

WALKER | MACY

Salmonberry Corridor Preliminary Feasibility Study

March 2013

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Acknowledgments

Salmonberry Coalition

The Salmonberry Coalition represents a broad range of interested parties and stakeholders. Participants include:

Oregon Department of Forestry (ODF)
Oregon Parks and Recreation Dept. (OPRD)
Cycle Oregon
Port of Tillamook Bay Corporation
Oregon Coast Scenic Railroad
State Senator Betsy Johnson
Tillamook County
Oregon Dept. of Fish and Wildlife
Governor's Office - Transportation and Intergovernmental/Regional Solutions
Columbia Pacific Economic Development District

Many other citizens and representatives of local communities surrounding the Salmonberry Corridor have provided input and guidance.

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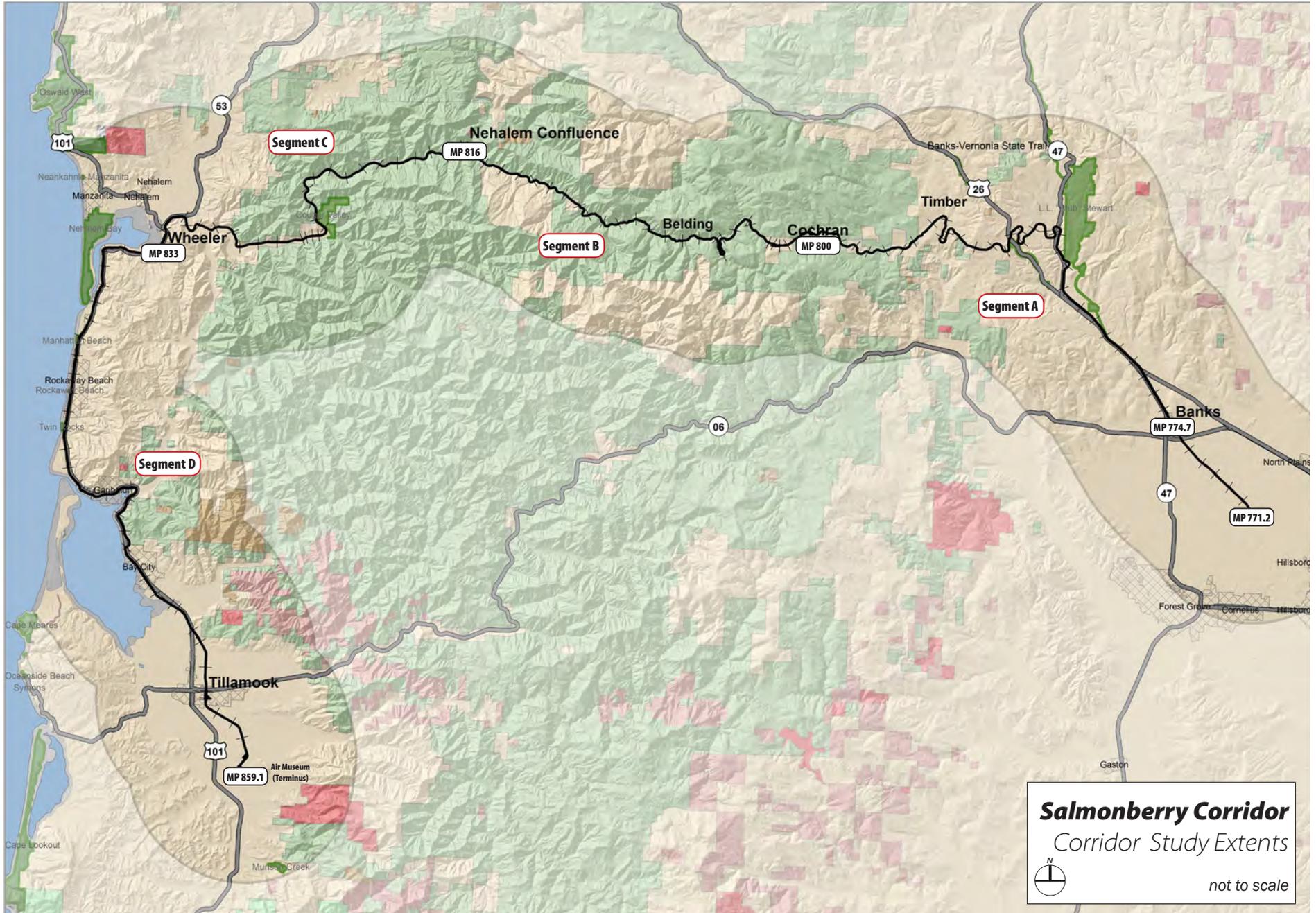
The Salmonberry Corridor Vision



