

Central Oregon Area Commission on Transportation (COACT)

REPORT on
CENTRAL OREGON RAIL PLANNING
November 2009

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ACRONYMNS

BLM – Bureau of Land Management
BNSF - Burlington Northern Santa Fe Railway
BTC – The Oregon Army National Guard’s Biak Training Center
COACT - Central Oregon Area Commission on Transportation
COIC – Central Oregon Intergovernmental Council
COPR – City of Prineville Railway
CORERT – Central Oregon Regional Economic Revitalization Team
DLCD – Department of Land Conservation and Development
DSL – Department of State Lands
EDCO – Economic Development for Central Oregon
ODFW – Oregon Department of Fish and Wildlife
ODOT - Oregon Department of Transportation, including the Rail Division, and Region 4 of the Highway Division
PMT - Project Management Team
ROW – Right-of-Way (i.e., transportation property)
SOW - Statement of Work
TAC - Technical Advisory Committee (for COACT)
TM - Technical Memo
TSP - Transportation System Plan
UP - Union Pacific Railway

CENTRAL OREGON RAIL PLANNING

November 2009

EXECUTIVE SUMMARY

This is a report of multi-agency (*Rail Team*) technical work and stakeholder involvement conducted between 2007 and 2009 to address various rail related safety, congestion, freight mobility, and economic development issues for Central Oregon. The report contains findings and recommendations summarized as follows:

Relocating BNSF Line to the East of Bend and Redmond:

The Rail Team recommended to COACT in 2008 that, based primarily on the cost data, neither of the relocation alternatives were feasible and should not be considered for further study. The COACT members concurred with this recommendation.

Existing At-Grade Railroad Crossings

Goals, objectives, and recommendations are provided for improving or eliminating all public at-grade crossings for the Burlington Northern Santa Fe (BNSF) and City of Prineville (COPR) railways, including decision-making tools and implementation strategies. The following are the recommended high priority locations (listed from north to south) for bridging existing at-grade crossings as of 2009:

- *BNSF Line / Belmont Lane & Bear Drive* (Jefferson County/Madras), ~\$4M
- *BNSF/COPR Lines (Prineville Jct)/O'Neil Highway* (Deschutes County/Redmond), ~\$18M
- *BNSF Line / Airport Way* (Deschutes County/Redmond), ~\$14M
- *BNSF Line / Cooley Road* (Deschutes County/Bend), ~\$24M
- *BNSF Line / Reed Market Road* (Deschutes County/Bend), ~\$18M
- *BNSF Line / Baker Road* (Deschutes County/Bend), ~\$36M
- *BNSF Line / US 97* (Deschutes County/La Pine), ~\$31M

Freight Mobility and Rail Service

Goals, objectives, and recommendations are provided for improving, enhancing, and sustaining freight mobility by use of rail services for all of Central Oregon. The key finding and recommendation is that Central Oregon needs to make strategic investments to avoid eventual loss of rail service by the Class 1 haulers, and the significant economic and livability impacts this would have on all of the communities here. Recommended implementation strategies include:

- Take advantage of and maximize opportunities with the area's shortline railroad, COPR, including industrial sites along the line, and freight terminal options such as at the Prineville Freight Depot and at the COPR interchange with BNSF at *Prineville Junction*.
- For on the Class 1 unit train operating model, for example by siting only unit train industries and ensure adequate on- and off-site support track along the BNSF mainline, and seek or create compatible (critical mass cargo) markets.
- Seek agreement by shippers in Central Oregon to use a single designated intermodal complex.

Passenger Rail Service

A discussion and recommendations are provided on future work to explore the feasibility of passenger or commuter rail in Central Oregon, including factors to consider, and coordination with an upcoming study of Central Oregon public transportation by the Central Oregon Intergovernmental Council (COIC).

Summary Recommendations

Over-arching decision-making and implementation strategies are recommended, including:

- Development of a multi-party agreement to provide a regional approach for partnerships on crossing improvements and priority needs, infrastructure development for rail-served industries, mainline expansion, and potentially passenger rail.
- Consideration and further evaluation of potential impacts, benefits, opportunities, and timing of a continuous second track on the BNSF line through Central Oregon.
- Use of this report by local jurisdictions for Comprehensive Plan and Transportation System Plan amendments.
- Other follow-up stakeholder involvement opportunities.

PURPOSE

The purpose of the Central Oregon Rail Planning effort was to develop a common *regional* strategy for Crook, Jefferson, and Deschutes counties to address various safety and congestion issues associated with roadway / railway *at-grade* crossings, and to enhance freight mobility.

The Central Oregon Area Commission on Transportation (COACT) initiated and sponsored the effort. COACT is made up of local and state agencies and transportation stakeholders within the three counties. COACT established a working group to lead this study, the COACT Rail Committed (aka, *Rail Team*), made up of representatives from the Oregon Department of Transportation (ODOT) Region 4 and Rail Division, Deschutes County, Jefferson County, the cities of Redmond, Bend, Madras and La Pine, the City of Prineville Railway, Economic Development for Central Oregon (EDCO), and the Oregon Department of Land Conservation and Development (DLCD).

