2001
OREGON RAIL PLAN

An Element of the Oregon Transportation Plan

THE OREGON DEPARTMENT OF TRANSPORTATION

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Adopted by

THE OREGON TRANSPORTATION COMMISSION

November 8, 2001

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Other Elements of the State Transportation Plan

Planning Document	Contact	Status
Oregon Transportation Plan	Dave Bishop	Adopted 1992
Aviation system Plan	Gary Viehdorfer	Fall 1999
Oregon Highway Plan	Carolyn Gassaway	Adopted 1999
Corridor Plans	Dick Reynolds	Incremental
Public Transportation Plan	Bob Sherman	Adopted 1997
Bicycle/Pedestrian	Michael Ronkin	Adopted 1997
Rail Plan	Ed Immel	Adopted 2001
Transportation Safety Action Plan	June Ross	Adopted 1995
Willamette Valley Transportation Strategy	Dave Bishop	Adopted 1995

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EXECUTIVE SUMMARY

INTRODUCTION

This *Oregon Rail Plan* is the first comprehensive assessment of the state's rail planning, freight rail, and passenger rail systems since the 1992 *Oregon Rail Passenger Policy and Plan* and the 1994 *Oregon Rail Freight Plan*. The Plan contains three elements, which summarize the state's goals and objectives, measure the state's performance to-date and refines the projected costs, revenues and investment needs with regard to rail transportation of people and goods. The elements are:

- Rail Policies and the Planning Process
- Freight Element
- Passenger Element

The passenger element of the rail plan concentrates on intercity passenger service with some mention of commuter rail operations. It does not include light rail or other rail transit type services

RAIL POLICIES AND THE PLANNING PROCESS

The *Oregon Rail Plan* is prepared to fulfill numerous federal and state planning requirements. These include requirements specified in the federal Local Rail Freight Assistance Program, the federal Section 1010 High Speed Rail Corridor designation, and the *Oregon Transportation Plan*, the State Transportation Planning Rule, Statewide Agency Coordination Program along with other local and federal programs. The Plan also fulfills the Transportation Equity Act for the 21st Century (TEA-21) requirement that state transportation planning consider, among other issues, economic vitality, increased accessibility and mobility options available to people and enhancing the integration and connectivity of the transportation system.

This chapter spells out these various requirements, and highlights specific goals and policies that apply to rail planning. For the most part, the rail policies in the current update remain the same as those found in the 1992 Rail Passenger Policy and Plan and the 1994 Oregon Rail Freight Plan.

These requirements are identified here, as the Rail Plan functions as the Rail Element of the *Oregon Transportation Plan (OTP)*, and provides guidance and direction to the Oregon Transportation Commission on rail issues.

FREIGHT ELEMENT

This chapter reviews the development of Oregon's freight rail system since the 1994 *Oregon Rail Freight Plan*. There are 2,387 route miles of railroad in Oregon today. Slightly more than half of this sum are owned and operated by two major rail systems – the Union Pacific Railroad (UP) and the Burlington Northern Santa Fe Railway (BNSF). Short line or small railroads operate the remainder. The Portland & Western Railroad, which operates 435 route miles of railroad in the northern central Willamette Valley and Northwestern Oregon, has the most rail traffic of any short line in Oregon.

Oregon's freight rail traffic totaled 63.5 million tons handled to, from, within, and through the state in 1999. This figure represented almost an 18 percent increase over freight rail tonnage handled in 1992, the data year used for the 1994 *Oregon Freight Rail Plan*. At almost 21 percent of total tons, the largest commodity handled in 1999 was lumber and wood products. About 34 percent of the lumber and wood product shipments actually pass through Oregon, rather than originating or terminating in the state. Having 22.2 million tons originating and terminating there, Multnomah County is the largest traffic generator of all Oregon counties. The general characteristics of Oregon freight rail tonnage are similar to the characteristics of freight rail tonnage in Washington, i.e., more tons terminate in the state than originate there, and through traffic accounts for a major share of total tons.

Short lines along with the UP and BNSF were contacted as to their respective system needs. Short lines identified about $70 million in improvements, consisting primarily of rehabilitation of track and bridges. Much of the rehabilitation need was related to the trend toward higher car weights, which trigger the need for higher track standards and stronger bridges. Both of the major systems cited clearance improvements for tunnels in Oregon needed to facilitate the growth of double-stack container traffic between the Pacific Northwest and Southern California along the "I-5 Corridor".

In a survey conducted for the Plan, 47 Oregon rail shippers reported concerns about rail service, and opinions of the role that the Oregon Department of Transportation's (ODOT) Rail Division should play with regard to rail service. Most of the survey respondents are served by short lines, and most ship forest products. Car availability is their top issue. Big and small shippers alike report their serving railroads offer fair to good performance with regard to car availability. Shippers see a varied role for ODOT's Rail Division. For some of these roles, ODOT's involvement is preempted by federal statutes, i.e., with regard to competition and safety. However, several shippers opined that the Rail Division should advocate shipper interests – a role that the Division in fact has performed for many years.

PASSENGER ELEMENT

This chapter reviews the development of the state's rail passenger system since the 1992 *Oregon Rail Passenger Policy and Plan*. Ridership on the Pacific Northwest Rail Corridor (PNWRC) through Oregon has increased concurrent with added frequencies of service, and growing highway congestion. Between Portland and Eugene, ridership in year 2000 totaled more than 100,000 passenger trips, up from slightly more than 24,000 passenger trips in 1993.

ODOT's goal for the Willamette Valley Corridor by 2003 is to increase the number of daily round trips from 3 to 5 and to reduce the travel time to 2 hours and 15 minutes from 2 hours and 35 minutes today. Both of these improvements will encourage additional ridership and revenue. ODOT has identified approximately $31 million in capital improvements to accomplish this goal. Ridership and revenue would continue to increase in the years beyond 2003 with further enhancements to the rail service and improvements to the rail infrastructure.

The states of Oregon and Washington, and the Province of British Columbia, have worked collaboratively to develop improvement plans and to program development of the PNWRC. Oregon is also working

with Idaho with regard to the potential reactivation of passenger rail service between Portland and Boise, which was discontinued in an Amtrak cost-cutting effort in 1997.

Oregon's current rail passenger service includes the Amtrak *Coast Starlight* and *Empire Builder* trains, and the state-sponsored *Cascades*, which uses Talgo tilt technology allowing faster speeds around curves. The *Cascades* service is supplemented by extensive state-sponsored Thruway bus feeder services that move riders between the PNWRC and various locations in the state.

Criteria that could be used to evaluate potential passenger rail services were identified in the Rail Plan. These include patronage, cost recovery, and running time, among others. Also, several new services were evaluated. Emphasis is on the continuing development of Portland-Eugene service and reactivation of Portland-Boise service.

The Plan identifies improvements needed for passenger stations, primarily in the Willamette Valley, but also including Chemult, Klamath Falls and possibly a new station at Oregon City. Improvements to Thruway bus stops were also identified.

VISION STATEMENT

INTRODUCTION

Many communities in Oregon grew up along a railroad line. The train was the first form of land transportation that permitted Oregonians to join the economy of the rest of the United States.

However, over the years the relationship between Oregon's economy and rail service has changed. The advent of the first paved roads brought about the demise of most branch line passenger trains as the use of automobiles increased. The construction of the Interstate Highway System and growth of auto and truck use caused a mass diversion of both freight and passenger traffic from rail to highway. The 1960s were probably the low point for rail service in the post World War II era with serious declines in both rail freight and intercity rail passenger service. Yet, rail freight service remained an important component of the state's economy, since most markets for Oregon's natural resource-based businesses were far removed. In 1999, over 63 million tons of rail freight either originated, terminated or passed through the state. That is equal to 1.5 million trucks!

The deregulation of the nation's railroads in the 1980s resulted in major changes to how railroads did business. The impacts on Oregon were both positive and negative. The railroads' financial picture stabilized, and they invested heavily into their physical infrastructure. At the same time, deregulation set up procedures that made it easier for the railroads to shed unprofitable parts of their systems. Rail lines were abandoned and communities such as Condon, Burns and Heppner lost rail service. In 1971, Amtrak was created by the federal government to take over the money losing passenger service of the freight railroads.

Deregulation also made it easier for the large carriers to spin off poorer performing lines to short line operators. Had this not happened, many more Oregon communities would have lost rail service had the big carriers been driven to seek abandonment of their branch lines. Today, almost one half of Oregon's rail system is operated by these new railroad entrepreneurs while over half of the state's rail shippers depend on these same lines to originate and receive traffic. These changes highlight the important role public assistance might have to play to keep these rural rail services in operation.

The state is moving into a new era as Oregon's transportation infrastructure is being stretched to its limits. Portland's airport and port facilities cannot keep up with demand both while many of the state's other airports and ports are suffering from aging infrastructure and/or declining markets. In addition, the state's highway budget has experienced no increase in the fuel tax rate since 1991. Motor vehicle fuel tax revenues have continued to expand as the population and economy has grown, but the gain in revenues have not kept up with the need for transportation improvements.

In many cases, railroads have extra capacity that, when utilized, could provide some of the relief needed in the other modes. However, their revenue generating potential is not capable of providing the needed additional infrastructure required to produce the necessary expansion of the system. Complicating the situation is that railroads are privately owned. Their goals may not be the same as the state's goals.

The Rail Plan responds to these challenges in the following ways:

- Provides background data to more fully understand the relationships between the state's economy and the provision of rail freight and passenger service.
- Examines rail infrastructure needs in light of not only maintaining the existing system but also the new demands for larger freight cars and growing demand for more and better passenger service.
- Suggests potential funding scenarios to meet these demands.
- Reexamines the policies and actions of the 1992 Oregon Transportation Plan, other modal plans, corridor plans, local and regional land use and transportation system planning.

VISION STATEMENT

The arrival of the 21st Century is bringing new challenges to Oregon's rail system and its future role. The 1992 *Oregon Transportation Plan* (OTP) took a lead role in asking, "How can transportation contribute to the kind of a future we want as a state?" The OTP's vision and policies were to lead to a more diverse, multimodal system in the future.

The 2001 *Oregon Rail Plan* builds on and continues implementation of the OTP's long-range vision for a viable rail freight and passenger system in the state.

The State of Oregon should have an enhanced intercity rail passenger service as part of a balanced transportation system. The rail passenger system shall operate efficiently, provide access to potential users, and comply with federal and state environmental and land use standards. Convenient connections should be developed with air, intercity bus and transit that integrate trains into a passenger network linking all areas of the state, nation and world.

High safety and compliance standards are required for the operating, construction and maintenance of the Oregon Rail System. The State of Oregon should develop adequate funding sources, both public and private, to finance the modernization of both rail passenger and freight service. Implementation should take place as rapidly as permitted by financial, design, construction, equipment and market considerations.

The State of Oregon will work with carriers, shippers and other groups to maintain and improve access to the national rail freight system, maintain a competitive environment for rail customers, strengthen the retention of local rail service, and assure a level playing field for all modes.

The State of Oregon will work with other state agencies, regional and local jurisdictions and the general public to integrate rail freight and passenger elements into land use and transportation planning processes. This will include working with private companies and public sector agencies to operate the rail system in safe manner for the users of the system and public in general.

Chapter 1
RAIL POLICIES AND PLANNING

INTRODUCTION

The *Oregon Rail Plan* is prepared to fulfill both federal and state requirements.

1. The Freight Element conforms to the planning requirements under the federal Local Rail Freight Assistance Program.
2. The Passenger Element relates to requirements associated with the Eugene-Portland Union Pacific (UP) main line being a part of a Section 1010 of the Intermodal Surface Transportation Efficiency Act (ISTEA) relating to high speed rail corridors. The federal designation means that the planning and project development process must conform to the National Environmental Policy Act (NEPA) for the receipt of any federal funds for the corridor.
3. The Plan also functions as the Rail Element of the *Oregon Transportation Plan* (OTP) and provides guidance and direction to the Oregon Transportation Commission on rail issues in the state.

FEDERAL REQUIREMENTS FOR RAIL FREIGHT

The 4R Act

In February 1976, Congress passed the Railroad Revitalization and Regulatory Reform Act (the 4R Act), which set up a nationwide local rail service assistance program and a rail planning process. As a prerequisite for obtaining federal assistance funds, a state was required to establish:

> "…..An adequate plan for rail services in such state as overall planning process for all transportation services in such state, including a suitable process for updating, revising and amending such plan….and that….such state plan is administered and coordinated by a designated state agency and provides for the equitable distribution of resources."

49 CFR 266

At first, the focus of the program under the 4R Act was on light density lines which had received an Interstate Commerce Commission certificate of public convenience and necessity permitting abandonment and which were considered uneconomic by the railroads that owned them. The passage of the Local Rail Service Assistance (LRSA) Act of 1978 broadened project eligibility and the funding allocation formula while instituting specific requirements for project justification. As a result, financial assistance was made available for several purposes including the purchase of rail lines along with rehabilitating and improving rail properties to provide adequate and efficient service.

In 1989, the LRSA program was reauthorized by Congress and renamed the Local Rail Freight Assistance (LRFA) program. Congress has continued to authorize the program but has not provided any funding since 1995.

Intermodal Surface Transportation Efficiency Act (ISTEA)

In 1991, Congress passed into law the Intermodal Surface Transportation Efficiency Act (ISTEA) which greatly expanded the nation's focus on intermodal transportation and movement of people and goods. It provided federal funding for multimodal transportation from both the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) to Metropolitan Planning Organizations (MPOs) and states.

The Act required that each state and urbanized area over 50,000 population adopt a 20-year transportation plan and the regional plans must be consistent with any official statewide plans (such as the Rail Freight and Passenger plans). Under ISTEA, transportation plans must "consider a range of transportation options designed to meet the transportation needs (both passenger and freight) of the state including all modes and their connections."

States and MPO's were required to "explicitly consider, analyze as appropriate and reflect in the planning process…International border crossings and access to ports, airports, intermodal transportation facilities and major freight distribution routes". ISTEA required plans to be developed using a coordinated process, including coordination with operators of airports, ports, rail terminals and other intermodal transportation facilities, and with the state rail plans. MPOs were encouraged to provide major transportation providers a voice in the planning and transportation improvement program's decision making process.

ISTEA required states to develop six management systems; two of these affected railroads. The Intermodal Management System was to inventory and measure the performance of passenger and freight system connections. The Safety Management System provided an analytical base for funding decisions to improve highway safety, including grade crossings.

The National Highway System Designation Act of 1995 removed several of the requirements for development of management systems. However, several states, including Oregon, elected to continue to develop and implement management systems.

The Federal Highway Administration (FHWA) interpreted ISTEA as providing funding eligibility for railroad-related projects including railroad clearance projects involving highways, intermodal passenger stations, grade crossing improvements and terminal access road improvements. However, the money could not be generally used for the construction of intermodal freight terminals or for intercity passenger projects.

Several of the programs under ISTEA have been used for intercity passenger projects in Oregon. Enhancement Program funds were used by ODOT to purchase and refurbish the Salem Amtrak station, while other jurisdictions used Enhancement Funds to construct local intermodal terminals both on and off of the current passenger rail system.

Congestion Mitigation and Air Quality (CMAQ) funds were also used to construct a Columbia Slough Intermodal bridge between the Port of Portland's Terminal 5 and Six at their Rivergate complex in north Portland.

Under ISTEA, Oregon's congressional delegation was also able to secure $6 million for track and signal work between Portland's Union Station and Vancouver, Washington. An additional $5.1 million was obtained for track and signal work in Southeast Portland.

Transportation Equity Act for the 21st Century (TEA-21)

In 1997, Congress passed into law a new transportation funding authorization package called the Transportation Equity Act for the 21st Century or TEA-21. TEA-21 was built upon the foundation of the expanded programs contained in ISTEA. TEA-21 contained a new scope for the planning process. It stated that, in general, each State shall carry out a transportation planning process that provides for consideration of projects and strategies that will:

1. support the economic vitality of the United States, the States, and metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency;
2. increase the safety and security of the transportation system for motorized and nonmotorized users;
3. increase the accessibility and mobility options available to people and for freight;
4. protect and enhance the environment, promote energy conservation, and improve quality of life;
5. enhance the integration and connectivity of the transportation system, across and between modes, throughout the State, for people and freight;
6. promote efficient system management and operations; and
7. emphasize the preservation of the existing transportation system.

A number of changes also permitted increased opportunities to obtain funds for rail freight projects and intercity passenger service.

The High Priority Projects program has designated funds to rehabilitate the railroad bridge at Coos Bay along with restoration of rail service to Astoria. TEA-21 also designated funding for the purchase and refurbishing of rail passenger stations in Eugene and Albany. The Oregon Department of Transportation (ODOT) was able to use Congestion Mitigation and Air Quality (CMAQ) funds to install layover power at Union Station in Portland and purchase two cab-control cars for the Talgo trains. CMAQ funds and railroad resources were combined with the $5.1 million mentioned above to undertake $12.2 million in track and signal work on the Union Pacific Railroad in Southeast Portland.

Other TEA-21 Programs

Section 1103(c) sets aside small amounts of highway funds to deal with grade crossings in high speed rail corridors. Some of this money is for research and development and some towards project implementation.

The Department has received grants to examine safety issues at low-volume farm crossings; improving circuitry at several crossings in Linn and Multnomah Counties; developing a crossing master plan along with the closure of several private crossings. The largest grant contributed towards a pedestrian safety corridor in Salem. Section 1103 (c) funds are discretionary dollars allocated on a nation-wide basis.

The ***Congestion Management and Air Quality (CMAQ) program*** provided funds towards passenger rail projects that helped the Portland region 's air quality. Funds were used to construct a standby power facility at Union Station so that locomotives could be shut down between use. CMAQ funds were also used to purchase two cab cars for train service along with track and signal work which permitted faster train speeds.

CMAQ funds are also discretionary but are distributed to states for both local and statewide projects. Projects must demonstrate that they have a positive impact on the air quality in a non-attainment area.

Americans with Disabilities Act (ADA)

Rail passenger service operated on behalf of ODOT by Amtrak is fully accessible and meets the requirements of ADA. Stations in Oregon are ADA compliant along with Thruway busses operated by ODOT. Any new passenger facilities construction will comply with ADA requirements and will be specifically addressed as the projects are developed and implemented.

ADA requirements for rail freight are almost non-existent since it is privately owned and operated. ADA requirements are included in any grade crossing construction funded with either state or federal funds.

Interstate Commerce Commission / Surface Transportation Board

Even though the 1980 Staggers Act deregulated the nation's railroads under, the U.S. Surface Transportation Board (STB), successor to the Interstate Commerce Commission (ICC), still plays a regulatory role. Permission must be received from the STB before a railroad merger or realignment can take place, before a railroad may abandon a rail line, and in some cases, if the railroad wants to take action regarding their rates. In all of these cases, the STB is to make sure that the actions taken by that agency are consistent with the transportation policies of the United States.

Since the introduction of the Staggers Act, any economic regulation of the railroads has been taken over by the federal government under the STB. The state has no role in the economic arena. However, ODOT is required by state law (ORS) to assist, if requested, users of rail service in any STB proceeding.

OREGON RAIL PLAN FINDINGS OF COMPLIANCE WITH STATEWIDE PLANNING GOALS

State Agency Coordination (SAC) Program Requirement

ODOT's certified State Agency Coordination (SAC) Program and Oregon Administrative Rules Chapter 31, Division 15 describe the procedures that ODOT will follow when developing and adopting plans to assure that they comply with the statewide planning goals and are compatible with acknowledged comprehensive plans. The SAC Program recognizes that planning occurs in stages and that compliance and compatibility obligations depend on the state of planning being undertaken. The SAC Program describes the step-wise process as follows:

> ODOT's program for assuring compliance and compatibility recognizes the successive stages of transportation planning and establishes a process that coordinates compliance and

compatibility determinations with the geographic scale of the plan and the level of detail of information that is available. At each planning stage, some compliance and compatibility issues come into focus with sufficient clarity to enable them to be addressed. These issues shall be resolved in subsequent planning stages and any plan decisions that depend on their resolution shall be contingent decisions. The result of this successive refinement process shall be the resolution of compliance and compatibility issues by the end of the project planning stage of the transportation planning program.

The Department's coordination efforts at the transportation policy plan and modal systems plan stages will be directed at involving metropolitan planning organizations, local governments and others in the development of statewide transportation policies and plans. Since these plans have general statewide applicability and since ODOT has the mandate under ORS 184.6128 to develop such plans, compatibility with the comprehensive plan provisions of specific cities and counties will not be generally established. However, compatibility determinations shall be made for new facilities identified in modal systems plans that affect an identifiable geographic area. Compliance with any statewide planning goals that specifically apply will be established at these planning stages.

The focus of the Department's efforts to establish compatibility with acknowledged comprehensive plans will be at the facility planning and project planning stages of the planning program. At these stages, the effects of the Department's plans are more regional and local in nature although some statewide effects are also present.

Copies of the adopted Rail Plan will be distributed to the Department of Land Conservation and Development (DLCD), cities, counties, Indian tribes, MPOs and participating state agencies, as well as to all interested persons and agencies who request copies. The Rail Plan is also available on the Rail Division's web site ***(www.ODOT.State.OR.US/Rail)***

Transportation Planning Rule

The Land Conservation and Development Commission adopted the Transportation Planning Rule (OAR 660-12) to implement Statewide Planning Goal 12 (Transportation) and to "explain how local governments and state agencies responsible for transportation planning demonstrate compliance with other statewide planning goals".

The Transportation Planning Rule describes transportation planning as follows (Section 010):

(1) As described in this division, transportation planning shall be divided into two phases: transportation system planning established land use controls and a network of facilities and services to meet overall transportation needs. Transportation project development implements the transportation system plan (TSP) by determining the precise location, alignment and preliminary design of improvements included in the TSP.

Section 15 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 (SAC) Program:

(1)(a) The state TSP shall include the state transportation policy plan, modal system and transportation facility plans as set forth in OAR 731, Division 15.

The *Oregon Rail Plan* is an ODOT modal system plan. The system plan is described in the SAC Program as follows:

These are overall plans and policies for each mode of transportation. These plans evaluate system wide needs for transportation services, identify and classify facilities by function and importance to meet the needs, and establish polices for the system and each class of facilities. These policies may cover topics such as prioritization of resources across the system; allocation of resources between maintenance, preservation, operation and modernization; operational goals for classes of facilities; and relationship of facilities categories to land use. The Transportation Commission adopts modal System plans.

Section 15 of the TPR describes ODOT planning responsibilities under the statewide planning goals:

(1) ODOT shall prepare, adopt and amend a state TSP in accordance with ORS 184.618, its program for state agency coordination certified under ORS 197.180, and OAR 600-12-030, 035, 065 and 070. The state TSP shall identify a system of transportation facilities and services adequate to meet identified state transportation needs.

Following are findings relating to each section of the TPR that apply to ODOT:

Section 030 – Determination of Transportation Needs

Section 030 identifies the basic requirements for determining transportation needs as follows:

(1) The TSP 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

(b) Needs of the transportation disadvantaged

(c) Needs for movement of goods and services to support industrial and commercial development planned for pursuant to OAR 660-09 and Goal 9 (Economic Development)

Since the Rail Plan is at a statewide scale, it addresses the current status of rail freight and passenger service in the state and identifies system deficiencies. Forecasts are projected at the state level in order to assist planning agencies with future forecasts of transportation needs. Local and regional systems are addressed only where they serve a statewide function as a whole. In some cases, needs are addressed in the aggregate.

However, there has been a recent appreciation of the movement of freight in urban areas. This has been reflected in the development of local and regional transportation plans that look at both truck and rail freight movements and their relationship to transportation capacity and operations. One of the difficulties associated with this planning effort is the lack of good data associated with freight movements. The Department has been actively involved in the development of attaining improved data and making sure it is used in the planning effort. The ability to track freight movements is increasing in sophistication and will form an even more important element in planning for future transportation needs.

The determination of transportation needs included in this plan is appropriate and sufficient for the level of decision-making provided in the plan. Information and resources available in the preparation of this plan did not allow ODOT to conduct a thorough analysis of some of the deficiencies. ODOT concludes that the schedule of improvements included in the Rail Plan provides for a feasible and appropriate level of rail freight and passenger service to meet the minimum levels of service outlined in the Oregon Transportation Plan given the level of funding available.

As a feasibility study, the plan does not directly address the needs of the transportation disadvantaged. This issue, including the requirements of the Americans with Disabilities Act, will be included when any actual systems and facilities are designed. However, if should be noted that the current rail passenger system, including stations and Thruway buses, are accessible to the disabled and that the rail plan identifies future improvements to service and infrastructure that will accessible too.

Since the freight section of the plan addresses transportation needs in mostly rural areas of the state, transportation needs in urban and MPO areas were not developed except in a cursory manner. The rail passenger section tends to concentrate on the movement of passengers in the Willamette Valley with some examination of other areas of the state where the introduction of intercity rail passenger service might be appropriate.

Section 035 – Evaluation and Selection of Transportation System Alternatives.

Section 035 contains requirements for evaluating and selecting transportation system alternatives.

> The TSP shall be based upon evaluation of potential impacts of system alternatives that can reasonably be expected to meet the identified transportation needs in a safe manner and at a reasonable cost with available technology. The following shall be evaluated as components of system alternatives:
>
> (a) Improvements to existing facilities and services;
>
> (b) New facilities and services, including different modes or combinations of modes that could reasonably meet identified transportation needs;
>
> (c) Transportation system management measures;
>
> (d) Demand management measures; and
>
> (e) A no-build system alternative required by the National Environmental Policy Act of 1969 or other laws.

Section 35 of the TPR also contains the following standards for evaluating transportation system alternatives:

> The following standards shall be used to evaluate and select alternatives:
>
> (a) The transportation system shall support urban and rural development by providing types and levels of transportation services appropriate to serve the land uses in the acknowledged comprehensive plan.

(b) The transportation system shall be consistent with state and federal standards for protection of air, land and water quality including the State Implementation Plan under the Federal Clean Air Act and State Water Quality Management Plan.

(c) The transportation system shall minimize adverse economic, social, environmental and energy consequences.

(d) The transportation system shall minimize conflicts and facilitate connections between modes of transportation.

(e) The transportation system shall avoid principal reliance on any one mode of transportation and shall reduce principal reliance on the automobile. In MPO areas this shall be accomplished by selecting transportation alternatives which meet the requirements in 660-12-035(4).

The analysis of needs and evaluation of alternatives in the Rail Plan are sufficient to comply with the provisions of 660-12-30 and 035 for the decisions reached in this plan.

Section 050 – Transportation Project Development

This section contains requirements for transportation project development and references ODOT's administrative rule for state agency coordination, OAR 731 Division 15.

Section 065 – Transportation Improvements on Rural Lands

This section includes requirements for making transportation improvements on rural lands. Railroad main line and branch lines are allowed on rural lands OAR 660-12-065 (3)(j).

Section 070 – Exceptions for Transportation Improvements on Rural Lands.

It is not known at this point whether exceptions to Section 070 are required. The early stages of the plan can be executed using existing rail lines, so none would be needed. This would be determined during facility planning.

Statewide Planning Goals

Goal 1 (Citizen Involvement) and Goal 2 (Land Use Planning) are addressed by ODOT's SAC program. ODOT has complied with these goals by following its SAC Program as described above.

The SAC program describes a process of going from the general to the specific. The Rail Plan is a modal plan that addresses system-wide management strategies and policies. It does not identify specific areas that would be affected by rail improvements. Accordingly, several land specific goals do not apply. These include:

Goal 3 – Agricultural Land

Goal 4 – Forest lands

Goal 5 – Open Spaces and Historic Areas, and Natural Resources

Goal 7 – Areas Subject to Natural Disasters and Hazards

Goal 15 – Willamette River Greenway
Goal 16 – Estuarine Resources
Goal 17 – Coastal Shorelands
Goal 18 – Beaches and Dunes

According to the SAC Program these goals will be addressed during the development of facility plans such as corridor plans and project plans when specific future improvements and geographic impacts are identified.

Several goals have negligible relationship to the Rail Plan. These are:
Goal 8 – Recreational Needs
Goal 10 – Housing

A number of goals do affect system-wide planning. These include:
Goal 6 – Air, Water and Land Resource Quality
Goal 9 – Economic Development
Goal 11 – Public Facilities and Services
Goal 12 – Transportation
Goal 13 – Energy Conservation
Goal 14 – Urbanization

These goals are all addressed by TSP requirements.

THE OREGON TRANSPORTATION PLAN

The *Oregon Transportation Plan* (OTP) is intended to "guide and coordinate transportation activities and to ensure transportation planning utilizes the potential of all existing and developing modes of transportation". The OTP fulfills state statutory requirements (ORS-184-618) to develop "a state transportation policy and a comprehensive, long range plan for a multimodal transportation system for the state" which includes aviation, highways, mass transit, pipelines, ports, rail and waterways.

It also fulfills several other state requirements, including the State Agency Coordination Program and the Land Conservation and Development Commission's (LCDC) Transportation Planning Rule. Additionally, the OTP helps implement the federal requirements of both ISTEA and TEA-21 for a state transportation plan and a statewide transportation planning process which links transportation planning with other planning activities, and facilitates a balanced, multimodal transportation system. As such, the OTP provides a framework for the *Oregon Rail Plan* and the associated activities of the Oregon Department of Transportation.

The OTP envisions a transportation system that moves people and goods in a way that provides for livability and economic prosperity for all Oregonians. The system provides Oregonians and visitors with access to goods, services, jobs and recreation, while providing Oregon industry with access to

national and international resources and markets. To most effectively meet the state's needs, the transportation system takes advantage of the inherent efficiencies of each transportation mode and encourages interconnection between modes.

Policy Element

The OTP contains both a Policy Element and a System Element. The Policy Element establishes four goals for the state's transportation system. These relate to (1) Characteristics of the System; (2) Livability; (3) Economic Development; and (4) Implementation. The Economic Development goal is most closely aligned with the state's rail infrastructure. The goal calls for promoting "the expansion and diversity of Oregon's economy through the efficient and effective movement of goods, services and passengers in a safe, energy efficient and environmentally sound manner." Further, the Characteristics of the System goal is for the "provision of a transportation system with the following characteristics: balance, efficiency; accessibility; environmental responsibility; connectivity among the modes and carriers; safety; and financial stability."

System Element

The System Element of the OTP is the implementing mechanism for the goals and policies. It is based upon a coordinated multimodal transportation system that includes air, rail, highways, public transit, pipelines, waterways, marine transportation, bikeways and other future modes. The System Element also establishes minimum levels of service standards that are to be achieved by each mode of transportation and identifies other major improvements beyond minimum levels of service. Further, it identifies transportation corridors and facilities which service statewide and interstate functions, identifies transportation system and facility and management processes that must be put into place, and identifies land use patterns which must be put into effect to achieve the goals of the plan. Finally, it identifies local, state and federal roles in implementing the plan, sets planning and performance criteria for modal implementation plans, and the financial requirements to implement the plan. As such, the OTP provides direction to Modal System Plans and Facilities Plans such as those that relate to railroads and the provision of rail freight and passenger service.

OTP POLICIES AND ACTIONS RELATING TO FREIGHT AND PASSENGER RAILROADS

The overriding purpose for the state's involvement in rail planning is to assure that Oregon will be served by an efficient rail network which is integrated into the state transportation network. A primary function of the transportation network is to provide for the efficient movement of people and goods throughout the state.

The Goals and Policies in the OTP provide direction related to the role and function of the state in rail freight and passenger planning and service. The actions that pertain to each of the policies define the role of the state with respect to rail freight and passenger service. The following rail related goals, policies and actions are taken from the OTP:

Goal 1: System Characteristics

Policy 1B – Efficiency

It is the policy of the State of Oregon to assure provision of an efficient transportation system. The system is efficient when (1) it is fast and economic for the users: (2) users face prices that reflect the full costs of their transportation choices; and (3) transportation investment decision maximize the full benefits of the system. (Full benefits and costs include

social and environmental impacts, as well as the benefits of mobility to users, and construction, operations and maintenance costs.)

Action 1B.4

Preserve corridors for future transportation development. Consider obtaining, developing and using those abandoned rail rights-of-way that are in the public interest for transportation system improvements. Consider using abandoned rail corridors for bicycle and walking trails and for utility and communication corridors as interim uses.

Policy 1C – Accessibility

It is the policy of the State of Oregon to promote a transportation system that is reliable and accessible to all potential users, including the transportation disadvantaged, measured by availability of modal choices, ease of use, relative costs, proximity to service and frequency of service.

Action 1C.1

Cooperatively define acceptable levels of accessibility through the establishment of standards in transportation plans for minimum levels of service and system design for passenger and freight for all modes.

Policy 1E – Connectivity among Places

It is the policy of the State of Oregon to identify and develop a statewide transportation system of corridors and facilities that ensures appropriate access to all areas of the state, nation and the world.

Action 1E.3

Develop and promote service in statewide transportation corridors by the most appropriate mode including intercity bus, truck, rail, airplane, passenger vehicle and bicycle.

Policy 1G – Safety

It is the policy of the State of Oregon to improve continually the safety of all facets of statewide transportation for system users including operators, passengers, pedestrians, recipients of goods and service, and property owners.

Action 1G.11

Promote high safety and compliance standards for operation, construction and maintenance of the rail system.

Goal 2 – Livability

Policy 2E – Minimum Levels of Service

It is the policy of the State of Oregon to define and assure minimum levels of service to connect all areas of the state.

Action 2E.1

Define appropriate minimum levels of service for all modes and for all potential users.

Policy 2F – Rural Mobility

It is the policy of the State of Oregon to facilitate the movement of goods and services and to improve access in rural areas.

Action 2F.2

Implement a statewide system of bikeways using current rights-of-way and creating new paths along rail beds, open spaces and other public and private lands held by cooperating landowners.

Action 2F.5

Consider acquiring and upgrading low-density rail lines where current owners are seeking to sell or abandon them.

Goal 3: Economic Development

Policy 3A – Balanced and Efficient Freight System

It shall be the policy of the State of Oregon to promote a balanced freight transportation system that takes advantage of the inherent efficiencies of each mode.

Action 3A.1

Identify the present level of local, state and federal support for each of the various modes of freight transportation including taxation, regulation, capital investment, and operating subsidy. Develop and maintain statistics on the characteristics of each mode as they affect the state.

Action 3A.5

Provide more efficient railroad service through the reduction of conflicts at busy railroad crossings and rail yard areas by means of grade separations and development of alternative motor vehicle circulation routes.

Policy 3B – Linkage to Markets

It is the policy of the State of Oregon to assure effective transportation linkages for goods and passengers to attract a larger share of international and interstate trade to the state.

Action 3B.4

Promote the retention of desirable rail service and rights-of-way through existing railroad ownership or alternative private and public ownership.

Policy 3C – Expanding System Capacity

It is the policy of the State of Oregon to expand the capacity of Oregon's freight industry by facilitating increased cooperation among the providers of transportation facilities.

Action 3C.5

Work with railroads, shippers and the federal government to remove barriers to convenient and efficient shipping by rail by promoting mutually-beneficial track sharing, interlining and shared use of terminals.

Policy 3D – Intermodal Hubs

It is the policy of the State of Oregon to promote intermodal freight and passenger hubs to enhance competitiveness, improve rural access and promote efficient transportation.

Action 3D.3

Continue to support Portland's role as a major freight hub for goods transported by air, highway, rail, barge and ship and recognize the other metropolitan areas' role as main connectors for the multimodal system.

Goal 4: Implementation

Policy 4G – Management Practices

It is the policy of the State of Oregon to manage effectively existing transportation infrastructure and services before adding new facilities.

Action 4G.4

Protect the integrity of statewide transportation corridors and facilities from encroachment by such means as controlling access to state highways, minimizing rail crossings and controlling incompatible land use around airports.

OTP SYSTEM MANAGEMENT

The OTP describes maintaining and operating existing facilities as fundamental to Oregon's future transportation system. Basic infrastructure requirements for movements by automobile, truck, public transit, intercity bus, bicycle and walking require that highways, roads and streets must be preserved and maintained. Additionally, rail, air, waterway and pipeline facilities must also be maintained as needed for the economic transportation of freight and passengers.

OTP CORRIDORS, FACILITIES AND SYSTEMS SERVICE, STATE AND INTERSTATE FUNCTIONS

The OTP defines transportation corridors, facilities and systems according to the function they serve and the level of government responsible for these program elements.

For freight systems and services, main line rail lines, connecting lines and rail access to marine facilities are each defined as a statewide function. The OTP goes on to explain that while individual rail branch lines are not a statewide function, the services that they provide, as a whole, are statewide functions. Thus, the state has an interest "in assuring that the connections serviced by rail branch lines continue to be served without adverse environmental consequences."

Waterways are also described as important carriers of interstate and international freight. The lower Columbia River ports, the Columbia/Snake River system and the deep draft coastal ports are considered a statewide function. The intermodal connections to those ports, including connections between ocean-going vessels, barges, railroads and trucks are a statewide function. Other marine ports such as Coos Bay, Astoria and Newport, which provide statewide, interstate, or international transportation functions are considered, as a whole, to be a statewide function. Another statewide function defined in the OTP pertains to major non-marine intermodal transfer facilities that are located at key locations around the state.

OTP MINIMUM LEVELS OF SERVICE

Freight

To meet the goals of the OTP, service standards for minimum levels of service are specified for each mode. For statewide freight service, these minimum levels of service pertain to intermodal freight and ports, highway freight and rail freight. Specifically, they call for the following:

1. Connections to deep draft ports should be available under open access terms to all major railroads and trucking lines in the nearby vicinity of maritime port terminals where feasible (e.g. Astoria, Portland, Coos Bay and Newport).

2. To the extent possible, major intermodal rail/truck facilities should exist on rail main lines with a service area radius of 150 miles (e.g. Portland, Eugene, Klamath Falls, Umatilla/Boardman, and Ontario). Intermodal reload facilities are to be encouraged at other locations, as the market demands (e.g. Medford, Bend/Redmond, Salem, Baker City, and La Grande, and coastal ports)

3. Ports and port systems handling substantial quantities of international and national freight (more than 3 million tons) should have multimodal connections, be able to operate in the international marketplace and have access to rail freight service (e.g. the lower Columbia River and Coos Bay).

4. Highway freight accessing intermodal truck/rail terminals or moving within Oregon should experience level of service C or better on Oregon highways during off-peak periods (e.g. Portland, Eugene, Medford, Klamath Falls, Umatilla/Boardman).

5. Branch rail lines within Oregon should be maintained to allow a minimum speed of operation of 25 miles per hour whenever upgrading can be achieved with a favorable cost-benefit ratio.

6. Rail main lines within Oregon should provide convenient ramp, terminal and reload facilities for transfers from truck to rail for long haul movement of freight. High quality highway access should be provided to these sites. Priority right-of-way should be preserved for potential public use or ownership when abandonment proceedings are initiated (e.g. corridors where there are future alternative uses, especially near expanding urban area).

7. Reload facilities should be encouraged and, if warranted, supported where they provide the most cost efficient and environmentally effective response to branch line abandonment.

Open access should be provided to and from all reload facilities and to major ports.

Passenger

The OTP identifies a set of stage improvements for rail passenger service in the state.

1. The regional rail service should offer frequent schedules, through trains, extensive feeder bus service with convenient connections, and an aggressive marketing and passenger amenities program to stimulate changes in transportation preferences and a per capita reduction in highway travel.

2. Intercity rail service through Oregon should provide reliable on-time arrivals within fifteen minutes of published schedules.

3. The existing Seattle to Portland *Mt. Rainier* train should be extended south to Eugene as a cost-effective first in creating a Seattle-Portland-Eugene passenger rail corridor. This extension can be implemented quickly with minimum capital investment. Premium hourly intercity bus service between Eugene and Portland should be inaugurated to complement the train. This would provide the needed frequencies to attract riders in sufficient numbers to justify the operation. As traffic volumes increase, more trains should be added.

4. Higher speed (110-125 mph) intercity rail passenger service should be developed within Oregon as need is demonstrated and technologies and financial support permit.

5. Incremental physical improvements to existing mainline railroad tracks should be used to increase passenger speeds up to 110-125 mph where there is potential for high rider volumes.

6. Oregon should cooperate with adjacent states to assure concurrence and cooperation when developing rail projects tied to the regional network.

7. Intercity bus lines and local transit service should be coordinated with intercity rail services to provide timely and convenient connections (e.g. Portland, Salem, Corvallis, Albany, Eugene, Coos Bay/North Bend), Medford, Bend/Redmond and Klamath Falls)

FREIGHT RAIL POLICY

In 1994, the Oregon Transportation Commission adopted four policies relating to rail freight service.

Policy 1: Increase economic opportunities for the State by having a viable and competitive rail system.

Actions:

1. Stabilize and improve Oregon's access to the national rail system by maintaining a competitive environment for rail customers, assuring a level playing field for each mode, and assisting in removing capacity restraints.

2. Promote intermodal centers where freight may be interchanged between rail and other modes by identifying suitable locations with adequate potential volumes and, if necessary, funding rail improvements and providing adequate highway access.

3. Identify opportunities for improved rail service to Oregon's deep water ports, which will promote foreign trade by funding support facilities to reduce congestion and increase efficiency.

Policy 2: Strengthen the retention of local rail service where feasible.

Actions:

1. Where necessary, seek alternative ownership and/or operation of rail facilities in order to preserve service.

2. Encourage increased use of rail service by promoting rail service opportunities, providing a wide range of intermodal facilities, and assisting localities and rail users to understand railroad economics, revenue needs of individual lines, and land use requirements.

3. Utilize federal or state funds for rail service continuation assistance where appropriate. Preference should be given to those lines that upon analysis have a positive benefit over cost ratio and will not require public assistance for ongoing operations.

Policy 3: Protect abandoned rights-of-way for alternative or future use.

Actions:

1. Ensure that political jurisdictions and private groups are familiar with how to preserve and convert abandoned rail rights-of-way for Public Use and Interim Trail Use, as allowed under federal law.