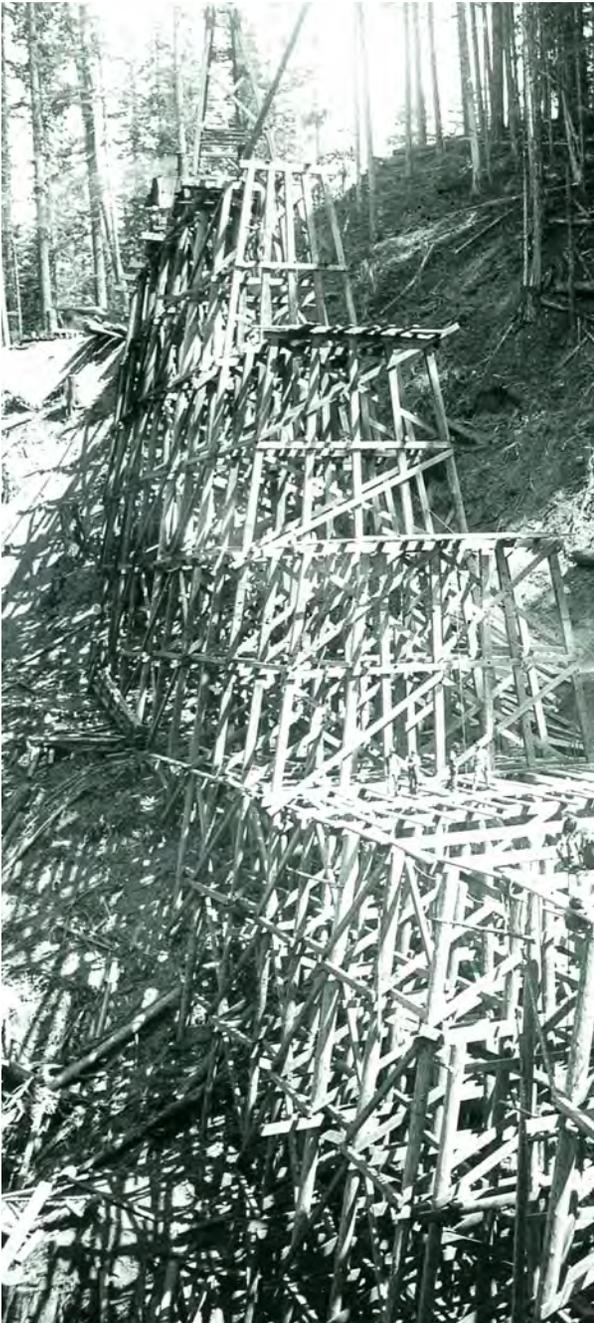
The Port of Tillamook Bay (POTB) railroad once connected the Willamette Valley to the Oregon Coast, with an 84-mile rail corridor formerly owned by Southern Pacific, running from Banks to the Tillamook Air Museum through the Salmonberry River canyon. Following a catastrophic storm with over 20" of rain over 2 days in December 2007, this rail connection was cut off due to major damage, particularly in a 16-mile stretch of tunnels and trestles deep within the Coast Range. An undamaged portion of the line is currently being used by the Oregon Coast Scenic Railway to conduct scenic tours along the Coast but the remainder of the corridor lies unused except by a few hikers and fishermen.

This unique corridor, (which will be referred to as the Salmonberry Corridor in this report), has a rich history and outstanding scenic context and has the potential to connect urban and rural Oregon while tapping into a wide network of existing recreation trails and parks, educational opportunities and heritage sites. This project will create strong economic opportunities for Northwest Oregon and help revitalize communities along the rail corridor, including Banks, Timber and the communities along the coast from Wheeler to Tillamook. It will also define a new corridor for human-powered transportation, from the urban population of the Willamette Valley through the wild Coast Range to the beaches and farms of Tillamook County. The Salmonberry Corridor will likely take many years of development until it can be considered as a complete recreational resource. But the Banks Vernonia Trail took over 30 years of planning and construction before it became the full corridor that it is today. Patience will be required to fulfill the initial vision.

The Corridor



Summary of Corridor History



*For the purposes of this study, a brief historical summary is included below. For a full, detailed historical account, please refer to the 2001 book *Punk Rotten and Nasty*, by Paul Clock and the *Port of Tillamook Bay Railroad National Register of Historic Places Evaluation Report*, prepared in 2009 by EDAW/AECOM. The following text is adapted from the 2009 report.*

Work on what would become the Pacific, Rail and Navigation railroad (PR&N, also referred to as the “Punk, Rotten, and Nasty” in reference to the challenges of building and maintaining a rail line in some of the most rugged and geologically dynamic terrain anywhere in the western U.S.) began when Elmer Lytle, a rail promoter and investor in Portland, incorporated the PR&N on October 13, 1905. Although much of initial start-up money came from Elmer’s and his brother Charles’ personal fortunes, the PR&N raised an additional two million dollars in capital through the sale of bonds to the Union Trust Company of San Francisco; a financial connection that eventually ceded a controlling interest in the PR&N to the Southern Pacific (SP) Company. Elmer and Charles Lytle planned construction starting from both ends of the planned railroad; one starting in Tillamook and the other in Hillsboro to the east.

The PR&N was officially completed on October 12, 1911, when the first passenger train pulled into Tillamook. Regular daily passenger service soon commenced between Hillsboro and Tillamook, with numerous stops along newly-established logging towns such as Timber and Cochran. From its inception, the PR&N advertised itself as a tourist railroad and boasted that it could bring passengers to within one block of the ocean for convenient day trips or longer overnight weekend stays. Ocean-side resorts and tourist attractions developed along the PR&N in towns such as Rockaway, Garibaldi and Bay City.

By 1915 the PR&N ceased to exist as a corporate entity when the Southern Pacific took complete control of the system. By 1927, as highway transportation became the norm for passengers, the S.P. began to cut passenger service; offering only one round-trip a day from Union Station in Portland to Tillamook. The S.P. continued to operate the former PR&N tracks throughout much of the 20th century; providing a convenient and economical means by which to transport timber products from mills in Garibaldi, Tillamook, and elsewhere in the region to markets in Portland and throughout the western United States. In Tillamook, the U.S. Navy established an airship base in 1942 and constructed a 5.5-mile spur line to the base.

