CHAPTER 6

Commuter Rail Service

Like intercity passenger rail, commuter rail typically operates over the privately owned freight rail system. It is distinguished from intercity passenger rail by connecting cities within the same metropolitan area during commuting hours. Another difference is when Congress created Amtrak in 1970, it mandated that the freight system must allow Amtrak to operate intercity passenger service on the system, but exempted commuter rail. Therefore, the railroads do not have to accommodate commuter rail service on their lines.

Beginning in the 1890s, commuting by rail throughout Oregon's Willamette Valley was the dominate form of transportation for over 30 years. The first commuter rail-type service was between Lake Oswego and Portland in the 1890s. After the advent of the automobile, commuter rail service began declining in the US. By the end of the 1950s, commuter rail service in Oregon had ceased to exist. Since the 1990s, there have been varying levels of interest in reinstituting commuter rail service in Oregon, and a number of commuter rail studies have been commissioned which are reviewed in this chapter. In the mid-1990s, Washington County and the greater Portland metropolitan area began considering a commuter rail service in suburban Washington County, which culminated with the opening of the WES commuter rail line in early 2009. Today, WES is the only commuter rail service in Oregon.

There has been growing interest in evaluating the feasibility of commuter rail service between Wilsonville and Salem, as an extension of WES. The alignment is shown in Figure 6.1. Such service could divert some of the projected vehicle trips from the state highway system to a parallel rail route. To assess the challenges and opportunities of extending commuter rail from Wilsonville to Salem, a preliminary feasibility study was initiated as a part of the *Oregon Rail Study*. The feasibility study looked at extending service between Wilsonville and Salem along 29 miles of the OE alignment. The study included a review of data from the previous commuter rail studies and an evaluation of the experience of the WES service. The results of those investigations are presented in this chapter.

Previous Commuter Rail Studies

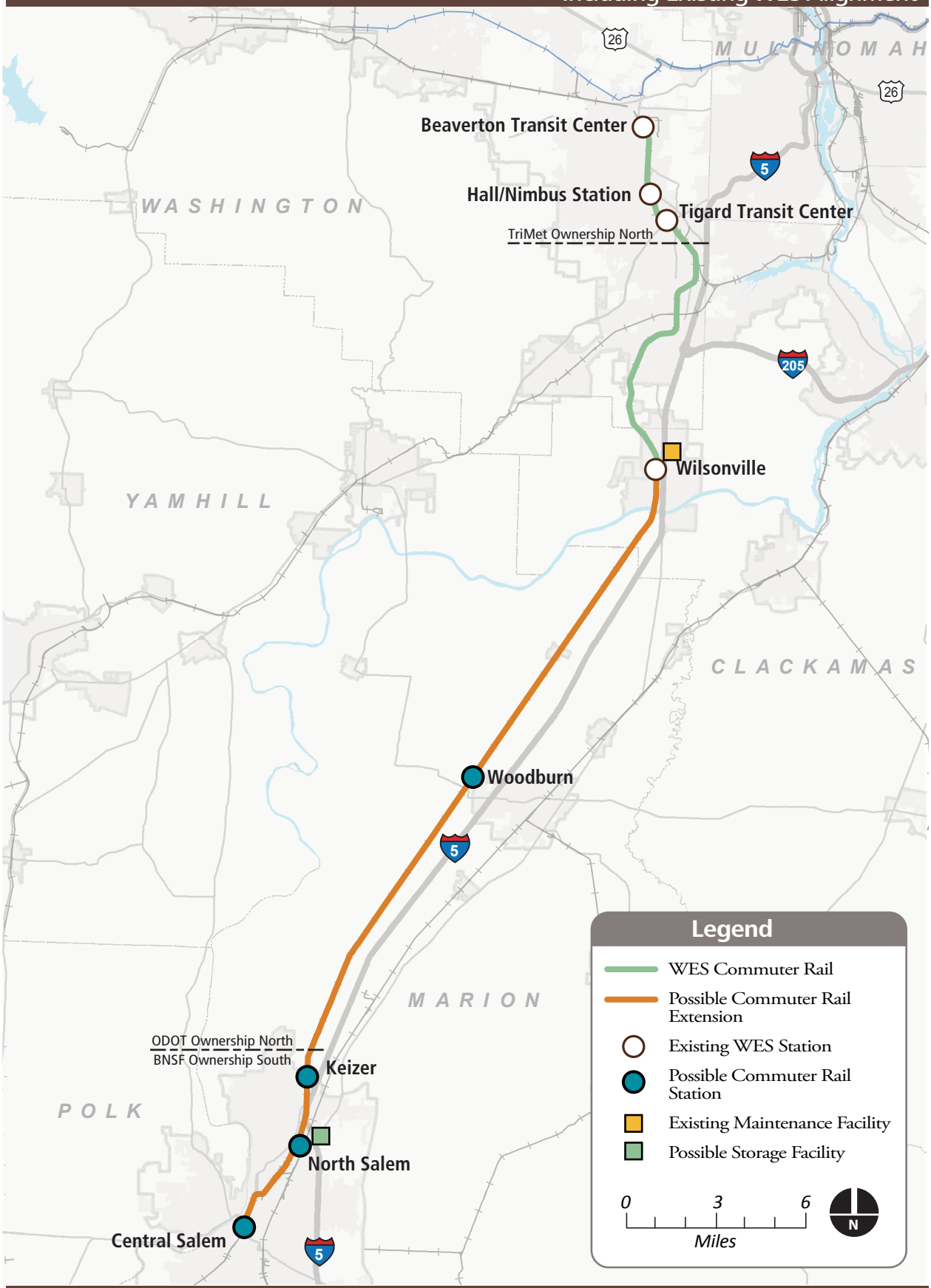
ISSUES TO CONSIDER WHEN EVALUATING COMMUTER RAIL