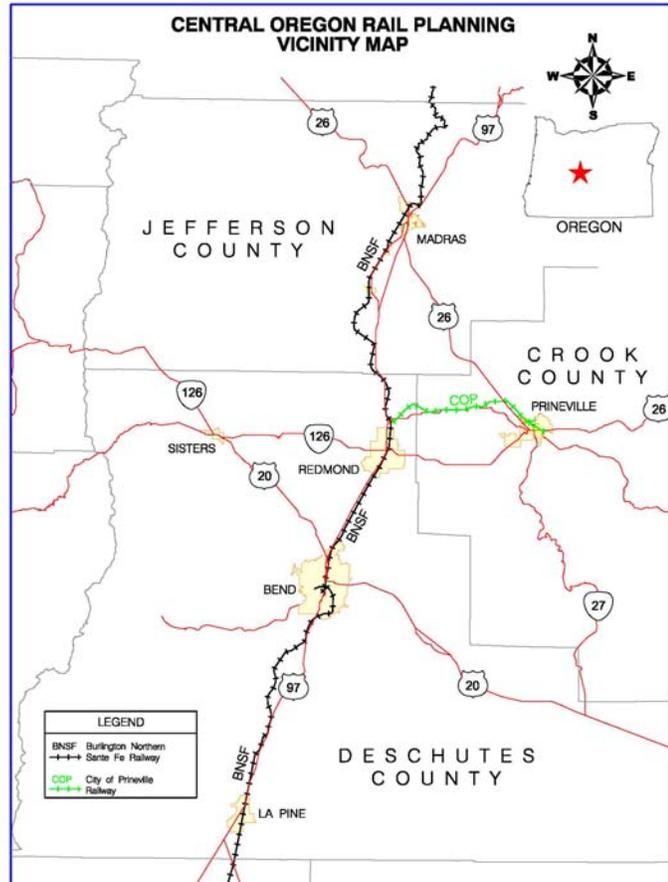
NEED

From the COACT perspective, two general rail-related subject areas needed to be addressed in this planning effort. As with many areas around the country, both subject areas reflect quality of life needs and the compatibility of railways with surrounding communities.

Rail Crossings

The first subject is about the location of the railway lines within communities, and the associated public *at-grade* roadway crossing safety and congestion issues. The Burlington Northern Santa Fe (BNSF) railway runs north-south through Madras, Redmond, and Bend. Given the rising volumes of rail traffic and the expanding lengths of trains, the railway with limited number of bridge crossings is, in effect, a barrier to east-west travel for motor vehicles, bicyclists and pedestrians. Finally, the combination of increasing rail and roadway traffic poses an increase in safety hazards for at-grade crossings (inherently unsafe even in low volume conditions).

The rapid population growth in Central Oregon communities has heightened the issue by funneling high traffic volumes at roadway / railway crossings. Most of the crossings do not have bridges to separate rail travel from community travel, and it is at many of these locations where significant safety and congestion issues have developed and will continue to grow. An at-grade crossing with high volumes of road or pathway traffic also creates operational inefficiencies and



safety issues for BNSF. The issue is exacerbated where communities need to expand their roadway and pathway systems across the railway, given bridge crossings are costly or infeasible and new or expanded at-grade crossings are not desirable. Other rapidly growing Central Oregon communities and rural sections face similar challenges with at-grade crossings, notably in the Culver area.

Freight Mobility

The second subject is about economics, preserving and enhancing rail freight mobility. The jurisdictions in Central Oregon have recognized a significant economic issue associated with freight rail service to the area. The operating model for both BNSF and the Union Pacific railway (UP, which has access rights to the BNSF line in Central Oregon) has been undergoing significant change, where they are seeking increased velocity on tracks, thereby improving capacity by transitioning to *hook and haul* operations. They are moving away from switching on the mainline toward moving *unit trains* consisting of 100 or more cars of a single commodity from one major hub to another. This means, for example, that BNSF and UP will no longer automatically provide existing or new service, nor allow a physical connection to be built onto their mainline.

Simultaneously, with the growth in Central Oregon an increasing number of companies located in Portland and the Willamette Valley are servicing customers in Central Oregon by daily truck freight deliveries. Central Oregon has seen a dramatic increase in truck freight traffic, and it is becoming a significant matter for economics and quality of life, from the rising price of fuel to road congestion and maintenance to safety. Therefore the trend of more trucked freight to Central Oregon, and the trend of less and less opportunities for freight rail service are both creating a significant issue for the area.

Rail Crossings and Freight Mobility

Both of these subject areas are very much related to each other, as illustrated by these example scenarios raised by the COACT membership:

- As long haul rail traffic grows, trains will affect traffic congestion at roadway crossings, impacting functions such emergency service response times and truck freight deliveries.
- The BNSF line in Central Oregon is currently not used for passenger rail, and there is interest among COACT members on the feasibility of passenger rail including the relationship to freight mobility and rail capacity.
- There are serious challenges in providing adequate access to regional facilities such as the Deschutes County Fairgrounds, the Redmond Airport, large employment areas, and other potential regional facilities.
- There is concern about the potential for hazardous material incidents in highly urbanized and/or environmentally sensitive areas.
- Both reduced access to rail freight and the conflicting rail / roadway traffic (priority dictated by the railway) makes Central Oregon less attractive for certain types of new and existing businesses.