By 1953, the Port of Tillamook Bay was established at the site of the former air station and utilized the SP line to facilitate the transportation of lumber, agricultural products, and other goods to external markets. However, the old Punk, Rotten, and Nasty line continued to live up to its name throughout the 20th century as the line continued with its plague of landslides, grade collapses, wash-outs, and similar maintenance challenges. The S.P. applied to abandon the line in 1989 and the Port began operating it from Tillamook to Batterson in 1983. With assistance from the State of Oregon, the POTB purchased the system in 1990 and continued to operate it as an important regional rail link. A major storm and flooding in 1996 damaged the line, forcing closure within the remote canyon portion of the line, but this damage was repaired with the help of state and federal funding. Many of these repairs survived the 2007 storm.

Project Scope and Schedule

The Salmonberry Corridor Coalition is a group of interested stakeholders, including State Senator Betsy Johnson and representatives of the Oregon Coast Scenic Railroad, Tillamook County, Port of Tillamook Bay, Tillamook County, Cycle Oregon, Oregon Parks and Recreation Department (OPRD), and the Oregon Department of Forestry (ODF), who have come together to explore the possibility of a trail connection along the POTB railroad. The primary focus of this group is to determine what challenges and obstacles need to be identified and overcome if a trail connection is to be considered for all or part of the railroad right of way.

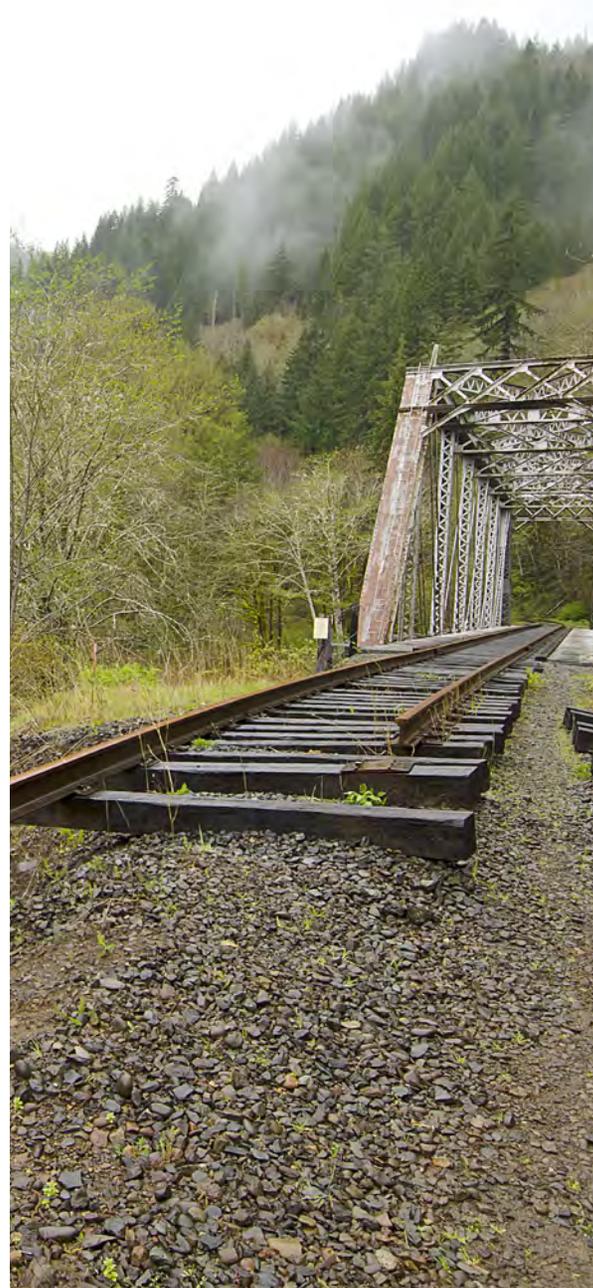
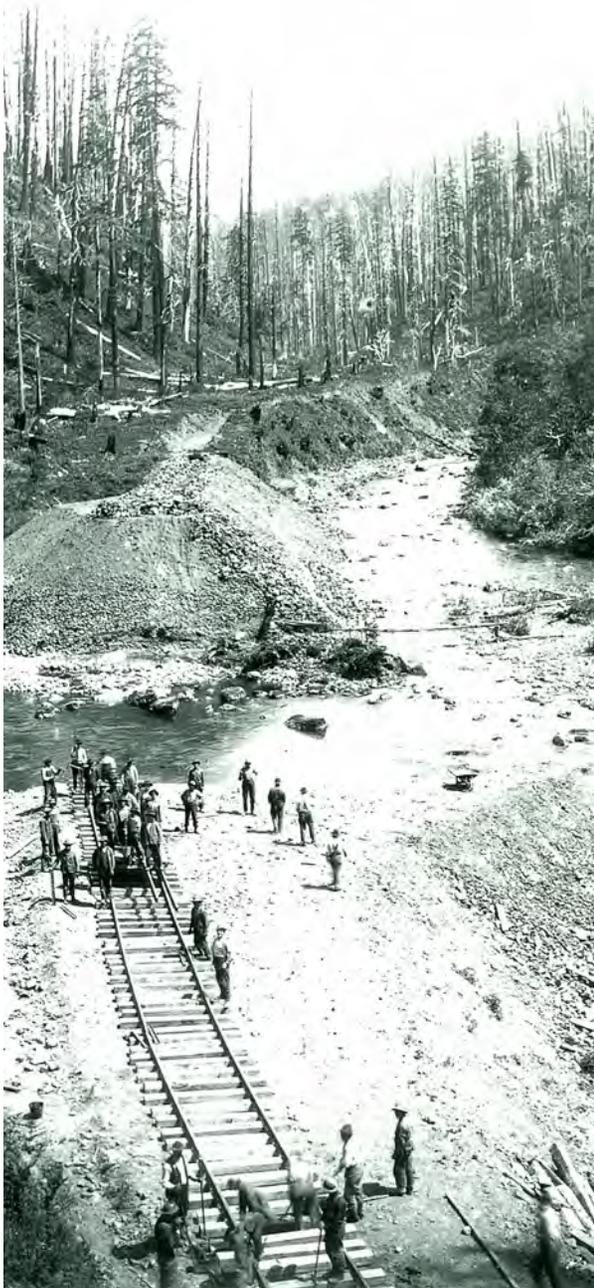
OPRD and ODF are the lead partners in pulling together a high level analysis for the group's consideration. While not a full feasibility study, the examination of potential issues in this report looks at ownership, existing use, natural and cultural resource considerations, construction costs, economic development opportunities, recreation potential, long term maintenance, and operation issues. This high level analysis will be used to create a framework for interested parties to make decisions about moving forward with a more complete planning effort. The goal is to have the analysis and framework for decision making ready by mid-2013, with the immediate next step being a Master Plan that further investigates the possibilities for each segment of the Corridor.