2. Use federal, state and local funds to preserve rail rights-of-way for future transportation purposes.

Policy 4: Integrate rail freight considerations into the State's land use planning process.

Actions:

1. Recognize the social, economic and environmental importance of rail freight service.

2. Encourage land use zoning and ordinances that enhance and protect existing rail freight service.

3. Work with communities to minimize conflicts between railroad operations and other urban activities.

4. Assist in removing constraints to improved railroad operating efficiency within urbanized areas. Work with communities to consolidate or close existing grade crossings and prevent the establishment of unjustifiable new grade crossings.

5. Encourage local jurisdictions to identify alternative uses for low-density branch line rights-of-way.

PASSENGER RAIL POLICY

Besides complying with the relevant parts of the OTP that deal with both rail freight and passenger service, the Oregon legislature directed:

> *The Department of Transportation to develop and maintain a state transportation policy for railroad passenger service and a comprehensive, long range plan for railroad passenger service. The plan required shall be a specific plan containing detailed proposals for the orderly development and improvement of passenger service, including interchanges among rail systems, bus systems and regional rail systems.*

The OTP supports intercity rail passenger service as a part of a balanced transportation system. This system shall consist of an efficient operation, reliable service, access to all potential users, and compliance with state environmental and land use standards. Convenient connections with other modes should integrate passenger train service into a network linking all areas of the state, nation and the world. High safety and compliance standards are mandated for the operation, construction and maintenance of the Oregon rail system. Adequate funding sources should be developed in order to finance the modernization of rail passenger and support services. The Department should implement increased levels of passenger service as soon as possible in order to facilitate financial, design, construction, equipment and market considerations.

STATE ROLE IN RAIL PLANNING

The Oregon Department of Transportation and the Oregon Transportation Commission play the chief role in rail planning and other modal pursuits.

The Oregon Transportation Commission (OTC) was established by ORS 184.615 and carries out the functions set forth in ORS 184.617. The OTC is the governing body of the Department of Transportation. It is the responsibility of the Commission, as defined in State statute, to "develop and maintain a state transportation policy and comprehensive, long-range plan for a multimodal transportation system for the state". The Commission establishes general policy direction for the Department of Transportation and has the authority to coordinate and administer programs relating to all transportation modes.

Besides being responsible for maintaining rail planning activities in the state, the Department's Rail Division has three other primary areas of responsibility:

- Rail Safety
- Grade Crossing Safety
- Regulatory Function

RAIL SAFETY PROGRAM

The Rail Safety Program consists of three separate programs:

- Railroad Employee Safety Program
- Federal Safety Program
- Rail Transit Safety Oversight Program

Each of these programs is discussed below.

RAILROAD EMPLOYEE SAFETY PROGRAM

The focus of the Railroad Employee Safety Program is to enforce state laws, rules and regulations for trackside clearances, trackside walkways, and sanitation (found in Oregon Revised Statute Chapter 824, and Oregon Administrative Rule Chapter 741). This program consists of two full-time employees, assisted by the other safety inspectors. There are approximately 1,500 rail-served industries and over 100 rail facilities within Oregon that require safety inspections to ensure the safety of railroad employees conducting their normal duties. Each year at least half of the rail-served industries and all of the rail facilities in Oregon are inspected. These inspections note various conditions, with varying degrees of concern, ranging from minor vegetation or mud in the walkways, to serious clearance impairments requiring immediate action to correct. This safety program works closely with railroad labor in ensuring the employees' safety.

FEDERAL SAFETY PROGRAM

The Federal Safety Program is a partnership with the Federal Railroad Administration (FRA), wherein ODOT is involved in five safety disciplines:

- Track
- Motive power and equipment (MP&E)
- Hazardous materials (HazMat)
- Operating practices (OP)
- Grade crossing signals (GCS)

Oregon has two inspectors for track and two for MP&E, and one in each of the other disciplines. State inspectors have the same duties and authority as those employed directly by the FRA. They utilize the same database and make the same reports and inspections, while working both independently and jointly with their federal peers.

Track Inspections

The track inspectors work very closely with the FRA in a cooperative effort to ensure all railroad trackage within the State of Oregon is inspected at least once annually, with higher priority tracks being inspected two or three times. Priority trackage consists of main lines carrying Amtrak and/or considerable hazardous materials through highly populated areas. There are approximately 3,800 total miles of track within Oregon, including 2,387 route miles.

Regulations under the jurisdiction of the track inspectors are found in 49 CFR Parts 213, 214, and 216. Track inspectors perform their work by walking or riding over the track in a railroad inspection vehicle. These inspections are primarily to determine compliance with the FRA track standards and to monitor the railroads' track inspections. If defective conditions are noted, the railroad must initiate remedial action to bring the track into compliance. Primary items noted during an inspection are:

- Defective ties
- Wide gauge (greater than 4 feet 8.5 inches)
- Defective rails
- Irregular track surface
- Inadequate or defective drainage facilities
- Loose or missing bolts
- Defective conditions, per the items above, in a turnout

State track inspectors check railroad inspectors' reports that do not contain the required information, do not initiate the required remedial action, or are not complete.

The track inspectors also enforce federal Roadway Worker Rules for the protection of railroad Maintenance of Way employees working on or near the track, and assist in the state Railroad Employee Safety Program while conducting routine track inspections.

Motive Power and Equipment Inspections

The MP&E inspectors enforce FRA safety standards for both locomotives and freight cars, found in 49 CFR Parts, 215, 216, 218, 221, 223, 229, 230, 231, and 232. These inspectors conduct independent safety assessments of all railroad locomotives, freight cars and air brake systems, and assist the FRA in focus inspections of certain facilities noted for safety concerns.

Most all inspections conducted by MP&E inspectors are performed after the railroad has had the opportunity to inspect the equipment. Frequently noted deviations of freight car safety standards include:

- Incorrect coupler heights
- Inoperative or missing coupler knuckle pins
- Worn roller bearing adapters
- Excessive or improper side bearing clearances
- Wheel flat spots

On locomotives, safety standard deviations frequently noted are:

- Inoperative sanders
- Hazardous passage way and compartment floors
- Insecure traction motors
- Wheel mismatch
- Worn wheel flange
- Missing daily inspection reports

Safety conditions noted on brake systems include:

- Improperly secured brake system
- Worn or missing brake shoes
- Improper piston travel
- Improper air brake test

Safety appliance deviations noted include:

- Bent or loose ladder treads or handholds
- Bent or loose sill steps
- Bent or inoperative cut-levers

Oregon has two Class I (major) railroads and 18 short line (small) railroads. The two Class I railroads, the Union Pacific Railroad and the Burlington Northern Santa Fe Railway, have several large terminals, with car and locomotive repair facilities, as well as many smaller facilities where travelling carmen and mechanics conduct minor repairs to equipment. All of these facilities are inspected by FRA and state inspectors frequently, as are small yards, sidings and interchange points, to ensure the safety of the equipment operating over the railroad system within Oregon. Each of the short line railroads has at least one location to service and repair equipment, as well as at least one interchange point with a Class I railroad. These interchange points are also inspected at least annually.

State MP&E inspectors will inspect on an average 15,000 freight cars and 700 to 800 locomotives annually, and note approximately 1,400 deviations from the FRA standards. The inspectors also assist with the state safety program by conducting sanitation facility inspections on locomotives.

Hazardous Materials Inspections

The Hazardous Materials portion of the FRA program enforces 49 CFR Parts 100 through 180. This discipline is a very sensitive and controversial area, with public concern about HazMat transportation at a high level. All modes of transportation carry some form of HazMat, but an incident on the railroad generally gets wide publicity. The rail transportation inspectors are involved with manufacturers, packaging, labeling, loading, shipping, transporting, unloading, and all the various types of paperwork that goes with shipping HazMat by rail.

When railroads move HazMat in a train, the car must be placarded and placed within the train in accordance with regulator specifications. The train crew must have a list of the cars, their location in the train, and their contents. Inspectors need to be familiar with American Association of Railroads (AAR) rules regarding tank car construction, and Transport Dangerous Goods regulations (from Canada) regarding placards, markings, and shipping papers. HazMat inspectors review both non-bulk cars (handling cylinders and drums) and bulk cars (conventional tank cars and intermodal tank cars) for safety appliances, fittings, closures, markings, and placarding.

HazMat inspectors spend a considerable amount of time at transload and reload facilities to ensure HazMat being transferred from one form of transportation to another is being handled properly, that containers are appropriate, and that the paperwork is complete. These inspections are generally made

with several different mode regulators, such as the Coast Guard, and motor carrier, railroad, local fire prevention, and emergency authorities. Some containers are opened and inspected for proper HazMat reporting, loading, packaging, and handling. Inspections conducted in Oregon have not revealed any serious violations of the federal rules, or safety concerns regarding the transporting of HazMat. A recent change in the federal HazMat statutes gives HazMat inspectors the authority to inspect containers moving by all modes of transportation. The change requires inspectors to have knowledge of other types of packaging.

Shippers and receivers of HazMat by rail are also inspected frequently to ensure:

- Loading and unloading of dangerous commodities are being carried out safely
- Their employees have received the mandatory training
- Training records and documentation are in order
- Shippers and receivers have 24-hour emergency notification capability

The state HazMat inspector also is responsible for monitoring railroad compliance with the state requirement for reporting of HazMat shipped, and railroad maintenance of the milepost inventory of local emergency response agencies. Annually railroads are to report to ODOT the types and classes of HazMat carried, and number of cars carrying HazMat that moved over each of their lines in the state. They must also maintain a current listing of all local emergency response agencies with 24-hour response capability. The listing must show the exact territory of each response agency.

Operating Practices

The Operating Practices (OP) discipline enforces 49 CFR Part 217, 218, 219, 220, 221, 225, 228 and 240 – all of which deal with the safe operation of trains. Railroad operating practice rules, drug and alcohol testing, accident reporting, engineer certification, hours of service, and communication are the key areas.

The OP inspector will ride trains to observe the engineer's handling of the train, crew members' compliance with railroad operating rules, proper radio use, and proper train dispatcher action, as well as observe other trains and crew members along the line. Inspectors will interview crew members to determine their knowledge and understanding of the rules, will observe switching moves, will inspect train manifests for proper car placement, and will review all written documents relating to the movement of the train, such as orders, procedures, warrants, bulletins, and time tables. Hours of service records, accident / incident reports, drug and alcohol testing records, railroad efficiency testing records, and dispatcher records are all reviewed by the OP inspector.

Railroad-Highway Grade Crossing Signals

Covered under 49 CFR Part 234, railroad/highway grade crossing signals (GCS) are inspected to ensure:

- Compliance with the rules
- Proper operation of signals when trains approach
- Proper maintenance
- Proper record keeping

The signals inspector will review the overall crossing warning devices, will inspect and test components for proper function, will review crossing diagrams and plans to ensure a system is current, and will review records of failures and false activations. There are approximately 900 actively protected crossings in Oregon that fall under the jurisdiction of the federal GCS rules.

In addition to enforcing the GCS rules, the signal inspector is responsible for monitoring railroad compliance with state laws and regulations for crossing safety.

All inspectors are required to investigate complaints and accident/incident reports as necessary, conduct follow-up inspections of any noted deviation from the standards, and write comprehensive reports noting any deviations found and action taken.

RAIL TRANSIT SAFETY OVERSIGHT PROGRAM

The Rail Transit Safety Oversight Program is for transit districts with a rail-fixed guideway system. The Federal Transit Administration (FTA) rule located at 49 CFR Part 659 requires any state with a transit district having a rail-fixed guideway system to establish an oversight agency. The Tri-County Metropolitan Area Transit District of Oregon (Tri-Met) is the only transit district in Oregon with a rail-fixed guideway system, and the ODOT Rail Division is the oversight agency. This agency must establish a System Safety Program Standard that requires Tri-Met to follow certain rules, regulations, and policies.

One state rule requires Tri-Met to establish and maintain an effective System Safety Program Plan and System Security Program Plan conforming to certain criteria designed by the American Public Transit Association (APTA). These plans are documents that describe the entire transit system, from its planning stage to its present day-to-day operations. They include certification that all required steps for implementation were completed.

Also required by the oversight agency, Tri-Met must conduct internal safety audits of all aspects of its operation. Tri-Met must report accidents and unacceptable hazardous conditions to ODOT. It must conduct investigations of them, and report back to ODOT with accident/incident causes and remedial action taken to prevent reoccurrence. Tri-Met reports all hours-of-service violations, which ODOT monitors for possible regulatory action if safety becomes compromised due to fatigue of train operators, controllers, supervisors, and other safety sensitive personnel.

ODOT participates in many investigations, facility inspections, safety meetings, training sessions, accident review meetings, security meetings, planning and design meetings, and construction and certification meetings. In addition, ODOT participates in national conferences, training sessions, meetings and workshops, that are designed for oversight agencies.

One major aspect of the oversight agency's responsibility is to conduct an in-depth audit or safety review of the entire Tri-Met system and operation every three years. The audit reviews the system safety and security program plans, training programs, maintenance and inspection programs (both vehicle and fixed structures), procurement, internal audits, security procedures, rail operation, control center, standard operating procedures, emergency procedures, certification process, fitness-for-duty procedures, and others. This process is a major task, and ODOT relies on outside contractor assistance to accomplish it. Once the safety audit has been completed, a report is issued to Tri-Met with the

deficiencies. Tri-Met them must implement a corrective action plan (CAP) with completion dates. ODOT reviews the CAP, approves or requests revisions, and monitors the activities to completion.

CROSSING SAFETY PROGRAM

Crossing Application Process

In Oregon, the authority to regulate all aspects of highway-railroad crossing safety lies with the Oregon Department of Transportation's Rail Division. This authority requires a public road authority or railroad to file an application with the ODOT Rail Division for permission to construct a new separated or at-grade crossing, make alterations to an existing public crossing, or to close an existing public crossing. The Division is required by statute (ORS Chapter 824) to follow an administrative process, the purpose of which is to assure that all parties have knowledge of and agree with the proposed project. The terms of that agreement are set forth in a regulatory order, which directs the parties to perform in a prescribed manner and addresses each party's financial responsibilities for the project.

ODOT Rail Division is in agreement with the Federal Railroad Administration in its effort to close crossings wherever possible. The Division is required by statute to eliminate crossings at grade wherever possible. ODOT also strongly discourages construction of new grade crossings unless there are strong, persuasive arguments to justify a new crossing.

Checklist for Rail Division Involvement

Whenever any road work (including construction of a sidewalk) is proposed within 500 feet of a railroad track, the party responsible for the project should consult ODOT Rail Division regarding the proposed project. Staff has developed a checklist for Rail Division involvement to aid a public authority in determining when ODOT Rail needs to be involved in the project. The checklist appears below.

Impact of Highway Construction Projects on Railroad-Highway Grade Crossings

Yes	No	Unk	Checklist Item
			1. Will the project alter or construct sidewalks, bike lanes, bike paths or roadway within 500 feet of a railroad track? 2. Will the project change the roadway approaches to a grade crossing within 500 feet of the crossing? 3. Will the project involve relocation, construction or closure of any grade crossings? 4. Will the project increase or decrease vehicle traffic at a grade crossing? 5. Will the project encroach on the railroad's right-of-way (ROW)? The typical ROW for a railroad is 50 feet on each side of the centerline of the tracks. 6. Will the project change the vertical curvature of the roadway approaching any railroad track? Will the project change the elevation of an adjacent side street near the grade crossing? 7. Will the project involve installation of new vehicle traffic signals or changes to existing traffic signals within 500 feet of a grade crossing?

If the answer is "Yes" to any of the above, the project may require a crossing order from the Rail Division. The Division must be consulted and involved in the project development process. The Division endeavors to complete processing of crossing applications within four to six months from the date an application is filed. If the project involves construction of new crossing signal devices, the lead time is not less than one year from the date the railroad company orders the equipment until it is installed.

The Division's authority over crossing construction or alteration does not involve private crossings, unless the crossing is located on the UP main line between Eugene and Portland, or on the BNSF main lines between Portland Union Station and the Columbia River. This trackage is part of the designated Northwest High Speed Rail Corridor, referred to elsewhere in this plan as the Pacific Northwest Rail Corridor. On this trackage, ODOT Rail Division has complete authority over private crossings in addition to public crossings.

New Crossing Construction

Whenever a party files an application for a new crossing, it is ODOT policy to review the application to assure the crossing is required for the public safety, necessity, convenience and general welfare. If the applicant satisfies that condition, ODOT then determines if it is possible to construct a separated (overpass or underpass) crossing and close adjacent grade crossings.

The safety standard for a new grade crossing is higher than that which is applied to an existing public crossing. The Division strongly believes a new public grade crossing should be equipped with flashing lights and automatic gates. An applicant for the crossing must be able to demonstrate the proposed crossing will be safe and accessible to all modes of public travel. The cost of constructing a new grade crossing can be substantial. The cost of maintaining active warning devices is also substantial, which requires an ongoing commitment from the railroad involved. The Division believes it is in the best interest of all concerned to only create those crossings that are required by the public safety, necessity, and convenience and general welfare.

Alteration of Existing Public Crossings

Alterations to existing crossings can be initiated by a public road authority, a railroad, or by the Division's staff investigation process. The cost of necessary safety improvements is borne by the party initiating the change to the crossing. The statutes allow the parties to agree on a funding strategy. However, unless the parties agree otherwise, the initiating party bears the cost of the alterations. Maintenance of the crossing, the roadway approaches, signs and signals is normally assigned to the party that installs the device or constructs that portion of the crossing.

Inspection Program

Routine Crossing Inspections: The Crossing Safety Section has an on-going program of physically inspecting all public crossings at least once every two years. Staff will note any deficiencies or deviation from authorized conditions and will then work with the public authority or railroad to resolve the concerns. The Division maintains a comprehensive inventory of all public crossings with data about each specific crossing. The database is used to evaluate numerous safety concerns at crossings.

Routine Crossing Signal Inspections: The Division has a State Crossing Signal Specialist who is responsible for inspecting crossing signal systems. He has been certified by the FRA as competent to perform those duties. He provides valuable expertise in the review of all crossing safety improvement projects involving installation or maintenance of active warning devices (signals).

1999 Oregon Highway Plan

Goal 2, System Management, of the *Oregon Highway Plan* (OHP) addresses the transportation policy of the state. Policy 2G sets forth issues regarding Rail and Highway Compatibility. The Action Items listed under Policy 2G should be reviewed and considered in any highway safety improvement.

Crossing safety issues should be an integral part of any highway safety project. When addressing the entire project, crossing safety concerns can be identified and resolved. Not only should rail safety issues be considered, but the impacts of the entire project on all modes of transportation should be considered. Compliance with a variety of state or federal policies and directives is essential.

Operation Lifesaver

Operation Lifesaver is an international public education program aimed at reducing collisions, injuries and deaths at highway/rail grade crossings, and trespass on railroad tracks in general. This program can be targeted to a specific audience.

REGULATORY FUNCTIONS

The Department has statutory authority to represent the state and customers of rail service before the Surface Transportation Board and other federal agencies. The Department routinely participates in rail proceedings that affect Oregon shippers and is also required, by state statute, to participate in contested rail line abandonments. The Department has limited ability to oversee economic and competitive issues, as federal law preempts its authority.

SUPPORTING OTHER PLANS

Oregon Transportation Safety Action Plan – 1995

The Rail Plan is supportive of numerous parts of the *Oregon Transportation Safety Action Plan*. Pertinent Actions include:

Action 1 – Traffic Law Enforcement Strategic Plan

Action 2 – Dedicated Funding Source for Law Enforcement

Action 9 – Public Information and Education

Action 31 – Local Transportation Safety Programs

Action 37 – Strategic Plan for Traffic Records

Action 53 – Incident Management

Action 57 – Youth Transportation Safety Strategy

Action 66 – Pedestrian Safety

Oregon Public Transportation Plan – 1997

The Rail Plan is supportive of numerous parts of the *Oregon Public Transportation Plan*. Pertinent Goals and Policies include:

Goal 1 – Purpose of the Public Transportation System

Policy 1A – Urban Access, Rural Access, Basic Mobility
Policy 1B – Environmental Protection
Policy 1C – Economic Prosperity
Policy 1D – Land Use
Policy 1E – Reduce Highway Demand

Goal 2 – The Components of the Public Transportation System

Policy 2A – Urban, Small City and Rural Transportation Systems
Policy 2B – Intercity Bus and Rail Systems

Goal 3 – The Management and Financing of the Public Transportation System

Policy 3A – State Role
Policy 3B – State Financing
Policy 3C – Public Transportation Facilities and Equipment Management System
Policy 3D – Project Serving Statewide Functions

Each of the above Goals and Policies have associated strategies. Many of these involve the maintenance and expansion of the rail passenger system.

Oregon Highway Plan – 1999

The Rail Plan is supportive of several parts of the *Oregon Highway Plan*. Goals and Policies include:

Goal 2: System Management

Policy 2G – Rail and Highway Compatibility

It is the policy of the State of Oregon to increase safety and transportation efficiency through the reduction and prevention of conflicts between railroad and highway users.

Associated Actions 2G.1 through Action 2G.5 guide the implementation of the policy.

Goal 4: Travel Alternatives

To optimize the overall efficiency and utility of the state highway system through the use of alternative modes and travel demand management strategies.

Policy 4A – Efficiency of Freight Movement
Policy 4B – Alternative Passenger Modes

Associated Actions 4A.4 through Action 4A.7 and Actions 4B.1 through 4B.6 guide the implementation of the policies.

ODOT Corridor Planning

The Department has established 30 transportation corridors across the state. These corridors follow primarily major state highway transportation routes that may, or may not, have parallel rail lines. The corridor planning process requires that each study analyze the impact of all of the modes in addressing the mobility needs of those living and traveling in the corridor.

The Rail Division has been actively involved in this corridor planning process and continues to provide rail freight and passenger information. Currently, about 15 of the 30 corridor plans have been completed. However, not all of the corridors contain rail lines. In addition, rail impacts vary from corridor to corridor, and the quality of the corridor planning process and its ability to address rail issues has been evolutionary in nature.

Oregon Public Utility Commission/ODOT Changes

In 1995, the Oregon Legislature relocated all of the rail activities of the Public Utility Commission (PUC) to the Department of Transportation. This includes the PUC's involvement in rail safety and grade crossings. Some of the former PUC's programs are contained in the Safety Action Plan and the Highway Plan. These functions will be cross-referenced in this update of the Rail Plan as necessary.

RAIL PLAN SERVES NUMEROUS FUNCTIONS

The *Oregon Rail Plan* fulfills federal and state requirements for preparing a plan for rail services in the state. Railroads differ from most other transportation systems considered in the OTP because they are generally owned by the private sector. However, the freight system and services are defined in the OTP as a state function, and the state is responsible for promoting rail freight and passenger service for the movement of goods and passengers throughout the state. Especially important is the availability of vital freight transportation services to move the state's agricultural and natural resource products to local, regional, national and international markets. For the Rail Plan to be an effective document, the major provisions of the OTP need to be implemented and adequately funded. To the extent feasible, a "level playing field" should be developed for evaluating the relative efficiencies of each mode.

One of the vital roles of the state is to assist local jurisdictions in dealing with potential rail line abandonment. The state cannot dictate levels of service, corporate investment strategies, or markets to be served by the railroad companies. At this time, there is virtually no rail infrastructure improvement assistance available except through the federal Railroad Rehabilitation and Improvement Financing (RRIF) program. However, this assistance may not be applicable for some sections of Oregon's rail system since some railroads may not be able to take on any additional debt and remain financially solvent.

The state Rail Plan is one of several modal system plans prepared by the Department of Transportation. As such, the goals, policies and action of the rail freight and passenger program must be coordinated with those of the other modal plans. In addition, the rail plan must be coordinated with local and regional land use and transportation plans and corridor plans.

Where applicable, the rail freight and passenger service must be considered as a component of these modal and multimodal plans and must be consistent with regional and local plans and policies. A checklist should be developed to be used as an evaluation tool in determining how the elements of the rail plan relate to local land use and transportation plans, and to determine the consistency between these regional/local plans and the state Rail Plan.

RAIL CONSIDERATIONS IN LOCAL LAND USE PLANNING

Planning Requirements and Rail Plan Policies

The state Transportation Planning Rule (TPR), adopted by the Land Conservation and Development Commission (LCDC) with the concurrence of ODOT, requires ODOT to identify a system of transportation facilities and services adequate to meet identified state transportation needs and to prepare a State Transportation System Plan (TSP). The OTP and adopted modal and facilities plans are components of the TSP. The Rail Plan is one of those components of the TSP.

In accordance with the Rule, cities and counties must prepare local transportation system plans consistent with both regional and state TSPs, unless they are eligible for full or partial exemption from TPR requirements. One of the required elements of the local TSP is "an air, rail, water and pipeline transportation plan which identifies where public use airports, mainline and branch line railroads and railroad facilities…are located or planned within the planning area".

As was stated earlier, the overriding purpose for the state's involvement in rail planning is to assure that Oregon will be served by an efficient rail network, integrated into a state transportation network which provides for the efficient movement of people and goods. The policies in the Rail Plan carry out policies in the OTP and give direction to state and local planning.

The purpose of this section of the Rail Plan is to provide guidance in planning for railroads at the local level. The section will outline the benefits of rail service, industrial site design, protection of sites, conflicts with rail use and alternative uses of abandoned rail lines.

Benefits of Rail Freight Service

Railroads interact positively with the economic base of a community. They add to the employment base of some communities and, more importantly, they provide low cost service for the movement of freight. This is particularly true for Oregon.

Oregon's forest and agricultural products are located long distances from some of their markets and are usually heavy and bulky in proportion. The Port of Portland is a major destination for out-of-state commodities, mainly grain, potash and soda ash bound for export. Railroads are particularly well suited for long-haul movement of these heavy, bulky and comparatively low value goods and thus are

very important to Oregon as well as to states that originate these shipments. Additionally, Oregon's rail industry is changing. The new short line railroad operators have been particularly successful in attracting new freight traffic to the railroads.

Because of the continuing dependence of many producers upon rail services, communities in their land use planning should attempt to ensure that a sufficient quantity of land with convenient access to rail service is planned and zoned for industrial development. There are several reasons why industrial parks and other industrially zoned property should have rail access:

1. Railroads tend to be more energy efficient than trucks and, therefore, can make better use of available energy resources.
2. Some commodities and products, especially those that are large, bulky, low valued, oversized, or not transportable over highways can be transported only by, or most efficiently by, railroad.
3. Access to rail service enable shippers to have a wider choice of transportation options, thus having a better bargaining position when negotiating rates with rail and truck carriers. While the initial occupant or occupants of a particular site or industrial park may not require rail service, subsequent occupants may.
4. Rail service enables delivery of goods in periods of emergency, strike or inclement weather when trucks cannot operate.
5. A railroad right-of-way may take less space than roads, and a railroad spur track may handle more volume in less space than could be done with trucks.

Industrial Land Use Considerations

Added Value

The availability of rail service not only adds flexibility of use to industrial land, but in some cases, especially in urban areas where rail-served lands are scarce, adds value. One study concluded that "value of industrial land abutting railroad facilities exceeded the value of industrial land away from the railroad by 50%". Such a variation in value should not be construed, however, as typical of all industrial lands adjacent to railroad facilities.

This is not the case, however, with other land uses. Railroad operations can create conditions of air, noise and visual pollution that may reduce the value of nearby residential and commercial property. The same study demonstrated that residential property values away from the railroad exceed those of property abutting the railroad by almost 50 percent. Commercial property value was five to 10 percent lower if it abutted the railroad. Undeveloped land was not affected. Thus a reduction in the negative impact the railroad has on less compatible land uses appears to be another advantage to clustering industrial land near the railroad.

Since the deregulation of the railroads in 1980 and the recent major railroad mergers, the importance of single-line rail hauls has risen greatly. Therefore, any piece of property served by more than one

railroad should be especially noted since all industries have need for competitive rail service. This could allow a shipper to have more competitive rates and access to different national markets.

Several places having access to more than one major railroad include areas next to the City of Prineville Railway, the Port of Tillamook Bay Railroad and the Portland Terminal Railroad. Other places include certain parts of the Portland & Western Railroad's Astoria line and select properties in Beaverton and Tigard, all served by the P&W, the Madras Industrial Park along with some areas of Redmond and Bend. Potential future sites include parts of Junction City, Harrisburg and Klamath Falls

Communities located on short line railroads may have an advantage in attracting businesses that need frequent switching or movement of rail cars. These activities are much more expensive when provided by the large carriers. The short lines tend to give more personalized service than the major railroads and usually at rates equal to, or lower than, the bigger carriers.

Adequate Sites

If a community decides that access to rail service will assist in the development of a piece of industrially zoned property, planners and developers need to consider requirements of the site that are critical to railroads. Planners should be aware of the amount of land required for spur track service to the site. This quantity is determined largely by four factors: the size of the right-of-way, the topography of the site, curvature restrictions and location of adjacent structures.

1. A minimum right-of-way is required where industrial switching is performed. ODOT's Rail Division sets standards for minimum railroad rights-of-way and should be consulted to confirm compliance.
2. Railroads are very grade sensitive. A 3 percent grade is near maximum while less than 2 percent is desirable.
3. Railroads are also sensitive to curvature. The 85 to 90-foot freight cars cannot safely negotiate curves over 19 degrees.
4. ODOT's Rail Division also has requirements relating to how close railroad tracks may be to adjacent structures.

Because of traffic congestion and accident potential created when railroads and roads cross at grade, industrial spur tracks, when feasible, should be placed adjacent to rear lot lines.

Planners and developers may consult the railroad to determine the amount of land required to serve particular sites. Many of the railroads have active economic development sections whose function is the generation of more traffic and they are willing to assist in such efforts.

The Oregon Economic and Community Development Department maintains a computerized data bank of industrial properties. Planners should check this list to see if it adequately addresses the railroad status of any particular piece of property.

Those communities located on light density (lightly used) branch lines and short lines should take special steps to plan for industrial property that requires rail service. The omission of mentioning rail service in comprehensive plans is often used by a railroad wishing to abandon a line as an example of the lack of concern the community has about the importance of rail service.

Railroad Conflicts with Highways and Community Development

Conflict between railroads and other urban area activities fall into six general types:

1. Safety
2. Delays and increased operating costs for highway users
3. Community barriers where railroad lines divide neighborhoods.
4. Environmental degradation
5. Incompatible or inappropriate nearby land use
6. Increased railroad operating costs and reduced efficiency such as multiple grade crossings and remote location of necessary train switching and servicing facilities.

Much of the conflict between the rail system and the street/highway system is due to the fact that the railroad and highways developed at different times. Technological developments of the two modes are still occurring. An example of this is the growth of TOFC (trailer-on-flat car or piggyback) and COFC (container-on-flatcar) traffic.

The steady growth of this business for the railroads means that the loading facilities for TOFC/COFC are unusually intensive generators of truck traffic compared to most industrial property. For example, the BNSF's intermodal facility in Northwest Portland generates over 300,000 truck movements a year. Planning and programming should address easy access for truck traffic between major arterials and the loading facilities and minimize the impact of this traffic on surrounding communities.

Emergency services such as fire protection are good examples of local activities that may be sensitive to railroads. Safety hazards and property losses might increase if the crossings used by fire trucks are frequently blocked by heavy train traffic, or if insufficient alternative routes are available. Any decrease in the efficiency of local fire protection is likely to be reflected in increased insurance costs.

A trail along an active rail line may be an example of potentially incompatible land use. Since trail uses raises major liability issues, the railroads may not agree to this use.

Improving Safety

Safety is the most important conflict to mitigate in most urban areas. There is also a direct relationship between traffic density and crossing accidents. In addition, safety is a problem between those trespassing on railroads and train movements.

There are a variety of ways to improve safety at grade crossings that may be applied individually or in combination. These alternatives include the following:

1. Close the crossing
2. Separate the grades by an overpass or underpass
3. Install warning devices, such as flashers and gates
4. Make site improvements which improve visibility for vehicles
5. Improve the roadway surface crossing the tracks for smoother skid-resistant movements of vehicles
6. Provide illumination for better visibility at night
7. Lower the speed limit of motor vehicles
8. Reroute trains to trackage with fewer crossings or lines with better crossing protection.

ODOT's Rail Division actively pursues a program to improve railroad at-grade crossings and reduce railroad-related accidents. Oregon statutes give ODOT the authority to control and regulate railroad-highway crossings and to eliminate crossings at grade whenever possible (ORS 763-013).

The Oregon portion of the federally designated High Speed Rail (HSR) corridor runs from the Columbia River (Portland) to Eugene. South of Portland's Union Station the designated HSR corridor is the Union Pacific Railroad's main line. It is also in this part of the corridor that ODOT has been given jurisdiction over not only public crossings, but also all private crossings. Department policy is that there will be no more at-grade public or private crossings on this line, and that efforts should be made to close unnecessary crossings or provide for future grade separations.

Relocating the Rail Line

Many of the conflicts may appear to be resolved best by relocating the railroad. However, it is often true that the "optimal" solution may be the most difficult or expensive to implement.

Because of the interrelationship between the location of railroads and that of factories, mills, warehouses and grain elevators, common carrier railroads have a continuing public obligation to provide service to their customers whenever it is physically and economically feasible to do so. Furthermore, railroads operate in a very competitive climate and should not be expected to give away business willingly. Since cities can exercise few regulatory powers over railroads, they cannot force railroads to comply with much of their planning. Communities, therefore, should prepare those portions of their comprehensive plans dealing with railroads in consultation with the carriers.

Of course, many sections of the tracks do not have shippers located along them. These sections might appear to be logical candidates for relocation or consolidations when more than one railroad serves a community. However, railroad relocations tend to be rather expensive. What might appear to be a relatively simple grade separation can easily turn into a $4 million to $5 million project. While there

are examples of one railroad operating over another's tracks by means of trackage rights or a pooling arrangement, these agreements are often very difficult to implement. With some justification railroads are hesitant to either lose complete control of their operation or surrender trackage that has potential for future industrial development. Consequently, relocation proposals that seem reasonable at first may have negative effects upon a particular railroad and therefore may be resisted.

Minimizing Conflict and Increasing Access

Careful planning can mitigate conflict and improve access. Local jurisdictions should consider the following when developing the transportation system plan elements of their comprehensive plans:

1. Avoid or minimize the number of future grade crossings when considering community expansion, industrial expansion and street plans.
2. Avoid creating intersections of major streets and railroads, whenever possible.
3. Locate new parallel streets and roads at least 500 feet from the railroad, rather than immediately adjacent, in order to allow for industrial development between the tracks and the highway. In addition, major intersections that are adjacent to the railroad tracks may call for expensive traffic signalization and railroad signal preemption facilities.
4. Recognize rail passenger stops in the comprehensive plans. Locate rail passenger terminals so that there is convenient access and sufficient parking space near the terminal. Coordinate the location with appropriate regional and state plans.
5. Coordinate local and intercity bus service with intercity rail service.
6. Recognize intermodal freight and passenger terminals and facilities and access to them in the comprehensive plan. Designate future facilities in locations consistent with appropriate regional and state plans.
7. When planning for passenger train facilities, consult the OTP, state Rail Plans and the major passenger carrier.

Communities should also recognize the impacts rail lines have on adjoining land uses. In many cases, zoning permits certain types of residential development, which, when constructed, result in conflicts with the railroads. Some communities also look at property near rail lines to site public facilities. This is usually driven by a desire to obtain lower valued property. When constructed, these too may result in problems with railroad activity.

Communities need to realize that railroad operations generate noise and vibrations. They are encouraged to include this information in responses to development permits. It should also be noted that federal law requires that trains sound their horns at all railroad crossings, and local communities have no authority to override this requirement. Time and again, communities are faced with residents who move into a development and then are surprised to learn that a railroad runs next to their house.

Abandoned Rail Lines

Communities that lose rail service when a line is abandoned may have given little consideration toward what use they might have for that newly vacant piece of property. Abandoned rail lines can be used for a number of purposes including utility corridors, highways/streets and trails. Under the federal "Rails to Trails" legislation, abandoned rail rights-of-way can be kept intact for recreational purposes. A trail-managing agency (state or local agency) can petition the Surface Transportation Board (STB) during the abandonment proceedings for interim trail use ("rail banking") so that the land remains intact. The STB process usually lasts only months. Any entity that wishes to acquire an abandoned line should be prepared to purchase it, and the price for the line should be negotiated with the railroad during the STB abandonment process.

If a local community feels that it has a recreational or other public use (such as a sewer, power line or future street) for a rail line that may be abandoned, then the community should mention this in its comprehensive plan. It should also include a map identifying the line and its intended use. This alerts public agencies and the railroad to the public need for the right-of-way and allows public use conditions to be attached to any STB-issued certificate of abandonment. For further information about the process, contact the Oregon Parks and Recreation Department.

Summary

Railroads are a vital segment of the transportation infrastructure of not only the state but of most local communities. Railroads are considered important in both the OTP and at the federal level. Besides being an important part of the economy of Oregon they also provide needed transportation opportunities when other modes may be at, or near capacity. In addition, this capacity is provided by the private sector making scarce public dollars available for other purposes.

Local planners and elected officials need to be aware of the importance of the railroads to a community's economic base. In addition, they should have an understanding of the conflicts and potential conflicts between railroads and other urban activities. In this way, a community may improve transportation services while minimizing negative impacts.

RAIL PLAN ADVISORY COMMITTEES

Rail Plan Advisory Committees for freight and passenger services were established to provide background, assistance and support of ODOT's professional staff and consultants in the completion of this project. Members of these groups included users of rail passenger service, rail passenger advocacy organizations, Amtrak, the Oregon Railroad Association, Oregon Short Line Railroad Association, Port of Portland and users of rail freight service.

This combined effort has produced a Rail Plan that examines the current state of the rail freight and passenger network in Oregon and makes recommendations on how this system can be improved in relation to guidance provided by the OTP for minimum levels of service.

PUBLIC INVOLVEMENT

Public involvement in the Rail Plan development process was encouraged. Comments from non-members were accepted at the advisory committees' meeting. Presentations were made at the following regional Area Commissions on Transportation (ACT):

- Mid-Willamette Valley
- Northwest ACT
- South Central Oregon Regional Partnership
- Central Oregon ACT
- Rogue Valley ACT

In addition, the draft Rail Plan was placed on the Department's Internet Web page where interested parties were encouraged to provide comments. Notices announcing the availability of the draft both in printed and an electronic version were mailed out to 435 public agencies, jurisdictions and local officials. The news media and other interested parties were sent periodic updated information about the project. The Oregon Transportation Commission visited the Rail Plan at two separate monthly meetings and approved the document at their November 2001 monthly meeting. In all cases, the OTC invited public testimony.

Chapter 2
FREIGHT ELEMENT

OVERVIEW

There are 2,387 route miles[1] of railroad in Oregon. Of these, approximately half belong to two large "transcontinental" railroads, and half belong to small or "short line" railroads. There are 20 railroads located in the state. These rail carriers handled more than 63 million tons of freight in 1999. Clearly, Oregon's freight rail system is a major infrastructure resource, providing Oregon shippers with access to the national rail system as well as to international markets in Canada, Mexico and, via Oregon's ports, throughout the Pacific Rim and elsewhere.

At the same time, the system is not without challenges. Short lines operate one half of the railroad miles in the state and serve one half of the state's rail shippers, and yet some short lines have difficulty in financing the capital improvements required to keep their lines in operation. The looming prospect of rail cars with heavier carrying capacity exacerbates this situation. Also, service problems, which resulted from consolidations of major rail systems in recent years, have contributed to shippers' reluctance to use rail transportation. While these service problems have eased over time, many shippers appear skeptical of the likelihood of benefiting from future rail industry consolidations.

The purpose of the Rail Plan Freight Element is fourfold. First, the Freight Element describes Oregon's freight rail network in terms of the carriers and the individual properties that make up the 2,387 route miles of railroad in the state. Second, the Freight Element describes the commodities that have been moved by rail to, from, through, and within the state, and estimates the volumes of the key commodities that will be handled in Oregon in the future. Third, the Freight Element identifies potential funding sources and funding needs for railroads in Oregon, including short lines and major railroads. Fourth, the Freight Element assesses what the users of the rail system, the shippers, think of their rail service and of the role that the Oregon Department of Transportation (ODOT) might play with regard to rail service.

OREGON FREIGHT NETWORK

Of the 2,387 miles of railroad operated in the state, about 30 percent are main lines (primary routes). The remainder are secondary main lines (alternative main lines used less often than primary routes), branch lines (lines which connect to main lines and serve industries and communities off the main routes), and short lines (small railroads). The lines of the Class I and Class III[2] railroads operating in Oregon as of the first part of 2001 are shown in the state railroad map, Figure 2-1, on the following page. At this time, there are no Class II carriers in the state. In addition, no rail lines in Oregon have been slated for an abandonment application before the Surface Transportation Board

[1] Route miles are miles of track not including portions of double track, sidings, and yard trackage. Including these, there are about 3,800 track miles in the state.

[2] According to the U.S. Surface Transportation Board, in 2001 Class I railroads have annual gross revenues of $260 million or more. Class II railroads have annual gross revenues of more than $20 million, but less than $260 million. Class III carriers have annual gross revenues less than $20 million. These limits are updated annually to reflect inflation.