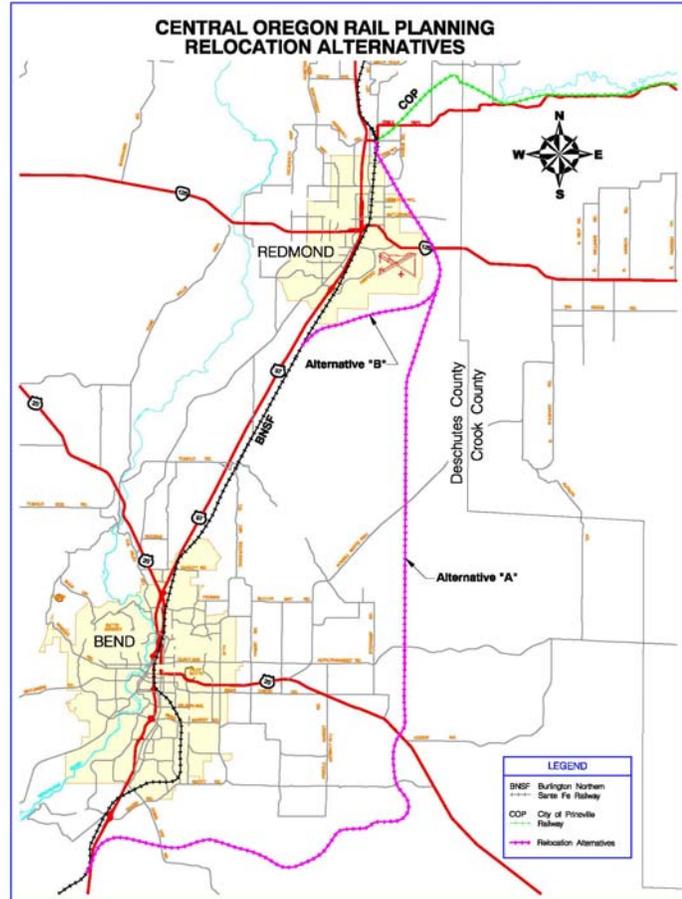
FINDINGS & RECOMMENDATIONS

1. Relocating BNSF Line to the East of Bend and Redmond

In addressing the needs and interests surrounding at-grade crossings, freight mobility, and even passenger rail in Central Oregon, there was a primary question to address which would ultimately affect all other findings and recommendations of this planning effort: *What is the feasibility of relocating the BNSF line to the east of Bend and Redmond?*

This was based on the potential assumed benefits of:

- Reduced traffic congestion and generally improved public safety in the urban areas (no more at-grade crossings with BNSF),
- Opportunities for improved rail service and operations (including benefits for BNSF and UP, or potential uses of abandoned BNSF line), and
- Eliminating the long-term costs that would come with the high priority needs of bridging or closing existing crossings;
- Lower/affordable land values and construction costs on a new alignment in a non-urban area.



The premise to address was how these benefits might be used to help justify and raise the *up-front* capital costs of relocation, as well as the environmental and other impacts of relocation.

Two relocation alternatives were developed and evaluated for feasibility: Alternative A - Relocate the BNSF railway east of both Bend and Redmond, and Alternative B - Relocate the BNSF railway to the east of Redmond only.

For feasibility comparison, an alternative was developed that made improvements along the existing BNSF line (where the line would otherwise be abandoned by BNSF). In other words, the assumption was that feasibility could not only be measured by the cost-effectiveness and

related issues of realignment, but also by other means of addressing primarily the at-grade roadway / railway crossing needs, and second, the freight mobility needs.

In order to establish an *apples-to-apples* comparison of the relocation versus the existing BNSF line in manageable terms, it was assumed for the long-term that any BNSF alignment would be free of at-grade railway / roadway crossings. It was further assumed for cost-effectiveness purposes that the relocation alternatives would be constructed free of at-grade crossings (e.g., with bridge crossings).

Findings of the relocation feasibility evaluation:

Appendix A - Rail Crossing Scoping Report, prepared by David Evans & Associates for the Rail Team, contains information on the track and crossing cost estimates for the [Alternative A](#) and [Alternative B](#) alignments. It also contains recommendations and costs estimates for eliminating existing BNSF at-grade crossings (this is further described in the next section *Existing At-Grade Crossings*). An [interactive map](#) is available on the Internet that shows the alternative alignments and provides crossing information.

Cost Feasibility

Cost feasibility became the primary evaluation factor, both in terms of the high up-front capital cost requirements for relocation as well as the comparison of at-grade improvement costs for the existing alignment.

Alternatives	Construction Cost (M)	Right of Way Cost (M)	Total Cost (M)
Relocate railroad east around Bend and Redmond	\$607	\$10	\$617
Grade-separate existing at-grade crossings, from south of Bend and to north of Redmond	\$313	\$73	\$386
Relocate railroad east around Redmond	\$169	\$7	\$176
Grade-separate existing at-grade crossing in Redmond	\$160	\$22	\$182

Note the cost estimates do not include:

- Utility impact/relocation costs for any of the above.
- Environmental mitigation costs (e.g., wetlands, historical resources) for any of the above.
- Cost to purchase existing BNSF right-of-way, for relocation alternatives (See *socio-economics* below)
- Additional costs to avoid County property impacts northeast of Redmond, for relocation alternatives

The importance of this cost comparison goes beyond the financial feasibility of such high *price tags* for each. The relocation alternatives require essentially all of the improvements to be made and paid for *up-front*, before a new alignment can be used and before any potential benefits can be realized. This justification *problem* for relocation is compounded by the fact that there are benefit and impact trade-offs, when compared with the alternative of making phased or incremental improvements to the existing line over the long-term (per below discussion points).

Other points of consideration for all alternatives included:

Crossing Safety

The potential for crashes at existing crossings. This generally favored the relocation alternatives, when assuming a single construction effort which would be grade-crossing free. Improvements to *existing* would take many years to resolve all crossing safety issues.

Public Safety

The potential for derailment/hazardous materials, and the impacts and benefits for emergency services (closings, blockages, etc). This favored the relocation alternatives by removing the potential for derailment outside of urban areas, and by grade-separating all crossings that would eliminate delays in responses by emergency services due to blockages at crossings.

Planned/Proposed New Crossings of roads or streets across the rail line

This is tied to the relationship of restrictions on new crossings and/or crossing widening (traffic congestion and safety, access to key land uses such as industrial/airports, etc.). An example is the future phases of the US 97 Reroute in Redmond. This favored the relocation alternatives.

Rural Roadways

Rural roadway route continuity and circulation effects. Because of the segregation a new realignment would create, this favored staying with the existing alignment alternative.

