE
To Spokane
To Pasco
To Redding
To Klamath Falls
To Salt Lake City
To Bend
To Alturas
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Project # 1886
APRIL 2004