Figure 2-1
State of Oregon Railroads

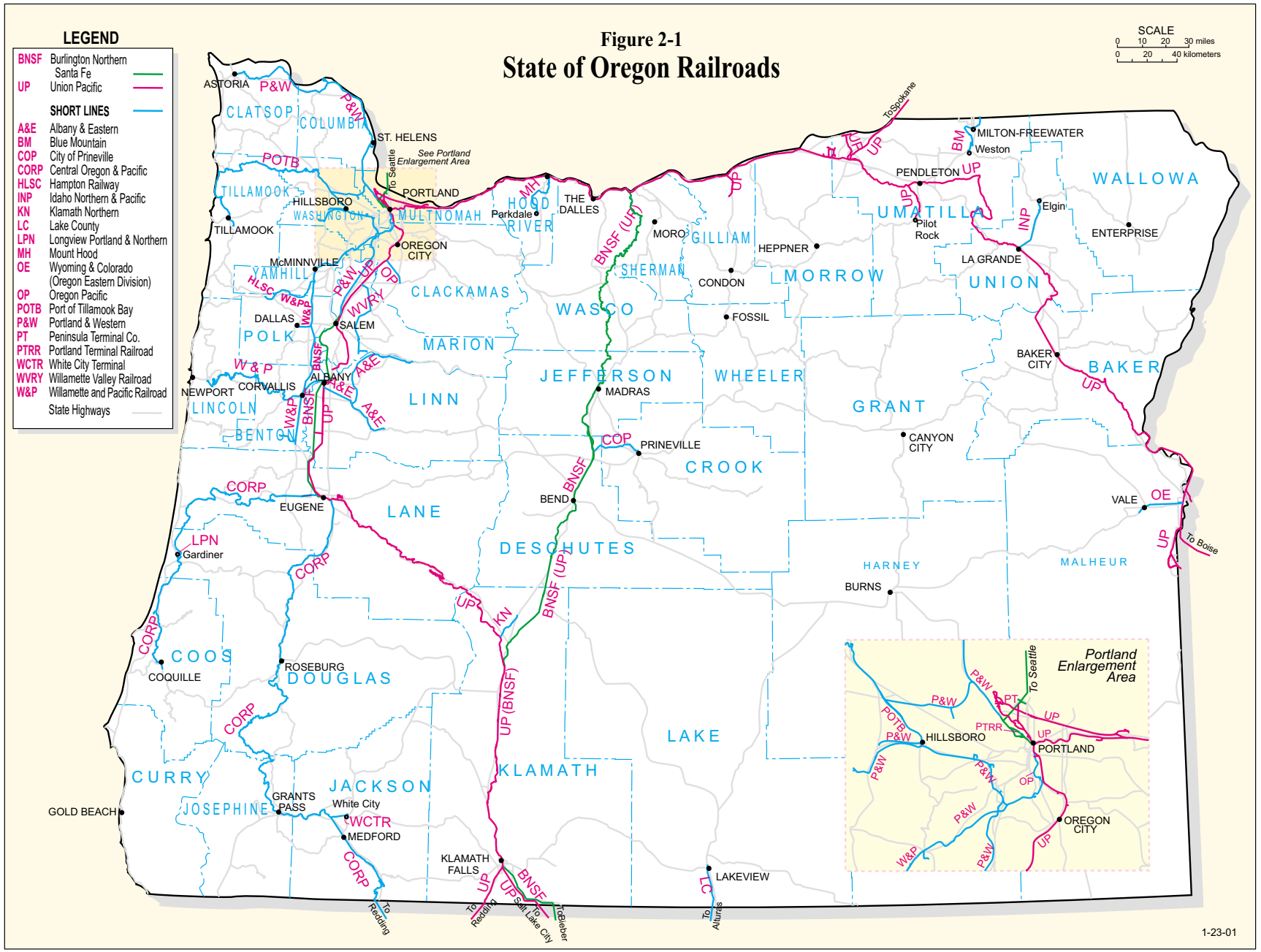


Table 2-1
Oregon Railroad Mileage
2001

Railroad	Route Miles of Track Owned or Leased	Trackage Rights	Total	Notes
Union Pacific Railroad	911.50	219.00	1,130.50	
Portland & Western Railroad	392.50	42.70	435.20	Includes former Willamette & Pacific mileage.
Central Oregon & Pacific Railroad	378.00	8.00	386.00	
Burlington Northern Santa Fe Railway	355.00	123.00	478.00	
Port of Tillamook Bay Railroad	95.00		95.00	
Albany and Eastern Railroad Co.	53.30		53.30	
Willamette Valley Railway	31.70		31.70	
Oregon Eastern Railroad	23.00		23.00	Formally the Wyoming & Colorado OE Div.
Mount Hood Railway	21.14		21.14	
Idaho Northern & Pacific Railroad	20.30		20.30	Plus 63 miles in an abandonment status.
Blue Mountain Railroad	20.10		20.10	9 miles out of service.
City of Prineville Railway	18.35		18.35	
Lake County Railway	15.24		15.24	
Oregon Pacific Railroad	14.73		14.73	
White City Terminal Railway	12.20		12.20	All yard trackage.
Klamath Northern Railroad	11.00		11.00	
Hampton Railway	5.20		5.20	
Longview Portland & Northern Railroad	3.39		3.39	Out of service.
Portland Terminal Company	2.98		2.98	Plus approximately 52 miles of yard trackage.
Peninsula Terminal Railroad	1.91		1.91	
Total	2,386.54	370.70	2,779.24	
Summary				
Union Pacific	911.50			
Burlington Northern Santa Fe	355.00			
Subtotal	1,266.50			
Short lines	1,120.04			
Total	2,386.54			

Source: ODOT Rail Division

Freight Railroads in Oregon

The Oregon rail system is currently comprised of 20 railroads. The carriers range in size from terminal railroads, to short intrastate railroads, to members of large rail systems extending from Oregon to the Midwest, the Gulf of Mexico, and Canada. Of the railroads, two are Class I, transcontinental railroads, and the remainder are Class III carriers, or short lines. The rail carriers are listed in Table 2-1. The state's two Class I railroads have main lines that converge on or pass through Portland, but otherwise provide service to distinct sections of the state as shown in Figure 2-1.

The Union Pacific Railroad (UP) is the largest carrier in terms of Oregon mileage, accounting for 38 percent of the state's rail system with its 911 route miles. In addition, it has another 219 miles of

trackage rights[3]. UP acquired the Southern Pacific Rail Corporation (SP) through a 1996 merger (discussed in more detail later).

The UP north-south main line extends from Portland to California to the south, and from Portland to Seattle to the north via trackage rights on Burlington Northern Santa Fe Railway between Portland and Tacoma, and via its own trackage between Tacoma and Seattle. It also provides access to UP's "Overland Route" through Roseville near Sacramento, and through the Modoc line between Klamath Falls and Winnemucca, NV. The Overland Route provides connections from the West to Cheyenne and Denver. Midwest connections are made at Omaha, Kansas City, St. Louis, and Chicago.

The Union Pacific's east-west line in Oregon lies along the south bank of the Columbia River and the I-84 Corridor into Idaho. The line provides the most direct connection from the Pacific Northwest (PNW) to the Overland Route via Pocatello and Cheyenne. A secondary line diverges at Hinkle and extends north towards Spokane, Washington and Canada.

The Burlington Northern Santa Fe Railway (BNSF) is Oregon's second largest Class I rail carrier. It operates 456 miles in the state, 123 of which are trackage rights. Its 355 route miles owned/leased comprise 15 percent of the state system. The BNSF's eastern connection with Portland lies on the north bank of the Columbia River. It provides a direct connection with eastern Washington and Spokane. The BNSF northern connection is a main line connecting Portland with Seattle and Vancouver, BC. BNSF also has a secondary line running from central Oregon at Chemult north to the Columbia River to Wishram, WA. This line now has a major role in the "I-5 Corridor" competition between UP and BNSF; carriers have north-south routes paralleling Interstate 5 between the Pacific Northwest and Southern California. In addition, BNSF still maintain a branch line between Salem and Eugene.

The largest short line is the Portland & Western Railroad. It operates 435 miles in Oregon. Of these, it owns or leases 392 route miles, and it operates over 43 miles via trackage rights. Its route miles comprise 16 percent of the state's rail system. This mileage includes the former Willamette & Pacific Railroad. All miles are in the northwestern quadrant of the state. The railroad has connections with both the UP and BNSF in Albany, Salem, and Portland.

The Central Oregon & Pacific Railroad (CORP) is Oregon's second largest short line railroad. It operates on 391 route miles and 8 miles of trackage rights in Oregon. Its route miles comprise 16 percent of all route miles statewide. CORP operates in the southwestern quadrant of the state serving the southern Willamette Valley to the California border and the central Oregon coast. The main north-south line provides connections from Eugene-Springfield to Cottage Grove, Roseburg, Glendale, Grants Pass, Medford, Ashland and on into California. CORP's Coos Bay Branch provides connections between Eugene and coastal communities such as Reedsport, Coos Bay and Coquille.

Lines owned or leased by Union Pacific, Burlington Northern Santa Fe, the Portland & Western, and the Central Oregon & Pacific railroads make up about 85 percent of all route miles in the state. The remaining 16 railroads make up the remaining 350 route miles in Oregon. These railroads are all short lines.

[3] Trackage rights are rights for one railroad to operate trains on tracks belonging to another railroad.

Rail System Changes

The Oregon rail system just described reflects a number of changes in its composition since the 1994 *Oregon Freight Rail Plan.* The rail system is smaller in terms of route miles, slightly larger in terms of the rail traffic being transported, and larger in the number of railroads. Its use has also changed over the same period. The changes have had an impact on rail users and have implications for the future of the state's rail system and rail program as well as the Oregon economy, especially in rural areas.

Railroad Mergers

The railroad mega-mergers[4] of the 1970s and early 1980s created the Burlington Northern and folded the Western Pacific and Missouri Pacific into the Union Pacific in the West. One result of this territorial expansion was to eliminate the need for interchange of cars between railroads as one merged railroad system would have a good chance of transporting a shipment all the way from origin to destination. The single-line haul is now commonplace, resulting in efficiencies and cost savings. In fact, there are often de facto penalties when a single-line haul is not available. These penalties manifest themselves in terms of additional cost and longer run times due to interchanges of traffic between railroads.

The railroads serving Oregon continued to be involved in mergers through the period since the preparation of the 1994 *Freight Rail Plan*. These mergers included:

- **Burlington Northern Santa Fe:** The merger of the Burlington Northern Inc. and Atchison, Topeka and Santa Fe Railway (ATSF), creating the BNSF, was approved in 1995. The BNSF has a 33,500-mile rail system, serving 28 states and two Canadian provinces. The merged system covers the western two-thirds of the United States and penetrates the Southeast as far as Alabama. The merger did not have as much impact on the Oregon rail system as did the UP-SP combination, discussed below, as the ATSF had no lines in Oregon. Even though the Santa Fe had no lines in Oregon, its merger with the BN brought about improved connections between the Pacific Northwest and the Southwest.

- **Union Pacific:** In February of 1995, the Interstate Commerce Commission (ICC) authorized the acquisition of control of the Chicago and North Western Railway (CNW) by the UP, which exercised its right later that year. The primary advantage to Oregon rail users of this merger was single-line service to and from Chicago and the interchanges with major eastern rail carriers.

  Following absorption of the CNW, the UP acquired the Southern Pacific and merged the operations of both railroads. The acquisition was approved by the ICC's successor agency, the U.S. Surface Transportation Board (STB), in June 1996. The merger took place later that year. The Union Pacific now operates more than 38,000 miles of track in 23 states from the Midwest to the West and Gulf Coasts. It is the primary rail connection for freight into Mexico and interchanges traffic with the Canadian railroad system. The merger reduced the number of Class I railroads in Oregon from three to two.

  As part of the merger approval, a combination of trackage rights and sales by UP provided a competing route for BNSF from the Pacific Northwest to California in the I-5 Corridor. Therefore, the state's rail shippers now have two through routes to and from California where before they had only one.

[4] A merger in this document means the combination of operations resulting from the acquisition or purchase of one rail system by another.

System Reduction

The current 2,387-route-mile Oregon rail system contains 185 fewer miles than recorded in the 1994 *Freight Rail Plan*, which showed 2,572 miles. This reduction has resulted from line abandonments, two of the largest of which were about 60 miles of the Idaho, Northern & Pacific Railroad in the northeast corner of the state and 135 miles of the Oregon Eastern line between Vale and Burns in Central Oregon. While reductions in mileage have been substantial, the impacts to shippers have been minimal, as in various cases the numbers of shippers on abandoned lines were few. In any case, the reductions have not been as great as they would have been without the "spinning off" of lines or conveying of lines, or the rights to operate them, to railroads with lower costs. These railroads are commonly called regional or short line railroads.

Railroad Creation

While the rail system has experienced an overall reduction in size, the number of railroads in the state has grown as a result of spinning off light density lines, which generate relatively small traffic volumes and revenues. In 1994, almost 500 miles (488) of former Class I branch lines, 20 percent of the rail system, were operated as short line railroads. Since then, additional Class I properties have been spun off creating major shifts in line operations. For example, the former SP's Siskiyou Line and Coos Bay Branch (total of 383 miles) were spun off to the Central Oregon & Pacific. The BNSF's 100-mile-long Astoria Branch was spun off to the Portland & Western Railroad along with 152 additional miles of BNSF properties in the Portland area. The net result is that mileage spun-off to new short line and the trackage of older, existing short lines now accounts for almost one-half of Oregon's current route miles.

In addition, a number of short line operations have changed hands since 1994. Some examples consist of the Willamina & Grand Ronde Railway, which is now the shipper-owned Hampton Railway. Portions of Willamette Valley Railway are now part of the Albany & Eastern Railroad, which also includes some former BNSF line segments.

REGIONAL DESCRIPTIONS

To simplify the discussion and aid in the identification of routes that comprise the Oregon rail system, the state has been broken up in geographical regions. Descriptions include annual tonnage or "density", Federal Railroad Administration (FRA) track class, weight and dimensional restrictions, and recent abandonment or sale history as applicable for each line.

As aids for understanding the regional descriptions, brief explanations of density and FRA track classifications below precede the descriptions.

Traffic Density: One measure of the utilization of the Oregon rail system is expressed in terms of the traffic density on each rail line. The measure used by railroads to depict traffic density is million gross ton-miles per mile (MGTM/M) of track per year. Gross tons are comprised of the weight of locomotives, rolling stock including cabooses, and lading (freight). A traffic density figure of 5.0 shown on Figure 2-2 on the following page, indicates that 5.0 MGTM/M moved over the particular line segment in the year of record. The map reveals the relative density of the various components of the system. The MGTM/M figures differ from the tonnage figures reported in the STB's Waybill Sample data cited in the System Use section of this document. While calibrated in tons, Waybill Sample figures are estimates based on a sampling and measure freight

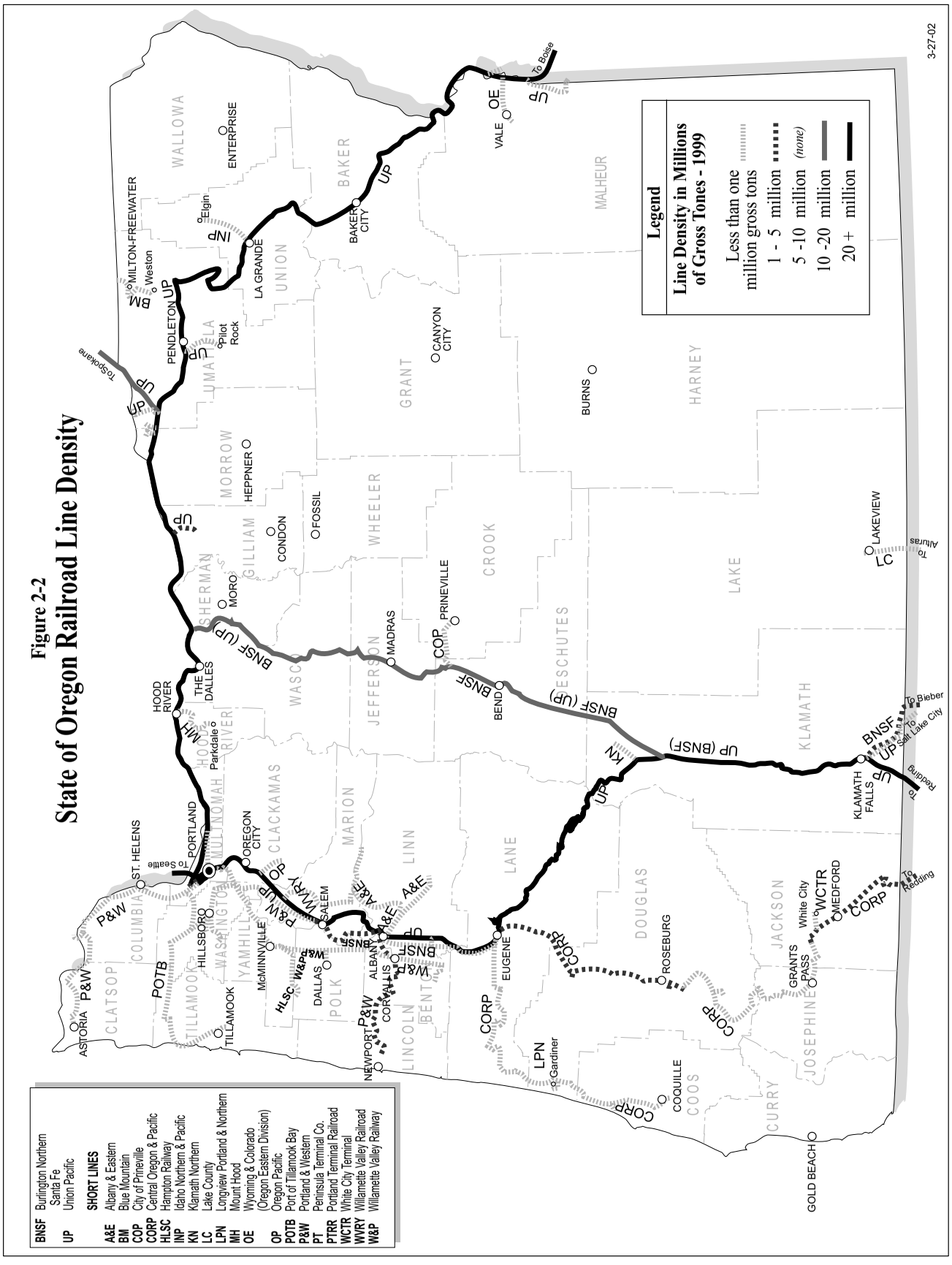


Figure 2-2
State of Oregon Railroad Line Density
Legend
Line Density in Millions of Gross Tones - 1999
Less than one million gross tons
1 - 5 million
5 -10 million (none)
10 -20 million
20 + million
3-27-02
BNSF Burlington Northern Santa Fe
UP Union Pacific
SHORT LINES
A&E Albany & Eastern
BM Blue Mountain
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
OE Wyoming & Colorado (Oregon Eastern Division)
OP Oregon Pacific
POTB Port of Tillamook Bay
P&W Portland & Western
PT Peninsula Terminal Co.
PTRR Portland Terminal Railroad
WCTR White City Terminal
WVRY Willamette Valley Railroad
W&P Willamette Valley Railway
To Spokane
To Boise
To Seattle
To Bieber
To Salt Lake City
To Reading
To Alturas
To Redding
ASTORIA
ST. HELENS
PORTLAND
OREGON CITY
HILLSBORO
TILLAMOOK
McMINNVILLE
DALLAS
SALEM
ALBANY
CORVALLIS
NEWPORT
EUGENE
COQUILLE
GOLD BEACH
ROSEBURG
GRANTS PASS
White City
MEDFORD
KLAMATH FALLS
LAKEVIEW
BURNS
VALE
ONTARIO
BAKER CITY
LA GRANDE
ENTERPRISE
Elgin
Weston
MILTON-FREEWATER
PENDLETON
Pilot Rock
HEPPNER
MORO
CONDON
FOSSIL
THE DALLES
HOOD RIVER
Parkdale
MADRAS
PRINEVILLE
BEND
CANYON CITY
Gardiner
CLATSOP
COLUMBIA
TILLAMOOK
WASHINGTON
YAMHILL
POLK
BENTON
LINCOLN
CLACKAMAS
MULTNOMAH
HOOD RIVER
WASCO
SHERMAN
GILLIAM
MORROW
UMATILLA
WALLOWA
UNION
BAKER
GRANT
JEFFERSON
WHEELER
MARION
LINN
LANE
DOUGLAS
COOS
CURRY
CROOK
DESCHUTES
JOSEPHINE
JACKSON
KLAMATH
LAKE
HARNEY
MALHEUR
POTB
P&W
OP
WVRY
A&E
BNSF
CORP
LPN
KN
HLSC
BM
INP
OE
UP
BNSF (UP)
UP (BNSF)

only. They are used to portray how specific commodities are moving between various origins and destinations. Railroads, which have their own comprehensive records of what is moving measured in gross tons, do not use Waybill Sample data to measure traffic density on their lines.

Track Classifications: The FRA has established nine classes of track and safety standards that prescribe the maximum speed of operation for both freight and passenger trains. The classes of track and prescribed speed limits for each are presented in the following table.

Table 2-2
Maximum Speed of Trains By FRA Track Class

Track Class	*Freight mph	Passenger mph
1	10	15
2	25	30
3	40	60
4	60	80
5	80	90
6	110	110

** The FRA has an additional three classes of trackage which deal with high speed train service up to 200 mph.*

Source: FRA

These maximum speeds are based on standards that define the level of maintenance needed to permit safe operation. It should be noted that a class of track and corresponding condition of the rail line might not be reflected in the operating speed. For example, a heavy main line may be in excellent condition, but operated at a much slower speed than the track condition would permit due to excessive curvature or grades.

FRA regulations also provide a special classification of "excepted track". Designation of excepted track is the prerogative of railroad operations and conveys exemption from compliance with certain FRA regulations: roadbed rules pertaining to drainage and vegetation; track geometry rules pertaining to cross level of track in curves; track structure rules relating to ballast, crossties, condition of rail and rail-fastenings and related track appliances.

Compared with Class 1 track, excepted track gauge tolerance (the distance between the rails) is eased slightly by one-quarter inch but inspections must occur at the same calendar intervals. The presence of hazardous cargo, depending upon quantities moved, may prevent or restrict application of excepted status. Occupied passenger trains may not run over excepted track.

For the most part, excepted status has been invoked for marginal, lightly used lines and auxiliary track. The ability to exempt track in certain situations has been helpful in maintaining train service to communities that might otherwise have lost their railroad to abandonment. When a railroad decides to promote a track out of excepted status it is required to give the FRA at least 10 days prior notice.

In Spring 2001, the short line railroads in Oregon had the following amounts of Excepted, Class 1, Class 2 and Class 3 trackage:

Excepted	231 miles
Class 1	84 miles
Class 2	702 miles
Class 3	103 miles

The major carriers had very few miles in excepted or Class One status.

In Oregon, as elsewhere, railroads maintain their track appropriately with the traffic handled. For example, Class 1 main lines should be capable of handling trains at speeds of 40 mph or more, and accordingly are maintained FRA Class 3 or 4 standards. Short lines' tracks generally do not have the need of higher speeds, and consequently may maintain their lines for a maximum 25 mph operation.

Northeastern Oregon

Rail activity in Northeastern Oregon is dominated by the main line operations of the Union Pacific and its connection to the east. Approximately 59 million gross tons moved over its main line through Baker County in 1999. The Spokane main line handled just a little over 16 million gross tons that same year. The Spokane main line is maintained to FRA Class 4 standards and has no weight or dimensional restrictions.

The railroad's hump yard at Hinkle is located at the junction of the UP's Overland route main line and the line to Spokane and is the largest UP classification facility in the Pacific Northwest. Hinkle is also the UP's major locomotive servicing and maintenance facility in the region. The UP main line between Nampa, Idaho and Hinkle is maintained in FRA Class 5 condition that permits operation of freight trains up to 80 mph. There are no weight or dimensional restrictions on the mainline.

Shippers in the area have the use of two intermodal facilities. The BNSF and UP both have facilities in Spokane, while the UP has an intermodal ramp just east of the Oregon/Idaho state line in Nampa, Idaho.

The UP also operates three minor branch lines in Northeastern Oregon. A short stub runs south of Nyssa to serve several onion packing warehouses at Adrian. The 14-mile Pilot Rock branch and the 10.3-mile Umatilla branch comprise the remainder of the railroad's branch line system in Northeast Oregon. The three branches are maintained to FRA Class 2 conditions and have no weight or dimensional restrictions.

Several short lines also operate in the area. The Oregon Eastern Division (OE) of the Wyoming and Colorado Railroad serves a diatomaceous earth plant just west of Vale. This line once extended westerly to Burns, a distance of 158 miles from the UP main line at Ontario, but was abandoned in the mid 1990s due to the closure of the only major customer at the end of the line. The OE is FRA Class 2 track with no weight or dimensional restrictions.

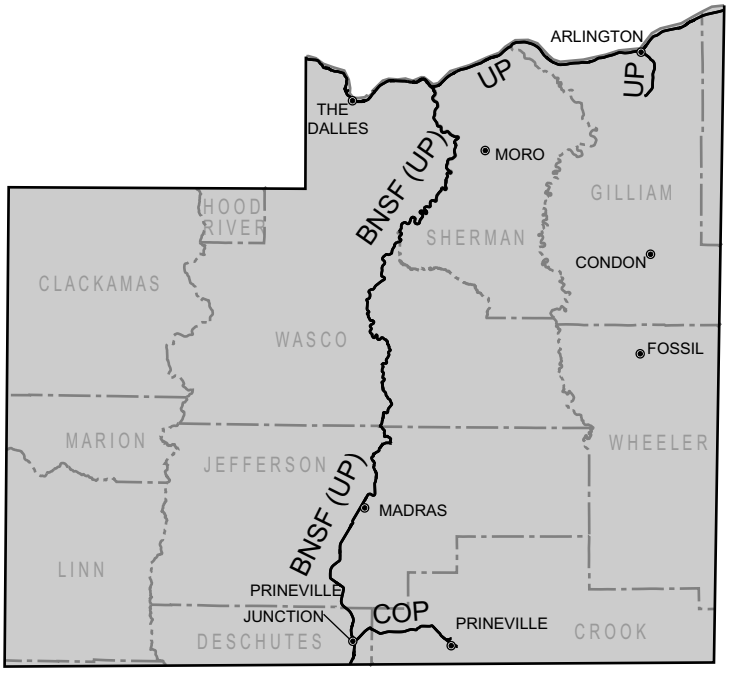
The Idaho Northern & Pacific (INP) has a 15-mile line from La Grande to a large lumber mill at Elgin. This line once extended east from Elgin an additional 60 miles to Enterprise and Joseph. The railroad received permission from the Surface Transportation Board to abandon the line and is currently in negotiations with the Oregon Department of Parks and Recreation to sell the right-of-way as a trail. The INP is FRA Class 2 track with no weight or dimensional restrictions.

The Blue Mountain Railroad (BM) runs southerly from Walla Walla, Washington through Milton-Freewater to Weston. The line is out-of-service to Weston due to a defective timber trestle just south of Milton-Freewater at Bade. Rail shipments previously originating at a Weston frozen food plant are not produced at the company's Milton-Freewater facilities and there are no plans at this time to repair the trestle. The BM is FRA Class 2 track with no weight or dimensional restrictions.

North Central Oregon

North Central Oregon's rail activities comprise mainly the Union Pacific main line running parallel to the Columbia River and the Burlington Northern Santa Fe's Oregon Trunk line from the Columbia River through Central Oregon to California. The UP main line between Hinkle and Portland is maintained to FRA Class 5 conditions with no weight or dimensional restrictions.

The only branch line in the area is the 11.5-mile UP line that runs southerly from its main line at Arlington to a major solid waste facility in Gilliam County. Much of Seattle's solid waste is handled at this facility. This branch is in FRA Class 2 condition and has no weight or dimensional restrictions.



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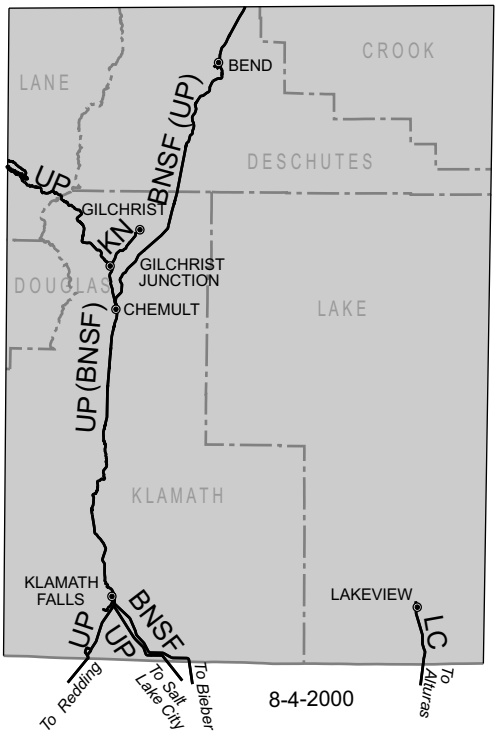
BNSF's Oregon Trunk line originates at its Wishram facility located on the Washington side of the Columbia River just east from The Dalles in Oregon. It carries about 8 million gross tons a year of both UP and BNSF freight. The Union Pacific has had trackage rights on this line to Bend for many years. As a result of its purchase of the Southern Pacific, the UP received additional trackage rights over the BNSF south from Bend (see South Central Oregon map) to Chemult. A major industrial park is located at Madras, and its tenants are fortunate in that they have equal access to both the UP and the BNSF. BNSF maintains the Oregon Trunk branch to FRA Class 2, 3 and 4 conditions with no weight or dimensional restrictions.

The only short line in the area is the City of Prineville Railway (COP) which is owned by the city of Prineville. The COP runs from Prineville Junction on the BNSF's Oregon Trunk line easterly 19 miles to Prineville. Wood products are the major commodity group moved by the COP. A private party also operates a dinner train over the railroad. The City of Prineville Railway was constructed by the city when the Oregon Trunk Railroad bypassed Prineville on its route through Central Oregon. The COP is maintained to FRA Class 2 conditions with no weight or dimensional restrictions.

South Central Oregon



South Central Oregon's railroad activity consists mainly of the Union Pacific's main line to California and the Burlington Northern Santa Fe's Oregon Trunk line. Two short lines provide feeder service.

The UP's Cascade main line carried about 28 million gross tons in 1999 on its line north of Klamath Falls and on into California. An additional 6.5 million tons of BNSF freight moves by trackage rights over the UP between Chemult and Klamath Falls. Amtrak's *Coast Starlight* passenger train also operates over the UP with stops at Klamath Falls and Chemult, and then over the Cascade Mountains to Eugene and Portland. The UP main line is maintained to FRA Class 4 condition with no weight or dimensional restrictions.

As a result of its purchase of the Southern Pacific, the UP acquired trackage rights over the BNSF between Bend and Chemult. In return, BNSF acquired the former UP line between Bieber and Keddie, California. This has resulted in both the UP and the BNSF having parallel main lines between the Pacific Northwest and California. Although the UP acquired the Bend-to- Chemult trackage rights although it has rarely utilized them. The BNSF moves about 6.5 million gross tons over the line between Bend and Klamath Falls.

The Union Pacific also owns the Modoc line which runs southeasterly from Klamath Falls to a connection with their California to Odgen mainline at Flanigan, Nevada. The 98-mile section between Alturas and Wendal, California is out of service but is still inspected on a regular basis. The last use of the line was in February 1996 when their north-south mainline between Klamath Falls and Sacramento was washed out. The line also provides the only connection for the Lake County Railroad.

The Klamath Northern Railroad (KN) runs between Gilchrist and Gilchrist Junction on the UP's Cascade main line. It is owned by Crown Pacific Industries, and its sole function is to move wood products from the Crown Pacific facility at Gilchrist. It is operated in FRA Class 1 condition.

The Lake County Railroad (LC) is a 55-mile short line that runs northerly from the UP's Modoc Line at Alturas, California to Lakeview, Oregon. The LC is owned and operated by Lake County, Oregon and was the first short line created in Oregon as a result of the regulatory reforms resulting from the deregulation of the railroads by the Staggers Rail Act of 1980. Lumber and perlite along with an occasional car of wood chips are the major commodities shipped over the LC. Perlite shipments have been increasing steadily over the last couple of years, while the downturn in the local timber industry

has resulted in decreasing levels of wood products shipped. The Lake County Railroad is maintained to FRA Class 2 condition with no weight or dimensional restrictions.

Southwestern Oregon

The activities of the regional carrier Central Oregon & Pacific Railroad (CORP) dominate railroading in Southwestern Oregon. The CORP main line south from Eugene through Medford (the Siskiyou Line) and their line from Eugene to Coquille (Coos Bay Branch) are former Southern Pacific lines that were purchased by CORP January 1, 1995.

Siskiyou Line operations on CORP are basically divided into two major segments. A large wood products operation at Dillard (just south of Roseburg) contributes the bulk of the traffic on the northern end of the line. Shippers south of Grants Pass are the major source of business on the southern end of the line. While the railroad operates a through train between Medford and Roseburg, most of the traffic heads either north out of Roseburg or south out of Medford. CORP's line south from Medford is one of the most rugged rail lines in the western part of the United States with gradients that approach 3.25 percent. The portion of the line south from Ashland to Black Butte, California has no weight restrictions but has dimensional restrictions in the Siskiyou Mountains. No Plate "F" cars (cars that are long and high) may be moved over the portion of the line between Montague, California and Ashland, Oregon. Other car types may not move over this portion of trackage because of certain length/height relationships.

CORP operates into and out of UP's yard at Eugene. Eugene is also the site of CORP's major engine repair facility along with its interchange with the Portland & Western Railroad through the UP. CORP trackage is maintained to FRA Class 1 and 2 condition with no weight or dimensional restrictions except for those south of Ashland.

CORP's Coos Bay branch runs westerly out of Eugene to the Oregon Coast and then southerly through Gardiner and Coos Bay to Coquille. Wood and pulp and paper products are the major commodities moved over the Coos Bay Branch. The Coos Bay Branch is maintained to FRA Class 1 and 2 condition with the main line between Coos Bay (MP 768.9) and Coquille (MP 763.0) in excepted condition. There are no weight or dimensional restrictions on the Coos Bay branch.

Two short lines connect and interchange with CORP. The three-mile Longview, Portland & Northern Railroad (LPN) runs westerly out of Gardiner Junction to a former paper mill at Gardiner. This line is currently out-of-service due to the shutdown of the paper mill in 1998.

The WCTU Railway (reporting marks WCTR) operates in a large industrial park at White City. The major commodities moved by WCTU include chemicals and wood products. Superior Lumber company

operates a small railroad that connects its wood products facility to the CORP main line at Glendale. WCTU is in FRA excepted track status, except for certain tracks which are used to carry hazardous materials and which are in Class 1 condition.

The Union Pacific's Cascade main line cuts through the northeast corner of the area. This is part of its previously described main line between Portland and California and carries about 30 million gross tons of freight a year. Amtrak's *Coast Starlight* also operates daily over this line. The UP main line is in FRA Class 4 condition with no weight or dimensional restrictions.

Central Willamette Valley

The Central Willamette Valley is a railroading mixture of main lines, Class I branch lines and multiple short lines. The UP main line dominates the traffic movements, having handled just over 30 million gross tons in 1999. In addition to UP freight trains, Amtrak operates three passenger service round trips on the main line. The UP main line is in FRA Class 4 condition with no weight or dimensional restrictions.

BNSF operates the former Oregon Electric Railway south from Salem through Albany and on to Eugene. BNSF accesses its operations by way of trackage rights over the Union Pacific between Portland and Salem. The BNSF Salem/ Albany line carries just over 1 million gross tons a year with its operations centered at Albany. The BNSF line is in FRA Class 1, 2 and 3 condition with no weight or dimensional restrictions.

1-24-2001

The Portland & Western Railroad (P&W) is the principal carrier west of the UP main line. In late 2000, the holding company that owned both the Willamette & Pacific Railroad decided to subjugate the W&P identity under the Portland & Western banner.

Former Southern Pacific branch lines constitute the backbone of the P&W operations in the Central Willamette Valley. Albany is the center of operations and maintenance for the P&W, which also has 40 miles of trackage rights over the UP main line between Albany and UP's large yard at Eugene. At Eugene, P&W interchanges traffic with the Central Oregon & Pacific Railroad through the Union Pacific.

P&W lines include a heavily used branch running westerly from Albany to a large paper mill at Toledo on the Oregon Coast. A lightly used branch runs south from Corvallis to a lumber mill at Dawson.

The former SP West Side Line connects the P&W's southerly operations with those located north near McMinnville. A short branch runs westerly from the West Side line to Dallas, while another branch

runs westerly to Fort Hill from Whiteson. The outer part of the line is actually owned by Hampton Railway (HLSC) but is operated by the P&W.

The P&W's major customer at McMinnville is a steel mill that gets inbound metal scrap and provides outgoing finished steel products. P&W carries a wide variety of commodities including feed grains, grass seed, scrap, finished steel products and chemicals. It operates under a haulage agreement north from McMinnville into the UP's Brooklyn Yard in Southeast Portland. The railroad also continues northward to connect with its operations at the north end of the Willamette Valley (see Northwest Oregon map).

The P&W trackage is maintained to various FRA classes:

- Toledo Branch is in Class 1, 2 and 3 conditions.
- Lower West Side Branch (Corvallis south and Dawson Line) is in excepted status with a weight restriction of 263,000 pounds per car.
- Upper West Side Branch from Corvallis Junction (MP 689.9) to Newberg (MP 748.5) is in FRA Class 1, 2 and 3 conditions.
- The Dallas Branch is in excepted status.
- The Willamina Line from Whiteson to Willamina is in excepted status.
- Hampton Railway from Willamina to Fort Hill is in excepted status.
- Former Oregon Electric line from Greton to Hopmere is in FRA Class 2 and 3 conditions.

The P&W lines in the Central Willamette Valley have no weight or dimensional restrictions with the exception of the Lower West Side and the Dawson lines.

Three short lines operate former Southern Pacific branch lines on the east side of the current UP main line. These include the Albany & Eastern Railroad (A&E), the Willamette Valley Railway (WVRY) and the Oregon Pacific Railroad (OP).

The A&E runs east from the UP and BNSF yards in Albany to Sweet Home and Mill City. The line from Lebanon to Sweet Home is the former BNSF Santiam Branch while the remainder is SP's former Mill City Branch. Wood products are the major commodity carried on the A&E.

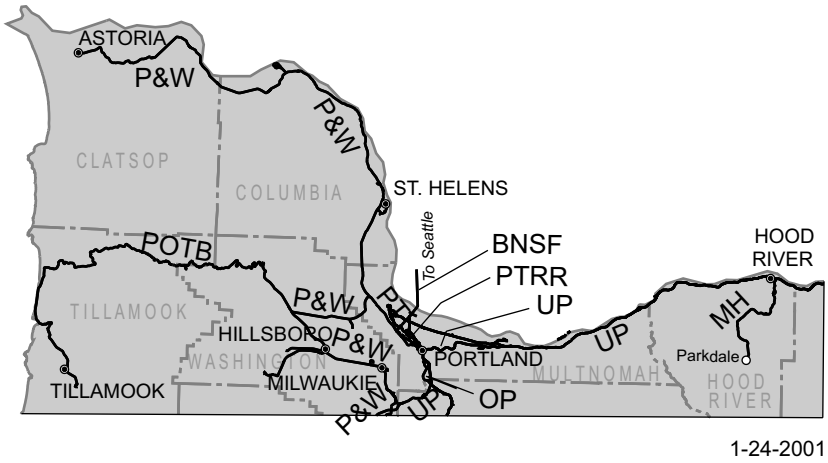
The WVRY runs east from the UP main line at Woodburn and then south to Stayton. Its major products include corn syrup for a bottling plant at Mt. Angel along with feed grains, wood products, processed foods and laminated beams from a facility located at Stayton.

The OP operates over SP's former Molalla Branch from Canby to Molalla. Major shippers include a lumber mill and feed mill grain operation at Liberal. The OP also owns the former Portland Traction Company in Southeast Portland.

The WVRY, A&E and OP operate mainly with FRA excepted track. The A&W does have FRA Class 2 track between Albany and Lebanon. The OP has restricted its Molalla line to 263,000-pound cars. However, the line may be upgraded to accommodate 286,000-pound cars.

Northwest Oregon

Northwest Oregon has the highest concentration of rail activity in Oregon with 75 percent of the state's rail traffic either originating, terminating or passing through the area. It contains four major rail yards, the state's largest collection of industrial customers and the region's major deep draft ocean port. Rail operations are many and complex and include main line, terminal and short line railroads.



Portland is at the western end of both the Union Pacific and BNSF main lines through the Columbia River Gorge. The two railroads moved a combined 128 million gross over their lines in the Gorge in 1999 (67.5 million on UP, 61 million on BNSF); these lines form easily the most heavily used rail system in the Pacific Northwest. The BNSF railroad bridge over the Columbia River carries not only its traffic destined for Portland, but also the UP's traffic to Tacoma and Seattle; UP has trackage rights over the BNSF to Tacoma. The bridge sees about 70 freight trains and 10 passenger trains on the average day.

UP has major facilities at (former SP) Brooklyn Yard in Southeast Portland, Albina Yard in Northeast Portland, and Barnes Yard in North Portland. The UP also has intermodal ramps at both Brooklyn and Albina Yards that see approximately 140,000 aggregated lifts (container or trailer on or off a railcar) a year.

The BNSF's major Portland facility is actually located just north of the Columbia River in Vancouver, Washington. Other BNSF yards include Willbridge in Northwest Portland and the Rivergate facilities in North Portland. The carrier has a major intermodal facility at Willbridge Yard seeing about 150,000 lifts a year, and shares a large international container facility at the Port of Portland's Terminal Six complex in Rivergate. The Rivergate complex is the largest receiver and shipper of freight in the region, handling over 150,000 carloads of freight a year.

Most of the UP and BNSF trackage in the Portland area is maintained to Class 4 standards on main lines, while Class 1, 2 and 3 tracks can be found in terminal areas and connecting tracks. There are no weight or dimensional restrictions on any of the BNSF or UP lines in the Portland area.

The UP and BNSF jointly own the Portland Terminal Railroad (PTRR) with a major terminal at Lake Yard in Northwest Portland. PTRR serves the Port of Portland's facilities along the west shore of the Willamette River and industries located in Northwest Portland. The PTRR has a mixture of main lines maintained to Class 4 condition along with yard and side tracks maintained to Class 1, 2 and excepted condition.