Socio-Economics

With the relocation alternatives, what might be the economic opportunities and/or impacts (for example, the cost of congestion), including existing customers (for example, industrial businesses along the rail line), freight mobility enhancements or impacts, potential redevelopment benefits and costs of existing rail line and right-of-way (for example, multi-modal benefits, potential revenue generators, etc.). Considerations included:

- Determining who would own the right of way of the existing BNSF railway if it were relocated to the east of Bend and/or Redmond.
- Socio-economic impacts (from an environmental perspective) of a new alignment would be significant, including the potential impacts to existing businesses which currently use the existing railroad alignment.
- Potential benefits of converting the existing railroad alignment to other multi-modal uses are to be described.

Generally speaking, the only conclusions during Rail Team discussion was that there would be countering trade-offs on the subject, between the relocation alternatives and staying with existing alignment.

Environment

Environmental impacts and feasibility (including emissions, neighborhoods, noise, wildlife, etc.), livability opportunities and/or impacts (for example, urban sprawl, noise, etc.). This favored staying with the existing alignment, giving for example:

- The relocated railway runs through two Oregon Department of Fish and Wildlife (ODFW) management units, Paulina (Unit 35) and Grizzly (Unit 38).

- The proposed alignment is located mostly on public lands managed by the Bureau of Land Management and the Forest Service. Both agencies have procedural requirements for acquiring public lands for this sort of project.

BNSF/UP

Railroad company benefits and costs, including safety, operating efficiencies, net value to share holders were considered. There appeared to be pros and cons which reflected trade-offs for relocation versus working within existing.

Land Use

These considerations general favored staying with the *existing* alignment:

- Implications for current and planned zoning were mentioned as something to consider.
- The proposed relocation alignment is located within or very close to the Redmond Airport runway protection zone. This would need to be verified and adjustment made, if necessary.
- The Oregon Army National Guard operates the Biak Training Center (BTC) located southeast of the Redmond Airport. The BTC consists of approximately 44,000 acres of federal lands managed by the Bureau of Land Management. The proposed alignment would go through the BTC.
- Although much of the land is under public ownership, there are private lands that would be impacted. Much of the land has had little development. At least one residential development in the Redmond area could be impacted.

Recommendation

The Rail Team recommended to COACT in 2008 that, based primarily on the cost data, neither of the relocation alternatives were feasible and should not be considered for further study. The COACT members concurred with this recommendation.

Therefore, the remainder of this report is based on findings, opportunities, priorities, and recommendations to work within the existing BNSF corridor.

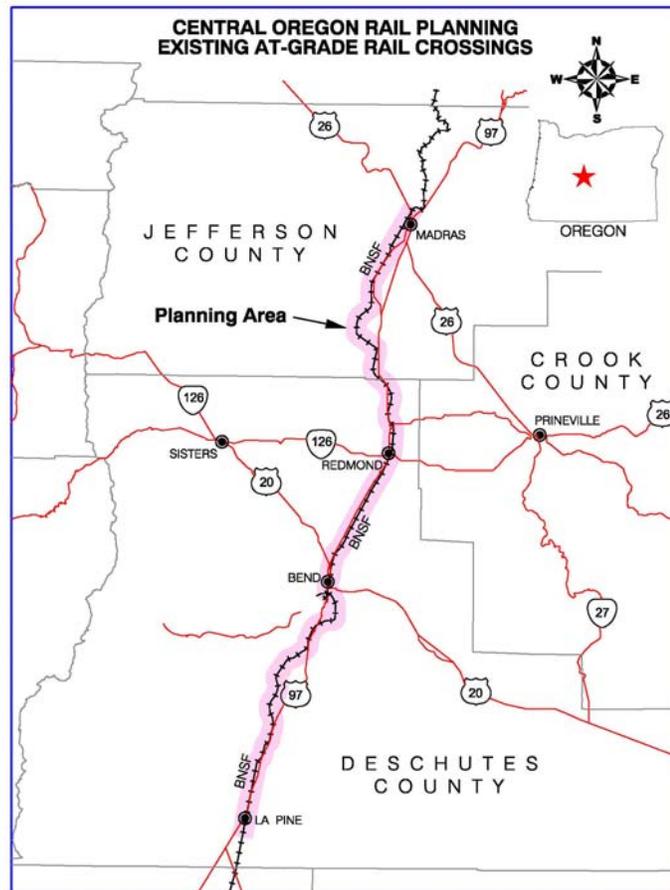
2. Existing At-Grade Rail Crossings

Goals & Objectives

As explained above in the *Need* section the increased traffic in the Central Oregon's rail and roadway systems results in growing safety concerns, travel delays, decreased mobility and adverse affects to the economy and overall quality of life. The ODOT Rail Division's Rail Safety programs and technologies have served to reduce incidents and crashes for at-grade crossings. Yet, given the rapid growth here, more must be done to improve crossing safety wherever possible, and to improve on the full range of other crossing-related economic and quality of life issues.

The long-term vision to resolve this issue would be to eliminate the at-grade crossings, either by bridge crossings or by closures. Particularly in the more developed areas, the high cost associated with this vision will make it challenging to implement, particularly in the shorter term (20 years) versus the longer term (50-70 years).

Therefore, the Goal is to uphold this ideal vision by continuously reducing the number of at-grade crossings, with emphasis on the highest priority bridge crossing needs and phases first. The complementary strategy is to seek opportunities for incremental improvements at existing crossings, and find mutual opportunities to improve or eliminate any at-grade crossing. This strategy would also apply when addressing other rail related issues (including freight mobility) or developing other nearby transportation system improvements for any mode.



