

Rail Freight and Passenger

Take Care of the System

Critical Investments in the areas of:

- Rail Freight – rehabilitate rail bridges
 - Rail Bridge Inventory Database..... \$0.5 - \$1.0 million (one time)
- Rail Freight – rail replacement and modernization program – upgrade 100 miles of rail line annually to carry industry standard 286,000 pound cars \$30 million per year
- Rail Passenger Service – stable funding New Revenue Source

Make the System Work Better

Critical Investments in the areas of:

- Rail Passenger – upgrade track and switches at specific locations..... \$2 million per year
- Upgrade Signal Systems \$5 million (one time)

Improve Safety

Critical Investments in the areas of:

- Grade Crossing Improvements \$1 million per year

Increase Capacity

Critical Investments in the areas of:

- Improve Rail Yard Switching Capacity
 - Site specific improvements \$5 million per year
- Improve Rail Capacity in the Portland Metro Area
 - Ten major improvements (2003 estimate) \$17 million per year

Available Resources:

- Oregon Transportation Plan
- 2001 Oregon Rail Plan
- I-5 Rail Capacity Study
- *ConnectOregon* applications

Rail Freight and Passenger

Background

Oregon's rail system is composed of 22 railroads and 2,413 miles of track. About 47 percent are main lines owned by Union Pacific Railroad and BNSF Railway Company (formerly the Burlington Northern & Santa Fe). The balance is publicly or privately-owned short line railroads. In addition, Oregon port districts own and operate rail terminals, yards, and intermodal facilities.

Railroads carried over 63,000 tons of freight in 1999. The major commodities were farm products, lumber and wood products, chemicals and allied products, and various pulp, paper and food products.

Amtrak operates the Coast Starlight and Cascades passenger trains on the Union Pacific north-south tracks from Washington to California. The two daily Cascades trains between Portland and Eugene are sponsored by the State of Oregon. The State of Washington sponsors three daily trains between Portland and Seattle. The Coast Starlight carries passengers between Seattle and Los Angeles each direction once daily. State-sponsored Amtrak Thruway bus services connect 16 communities to train services. About 123,000 passengers started or ended their trips at Oregon train stations in 2004.

The Oregon Department of Transportation's Rail Division ensures compliance with state and federal regulations related to the safety of public road-railroad crossings and the safety of railroads and rail transit operations in Oregon. The Rail Division manages passenger and freight rail service programs, including the development of passenger and freight rail transportation opportunities and railroad improvement projects financed through the Short Line Credit Assistance Program, Industrial Rail Spur Program and the *ConnectOregon* program.

The Oregon Transportation Plan is the state's long-range multimodal transportation plan. It is an overarching policy document that focuses on state, local and public aspects of Oregon's transportation system. Identifying what should be done to maintain and improve the transportation system ("feasible needs") is a major component of the Plan.

The 2006 update of the Plan estimated the difference between the local, state and federal resources that are available and those that would be required to meet "feasible needs." Because much of the rail infrastructure is privately owned, the Plan Update could not estimate the overall gap between the resources available to maintain and improve it and feasible needs. The Plan estimated that there are about \$19 million (2004 dollars) per year in freight rail opportunities and that improvements necessary to support passenger rail service range from \$9 to \$57 million (2004 dollars) per year depending on the desired level of rail passenger service.

The investment options described on the attached pages are not intended to represent a plan to meet all feasible needs. They propose specific improvements in the rail system provided additional resources can be identified. They assume that both public and private funding for rail infrastructure remains in place and continues to be invested as it is today.

Rail Freight and Passenger Take Care of the System

Railroad Bridge Reconstruction

What we do

Many rail bridges, especially on Oregon's shortline railroads, are timber bridges built during the 1930s, 40s and 50s. These rail bridges, like Oregon's highway bridges, are reaching the end of their useful lives. In addition, most were designed before modern 286,000-pound gross vehicle weight freight cars came into common use.

The railroad companies own and maintain their bridges. Most are private companies, although some are owned by local governments (cities, counties, ports and special districts). The Oregon Department of Transportation inspects rail bridges.

Why it is important

Bridges form critical links in rail system. Bridges that may fail for any reason are a barrier to freight movements.

Impact if under-funded

Shippers experience lower quality, less efficient service when cars must be partially loaded. Further, shippers may experience no service or long service delays when rail bridges fail. There are seldom detour routes around failed bridges; rail service is halted until the bridge can be repaired or rebuilt.

How much does it cost?

We do not know how many rail bridges have reached the end of their useful lives and are load limited. We cannot estimate the cost. There is no comprehensive, statewide inventory of rail bridges similar to the National Bridge Inventory System that exists for highways, roads and streets. We estimate that it would cost between \$500,000 and \$1 million to build a similar rail bridge inventory database for Oregon.