Before evaluating commuter rail between Wilsonville and Salem, the *Oregon Rail Study* looked at previous commuter rail studies to determine what information had already been collected, what gaps in information existed, and what lessons might be learned from the previous analyses.

Six commuter rail studies dating back to 1997 were reviewed. The goal was to create an inventory of what rail data had been collected and what had been omitted, and to develop guidance for what should constitute comprehensive feasibility studies of commuter rail opportunities in the future.

Figure 6.1

Wilsonville to Salem Commuter Rail Study Area
Including Existing WES Alignment



The previous six studies had examined the idea of adding commuter rail service to the following four corridors:

- Ashland to Medford, 2001
- Yamhill County to Portland, 1998 and 2008
- Wilsonville to Beaverton, 1997
- Vancouver, WA to Portland, 1999 and 2006

When the content and scope of the six commuter rail studies are compared, it becomes clear that some aspects for evaluating the feasibility of commuter rail are studied frequently, while others are rarely studied. Scant attention was paid to land use issues, cost-benefit analysis, financing, impacts to freight rail operations, and governance issues. Surprisingly, only one of the six studies included outreach to the host railroad, even though no rail service can occur without its agreement. Table 6.1 lists major issues and whether each of the six existing studies evaluated each issue. The comparison reveals the gaps in information or analysis for the four corridors. Future study of commuter rail in these corridors should address these gaps. In addition, the Transportation Research Board[26] has recently completed a "best practices" guide for commuter rail studies, entitled *Guidebook for Implementing Passenger Rail Service on Shared Passenger and Freight Corridors* (2010).

Five aspects of commuter rail should be evaluated in any feasibility analysis in order to obtain a complete picture of the opportunities and constraints. The five critical aspects are: outreach to the railroad owners of the track regarding right-of-way and trackage rights, data collection, operating plan assumptions, data analysis, and feasibility assessment.

OUTREACH TO THE HOST RAILROAD

Commuter rail service typically runs on the same privately owned infrastructure as freight and intercity passenger rail services. Because the railroads have the sole decision-making power regarding the use and operation of their rail corridors, the host railroad should be involved from the beginning of the discussion.

26 The Transportation Research Board is one of six major divisions of the National Research Council—a private, nonprofit institution that is the principal operating agency of the National Academies in providing services to the government, the public, and the scientific and engineering communities. The mission of the Transportation Research Board (TRB) is to promote innovation and progress in transportation through research. http://www.trb.org/AboutTRB/Public/AboutTRB.aspx. Accessed April 26, 2010.

Table 6.1 Issues Addressed in Commuter Rail Studies

	Ashland to Medford 2001	Yamhill County to Portland 1998	Yamhill County to Portland 2008	Wilsonville to Beaverton 1997	Vancouver to Portland 1999	Vancouver to Portland 2006
RAILROAD OUTREACH					•	
DATA COLLECTION						
Line Characteristics	•	•		•	•	•
Land Use Issues	•			•		
Station Location	•	•	•	•	•	
Train Equipment	•	•	•	•	•	
Schedule	•	•	•	•	•	
Ridership Estimates	•	•	•	•	•	
Capacity Analysis				•	•	
Capital Costs	•	•	•	•	•	•
Operating Costs	•	•	•		•	•
FEASIBILITY ASSESSMENT						
Cost-Benefit Analysis/Return on Investment Analysis	•				•	•
Financing Plan						
Governance Issues					•	

DATA COLLECTION

An inventory of the existing condition of the rail line infrastructure and adjacent land uses will help identify potential physical and operational constraints to commuter rail service. For example, the standards for freight track type and condition are different from the standards for passenger rail, and therefore running commuter service could require significant upgrades. An examination of existing and planned land uses will identify potential incompatibility between rail operations and adjacent land use types. Data collection may include analyzing the line characteristics, including the condition of the track, available right-of-way, and physical features such as crossings, bridges, and wetlands that could constrain the ability to expand or improve track capacity. Agencies with jurisdiction over land use should be consulted to determine land use issues, including both opportunities and conflicts that commuter rail service could present.