Recommended standing Objectives to address needs associated with at-grade roadway / railway crossings for Central Oregon rail planning and implementation are as follows (see [Central Oregon Rail Crossings Table](#)):

1. *Bridge Crossings*. Complete five (5) of the proposed Highest Priority bridge crossings within 20 years.
2. *Closures*. Complete seven (7) of the proposed crossing closures within 20 years.

3. *Upgrades.* Complete eight (8) proposed interim upgrades (e.g., gates, lights) within 5 years.
4. *New Crossings.* Resolve all short-term and long-term decisions and/or complete plans for the five (5) new proposed crossing locations in Redmond and Bend, within 3 years. Quartz Avenue in Redmond would be the only new at-grade crossing for an interim period of time.
5. *Incidents.* Continuously decrease the potential for crossing-related incidents and crashes, through all potential methods including technologies, and for all modes of travel.
6. *Congestion.* Continuously improve on crossing-related traffic congestion issues, including land-use related impacts, through all potential methods including technologies and policies, and for all modes.
7. *Emergency Services.* Continuously improve on crossing-related emergency service response time issues, through all potential methods including technologies and policies.
8. *Freight Mobility.* Continuously seek opportunities to align at-grade rail crossing needs with freight mobility needs, for either or both rail- and truck- serviced industrial lands.

Framework for Evaluating & Prioritizing Rail Crossing Needs

This report establishes a framework through which railway / roadway crossings can be evaluated and tracked for status and range of improvement strategies and priorities. Findings currently (and should continuously) reflect key stakeholder involvement, such as public agencies, railways, cities and counties, emergency services, economic development advocates, etc. See the [Central Oregon Rail Crossings Table](#), a complete rail crossing inventory spreadsheet with rankings and status. The table includes one section each for:

- Existing public at-grade crossings on the BNSF mainline (41)
- New proposed crossings on the BNSF mainline (5, only 1 would be at-grade for an interim period of time)
- Existing public at-grade crossings on the COPR mainline (15)
- Existing grade separated crossings on the BNSF mainline (15)
- Existing at-grade crossings on BNSF spurs (5)

The focus of evaluation was for the 41 existing at-grade crossings on the BNSF mainline. Appendix A - Rail Crossings Scoping Report contains detailed scoping summaries of proposed *solutions* (bridge crossings or closures) and cost estimates for each. The appendix breaks out the existing at-grade crossings into four geographic areas: [southern Jefferson County](#), [northern Deschutes County](#), [central Deschutes County](#), and [southern Deschutes County](#). Also an interactive map with data and photos for these at-grade crossings on the BNSF mainline is available on the Internet at the following web address: http://www.odot.state.or.us/GIS_Maps/

A series of considerations (including safety, emergency services, traffic congestion, economic opportunities, local jurisdiction priorities, railway company needs, land use / environmental, road classification, cost, and phasing / financing) were identified to assist in developing an initial prioritized list of at-grade rail crossings shown on the [Central Oregon Rail Crossings Table](#). The rankings of high, medium, and low take (and should continuously take) into account other considerations and understanding of context, beyond the sum of assigned *scores* in each category. The individual and summary scores are meaningful in terms of assessing stakeholder

and subject matter perspectives, and in terms of supporting the decision-making discussion among the COACT membership.

The criteria and process, as described in the [Appendix B Rail Crossing Evaluation Process](#) document, should be used as the ongoing methodology for future crossing priority decisions. Also the starting point of these recommendations is that the highest-priority crossing locations should be considered for further development in the near term, with a recognition that priorities will change over time. The following are the recommended high priority locations (listed from north to south) for bridging existing at-grade crossings as of 2009:

- *BNSF Line / Belmont Lane & Bear Drive* (Jefferson County/Madras), ~\$4M
- *BNSF/COPR Lines (Prineville Jct)/O'Neil Highway* (Deschutes County/Redmond), ~\$18M
- *BNSF Line / Airport Way* (Deschutes County/Redmond), ~\$14M
- *BNSF Line / Cooley Road* (Deschutes County/Bend), ~\$24M
- *BNSF Line / Reed Market Road* (Deschutes County/Bend), ~\$18M
- *BNSF Line / Baker Road* (Deschutes County/Bend), ~\$36M
- *BNSF Line / US 97* (Deschutes County/La Pine), ~\$31M

Implementation

The following are recommended decision-making and implementation strategies to achieve the at-grade crossing Goals and Objectives (unless stated otherwise, the lead responsibility for follow-up falls to staff for the jurisdiction who has authority for the road/street/highway crossing, the ODOT Area Manager and ODOT Rail Safety Manager will provide assistance and coordination as needed, and at minimum an update report will be provided on these items to COACT in the Fall of each year*):

1. Begin or continue project development on the high priority crossings shown on [Central Oregon Rail Crossings Table](#). At the same time seek funding and partnerships for construction, and identify *protective* right-of-way purchases.
2. Seek mutual opportunities and partnerships to eliminate or improve any at-grade crossing when addressing other nearby related issues (development or expansion of regional facilities such as fairgrounds, airports and large industrial sites, etc.), or developing other transportation system improvements (for any mode including rail, roadway, bicycle/pedestrian, public transportation, etc).
3. Focus decision-making and funding priorities (for at-grade crossing improvements) on multi-stakeholder benefits, beyond public safety and roadway traffic congestion, such as: rail freight mobility and industrial business recruitment (rail-served), short and long term issues with freight trucking (e.g., fuel costs, roadway impacts), rail operational needs, etc.
4. Update applicable City and County Transportation System Plans (TSP's) to reflect the above *Goals and Objectives*, the above (6) implementation strategies, and the current rail crossing priorities on the [Central Oregon Rail Crossings Table](#). *City or County Planning staff.