This process also included initial review by the public. In the fall of 2012, two 'Listening Post' sessions were held in Banks and Tillamook to get initial public reaction to the concept. These two meetings were very well-attended and there was significant support expressed for the concept and for continued study to further define the potential of this corridor.



Scope of Work

- 1. Project Orientation and Inventory**
 - Define purpose of this study
 - Prepare a description of the right-of-way (ROW) and study area
 - General mapping of the study area
- 2. Economic Feasibility Advising (*with ECONW*)**
 - Demographics of potential trail users and potential demand and use.
 - Recommend future steps needed in determining economic benefits
- 3. Legal Feasibility Assessment**
 - Determine ownership of the corridor ROW
 - Identify potential challenges and/or "fatal flaws"
- 4. Corridor Condition Inventory and Assessment (*with Tom Wiser*)**
 - Summarize key findings of existing assessments
 - Identify areas for further study, identify potential challenges or "fatal flaws"
- 5. Trail Governance, Operation, and Maintenance**
 - Identify options for ownership, oversight and management of Corridor
- 6. Acquisition and Financial Feasibility (*with ECONW*)**
 - Consider precedent projects
 - Summarize restrictions on use of the property
 - Identify typical options for acquiring portions of the corridor
 - Provide general range of precedent costs of this project
 - Describe potential revenue gained by salvaging existing steel rails
 - Provide typical management and maintenance budgets
 - Provide preliminary assessment of most likely funding sources.
- 7. Report**
 - Concise, illustrated report as Executive Summary of findings



Introduction

The Salmonberry Corridor is best understood not as a single, uniform entity, but as an ever-changing cross-section of Northwest Oregon, traversing an incredible variety of landscapes. Understanding the Corridor as such can also lead to the development of diverse ideas for the Corridor's future that account for place-specific opportunities and constraints. There is probably not one single treatment for the Corridor that will be applicable for the entire 84 miles. And as a result of different funding and political priorities, there may well be certain segments that are developed sooner than others.

From an initial analysis of the Corridor's geography and condition, it is recommended that the Corridor be considered in 4 distinct segments. These segments are described in the following pages. For the purposes of this study, the entire corridor under ownership of the POTB is considered, except for one short stretch. This study considers an 84.4-mile corridor, between the Banks Lumber Mill siding in the town of Banks, at Milepost 774.7 and the Port of Tillamook Bay Industrial Park, where the railroad line ends at Milepost 859.13. However, the POTB actually owns an additional 3.5-mile length of corridor between Banks and Schefflin, for a total distance of 87.9 miles. This portion of the corridor is leased to the Portland and Western Railroad (PNWR). The PNWR uses this stretch of track to move trains between the former BNSF rail line that extends east from Banks, through North Plains and over Cornelius Pass to the main line along the Columbia River. The PNWR also stores railcars on a short portion of the actual study corridor, just north of the town of Banks. The historic SP corridor actually began in downtown Hillsboro, at MP 765 but PNWR now owns the 5 miles between Hillsboro and Schefflin.