The Peninsula Terminal Company (PT) is a switching operation adjacent to the BNSF's main line in North Portland. Petroleum and chemicals provide the bulk of the traffic moving over the PT. PT operates with FRA Class 1 track which has no weight or dimensional restrictions.

The Oregon Pacific Railroad (OP) operates over what was the former Portland Traction Company between Southeast Portland and an industrial park in Milwaukie. Frozen foods and plastic pellets form the bulk of the OP's traffic base. The OP operates mostly with FRA Class 1 trackage. It also has a short section of excepted track towards the end of its line in Milwaukie.

The Portland and Western (P&W) operates over a system of former SP and BNSF branch lines mainly in Washington County west of Portland. Traffic includes wood and industrial products, plastic pellets and automotive parts along with feed grains. The P&W also operates a shuttle train that moves building aggregates from a pit north of Salem to several distribution sites in Washington County.

P&W also owns and operates the former BNSF Astoria branch. This 100-mile line runs west along the Columbia River from the BNSF's Willbridge Yard in Northwest Portland to Astoria. One large pulp and paper mill generates outbound paper products on the line and inbound wood chips. A large cluster of chemical and petroleum product companies constitutes a major traffic base in Northwest Portland. A new wallboard facility at Rainier became an active user of rail service when it came on line in early 2001.

The last 27 miles of the line from milepost 73 to Astoria is currently out of service due to a lack of customers in this segment. However, several promising industrial prospects are considering locating at Astoria that might create the need for the P&W to restore service. The P&W's Astoria branch and lines in Washington County are unique in that the underlying right-of-way is actually owned by the Oregon Department of Transportation, while the railroad owns the tracks and appurtenances. The right-of-way was donated to the Department at the same time that the P&W acquired the track and structures. While ODOT owns the bridges they are actually maintained by the railroad.

The P&W lines in the Northwest region operate under a number of FRA track classifications:

- United Railways District between United Junction and Banks is in FRA Class 1 and 2 conditions.
- The Forest Grove line is in excepted track status.
- The Seghers Line is in FRA Class 1 and excepted status conditions.
- The former Oregon Electric line from United Junction and Hopmere is in Class 2 and 3 conditions.
- The Astoria line is Class 1 and 2 and 3 conditions, except for a portion between MP 58 and MP 73 that is in excepted condition.

The 90-mile Port of Tillamook Bay Railroad (POTB) owns and operates the former SP Tillamook branch from near Hillsboro to Tillamook. The POTB is one of the most rugged rail lines in the state with gradients of 3.75 percent and numerous curves of up to 17 degrees. Outbound wood products and inbound feed grains comprise the majority of its traffic base. POTB interchanges with the P&W at Banks, Oregon.

POTB track is a mixture of FRA Class 1, 2 and excepted track. There are no weight restrictions on the line. However, curvature limits the length of equipment to 85 feet.

The Mount Hood Railway operates southerly from Hood River to Parkdale, a distance of 21 miles. The Mount Hood is unique among Oregon's short lines in that the majority of its revenue is derived from passenger not freight service.

SYSTEM USE

The Oregon rail system described earlier is used for the movement of both freight and passengers. The system has undergone a number of changes since the 1994 *Oregon Freight Rail Plan*, as discussed earlier, and freight traffic patterns have also changed. Oregon rail freight traffic changes are discussed with a review of total freight movement to, from, within, and through the state, and an analysis of commodities originating and terminating in Oregon.

While the discussion that follows portrays traffic on the system, it is worth mentioning that much of this traffic relies on modal connections leading to the rail origin point or away from the rail termination point. For example, a portion of the lumber and wood products harvested in Oregon and bound for inland markets by rail travels to the rail reload facilities by truck. Grain and potash rail shipments, on other hand, travel to the Port of Portland for export by ship.

For the most part, the interchange points between truck and rail have sufficient capacity to handle the present traffic and any near-term growth. The loading of lumber and grain normally occur in more rural areas. Most merchandise (boxcar) traffic is moved directly to the consignees facilities while bulk movements are to terminals dedicated exclusively to that particular commodity. At times these terminals may experience temporary congestion due to late ship arrivals/departures. These problems are usually short term and carriers involved take quick remedial action.

Domestic intermodal terminals (as contrasted to on-dock ship/train container movements) are impacted by highway traffic congestion. Many times, local governments underestimate the amount of truck traffic generated by a rail intermodal terminal. According to industry sources, each container/trailer generates just over 2 truck movements. For example, the Burlington Northern & Santa Fe Railway's intermodal facility in NW Portland yearly handles about 150,000 containers/trailers resulting in over 300,000 annual truck movements or about 1,000 per day! Access to the domestic intermodal terminals needs the same attention as that given to access to port and airport facilities.

The attributes of rail service can illustrate why certain commodities are drawn to rail versus truck movement. A strength of rail transport is that it can move high volumes over longer distances at a lower cost relative to truck. For this reason, less time-sensitive bulk commodities traveling several hundred miles or more generally go by rail. Also, mixed commodities shipped in trailers and containers between Portland and the Midwest often go by rail, as intermodal trains (trailer and container unit trains) are expedited and are therefore competitive with truck both in terms of cost and transit time. Conversely, time-sensitive cargo going shorter distances tends to move by truck.

Freight Traffic

Total rail freight traffic in Oregon in 1999 was comprised of 63.5 million tons as shown in Table 2-3. Out of the total, 16.0 million tons originated in the state with destinations outside of the state, and 23.3 million tons terminated in the state from origins outside of the state. There were 1.7 million tons that both originated and terminated within Oregon; that is, freight traffic that remains within the state (intrastate traffic). Through traffic (traffic passing through without an origin or destination in Oregon) accounted for 22.4 million tons.

It should be pointed out that the tonnage figures mentioned in the following section are net tonnage (minus tare weight). Gross tonnage figures are used in the density map (Figure 2-2) and in the regional descriptions.

Table 2-3
Oregon Freight Traffic
1999

Commodity		Tonnage (000)					
STC.C[5]	Description	Orgin'g	Termin'g	Intrastate	Through	Total	% of Total
01	Farm Products	531.8	4,078.8	341.0	4,971.4	9,923.0	15.6%
24	Lumber or Wood Products	6,893.1	1,730.1	123.8	4,521.4	13,268.4	20.9%
28	Chemicals or Allied Products	316.9	4,478.0	118.8	1,855.5	6,769.2	10.7%
46	Misc. Mixed Shipments	1,759.7	2,205.5	0.0	2,517.8	6,483.0	10.2%
26	Pulp, Paper or Allied Products	2,600.5	872.7	229.5	1,643.1	5,345.8	8.4%
20	Food or Kindred Products	541.1	1,704.9	52.5	2,014.7	4,313.2	6.8%
	All Others	3,377.2	8,259.3	807.8	4,914.5	17,358.8	27.4%
	Totals	16,020.3	23,329.3	1,673.4	22,438.4	63,461.4	100.0%

Source: STB Waybill Sample compiled by Wilbur Smith Associates.

Commodities and Flows

In the aggregate (all movement types), lumber or wood products comprise the largest commodity moving by rail (20.9 percent) in or through Oregon. Farm products (including, grain, corn, and soybeans) are second at 15.6 percent. Chemicals, miscellaneous mixed shipments (majority of which travels in intermodal[6] service), and pulp and paper products follow, and together account for 29.3 percent of rail totals. Food or kindred products (e.g., frozen foods, beer, etc.) make up 6.8 percent of Oregon rail traffic.

The significance of each commodity varies, however, by movement type. The following paragraphs elaborate on the differences.

Originating Traffic

The 16.0 million tons of commodities originating by rail in Oregon, and terminating outside of the state, are comprised principally of three groups – lumber or wood products (43.0 percent), pulp or paper products (16.2 percent), and miscellaneous mixed shipments (11.0 percent) – which together embrace more than two thirds of originating totals. Other significant commodities include primary metal products at 6.3 percent of the total.

Rail freight originating in Oregon predominantly terminates in the neighboring states of California and Washington as shown in Figure 2-3. The next largest area is the Midwest region (predominantly Illinois).

[5] Standard Transportation Commodity Code (STCC), originally a commodity designation system developed by the American Association of Railroads (AAR) and since adopted by the ICC and subsequently by the STB.

[6] As a term used by freight railroads, intermodal refers to traffic handled in trailers and containers on flatcars or double-stack cars. This traffic is also known as TOFC (trailer on flatcar) and COFC (container on flatcar) traffic. Increasingly, these shipments travel in unit trains consisting of exclusively intermodal traffic between major origins and destinations. In the Waybill Sample data, some intermodal shipments may actually be identified as specific commodity shipments, rather than as part of mixed shipments which, as noted above, move mostly in intermodal service. These may include containers of farm products, for example.

Combined, the four states account for up over 12 million tons of originating Oregon volumes. Much of the tonnage terminating in Illinois is actually reloaded onto trucks for delivery to Eastern and Midwestern states.

Terminating Traffic

Only a few specific commodities account for most rail traffic terminating in Oregon from origins outside of the state (23.3 million tons). Farm products and chemicals are the largest groups, each comprising less than 20 percent of totals.

Miscellaneous mixed traffic totals 9.4 percent. Lumber/wood products and waste or scrap materials are less than 8.0 percent each. All other commodities, including 2.3 million tons of coal from Wyoming, comprise 38.5 percent of the total.

Much of the rail freight terminating in Oregon originates in Washington and California, and in the northern Mountain and Plains states of Idaho, Montana, Wyoming, and Illinois. Figure 2-4 shows these out-of-state originations. A lot of freight terminating in Oregon is being loaded onto ships for export (e.g., grain, soda ash, and potash).

The vast majority of farm products terminating in Oregon originates in the grain-producing Idaho-Montana-Dakotas region. Similarly, significant chemical and coal tonnage originates in the same region.

Intrastate Traffic

Oregon intrastate rail traffic at 1.7 million tons is small compared to the other movement types. The principal intrastate commodities are farm products, lumber, chemicals, and pulp and paper. An additional ½ million tons of aggregate are moved in the Portland area by the Portland & Western's shuttle train. It moves under a special contract and not a normal waybill which means that it is not captured by the STB's Waybill Sample process.

Through Commodities

Rail traffic passing through Oregon from origins outside of the state and destined for delivery in states other than Oregon comprises the second largest rail traffic movement at almost 22.4 million tons, just slightly below terminating movements. Six major commodity groups – farm products (22.1 percent), food products (8.9 percent), lumber/wood products (20.1 percent) pulp/paper products (7.3 percent), chemicals (8.3 percent) and miscellaneous mixed traffic (11.2 percent) – comprise 77.9 percent of the total. Major through movements include:

- 6.2 million tons of farm products (grains including wheat, corn, and soybeans) from the North Midwest to Washington
- 1.1 million tons of miscellaneous shipments (intermodal trailer loads and container loads) from Washington to the North Midwest
- 0.6 million tons of farm products from the Northwest to Washington
- 0.6 million tons of pulp, paper, or allied products from Washington to California
- 0.5 million tons of chemicals or allied products from Central Canada to Washington
- 0.5 million tons of lumber or wood products from the Northwest to Washington

Rail traffic originating at points east of Oregon and flowing through the state is the subject of Figure 2-5. The Mountain and Plains states, central Canada and Texas combined with surrounding states represent the major origins. Shipments include grain and soda ash. The flow-through ends up principally in California, but a significant volume also terminates in Washington State. Much of this flows from the Union Pacific lines in Oregon to grain terminals in Vancouver, Longview, Kalama, Tacoma and Seattle, Washington.

Flows in the opposite direction show substantial origins in Washington in addition to Western Canada and California. Major through commodities include lumber and farm products. Texas and surrounding states are major destinations (as they were origins), but the largest flow is to the Midwest states. These flows are the subject of Figure 2-6.

As shown in Figure 2-7, there are sizable flows through Oregon, having originations and terminations in California, Washington, and British Columbia.

Traffic History

As seen in Table 2-4, total freight traffic between 1992 and 1999 grew 17.9 percent. This compares with a growth of 28 percent from 1986 to 1992, the reporting year for the 1994 *Freight Rail Plan*. Traffic dropped in 1997, due to service problems resulting on the UP, but recovered in 1998. Growth over the following year topped 7.4 percent. The volumes appearing in Table 2-4 are presented graphically in Figure 2-8.

Table 2-4
Oregon Freight Rail Traffic 1992 to 1999
(in thousands of tons)

	Originating	Terminating	Intrastate	Through	Total
1992	14,413	19,362	1,834	18,229	53,837
1995	13,748	22,291	866	21,169	58,073
1997	13,486	19,470	1,649	20,720	55,324
1998	14,744	21,828	1,764	20,733	59,068
1999	16,020	23,329	1,673	22,438	63,461

Source: STB Waybill Sample data complied by Wilbur Smith Associates

Oregon rail traffic origins or destinations are dominated by a few counties. Some of this is due in part to the existence of major deepwater ports. Not surprisingly, Multnomah County is the largest county in terms of both originating and terminating rail traffic with over 22 million tons. Specifically, 7.0 million tons originated, and 15.2 million tons terminated in the county. A major portion of this activity is associated with the Port of Portland and private marine terminals on the Willamette and Columbia Rivers.

Figure 2-3
Destination of Rail Traffic Originating in Oregon

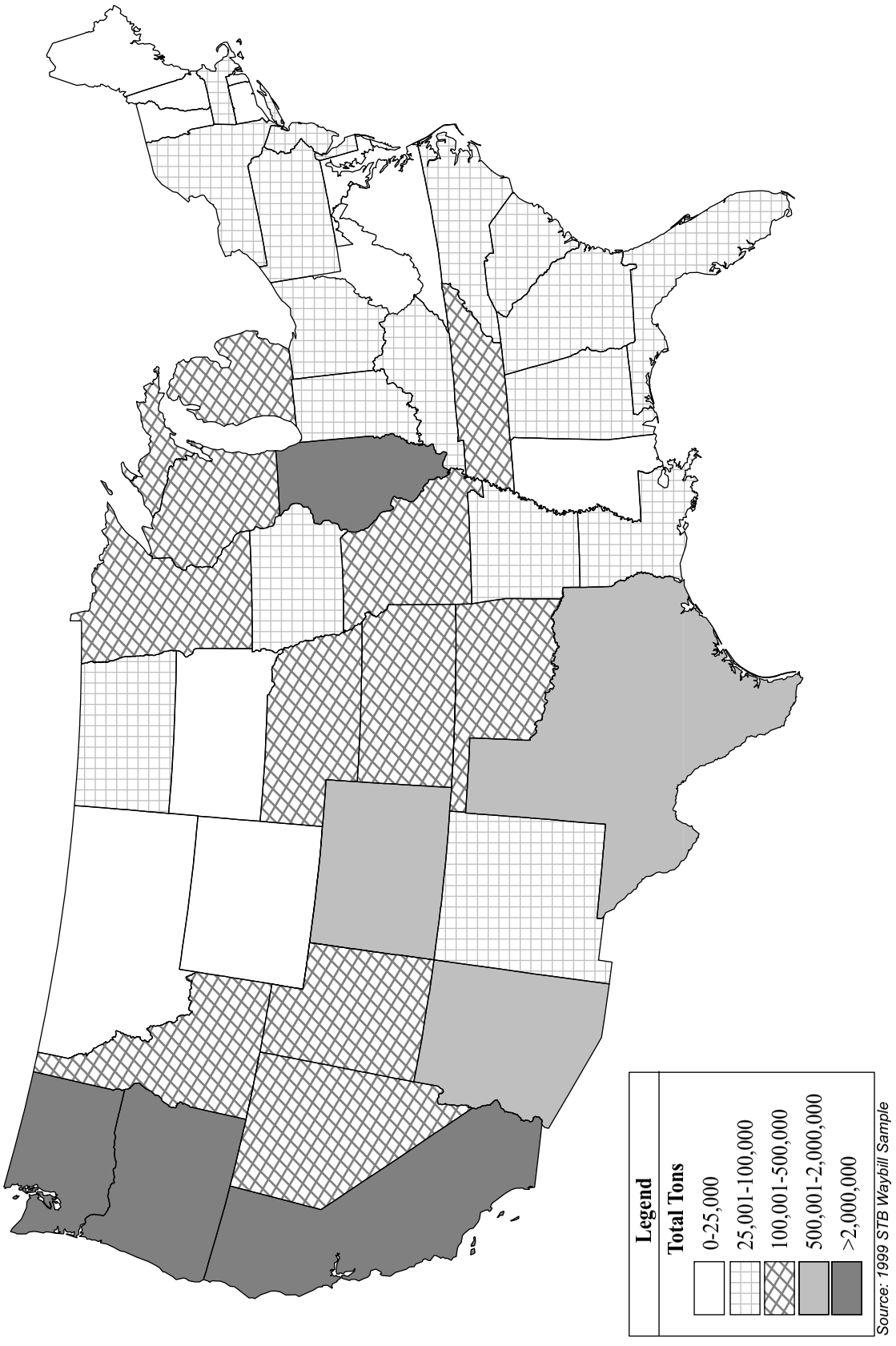


Figure 2-4
Origination of Rail Traffic Treminating in Oregon

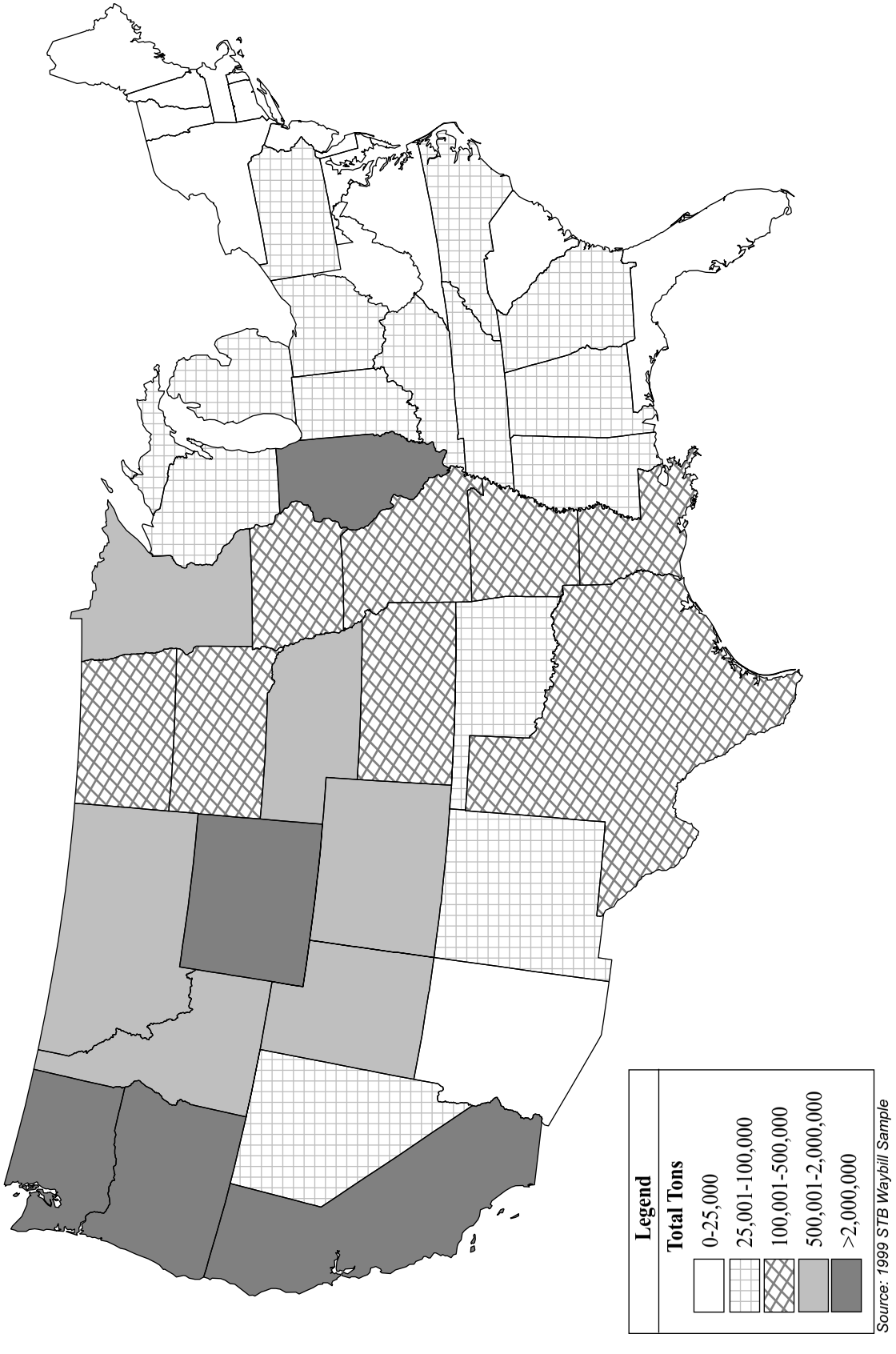


Figure 2-5
Through Tonnage Moving East to West

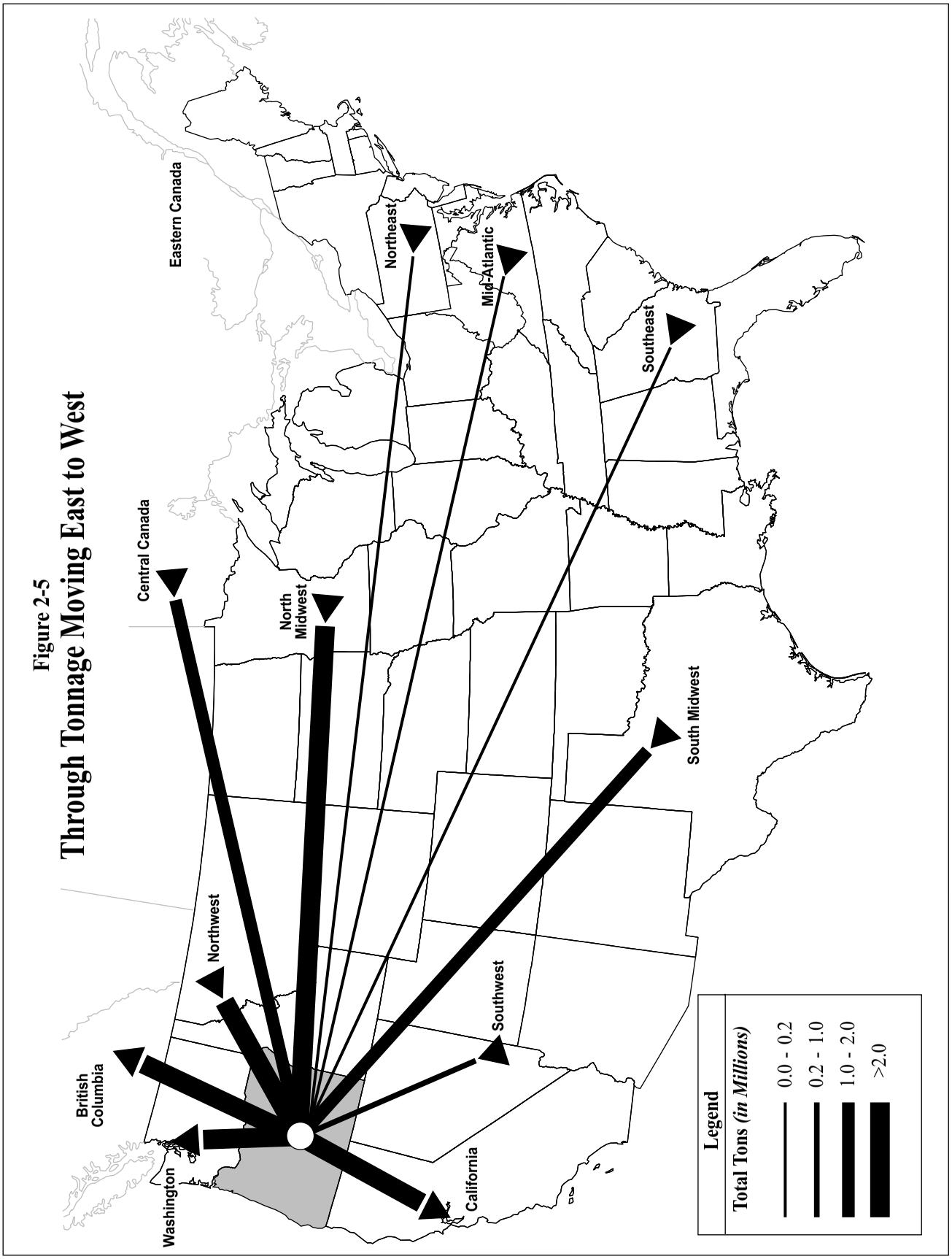


Figure 2-6
Through Tonnage Moving West to East

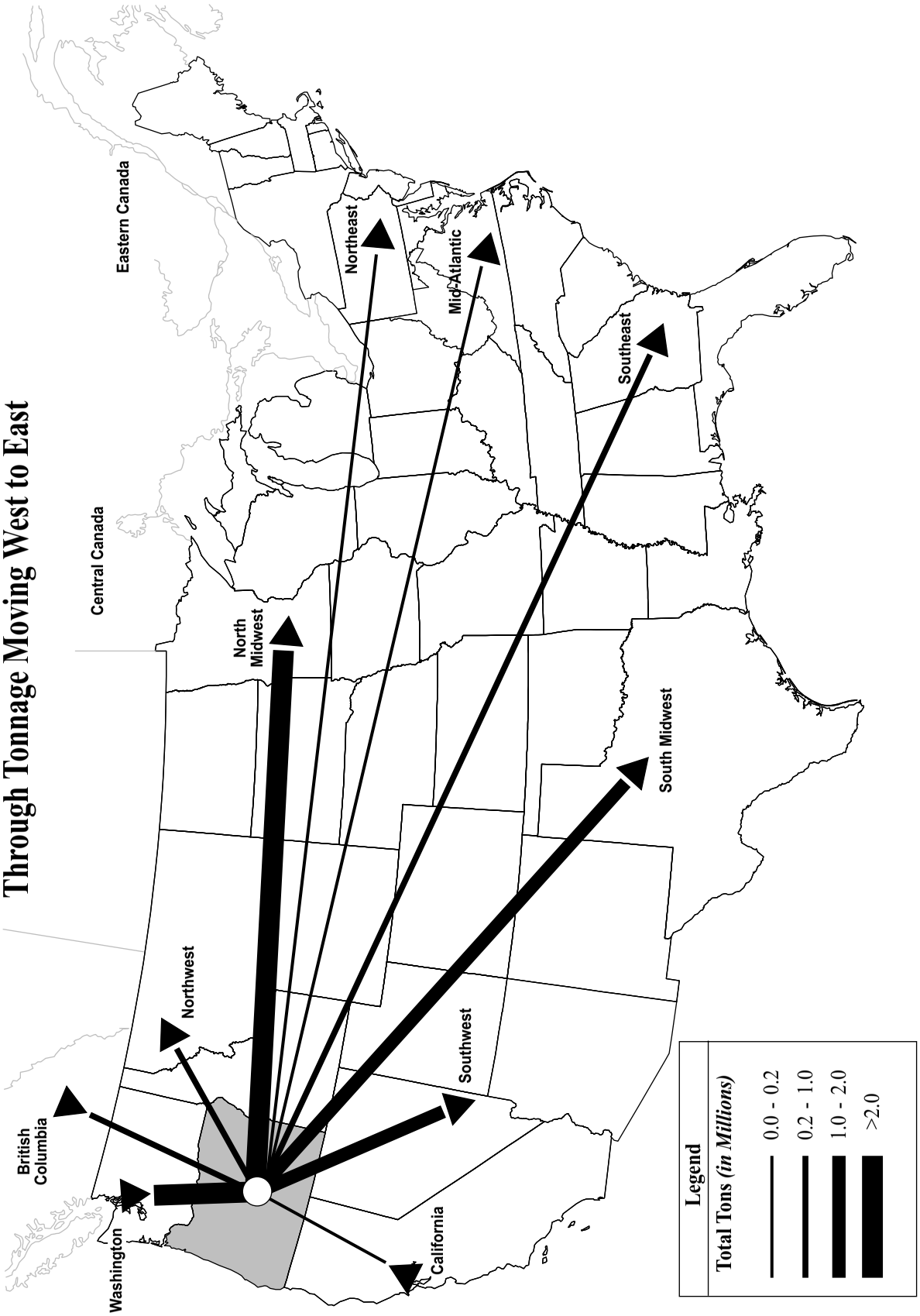


Figure 2-7
Through Tonnage Moving West to East

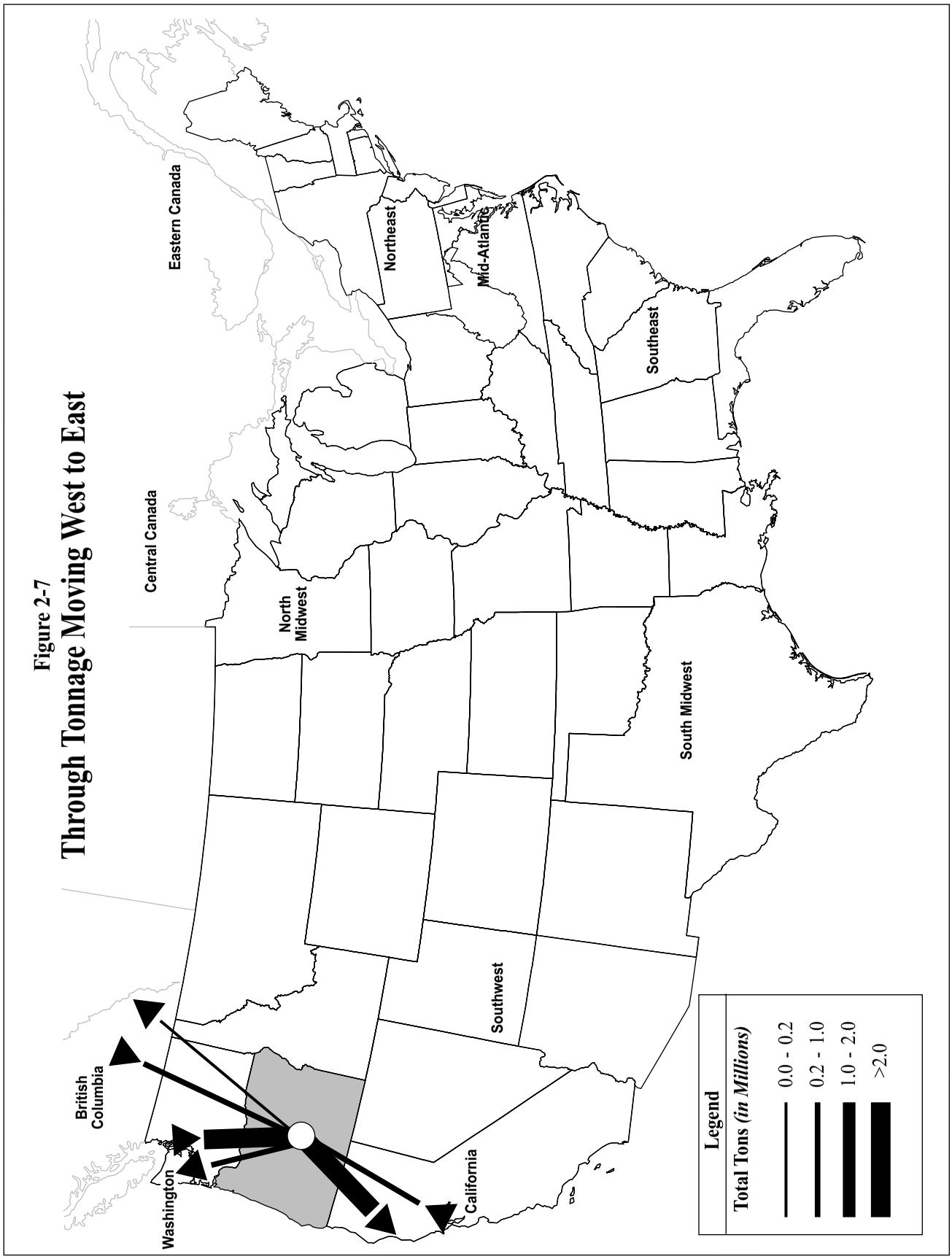
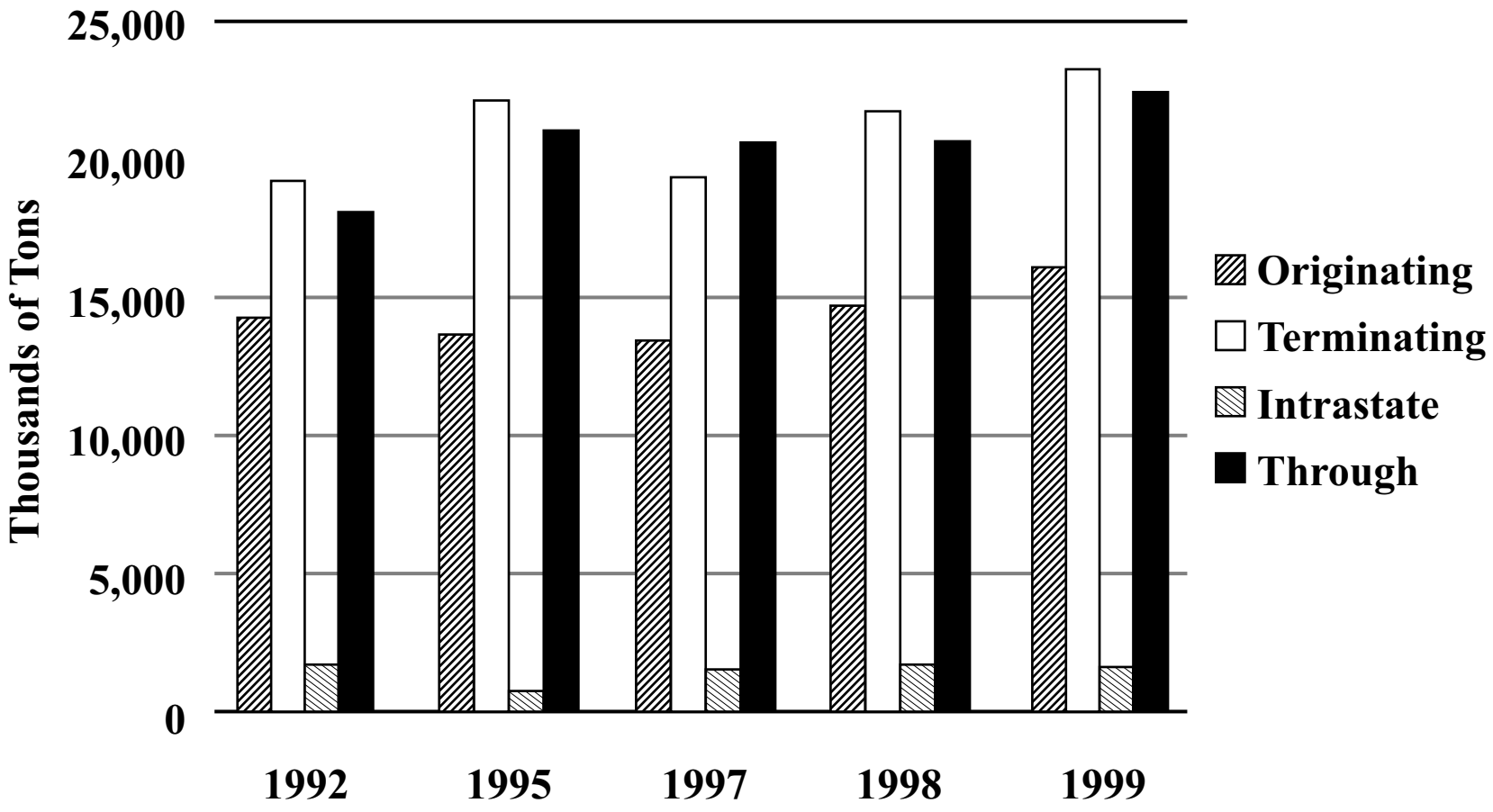


Figure 2-8

Oregon Rail Freight Traffic
1992 - 1999



Lane County is the next largest originator/terminator with 3 million tons. Morrow originated/terminated 2.7 million tons (some of this coal going to the Portland General Electric Company's Boardman power plant. Four counties – Linn, Yamhill, Lincoln, and Douglas – were the origin or destination of 5.7 million tons all together. All other counties orginiated/terminated less than 1 million tons each. Figure 2-9 presents a graphic display of county volumes. With the exception of Morrow and Lincoln, the counties along the I-5 Corridor produced greater volumes relative to other counties in the state.

Oregon Tonnage versus Washington State Tonnage

In the period 1992 to 1998, rail tonnage in Washington increased 16.2 percent. Over the same period, Oregon's rail tonnage increased only 9.7 percent. The difference likely is due to the UP service problems during 1997 and 1998. UP is Oregon's dominant Class I railroad, while BNSF is the dominant railroad in Washington. Accordingly, Oregon's total tonnage would have been affected to a greater extent by the UP's problems than would Washington. As UP's service performance recovered, so did its volumes – up 7.4 percent in 1999 from the previous year.

As shown in Table 2-5, both states terminate significantly more tons than they originate. Intrastate traffic is a minor share of total rail traffic for both states. Also, through traffic for both states is a major share of total rail traffic – 25.8 percent for Washington and 35.1 percent for Oregon in 1998.

Table 2-5
Washington and Oregon Freight Rail Tonnage
1992 and 1998
(thousands of tons)

State	Year	Originating	Terminating	Intrastate	Through	Total
Washington	1992	13,286	30,238	5,696	15,275	64,495
	1998	17,380	31,682	6,540	19,370	74,971
Oregon	1992	14,413	19,362	1,834	18,229	53,837
	1998	14,744	21,828	1,764	20,733	59,068

FREIGHT TRAFFIC FORECASTS

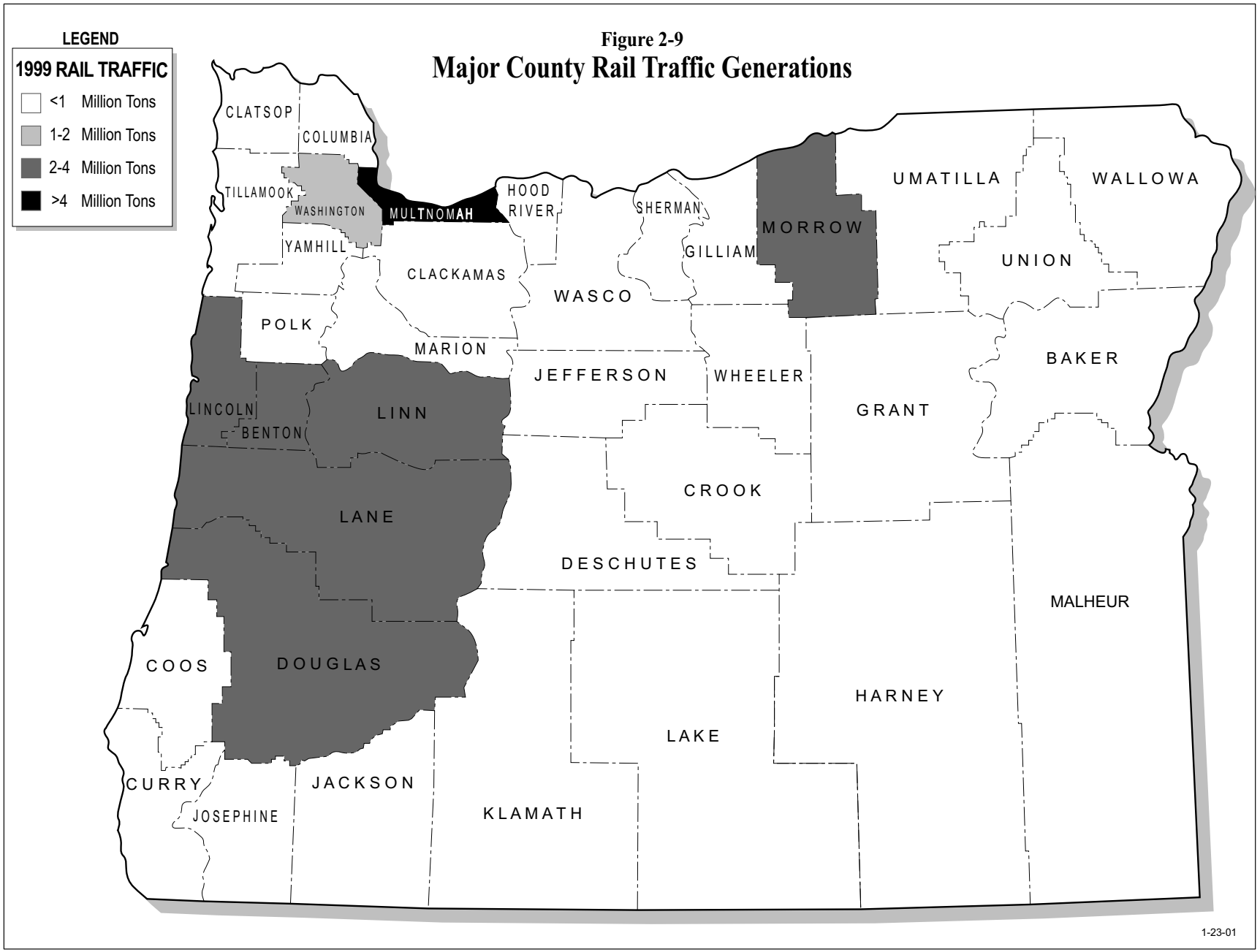
The future of rail traffic in Oregon is mixed. Following the sizeable growth in rail traffic between 1986 and 1992, as discussed earlier, it has leveled off. However, there are a lot of forces at work that make the future very difficult to predict.