5. Provide input on the current statewide Rail Planning effort, to reflect the above *Goals and Objectives*, the above (6) implementation strategies, and the current rail crossing priorities on the [Central Oregon Rail Crossings Table](#). *Lead responsibility falls to ODOT staff.
6. Quartz Avenue in Redmond. In 1996, the City of Redmond closed an existing at-grade crossing at Odem Medo Avenue, with their understanding that in exchange there was support from BNSF and the ODOT Rail Division for installation of a new at-grade crossing at Quartz Avenue in the future to accommodate growth needs in the airport area. The City's TSP identifies Quartz Avenue as a collector roadway. This is the only currently known location within the BNSF mainline corridor in Central Oregon where a local jurisdiction is seeking a new, interim at-grade crossing. Although from the City's perspective it appeared they were amenable to the Quartz Avenue crossing in 1996, BNSF and the ODOT Rail Division have since stated opposition to this or any new at-grade crossings within the corridor. This issue needs to be addressed immediately, starting with resolution of these areas:
 - The road network needs expansion, including benefit to the state highway system.
 - Design, access, land use impacts, and cost feasibility create major issues for initially constructing a grade separation.
 - The COACT Rail Team supports a specific incremental strategy (proposed interim at-grade crossing), which includes evaluating and completing long-term design for grade-separation (including consideration of BNSF rail alignment *shift* to the east), finance plan for grade-separation, and closure/grade separation of at least one existing and comparable (e.g., similar traffic volumes) at-grade crossing within the corridor.

3. Freight Mobility and Rail Service

Goals & Objectives

As explained above in the *Need* section of this report, the change of operating model for BNSF and UP railways will continue to affect the economics of Central Oregon. The *unit train, hook & haul* model ultimately has the potential to completely isolate all of our communities from rail service. This is significant, given 2009 is a time when the area is facing devastating unemployment rates, and maintaining and enhancing freight service is a critical economic development and quality of life necessity.

The ideal vision for Central Oregon is to improve, enhance, and sustain freight mobility by use of rail services. However, given the changing model and trends of BNSF and UP, there is not a simple solution given our current situation of individual shippers (with individual commodities) located on the mainline.

Therefore, the primary recommended Goal for the jurisdictions of Central Oregon is twofold. One, maximize the existing rail network and two, develop large land parcels for rail served industries. By performing these two actions the region can collectively offset or even reverse the trend of loss in rail service.

Recommended standing Objectives to address the freight mobility needs for Central Oregon rail planning and implementation are as follows:

- Offset the trend of growing truck freight to and from Central Oregon, and reduce the associated cost impacts, both in terms of the cost to consumers and providers, and in terms of the costs for the road system (maintaining and improving roads, traveler delay costs, etc.).
- Maximize opportunities to improve freight mobility through the COPR line and operations, including direct operational services they may be able to provide to BNSF and UP.
- Prioritize industrial land development in places where *unit trains* can be created and enough market generated to meet the *hook and haul* model.
- Work continuously to eliminate at-grade crossings on the BNSF which compromise rail supported infrastructure.
- Work to achieve these above objectives so rail freight service options can be used a positive asset in attracting new and retaining existing industrial businesses.

Findings

[*Appendix C Study of Economic Opportunities / Rail Access Land Supply in Central Oregon*](#) was completed by Tangent Services, to address the needs and opportunities defined for the rail planning effort around freight mobility. Specifically, Tangent's research assisted the Rail Team and the COACT Membership in better understanding the region's railways (operations, infrastructure, facilities), how they are an asset, and how they fit in with the region's other transportation systems and land uses. The findings included details regarding 1) operations and motivations of the railroads which serve Central Oregon, 2) condition of existing infrastructure

and additional infrastructure needed to support industrial development, and 3) land site configuration and locations best suited for rail-dependent industries.

The following is a summary of findings summarized & paraphrased from Tangent's document:

1. In the long-term perspective Class I railroads, like BNSF and UP, will generally not support new industrial development along their mainline if they view it as impacting their mainline capacity. This is because as railroads become more congested (or anticipate congestion), they create operating models which increase velocity on tracks thereby improving capacity.
2. There has been some de-marketing by the railroads of customers along the Oregon Trunk mainline due to inefficiencies and low freight volumes. For example, the operators have reduced demand for serving industries shipping less than unit train volumes located on a mainline through higher pricing and conversely provided rate incentives for *unit trains*.
3. Central Oregon has already witnessed some of the effects of these strategies by BNSF which make rail less competitive with the truck mode, and recent rail freight volumes are not sufficient to ensure long-term competitive and efficient rail service in the region from the Class I railroads.
4. The market for unit train shippers who would consider development in Central Oregon is likely limited. Such shippers generally are closer to commodity growing areas, manufacturing nodes, or larger population centers.
5. Facilities with adequate infrastructure to hook multiple rail cars together to be picked up by the through trains, without impacting the mainline, are compatible with the current Class I railroads operating model.
6. There is not (in 2009) a current market need for an additional transload/reload hub facility within the area. However, it is rare, but highly desirable, to have access to both Western railroads because it provides market pressure for them to compete on pricing through COPR. It is even more advantageous to have a short-line operator do the switching and railcar aggregation on behalf of shippers and then interchange with the Class I carriers. This is a very marketable rail scenario since the short-line can provide a more customized service for the shipper.
7. The strength of the rail network in Central Oregon is that it is served by both Western Class I operators, as well as by COPR who specializes in what the big operators will no longer do – switching and aggregating cars from individual shippers.
8. The COPR provides switching services to local shippers and provides a location, the Freight Depot in Prineville, for regional shippers to access the rail network by transferring freight from trucks to railcars (*transload/reload* operation). This rail service with the Freight Depot are concepts which the Class I railroads will support.
9. BNSF is obliged by the Surface Transportation Board as a common carrier to provide service to shippers on their shortline partners (e.g., COPR). As with other shippers on the BNSF

mainline, however, the railroad could incrementally price the business high enough that rail service becomes uncompetitive with truck.