OPERATING PLAN ASSUMPTIONS

In order to assess the feasibility of commuter rail service, assumptions must be made about station locations, train equipment, and schedule. These factors are used to estimate the number of trains per day and level of service to be used in calculating ridership estimates. Without ridership estimates, it is difficult to assess whether the investment would be justified. The operating plan should identify who will potentially operate the service.

DATA ANALYSIS

A ridership estimate should be calculated using a recognized and commonly used modeling tool. The estimate should identify demand by workday, time of day, origin/destination, parking needs, bus service needs, and diversion from adjacent transportation facilities.

The capacity of the rail alignment must also be analyzed, using either sophisticated rail operations software packages or simpler string-line diagrams. The capacity analysis will identify delays and safety conflicts in the commuter or freight rail systems based on current and future train schedules. The analysis identifies where constraints will likely occur and tests the ability for improvements to overcome delays.

Findings from the capacity analysis are used to design and estimate capital costs for necessary track improvements to reduce delays or add infrastructure for the commuter service. Other capital costs comprise stations, maintenance facilities, and train equipment. Operating costs such as labor, administration, insurance, and maintenance associated with operating the commuter rail service should also be estimated.

FEASIBILITY ASSESSMENT

A cost-benefit analysis or return on investment analysis compares the potential costs, both capital and operational, to the benefits created from the service. Both the costs and the benefits are monetized over the life cycle of the infrastructure investment. Measure of the benefits should include factors such as reduced highway maintenance and construction costs, improved travel time, economic impact, reduced pollution, increased safety, and reduced congestion.

A financing plan should be developed to identify possible funding sources and a strategy for funding both initial and on-going capital and operating costs.

Critical governance and interagency issues should be identified and a plan developed for solving them. Governance identifies which entity would be responsible for project implementation and ongoing operations of the commuter rail line. Interagency issues research includes, for example, resolving permitting and land use compatibility issues with local governments, resolving operating issues with the host railroad, and resolving safety issues with ODOT, the Federal Transit Administration (FTA) or the FRA.

A Case Study: Wilsonville to Salem Commuter Rail Assessment

The *Oregon Rail Study* includes an assessment of extending the existing WES commuter rail service from Wilsonville to Salem. Figure 6.1 shows the study area.

The *Wilsonville to Salem Commuter Rail Assessment*, Appendix I, is a high-level feasibility study that builds on lessons learned from WES and covers the topics previously outlined in this chapter:

- Railroad Outreach
- Data Collection: Line Characteristics, Land Use Issues
- Operating Plan Assumptions: Station Locations, Train Equipment, Schedule
- Data Analysis: Ridership Estimates, Capacity Analysis, Capital Costs, Operating Costs
- Feasibility Assessment: Cost-Benefit Analysis/Return on Investment Analysis, Financing Plan

OUTREACH TO RAILROADS: PNWR AND BNSF

Information provided by the two railroads was used to conduct operating and capacity assessments and to analyze costs for construction, rail operations, maintenance, and insurance.

Three entities have a vested interest along the OE line from Wilsonville to Salem:

- The State of Oregon owns the right-of-way between Wilsonville to just north of Keizer.
- BNSF owns the line from north of Keizer to Salem.
- PNWR owns the operating rights on the ODOT right-of-way and leases the BNSF right-of-way.

Consequently, consent by PNWR and BNSF to allow commuter rail on their systems would be required. Both PNWR and BNSF were interviewed to discuss their willingness to entertain extending commuter rail to Salem. Given the impact on current operations from WES and concern for the future, PNWR does not support expansion of WES on its system.

BNSF representatives were asked about the concept of a commuter rail extension to Salem, their experience with other commuter rail projects, and how commuter rail would be different from intercity passenger rail. Some of the key responses included the importance of developing a potential commuter rail operating plan early in the project planning process, because frequency and bi-directional operation significantly affect infrastructure plans and double tracking needs, resulting in significant impacts to capital costs. BNSF representatives confirmed that passenger trains require careful planning and capacity improvements to ensure that freight trains can adequately navigate the corridor. In addition, BNSF would require indemnification similar to that already in place for PNWR for WES. BNSF also expressed a possible willingness to sell the corridor at market value, which would likely reduce or eliminate the requirement to indemnify BNSF against potential liability.