Physical Assessment

FEMA Assessment

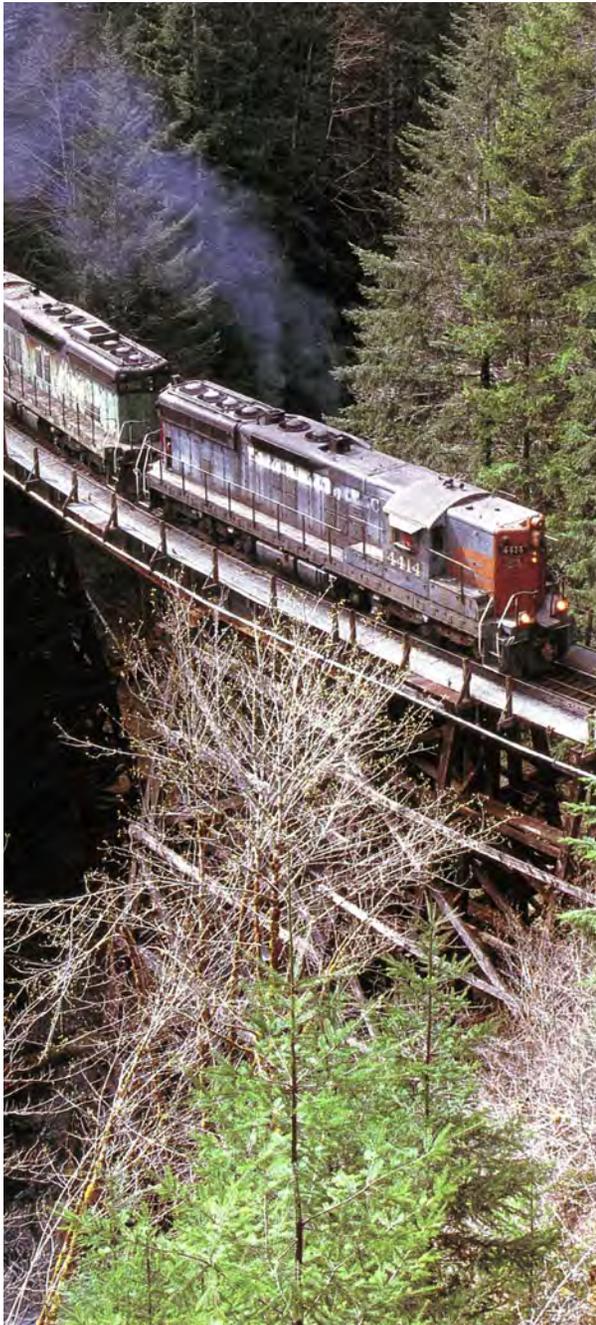
The 2008 FEMA Railroad Emergency Project was an extensive study performed by the IBIS Group with engineering consultants and included structural damage assessments and preliminary civil and geotechnical study of the damage in the most heavily-damaged portion of the Corridor, between Buxton and the Nehalem Confluence. (Nine binders of assessment reports are currently in OPRD's possession). A companion Draft Environmental Assessment was prepared by AECOM in Seattle to determine if an EIS was needed. Generally, there are several limitations to the 2008 FEMA studies that should be noted (*opinions below supplemented by Skip Haak, PBS Engineers and Jim Keany, AECOM*):

- The assessment was conducted with the intent of re-establishing rail service. For smaller-scale trail work, there may not be such extensive repairs required.
- Only bridges that showed damage were assessed. Other bridges, trestles and tunnels were not extensively studied and would require assessment.
- The assessment did not include detailed geotechnical study, only visual observation. To confirm subsurface conditions at major repair points, heavy machinery will be needed to dig test pits and bore for samples and determine bedrock depth. With severely constrained access to some portions of the Corridor, this may be extremely challenging.
- There needs to be an extensive study of the hydrological conditions in the watershed to better understand the natural processes that washed out the rail line. It is unclear in some cases if soil was simply too

saturated and shallow and therefore slid over bedrock, or if there was water that gathered in dams created by the rail line that created a pressure causing the slide. There are also points where the river below may have triggered slides by scouring away slope foundations.

- An analysis of the risks from seismic action was never considered. The probability of an earthquake is considerable and this could further destroy the Corridor.
- The cost estimates included in the Assessment are based on 2008 costs and they also do not include any figures for permitting, engineering and design work, which can add a significant amount to the totals, particularly for in-water permitting with the Army Corps of Engineers and for review of potential Endangered Species (salmon, spotted owl and marbled murrelet.) Wetland delineations may also be required.
- The costs were based on preliminary sketches for repairs, so detailed engineering design would be needed.
- There have not been extensive studies of toxic hazards on the Corridor, mainly from creosote-treated rail ties and from "oiler boxes" placed trackside which automatically grease tracks at curves. The entire Corridor may need a Phase 1 Environmental Site Assessment (ESA) before detailed engineering proceeds. This would include site investigation of a level sufficient to determine potential soil and water contamination from chemical residues on rail structures, any leftover

substances in old railcars, yards or sidings, old spills or dripping from railcars. The ESA could also include an evaluation of risks to neighboring properties, a review of records and POTB files and interviews with former POTB rail operations staff.



Historic Evaluation

The 2008 FEMA studies included a National Register of Historic Places Evaluation Report, a study of the potential historic resources along the Corridor. The report indicates that very few individual elements date to the period of significance, noted as 1905-1916, when the line was built by the Pacific Railway and Navigation Company (PR&N). The report notes that:

With only two exceptions...all of the culverts, bridges, and trestles date to the time during which the Southern Pacific or POTB operated the line. All ties, rails, switching, and ballast have also been replaced. Of all the features noted on the old PR&N line, only the tunnels remain in largely the same configuration and condition as they were when originally constructed during the period of significance. However, the original grade and ROW remain unchanged in terms of overall physical integrity and setting. The PR&N was constructed through a rugged and heavily-wooded region and while the character of the forest itself has changed from old growth to secondary growth over the preceding century, the look and feel of the line remain essentially unchanged. Combined with the significance of the line for the economic development of the north-western portion of Oregon, the overall PR&N/(POTB) system is eligible for NRHP listing.

The remaining trestles still have some historic and cultural merit as reminders of the Corridor's rail history and as strikingly beautiful structures as seen from below or even from curves in the Corridor. Given the importance of these trestles in bridging steep drainages, to connect a trail through this Corridor, there may be no alternative other than upgrading them and adding appropriate decking to the surfaces. As the Buxton Trestle proves, these trestles can become visitor destinations in themselves.