10. Central Oregon can also secure future efficient and competitive rail service by developing certain industrial sites for rail-served industries. These sites were identified and ranked in Tangent's study.
11. There are several sites which are well-suited for rail-served industrial development in the region, with the caveat that sustainable long-term rail service for shippers of less than *unit train* volumes will likely not be possible along the mainline. Many sites along the mainline, however, are large enough to develop for unit train shippers. These shippers could also accommodate shippers of smaller volumes who could then truck the product to the COPR Depot.
12. Freight volumes in and out of the region are currently depressed. Once the market rebounds, there should be enough freight to support rail/truck modal choice. For example, there are some opportunities to grow these volumes by supporting use of the COPR freight operation.
13. While the past and current existing rail market is relatively small, there is potential to capture additional volumes by exploring the dynamics of the trucking market. Based on 1997 commodities data, if 5 percent of the trucking volume were converted to the rail mode this would more than double current rail volumes, which would ensure competitive rail service for the long term.
14. The Department of State Lands (DSL) site in south of Redmond is approximately 1,000 acres of undeveloped land, which is a unique asset on the West Coast in terms of potential for large lot industrial. The site provides an opportunity to build all the rail infrastructure on site and still have ample acreage for a large industrial development.
15. With the exception of Lava Siding between Bend and La Pine, all rail support infrastructure (switching yards and sidings) is compromised by existing at-grade crossings. New infrastructure for the unit train model can be developed, but the costs must take into account the need for grade separated-crossings.

Implementation

The following are recommended decision-making and implementation strategies to achieve the freight crossing Goals and Objectives (primarily based on recommendations from the [*Study of Economic Opportunities / Rail Access Land Supply in Central Oregon*](#)):

1. Take advantage of and maximize opportunities with the area's shortline railroad, COPR. Secure long-term efficient and competitive rail service by siting non-unit train, rail-served industries along the COPR. Sites served by a shortline railroad with access to both the BNSF and UP are exceedingly rare and desirable from a competitive standpoint. The highest ranked sites from Tangent's Study include land at: Prineville Junction (Deschutes County), Crook County Heavy Industrial Zone, Northwest Industrial Park (Prineville).

2. Prioritize and encourage support of trucking freight to COPR Freight Depot for transfer to rail mode, for the shippers of less than one unit train volumes currently located on the mainline or new shippers locating in the vicinity of the mainline.
3. Site only unit train industries and ensure adequate on- and off-site support track along the BNSF mainline. The highest ranked for this recommendation is the Madras Industrial Zone.
4. Identify support infrastructure which will be needed to support rail-served sites and begin to incorporate this infrastructure in transportation system plans. Connectivity to the rail network is vital for economic development efforts in the region. This should be approached by examining scenarios which reflect much higher fuel prices in the future, as a significant change in cost per gallon will likely result in a much more significant change to the *break-even-distances* of truck versus rail.
5. Since the dramatic downturn of the economy, railroads are aggressively marketing all commodities. Therefore, this is the time to seek industries to locate in Central Oregon which are carload shippers. However, in order for the service to be sustainable in the long term, coinciding freight terminal options need to be implemented.
6. Investigate the wind energy industry and other alternative energy companies as they will likely evolve as major rail users in the coming years. Also investigate carload business such as construction materials, metal products, and wood or paper products, as they will be easiest to market for rail service.
7. Incorporate language in comprehensive plans which recognize and protect industrial sites lending themselves to rail-served industrial development (see listing and ranking in [Tangent's](#) study). Here is example language which might be used:

The City of () [or County] will seek to protect and preserve lands zoned for industrial use that are identified as having exceptional transportation and site characteristics which are compatible with rail operations adjacent to the BNSF and/or COPR for rail-dependent industrial uses.
8. Stay closely involved in the current ODOT statewide freight planning and rail planning efforts, as they could identify if there are new commodities which are moving (and will also show volume levels and corridors they are moving to and from) as useful information for targeting industries for rail served sites in Central Oregon.
9. La Pine has large and desirable sites from a development standpoint, and there is an existing siding. For rail-served development, look to market to a large rail user in order to be able to get service from the BNSF. It would be difficult to secure service for a rail user with occasional shipments of small numbers of railcars.
10. Having one pick-up and drop-off location in Central Oregon [for the BNSF line], rather than several, will ensure that the mainline velocity and capacity are not compromised over the long term.

11. Intermodal trains are generally high priority trains on the railroad network, and this is an important opportunity to explore for implementation. However, since there is no single business entity capable of providing a critical mass of container cargo in Central Oregon, regional businesses and transportation service providers will need to work together and combine their intermodal cargo needs into a single designated facility which offers:

- Good connectivity to the roadway and highway network
- Rail service
- Property with land for expansion
- Critical mass of cargoes

This would also include agreement by shippers in Central Oregon to use a single designated intermodal complex, including minimum guaranteed volumes before the railroad service providers will entertain discussions about dependable train service.

12. Investigate terminal development and grant funding opportunities (which would include multimodal) at Prineville Junction. The Tangent Study identifying that a terminal site must have the following characteristics:

- Proximity to highway freight corridors
- Efficient connectivity to the Class I rail network (on a connecting short line, at an industrial site with large enough base to have an industrial switcher interchange blocks of cars directly with the Class I at a strategic location)
- Adequate industrial land for future build-out
- On and/or offsite rail infrastructure sufficient to hold additional empty loaded cars.
- Critical mass of railcars.
- Sufficient storage capacity, preferably with some covered storage.