Rail Replacement and Modernization Program

What we do

Oregon has about 2,400 miles of rail. More than 20 percent (about 500 miles) of this was not built to carry modern 286,000 pound GVW railcars. These rails are located on more lightly used lines that serve coastal and rural Oregon.

Why it is important

Rail that cannot safely carry trains made up of fully-loaded 286,000 pound GVW freight cars is a barrier to freight movements. When these heavy freight cars travel over track that was not designed to carry them, they cause the ties and rail bed to deteriorate rapidly. This increases maintenance cost and reduces the life of the investment in ties and rail bed. In addition, derailments may result in lost or damaged product or more serious environmental damage.

Rail Freight and Passenger Take Care of the System

Impact if under-funded

Shippers experience lower quality, less efficient service when cars must be partially loaded. It also takes more time to move freight by rail when railroads reduce train speeds to travel over lightly built rail and rail bed.

How much does it cost?

We estimate that it would cost about \$150 million or \$30 million per year to upgrade rail line over a five years timeframe. Upgrading a mile of existing rail line (rail, ties, and ballast) to carry 286,000 GVW cars costs about \$300,000. There are about 500 miles of track that is not capable of carrying the heavier rail cars.

The Oregon Legislature provided about \$2 million per biennium in 2001-03 and 2003-04. Several *ConnectOregon* applications proposed to upgrade rail lines to carry 286,000 GVW cars.

Rail Passenger Service

What we do

The Oregon Department of Transportation manages and markets two daily roundtrips of the *Cascades* trains in the Willamette Valley and the related intercity bus service. The service is operated by Amtrak under contract; the trains themselves are owned by Amtrak and the state of Washington. These contracts cost \$5.3 million per year.

ODOT participates in the Pacific Northwest High Speed Rail Corridor with the state of Washington and Amtrak.

Why it is important

Passenger trains expand transportation options, reduce the pressure on the state's road infrastructure, attract tourists, and contribute to the state's overall livability. Oregon's transportation modes are being taxed by increasing demands, and passenger trains are a component in helping to manage this situation. Investments in passenger rail yield long-term benefits as the infrastructure improvements last decades. These improvements benefit freight rail business as passenger trains operate on the freight rail system.

Impact if under-funded

Passenger rail and the related bus service will be reduced.

How much does it cost?

It is essential to provide stable, sustainable funding for the existing two daily round trip passenger trains that exist today. Biennial General Fund appropriations lead to question as to whether Oregon will support one or two trains.

Rail Freight and Passenger Make The System Work Better

Track Improvements for Rail Passenger Service

What we do

The Coast Starlight and the *Cascades* trains operate over the Union Pacific's main north-south track. This single track line is heavily used and is congested. The number, length and placement of existing sidings are adequate to meet the needs of Union Pacific's freight business. The existing sidings do not fully meet the needs of passenger service.

Passenger trains between Eugene and Portland take about two-and-a-half hours with intermediate stops at Albany, Salem and Oregon City. Passenger trains are sometimes delayed by other rail traffic, making schedules unreliable.

Why it is important

Passengers expect a high quality of service. They expect trains to arrive and leave on time and that the time required for the trip not be too great.

Passenger trains that are delayed for any reason lose their place in the scheduled flow of north-south traffic. They are put on sidings to wait for on-coming traffic to pass. The length and placement of sidings has a significant effect on how long the trains wait. In addition, the sidings have good quality track for freight trains, but provide a rough ride for faster-moving passenger trains.

Impact if under-funded

Amtrak and ODOT will not be able to significantly improve travel time and reliability without an investment in sidings, grade crossings and signal systems. Ridership on passenger trains in the Willamette Valley will not increase, and may in fact decrease due to passengers' frustration with unreliable service.

How much does it cost?

We estimate that building new high speed sidings for passenger trains would cost about \$1 million per mile of siding. A \$10 million investment (\$2 million per year for five years) would upgrade 10 miles of high speed sidings and enable Amtrak and ODOT to improve the reliability and travel time for passenger trains. The investment would also be beneficial for freight movement in this congested corridor.

Rail Freight and Passenger Make The System Work Better

Upgrade Signal Systems

What we do

The Coast Starlight and the *Cascades* trains operate over the Union Pacific's main north-south track. Union Pacific currently uses a signal system called an Automatic Block System to manage the congested segment of its mainline between Albany and Salem.

Union Pacific has proposed upgrading the signal system used between Albany and Salem to a modern and highly efficient system call Centralized Control. Union Pacific uses Centralized Control for its mainline track elsewhere in Oregon.

Why it is important

The Centralized Control system will make the movement of passenger trains more fluid. Moving to the new system will also upgrade highway grade crossing systems and improve the safety of higher speed passenger train operations.