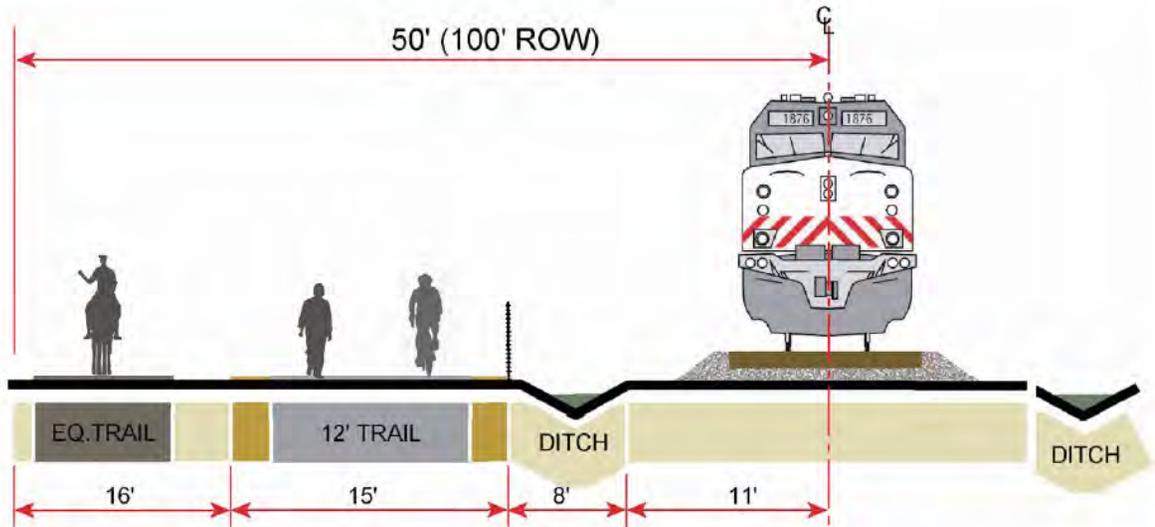
Physical Assessment

Trail Precedents

There are over 1600 successful Rail Trails in the US and there is abundant analysis and research on these available at the Rails to Trails Conservancy website (www.railstotrails.org). It has been proposed that the Salmonberry Corridor be considered in some sections as a Rails With Trails project, and there are 60 or so such trails in North America, with two in the Portland area—the Springwater Corridor and one mile of the Chelatchie Prairie Trail.

The principal consideration with a RWT is safety and the need for clear delineation to separate traffic. Fencing is often required to outline the edge of a railroad's operation zone and prevent trespassing. Typically, there needs to be a clear setback from the side of the rail line of about 10-11' to avoid injuries from rail car protrusions or derailments. Railroads also seek to maintain a clear zone to avoid trees falling across their tracks. Grade crossings are also a major safety concern. New ones are highly restricted for active rail corridors and ODOT Rail seeks to close existing crossings where possible. Generally, successful RWT projects involve the railroad early and often. There may be potential flexibility for smaller safety setbacks on the POTB line, reflecting the low OCSR traffic and slow speeds. Accommodating a trail next to a restored rail line through tunnels and across bridges could potentially be achieved through signage and careful train operations.

There are very few precedents for trails between tracks, mainly because of the safety issues involved and the narrow space for a trail—the width or gauge for all North American rail is 4 feet, 8.5 inches. An active rail line would require a channel for wheels, which would pose a danger to bicycle tires, especially traveling at high speed downhill.



Typical setback considerations for a Rail With Trail (ALTA Planning, Chelatchie Prairie Rail-with-Trail Corridor Study, 2008)

In the analysis that follows, it is assumed that a multi-use trail would require a minimum 10' trail width, with 12' width preferred for 2-way traffic. Asphalt will be preferred for a bicycle trail and also good for ADA access, but a mountain bike trail similar to the Gales Creek trail could also be built. When the Banks Vernonia Trail was first built, it was gravel, with predominant use by horse and mountain bike users. When it was paved with asphalt, user numbers increased dramatically, with associated user conflicts.

Segment A: Banks (MP 774.7) to Cochran (MP 800)



Introduction

This 25-mile easternmost segment of the Corridor runs from the fertile farmlands of western Washington County into the Coast Range foothills. This segment may be the most likely to see trail development soon, thanks to the proximity of this segment to the Metro Portland population base, it's relatively undamaged condition and potential linkages to existing trails including the Banks Vernonia Trail.