DATA COLLECTION

Information collected to document existing conditions within the study area between Wilsonville and Salem included the following:

- Railroad track charts showing infrastructure and the extent of right-of-way
- Population and employment statistics
- Freight operations (number of trains, running speeds, switching times)
- Site reconnaissance at potential station locations
- Land use plans from jurisdictions along the alignment
- Maps and aerial photos
- Commuter rail data from Washington County and TriMet
- Ridership data from a variety of sources

FREIGHT RAIL OPERATIONS

Currently, PNWR operates an average of two northbound and two southbound freight trains per day in the study corridor, but at times PNWR operates as many as four freight trains in each direction each day. Freight trains average 25 mph along the corridor. PNWR performs switching operations at a number of locations between Wilsonville and Salem: Hopmere, west Woodburn, and north Salem being the most frequent locations. By 2030, the number of freight trains is expected to double.

PNWR indicates that it has reduced or eliminated freight service during the morning and afternoon weekday peak periods in the current WES corridor, and has curtailed midday service as well, in order to provide capacity for commuter rail service. Track conditions along the alignment between the WES terminus in Wilsonville and Salem are adequate to serve its current purpose as a low-density freight railroad, but the track would need to be rebuilt to support passenger rail service.

LAND USES

Wilsonville station is the current southern terminus of WES commuter rail and the starting point of the extension studied in this assessment (see Figure 6.1). The existing OE rail line between Wilsonville and Salem passes through diverse land uses. At Wilsonville, land is industrial in one area and farm (urban holding) in another. Outside the commercial and single-family residences in communities such as Donald, Woodburn, Hopmere, and Keizer, land is zoned mostly for farm uses. Land is mostly industrial at the north end of Salem, and then there is a mix of uses, urban densities, and existing transit services to the larger downtown area of Salem.

A previous study suggested that the initial phase of the commuter rail extension should terminate at Keizer or north Salem because of the land use impacts of extending commuter rail through north and central Salem.[27] Although terminating the extension in north Salem would reduce immediate impacts to adjacent communities and relieve some design issues, it would force the majority of Salem-bound riders to transfer to another transit mode before reaching central Salem's employment and commercial core and would likely reduce ridership.

Through Salem, the current alignment passes near a number of pedestrian areas, schools, parks, and office parks. Planning for increased rail service near any of these existing uses requires sensitivity to neighborhood and community needs and safety, an issue which would need to be addressed in the Alternatives Analysis/Draft Environmental Impact Statement (AA/DEIS) process. Mitigation measures would need to be developed to address the pedestrian and community impacts that would result from the commuter rail extension.

LINE CHARACTERISTICS

The alignment from Wilsonville station to Salem could support passenger train speeds up to 110 mph, if the track is rebuilt, except where curvature requires reduced speeds. The existing right-of-way is large enough for two mainline tracks. A few locations where there is fewer than 50 feet of right-of-way may require that the existing track be shifted to accommodate a second track for commuter rail operations. Figure 6.2 describes some of the line characteristics along the alignment.