Historic Trends Since 1976

Prior Oregon rail plans examined rail traffic between 1976 and 1992. The year 1976 was chosen as representative of a normal business year. Originating and terminating rail tonnage in the aggregate held fairly constant between 1976 and 1985 ranging between 21 and 23 million tons before jumping to almost 28 million in 1986. The characteristics of the traffic varied somewhat over the period, but typically more tonnage was shipped from the state than into it. That trend has since reversed.

Figure 2-9

Major County Rail Traffic Generations



A constant pattern throughout the period 1976-1986 was the dominance of two commodities – wood and farm products. Commodities other than those each ranged between 1 and 4 percent of total originating and terminating tonnage between 1976 and 1985. However, the 1992 statistics contained in the 1994 *Oregon Freight Rail Plan* revealed that other commodities had risen to over 59 percent of the same totals, and in 1999 they were up to 66 percent. The shift in farm products from a major originating commodity to a major terminating commodity was another change. Another change is that commodities carried in piggyback trailers or containers are lumped under other commodities if their specific identity is not known.

As evident from Table 2-3, six commodities or commodity groups dominate Oregon's rail traffic, accounting for three-fourths of all rail traffic originating, terminating or moving through the state. There are also major differences in originating and terminating traffic. Lumber/wood products and pulp/paper products are the largest originating rail commodities, with little terminating tonnage, while farm and chemical/allied products largely terminate with few originations. Miscellaneous mixed shipments (intermodal) shows more balance than the others.

Oregon Transportation Plan Projections

Projections in the *Oregon Transportation Plan* (OTP) established rail freight growth at 2.5 percent per year from 1990 to 2010. At this rate, rail traffic would grow by 64 percent over 20 years. From 1992 to 1999, rail traffic grew at an average of 2.4 percent per year from 53.8 million tons to 63.5 million tons. However, tonnage dropped in 1997, only to recover the following year.

Projection Difficulties

The difficulty in predicting freight movements is that many factors influence traffic movements. For example, a large part of the rail tonnage growth in Oregon is related to international trade through the state's water ports and associated public and private terminals. These movements are not always easy to predict as they are subject to port competition, foreign policy, and economic changes. Examples include the Russian grain embargo and the recent Asian situation, the center of trade with Asia shifting so that a route through the Suez Canal to East Coast ports becomes competitive with land bridges from West Coast ports, and any number of other reasons. Forecasts based solely on socio-economic projections are not sufficient to visualize these types of changes.

The principal source of originating traffic, lumber and wood products, also has its ups and downs. Production and demand are sensitive to the economy, as construction is one of the first activities to respond to economic changes. Then there are environmental issues that seem to constantly encompass timber harvesting and forest management practices.

If these factors do not generate enough doubt, there are others within the transportation industry itself. For example, the Clean Air Act and fuel prices are representative of initiatives and situations that appear to push modal choices in one direction, while the shipping public appears to be pushing in another. In short, a projection of future freight traffic is not an easy task.

Forecasts from Standard & Poor's DRI show that freight revenue and tons (volume) are expected to grow slightly more or slightly less than the nation's Gross Domestic Product (GDP). From 1996 to 2006, GDP is nationally forecast to grow at 24 percent, while freight tonnages and revenues are forecast to grow at 21.5 percent and 30 percent respectively. Airfreight is forecast to grow the fastest, followed

by rail intermodal, as seen in Table 2-6 below. Railcar revenues and tons are expected to grow annually at 1.7 percent and 1.6 percent respectively.

Table 2-6
Domestic Freight Shipment Growth, 1996 - 2006[7]
(in percent change annually)

Mode	Revenues	Tonnages
Air	8.2	8.2
Pipeline	1.0	1.0
Rail	1.7	1.6
Rail Intermodal	4.6	4.5
Truck	2.6	2.3
Water	0.8	0.9

Source: Standard & Poor's DRI, U.S. Freight Transportation...to 2006.

Oregon Projections

There are a number of forces at work, however, which provide a view of the future, and projections are made by different organizations. In addition, as a large amount of Oregon's rail traffic is oriented to port operations, port projections provide another barometer for future rail use. Forecasts were recently made for the Port of Portland and the entire Portland metropolitan area.[8] These are noted in the following commodity descriptions.

Intermodal

The *OTP* provides a basic framework for public decisions which encourages modal choices and places an emphasis on intermodal opportunities. Intermodal truck-rail has been the big growth sector of long-haul transportation due to a variety of reasons ranging from economics to the truck driver shortage.

In 1998, intermodal loadings nationwide totaled 8.8 million units continuing a two-decade-long growth trend. In 1980, 3.1 million trailers and containers were handled by rail, reflecting an average annual growth of 300,000 units or almost 10 percent. Intermodal traffic now accounts for 17 percent of all rail revenue, second to only coal. The continued growth of intermodal appears to be limited only by equipment shortages, terminal capacity constraints, and service limitations – none of which is an insurmountable problem. In Oregon, originating and terminating intermodal traffic (i.e., mixed shipments) accounted for just over 8 percent of 1992 inbound and outbound rail tonnage, having doubled since 1986, and stood at 11.8 percent in 1999. Factors in the past which have driven Oregon's intermodal traffic include having a large international container port (Port of Portland), a base of export commodities such as lumber and paper which can be containerized, and a large metropolitan area (Portland). These factors should continue to be important well into the future. However, growth may be tempered by the inability to deepen the Columbia River channel or actions to breach Snake River dams.

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[7] Forecasts are for primary shipments from origins to destinations. Due to lack of data, the forecasts do not include secondary shipments.

[8] ***Commodity Flow Analysis for the Portland Metropolitan Area***, ICF Kaiser, Columbus Group, Reebie Associates, the WEFA Group, and the Port of Portland, April 1999. Hereafter, the study is referred to as Port of Portland.

Intermodal by the railroad definition means the movement of trailers and containers. It is divided into two components – international and domestic. Oregon is fortunate to be in a position to take advantage of both. International trade through Oregon's ports has seen continued growth and is forecast to continue at a rate of 4 percent for the short term (to 2006), and continue at a rate of 3.7 percent in the long term (to 2030).[9] In regard to the latter, both of the Class I railroads operating in the state are making efforts to capture mainly domestic traffic that would otherwise move by truck in the I-5 Corridor.

While intermodal, as mentioned above, in the railroad definition is limited to trailers and containers on rail cars, the full definition of the term means the transfer between modes and transport of any commodity. Based on this definition, intermodal traffic would include traffic handled through bulk transfer facilities, lumber reloads, marine terminals, and other such facilities not always associated with intermodal shipments of containers and trailers on rail cars. When viewed in this context, the future of rail intermodal is generally positive, provided the railroads can provide the service necessary to attract and retain these diverse types of traffic.

Lumber and Wood Products

As noted in Table 2-3, this commodity group originates more rail tonnage than any other in Oregon. Accordingly, domestic demand for this commodity will have a palpable effect on rail shipments in the state. North American lumber (including soft and hardwoods) production for the period 2000-2004 is expected to decrease between 1999 and 2001 by 1.5 billion board feet from its 1999 peak. However, production should recover and stabilize in 2004 at 63.8 billion board feet in 2004.[10] Production in Oregon has had a slightly different trend. Nine billion board feet of timber were harvested in Oregon in 1971. The harvest in 1997 was 4.1 billion board feet.[11] Much of this decrease was due to the reduction in harvesting from federal lands (57 percent of the state's forests) which dropped to 650,000 board feet in 1997, as compared with 5.5 million in 1972.

Primarily the U.S. building and housing material markets drive domestic demand for wood products. New housing construction accounts for more than a third of U.S. consumption of softwood and structural panels.[12] The dip in production shown in Table 2-7, as measured in cubic meters, is a consequence of an expected decline in new residential housing starts in 2000-2001. Besides the decline of domestic production and demand, there are other factors affecting lumber and wood product shipments. These

Table 2-7
North American Softwood Lumber Production
(million cubic meters)

1980	1995	1999	2004
44,700	58,327	63,512	61,374

Source: WWPA, Statistics Canada; Forecast IWMRI.

[9] Port of Portland, p. 32.

[10] International Wood Markets Research, Inc, Wood Markets 2000 Edition, The Solid Wood Products Outlook, page 129.

[11] Oregon Department of Forestry Annual Report for 1997, per ODF Website.

[12] ECE Timber Committee, 58th Session "Statement of the U.S. Market: Review and Prospects".

include foreign harvests, price of domestic supply versus the price of supply from other countries which may be cheaper, trade restrictions on U.S. exports in other countries, interpretation of environmental laws in the U.S. and other countries, among other things. Consequently, rail shipments of lumber and wood products can expect a decline in the next few years. However, with improving domestic economic conditions, rail shipments should begin to rise after 2001.

Future export demand for U.S. wood products will depend considerably on the economic fortunes of trade partners in this commodity. Oregon's export wood shipments exports move mostly by truck through the Port of Portland. Accordingly, the vagaries of the wood export market will have little effect on rail shipments in the state. However, tariff rates on Canadian timber can impact the level of Canadian lumber being imported into the US and its ripple effect on timber production in Oregon.

Forecasts made for the Portland area's trade in lumber and wood products show domestic annual growth at 2 percent from 1996 to 2006 and 1.5 percent from 2006 to 2030.[13]

Pulp and Paper Products

Pulp and paper products will remain a large share of Oregon rail shipments. However, future projections must remain modest and anticipate continued annual variability in shipment volumes due to changing international and domestic demand and price competition. This caution is reflected in the Portland forecasts that show a 1.4- percent annual growth rate for domestic trade from 2006 to 2030.[14] Oregon's overseas pulp and paper exports move mostly by truck to the Port of Portland, and therefore are not a factor in intrastate rail shipments.

Food and Kindred Products

In constant dollar terms, total domestic shipments have averaged a 1.7 percent annual rate of increase during the 1987-1997 decade.[15] Non-discretionary expenditures, food and food product expenditures exhibit less variability during most phases of the business cycle. During the next three to four years, domestic demand and associated shipping requirements can be expected to grow at the historical rate reflected in domestic shipments of 1.7 percent. The Portland forecasts show a 1.4 percent long range (2006-2030) annual growth rate for domestic food and kindred product shipments.[16] Oregon's exports of this commodity group move mostly by truck or barge to the Port of Portland, and therefore are not a factor in the state's rail shipments.

Farm Products

Farm products generate the second largest rail tonnage of the various commodity groups in Oregon. Oregon terminating and through rail flows are related principally to exports, with Asia being the largest market. International trade through the Port of Portland is forecast to grow at 2.7 percent yearly in the short term (to 2006) and decrease after that to a rate of 1.0 percent (through 2030).[17] Farm products include grains (i.e., wheat and corn).

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[13] Port of Portland, p. 47.

[14] Port of Portland, p. 49

[15] This figure represents the change in value of all products and services sold by establishments in the food and kindred products industry. Source: U.S. Dept. of Commerce.

[16] Port of Portland, p. 46.

[17] Port of Portland, p. 39.

Chemicals and Allied Products

This commodity group is largely rail-borne shipments of soda ash and potash bound for export through the Port of Portland. Originating in various inland points in the U.S and Canada, soda ash and potash are comparatively long-haul bulk commodities well suited to rail transport. The export growth rates for the chemical commodity group are more robust than most at 5.9 percent and 4.8 percent for the short and long term, respectively.[18]

RAIL ROLE IN OREGON FREIGHT TRANSPORTATION

Two sources of data provide insight into the role that rail transport plays in relation to the other freight-transporting modes in Oregon.

U.S. Commodity Flow Survey

The first is the 1997 *Commodity Flow Survey* (CFS). [19] The CFS captures data on shipments originating in the 50 states and the District of Columbia. Some business sectors are excluded, however. The survey coverage excludes establishments classified as farms (food and kindred product industries are included), forestry (lumber and wood product industries are covered), fisheries, governments, construction, transportation, foreign establishments, services, and most establishments in retail. Also, because of unresolved industry-wide reporting issues, shipments of oil and gas extraction establishments were excluded from the 1997 survey, and were to be used as input in a subsequent CFS publication. Shipments of crude petroleum were excluded, as they are a product of oil and gas extraction.

Various Oregon freight shipment characteristics taken from the 1997 CFS are presented in Table 2-8 below. It should be noted that these figures differ from originating shipments cited in the STB Waybill Sample data. The differences result from the fact that both sets of figures (Waybill Sample and CFS) are estimates that are derived differently.

Table 2-8
Oregon Originating Freight by Mode
1997

Mode	Tons (000)	Ton-miles (millions)	Average Shipment Distance (miles)	Value ($ billion)	Value per Ton ($)
Rail	9,169	12,623	1,551	4.8	524
Truck	117,580	19,736	182	76.2	648
Water	15,525	2,251	W	2.4	155
Air	61	104	1,685	2.8	45,902
Multiple	2,984	2,311	749	12.8	4,290

W - withheld
Source: 1997 Commodity Flow Survey.

[18] Port of Portland, p. 43.

[19] *1997 Economic Census – Transportation*, USDOT Bureau of Transportation Statistics and US DOC, Economics and Statistics Administration, US Census Bureau, December 1999.

Based on review of Table 2-8, rail originates less traffic than both the truck and water modes. In terms of ton-miles generated, however, it is exceeded only by trucks, but only slightly compared to the difference in tonnage. This difference in rail's relative importance in tonnage compared to its relative importance in ton-miles is due to the relatively short average haul distance for trucks shown in the next column. The truck statistics include both over-the-road long-haul trips and local distribution moves. In terms of average shipment length, rail is exceeded only by air, and even then not by much. Shipment value, however, is a different story. The rail mode falls near the bottom in terms of aggregate value, and next to last in value per ton. Only the water mode is less in the case of the latter. Thus, the transportation provided by the rail mode can be summarized from this data as the movement of relatively low-value commodities over long distances.

Portland Commodity Flow Survey

The second data source is from the previously referenced commodity flow study conducted for the Portland metropolitan area. It presents a somewhat different picture (see Table 2-9) as it contains both inbound and outbound shipments and is derived from a combination of databases and models.

Based on the data shown above, rail is a much larger player in the transportation market based on tonnage, especially in the international market. The relative relationships are not forecast to change significantly through 2030.[20]

Table 2-9
Portland Area Freight Movements by Mode
1997

Mode (million tons)	Int'l Freight (million tons)	Domestic Freight (million tons)	Totals
Rail	11.76	31.23	42.99
Truck (1)	6.09	97.36	103.44
Intermodal	0.27	2.76	3.03
Barge	5.20	12.96	18.16
TOTALS (2)	23.32	144.34	167.66

(1) Includes air, 16,000 international tons, and 225,200 domestic tons.
(2) May not add due to rounding.

Source: Commodity Flow Analysis for the Portland Metropolitan Area, p. 15.

RAIL ASSISTANCE FUNDING

Over the years, the railroad system in Oregon has been privately owned and funded. The level of maintenance was determined by the financial strength of the railroads involved. Some of the railroads (Union Pacific and Burlington Northern) were better able to invest in their infrastructure while others (Southern Pacific) had fewer resources available. This greatly impacted the condition of each of the carrier's branch lines.

[20] Port of Portland, p. 21.

Historically, Class I railroads shunned public assistance, fearing too many attached strings. But rapid growth in small railroads has expanded the universe of parties who have different perspectives about public help.

However, over the last 20 years there has been growing assistance by government in funding projects on Oregon's light density rail system. This has occurred principally with state-administered dollars. Two factors are intensifying the need for public investment in the rail infrastructure. One is the huge growth in Oregon's short line mileage during the 1990's as the Class I carriers spun off marginal routes.

Another compelling factor is the railroad industry's on going transition from a standard freight car gross weight of 263,000 pounds to 286,000 pounds. The advent of these heavier vehicles has generated additional needs in terms of weight bearing capacity of both track and structures on lighter density routes. There is no question that the heavier cars are harder on the physical plant than their immediate predecessors.

Historically, the railroad's ability to maintain and improve lines has been closely tied with the revenue produced by these lines, and this relationship has not changed. Now, shippers demand the heavier cars because they can move the same amount of freight in fewer cars. The effect of this is to reduce short line revenue because most small carriers are compensated by their Class I partners on a per-car basis. The conundrum for short lines is that the heavier cars are escalating their maintenance costs while reducing revenue.

Over the past two decades federal funding has provided the backbone of public support for rail projects in Oregon. State participation has occurred through investment of lottery funds for line purchase and, for the first time in 2000, by direct general fund appropriation. In 1979, ODOT received authority from the Legislature to provide rehabilitation assistance, facilitating the state's participation in administering funds from the federal Local Rail Service Assistance program. In 1985, the Legislature established the State Rail Rehabilitation Funds and authorized a wide range of governmental entities to enter into the railroad business for profit.

Federal Funding of Rail Projects

The Oregon Department of Transportation has used federal funds, wherever possible, to support rail projects. These funds have come through the federal Local Rail Freight Assistance (LRFA) program, which is designed to fund freight rail line rehabilitation, rail facility construction, and acquisition. The program was originally known as the Local Rail Service Assistance (LRSA) program. Use of these funds requires a 30 percent match for rehabilitation and 50 percent match for construction and acquisition. Federal provisions permit the funds to be used as either grants or loans at the discretion of the state. In Oregon, the funds have been used as grants. The program has been a target for elimination by past and current federal administrations, and appropriations were last made in 1995.

Table 2-10 provides a listing of public assistance in Oregon over the past 21 years. These projects have totaled more than $17.0 million for the period 1980 to 2001 and have been targeted for rail line rehabilitation and service preservation. The projects occurring between 1980 and 1995 and totaling $8.3 million were funded through the LRSA/LRFA programs.

Table 2-10 Public Assistance to Oregon's Short Line Railroads

	City of Prineville Ry.		Union Ry of Oregon		Lake County RR.		Willamina & Grande Ronde		Port of Tillamook Bay RR.		
Year	Federal	Other	Federal	Other	Federal	Other	Federal	Other	Federal	Other	Total
1980	$ 595,571	$ 255,245	$ 107,623	$ 46,124							$ 1,004,562
1981	$ 374,660	$ 160,569					$ 217,974	$ 93,418	$ 223,441	$ 95,761	$ 1,165,823
1982	$ 250,000	$ 107,143									$ 357,143
1983	$ 199,600	$ 85,543					$ 110,250	$ 47,250	$ 89,750	$ 38,464	$ 570,857
1984	$ 345,900	$ 148,243									$ 494,143
1985	$ 263,057	$ 112,739									$ 375,795
1986					$ 334,071	$ 143,173					$ 477,244
1987					$ 172,371	$ 73,873					$ 246,244
1988											$ -
1989											$ -
1990									$ 665,305	$ 285,131	$ 950,435
1991											$ -
1992									$ 530,549	$ 227,375	$ 757,924
1993									$ 813,747	$ 348,749	$ 1,162,496
1994									$ 262,954	$ 112,694	$ 375,648
1995					$ 259,210	$ 111,090					$ 370,300
1996											$ -
1997											$ -
1998											$ -
1999											$ -
2000											$ -
Total	$ 2,028,788	$ 869,480	$ 107,623	$ 46,124	$ 765,652	$ 328,136	$ 328,224	$ 140,668	$ 2,585,745	$ 1,108,174	$ 8,308,614

	Central Oregon & Pacific		Willamette & Pacific		Portland & Western		Willamette Valley Ry.		Albany & Eastern Ry.		
Year	Federal	Other	Federal	Other	Federal	Other	Federal	Other	Federal	Other	
1996							$ 300,000	$ 200,000			$ 500,000
1997											$ -
1998	$ 5,500,000	$ 1,375,000			$ 700,000	$ 175,000					$ 7,750,000
1999											$ -
2000				$ 250,000						$ 250,000	$ 500,000
Total	$ 5,500,000	$ 1,375,000	$ -	$ 250,000	$ 700,000	$ 175,000	$ 300,000	$ 200,000	$ -	$ 250,000	$ 8,750,000
										Grand Total 1984 through 2000	**$ 17,058,614**
										Federal	$ 12,316,032
										Other	$ 4,742,582

NOTE: The category of "other" is normally local match supplied by the railroad involved in a track rehabilitation project. The exceptions are the two $250,000 projects for the Willamette & Pacific Railroad and the Albany & Eastern Railroad which were state general funds. The $500,000 payment to the Willamette Valley Railway was associated with the construction of a highway project.

The 1992 Intermodal Surface Transportation Efficiency Act (ISTEA) and the 1998 Transportation Equity Act for the 21st Century (TEA 21) both contain several provisions for rail assistance project funding. TEA 21 Section 7202, Light Density Rail Line Pilot Projects, is intended to replace LRFA with $17.5 million in grants authorized annually. However, funds have yet to be appropriated. Another TEA 21 rail initiative, Section 7203, Rail Rehabilitation and Improvement Financing (RRIF), provides for federal loans or loan guarantees up to an aggregate amount of $3.5 billion, with at least $1 billion to go to non-Class I railroads. Priority is to be given to projects which:

- Enhance safety
- Enhance the environment
- Promote economic development
- Are included in state transportation plans
- Promote U.S. competitiveness
- Preserve/enhance service to small communities/rural areas

The final rules for the program were issued on September 5, 2000 (49 CFR 260). The focus of the approval process for funding is an analysis of the risk that the applicant will be able to repay the loan, and an assessment of the size of the credit risk premium which has to be paid up-front. The program is entirely different from the federal LRFA/LRSA programs of the past. Specifically, LRFA/LRSA programs were grant programs. RRIF is a loan program.

Benefit-cost analyses were required under the former federal LRFA rail assistance program to determine project eligibility. Since this program is not funded and is being replaced by the RRIF program, benefit-cost analyses are no longer needed. As discussed elsewhere, RRIF funds are disbursed as loans or loan guarantees, and the principal analyses required is a determination of the carrier's ability satisfy the terms of the loan.

Projects in Table 2-10 for 1996 through 2001 were funded through TEA 21 as priority projects, in conjunction with highway construction projects, or by direct appropriation of the Oregon Legislature. Some Oregon Economic and Community Development Department (OECDD) funds, totaling $4.5 million, were spent on rail projects during the last 21 years.

State Funding of Rail Projects

A variety of state sources have been utilized for rail assistance projects. Funds from ports and local jurisdictions are utilized to support rail projects. The state requires local jurisdiction participation in funding rail projects. The two most applicable state funding sources are discussed below.

State Rail Rehabilitation Fund: As mentioned earlier, Oregon established a State Rail Rehabilitation Fund in 1985. This fund is supported from the General Fund and is administered by ODOT. The fund can be used for rail line acquisition, rehabilitation or improvement of rail properties, planning, or any other method of reducing the costs of lost rail service. The authorizing language does not permit the state to address such critical concerns as railcar availability, freight service enhancements, and public and private partnership for maintaining service, although it does permit track rehabilitation projects. *The Legislature has never appropriated funding for this program.* However, the Legislature used the Fund as a vehicle to funnel $500,000 in General Fund dollars into projects on the W&P and A&E railroads.

Economic Development Funds: In 1984, the people of Oregon authorized the State Lottery. A portion of lottery funds was directed to OECDD, which has used the funds to assist rail projects through its loan and grant programs. These funds are available for a wide range of projects. Rail projects must, however, compete based on department criteria and fund availability. As previously mentioned, support for rail projects by the department has totaled approximately $4.5 million. These were for line purchases or studies.

OECDD's Strategic Reserve Fund, Regional Strategy Fund, Special Public Works Fund, and Port Revolving Loan Fund have supported rail projects. In all cases, these funds have supported acquisition and rehabilitation projects.

Short Line Funding Needs

As a part of the Oregon Rail Plan, all of Oregon's short line railroads were surveyed to determine future needs and their interest in a federal RRIF project or a desire for a grant. ODOT conducted the survey by mail. Follow-up efforts were made by telephone to encourage responses.

In all, responses were received from 8 of 16 short line railroads surveyed. The replies yield a response rate of 44 percent, which is slightly higher than the response rate to this plan's shipper survey discussed in a subsequent section. Three of the eight were interested in grants only. One cited no needs and thus did not indicate a preference. The remaining four were interested in both grants and the RRIF program.

Needs expressed consisted principally of rehabilitation of track and bridges, but some equipment and debt refinancing needs also were indicated. Much of the rehabilitation need was related to 286,000-pound cars. Total car weights of 286,000 pounds represent about a 10 percent increase over previous maximum car weights. These cars are popular with shippers and Class I railroads as they represent opportunities to maximize loads and minimize operating costs. However, many short lines do not have the underlying track and structures capable of supporting these heavier cars. The needs expressed by the survey responses totaled $69.0 million, due mostly to deferred maintenance exacerbated by the 286,000-pound car issue. Figure 2-10 illustrates short line assistance requests by type of assistance, while the specific requests of the short lines appear in Table 2-11.

While eight of the state's short lines participated in the survey, 10 others did not. However, non-responses do not automatically mean these 10 railroads do not have future needs or desire for participation in government funding programs.

In order to more accurately quantify total statewide needs, estimates were prepared for all short lines in the state based on condition and cost data contained in various studies relating to needs predicated by 286,000-pound cars[21]. If all rail sections with 90-pound (per yard) rail and less were replaced, $174 million would be required. Bridges could add another $56 million, for a total need of close to $230 million[22], exclusive of equipment, debt financing, etc.

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[21] Three studies were reviewed. These were: *The Ten-Year Needs of Short Line and Regional Railroads*, prepared by the Standing Committee on Rail Transportation of the American Association of State Highway and Transportation Officials (AASHTO), December 1999*; An Estimation of the Investment in Track and Structures Needed to Handle 286,000-pound Rail Cars*, prepared for the American Short Line and Regional Railroad Association by ZETA-TECH Associates Inc., May 26, 2000; and *286,000# Upgrading Study Report for Iowa Branchlines*, prepared by Robert Folkmann, Program Management, Iowa Department of Transportation, July 1998.

Table 2-11
Oregon Short Line Funding Needs

Railroad	Project Description	Estimated Cost	Railroad Total Request
Albany & Eastern	Cross tie renewal	$ 1,215,000	
	Rail renewal	$ 550,000	
	Bridge repair	$ 150,000	$ 1,915,000
Central Oregon & Pacific	Cross tie renewal, surface and line	$ 6,043,725	$ 6,043,725
City of Prineville	Cross tie renewal, surface and line	$ 2,773,835	$ 2,773,835
Lake County Railroad	Cross tie renewal, surface and line	$ 446,416	
	Rail renewal	$ 1,660,881	$ 2,107,297
Mount Hood Railroad	Cross tie renewal	$ 500,000	
	Bridge repair	$ 155,000	
	Retaining wall construction	$ 100,000	
	Locomotive acquisition	$ 100,000	
	Access pavement	$ 75,000	
	Debt refinance	$ 1,100,000	$ 2,240,000
Port of Tillamook Bay	Tunnel repair	$ 1,000,000	
	Bridge repair	$ 1,500,000	
	Rail renewal	$ 450,000	
	Cross tie renewal	$ 1,530,000	
	Locomotive acquisition	$ 450,000	
	Debt refinance	$ 1,300,000	
	Maintenance equipment acquisition	$ 690,000	$ 6,920,000
Portland & Western	Rail renewal	$ 23,800,000	
	Bridge repair	$ 12,205,000	
	Cross tie renewal	$ 8,861,000	
	Turnout renewal	$ 1,620,000	$ 46,486,000
Willamette Valley Ry.	Rail, cross ties and turnout renewal	$ 1,657,600	$ 1,657,600
	Total	$ 70,143,457	$ 70,143,457

While rail, tie, and roadbed needs are fairly easily established, bridge needs, especially for metal bridges, typically require a more technical evaluation by experienced railway bridge engineers. Most short line operators do not have this technical expertise in-house, nor can they afford the required analyses. Provision of technical expertise, or funding to pay for it, should comprise one component of any state-funded assistance program.

Class I Funding Needs

Union Pacific and Burlington Northern Santa Fe were also contacted with regard to their needs for tunnel clearances on their roughly parallel I-5 Corridor routes in Oregon. These routes link the Pacific Northwest with Southern California and the Southwest. Both railroads indicated in the past that their routes have potential for gaining major truck traffic. They have also stated that improving the tunnel clearances on the routes to permit

[22] Based on an average sum per railroad.

two "high-cube" or 9-foot 6-inch containers stacked one on top of another in a double-stack configuration is imperative to enhancing the attractiveness of their routes for traffic currently moving by truck. Most of the tunnel clearance restrictions on the two routes for high-cube double-stack shipments are in Oregon.

UP has 20 such tunnels in Oregon, and four more in California. The 20 Oregon tunnels are all within a stretch of about 50 miles in Lane County between Oakridge and Cascade Summit. Although plans have been prepared, funds for the improvements in all 24 tunnels were not included in the railroad's 2001 capital budget. UP declined to specify a dollar sum for the improvements. Two of the California tunnels are just south of the Oregon State Line, and two others are between Oxnard and the San Fernando Valley.

BNSF has identified needed improvements to five tunnels on its north-south line through central Oregon. The tunnels are located in an 88-mile stretch in Wasco and Jefferson Counties. A preliminary estimate of improvements to provide clearances sufficient for high-cube double-stack traffic totals $6.3 million. The railroad stated that a preliminary engineering analysis could bring the estimate down. BNSF also indicated that it would be interested in state support contributing to the improvements of the tunnel clearances, as the route's revenues do not currently justify the investment.

While the tunnel clearances are very important, shippers have indicated that rail transit time must also be enhanced if the railroads are to be successful in attracting I-5 truck traffic. Specifically, shippers have reported that Seattle-originated shipments need "second morning delivery" in Los Angeles. The same would be true of northbound shipments. Any improvements needed to meet this goal would help Oregon since transit times would also be reduced for Oregon trafffic. Current railroad transit times do not meet this standard. There may also be a future need to increase the capacity of the railroad bridge over the Columbia River between Vancouver, Washington and Portland.

Whatever the merits of these tunnel clearance and bridge capacity improvements may be, Oregon does not have the funding in place to support these improvements, just as it does not have the funding in place to assist the state's short lines with their needs related mostly to 286,000-pound cars.

SHIPPER SURVEY

As part of the rail planning process, ODOT surveyed numerous Oregon rail shippers to understand their concerns with regard to their rail service, as well as their opinions on the role that ODOT's Rail Division should play with regard to rail service. ODOT mailed the survey to more than 120 rail shippers in the state. ODOT targeted firms whose facilities:

- Have direct physical access to the national rail system through sidings or spurs
- Are served by Class I carriers, short lines, or both
- Are located in all rail-served parts of the state
- Ship and receive a variety of commodities
- Ship and receive in large and small volumes

In soliciting their participation in the survey, ODOT guaranteed the shippers anonymity. No effort was made to call non-respondents to encourage their participation. In all, 47 shippers completed survey. The

47 survey respondents are located in all parts of the state served by rail. However, more than half of the respondents are located west of the Cascades in urban and rural areas bounded by Portland on the north and Eugene on the south. More than half of them are served by short lines. While all are directly served by rail, many also use reload facilities. They ship and receive a variety of commodities by rail, and depend on rail for almost half of their inbound and outbound shipments. For them, the most important rail service attributes include car availability, price or cost of rail service, and reliable transit times. Many feel that further consolidations of major carriers and the capital improvement needs of short lines are major issues that they will face in the future. The specific findings of the survey appear below.

Most Respondents Are Served by Short Lines

More than half of the shippers reported being served by short lines. Eleven shippers are served by UP, and 7 shippers are served by BNSF. Three of the respondents enjoy competing service from both UP and BNSF. Shippers named 13 short lines as serving carriers. In all, short lines serve 26 of the respondents located in various parts of the state. The Portland & Western Railroad serves more respondents than any of the other 12 short lines. The short lines, the Class I carriers, and the numbers of survey respondents they serve appear in Table 2-12.

Union Pacific Railroad Is the Major Short Line Connection

Eighteen respondents of the 26 shippers served by short lines identified UP as the connecting carrier for the individual short lines or combination of short lines serving their facilities. Short line combination service would include two or more short lines involved in a haul between a shipper's facility and a Class I railroad. Such would be the case, for example, with rail-served shippers in White City; their routing would be the WCTU Railway from White City to Tolo, and the Central Oregon & Pacific Railroad between Tolo and the UP at either Eugene or Black Butte, California.

Five respondents reported that their serving short lines interchange cars with BNSF. One respondent reported that its short line enjoys competitive connections with both UP and BNSF.

Shippers Use Off-site Railroad Facilities

Twenty-one shippers, or 45 percent of respondents, reported utilizing reload facilities, i.e., facilities where shippers arrange for transshipment of cargo from truck trailers into

Table 2-12
Oregon Railroads and Respondents Served

Short Lines	Respondents Served
Central Oregon & Pacific Railroad	4
Willamette & Pacific Railroad	3
Portland & Western Railroad	7
City of Prineville Railroad	1
Wyoming & Colorado Railroad	1
Lake County Railroad	1
WCTU Railway	3
Port of Tillamook Bay Railroad	1
Mount Hood Railroad	1
Oregon Pacific Railroad	1
Albany & Eastern Railroad	1
Idaho Northern & Pacific Railroad	1
Portland Terminal Railroad	1
Total Served by Short Lines	26
Class Is	
UP	11
BNSF	7
UP and BNSF	3
Total served by Class Is	21
Total Rail-served Shippers	47

rail boxcars or onto flatcars. Eleven shippers reported utilizing rail intermodal facilities, i.e., facilities where trailers or containers are loaded on and off rail flatcars or double-stack cars.

Most Respondents Use Off-site Facilities Located on Both Class I Railroads

Fifteen shippers, or 32 percent of respondents, reported making use of off-site facilities having access to UP and BNSF, whereas 10 shippers reported using such facilities on one or the other Class I railroad or on short lines.

Shippers Have Varied Reasons for Making Use of Reload Facilities

The reason more often cited by the respondents for utilizing reload facilities is to access a Class I railroad in addition to the one that serves them. Six respondents, all of whom are UP served, use reload facilities to ship cargo on BNSF. One respondent, served by a short line that connects with BNSF, reported using a reload facility to access UP. Other reasons for reload facility use include:

- Three shippers reported that brokers or customers request specific routings that involve reloads.
- Three rail-served shippers can achieve more competitive rates through use of reload facilities.
- Two shippers use reload facilities when cars are in short supply or are unavailable from the carrier serving the shippers' facilities.

Respondents Report a Variety of Inbound Shipments

Thirty respondents reported receiving numerous commodities by rail. Some shippers receive multiple commodities. Specifically:

- 10 receive forest products
- 5 receive grain shipments
- 4 receive chemicals
- 3 receive agricultural products other than grain
- 3 receive energy products, including coal
- 2 receive various industrial products
- 2 receive intermodal shipments of unspecified commodities
- 1 receives pulp and paper
- 6 receive other diverse commodities

The 30 shippers receive annually a total of about 52,000 carloads and 130 intermodal trailers and containers.

Shippers Use Rail and Truck Almost Evenly for Inbound Shipments

Based on the shippers' responses, it appears that shippers tend to use rail and truck almost evenly for inbound shipments. A simple, non-weighted average of 37 shippers' responses indicates that 48 percent of their inbound shipments arrive by rail (47 percent by carload and 1 percent by intermodal), and 52 percent by truck. Performing a weighted average was problematic, as not all shippers reported volume information.

Most Respondents Ship Forest Products

Thirty-six respondents reported shipping a variety of commodities. Two-thirds ship forest products. Some ship multiple commodities. Specifically:

- 24 ship forest products
- 3 ship grain
- 2 ship agricultural products other than grain
- 2 ship intermodal shipments of unspecified commodities
- 2 ship industrial products
- 6 ship other diverse commodities

The 36 shippers providing data ship more than 37,000 carloads and almost 7,000 intermodal trailers and containers per year.

Many Respondents both Ship and Receive Rail-borne Commodities

Included in the tallies above, 18 respondents reported both shipping and receiving commodities by rail.

Shippers Use Truck More than Rail for Outbound Shipments

Based on shipper responses, it appears that shippers tend to use truck more than rail for outbound shipments. A simple, non-weighted average of 37 shippers' responses indicates that 45 percent of their outbound shipments depart by rail (38 percent by carload and 7 percent by intermodal), and 55 percent by truck. Performing a weighted average was problematic, as not all shippers reported volume information.

Car Availability Tops List of Rail Service Attributes Important to Respondents

Shippers were asked to rank specific rail service attributes in terms of importance. Rankings were between 1 and 6, with 1 being most important and 6 being least important. Most, but not all, shippers ranked service attributes. The rankings were averaged. The results, which appear in Table 2-13, show that car availability is most important among the respondents.

Table 2-13
Ranking of Rail Service Attributes

Service Attribute	No. of Respondents	Ranking
Car availability	42	2.2
Cost / price	42	2.4
Reliable transit times	42	2.6
Responsiveness	41	3.9
Damage free service	41	4.3
Other	15	4.7

Table 2-14
Assessments of Rail Service Attribute Quality

Service Attribute	No. of Respondents	Poor	Fair	Good
Car availability	43	7%	47%	47%
Cost / price	42	14%	69%	17%
Reliable transit times	45	18%	60%	22%
Responsiveness	43	23%	49%	28%
Damage free service	44	7%	27%	66%
Other	8	13%	63%	25%

Shippers were also asked to assess the quality of these rail service attributes that they are experiencing. As shown in Table 2-14, most respondents were evenly divided on whether the quality of car availability from the railroads is either fair or good. A small percentage of respondents rated railroad car availability as poor. A majority of shippers felt that railroad performance with regard to transportation prices, reliable transit times, and responsiveness on service issues was fair.

Survey results suggest that short lines generally respond better to shippers' needs than do Class Is. Twenty-five shippers served by short lines rated their serving railroads' responsiveness. Of these, 84 percent rated the short lines' responsiveness as either fair or good; the split between fair and good was almost even. On the other hand, 18 shippers served by Class Is rated their serving railroads' responsiveness. Of these, 67 percent rated the Class Is' responsiveness as either fair or good; fair ratings outnumbered good ratings on the order of five to one.

Railroads received good marks from most shippers with regard to their ability to provide damage free service, though this is a lesser important service attribute (see Table 2-13).

The same analysis was performed with big shippers exclusively and then with small shippers exclusively to identify if the importance of rail service attributes and the quality of rail service experienced differed

Table 2-15
Ranking of Rail Service Attributes By Big and Small Shippers

Service Attribute	No. of Big Shippers	Ranking By Big Shippers	No. of Small Shippers	Ranking by Small Shippers
Car availability	8	2.1	10	1.8
Cost / price	9	2.0	9	3.1
Reliable transit times	9	2.8	9	2.7
Responsiveness	8	4.0	9	4.1
Damage free service	8	5.1	9	3.4

Table 2-16
Assessments of Rail Service Attribute Quality By Big and Small Shippers

Service Attribute	Big Shippers	Poor	Fair	Good	Small Shippers	Poor	Fair	Good
Car availability	9	0%	56%	44%	10	10%	40%	50%
Cost / price	10	10%	80%	10%	8	13%	75%	13%
Reliable transit times	10	20%	40%	40%	9	33%	44%	22%
Responsiveness	9	44%	33%	22%	9	11%	44%	44%
Damage free service	9	11%	22%	67%	9	0%	11%	89%
Other	4	25%	50%	25%	1	0%	0%	100%

between the two groups. For this analysis, big shippers were those that reported either dispatching or receiving 1,000 or more carloads and/or containers per year. Small shippers were those that reported dispatching or receiving less than 100 carloads and/or containers per year. Table 2-15 shows the results of the big shipper and small shipper ranking of attributes. Big and small shippers alike reported that car availability, cost, and reliable transit times are the most important attributes of their rail service.

As regards the quality of these rail service attributes experienced, small shippers assessed several attributes generally in the same way as big shippers did. As shown in Table 2-16, big shippers and small shippers both gave railroads predominantly fair to good marks for car availability. Most big and small shippers assessed the railroads' cost and transit time reliability as either fair or good. Also, most big and small shippers assessed the railroads' ability to provide damage free service as predominantly good. On the other hand, while most big shippers rated railroad responsiveness as either poor or fair, most small shippers rated this attribute as either fair or good.

Shippers Are Divided on Rail Service Quality Now Versus 10 Years Ago

Shippers were asked whether their rail service had improved, remained the same, or worsened over the last 10 years. Responses showed no clear trend over the period. Forty-one percent of all 47 respondents indicated that service has either improved significantly or somewhat; 19 percent indicated that service has remained the same; and 37 percent indicated that it has either deteriorated somewhat or significantly. Three percent offered no comment.

Almost Half of Shippers Cite the Creation of Short Lines as a Factor Affecting the Current Quality of Rail Service

Twenty-two shippers, or 47 percent of respondents, identified the creation of short lines as a major contributor to the current level of rail service that they are experiencing. The shippers indicated that the effect on the whole was positive: thirteen felt the new short lines had a positive effect, and six percent felt they had a negative effect.

Seventeen shippers, or 36 percent of respondents, identified the consolidation of Class I railroads in Oregon into two major rail systems as a major contributor to the current level of rail service that they are experiencing. The shippers indicated that the effect was negative: 14 felt that the consolidations had a negative effect, and 2 felt they had a positive effect.

Ten shippers reported inadequate car supplies as a major contributor to their current service levels. Another 10 shippers reported nothing in particular in terms of a major factor on service.

Twelve shippers identified 11 other factors, which either positively or negatively have affected the current level of rail service. These other factors are diverse. Those having had a positive effect include:

- Improved communications between the shipper and the railroad
- Technology which has improved productivity
- Access to a competing carrier through a reload facility, which has lowered transportation costs
- A lower demand for certain car types that has made them more available for one shipper

Those having had a negative impact include:

- Yard congestion, which has delayed car deliveries
- Class I inflexibility on rate issues – inflexibility that has in one case restricted a shipper's market growth
- High costs and poor service, generally
- Centralized operations, which have led to deterioration of local service

Most Shippers Report Increasing Rail Volumes

Despite the negative factors affecting rail service, about half of the respondents voiced a positive trend in Oregon rail shipments. Twenty-three shippers, or 49 percent of respondents, reported that their rail volumes increased during the last 10 years. For the same period, 14 shippers reported that volumes decreased, and 7 reported that their volumes remained the same.