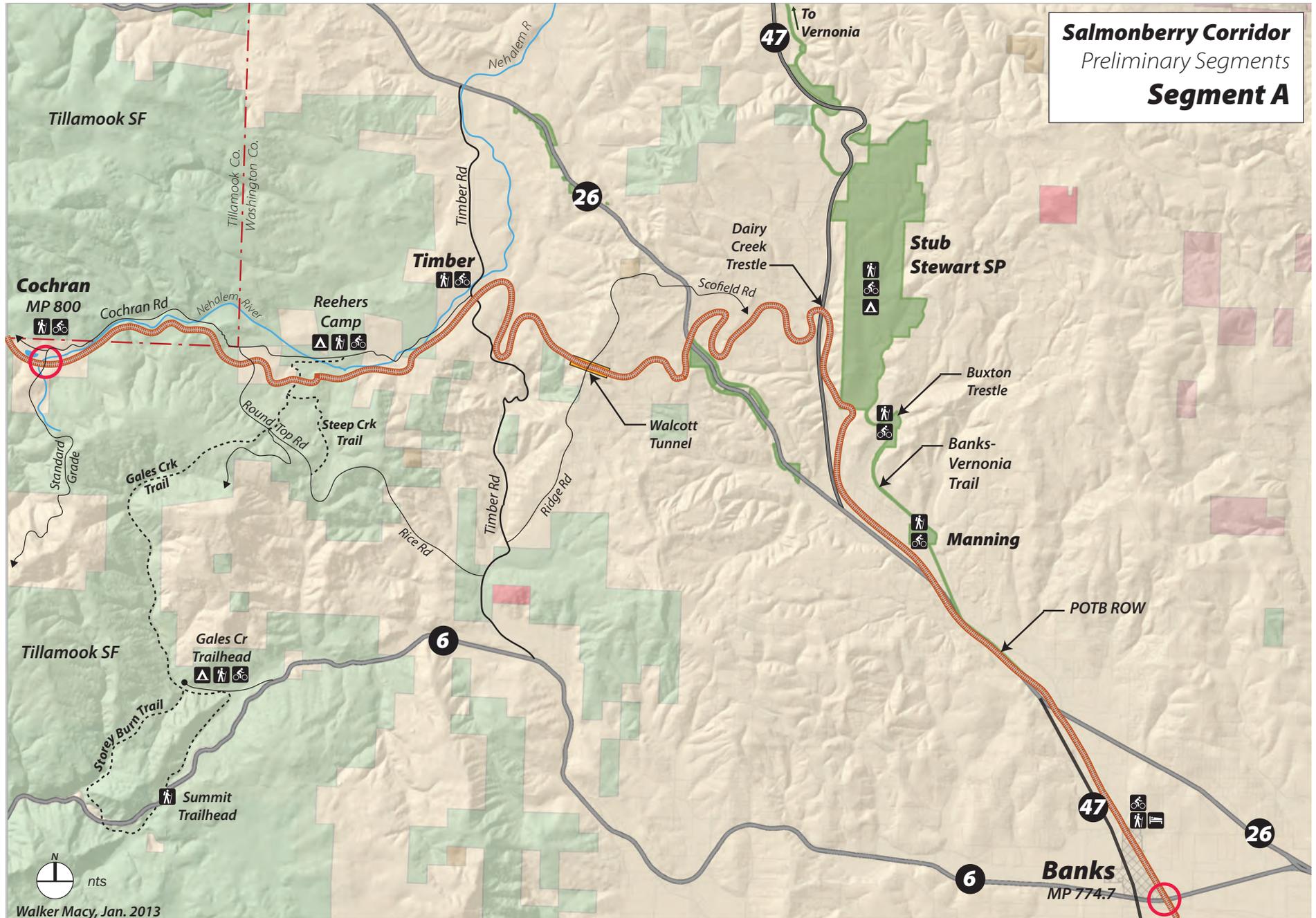
Physical Structure

This segment begins in the town of Banks, at the siding owned by POTB along NE Commerce Street, adjacent to the Banks Lumber Company Mill and the former Banks Depot which still stands. The Right of Way (ROW) varies, beginning at 60' in width between Banks and MP 777, at which point it widens to 80' until just before MP 782, where it becomes a standard 100' ROW all the way to Cochran. The POTB owns additional ROW in the town of Buxton, where a former Y spur accessed a lumber mill, now demolished. There are additional wider sections of ROW in certain locations such as Scofield (MP 785) and the siding in the town of Timber (MP 793) as well as the siding in Cochran (MP 800).

This segment begins in the flat farmland around Banks and does not appreciably increase in gradient until it runs alongside Highway 47 north of Buxton and begins a gentle climb to cross the highway at MP 782.5. As such, this first 7 miles of corridor is very direct. As it climbs gently into the Coast Range, the ROW begins to weave around hillsides to minimize gradient (freight trains rarely operate at a higher than 1% gradient but some sections of this corridor approach 3%), resulting in a 12-mile route between Buxton (EI 325') and Timber (EI 975'), which are only 5 miles apart "as the crow flies." The Corridor continues climbing to its highest point, at Cochran (EI 1800'.) The total elevation gain between Banks and Cochran is approximately 1600'.

There are several bridges and trestles in this segment, 11 of which require minor ballast repairs, repairs to small culverts, and repair of minor scour of bridge and trestle abutments. These are described in detail in the FEMA Structural Engineering Assessment work, prepared by WH Pacific for IBIS Group. The most significant bridges are the two trestles, one at MP 782, crossing Highway 47 and the other crossing Reliance Creek, at MP 798.79. These trestles have the potential to become visitor attractions due to their height, views and unique structure. The Buxton Trestle on the Banks-Vernonia State Trail offers a precedent for future restoration of a similar structure. An additional significant bridge crosses US 26 at MP 787.7 and is distinctive for its painted slogan exhorting motorists to "Ride The Tillamook Railroad". There is one tunnel in this segment, the Walcott Tunnel or Tunnel 25 at MP 789.48.

Physical Assessment



Segment A: Banks (MP 774.7) to Cochran (MP 800)



Natural Setting

This segment begins in the flat farmland around Banks with minimal natural features other than remnant woodland between farm fields and along the corridor itself. At several points the corridor crosses the West Fork of Dairy Creek, a tributary of the Tualatin River. Dairy Creek and its tributaries provide habitat for several salmonid species, including steelhead trout, which are listed as threatened under the Endangered Species Act. Other salmonids species include cutthroat trout and the (non-native) coho salmon. The East and West forks of Dairy Creek are the main cutthroat trout spawning and rearing areas within the Tualatin sub-basin. Between Timber and Cochran, this segment enters the Upper Nehalem River watershed, which drains northward before turning west and eventually meeting the rail corridor again at the Salmonberry River confluence.