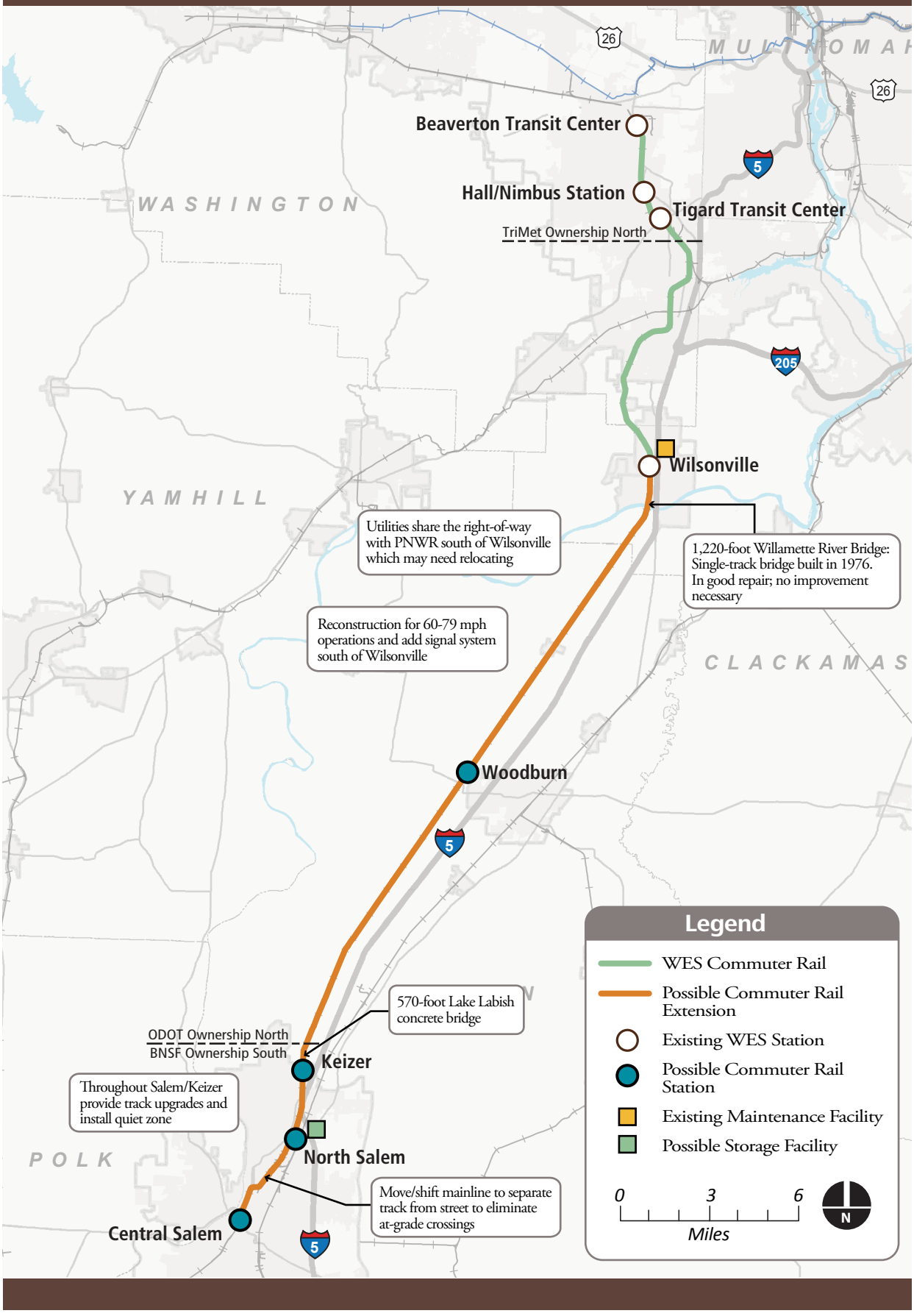
Both buried and overhead utilities are located within the right-of-way in the Wilsonville city limits and at other locations along the corridor. Utilities may need to be relocated to accommodate additional track.

The single-track Willamette River Bridge near Wilsonville was built in 1976 and is in good condition. This study assumes the bridge would remain as a single track. The alignment also crosses the 570-foot Lake Labish concrete bridge upon entering Keizer city limits.

Track through north Salem is located within Front Street with limited separation from vehicular and pedestrian traffic, and there are several at-grade crossings. Improving speed would require a shift of the mainline to separate the railroad track from the street and to eliminate conflicts between different uses at intersections. Speeds through Salem would be limited to less than 40 mph, and a quiet zone would help reduce impacts on adjacent neighborhoods.

27 *Commuter Rail Feasibility Between Wilsonville and Salem/Keizer* (Powerpoint presentation), HDR, Inc., 2009.

Figure 6.2 Existing Conditions and Identified Track and Operations Issues



TRANSIT FACILITIES AND SERVICES

Many of the communities along the OE line are served by transit services that have facilities near the alignment. They include the transit transfer station and the park-and-ride lot at the Wilsonville station where transfers between WES, all South Metro Area Regional Transit (SMART) buses, Salem-Keizer Transit (Cherriots) buses, and Canby Area Transit (CAT) buses occur.

OPERATING PLAN ASSUMPTIONS

Developing an operating plan was an essential part of the feasibility study. Assumptions were made about the alignment, schedule, train equipment, station locations, terminus, and maintenance facilities. A detailed summary of the operating assumptions, including schedules and capacity analysis, can be found in the Wilsonville to Salem Commuter Rail Assessment, located in Appendix I.

STATION LOCATIONS

Stations were assumed to be at Wilsonville, Woodburn, Keizer, and Salem. Three options for a southern station terminus were studied: Keizer, north Salem, and central Salem. Current and projected commute trip patterns in the Salem/Keizer metropolitan area and the distances between stations suggest that a north Salem terminus would eliminate the need for a Keizer station. If the extension terminates in central Salem, a Keizer station would replace a north Salem station. Station areas are discussed in detail in Appendix I.

WES at the Wilsonville station.

TRAIN EQUIPMENT

The current WES equipment, three Diesel Multiple Units (DMUs) and one unpowered trailer car, would not be sufficient to maintain the current service and add service to Salem. The number of train sets depends upon the schedule. Service every 30 minutes would require five additional train sets; service every 60 minutes would require four additional train sets.