Most Shippers Identify Further Class I Consolidations as a Major Issue

Several rail mergers in the recent past have resulted in major rail service disruptions. In Oregon, problems were particularly acute following to the UP's absorption of the former Southern Pacific Transportation Company in 1996. These problems have since improved, only to be followed by service problems resulting from the division of Consolidated Rail Corporation (Conrail) between Norfolk Southern Railway and CSX Transportation, two railroads who handle much Oregon's East Coast traffic. These problems persist today. It is hardly surprising, therefore, that 26 shippers, or 55 percent of the 47 respondents, identified additional consolidations among the large rail systems as a major issue that they will face in the future.

Fourteen shippers, or 54 percent of respondents served by short lines, identified the need for capital improvements on their serving short lines as a major issue. Many short lines are facing the need for expensive capital improvements, including track upgrades for handling heavier cars, in the near term. At the same time, they are limited to "spreading these costs" over few track miles as compared with Class I railroads. Clearly, financing the improvements for some short lines is a major challenge, and as a result some have pursued federal and state funding.

Table 2-17
Shipper Suggested Roles for ODOT Rail Division

Shipper Suggested Role for ODOT's Rail Division	Comments
Advocate service improvements and shipper interests	6
Provide information to shippers	1
Provide regulatory oversight for service and competition	11
Provide infrastructure support for lines	3
Provide regulatory oversight for safety	5
Total individual comments received	26

Shippers Mostly Control Rail Routing Decisions

Shippers reported that they, for the most part, make the routing decisions. Responses indicate that the shippers decide which routes shipments will follow between origin and designation 54 percent of the time. Consignees, or receivers, decide the route 23 percent of the time. Third parties, such as commodity brokers or freight forwarders, make the routing decisions 23 percent of the time.

Shippers See a Varied Role for ODOT's Rail Division

Shippers offered comments on roles that ODOT's Rail Division should play relative to their rail service. These were grouped into the five broad categories as shown in Table 2-17. Twenty-one shippers offered comments on specific roles, and some suggested multiple roles. In all, 26 individual suggestions were received. The most commonly suggested role pertained to regulatory oversight on issues relating to service quality and competition. However, in these matters, federal law preempts ODOT's authority.

Several shippers called for ODOT to help ensure safe rail operations. However, federal statutes also mostly preempt ODOT's role here. Three shippers suggested a role for ODOT with regard to supporting rail infrastructure improvements; this role in particular is addressed in the recommendations of the state's Freight Rail Plan. Also, six shippers suggested a role for ODOT as an advocate for rail shippers' interests; it is noted that ODOT has performed this very role for many years, often monitoring rail service on an as-needed basis. ODOT's Rail Division is also heavily involved in providing regulatory oversight for rail safety.

However, at least one shipper does not believe that a pro-active role for the Rail Division is appropriate. The shipper commented that the question of a Rail Division role "should be asked of the rail services themselves…(Oregon shippers) use the system because it's available and convenient. The rail system knows what it needs and how it should work."

None of the shippers' comments on ODOT's role in rail planning suggested a need for new or expanded state legislation although some expansion of ODOT's rail functions may require new legislation. Suggestions pertained either to roles in which ODOT action is preempted by federal statutes, or to

roles that ODOT is already performing, or to roles for which no specific funding is in place at the present time.

RAIL PLAN FREIGHT ADVISORY COMMITTEE RECOMMENDATIONS

During the course of the Freight Element's development, the ODOT Freight Advisory Committee discussed with the railroads their needs for remaining competitive, and investigated the challenges to short line railroads presented by 286,000-pound cars. Based on this effort, the Freight Advisory Committee has proposed the following recommendations:

- Work with the state's Congressional delegation for funding of a federal rehabilitation grant program.
- Provide state funding for the Credit Risk Premium under the RRIF program.
- Fund a state Emergency Grant/Loan program for Class II and III carriers.
- Provide a state-funded Railroad Revolving Fund and/or fund the existing State Rail Rehabilitation Fund.
- Establish a state-funded bridge inspection program for short line railroads.

Chapter 3

PASSENGER ELEMENT

INTRODUCTION

The requirement that the Oregon Department of Transportation should develop a railroad passenger service policy and long range plan led directly to the completion of the *Oregon Rail Passenger Policy and Plan* in 1992. Subsequent technical studies and passenger surveys were conducted to aid in implementation of the plan and establishment of state-supported rail and feeder bus services. The key policy recommendations from the 1992 plan were to extend Seattle-Portland corridor trains south to Eugene, and to provide a comprehensive system of feeder bus routes to complement the rail service. Oregon has implemented many of those recommendations. The primary purpose of this current plan is to update findings of the 1992 plan, incorporating the results of subsequent studies, and to provide criteria and guidelines for continuing ODOT's role in overseeing further development of the rail and bus network.

A summary of passenger service development in Oregon, including statewide policy documents and the economic framework in which Amtrak operates, is found in the appendices of this report.

PACIFIC NORTHWEST RAIL CORRIDOR, OREGON SEGMENT

Oregon's most recent document dealing with the Pacific Northwest Rail Corridor (PNWRC) is an operating and capital facilities plan published in April 2000. The plan, entitled *Pacific Northwest Rail Corridor, Oregon Segment*, documents current services and proposed specific improvement projects necessary for expansion of the corridor service in the Willamette Valley. As a part of the study effort, patronage modeling of future service operations was conducted by the Volpe National Transportation Systems Center, a research and consulting arm of the U.S. Department of Transportation, in Boston.

Ridership on PNWRC trains has increased concurrent with added frequencies, and increasing highway congestion. Ridership trends are shown in Table 3-1. Ridership growth reflects both the introduction of new equipment on the corridor trains, and the impact of additional frequencies and reduced travel times.

Table 3-1
PNWRC Ridership 1993-2000
(thousands of passengers)

	1993	1994	1995	1996	1997	1998	1999	2000
Vancouver-Seattle	n.a.	n.a.	60.4	78.7	82.8	96.2	109.5	149.6
Seattle-Portland	162.8	238.1	243.9	248.4	298.7	345.5	360.5	389.3
Portland-Eugene23	24.1	33.8	71.9	82.7	102.5	106.3	95.3	101.4
Corridor Trains	n.a.	n.a.	n.a.	n.a.	46.4	47.3	43.8	52.5
Coast Starlight	n.a.	n.a.	n.a.	n.a.	56.1	59.0	51.5	48.9
PNWRC Train Totals	186.9	271.8	376.2	409.8	484.9	552.0	565.3	640.3
Oregon Thruway Bus	n.a.	1.5	16.0	18.2	24.9	38.0	41.4	40.5

Source: Amtrak West, Calendar Year Data

ODOT's goal for Willamette Valley corridor operations by 2003 is to increase the number of daily round trips and to reduce the travel time between Portland and Eugene to 2 hours, 15 minutes. Service planning is being coordinated with Washington and British Columbia to provide more through travel opportunities in the corridor. The increased round trips, supplemented by Thruway[24] bus service between Portland and Eugene to connect with new trains between Portland and Seattle, will provide more travel opportunities at times that people wish to travel. Oregon's passenger rail system and Thruway bus network are shown in Figure 3-1.

The operation of more trains at higher speeds requires significant upgrades to portions of the rail corridor. ODOT studies identified the principal limitations of the rail infrastructure and developed a $31 million capital program[25] to overcome the most severe capacity and speed limitations. The program includes track and signal system upgrades, and improvement and extension of sidings where trains can meet and pass. UP, as owner of the track between Portland and Eugene, will gain some benefits from the improvements and has agreed to participate in funding the improvements. The locations of improvements were determined in part by train operation simulations sponsored by ODOT with the cooperation of UP and BNSF. Completion of the improvements will allow reductions in running times, and will provide the additional operational flexibility essential to improving the on-time performance both freight and passenger services between Portland and Eugene. The capital program represents the first stage of a long-range improvement program. ODOT has agreed to periodically re-examine operating results in the corridor, and to participate in further capacity analysis that will support staged increases in frequency and further run time reductions.

As companion efforts, station improvements are planned or underway in Portland, Salem, Albany, and Eugene, and a preferred station site has been identified in Oregon City to serve the growing Portland metropolitan region.

ODOT proposes to invest in the purchase of passenger rolling stock to support the increased corridor services. State-owned equipment will avoid the capital equipment charges[26] that otherwise would have to be paid to Amtrak for use of Amtrak-owned equipment.

Ridership forecasts for the expanded Willamette Valley service were prepared in 1998 by the Volpe Center. The Volpe model, used for similar corridor analyses in other areas, produced ridership and revenue forecasts for rail services under different service scenarios (train frequency, travel time, and

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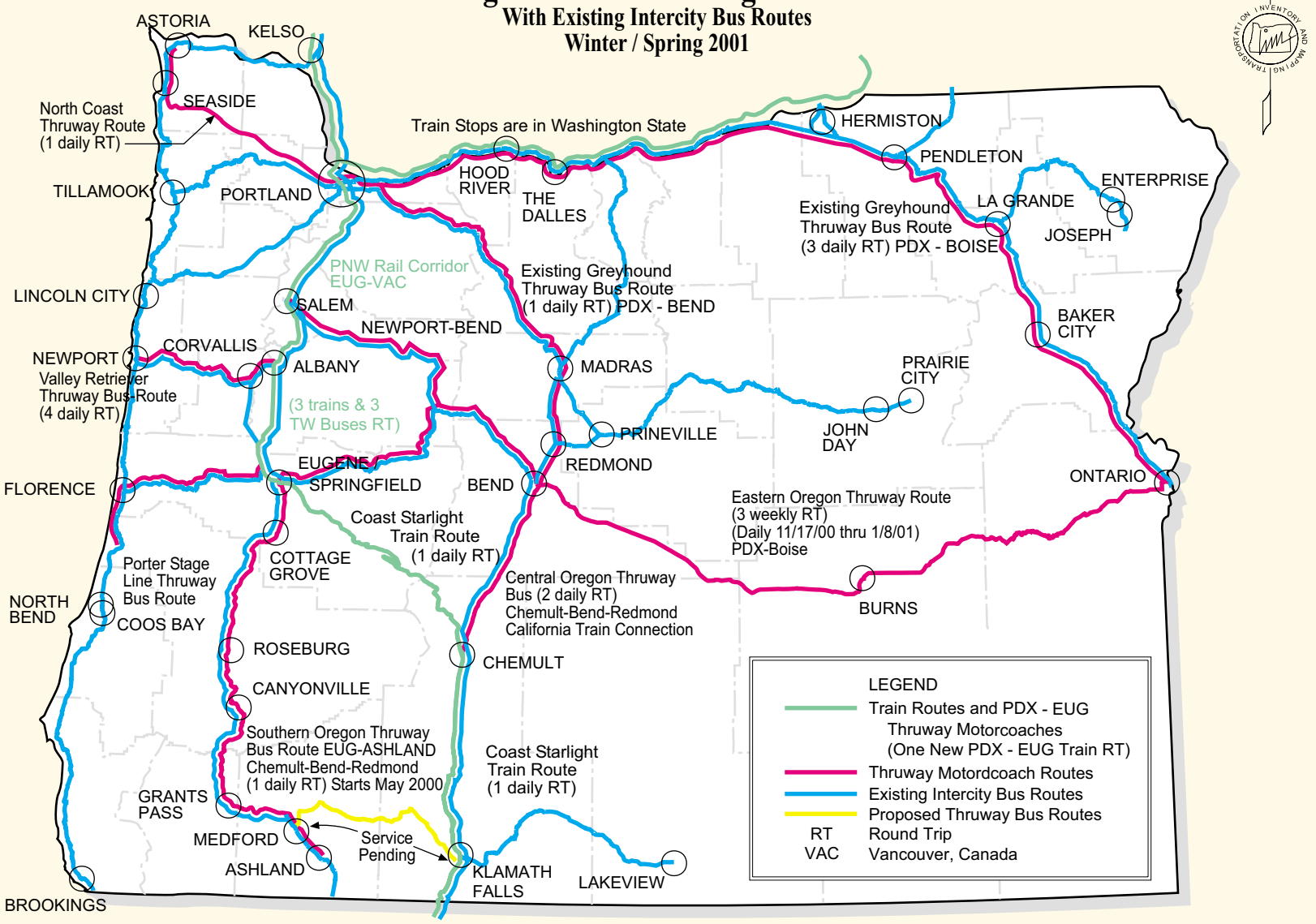
[23] Table 2 shows total riders on each corridor segment. Riders from Oregon stations south of Portland to stations north of Portland are shown as Oregon segment riders. The table includes corridor riders on the Coast Starlight, but excludes long distance riders on the Coast Starlight traveling to or from points south of Eugene.

[24] Thruway service refers to intercity bus service specifically contracted to provide timed connections to train service, or to provide transportation in lieu of former or potential new train service. Many Oregon communities are served by additional intercity bus routes that are not part of the Thruway service

[25] Specific projects are described in detail in ODOT's April 2000 report *Pacific Northwest Rail Corridor, Oregon Segment*

[26] Amtrak charges a fee, sometimes termed an equipment rental fee, to cover costs of providing passenger cars and locomotives for state funded services. The fee may be a one-time capital charge or assessed annually as part of an ongoing operating agreement. The equipment fee can be avoided if the state owns the equipment. The resulting state costs related to ownership and depreciation may be lower than the Amtrak charges. Both California and Washington have purchased a portion of the equipment used in their

Figure 3-1
Oregon Amtrak Passenger Routes
With Existing Intercity Bus Routes
Winter / Spring 2001



ticket prices). The Volpe Center demand modeling analysis[27] determined the optimum balance of service levels and pricing that would result in the most efficient corridor operation. Over the short term, the forecasts anticipate 387,000 passengers using the Oregon segment of the PNWRC by year 2003 with 5 round trips per day, including the *Coast Starlight*.[28] Ridership at the estimated level would result in Oregon-allocated revenues[29] of approximately $5.8 million in year 2003.

Both ridership and revenue would continue to increase in the years beyond 2003 with further enhancements to the rail service. Volpe projected that total PNWRC ridership would rise from 522,000 trips in 1998 to 1.7 million trips in 2003 and almost 2.9 million trips in 2018. These forecasts assume that capital funding is made available to implement the running time reductions and to provide the necessary capacity improvements. The Oregon segment ridership for 2018 would reach about 650,000 annual passengers, and would support 8 or more daily round trip schedules. Clearly, the potential exists for significant ridership growth, but only if it is supported by a level of capital investment throughout the entire PNWRC that will provide attractive equipment, attain faster running times, and build sufficient capacity for operation of multiple passenger service frequencies and freight service growth.

ODOT has identified potential environmental effects of the proposed $31 million improvement program, and has identified opportunities to avoid or reduce potential impacts. The Federal Railroad Administration (FRA) oversees the planning efforts within identified high speed rail corridors in partnership with the Federal Highway Administration (FHWA) as its representative, using FHWA regulations. After consultation with ODOT, FHWA has determined that the potential environmental effects would be insignificant. The program is categorically excluded from detail review under the National Environmental Policy Act (NEPA). As the planning effort moves forward, ODOT will prepare the appropriate documentation and obtain the necessary permits and clearances.

Oregon's investment in the rail program involves both *capital investments* (infrastructure and rolling stock) and annual *operating costs* of the service. The first-phase capital investment is estimated at $31 million, exclusive of rolling stock. If ODOT acquires train sets, the costs would range from about $6.5 million for a diesel multiple unit train set seating 170 passengers to about $13.5 million for a Talgo-style train set seating 242 passengers.[30]

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[27] The Volpe Center modeling methodology looked at total travel patterns and volumes within the corridor, and assigned a share of that travel to the rail service based on competitive factors such as travel time, travel cost, convenience (frequency of service), trip distance, and other factors that would influence a decision to travel by auto, air, bus, or train.

[28] Amtrak's *Coast Starlight* runs between Seattle, Portland, Oakland, and Los Angeles, and carried significant numbers of local travelers within the PNWRC.

[29] The rail service would be integrated with PNWRC operations over the entire corridor between Vancouver, BC, and Eugene. Oregon would be credited with that share of revenue generated by trips partially or entirely within Oregon.

[30] Diesel multiple unit (DMU) train sets involve two or three cars permanently coupled together, with an engineer's cab at each end of the train set, powered by diesel engines mounted under each car. This design is widely used in Europe for light-density rail corridors, and equipment manufacturers are proposing similar train sets that will meet federal requirements for operation in the U.S. on track shared with freight service and conventional passenger service. Talgo-type train sets (manufactured by Talgo, or by other companies under differing names) are specially designed tilting train sets consisting of locomotives and several passenger cars coupled together as a unit. These train sets have the ability to "tilt" when negotiating curves, and thus can operate at higher speeds than conventional equipment. Talgo-built train sets currently operate in the PNWRC.

Currently, Oregon pays Amtrak a flat rate per month for the operation of the two daily *Cascade*[31] round trips between Portland and Eugene. Amtrak collects and retains all fares. The monthly rate is renegotiated each year. A financial analysis of expanded corridor service, based on the findings of the Volpe Center patronage study, analyzed the costs and revenues associated with corridor service expansion. The analysis determined that the operating loss in 2003 with 5 round trips would be $2.4 million (in 1998 dollars), but that by year 2018 the operation of 8 or more frequencies in Oregon would result in a net operating gain, with revenues exceeding costs by $1.3 million per year.[32] Again, this all dependent upon making the necessary investments in track infrastructure and rolling stock.

Key measures of the Willamette Valley service are shown in Table 3-2.

Table 3-2
Projected Operating Results, PNWRC Oregon Segment
(1998 dollars)

	1998	2003	2018
Operating Cost	$2,040,000	$8,160,000	$10,200,000
Revenue	NA	$5,800,000	$11,544,000
Net Operating Gain (Loss)	NA	($2,360,000)	$1,344,000
Daily Round Trips	2	5	8+
Annual Ridership	108,369	387,200	650,000
Portland-Eugene Time	2 hrs 35 min	2 hrs 15 min	1 hr 45 min

Notes: Ridership includes local riders on the Coast Starlight
Running time goal is for corridor trains only
Cost and revenue shown for corridor trains only
2018 Oregon segment trips and ridership interpolated by WSA from Volpe data

RELATIONSHIP TO PASSENGER RAIL PLANNING IN ADJOINING STATES

The states of Oregon and Washington, and the Province of British Columbia, have worked collaboratively to develop improvement plans and to program development of the corridor. The UP and BNSF railroads also have been involved in the planning process.

Oregon has been a partner with Washington in planning passenger services in the Pacific Northwest Corridor for many years. The two states began collaboration on high speed rail planning in 1991 by developing service options for evaluation. Oregon's efforts resulted most recently in the *Pacific Northwest Rail Corridor, Oregon Segment* report, published in April of 2000, which contains an operating and capital facilities plan and preliminary environmental analysis for the segment of the corridor between the Columbia River and Eugene. The Oregon study is a companion effort to a similar Washington

[31] *Amtrak Cascades* is the generic name applied to corridor service trains operating between Vancouver BC, Seattle, Portland, and Eugene. These trains are financially supported by the states of Oregon and Washington, in partnership with Amtrak.

[32] Earlier studies by the Washington Department of Transportation showed a similar pattern of reduced operating support in future years, with operating profits attainable towards the end of the 20-year analysis period.

Department of Transportation (WSDOT) analysis of Washington's portion of the corridor. The Province of British Columbia is the third partner in the corridor effort. All three partners, along with Amtrak, recognize the overlapping nature of travel patterns in the corridor. While Seattle-Portland is the largest single origin-destination pair in the corridor, there is extensive potential for service that carries passengers through both Portland and Seattle, and the goals of the partners include maximizing rail patronage by providing through or connecting services through the entire length of the corridor. Current service, with only a limited number of daily frequencies, has just begun to tap the potential.

The second partnership effort involves the State of Idaho and communities along the UP line between Portland and Boise. With encouragement from and the active interest of Oregon's U.S. Congressional delegation, the communities are evaluating the means to re-establish passenger service over this route which was withdrawn by Amtrak in 1997 as a cost-saving effort[33]. The evaluation is looking at potential patronage, development of express business, and other means to support restoration of service between Portland and Boise at a minimum, and perhaps beyond Boise to the Salt Lake City area, Denver, or Chicago.

OREGON'S RAIL PASSENGER SERVICE

Current rail passenger service in Oregon consists of the *Coast Starlight*, the two *Cascade* round trips to Eugene, and the Portland section of the *Empire Builder* that enters Portland from the north bank of the Columbia River at Vancouver, WA. Service frequency, equipment type, and travel times are shown in Table 3-3.

Table 3-3
Current Rail Passenger Service in Oregon

	Coast Starlight	Cascades	Empire Builder
Route	Seattle-Eugene-Los Angeles	Seattle-Portland-Eugene	Portland-Spokane-Chicago
Daily Round Trips	1 Seattle-Klamath Falls *(continues to Los Angeles)*	3 Seattle-Portland 2 Portland-Eugene	1 Portland-Spokane *(continues to Chicago)*
Equipment	Superliner	Talgo	Superliner
Travel Times	4:17 Seattle-Portland 2:55 Portland-Eugene 4:50 Eugene-Klamath Falls	3:30 Seattle-Portland 2:35 Portland-Eugene	7:29 Portland-Spokane

Note: Travel times are average of hours:minutes in both directions.

[33] In 1995, Amtrak acted on the recommendation of a consultant study to reduce the frequency of several long distance trains from daily to tri-weekly, in an effort to reduce operating costs while retaining most revenues. The assumption was that most passengers travel on flexible schedules, and that the change to tri-weekly service would retain most of the patronage on other days. The "experiment" was short lived, as passenger volumes dropped generally corresponding to the level of service provided. By the time Amtrak realized the result of its actions, some of the equipment required for daily service on the western long distance trains had been transferred to other areas to replace older equipment, and was not available to resume the daily services on all trains. The tri-weekly *Pioneer* (Seattle-Portland-Denver-Chicago) went from daily to tri-weekly service in 1993, and was discontinued completely in 1997 since it had been rendered less viable by the tri-weekly schedule and could not be reinstated as a daily train due to equipment limitations.

Coast Starlight

Amtrak assumed operation of this service on May 1, 1971 when it took over most interstate passenger services from the railroads. It replaced the former Southern Pacific *Cascade*, which operated tri-weekly between Portland and Oakland, via Eugene and Klamath Falls. Amtrak combined the *Cascade* with connecting trains between Seattle and Portland, and between Oakland and Los Angeles into a single through train operating over the entire route. The Seattle-Oakland portion continued on a tri-weekly basis, while service was daily south of Oakland. By 1973, the train was converted to daily operation on a year-round basis. New bi-level Superliner cars were introduced in 1981. Amtrak has made the *Coast Starlight* a rolling laboratory for innovations and improvements in on-board services, and it is generally recognized as Amtrak's best long distance train.

The nature of the long distance train operation means that service disruptions or events far from the corridor can impact schedule adherence. As a result, long distance trains traversing a regional corridor usually satisfy some of the corridor transportation needs, but they do not substitute for specific corridor schedules that operate dependably at the times when most people wish to travel.

The *Starlight's* schedule, optimized for convenient times at its major stations, provides a convenient daytime schedule between Seattle, Portland and Eugene, although the utility of the schedule for local travel is diminished by relatively poor schedule adherence. Nevertheless, this segment of the *Starlight's* run remains a strong component in its passenger make-up. The train currently carries about 17,000 passengers annually between Portland and Eugene, and about 33,000 additional passengers annually between Oregon stations (excluding Portland) and Washington state locations. It handles about 47,000 annual trips between Portland and stations in Washington. The *Starlight* is a "basic system" train, funded entirely by Amtrak. During most times of the year[34], it provides additional local travel capacity supplementing PNWRC *Cascade* services, and provides an additional opportunity for travelers to pick a convenient travel time. This "corridor service" function will become more limited as new corridor frequencies are introduced that provide convenient travel options throughout the day. The key understanding is that a long distance train usually supplements a viable corridor service rather than substituting for the corridor trains. The *Coast Starlight* provides Oregonians with access to Amtrak's national system through major connections in Portland, Sacramento and Los Angeles.

Cascades

In addition to the tri-weekly *Coast Starlight*, Amtrak retained two daily round trips between Seattle and Portland that had operated prior to 1971. A third daily round trip was added in 1994, and new Talgo equipment was placed on the route in 1995. One round trip was extended south to Eugene in 1994, and a second trip was extended in 2000. The trains once carried individual names, but now are all operated as *Cascade* trains, creating a *Cascade Corridor* identity that can be used in marketing efforts.

[34] Amtrak utilizes airline-type "yield management" techniques to determine the number of seats available between selected station pairs. Yield management attempts to maximize revenues based on travel demand, obtaining the highest combination of revenues from a mixture of passengers traveling over both short and longer distances. During periods of peak travel when long distance travel demand is high, lower fares and short distance travel will be restricted or "blocked out" from sale in order to provide space for those passengers traveling longer distances at higher ticket prices. When this occurs, the value of a long distance train as a corridor travel resource is diminished. On the other hand, during slack travel times when long distance travelers do not use the full capacity of the train, yield management will offer discounted fares for both short and long distance travel in order to attempt to fill all available seats. Peak travel on the *Coast Starlight* occurs during Christmas/New Years, Easter/Spring Break, Thanksgiving, and throughout the summer months.

Table 3-4
Calendar 2000 Ridership Patterns For Oregon Stations

Stations	Riders
Seattle-Portland	209,500
Tacoma-Portland	56,300
Portland-Eugene	22,500
Seattle-Eugene	22,100
Olympia-Portland	15,000
Seattle-Salem	13,900
Seattle-Albany	8,300
Portland-Salem	6,100
Tacoma-Eugene	5,700
Portland-Albany	4,400
Tacoma-Salem	4,400
Tacoma-Albany	2,400
Salem-Eugene	1,900
Olympia-Eugene	1,900
Olympia-Salem	1,500

Note: Includes intra-corridor ridership on Coast Starlight and all trips where one end of the trip is an Oregon station.

The tilting feature of the Talgo design permits the trains to operate faster on curves than conventional Superliner equipment such as that used on the *Coast Starlight*. The trains have proven popular, as evidenced by the growing patronage on the route. The *Cascade Corridor* service currently offers 2 daily frequencies north of Seattle (1 to Vancouver BC, and 1 to Bellingham, WA), 3 daily frequencies between Seattle and Portland, and 2 daily frequencies between Portland and Eugene. Both of the Eugene trains operate through from Seattle in the southbound direction. Northbound, one train operates through while the other requires a change of trains at Portland. WSDOT provides financial support for the trains between Vancouver, Seattle, and Portland, while ODOT supports their operation between Portland and Eugene.

From August 1980 to December 1981, Amtrak operated 2 daily round trips (in addition to the *Coast Starlight*) between Portland and Eugene, with financial support partly provided by ODOT. Considered an experimental operation, this *Willamette Valley* service was discontinued because of lack of state funding.[35] A primary lesson learned from the service is that the viability of rail passenger service in the valley depends on it being operated and marketed as part of a larger transportation system that extends beyond Oregon boundaries. This realization has been an important factor in the development of PNWRC *Cascade* service plans.

[35] Ridership goals were developed during the late 1970s energy crisis, with the goal of achieving rail passenger miles per gallon equal to auto passenger miles per gallon. While the service failed to meet these criteria, it provided useful experience about the market for rail travel in the corridor.

Reinforcing the need to plan and operate the PNWRC as a unified corridor, the major travel markets for rail passengers using Oregon stations in 2000 are shown in Table 3-4. Seattle-Portland and Tacoma-Portland dominate because of their large population base. Among the smaller markets, however, Salem, Albany, and Eugene generate more passengers to and from Washington State communities than they attract for the trips to Portland.

Empire Builder

Amtrak operates the long distance *Empire Builder* between Chicago and Seattle/Portland. The train splits into separate sections in Spokane to reach the two West Coast terminals. The Seattle section was one of the routes retained by Amtrak in 1971, while the Portland section was added in 1987. The train operated tri-weekly from 1995 to 1997 when daily service was restored. The *Empire Builder* runs north from Portland to Vancouver WA, and along the north bank of the Columbia River. The *Empire Builder* is a "basic system" train operated by Amtrak, and uses the long distance Superliner equipment. It provides access to Amtrak's national system through important connections in Chicago.

Pioneer

Amtrak initiated new *Pioneer* train service between Seattle, Portland, Boise, and Salt Lake City in 1977. The train connected at Salt Lake City with other service to Denver and Chicago. Frequency was reduced to tri-weekly in 1993, and the service was discontinued as an economy move in 1997. The *Pioneer* operated on the south side of the Columbia River, serving Hood River, The Dalles, Hinkle, Pendleton, La Grande, Baker City, and Ontario in eastern Oregon. Since its discontinuance, states and communities along the route have worked to seek restoration of service at least between Portland and Boise, but preferably connecting to the national network southeast of Boise. ODOT with elected officials and local jurisdictions to restore service on the route.

Passenger Station Activity

Oregon's rail stations have experienced continuing growth in boarding and detraining passengers that reflects the increasing ridership on trains and connecting buses. Table 3-5 demonstrates the growth in rail and bus ridership at each station. The table includes ridership on the *Coast Starlight*, the *Cascades*, and the Thruway buses. Data are shown for Amtrak fiscal years ending in September.

Table 3-5
Boarding and Detraining Passengers At Oregon Amtrak Stations

Year	Portland	Salem	Albany	Eugene	Chemult	Klamath Falls
FY 1993	338,507	21,959	14,196	43,345	6,439	18,214
FY 1994	330,384	20,005	13,375	40,196	5,475	19,240
FY 1995	341,393	32,779	21,340	71,321	5,176	20,224
FY 1996	327,157	32,409	20,291	67,996	4,857	18,614
FY 1997	360,781	37,249	22,376	75,721	4,906	19,448
FY 1998	403,060	41,963	25,964	85,394	5,448	21,969
FY 1999	429,582	45,839	28,352	99,536	5,571	24,672
FY 2000	457,378	47,576	30,395	102,379	7,660	27,766

Source: Amtrak West and ODOT Thruway Ridership Reports

THRUWAY BUS SERVICE IN OREGON

Thruway bus service in Oregon was initiated in October 1994, at the same time as the extension of corridor train service from Portland to Eugene. Originally, 5 round trips were provided between Portland and Eugene to supplement the new train service and to connect with trains operating north and east of Portland. Budget constraints required an adjustment to 3 round trips in mid-1995. The 3 trips continued to operate until October 2000 when one was replaced by the second train extension. The success of the Thruway service led to expansion of the state-sponsored system on additional routes in 2000. The connecting bus services provide an opportunity for rail passengers to reach numerous communities throughout the state by making convenient connections between train and bus. There are two types of service provided.

State-supported service is provided on five routes. These services operate as contract runs, on schedules specifically tailored to match connecting train times. In event of a service disruption, the buses will wait for an arriving train. Amtrak tickets are valid on these buses, which may also carry non-rail passengers between local communities. A summary of Oregon-supported Thruway bus services appears in Table 3-6.

Table 3-6
State-Supported Thruway Bus Services

Route	Frequency	Initiated
Portland-Eugene	2 round trips daily	October 1994
Portland-Boise via Bend	1 round trip tri-weekly	March 2000
Eugene-Ashland	1 round trip daily	May 2000
Bend-Chemult	2 round trips daily	January 2000
Portland-Astoria	1 round trip daily	October 2000

Non state-supported service operates on several other routes. These are regularly scheduled buses provided by private operators who have agreed to accept Amtrak tickets for transportation. The buses also serve non-rail passengers, and connections between trains and buses are not guaranteed. Most of these services became Thruway affiliates in 1997 when Amtrak negotiated agreements, but they were in operation prior to that time. A summary of these services appears in Table 3-7.

Proposed Bus Services

A potential private operator currently is evaluating the viability of a Medford-Klamath Falls bus route, which would provide connections to and from the *Coast Starlight* at Klamath Falls.

FREIGHT RAILROAD CAPACITY CONCERNS

Freight railroads are often concerned about the impact of adding passenger services over their routes, and they view each additional passenger train as a reduction in their ability to accommodate freight

Table 3-7
Thruway Service Provided by Private Operators

Route	Frequency
Portland-Boise *Greyhound via Pendleton*	3 round trips daily
Portland-Bend *Greyhound via Madras*	1 round trip daily
Albany-Bend *Valley Retriever*	1 round trip daily (except Sunday)
Eugene-Bend *Porter Stage Line*	1 round trip daily
Albany-Newport Valley Retriever	3 round trips daily
Eugene-Coos Bay Porter Stage Line	1 round trip daily (2 round trips on week days)

services. Passenger trains are operated under contract, with the schedule being part of the contract. Passenger trains operate generally at higher speeds than freight trains, and in most circumstances have priority over freight operations. The time that a freight train has to wait in a siding for a passenger train to pass adds to the run time of the freight train and represents a cost to the railroad. While some rail lines can accommodate additional passenger service without significant impact on current or future freight volumes, other lines are operating at or close to their capacity now. In negotiations with Amtrak (and other public agencies sponsoring passenger services), the freight carriers understandably insist that their ability to operate freight service should not be diminished as a result of new passenger services, and they are requiring selective improvements[36] to ensure freight capacity, maintain operating flexibility, and ease congestion at "choke points" along their rail lines.

The freight railroads do not have a uniform, industry-wide attitude toward passenger services over their trackage. Some carriers are at times more "passenger friendly" than others, and attitudes have been known to change with changes in management. However, all the major railroads have similar concerns about their ability to maintain capacity for their potential freight growth. Their willingness to accept additional passenger services frequently is proportional to the amount of capital investment that is available to create the added capacity or operating flexibility. Amtrak's payments to the freight

[36] Capacity improvements typically involve lengthening sidings, construction of new sidings, upgrading of siding speeds, provision of segments of double track, or improvements to signal systems that will maintain the railroad's freight operating capability despite the additional passenger trains operating over a route. Often the capacity improvements benefit the freight carrier to a greater extent, and mutual cost-sharing agreements reflect the level of benefit conferred by the improvement.

railroads for use of their track are negotiated periodically with each railroad, and generally have been increasing.[37] However, the stated position of most railroads is that the payments for passenger operations do not yet approach the revenue potential per train of freight traffic occupying the same track space.

ODOT has sponsored computer simulation studies of the UP trackage in the Willamette Valley in cooperative efforts with UP, and has identified a series of improvements that will be required for operation of increased levels of passenger service without negatively impacting freight operations. The immediate projects necessary are detailed in the *Pacific Northwest Rail Corridor, Oregon Segment* report issued by ODOT in April 2000. Often the capacity improvements benefit the freight carrier and mutual cost-sharing agreements would reflect the level of benefit conferred by the improvement.

PASSENGER RAIL DEVELOPMENT CRITERIA

In planning for both rail and bus service expansion, ODOT must evaluate each service proposal and consider its many implications.

Service Concerns

A preliminary assessment of each service proposal often will be sufficient to provide a basis for a decision. In some instances, more detailed study will be required to clarify the pros and cons of any specific service proposal. Questions to be answered in the service assessment include:

- Will the service attract sufficient ridership and revenues to justify the service?
- What are the potential costs and revenues?
- What are the economic and social benefits to the state and local communities?
- Can a service be provided at an affordable cost?
- What are the alternatives to providing the service?
- How does the service satisfy Oregon's transportation goals?
- Will the service contribute positively to other services through connections?
- Does the service accommodate disabled travelers and comply with the Americans with Disabilities Act?

The primary advantage of rail is its ability to move larger numbers of passengers at approximately the same cost as a small number of passengers, to move them in a comfortable, time-competitive manner and to provide peaking capacity parallel to congested highway corridors. Because of the high infrastructure cost[38], rail works best where passenger volumes are high enough to justify the investment, and generally this means where multiple frequencies can be operated. However, rail's advantage declines where the available rail route is not competitive with driving times, either due to a circuitous route or to

[37] In the past few years Amtrak has renegotiated all of its agreements with freight railroads, and has increasingly moved toward incentive contracts which provide greater payment to the railroad when on-time performance of Amtrak trains remains at acceptably high levels.

[38] Amtrak payments to a railroad for use of its trackage represent a contribution toward infrastructure cost. In addition, there may be specific improvements required to support passenger services that must be borne fully by the passenger operation.

poor track conditions that limit operating speeds. Nevertheless, there is a general perception that rail service is more reliable, more comfortable, and more safe because the vehicles provide more passenger space and travel over a fixed guideway that is not affected by highway congestion except maybe, between the rail terminals and the trips eventual origin and destination.

Conversely, the advantage of bus service as an extension of rail service is its relatively low cost[39] per passenger, making it effective even in markets with low volume. Over many routes, particular those serving smaller communities and rural areas, buses can take advantage of improved highways to provide service competitive with driving times where rail cannot match highway speeds. Capital costs are basically in the provision of the buses, which are extremely flexible in their routing and usage. It is relatively easy to establish a route, test the market, and evaluate the results after a period of one or two years. If the service fails to attract patronage, it can be restructured, rescheduled, or even discontinued with a minimal loss in fixed facilities and marketing costs.

The negative side of bus operations is that the public has mixed feelings. A lot of people simply do not like riding a bus, for a variety of reasons. The California Department of Transportation, which has an extensive system of Thruway bus routes supplementing state-supported trains, has found that the negatives associated with bus travel are minimized when the passenger is using the bus to get to or from a train. Even where the bus ride exceeds the train ride in time, passengers are more willing to accept the bus as part of a unified transportation system that includes the train. ODOT has found a similar experience: ODOT has found that when trains replaced nearly identical bus schedules in the Willamette Valley, ridership increased dramatically with the train service.

Key Rail Service Thresholds

Patronage, cost recovery, and running time are factors that must be evaluated when considering rail service expansion, or extension of rail service over a new route.

Patronage: To justify rail service, a train should have a minimum average occupancy of about 75 passengers[40] per train. Occupancy might be lower at the extreme end of a run, but average occupancy should justify the operation of a train with at least 180 seats (typically a three car train). The economic efficiency of rail is significantly reduced if usage falls below this level, and bus operation often may provide more effective use of transportation dollars. Most of Oregon's current trains meet this threshold.

Cost Recovery: Typical train operating costs are about $26 per mile. A new rail service should be expected to attain a 30-40 percent farebox recovery ratio (the proportion of operating costs covered by fare revenue) to be viable. With a lower cost recovery, the amount of subsidy per passenger becomes excessive and alternative transportation by bus becomes a more attractive option. Oregon's long term goal is to achieve or exceed 100 percent operating cost recovery on its rail services. The Volpe Center analysis indicated this is a feasible goal for the Willamette Valley portion of the PNWRC service over the long term if the projected ridership goals are reached. It is questionable whether rail operations in other parts of the state have the same potential.

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[39] The California Department of Transportation (Caltrans) has found that Thruway bus service provided by contract operators generally becomes self-supporting with about 10-15 passengers per bus, on average. Caltrans continually experiments with new routes and schedules in an effort to meet travel needs.

Running Time: Rail service has to be reasonably competitive with auto driving times to be successful. Unfortunately, some branch lines that otherwise might have passenger service potential drop out of consideration because they follow alignments that cannot be upgraded to provide time-competitive service at a cost commensurate with the potential service level. Many of Oregon's branch lines fall into this category. Freight service levels are insufficient to justify major capital investment in track upgrades or curve reductions that would also benefit passenger operations, so the entire cost of improvements would be a passenger-related responsibility. Parallel highways, however, have been improved to the extent that driving times (and potential bus times) have been significantly reduced over time, rendering establishment of rail service more difficult to justify.

Other Factors: In certain situations, rail service may be warranted even though it would not meet the general parameters given above. Justifications may include rail service that contributes substantially to the patronage of other trains, service that provides special benefits to the area served or operations that assist in the mobility of certain travelers (i.e. handicapped).

ANALYSIS OF OREGON ROUTES

Oregon's principal travel corridors were examined in the *Oregon Rail Passenger Policy and Plan* in 1992. Each of these is discussed below, with comments updated to reflect the current status since completion of the Volpe Center patronage analysis, and the initiation of Thruway bus services on several of the routes. In addition, a number of commuter rail proposals have been evaluated for their service potential.

Major Intercity Corridors

Portland-Eugene

The Portland-Eugene corridor is the southernmost portion of the PNWRC, which encompasses the major urban areas of British Columbia, Washington, and Oregon. Sixty-nine percent of Oregon's population lives in the nine counties[41] clustered along the corridor. The corridor's *Cascade* trains provide both regional service and connections to the national rail system. The *Coast Starlight* also operates in this segment of the corridor. The corridor is a federally designated high speed corridor, making it eligible to compete for federal high speed rail capital funding.

Within Oregon, three train frequencies (two *Cascades* and the *Coast Starlight*) plus two bus frequencies provide a basic level of service throughout the day. Patronage evaluations by the Volpe Center found sufficient patronage to warrant up to 5 trains per day by 2003, assuming necessary capital projects are completed. Oregon will seek to provide additional train frequencies over the next several years, consistent with patronage growth and reductions in running time in the corridor. In doing this, ODOT should devise schedules that make best use of available equipment and maximize through travel opportunities within the PNWRC. Both current patronage and the Volpe Center projections show the importance of travel through Portland. While the corridor serves Oregon travel needs within the state, it also attracts heavy volumes of travel between Oregon and Washington stations. As additional service is added both

[40] This level is based on typical patronage of state-supported train service in other states, and is not a hard and fast threshold.

[41] Multnomah, Washington, Clackamas, Yamhill, Polk, Marion, Benton, Linn, and Lane Counties.

in Oregon and Washington, there will be an increased opportunity for through travel to points north of Seattle, and this opportunity will reinforce the utility of the corridor over its entire length. The corridor is forecasted to eventually have enough ridership to require at least two daily round trips operating through between Vancouver, BC and Eugene as an important component of the schedule pattern.