Impact if under-funded

Amtrak and ODOT will not be able to significantly improve travel time and reliability without an investment in sidings, grade crossings and signal systems. Ridership on passenger trains in the Willamette Valley will not increase.

How much does it cost?

An investment of at least \$5 million would be required to upgrade the signal system on the UP mainline between Albany and Salem.

Rail Freight and Passenger Improve Safety

Grade Crossing Improvements

What we do

There are about 2,500 public highway-railroad crossings in Oregon. Most of these crossings are at grade. State policy as articulated in statute is that Oregon have a uniform and coordinated regulations of crossings and that crossings at grade be eliminated wherever possible.

ODOT regulates grade crossings and determines whether new crossings should be built as grade separated and, if not, what protective devices are required for the at-grade crossings. Annually, ODOT uses about \$200,000 in State Highway Funds plus \$2.1 million of federal hazard elimination program money to improve grade crossings. While the railroads, local government and ODOT build some new grade separated crossings, more often they install new signals and barriers to update existing at-grade crossings.

Why it is important

Grade crossings are an obvious point of conflict between highway and rail traffic. Collisions between cars and trains are always serious. Trains cannot stop quickly due to their heavy weight and can easily cause great damage to a car and its occupants. Trains travel more slowly in areas where there are at grade crossings than they could otherwise to give motorists a margin of safety.

Separating grades eliminates the conflict between highway and rail traffic. Grade separation is expensive. Further, it is not a feasible solution in many situations.

Additional crossings improvements would reduce the number of hazardous situations. They could reduce injuries and fatalities related to crashes. They could also allow both freight and passenger trains to travel faster.

Impact if under-funded

Safety for the public is reduced.

How much does it cost?

It costs about \$400,000 to install signal lights and barriers at a grade crossing. An additional investment of \$1 million per year could improve about 12 crossings over a five year period. While grade crossing improvements are included as an investment in the rail infrastructure, these investments are also investments in the highway system and improve highway safety as well.

Rail Freight and Passenger Increase Capacity

Improve Rail Yard Switching Capacity

What we do

Rail yards are used to sort rail cars and to build and distribute trains. The mainline and shortline railroads own rail yards that are located at key points throughout their systems.

Why it is important

Improvements to rail yards increase the capacity of railroads. Rail yards are especially important to Oregon's shortline railroads. Efficient exchanges of rail traffic between the shortlines and the mainline railroads require the shortlines to assemble and break down long strings of cars.

Impact if under-funded

Delayed product and good movement, increased costs and blockage impacts to highway traffic depending on the proximity of the rail yard to public roads.

How much does it cost?

Freight switching yards are significant investments. The amount required for a rail yard improvement project is site specific and depends on the condition of each yard. Two projects that have been funded through the *ConnectOregon* program illustrate the range of investment: the Central Oregon and Pacific Railroad's \$9.6 million project to build a new 11-track yard in Winchester and the Portland and Western Railroad's \$3.7 million project to build a yard in Tigard.

If these projects and other opportunities that were not funded through the 2005 *ConnectOregon* program are representative, an investment of \$5 million per year could significantly improve the condition and efficiency of rail yards in Oregon. Note that Oregon ports own and operate rail yards that serve both marine terminals and intermodal freight facilities.

Improve Rail Capacity in the Portland Metro Area

What we do

The Portland/Vancouver region's freight rail network includes five major rail yards, numerous lesser rail yards, and port terminals. The system serves the state's largest collection of industrial customers and provides access to the ports of Portland and Vancouver. Nearly 150 freight trains and 12 passenger trains per day are dispatched through this rail network.

Why it is important

The Portland/Vancouver area is a key transportation hub, and rail is an important component of that hub. The capacity of the rail network is significant because:

- Rail is critical to the area's economy.
- Rail passenger service is a key element in the region's transportation system.
- Solutions to rail capacity will require joint public-private cooperation.

Impact if under-funded

Rail Freight and Passenger Increase Capacity

The Portland / Vancouver rail network is congested and is close to its capacity. Trains moving across the network experience about 100 hours of delay during each 24-hour workday. For comparison, this is about half of the delay experienced in Chicago's rail network which handles about four times as many freight trains per day as are handled in Portland / Vancouver.

How much does it cost?

The I-5 Rail Capacity Study (2003) identified ten major improvements that would preserve and improve heavy rail capacity in the Portland / Vancouver area. These improvements would significantly reduce traffic congestion on the area's rail network for the next five to ten years. Preliminary estimates place the cost in the range of \$170 million (2003 dollars). These include investments in rail yards, spurs, connections between mainline tracks, and the rail bridges in the region. The investments have been annualized to \$17 million per year over a ten year period.