WES currently uses DMUs built by Colorado Railcar, which went out of business during the train car delivery for WES. In 2009, US Railcar purchased Colorado Railcar's assets with plans to manufacture DMUs in the US. Potential vendors would likely be able to match specifications of the existing WES trains, but the cost would be highly dependent on finding partner commuter operations to bid jointly on engineering and construction of components. New equipment that would maintain the look and feel of existing WES trains for the extension is desirable for operational continuity. Equipment options would be analyzed during the project design process in an equipment procurement plan.

Another option would be locomotive-hauled train sets. There are several manufacturers in the country as well as potential partner agencies such as Sound Transit in Seattle, Utah Transit Authority, and Trinity Rail Express in the Fort Worth-Dallas area for these train sets. Using such equipment would require modifying the WES line to have a stronger Beaverton Creek bridge at Beaverton Transit Center as well as enlarging existing WES station platforms. The changes would have a significant impact on overall costs.

SCHEDULE

Six operating scenarios were studied to capture the impacts of different combinations of commuter train frequency, Amtrak train frequency, and freight train frequency. The analysis assumed that WES would keep the existing schedule of trains every 30 minutes in the morning and evening peak periods. All scenarios include hourly midday service, which would be in addition to the current WES schedule. Other scenarios could be developed to reduce capital and operating costs (compared to 30-minute service along the entire corridor) without substantially reducing ridership. Analysis of those scenarios would be appropriate during the environmental review and preliminary engineering analysis that would be required.

DATA ANALYSIS

The service level analysis assumed that WES would keep the existing schedule of trains every 30 minutes (also referred to as a 30-minute headway) in the morning and evening peak periods. Hourly midday service would be added as an option. A 60-minute service assumption was also added. The 30- and 60-minute headway assumptions combined with two options of the line ending at Keizer/north Salem or downtown Salem, and the midday service resulted in a total of six scenarios:

1. 30 minute service, terminating in central Salem, no midday service
2. 30 minute service, terminating in north Salem or Keizer, no midday service
3. 60 minute service, terminating in central Salem, no midday service
4. 30 minute service, terminating in central Salem
5. 60 minute service, terminating in central Salem
6. 60 minute service, terminating in north Salem or Keizer

The six future scenarios were analyzed for ridership forecasts, capacity, capital requirements, and operational costs. A sketch-planning model was developed to create order-of-magnitude ridership comparisons for different scenarios, because no existing computer model can provide ridership forecasts for the entire study area.[28]

FORECASTED RIDERSHIP

The daily ridership projections under these various scenarios are shown in Table 6.2.

Table 6.2 Daily Ridership Projections by Scenario, Wilsonville to Salem[29]

Scenario	Wilsonville-to-Salem Headway	Southern Terminus	Midday Service	Projected Ridership 2020	Projected Ridership 2030
1	30 minutes	Central Salem	No	2,920-3,570	3,240-3,960
2	30 minutes	North Salem or Keizer	No	2,190-2,670	2,430-2,970
3	60 Minutes	Central Salem	No	2,630-3,210	2,910-3,560
4	30 Minutes	Central Salem	Yes	3,440-4,210	3,820-4,670
5	60 minutes	Central Station	Yes	3,100-3,790	3,440-4,200
6	60 minutes	North Salem or Keizer	Yes	2,320-2,840	2,580-3,150

28 Note: It is likely that FTA will require a formal travel demand forecasting model be developed for use in the AA/DEIS process. This model would need to be capable of producing FTA-compliant travel user benefit output.

29 Existing ridership is estimated at 600 riders per day. Combination of ridership on the SMART/Cherriots 1X route, as reported by SMART (approximately 400 to 500 riders per day), plus an estimate of vanpools operating in the corridor. If adjusted for economic conditions, this is estimated to be approximately 700 bus/vanpool riders per day.

To check the accuracy of the analysis, the results were compared to previous commuter rail studies for the Wilsonville to Salem corridor. The results of the ridership forecast fall within the range of projections developed for prior studies by TriMet and Metro, as shown in Table 6.3.

Table 6.3 Ridership Projections Comparison, Wilsonville to Salem

Source	Current Feasibility Assessment[30]	Metro[31]	TriMet/URS[32]	TriMet/HDR[33]	Average
2020 Ridership	2,920 – 3,570	3,900	3,000 - 3,600[34]	2,500 – 3,800	Approx. 3,400

CAPACITY ANALYSIS

Capacity would need to be expanded if commuter rail service were added to the OE line. Additional passing sidings and/or double tracking would be needed at multiple locations to allow freight and commuter trains to pass each other. PNWR indicated all schedule scenarios would require a second track along the existing WES corridor between Tualatin and Wilsonville. The addition of this second track would mitigate current freight operational issues that PNWR is experiencing and would help overcome expected capacity constraints if intercity passenger service (Amtrak) were shifted to the OE line. Maintaining access to PNWR's industrial customers would require construction of two to four passing sidings under the 60-minute and 30-minute scenarios, respectively.