Feeder bus services should be adjusted as additional train frequencies are instituted, so that buses connect with as many trains as possible to increase patronage levels. Parallel bus service in the corridor should continue to supplement the train schedules as long as there is ridership to support the bus service. Operating experience shows that corridor buses connecting with trains are well used and have a good cost recovery ratio. These buses provide links between Willamette Valley communities and trains that do not run south of Portland.

Local marketing efforts will be necessary, particularly for the bus schedules and connecting travel opportunities, because these do not always receive complete coverage in Amtrak national timetables or Website information. The basic train service through the corridor should be promoted by Amtrak's national and regional marketing efforts, working cooperatively with the three corridor partner jurisdictions (Oregon, Washington, and the Province of British Columbia).

ODOT should encourage local transit providers to establish sufficient bus frequencies serving the train stations, so that transit becomes a readily available and convenient means of access to the trains. Interline ticketing or transfer privileges from rail to local transit systems would be a significant convenience.

Portland-Eugene Alternative Alignment Options

Alternative alignments may need to be explored as the PNWRC matures and truly high speed rail becomes a reality. At some point it may become necessary to keep freight and passenger trains separate and give each of them their own alignments. Two opportunities present themselves between Albany and Eugene:

BNSF Oregon Electric Branch

BNSF's Oregon Electric Branch parallels the Union Pacific mainline in many places in the Willamette Valley. This is especially true between Albany and Eugene where at times their right-of-way abut. Two potential scenarios might emerge. One would be where they are operated as double trackage. The other might see the OE line upgraded for passenger service only with much higher operating speeds.

Some drawbacks present themselves since in several towns along the way the OE actually runs down the middle of city streets. The easiest way to avoid this is to go onto the UP right-of-way necessitating some of the same grade separations that would be required if the line were upgraded. In addition, the OE does not serve Corvallis therefore, not providing direct rail service to that community.

Albany-Corvallis-Monroe-Eugene

Another alternative might be to reroute PNWRC traffic southwesterly to Corvallis and then south to Monroe over existing freight-only trackage. From Monroe, two alternatives are possible. One is building a new alignment to a connection with the PNWRC near Junction City. The other is resurrecting the old grade of an abandoned railroad that ran south from Monroe to a junction with the former Southern Pacific's Coos Bay branch.

Even though either of the two alignments above are a bit longer than the more direct Union Pacific route, they would solve the problem of providing direct rail service to Corvallis. By moving the passenger service off the main freight corridor significant future capital investment in new freight mitigating capacity might be avoided on the UP line.

The almost completed absence of freight traffic via Monroe coupled with new construction may create an opportunity for this segment to be engineering for truly high speed operations.

Eugene-Klamath Falls

Amtrak's *Coast Starlight* service connects Seattle, Portland, Eugene, Sacramento, the San Francisco Bay Area, San Jose, and Los Angeles. The train provides the only direct intercity service to Oregon communities between Portland and Klamath Falls, and overnight service south to California. Major connections with other Amtrak long distance trains are provided in Portland (*Empire Builder*), Sacramento (*California Zephyr*), and Los Angeles (*Sunset Limited* and *Southwest Chief*). The *Coast Starlight* also connects with California-sponsored services (*Capitols, San Joaquins, and Surfliners*). These connections enhance the usefulness of the train to Oregon residents and visitors alike. The *Coast Starlight* is an important element in Oregon's tourism and recreational industries, and is a popular travel option for students at the many colleges and universities along its entire route. Sparse population between Eugene and Klamath Falls is unlikely to support a state-sponsored corridor train extension, but increasing popularity of the *Coast Starlight* may eventually require Amtrak to consider additional through service on the route which would bring more travel options to Oregon residents.

Portland-Boise

Oregon is working with the state of Idaho to develop the resources required for restoration of service on the former *Pioneer* route that runs parallel to the I-84 freeway. Current efforts that have been focused mainly between Portland and Boise should have priority, but the long-range potential of the service would be economically enhanced by going east of Boise to Salt Lake City or Denver, with national connections. The opportunity for developing express and mail business to support the train would be significantly greater with through service. The role of ODOT is to support the Oregon communities along the route in returning train service between Portland and Boise. However, the possibility of multi-state support for service might be explored as a means of getting it restarted.

The *Pioneer* was part of a viable passenger route dropped by Amtrak in 1997 for fiscal reasons. (The *Pioneer* was not state-supported). ODOT should continue the current efforts to restore Portland-Boise service and cooperate with the UP, Amtrak, and public agencies on proposals for service east of Boise to connect to other parts of the national passenger rail system at Salt Lake or Denver. ODOT must seek partnerships with states along the route, and explore mail and express potential as a means of supporting the service. Mail and express traffic was not an Amtrak priority at the time service was discontinued but, it has become increasingly important as a revenue generator.

Amtrak's approach is to cooperate in the provision of regional service that does not increase its bottom line deficit. The Portland-Boise service is unlikely to be restored as an Amtrak "basic system" train, at least in the near term. This means that local funding support will be necessary. UP officials have

indicated a willingness to handle the train between Portland and Boise if any negative impacts on freight service can be mitigated.

ODOT should evaluate the importance of "through travel" to origins and destinations beyond the Portland-Boise route. Connections at Portland are assumed to accommodate travel south to Eugene and north to Seattle. However, present capacity constraints prohibit adding another corridor train and the Amtrak *Cascades* equipment used in the corridor is committed to other schedules. A Portland-Boise train could be supplemented by a Boise-Salt Lake City Thruway bus to provide a link to the east.

Diesel multiple unit (DMU) trains might be used on a Portland-Boise run to reduce operating costs. DMU equipment has the capacity needed for the route and costs about 40 percent as much as to operate as a conventional train. Availability of DMU rolling stock is currently limited to Budd Rail Diesel Cars (RDCs) manufactured in the 1950s. New DMUs that are compliant with FRA standards for operation on shared track with freight trains will not be obtainable for at least three years. In the interim, while these efforts continue, Greyhound is providing Thruway bus service on the route that might be used to measure potential rail patronage at Oregon stations.

Secondary Service Corridors

Eugene-Medford

Rail service is disadvantaged here by a twisting track alignment, slow speeds, and relatively light population. The rail route basically follows an alignment built in 1880s. Freight service on the rail line is operated by a short line, Central Oregon & Pacific Railroad (CORP), and the line is maintained to Class 2 standards with maximum speed over the route of 25 mph, with many segments limited to 20 mph. A passenger rail service would be unable to match highway times. Rail running time on the present 205-mile rail route between Eugene and Medford would require over 8 hours, and the improvements necessary to reduce the rail running time to competitive levels would require major reconstruction. State sponsored Thruway bus service with one daily round trip via the I-5 freeway between Eugene and Ashland started in May 2000. This bus connects with the mid-morning *Amtrak Cascades* train departure from Eugene.

Eugene-Coos Bay

The rail line follows a circuitous 121-mile route between Eugene and Coos Bay. Short line operator CORP provides freight service over the line, with a maximum speed of 25 miles per hour. Several segments are limited to as low as 10 miles per hour. Passenger service is unlikely because of the low population of the coastal communities, non-competitive rail travel times, and the high cost of track improvements. Highway mileage is 108 miles. Accessibility of the coastal communities should be maintained by Thruway bus service connecting with *Cascades Corridor* services at Eugene, with multiple frequencies to be provided consistent with increased service in the corridor.

Central Oregon

The BNSF north-south rail route from Chemult through Bend to the Columbia River constitutes an important freight movement resource through central Oregon. It has accommodated passenger trains when it was necessary to detour the Coast Starlight from its regular route. The line occasionally is used

for special passenger excursion operations. However, the light population density along the line and its slow, circuitous route through the Deschutes River Canyon render it infeasible for regular intercity service. Central Oregon communities are probably better served by more direct bus and air transportation between the Willamette Valley and Central Oregon. ODOT should continue to monitor and improve the current intercity bus routes to maintain the accessibility of the area and reinforce the connections to the Cascade Corridor trains and to the Coast Starlight at Chemult.

Portland-Astoria

This route presents both limitations and opportunities for rail service. Bus running time between Portland and Astoria is 2 hours 15 minutes, and auto driving time is likely under 2 hours. Highway distance is comparable to the rail distance, at about 99 miles by either mode. Currently, a passenger rail service from Portland to Astoria would require more than 6 hours, with over 40 miles of running at 15 miles per hour and a maximum speed of 25 miles per hour over most of the balance of the route. Freight service on the line is provided by a short line operator, Portland & Western Railroad. The alignment of the rail line is favorable, with few curves or grades. With significant track improvements, it could attain travel times competitive with highway travel. Thruway bus service with one daily round trip over Highway 26 between Astoria and Union Station in Portland was initiated in October 2000.

Communities along the line currently are investigating provision of seasonal summer service over the line in conjunction with the Lewis and Clark Bicentennial events planned in 2003-2005. A moderate level of track improvements would permit 3 hour 30 minute running times, which would be acceptable for the scenic ride along the south bank of the Columbia River. If successful, these trains will contribute to interest in year-round service on the route.

Albany-Corvallis

Corvallis, home of Oregon State University, is the largest community in the Willamette Valley outside of Portland not currently served by passenger rail. The university staff and student body provides a significant passenger market. In the near term, Thruway bus service should be developed to connect with all *Cascades* corridor train schedules. Evaluation of rail service options should continue, looking at both commuter/shuttle operations, and at the potential of terminating some corridor trains in Corvallis rather than Eugene.

Commuter and Interurban Corridors

The focus of this rail plan is intercity service, rather than commuter service which is a form of urban transit. Nevertheless, rail commuter service is getting increasing attention nationwide, both in major urban centers and in less populous communities where increasing traffic congestion encourages people to look for transportation alternatives. The recent introduction of such service between Seattle and Tacoma shows that this trend has moved to the Pacific Northwest. Several Oregon communities have conducted commuter rail feasibility studies, and others continue to show interest. The discussion that follows is intended to provide a perspective on these efforts.

Once considered viable only as a means to move suburban residents into major downtown employment centers, many communities are now investigating commuter service potential between suburban areas where employment and housing patterns are more diverse. Lightly used or abandoned rail lines are seen as having commuter service potential with minimal or no conflicts with freight

operations. A determination of commuter rail feasibility depends on a number of factors that vary widely from community to community, but ultimately the viability of commuter rail hinges largely on a calculation of the balance between its costs and ridership, which translates to revenues. A number of indicators can be used to measure the potential success for a commuter service. The checklist below covers the primary attributes that affect a viable commuter operation:

Direct Rail Link: An existing rail line with a reasonably direct route between the communities to be served and with sufficient unused capacity to accommodate relatively frequent rush hour passenger service.

Supporting Regional Goals: Land use and transportation system goals that seek to reduce motor vehicle trips, concentrate commercial and residential development in and near the urbanized areas in the corridor, and to promote higher-density development within the corridor and specifically, near rail station sites.

Population Growth and Density: Continuing moderate to rapid growth in population within and along the corridor, with a high concentration of residences and/or business/commercial activity close to proposed station sites.

Limited Funding for Highway Projects: Difficulty in raising funds for new highway projects which would increase traffic capacity in the corridor.

Commuting within the Corridor: A high level of daily commuting within the rail corridor.

Traffic Congestion: Growing traffic congestion on highways paralleling the rail line.

Limited Parking: Limited and expensive parking at commuter destination points.

Competitive Transit Times: Ability to provide rail commuter service competitive with auto commute times.

Availability to Funding: Ability to provide rail commuter service at a cost competitive with auto commuting.

Willingness to Use Transit: Daily commuters in the corridor with a relatively high propensity to use transit.

A number of commuter or localized (interurban) rail services have been proposed in Oregon during the past decade. The status of each service is summarized below.

Portland-McMinnville-Corvallis-Eugene

Local interurban passenger service along little-used freight lines on the west side of the Willamette Valley was suggested in the 1992 Rail Plan. Since that time, Portland's light rail system has been extended to the growing western suburbs, and potential commuter rail routes have been evaluated that could extend urban transportation corridors into additional portions of Washington and Yamhill Counties.

Separate commuter rail studies have been conducted showing a potential for service on the northern portion of this route, between the Portland metropolitan area and McMinnville. South of McMinnville, lower population densities are not likely to support rail service over the next decade, but rights-of-way should be preserved in the corridor for possible long range development as transportation corridors. Alternative Thruway bus or rail service between Albany and Corvallis warrants further consideration to serve growing travel markets to and from Corvallis.

McMinnville-Milwaukie

A recent study[42] outlined the commuter rail potential between a light rail transfer station in Milwaukie and suburban communities reaching to Newberg and McMinnville. Due to the condition of the line, a capital investment of $112 million would be required to bring the line up to acceptable standards for commuter rail operations. The commuter system potentially could connect with a second commuter rail line between Beaverton and Wilsonville. The relatively short travel distances and the growing employment centers in the southwestern Portland area make these freight routes logical candidates for urban commuter rail, or perhaps further light rail extensions, rather than for intercity corridor service development.

Beaverton-Wilsonville

Several studies were undertaken to look at the feasibility of commuter rail service along the former BNSF Oregon Electric branch between Wilsonville and Beaverton. These studies culminated with a final report in May 1999 showing that such service would carry about 4,600 passengers a day with capital costs of $85 million. This study was followed up the Final Environmental Assessment in May 2001 with a finding of no significant impact.

The jurisdictions involved are now doing final engineering and the funding secured. If the current process moves forward unhindered, service is expected to begin in September 2004 with 8 morning and 8 evening schedules. The north end of the line would leave from Tri-Met's Beaverton Transit Center with the south end in Wilsonville at Barber Street.

Salem-Wilsonville

During the process of conducting the Beaverton-Wilsonville study, a number of people at the public hearings suggested that the service be extended southerly to Salem. The Beaverton-Wilsonville Steering Committee indicated that they did not want to entertain the suggestion at this time. They were concerned that the increased costs for this extension would make the overall project so large that funding would be even more difficult to obtain. They suggested that a more appropriate time to discuss the extension was once the Beaverton-Wilsonville project was fully funded

A preliminary look at the costs associated for this 27 mile extension seemed to indicate that capital costs for such an extension would be approximately $88 million. This included both track improvements and the necessary equipment.

[42] Yamhill County Commuter Rail Study, January 1998.

Portland-Vancouver, WA

In 1999 the Regional Transportation Council (RTC) in Clark County, Washington undertook a study to determine the feasibility of commuter rail service between Clark County and Portland's Union Station. The final report was delivered in Spring 2000. The report contained no recommendations but was just an information document for use by the RTC in determining potential transportation options for the area.

The study found that ridership would be relatively low (2,500 a day) mainly due to the geographic isolation of the BNSF Railway's tracks from any concentrations of ridership in Clark County and intermediate locations. Virtually no riders were within easy walking distance of any of the stations.

In addition, travel times for the majority of passengers were almost double than those using the highway and current transit service. This would be true for the foreseeable future as connections to Tri-Met's new Interstate MAX station in North Portland would provide better service to that possible with a commuter train.

The cost associated with providing such service would be extremely high since the railroad bridge over the Columbia River was approaching its operating capacity. The railroad system would need additional capacity in order to permit the operation of time sensitive commuter trains.

Grants Pass-Ashland

An analysis of commuter service in the Rogue River Valley was completed the Summer of 2001. The rail line passing through Grants Pass, Medford, and Ashland has low volumes of freight traffic and is seen as a potential passenger transportation resource.

Three different operating scenarios were studied that included service between only Central Point and Ashland; an limited extension of this service to Grants Pass and full service between Ashland and Grants Pass. Capital costs for the three options ranged from $38 million to $84 million. Annual ridership is projected to be between 118,000 to 211,00 depending the option selected. It should be noted that these numbers are only those passengers new to transit and does not include any transfers from existing transit service in the region.

Portland-Canby

Commuter rail service was one of the transportation alternatives considered in Metro's South Corridor Study involving transportation options in the north part of Clackamas County. Capital costs for this corridor are estimated to be in the range of $170 million. In April, 2001 the Steering Committee for the South Corridor Study decided not to pursue the commuter rail option as one of the transportation alternatives.

Albany-Corvallis

This route has the potential to handle both intercity and commuter train service. As *Cascades* service increases in the Willamette Valley, supplemented by Thruway bus service, there will be a need for increased connections to Corvallis. Thruway bus operation from Albany is the easiest means of extending the benefits of PNWRC service to Corvallis. However, a longer-range vision should include evaluation of rail service, either as a dedicated commuter shuttle service with economical DMU equipment, or

perhaps by diverting one or more *Cascades* trains from Albany to Corvallis in lieu of Eugene. These concepts will require careful market and economic analysis. Currently there are three Thruway intercity bus round-trip runs and multiple commuter bus trips between Albany and Corvallis.

AMTRAK PLANS FOR THE PNWRC CORRIDOR

Consistent with Amtrak's Strategic Business Plan and a congressional mandate for self- sufficiency by the fiscal year 2003, Amtrak's vision is to maximize its potential in the marketplace. Accordingly, the plan focuses on five Key Corporate Strategies and their relationships to eleven Operational Initiatives. The Key Strategies are:

- Build a market-based network to create economic viability that is critical for the survival of a national network.
- Develop corridor services as the engine of long term survival.
- Develop consistent quality service to ensure that Amtrak's passengers return again and again, creating the foundation for economic health.
- Revitalize the Amtrak brand to reflect the changing product and corporate culture.
- Leverage public and private partnerships to permit each partner, including Amtrak, to build on its strengths, facilitating service where it might otherwise not be viable.

The Operational Initiatives are:

- Launch high speed rail.
- Grow mail and express business lines.
- Manage the sales and distribution network.
- Improve fleet quality and management.
- Contain core operating costs.
- Pursue new commercial ventures.
- Continue safety excellence.
- Advance information technology.
- Conclude labor negotiations.
- Capitalize on human resources.
- Develop contract commuter services.

Toward this end, Amtrak has been working with Washington and Oregon in the incremental implementation of the PNWRC *Cascades* plan that each state has developed for the corridor. Both states have adopted the same approach aimed at meeting our mutual goals.

The development and prosperity of the PNWRC require cooperative efforts of the many partners involved. The corridor has three distinct segments, one of which is Portland to Eugene, but all have varying passenger rail needs. Plans for the PNWRC recognize the distinct differences of the three segments and help identify and prioritize projects. These cooperative efforts will help gain support and funding for the additional improvements required to meet the transportation needs in this region. The success of

the *Cascades* service has confirmed the need for faster and more frequent service along the entire corridor. Capital improvements will benefit Amtrak's long distance trains and freight traffic operating in the Northwest, as well as provide opportunities for other modes of transportation (Thruway buses and transit services) to enhance rail service in the communities served.

Equipment purchases and demonstrations, as well capital improvements to stations, track and maintenance facilities have been made with funding from federal, state, local and Amtrak partnerships. However, as identified in the PNWRC plans prepared by Oregon, Washington, and British Columbia, this fast growing region will require additional infrastructure improvements to increase track capacity to relieve congestion and safety upgrades to track and signal systems before increased passenger train speeds and frequencies can be allowed. As these and other improvements are made, additional passenger rail service can be added to meet the travel needs of the region.

RAIL PASSENGER STATIONS

Oregon's rail passenger stations have received significant improvements in recent years, but some deficiencies remain. The state is currently installing a passenger information system at stations in the Willamette Valley. The system will provide passengers with up-to-the-minute information on train arrival times, unusual operating conditions, and other information designed to increase passenger satisfaction. ODOT continues to assess station needs, and to work with both Amtrak and local communities to identify needs and secure funding for further improvements. A brief review of rail stations is presented below.

Portland. The station was acquired and improved by the Portland Development Commission, with some assistance from Amtrak. Portland's intercity bus terminal adjoins Union Station, creating a transportation hub for the region. Light rail service is a five-minute walk, and the station is within the city's "no fare" downtown transit zone. A number of Tri-Met bus routes terminate at the rail and bus stations. Future improvements still to be accomplished include improved platforms, consolidated ticketing and baggage operations, seismic retrofitting, and enhancements to facilitate Amtrak's growing mail and express business.

Oregon City. A new station site has been identified by the city, and planning is underway to move the city's historic station to the site. The $1.5 million station, planned for completion in 2002, will serve all *Cascades* trains but not the *Coast Starlight.*

Salem. ODOT purchased the station with $2.4 million in ISTEA[43] Enhancement Program funding and completed renovations and seismic retrofitting in 2000. The renovation restored the original details of the "Classical Revival" station and updated the station's facilities. Amtrak funded improvements to the station platform and north parking areas.

[43] The Intermodal Surface Transportation Efficiency Act (ISTEA) is the federal government's primary multi-year funding program for ground transportation modes. It was re-authorized and extended in 1998 as the Transportation Equity Act for the 21st Century (TEA-21).

Albany. The city has secured TEA-21[44] funding to purchase and renovate the station. The $9.5 million federal grant (with a $2 million local match) will be used to purchase and renovate the station, improve multimodal station access, and promote local community and business development.

Eugene. The station, currently privately owned, is not equipped to handle anticipated future passenger volumes. The city is has recently purchased the station, and TEA-21 funding has been secured. Engineering is currently underway to provide the needed improvements that include greater station capacity, increased parking, improved access, and better passenger facilities.

Chemult. Station shelter and wood platforms are in poor condition. ODOT and Amtrak are developing plans to replace the station shelter, and to provide new platforms.

Klamath Falls. Station building improvements and improved passenger platforms are required to meet current and projected passenger usage.

Thruway Bus Stops. Connecting Thruway bus services that are operated by existing transportation companies utilize a variety of station or bus stop arrangements. At the rail transfer point, the rail station facilities are utilized. In other communities, the services either use local bus stations or identified bus stops along major transportation routes. At a minimum, these bus stops will be identified with up to date signage indicating bus schedules and routes, and clearly identifying the location as a "train connection" location. Shelters are desirable, and parking will be available for either park and ride users, or for passenger drop-off and pick-up. Bus stop locations need to be identifiable by street intersection, street address, or relationship to a local business, so the locations can be put in timetables and made available to the traveling public in other promotional materials. Finally, bus stops need to be located in areas where people will feel comfortable waiting for a bus, or waiting to pick up an arriving passenger. ODOT will periodically review bus stop locations and propose improvements based on observations, minimal standards, and passenger comments.

RAIL PLAN PASSENGER ADVISORY COMMITTEE RECOMMENDATIONS

During the course of the Passenger Element's development, the ODOT Passenger Rail Advisory Committee was informed of the work underway and was provided with draft copies of the Passenger Element. Based on its review of the draft document, the Passenger Rail Advisory Committee has proposed the following recommendations:

- Work with Oregon's congressional delegation to secure a source of capital funds for rail passenger service.
- Add one additional *Cascades* passenger train between Portland and Eugene in 2003, 2005 and 2007. This will result in five trains between Portland and Eugene, in addition to the *Coast Starlight*. This schedule should be implemented on a more rapid timeline if capacity improvements are completed ahead of schedule and the necessary resources to support the service are available.

[44] Ibid.

- Work with Amtrak and the private sector railroads to improve passenger train on-time performance, higher train speeds and expanded rail capacity to accommodate the increases in passenger service.
- Add and adjust supplemental corridor and feeder Thruway motor coach services as the market demands and funding becomes available.
- Strengthen the intermodal connections between Albany and Corvallis.
- As train frequencies increase, work with local transit providers to provide enhanced local connections leading towards a "seamless" journey.
- Improve passenger information both in the field of trip planning and real time train and Thruway bus data.
- Work with Amtrak and Washington State DOT to obtain sufficient and appropriate passenger equipment to handle increases in passenger travel in the corridor.
- Work with our partners towards establishing through Eugene-Vancouver BC train service.
- Establish a secure long term dedicated source of funding for both train operations and capital improvements.
- Re-establish passenger train service between Portland and Boise with a connection to the national network southeast of Boise as soon a feasible.
- Encourage the development of mail and express business to provide additional operating revenue for the passenger rail service.

PROSPECTS FOR TRUE HIGH SPEED RAIL IN OREGON

Several suggestions have been made that the state needs to proceed directly to truly high speed rail with train speeds in excess of 150 mph. Others have stated that a more incremental program needs to be developed. The incremental approach is being taken in this plan since it is felt that an effective plan should be one that can be implemented in the next six years.

The Oregon Transportation Plan continues to serve as the state's long range transportation planning document and it calls for true high speed rail. Such a line between Portland and Eugene would cost an estimated $4-5 billion depending upon alignment and could cut travel times between the two cities to 45-60 minutes. Annual ridership levels at these travel times is expected to approach 3.4 million passengers a year or just over 9,000 passengers a day. This compares to the 750,000 riders (2,100 a day) projected in the capital plan prepared for the Department in April 2000.

The estimated capital costs for the 750,000 passengers a year is expected to be about $385 million. Going to truly high speed rail would increase the capital costs by a factor of 12-15 while ridership would only increase by a factor of 5. In all likelihood some balancing would take place between capital expenditures and ridership levels. As train levels increase it will probably be necessary to construct a separate line for passenger trains only. This line would be constructed to a much higher level and could see passenger trains operating at speeds of 110-125 mph.

In addition, the environmental process for a truly high speed line would be similar to trying to locate a new freeway in the Willamette Valley. The incremental approach would breakdown the end product into more environmentally digestible pieces.

Circumstances in the next couple of years may cause the next update to the rail plan to re-examine the incremental approach and suggest that the pace to true high speed rail be accelerated.

APPENDICES

Appendix A:

BACKGROUND RELATING TO RAIL PASSENGER SERVICE

OVERVIEW

Prior to Amtrak's assumption of rail passenger services from the various private railroads in 1971, there was virtually no proactive state role in the provision of passenger services outside the confines of the Northeast Corridor (NEC).[1] Passenger services were provided by individual private railroads over a declining network of rail lines. The government role with respect to passenger services was largely limited to safety regulation and, in many states, a lesser regulatory role in reviewing railroad applications to discontinue service. Railroad passenger service had always been provided by private carriers, and there was little public interest in any form of financial support for passenger services which, for the most part, were viewed financially as a deficit operation. The number of passenger services declined steadily during the late 1950s and 1960s, hastened by the decision of the U.S. Postal Service to withdraw transport of mail shipments by passenger train. The decline corresponded with the construction of the interstate highway system and the widespread introduction of jet aircraft, leading many transportation observers to predict the end of intercity passenger rail service. Each discontinued passenger train resulted in fewer remaining passengers, fewer travel options, and often loss of vital connecting services.

Federal efforts to improve passenger rail transportation began in the NEC in the 1960s, with the development of the original Metroliner service between New York City and Washington. Cities and regional governments increasingly found it necessary to finance the operation of commuter systems serving urban areas when the railroads found this market segment was as unprofitable as the intercity services. The potential loss of all passenger services eventually spurred Congress to create the National Railroad Passenger Corporation, now known as Amtrak, to take over the remaining intercity trains and relieve the railroads of the operating losses they faced. Amtrak began operating a greatly slimmed down national network in 1971. That network consisted of a skeleton of rail routes connecting major metropolitan areas, with most routes served by only a single daily or tri-weekly schedule. While these routes preserved a modicum of service on a national scale, they offered little in the way of frequent or convenient shorter distance corridor services beyond the NEC.

SUPPLEMENTAL SERVICES

The federal legislation creating Amtrak provided that states could join with Amtrak to fund services supplemental to Amtrak's federally-supported long distance routes. Only a handful of states originally opted to participate in the program, known as the "403(b) Program." New York, Michigan, Illinois, and California were the primary initial states that contributed towards the operating loss of one or more local-service trains. This cooperative program is important because under federal law, Amtrak has the rights to operate over the lines of freight carriers on specified favorable terms. States or regional agencies that operate passenger service independently over lines of private freight railroads must negotiate

[1] The NEC is the rail line connecting Boston, New Haven, New York, Philadelphia, and Washington DC, with spur lines to Springfield, MA and to Harrisburg, PA. It is the most heavily traveled passenger route in the nation, used by both Amtrak and a number of regional commuter agencies, as well as freight services.

access rights separately, usually on less favorable terms. Thus, there is an advantage to working through Amtrak to secure supplemental regional passenger services.

Oregon's initial involvement came in 1980, when the state sponsored an experimental service between Portland and Eugene, and some limited ODOT staff resources were assigned to passenger service issues in the state. The experimental service was discontinued in 1981, but ODOT's interest in planning for passenger rail service in the state continued.

In the 1970s and into the 1980s, Amtrak covered a portion of the cost of "403(b)" trains, while states picked up the balance. In recent years, Congress has mandated that Amtrak's federal operating subsidy is to be phased out by the beginning of Amtrak's fiscal year 2003. As a result of this mandate, states have had to provide a larger percentage of the operating loss for those trains they wanted to sponsor. In addition to the operating loss, states are partnering with Amtrak and others to fund capital improvements associated with the services.

There is some flexibility in the program that allows states to negotiate the precise terms of the service agreements, and to balance legal or policy limitations that affect what particular states may pay for. California, Washington, and North Carolina, for example, provide state-owned equipment, while other states participate substantially in trackage improvements or station facilities. Agreements can be drafted to reflect benefits to Amtrak's basic services that result from state-funded improvements. A recent innovation in the state agreements has been a fixed fee for services to be provided over a period of years. Under these terms, Amtrak agrees to operate defined services for a fixed price, and Amtrak assumes some financial risk in the event revenues fall below projected levels. On the other side, the state has a known expense amount for budgeting for 2 or 3 years in advance, and a corresponding lower risk.

In 1999, Oregon became an equipment-owning state with the purchase of two cab cars for the Talgo *Cascades* train sets. An additional cab car will be added the summer of 2001.

Several examples of how states are participating in the 403(b) program are given below. The listing is not a complete catalog of all participants, but is intended to illustrate the many ways in which states can secure supplemental service.

Washington

The state funds the operating support required for Talgo service between Vancouver, BC and Seattle, and Seattle and Portland. State costs are offset by the provision of two state-owned train sets.[2] Washington also is participating in approximately $200 million track improvement projects in the Washington segment the corridor that will reduce running times and will provide the capacity necessary for the intercity corridor trains.

[2] Amtrak usually charges an equipment lease fee or an equivalent "capital cost" charge for use of Amtrak equipment on state-sponsored trains. States that are legally able to own locomotives and passenger cars may find their total costs reduced by providing state-owned equipment.

California

California has been a program participant since the mid-1970s, and now supports service in three corridors, with frequency of service ranging from 5 to 11 daily round trips. California provides operating support, has paid for significant track and facility improvements, and provides most of the equipment used in the state services. The state also conducts an extensive marketing effort on behalf of the service. Amtrak operates the services in all three corridors, with management oversight provided in two corridors[47] by Caltrans, and in the third corridor[48] by a joint powers agency comprised of the counties along the route. In addition, California pioneered the concept of Thruway bus service to extend the effective service area of the corridors to smaller communities well beyond the rail lines, and to provide important connections between the corridors where train service was not feasible.[49]

Illinois

Operating funds from the state under a multi-year fixed price agreement supports Service between Chicago and St. Louis. Illinois also contributed to a major track project to upgrade the line, and currently is cooperating with the FRA in a test installation of a new train control system designed to make high speed operation more feasible. Illinois also supports the operation of corridor service between Chicago and Milwaukee.

North Carolina

The state provides funding for rail service between Charlotte and Raleigh. A daily round trip operates over the route using rebuilt equipment purchased by the state. The state also provides funds to operate one of Amtrak's Northeast Corridor trains south to Raleigh and Charlotte, and is planning track upgrades to make the services more competitive.

Maine

Using funds provided by a statewide bond issue and other sources, Maine has upgraded the rail line between Boston and Portland, and will support 3 daily round trips beginning in the spring of 2001. Even though the service has not yet started, Maine already is planning extensions to communities north of Portland.

Oklahoma

The state funds a single round trip between Oklahoma City and Fort Worth, and is currently paying to retime crossing gates over part of the route to permit higher speeds. Amtrak upgraded some equipment for the service, which started in 1999, and is reimbursed by the state through equipment rental charges.

Midwest Corridor Initiative

A group of states in the Midwest have banded together to develop a plan for interconnected high speed rail corridors centered on Chicago. The initiative proposes incremental upgrading of the rail

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[3] *Surfliner Corridor* from San Diego to San Luis Obispo, and *San Joaquin Corridor* from Oakland to Bakersfield.

[4] *Capitol Corridor* from Auburn to San Jose.

[5] Thruway bus service connects San Joaquin trains at Bakersfield with multiple locations in Southern California. Passenger volumes would support rail service, but direct rail service over the Tehachapi Mountains is precluded by a circuitous rail route and extreme

routes, many of which already have some Amtrak service, and purchase of new equipment for high speed operation. Amtrak is currently seeking bids on an initial order of train sets that will initiate the new services.

THE EMERGING FEDERAL INTEREST

The two major federal surface transportation acts of the 1990s authorized the designation of high speed rail corridors. The Vancouver-Seattle-Portland-Eugene corridor was one of five such corridors designated by the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1992. High speed corridors are those with high speed potential, including reasonable expectation of running speeds of at least 90 miles per hour in the reasonable future. Designated corridors were eligible for federal funding to be used for improving or eliminating highway grade crossings (Sec. 1103(c) under TEA-21). The Transportation Equity Act for the 21st Century (TEA-21) in 1998 authorized designation of additional corridor eligible for funding. The recent level of funding, only about $5 million per year, does not go very far in the expanded network of corridors.

Despite the funding limitations, Oregon has benefited from the ISTEA and TEA-21 programs. Funding has been secured for a number of projects:

- Salem, Albany, and Eugene rail station enhancements as intermodal terminals.
- Major track and signalization improvements both north and south of Portland.
- Layover power facilities at Portland Union Station.
- Purchase of 2 cab-control cars for Talgo train sets.

Federal legislation was introduced in Congress in 2000 to enact a High Speed Rail Investment Act (HSRIA). The legislation would allow Amtrak to issue $10 billion in bonds over 10 years. Interest earned on the bonds would be tax-free. States would be required to provide a 20 percent match to be placed into escrow to pay off the bonds later. Ninety percent of the total would go to corridors designated under ISTEA and TEA-21 for infrastructure development, with no single corridor to get more than 30 percent of the total funding. The HSRIA funding is envisioned as an incentive for state investment (as highways and transit already enjoy) and as a means to encourage serious development of higher speed intercity passenger rail services nationwide. The contemplated funding level would support meaningful infrastructure improvements, far beyond the token grade crossing funding available to date. Although criteria for distribution of the funding was not worked out in detail, projects with a matching contribution in excess of 20 percent probably would receive preference, and any project considered would have to demonstrate a positive incremental financial contribution to Amtrak. Despite widespread support in both the House and Senate, the legislation was allowed to lapse late in the year. Senate leadership of both parties has promised to reintroduce the legislation in 2001.

AMTRAK SELF SUFFICIENCY REQUIREMENT

In enacting the Amtrak Reform Act in 1997, Congress indicated its intent to reduce the level of operating support provided to Amtrak, with a goal of making Amtrak self-sufficient on an operating basis (excluding

capital needs) by 2003. This requirement has placed pressure on Amtrak to make business decisions that reinforce this goal. As a result, all state-funded services are under increased economic scrutiny, and Amtrak will only provide the supplemental services on a basis of contribution to Amtrak's "bottom line" in financial terms. The obvious result has been to increase the level of state support required in recent years.

Appendix B:

POLICY FRAMEWORK FOR PASSENGER RAIL PLANNING

OREGON'S POLICY FRAMEWORK

Oregon has fashioned its transportation policies, and particularly its rail passenger goals, through a series of efforts over the last decade. These plans, together with funding authorizations from the legislature, have clearly established the interest of the state in providing its citizens with a multimodal transportation system that includes an important rail passenger element.

Aside from the experimental *Willamette Valley* service operated in 1980-81, the Oregon Department of Transportation's involvement in passenger rail planning stems principally from Senate Bill 763, which directed ODOT to **"…develop and maintain a state transportation policy for railroad passenger service and a comprehensive, long range plan for railroad passenger service…"** Since the early 1990s, ODOT has pursued that charge. On the policy side, the *Oregon Transportation Plan (1992)* and the *Oregon Rail Passenger Policy and Plan (1992)* defined the state's strategies and policies for investment in transportation improvements. The *Oregon Public Transportation Plan (1997)* provided further policy definition, leading to the preparation of more specific modal transportation plans. ODOT also has pursued technical studies supporting the passenger service development goals, including capacity analyses to identify needed improvements along the core Willamette Valley trackage, and development of operating plans supported by patronage evaluations and financial analyses. ODOT also has conducted passenger surveys to develop a market understanding and ascertain the key concerns of rail passengers. Most recently, the *Pacific Northwest Rail Corridor, Oregon Segment (2000)* summarizes operating plan goals, and identifies specific capital improvements necessary to decrease running times and satisfy immediate passenger and freight capacity needs for the segment of the corridor between the Columbia River and Eugene. The report includes a preliminary environmental analysis for the improvements.

The key provisions of the prior policy plans are summarized below. These provisions continue to guide Oregon's efforts to improve passenger rail transportation for its citizens.

1992 Oregon Transportation Plan

The plan set the stage for subsequent more specific modal transportation planning efforts throughout the state. It established a number of statewide transportation goals, including:

- Provide transportation choices through a balanced system having high accessibility, maximum connectivity, and financial stability.
- Develop a transportation system supporting urban and rural livability.
- Support economic development with efficient and environmentally sound transportation facilities.
- Implement the plan through stable financing, good management, and cooperative government and private efforts.

In addition, the plan established specific concepts for intercity rail service that continues to guide the state's efforts today:

- Frequent regional rail service with feeder bus networks.
- Aggressive marketing and passenger amenities.
- Reliable on-time performance.
- Incremental improvements to attain higher speed rail service.
- Cooperation with adjacent states.
- Coordination with local bus and transit services.

1992 Oregon Rail Passenger Policy and Plan

This study represented the first comprehensive plan for rail passenger service in Oregon undertaken by the state. The study concluded that rail passenger service is most viable in the Willamette Valley as part of a regional system linking urban centers from Eugene north through Portland and Seattle to Vancouver, BC. It called for upgrades to the UP line through the valley to provide needed capacity for added service, and identified extension of the Seattle-Portland *Mt. Rainier* service south to Eugene as a priority proposal. The plan proposed incremental upgrading of the Willamette Valley route in four service stages:

- Early Stage: Limited upgrade of existing track and signals; added frequencies in the Willamette Valley; added feeder bus routes.
- Second Stage: Upgrade Willamette Valley to higher maximum speeds (90-110 mph with elimination of speed restrictions in selected locations); extension of service to Roseburg; increased service frequencies; added feeder buses.
- Third Stage: Continued upgrading of Willamette Valley/Roseburg service to 110 mph standards; added frequencies in the Valley; possible extension of conventional service to the Rogue River Valley.
- Late Stage: Full high-speed trunk between Portland and Medford; connections to California; branch railcar connections to Coos Bay, Newport, and Astoria; rearrangement of bus feeders.

The study looked at the potential of local service with either diesel or electric technology serving the west side of the Willamette Valley from Portland to McMinnville, as well as intercity service to Bend/ Redmond via the Deschutes River Canyon and to eastern Oregon along the UP route. However, the plan found these carried relatively high price tags for the benefits that would be gained. It also concluded that conventional rail service to the Rogue River Valley would be difficult to achieve in a cost-effective form, but might be more feasible as part of an interstate high speed system linking the West Coast states. Despite the marginal prospects for rail service on these and other branch lines, the study emphasized the need for connecting bus service in several corridors that would support train operations on the Willamette Valley line. These included:

- Medford: Buses between Eugene and Grants Pass/Medford would initially provide service as an extension of trains between Portland and Eugene, until such time as train service becomes a viable alternative over this route.

- Astoria: Buses between Astoria and Longview, WA to connect with service between Portland and Seattle.
- Newport: Buses between Newport and Albany to connect with trains at Albany.
- Central Oregon: Buses between Bend and Redmond and Albany, connecting with trains at Albany.
- Coos Bay: Buses between Coos Bay and Eugene, where the connection would be made with trains.
- Klamath Falls: Buses between Klamath Falls and Medford.

The 1992 plan was significant because many of its concepts were translated to reality. The first Seattle-Portland corridor train was extended to Eugene in 1994, and a second was extended in 2000. Thruway bus service was initiated in the Willamette Valley to complement the train schedules, and was extended to numerous communities including the Rogue River Valley, Florence-Coos Bay, Newport, Astoria, Bend, and Chemult. Thruway buses also serve eastern Oregon communities over routes via both Pendleton and Burns. Track improvements are being implemented on an incremental basis with the cooperation of UP and BNSF, and stations are being upgraded. On the other hand, the plan presented a highly visionary concept of rail service south of Eugene that would appear unattainable under current or foreseeable levels of financial support for rail improvements.

1997 Oregon Public Transportation Plan

The *Oregon Public Transportation Plan* provided the framework for updating this Rail Passenger Plan Element. The plan stressed the need for integration of the various public transportation modes in the state, and provided a basic policy framework for the more detailed modal plan for rail services. Further, the plan was the outgrowth of extensive public involvement, including stakeholder interviews and community workshops.

The plan suggested implementation in three levels, each related to available funding, as shown in Table B-1.

Table B-1
Transportation Plan Implementation Levels

	Objective	Emphasis
Level 1	Maintain the existing public transportation facilities	Emphasize service to those most dependent on public transportation
Level 2	Develop public transportation facilities that keep pace with growth in the state	
Level 3	Provide a range of service options designed to respond to the goals of Oregon's planning initiatives	Expand service to those using public transportation by choice, include an emphasis on commuters

The plan indicated that the probable cost to operate services at current levels through 2015 would be about $7.3 billion, with anticipated revenue covering most of the cost. Level 2 costs through 2015 would be about $10.6 billion, and Level 3 costs would be about $16.7 billion. Service revenue could not keep pace with costs, resulting in higher shortfalls. Only at Level 3 would the service respond to state and federal mandates and goals for public transportation services.