The ideal terminal model would be capable of generating volumes and could meet the requirements for unit train activity on the COPR. If the ideal were achieved, it would provide the greatest flexibility for shippers and in the long-term meet the needs of the Central Oregon shippers. Prineville Junction is a prime location, because it is at a nexus of roads/highways and rail providers, with access to expandable and developable property for facility growth.

There is also the potential that terminal development at Prineville Junction could provide an opportunity for the BNSF trunk line crew and switching operations to be moved here from the current location on the south side of Bend. This would provide numerous benefits for many different stakeholders.

Also regarding switching operations, BNSF has indicated their intention to de-market local freight switching along the mainline, and there is a very good chance that local switchers and crews will eventually disappear because BNSF can better afford to use the locomotive and crew on a through train rather than on local switching. On the other hand, COPR can perform a range of repairs and operations which all benefit the Class 1's, where local industries cannot perform these tasks.

The most recent opportunity COPR has suggested, with interest from both BNSF and UP, is the potential for access to the 1,600 acre Crook County landfill, which will likely soon have a *regional* landfill designation. This has great potential to immediately achieve the types of volumes to support the recommended terminal development.

Regardless of which recommended strategies COACT is able to or decides to implement, the COPR is Central Oregon's best hope for assuring we maintain access to the national rail network.

4. *Passenger Rail Service*

The Central Oregon Rail planning effort has been predominately focused on at-grade crossings from a safety and operational aspects and rail-freight mobility needs and economics. The study was not intended to address in any detail the feasibility of passenger or commuter rail in the area. Therefore, this section and its recommendations are largely drawn from previous work and other sources, primarily the [2001 Oregon Rail Plan](#), which was adopted by the Oregon Transportation Commission (OTC) November 8, 2001.¹

The recommended Goal for COACT is to establish passenger rail service through Central Oregon. However, it is important to recognize that freight carriers such as BNSF are 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. Their willingness to accept additional or new passenger services is frequently proportional to the amount of capital investment that is committed to create additional rail capacity. In the case of Central Oregon, this would likely include adding a second rail line, as well as other significant and costly improvements. The 2001 Passenger Rail Study did include some comments on the feasibility of passenger rail in Central Oregon:

The BNSF north-south 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 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.

Recommendations

Further research is recommended to begin as soon as possible, to explore the feasibility of passenger or commuter rail in Central Oregon and to develop a phasing strategy and action plan that would likely include the initial creation of an express bus system. An upcoming study of Central Oregon Transit by the Central Oregon Intergovernmental Council (COIC) will likely include some additional analysis of this issue, but a separate study focused on this issue may be warranted. Additional analysis of Central Oregon commuter rail in particular would be helpful. Several factors should be considered when considering the feasibility of commuter rail:

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

¹ For more detailed information on Passenger Rail, see Chapter 3 of the [2001 Oregon Rail Plan](#).

- Supporting Regional Goals: Land use and transportation 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 lines.
- Population Growth and Density: Continuing moderate to rapid population growth within the corridor, with a high concentration of residences and/or business/commercial activity close to 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 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. This would include any supportive bus transit at destination/origin points.
- Availability of 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.

Key Passenger Rail Service Thresholds. Patronage, cost recovery and running time are factors that must be evaluated when considering extension of rail over a new route. **Patronage** is a measure of average occupancy. Typically a train should have a minimum average occupancy of about 75 passengers per train. **Cost Recovery** is a measure of how much fares are covering the operating costs. A new rail service should be expected to attain a 30-40% farebox ratio to be viable. **Running Time** is generally measured relative to a competitive auto route and travel time, for example a trip on Highway 97. If a new rail route is not competitive with travel time by auto, then it likely will not be successful.

There are also other factors that could significantly influence the decision to consider a new passenger rail line, including serving the transportation disadvantaged community. In the case of Central Oregon, passenger rail could potentially enhance the regional tourism economy.

5. *Summary Recommendations*

Recommendations for implementation have been provided in each of the above sections for:

1. *Relocating BNSF Line to the East of Bend and Redmond*
2. *Existing At-Grade Railroad Crossings*
3. *Freight Mobility and Rail Service*
4. *Passenger Rail Service*

To supplement those recommendations, the following are over-arching decision-making and implementation strategies to achieve the Goals and Objectives in all areas regarding rail in Central Oregon:

1. With the findings and recommendations of this report, begin outlining and developing a multi-party agreement for the entire corridor, to include:
 - New grade separation *credit* applied to (or packaged with) interim roadway system expansion needs across railway lines
 - Rail-served industrial options and infrastructure development (using the unit train / hook & haul model)
 - Mainline expansion opportunities
 - Cost-sharing for mutual priority crossing locations
 - Passenger rail feasibility analysis and a phasing strategy (likely including a first step of an express bus system)
2. There has been a question of the potential negative impacts, benefits, opportunities, and timing implications of a continuous second track on BNSF through Central Oregon related to the range of needs identified above. All decision-making on at-grade crossings, rail freight mobility, mainline freight capacity and efficiency, commuter rail, etc., should include consideration of and financing for double-tracking on the existing BNSF line.
3. The local jurisdictions should use this report to develop Comprehensive Plan amendments, particularly in the at-grade crossing and freight mobility areas. This might include specific amendments or new rail chapters in local Transportation System Plans, along with recommended funding strategies.
4. Acceptance of the findings and recommendations of this report should carry over to continued efforts to gain broad public and stakeholder support of implementation. This can include briefings, updated, and specific recommendations to city councils and county boards.