CAPITAL COSTS

Major cost elements for the extension include the following:

- Train equipment
- Stations at Woodburn, Keizer, and Salem
- Maintenance and support facilities
- Signals/communications and crossings warning upgrades
- Track upgrade and/or replacement
- Passing sidings and double track
- Implementing a "quiet zone" through Salem

Acquiring the BNSF right-of-way and upgrading the Willamette River Bridge on the OE line for faster, passenger train operation were not included in the cost estimates.

30 Assumes service terminates in central Salem.
31 Estimates based between Beaverton and Salem.
32 Estimate extrapolated to 2020. Assumes service terminates in central Salem.
33 Assumed service terminates in north Salem.
34 Estimate extrapolated to 2020 based on URS 2015 projections.

Contingency costs were added for administration of an FTA grant, multiple agency agreements and funding, and construction of improvements under rail traffic.

WES costs were approximately $11 million per mile (all costs included). The cost estimates for the commuter rail extension range from $11.3 million to $13.3 million per mile, of which approximately $1.0 million to $1.5 million per mile is due to mitigation measures along the existing WES corridor. The conceptual capital cost estimates provided in Table 6.4 include costs for two scenarios, 60-minute service and 30-minute service, both to central Salem.

Table 6.4 Conceptual Capital Cost Estimate

Cost Element (Rail Assumptions)	Unit Costs (per mile or per each)	60-Minute Scenario	30-Minute Scenario
Track: new with subgrade, welded rail, concrete ties, and new turnouts Sidings: assume 3-5 miles of sidings along the 30-mile corridor, plus 3 to 5 miles for a double track between Tualatin and Wilsonville, depending on operating scenario	$2,500,000	$15,000,000	$25,000,000
Track: replace/upgrade to as much as 79 mph (FRA Class 4)	$1,000,000	$30,000,000	$30,000,000
Track: replace ties for track upgrades	$500,000	$15,000,000	$15,000,000
Double crossovers (one on the double track)	$2,000,000	$2,000,000	$2,000,000
Stations (Woodburn, Keizer, Salem)	$5,000,000	$15,000,000	$15,000,000
Signals & communications (excludes crossings)	$1,000,000	$25,000,000	$25,000,000
Maintenance, storage, and support facilities	$10,000,000	$8,000,000	$10,000,000
Crossings: all public crossings, including signal upgrade	$400,000	$12,000,000	$12,000,000
Bridges: replace timber with concrete	$4,800	$24,000,000	$24,000,000
Equipment	$5,000,000 - $6,000,000	$30,000,000	$50,000,000
SUBTOTAL		$176,000,000	$208,000,000
Preliminary Engineering and Permitting Services (13 percent)		$22,880,000	$27,040,000
Construction Engineering (8 percent)		$14,080,000	$16,640,000
Contingency (50 percent)[35]		$88,000,000	$104,000,000
FTA/Multi-Agency Administration (15 percent)		$26,400,000	$31,200,000
TOTAL		$327,360,000	$386,880,000

35 Accounts for design components not readily identified at this level of detail, as well as for estimated right-of-way acquisition. Also includes costs for establishing a quiet zone through Salem.

OPERATING COSTS

Conceptual operating costs based on information from TriMet and other recent similar commuter rail projects are shown in Table 6.5.

Table 6.5 Conceptual Annual Operating Cost Estimates

Operational Element	Estimate for Wilsonville to Salem Commuter Rail Extension
Transit Agency Staff	$400,000 – $500,000
Railroad Maintenance Work and Support Staff	$1,750,000 – $2,250,000
Commuter Train Operations	$1,400,000 – $1,700,000
Performance Incentive (for on-time performance by PNWR crews)	Not included in this assumption
Insurance	$2,000,000 – $2,500,000[36]
TOTAL	$5,550,000 – $6,950,000

FEASIBILITY ASSESSMENT

Assessing the feasibility of extending the WES commuter rail service from Wilsonville to Salem must consider the costs and benefits of the extension; environmental impacts, right-of-way and land use impacts; capacity for freight and passenger rail traffic; sources of financing; and governance issues. The findings are intended to assist elected officials and stakeholders to determine whether the Wilsonville to Salem extension concept should be advanced further.

COST-BENEFIT ANALYSIS/RETURN ON INVESTMENT ANALYSIS

The preliminary analysis indicates that the overall travel improvements on I-5 and OR 99E and OR 99W as a result of the extension would be very limited. Wilsonville to Salem commuter service is projected to reduce congestion up to three percent on I-5 during the morning and evening peak commuting periods between 2015 and 2030. More of the benefit could be realized on OR 99E and OR 99W than on I-5. Since OR 99E and OR 99W provide similar access to regional destinations and also have congestion during peak travel times, trips on those routes may shift to I-5 to take advantage of the reduced congestion. The study area would need to be more thoroughly evaluated to quantify reduced travel delays compared to not extending the commuter service.