Although meeting the public transportation aspirations of Oregon citizens would require collaboration among federal, state, local, and private transportation providers, the state's role is the key to bringing these interests together. This will require legislative and executive actions, in addition to the continuous planning and coordinating role assigned to ODOT.

APPENDIX C

GLOSSARY OF RAILROAD TERMS

Abandonment - Elimination of a line segment from a rail network. Abandonments must be approved by the Surface Transportation Board.

ADT/AADT - Average Daily Traffic/Average Annual Daily Traffic. The number of vehicles or passengers using a facility on an average day. It is calculated by dividing the total yearly volume (of passengers or vehicles) by 365.

Association of American Railroads (AAR) - An association of private rail carriers which was founded to promote cooperation among the rail carriers; headquartered in Washington, D.C.

Automatic Train Control Systems (ATC) - Using technology to monitor and control the movements of trains eliminating the risk of human error thus reducing collisions.

AVO - Average Vehicle Occupancy. The number of persons per vehicle.

Ballast - Selected material placed on the roadbed for the purposes of distributing weight, providing drainage and holding the track line and surface.

Bogie - A set of wheels built specifically as rear wheels under a container.

Branch Line - A secondary line of a railway, typically stub-ended.

Breakbulk Cargo - General cargo conventionally stevedored and stowed as opposed to bulk or containerized cargo.

Bridge Traffic - A railroad's traffic which originates and terminates on other railroads, or off-line. Also known as overhead traffic.

Bulk Cargo – Homogeneous raw material shipped in shipload lots. Such commodities may include grain, coal chemicals, or petroleum products.

Bulk Transfer - The transfer of bulk products, such as plastic pellets or liquid sweeteners, from one mode of transportation to another. Bulk transfer permits off-rail shippers and receivers of varied commodities to combine rail's long-haul efficiencies with truck's convenient door-to-door delivery.

Carload - Shipment of freight required to fill a rail car.

COFC - Container on (rail) flat car. A form of intermodal movement of freight.

Congestion Pricing - A policy that attempts to reduce congestion by applying a price to use a roadway during peak travel periods. Such policies may include parking surcharges and automated tolling.

Container - A large, weatherproof box designed for shipping freight in bulk by rail, truck or steamship.

Containerized Cargo - Cargo which is practical to transport in a container, and result in a more economical shipment than could be effected by shipping the cargo in some other form of unitization.

Continuous Welded Rail (CWR) - A number of rails welded together to form a continuous string in lengths typically of 1,400 feet.

Cross Ties - The wooden, concrete, or steel crosspieces that keep the two rails in gage. Also see tie.

Deficiency - A constraint in the transportation system that decreases the efficiency of the system. Deficiencies can include congestion, geometric limitations such as speed, height, or width restrictions, or facility condition that restricts use or operations.

Double-Stack Containers - Containers that can be stacked atop one another on a flatcar.

Dray - A local move of a trailer, truck or container.

Elasticity Factor - The effect on demand for one mode induced by the change in price of a competing mode.

Embargo - A means of controlling or stopping rail traffic when accumulations, congestion or other problems, such as poor track conditions, normally of a temporary nature, interfere with normal operations.

FEU - Forty-foot container equivalent. This is a common measure for freight movements.

Federal Railroad Administration (FRA) - The FRA is a division within the USDOT that is responsible for conducting and monitoring research regarding high-speed rail passenger operations, and enforcing federal programs for railroad safety. It is generally responsible for administering all federal programs related to rail transportation.

Federal Railroad Administration (FRA) Track Classes - The FRA limits operating speeds on track based on physical condition. The classes which have been established and maximum speeds are:

Class	1	Max. Freight Train Speed	10 MPH
	2		25 MPH
	3		40 MPH
	4		60 MPH
	5		80 MPH
	6		110 MPH

Exempt track does not meet Class 1 standards and can be operated only with written approval of the FRA and with certain restrictions.

Freight - Any commodity being transported.

Gage (of track) - The distance between the gage face of the rails, measured at right angles thereto. (Standard gage is 4 feet, 8 inches.)

GIS - Geographic Information System. The use of computers, software, and geographic data to display, manipulate, and analyze information.

Global Positioning Systems (GPS) - Using satellites and advanced communications technology to accurately locate oneself on the globe. Can be used by drivers, transit operators, and trucking companies to locate vehicles and provide alternative routes.

Grade Crossing - The point at which a roadway intersects and crosses a rail line. The crossing can be at-grade or grade separated.

Gross State Product (GSP) - The total value of all products and services produced in that state.

Gross Ton-Mile - The movement of the combined weight of transportation equipment and its contents a distance of one mile.

Headway - The time interval between consecutive vehicles passing a given point. Generally used to define transit service. Used in the following context: "Peak period transit buses and trains generally run on five-minute headways or less."

Intelligent Transportation Systems (ITS) - Using technology to improve the efficiency of the transportation system.

Interchange - The exchange of carload traffic between railroads. An interchange point or location is the specific track or tracks on which cars are placed for delivery to another railroad.

Intermodal - Carriage by more than a single mode with a transfer(s) between modes to complete a trip or a freight movement. In passenger transportation intermodal usually refers to trips involving more than one mode. For freight and goods movement, the definition refers to transfers between all freight modes including ships, rail, truck, barge, etc. taken as a system for moving freight. Also refers to the movement of an intermodal container.

Intermodal Development Program - Provides for major capital investments in fixed-guideway transportation systems, access to seaports, airports and other transportation terminals, providing for the construction of intermodal or multimodal terminals; and to otherwise facilitate the intermodal or multimodal movement of people and goods.

Intermodal Management System – Oregon's systematic process of evaluating and monitoring intermodal facilities and linkages of statewide significance to identify and correct deficiencies that impede efficient connectivity with national and international transportation systems and markets.

Intermodal System - The transportation network consisting of public and private infrastructure for moving people and goods using various combinations of transportation modes.

Intermodal Transportation - Transportation movement involving more than one mode (e.g. rail/motor, motor/air, or rail/water). It has been defined as a process of addressing the linkages, interactions and movements between modes of transportation.

Interstate - Traffic that originates in one state and terminates in another. Foreign and domestic port (import and export) traffic is also considered to be interstate in nature.

Interstate Commerce Commission (ICC) - Former transportation regulating authority, eliminated by the ICC Termination Act of 1995. Replaced by the Surface Transportation Board (STB).

Intrastate Carrier - A carrier operating solely within the boundaries of a single state, e.g., the Portland & Western Railroad.

ISTEA - Intermodal Surface Transportation Efficiency Act of 1991.

Lading - Freight or cargo making up a shipment.

LCV - Longer combination vehicle. Any combination of truck tractor and two or more trailers or semitrailers which operates on the Interstate System at a gross vehicle weight greater than 80,000 lbs.

Less-than-truckload (LTL) - The quantity of freight that is less than that required for application of a trailerload rate.

Line-haul service - The movement over the tracks of a railroad from one city to another, not including the switching service, or the movement of a truck over the highway from city to city.

LRFA - Local Rail Freight Assistance Program - A federal program designed to provide assistance (funding) for light density rail lines. The program is not currently funded.

Main Line - Two definitions apply. First is a designation made by each railroad of its own track, generally signifying a line over which through trains pass with relatively high frequency. A main line generally has heavier weight rail, more sophisticated signalling systems and better maintenance than branch lines. Second is a designation of the through track between any two points, even on a branch line, as distinguished from side tracks, pass tracks or spurs.

Main Track - See main line.

MGTM/M - Million Gross Ton-Miles per Mile.

Mobility - The ability of people to complete desired trips or for goods to be moved from place to place.

Modal Share - The percentage of freight or passengers moved by a particular type (mode) of transportation.

Mode Shift - The change in mode by an individual. A person may shift modes when the relative cost in terms of time, money, and convenience between modes changes. For example, if transit fares are reduced people who once drove alone to work may decide to take the bus instead. That is, these individuals shift from the automobile mode to the bus mode.

MPO - Metropolitan Planning Organization. A forum for cooperative decision making for a metropolitan planning area.

Multimodal Transportation - More than one mode to serve transportation needs in a given area and is sometimes included within the meaning of intermodal.

National Ambient Air Quality Standard - Federal air quality standards established pursuant to s.109 of the Clean Air Act that apply to outside air everywhere and are set to protect public health. Included are standards for carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM-10), and sulphur dioxide (SO_2).

Net Ton-mile - The movement of a ton of freight one mile.

Operating Revenue - All revenue generated by transportation services.

Peak Hour - The hour of the day during which the volume is higher than at any other hour during the day.

Peak Period - The time period which has the highest volume of traffic in a day. For example, the peak period for urban highways is generally between 6:00 and 9:00 AM.

Piggyback - The transportation of highway trailers (TOFC) or removable trailer bodies (COFC) on rail cars specifically equipped for the service. It is essentially an intermodal movement in which a truck performs pickup and delivery to a rail terminal, as well as delivery at the terminating rail head.

PMT - Personal Miles Traveled. This is the summation of the products of person trips times miles traveled per trip.

Rail - A rolled steel shape, commonly a Tee-section designed to be laid end-to-end in two parallel lines on cross ties or other suitable supports to form a track for railway rolling stock.

Rail Yard - A system of tracks within limits provided for switching cars, making up trains, storing cars, and other purposes.

Railroad Classifications - Railroad classifications as defined by the Interstate Commerce Commission, now the STB, are based on average annual operating income adjusted each year.

Class I: Railroads with average annual operating income of $255.9 million or more (1996, the latest year).

Class II: Railroads with average annual operating income of at least $20.5 million.

Class III: Railroads with average annual operating income of less than $20.5 million.

Railroad Mileage - The following definitions apply: road or route miles signify the unduplicated mileage of a rail carrier's system and is the typical measure of a railroad's size. Track miles, a higher number than route miles, for a given system, taking into account second (or third) tracks; running track miles represent tracks normally used in train service, exclusive of yard tracks, industrial sidings and storage tracks; total track miles are the sum of running tracks plus all other tracks.

Railroad Revitalization and Regulatory Reform Act of 1976 (4R Act) (Four R Act) - Federal legislation which provided reform of railroad economic regulation and federal funding for the rehabilitation of railroad facilities and equipment.

Regional Rail Reorganization Act of 1973 (created Conrail) (Three R Act) - Passed by Congress to finance and restructure eight Eastern bankrupt railroads and preserve essential transportation services in the Northeast and Midwest.

Right-of-Way - A strip of land for which an entity has a right to build, operate, and maintain a linear facility such as a road, railroad, or pipeline.

ROW - Right-of-Way as defined above.

Safety Program - Includes projects designed to improve vehicle and pedestrian safety on the city, county, and state highway systems. The safety program is divided into three subprograms — rail-highway crossings, highway safety, and traffic safety grants.

Short Range Objectives - One or more statements, for each long range objective, of the specific, measurable, intermediate end that is achievable and marks progress toward a goal. Specific objectives may be associated with more than one goal and/or long range objective.

Side-Track - A short track extending alongside and often connecting at both ends with main track.

Slow Order - A speed restriction placed by railroad management on a designated segment of track, generally as a temporary measure during the performance of maintenance work. Sometimes, however, slow orders represent semi-permanent restrictions due to deteriorated track conditions.

SOV - Single Occupancy Vehicle. An automobile in which only the driver is transported.

State Implementation Plan - The plan developed by the State and approved by the U.S. Environmental Protection Agency that contains the strategies and mechanisms, enforceable under State law, necessary to meet the national ambient air quality standards and comply with federal and State air quality laws and regulations.

Station - A place designated in the timetable by name.

STCC - Standard Transportation Commodity Code, a standard 7-digit collapsible coding structure. The first 5 digits of the STCC coincide with the Commodity Classification for Transportation Statistics, a commodity adaptation of the Standard Industrial Classification (SIC) published by the U.S. Office of Management and Budget, which was developed for use in the Census of Transportation and adopted by the Interstate Commerce Commission as the mandatory reporting form for all ICC-regulated carriers.

Strategic Issues - Critical challenges or fundamental policy concerns that affect the nature of a public condition. Strategic issues serve to identify the most significant opportunities and/or threats/problems that the agency must address in the next five years to help the agency succeed or prevent the agency from failing in its mission.

Strategy – Grouping of Actions into a comprehensive plan.

Surface Transportation Board (STB) - Replaced the ICC as the federal transportation regulatory body, but with reduced responsibilities and powers.

Terminal - An assemblage of facilities provided by a railway at a terminus or at an intermediate point for the handling of passengers or freight and the receiving, classifying, assembling and dispatching of trains.

TEU - Twenty-foot-equivalent-unit. The 8'x8'x20' intermodal container is used as a basic measure in many statistics.

Tie - The transverse member of the track structure to which the rails are spiked or otherwise fastened to provide proper gage and to cushion, distribute, and transmit the stresses of traffic through the ballast to the roadbed.

Timetable - The authority for the movement of regular trains subject to the rules. It may contain classified schedules and includes special instructions.

TOFC - Trailer on (rail) flat car. A form of piggyback movement of freight.

Track - An assembly of rails, ties, and fastenings over which cars, locomotives, and trains are moved.

Bad Order - A track on which bad order cars are placed either for light running repairs or for subsequent movement to repair tracks.

Classification - One of the body tracks in a classification yard, or a track used for classification purposes.

Crossover - Two turnouts with track between, connecting two nearby and usually parallel tracks.

Interchange - A track on which cars are delivered or received, as between railways.

Passing - A track auxiliary to the main track for meeting or passing trains. Same as a "Siding."

Side - A track auxiliary to the main track for purposes other than for meeting and passing trains.

Spur - A stub track diverging from a main or other track.

Station - A track upon which trains are placed to receive or discharge passengers, baggage, mail, and express.

Storage - One of the body tracks in storage yards or one of the tracks used for storing equipment.

Team - A track on which cars are placed for transfer of freight between cars and highway vehicles.

Trackage Rights - Rights obtained by one carrier to operate its trains over the tracks of another carrier.

Track Capacity - The number of cars that can stand in the clear on a track.

Trains, Categories of:

Extra Train - A freight train that does not operate regularly but only when required to move cars in excess of the normal flow of traffic.

Intermodal Train - A train that handles only trailer on a flat car (TOFC) or container on a flat car (COFC) traffic.

Switch Runs - Trains that operate in terminal areas or in road territory for short distances (normally under 100 miles) and place and pull cars from industries along the line. Switch runs are also referred to as "locals" by some railroads.

Through Freight - Trains that operate between terminals that may be several hundred or thousands of miles apart and do little or no picking up and setting off of cars en route.

Unit Train - A train handling a large volume of one commodity. Typically those trains handle coal, ore, potash, etc., which originates at one point and is hauled to one destination.

Transit - Mass transportation by bus, rail, or other conveyance which provides general or special services to the public or a regular and continuing basis. It does not include school buses or charter or sightseeing services.

Transportation Corridor - Any land area designated by the State, a county, or a municipality which is between two geographic points and which area is used or suitable for the movement of people and goods by one or more modes of transportation, including areas necessary for management of access and securing applicable approvals and permits. Transportation corridors shall contain, but are not limited to, the following: a) existing publicly owned rights-of-way; b) all property or property interests necessary for future transportation facilities, including rights of access, air, view, and light, whether public or private, for the purpose of securing and utilizing future transportation rights-of-way, including but not limited to, any lands reasonably necessary now or in the future for securing applicable approvals and permits, borrow pits, drainage ditches, water retention areas, rest areas, replacement access for landowners whose access could be impaired due to the construction of a future facility, and replacement rights-of-way for relocation of rail and utility facilities.

Transportation Expenses - The expenses directly associated with the operations of a railroad. They generally include the cost of crews, fuel, and other related items.

Turnout - A device made of two movable rails with connections and a crossing frog that permit the movement of an engine, car or train from one track to another. Also called a switch, although the switch is one component of a turnout.

Unit Train - A dedicated set of rail vehicles (a train) loaded with one commodity at one origin, unloaded at one destination each trip, and moving in both directions on a predetermined schedule without intermediate stops.

VMT - Vehicle Miles Traveled. The total number of miles traveled for a mode during a given time period.

Work Program - The five-year listing of all transportation projects planned for each fiscal year by the Florida Department of Transportation, as adjusted for the legislatively approved budget for the first year of the program.

Sources:

***2020 Transportation Plan – Draft 1997 Short Range Component**, Florida Department of Transportation.*

***American Trucking Trends**, 1996 Edition, American Trucking Association Statistic Department.*

***Minnesota State Rail Plan**, Minnesota Department of Transportation, Office of Railroads and Waterways, January 1994.*

***1980 Iowa Railroad Analysis Update**, Iowa Department of Transportation, December 1980, Wilbur Smith Associates.*

Norfolk Southern Corporation web site.

California Intermodal Transportation Management System

***Transportation Expressions**, US Department of Transportation, 1996.*

APPENDIX D:

SIGNIFICANT COMMENTS TO THE DRAFT OREGON RAIL PLAN

The Department received a number of comments on the draft of the update to the Rail Plan. Most them dealt with the wording in the document and were included were appropriate while others complemented the draft document. In addition, the Rail Plan Freight and Passenger Advisory Committees were essential in providing initial comment and input and provided a great deal of guidance while the drafting of the document was underway.

However, three comments are deemed significant enough to include them as an appendix. They were from:

Federal Highway Administration
Association of Oregon Rail and Transit Advocates
ODOT Region Three

A copy of their original submissions and staff comments are part of this appendix.

NOTE: *The reference to certain pages are in relation to the draft document and not those in the final draft. The incorporation of suggestions and comments resulted in a change to page numbering.*

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

THE OREGON DIVISION
The Equitable Center, Suite 100
530 Center Street NE
Salem, Oregon 97301
503-399-5749
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August 3, 2001

IN REPLY REFER TO

HEO.3-OR
710.36/ x-ref. 720.100

Ms. Claudia Howells
Manager, Rail Division
Oregon Department of Transportation
555 13th Street N.E.
Salem, Oregon 97310

Dear Ms. Howells

RE: Comments on Draft Oregon Rail Plan

Thank you for the opportunity to comment on the Draft Oregon Rail Plan. We appreciate the overview of freight flows, description of mainline and branch services, and future forecasts, as well as the acknowledgment of the sometimes quite limited role of the State in operational decisions. We have several comments to offer:

1. Introduction: We would recommend that text also note that the Oregon Rail Plan fulfills the Transportation Equity Act for the 21st Century (TEA-21) requirement that state transportation planning consider, among other issues, economic vitality, increased accessibility and mobility options available to people and freight, and enhancing the integration and connectivity of the transportation system.

2. Page 2: The text should indicate that the National Highway System Designation Act of 1995 removed the requirement for development of management systems (the requirements for congestion management systems and traffic monitoring systems were not changed). Several States, including Oregon, elected to continue to develop and implement management systems.

3. Page 3: We suggest reiterating the planning factors included in TEA-21, particularly those factors that address freight movement.

4. Page 3: We recommend the text include an expanded discussion on applicability of Section 1010 and Congestion Management and Air Quality funds.

5. Page 7: While we recognize the role of the document as a policy plan, we would recommend an expansion of the rail freight issues in the metropolitan areas as a means to ensure sufficient policy direction is available and that analysis guidelines are sufficient to identify shipment patterns, freight interchange facilities, performance, and needs.

6. Page 17: The text provides a description of the State role in rail planning. The text should also provide conclusions based on the findings from State oversight activities to determine if policy recommendations would be beneficial. Similarly, follow-on text discussing rail considerations in local planning would benefit from an assessment of the status of the crossing closure program and success in improving local access to rail service and, in general, status in recognizing rail's role in an integrated transportation system.

7. Page 60: It would be desirable to include a section on freight interchanges, as they are an integral part of the supply-distribution chain.

8. Page 94: We would recommend revising the paragraph on environmental impacts of the Pacific Northwest Rail Corridor. While the majority of highway-associated work would be expected to involve modification of existing crossings to upgrade equipment and protection devices or the creation of grade separated crossings and thus would meet criteria for categorical exclusion designation (in some cases requiring documentation) there may be cases where new rail alignments may be possible which may have more pronounced environmental impacts.

9. To what extent has the Department's statewide transportation model been used to analyze policy choices of various rail service scenarios? This is a powerful tool for assessing alternative modal investment options. As an allied comment, policy development would benefit from an analysis of cross-modal elasticities.

10. While recognizing the strong direction provided by the Oregon Transportation Plan and the limitations in the State role in rail freight operations, it would still be beneficial to offer an assessment of the current policy direction in line with the useful information already included on mainline and branch rail operations and freight and passenger forecasts as well as an assessment of where State investments would provide the greatest benefits.

Sincerely,

Nicholas J. Fortey

Transportation Operations Engineer

Document #1 - Page 2 of 2

ODOT staff have the following comments on the letter from FHWA

Numbers 1-5

These items have been integrated into the text.

Number 6

The Oregon Transportation Plan has a number of policies that relate to both freight and passenger service. An update to the original OTP is underway and as a part of this process an attempt is being made to determine the effectiveness of the existing goals, policies and actions. Any changes will be reflected in the next update to the Rail Plan.

The effectiveness of the state's Legislatively-directed crossing closure program has been mixed . The Department has been successful in closing some crossings through a corridor approach whereby a large number of crossings are grouped together with improvements made at some crossings and several adjacent crossings closed as a tradeoff. Less successful has been the random closure of isolated crossings since many of these might be the sole access for some residents and businesses or result in a great deal of out-of-direction travel. In addition, policies calling for community connectivity may, at times, be a odds with the state and federal desire to close crossings.

The access to rail freight facilities is hard to access since there never was a bench mark established from which to make comparisons. On the plus side is the increasing awareness of local planners as to the level of highway access needed to both port and rail intermodal facilities. This has resulted in some construction projects to improve access and other project added to local TIP's for future implementation

Numbers 7 and 8

These items have been integrated into the text.

Number 9

The Department's current version of the modeling software can do some modal alternatives on the passenger side but does not have the capability of including the freight element. They hope to be able to include freight in the next version of the model. However, that is still a number of years away.

One of the problems we have always had with trying to model modal choices on the freight side is that there are too many variables involved. In addition, a great deal of data is needed some of which is subjective not objective. There are certain elements which are great determinant of modal choice such as the distance involved; the type of commodity (coal, timber, grain, manufactured goods, high tech); need for speed vs. cost. etc. It has been found that in some cases the bias of the traffic manager is involved (he doesn't like the train crew that serves the plant); the company owns a fleet of trucks and other non-objective issues.

Our *Southwest Oregon Freight Study* took an extensive look at why shippers in that area make certain modal choices. We have encouraged the author's involved in the state's various corridor and local transportation plans take a look at the study and integrate some of the findings in their specific planning effort.

Number 10

It is difficult to determine if state policy has had any impact on mainline and branch line rail operations. A great deal of the problem can be attributed to the fact that we may have policies but no funding exists for assisting in their implementation. Implementation has been mainly left up to the private sector where investment decisions are make in manner quite different from the public sector. Investment in the private sector is market driven while the public has a tendency to make decisions based upon solving a problem.

A small amount of public funds (state and federal) have gone into the rehabilitation of low density branch lines with additional amounts of state funds going into the acquisition of lines by local units of government. Undoubtedly, without these funds many rural communities would have lost their local rail service.

Public investment for passenger service has resulted in the reduction of running times and increases in schedule reliability. The state's long-term goal is to continue with this investment in order to further improve service and add additional trains that will lead to substantial increases in ridership. This investment for passenger service has had secondary benefits for rail freight service over the lines. However, it is doubtful that the market driven freight railroads would have made the same investments absent the state's desire for increased passenger service.

What has occurred in the last several years is a dialogue between the public and the freight railroads to discuss projects that are of mutual benefit to all parties. The freight railroads are beginning to realize that their capital needs are great but their ability to fund these needs are limited. In short, they are beginning to step up to the table to get involved in forming public/private ventures to accommodate the increases in freight and passenger service being forecasted.

Association of Oregon Rail and Transit Advocates
AORTA • P. O. Box 2772 • Portland, Oregon

MEMORANDUM

To: **ODOT Rail Division, Oregon Rail Plan Advisory Committee**
From: **Fred Nussbaum,** [redacted]
Date: **November 1, 2001~~August 6, 2001~~**
Re: ***AORTA*'s Review of 7/10/01 Draft Oregon Rail Plan**

AORTA is pleased with the general tone of the 7/10/01 version of Draft Rail Plan. Many of our concerns of last winter seem to have been addressed, especially with regard to goals for future service and clearing up of conflicting statements about projected frequencies.

We are also very pleased that the document was published in MS Word format. This has made it easier to exchange comments and suggestions about specific portions of the text.

One general weakness of the draft is that the relationship between this Oregon Rail Plan and the 1992 ORPPP is not clearly delineated. This draft Oregon Rail Plan is very skimpy on vision and long-term implementation strategies and therefor must be considered a supplement to the 1992 ORPPP. Another area that needs improvement is the Executive Summary. This is probably the only part of the document that decision-makers will actually be likely to read. Therefor, certain key conclusions need to show up here – for instance, the finding by the financial analysis of the Volpe Center modeling that indicated significant reduction in net operating costs as frequency of service increases so that 2018 service with 8 or more round trips could actually produce a net operating profit.

The narrative about passenger rail and freight rail interaction still seems overly negative and confrontational. We have suggested some softening language that also puts the freight operators in a better light.

Another general comment is that the Rail Plan should list the names of the Oregon Rail Plan Advisory Committee members (both passenger and freight) in the Appendix.

Specific comments and suggested changes follow, marked on the pages they refer to. This document should be opened with Microsoft Word 97 or software (like a later version) that can read Word 97's enhanced formatting, including strike through and callouts. You should also have Word set to highlight changes (**Tools | Track Changes | Highlight Changes...**).

Additions indicates suggested additions
~~Deletions~~ indicates suggested deletions

This is a comment

Note that the footnote numbers are not consistent with the original. Since I have not included all the pages of the document, Word has renumbered them in my excerpt. I apologize for the inconvenience, but could not come up with a work-around.

EXECUTIVE SUMMARY

INTRODUCTION

This *Oregon Rail Plan* is the first comprehensive assessment of the state's rail planning, freight rail, and passenger rail systems since the 1992 *Oregon Rail Passenger Policy and Plan* and the 1994 *Oregon Rail Freight Plan*. The Plan contains three elements, which summarize the state's goals and objectives, measure the state's performance to-date and refine the projected costs, revenues and investment needs with regard to rail transportation of people and goods. The elements are:

- Rail Policies and the Planning Process
- Freight Element
- Passenger Element

Requirements are not the same as goals and objectives. These should also be summarized here.

RAIL POLICIES AND THE PLANNING PROCESS

The *Oregon Rail Plan* is prepared to fulfill numerous federal and state planning requirements. These include requirements specified in the federal Local Rail Freight Assistance Program, the federal Section 1010 High Speed Rail Corridor designation, and the *Oregon Transportation Plan*, among others. This chapter spells out these various requirements, and highlights specific goals and policies that apply to rail planning.

These requirements are identified here, as the Rail Plan functions as the Rail Element of the *Oregon Transportation Plan (OTP)*, and provides guidance and direction to the Oregon Transportation Commission on rail issues.

FREIGHT ELEMENT

This chapter reviews the development of Oregon's freight rail system since the 1994 *Oregon Rail Freight System Plan*. There are 2,387 route miles of railroad in Oregon today. Slightly more than half of this sum are owned and operated by two major rail systems – the Union Pacific Railroad (UP) and the Burlington Northern Santa Fe Railway (BNSF). Short line or small railroads operate the remainder. The largest of these is the Portland & Western Railroad, which operates 435 route miles of railroad in the Central Willamette Valley and Northwestern Oregon.

Oregon's freight rail traffic totaled 63.5 million tons handled to, from, within, and through the state in 1999. This figure represented almost an 18 percent increase over freight rail tonnage handled in 1992, the data year used for the 1994 *Oregon Freight Rail Plan*. At almost 21 percent of total tons, the largest commodity handled in 1999 was lumber and wood products. A major portion, 34 percent, of the lumber and wood product shipments actually pass through Oregon, rather than originating or terminating in the state. Having 22.2 million tons originating and terminating there, Multnomah County is the largest traffic generator of all Oregon counties. The general characteristics of Oregon freight rail tonnage are similar to the characteristics of freight rail tonnage in Washington, i.e., more tons terminate in the state than originate there, and through traffic accounts for a major share of total tons.

Short lines along with the UP and BNSF were contacted as to their respective system needs. Short lines identified about $69 million in improvements, consisting primarily of rehabilitation of track and bridges. Much of the rehabilitation need was related to the trend toward higher car weights, which trigger the need for higher track standards and stronger bridges. Both of the major systems cited clearance improvements for tunnels in Oregon needed to facilitate the growth of double-stack container traffic between the Pacific Northwest and Southern California along the "I-5 Corridor".

In a survey conducted for the Plan, 47 Oregon rail shippers reported concerns about rail service, and opinions of the role that the Oregon Department of Transportation's (ODOT) Rail Division should play with regard to rail service. Most of the survey respondents are served by short lines, and most ship forest products. Car availability is their top issue. Big and small shippers alike report their serving railroads offer fair to good performance with regard to car availability. Shippers see a varied role for ODOT's Rail Division. For some of these roles, ODOT's involvement is preempted by federal statutes, i.e., with regard to competition and safety. However, several shippers opined that the Rail Division should advocate shipper interests – a role that the Division in fact has performed for many years, often monitoring rail service on an as-needed basis.

PASSENGER ELEMENT

This chapter reviews the development of the state's rail pa[illegible]ince the 1992 *Oregon Rail Passenger Policy and Plan*. Ridership on the Pacifi[illegible]l Corridor (PNWRC) through Oregon has increased concurrent with added [illegible]d growing highway congestion. Between Portland and Eugene, ridership in ye[illegible] totaled more than 100,000 passenger trips, up from slightly more than 24,000 passenger [illegible]ps in 1993.

This is a good summary of short-term goal, but long-term goal should also be stated.

ODOT's goal for the Willamette Valley Corridor by 2003 is to increase the number of daily round trips and to reduce the travel time to 2 hours and 15 minutes from 2 hours and 35 minutes today. Both of these improvements will encourage additional ridership and revenue. ODOT has identified approximately $31 million in capital improvements to accomplish this goal. Ridership and revenue would continue to increase in the years beyond 2003 with further enhancements to the rail service.

The states of Oregon an[illegible] of British Columbia, have worked collaboratively to develop[illegible]gram development of the PNWRC. Oregon is also working wi[illegible]ential reactivation of passenger rail service between Portland an[illegible]d in an Amtrak cost cutting effort in 1997.

Also, need a brief reference to declining net operating cost as service levels increase. Specifically, the projected 2018 net operating gain from 8 or more frequencies should be noted here.

Oregon's current rail passenger service includes the Amtrak *Coast Starlight* and *Empire Builder* trains, and the state-sponsored *Cascades*, which use Talgo tilt technology allowing faster speeds around curves. The *Cascades* are supplemented by extensive state-sponsored Thruway bus feeder services that move riders between the PNWRC and various locations in the state.

The Rail Plan responds to these challenges in the following ways:

- Provides background data to more fully understand the relationships between the state's economy and the provision of rail freight and passenger service.
- Examines rail infrastructure needs in light of new demands for larger freight cars and growing demand for more and better passenger service.
- Suggests potential funding scenarios to meet these demands.
- Reexamines the policies and objectives not only with the 1992 Oregon Transportation Plan, but also with the other modal plans and local land use planning.

See previous comment

VISION STATEMENT

The arrival of the 21st Century is bringing new challenges to Oregon's rail system and its future role. The 1992 *Oregon Transportation Plan* (OTP) took a lead role in asking, "How can transportation contribute to the kind of a future we want as a state?" The OTP's vision and policies were to lead to a more diverse, multimodal system in the future.

The 2001 *Oregon Rail Plan* builds on and continues implementation of the OTP's long-range vision for a viable rail freight and passenger system in the state.

The State of Oregon should have an enhanced intercity rail passenger service as part of a balanced transportation system. The rail passenger system shall operate efficiently, provide access to all potential users, and comply with state environmental and land use standards. Convenient connections should be developed with air, intercity bus and transit that integrate trains into a passenger network linking all areas of the state, nation and world. High safety and compliance standards are required for operation, construction and maintenance of the Oregon rail system. An adequate funding source should be developed to finance the modernization of rail passenger and support services as described in the ORPP. Implementation of the ORPP should take place as rapidly as permitted by financial, design, construction, equipment and market considerations.

It is imperative that Oregon ma tains and improves access to the national rail freight system, maintains a competitive vironment for rail customers, strengthens the retention of local rail service, and assures level playing field for all modes.

Rail freight and passenger elem must be integrated into the State's land use planning process. In addition, the system st be operated in a safe manner for both users of the system and the public in genera

There is no reason why these important sentences from the 1992 ORPPP were not included here.

Patronage: To justify rail service, a train should have a minimum average occupancy of about 75 passengers[15] per train. Occupancy might be lower at the extreme end of a run, but average occupancy should justify the operation of a train consist with at least 180 seats (typically a three car train). The economic efficiency of rail is significantly reduced if usage falls below this level, and bus operation often may provide more effective use of transportation dollars.

Cost Recovery: Typical train operating costs are about $26 per mile. A new rail service should be expected to attain a 30-40 percent farebox recovery ratio (the proportion of operating costs covered by fare revenue) to be viable. With a lower cost recovery, the amount of subsidy per passenger becomes excessive and alternative transportation by bus becomes a more attractive option. Oregon's long term goal is to achieve or exceed [illegible] percent operating cost recovery on its rail services. The Volpe Center analysis indicated th[illegible] Willamette Valley portion of the PNWRC service over the lon[illegible] whether rail operations in other parts of the state have the same pote[illegible]

What is the source of this rule? Political circumstances are more of a determinant

Running Time: Rail service has to be reasonably competitive with auto driving times to be successful. Unfortunately, some branch lines that otherwise might have passenger service potential drop out of consideration because they follow alignments that cannot be upgraded to provide time-competitive service[illegible] commensurate with the potential service level. Many of Oregon's branch lines fail[illegible] levels are insufficient to justify major capital investment in t[illegible] that would also benefit passenger operations, so the entire co[illegible] passenger-related responsibility. Parallel highways, however, [illegible] that driving times (and potential bus times) have been significantly reduced over time, rendering establishment of rail service more difficult to justify.

What about special scenic values (views not available from the highway or rail being an alternative to parallel highway expension?

Other Factors: In certain situations, rail service may be warranted even though it would not meet the general parameters given above. Justifications may include rail service that contributes substantially to the patronage of other trains, or service that provides special benefits to the area served.

ANALYSIS OF OREGON ROUTES

Oregon's principal travel corridors were examined in the *Oregon Rail Passenger Policy and Plan* in 1992. Each of these is discussed below, with comments updated to reflect the current status since completion of the Volpe Center patronage analysis, and the initiation of Thruway bus services on several of the routes. In addition, a number of commuter rail proposals have been evaluated for their service potential.

Major Intercity Corridors

Portland-Eugene

The Portland-Eugene corridor is the southernmost portion of the PNWRC, which encompasses the major urban areas [illegible]shington, and Oregon. Sixty-nine percent of

Statement is contradictory and unnecessary.

[15] This level is based on typical pa[illegible]age of state-supported train service in other states, and is not a hard and fast threshold. ~~Below this level, the economics of passenger train operations make service unlikely.~~

- Support economic development with efficient and environmentally sound transportation facilities.
- Implement the plan through stable financing, good management, and cooperative government and private efforts.

In addition, the plan established specific concepts for intercity rail service that continues to guide the state's efforts today:

- Frequent regional rail service with feeder bus networks.
- Aggressive marketing and passenger amenities.
- Reliable on-time performance.
- Incremental improvements to attain higher speed rail service.
- Cooperation with adjacent states.
- Coordination with local bus and transit services.

1992 Oregon Rail Passenger Policy and Plan

This study represented the first comprehensive plan for rail passenger service in Oregon undertaken by the state. The study concluded that rail passenger service is most viable in the Willamette Valley as part of a regional system linking urban centers from Eugene north through Portland and Seattle to Vancouver, BC. It called for upgrades to the UP line through the valley to provide needed capacity for added service, and identified extension of the Seattle-Portland *Mt. Rainier* service south to Eugene as a priority proposal. The plan proposed incremental upgrading of the Willamette Valley route in four service stages:

- Early Stage: Limited upgrade of existing track and signals; added frequencies in the Willamette Valley; added feeder bus routes.
- Second Stage: Upgrade Willamette Valley to higher maximum speeds (90-110 mph with elimination of speed restrictions in selected locations); extension of service to Roseburg; increased service frequencies; added feeder buses.
- Third Stage: Continued upgrading of Willamette Valley/Roseburg service to 110 mph standards; added frequencies in the Valley; possible extension of conventional service to the Rogue River Valley.
- Late Stage: Full high-speed trunk between Portland and Medford; connections to California; branch railcar connections to Coos Bay, Newport, and Astoria; rearrangement of bus feeders.

The Plan also stated that "in addition, the Oregon Transportation Plan (OTP) recommendation for hourly intercity passenger service along the I-5 corridor between major cities in the Willamette Valley should be implemented. This quality bus service would offer the frequencies needed to attract ridership and to complement the *Mount Rainier* extension..."

The study looked at the potential of local service with either diesel or electric technology serving the west side of the Willamette Valley from Portland to McMinnville, as well as intercity service to Bend/Redmond via the Deschutes River Canyon and to eastern Oregon along the UP route. However, the plan found these carried relatively high price tags for the benefits that would be gained. It also concluded that conventional rail service to the Rogue River Valley would be difficult to achieve in a cost-effective form, but might be more feasible as part of an interstate high speed system linking the West Coast states. Despite the marginal prospects for rail service on these and other branch lines, the study emphasized the need for connecting bus service in several corridors that would support train operations on the Willamette Valley line. These included:

- Medford: Buses between Eugene and Grants Pass/Medford would initially provide service as an extension of trains between Portland and Eugene, until such time as train service becomes a viable alternative over this route.
- Astoria: Buses between Astoria and Longview, WA to connect with service between Portland and Seattle.
- Newport: Buses between Newport and Albany to connect with trains at Albany.
- Central Oregon: Buses between Bend and Redmond and Albany, connecting with trains at Albany.
- Coos Bay: Buses between Coos Bay and Eugene, where the connection would be made with trains.
- Klamath Falls: Buses between Klamath Falls and Medford.

The 1992 plan was significant because many of its concepts were translated to reality. The first Seattle-Portland corridor train was extended to Eugene in 1994, and a second was extended in 2000. Thruway bus service was initiated in the Willamette Valley to complement the train schedules, and was extended to numerous communities including the Rogue River Valley, Florence-Coos Bay, Newport, Astoria, Bend, and Chemult. Thruway buses also serve eastern Oregon communities over routes via both Pendleton and Burns. Track improvements are being implemented on an incremental basis with the cooperation of UP and BNSF, and stations are being upgraded. On the other hand, the plan presented a highly visionary concept of rail service south of Eugene that would appear unattainable under current or foreseeable levels of financial support for rail improvements.

1997 Oregon Public Transportation Plan

The *Oregon Public Transportation Plan* provided the framework for updating this Rail Passenger Plan Element. The plan stressed the need for integration of the various public transportation modes in the state, and provided a basic policy framework for the more detailed modal plan for rail services. Further, the plan was the outgrowth of extensive public involvement, including stakeholder interviews and community workshops.

The plan suggested implementation in three levels, each related to available funding, as shown in Table B-1.

Staff comments on the Association of Oregon Rail and Transit Advocates memorandum regarding the draft of the Oregon Rail Plan.

General Issues

For the most part, editorial suggestions have been incorporated into the text where appropriate. The comments on the Vision Statement were not included since all of the modal plans have the same type of vision statement format.

Thruway Bus Service

Increases in Thruway bus service were suggested in several places. Staff feels that greatly expanding intercity bus service needs to be considered under an overall intercity bus program and not funded as part of a rail program.

Comments from ODOT Region 3 on Draft Rail Plan

1. Intermodal connections for freight and passenger

Policy 3D (page 13): Promotion of intermodal hubs is needed. This section also needs a policy to protect those hubs from encroaching and incompatible land uses.
Action 30.3 (page 13): **Is** there an action to support the Medford and Coos Bay ports?

2. Rail/Community development (page 32)

Policy 4.3 (page 16): We should take a stand that is stronger than just "working with communities to minimize conflicts". The plan describes some of those conflicts on page 32.

3. Freight Rail Policy

Policy **4.2** (page 16): We should take a stronger stand that "encourage land use zoning and ordinances ...." This is a good place to start but we are responsible for linking transportation and land use.

4. Passenger

The Plan should reference the Southern Oregon Commuter Rail Study, June, 2001 and incorporate relevant findings. Appendix C Station Sit Drawings/Plans/Maps could be adopted by reference. These sites have been adopted into the local comprehensive plan. Including them in the draft Plan would show consistency between the state and local plans and create a stronger link with land use elements.

STAFF COMMENTS:

Comment #I

Most of the Policies come from the Oregon Transportation Plan. The OTP is currently being updated and any movement to stronger language should be part of that updating process. Rail Division staff will make such a recommendation. The problem may be defining what "promotion", "working with", "encouraging" etc mean. Having a funding program greatly changes the meaning of these types of words.
Both the OTP and the Rail Plan support competitive rail service to all of the state's deepwater commercial ports such as Coos Bay. The OTP does suggest that Medford might be an appropriate site for a truck/rail intermodal facility but relies on the private sector market to drive such an effort.

Comment #2

Rail Division staff **would** support such an effort in the OTP updating process.

Comment **#3**

Same comment as **#2** above.

Comment #4

The Rail Plan is merely a framework document and details are left to the implementation process for each of the projects. The adoption of the recommendations/plans/maps for any particular project should be left to the local jurisdiction's involved. Including these in a statewide plan could lead to an unwieldy cumbersome document.