The extension would create more choice for people who do not have access to private vehicles for transportation and who would use the transit systems that would connect with the commuter rail stations. The mobility of transit-dependent individuals is a primary variable used by the FTA in evaluating proposed transit projects for funding.

36 This cost is estimated at approximately half of the totaled other operational costs. TriMet assumes a lower marginal increase over current rate.

FINANCING PLAN

Consultation with the railroads, TriMet, and Washington County revealed that creative funding solutions and a political champion would be essential to funding the extension locally and successfully presenting the proposal to the FTA. For reference, the WES line was funded by the State of Oregon (~25 percent), Washington County and local cities (~20 percent), TriMet (~five percent), and FTA (~40 percent).

Since the FRA does not offer grants for public transit investments, the most likely source of federal funding would be FTA. To qualify for FTA funding, lead agencies need to show that financial backing is in place and that the proposed investment demonstrates a balance between forecasted ridership and total construction and operational costs. No state or local funding source has been identified to date. Requests for FTA funding compete on a national scale using the FTA's New Starts criteria.

GOVERNANCE ISSUES

Extension of the WES commuter rail line to Salem would involve many jurisdictions, including the State of Oregon; Washington, Marion and Clackamas counties; the cities of Wilsonville, Woodburn, Keizer and Salem; the PNWR and BNSF railroads; and the transit agencies throughout the corridor—TriMet, SMART, CAT, and Cherriots. These agencies would need to work together to implement the extension. One of the lessons from WES was that successful implementation of the new commuter rail service was the result of visible and consistent local champions throughout the planning and construction of the project. A similar coalition of proponents from the Wilsonville to Salem area local agencies has not yet emerged.

Given that the extension to Salem would cross multiple jurisdictions, the options considered for a governing agency include:

1. A single transit agency (such as TriMet) with operating agreements with other agencies outside of the established district. TriMet has indicated it would not want to administer a commuter rail extension into Salem, another agency would need to be identified.
2. A new regional transit agency. A new, regional entity to oversee the project development, administer funding, and eventually own and operate the system. Multiple agencies would need to participate.
3. Amtrak. Amtrak's statutory authority pertains only to its interstate network, meaning commuter rail would not have the same priority rights as intercity rail. Amtrak can serve as a commuter rail operator, but cannot provide government oversight.
4. ODOT or another state agency. A number of state departments of transportation around the country fund or operate commuter rail systems. Oregon's lack of a state transit funding source currently make this governance option infeasible.

Summary of Commuter Rail Studies

Since 1997, six studies have examined the idea of adding commuter rail service to the following four corridors:

- Ashland to Medford, 2001
- Yamhill County to Portland, 1998 and 2008
- Wilsonville to Beaverton, 1997
- Vancouver, WA to Portland, 1999 and 2006

Five aspects of commuter rail should be evaluated in any feasibility analysis in order to obtain a complete picture of the opportunities and constraints. The critical aspects are: outreach to the railroad owners of the track regarding right-of-way and trackage rights, data collection, operating plan assumptions, data analysis, and feasibility assessment.

These study aspects were included in the *Oregon Rail Study's* assessment of extending the existing commuter rail service from Wilsonville to Salem. The assessment revealed that extending commuter rail to Salem is technically feasible, but it faces operational and financial challenges including:

- Lack of support by PNWR, the operating railroad, because of concerns over freight capacity
- The capital cost of $327 to $387 million and operating costs of $5.5 million to $6.9 million plus per year, however, no funding source has been identified
- The extension project has the potential to attract 3,000 to 4,000 riders per day by 2030, which would slightly reduce congestion on I-5 and OR 99E between Wilsonville and Salem, but not enough to reduce the need for highway capacity projects in the same area
- Need for local political champions of the project
- Ridership on the extension is forecast to be moderate at best when compared to other commuter rail projects nationwide, making funding through FTA more difficult
- Funding sources from local communities would be needed in any matching grant pursuit with FTA, however, none are known to be available
- Existing and planned land uses around some of the possible station locations do not complement commuter rail transit, and possible land use changes to complement commuter rail transit may be incompatible with existing freight rail operations and freight customers along the PNWR line

As population and road congestion are projected to grow, state and local leaders are interested in commuter rail as a piece of the transportation solution. Future studies could focus on the recommended study aspects in varying degrees of depth. Though not every study may cover all aspects due to cost or time constraints, railroad outreach should always be considered. Without the cooperation of the railroad, commuter projects on existing freight rail lines are not possible.