North of Buxton, the Corridor passes through the SW corner of Stub Stewart State Park and between Highway 47 and Cochran, crosses predominantly private timberland which is subject to logging but may be habitat for a range of forest species. Subsequent planning for the Corridor will probably require more extensive study of corridor natural features in this segment, since it was not assessed in 2008.

Adjacent Land Uses

Beginning in the town of Banks, the corridor runs adjacent to US 47, then US 26 and the Banks-Vernonia State Trail for the first 4 miles, until it splits right before MP 779. There is a mixture of active farmland and large lot rural residential uses, with several driveway crossings, but this land use transitions to predominantly small-scale commercial forest land after MP 782. At MP 793, the Corridor passes through the small town of Timber, where smaller residential lots abut the line and may be encroaching on the ROW. At MP 794, the Corridor enters the Tillamook State Forest, weaving between the TSF and large parcels of commercial forest land owned by Stimson, International Paper and Agency Creek Management before entering the State Forest again at MP 800.5.

In terms of compatibility with these land uses, if there is a trail developed, there will be a need to define the ROW with new fencing. Residential lots may effectively become smaller if they are treating the tracks themselves as the edge of their properties, instead of the ROW edge. At road crossings, new safety striping and signage will be needed, both for trail users and motorists. The most significant road crossings are at Manning (MP 779—NW Pihl Road), Buxton (MP 780.5 and 781—NW Fisher Road), and Timber (MP 793—NW Timber Road). There are existing crossing solutions on the Banks Vernonia Trail which may be instructive, including crossings for farm vehicles where the ROW crosses active fields that are managed by the same farmer.

There are additional compatibility issues with adjacent forest land, specifically with harvesting activities, but there will also be a need to prevent Off-Highway Vehicle use of the trail.

Physical Assessment

2007 Damage

This segment was not extensively damaged in the storm of December 2007. The most expensive damage point occurred at Tunnel 25, the Walcott Tunnel, with a major landslide covering the western portal of the tunnel. The FEMA damage assessment estimated that repairs would cost \$5.6 million. Since then, significant debris has been cleared and the tunnel has been re-opened but not repaired. The structural assessment for FEMA noted small scale repairs needed on 11 bridges, none of which were estimated to cost over \$25,000 (in 2008 dollars.)

Since the 2008 storm, there may have been additional damage to the Corridor, which should be verified before detailed design begins on trail alternatives. Vegetation growth and downed trees along the tracks are likely to be the biggest challenges since then.

Segment A:
Banks (MP 774.7) to
Cochran (MP 800)



Segment A Potential

Considering the physical context of this segment, we can propose preliminary responses to a range of 5 possible future corridor configurations:

Rail

The Port of Tillamook Railroad operated as an essentially one-way freight operation, hauling timber from mills in Tillamook and Garibaldi to the Banks Lumber Company and returning empty to the coast. At one point, there would have also been grain shipments to dairy farmers in Tillamook County. Without the coastal sources of materials, there is little demand for a rail line between Cochran and Banks. No excursion tourist trains have been proposed. The Portland and Western RR (PNWR) currently leases 3.5 miles of POTB track from Schefflin, between Hillsboro and Banks, to a point just south of Banks, underneath the Highway 6 road bridge over the tracks. They are actively negotiating to purchase this leased portion outright from the POTB. PNWR is also interested in acquiring an additional 1 to 2 miles north of this point for switching purposes (phone communication with David Anzur, PNWR, January 7 2013).

There is a basalt rock quarry at Cochran, south of the Corridor, with a dedicated rail siding and there have been numerous attempts to begin active quarrying operations here and ship the rock material on the rail line east to connect with PNWR. The current status of this quarry is unknown and it is unclear if there is sufficient material to be quarried that can justify re-establishing rail service. There could also be limited potential for raw log loading onto railcars from the Cochran area but again, it is unclear if this would be economically feasible. The main impediments to rail service on this segment are the needed repairs to the Walcott Tunnel

and the limited potential use of the line for tourist or freight traffic.

Feasibility: Moderately Difficult (due mainly to lack of demand)

Rail with Trail

If there is a limited market for continued rail service on this segment, the question of whether to build a rail with trail project may be moot. Since there is very limited existing interest, the sole reason for considering a RWT may be if there is any interest in leaving rail on the corridor to preserve the tracks for future use. This would face the challenge of these tracks corroding without frequent traffic.

Generally, the constraints of this line's physical context make RWT development difficult, mainly due to the number of tunnels, bridges and trestles, all of which would need to be widened to accommodate the setback distance needed from an active rail. The Walcott Tunnel itself is probably prohibitively expensive to widen.

There are also sections of the Corridor that cross probable wetland areas between Buxton and Banks, which would need to be filled for a trail adjacent to the rail line, which is typically on an embankment in such areas. The permitting challenges involved would add another level of complexity to the RWT concept.

Feasibility: Moderately Difficult. Difficult in some sections.

Physical Assessment

Multi-Use Trail

If the rails are removed, this segment offers a promising potential new trail route for the Portland metro region, which could connect with other trails such as the Banks Vernonia Trail and Stub Stewart State Park, as well as the proposed Council Creek connection to Forest Grove and Hillsboro (and other urban trails linking to downtown Portland.) The rural farm roads in Washington County are popular with cyclists and could also offer route options to access the Corridor from urban areas.

The POTB rail ROW is sufficiently wide to support a 10' wide asphalt multi use trail, laid atop the existing ballast, with additional ballast structure added if necessary once the rails and ties are removed. Bridge crossings will likely need additional decking to allow bikes to safely cross, as well as safety railings on either side of most bridges including the open trestle across Hwy 47. Subsequent master planning will determine appropriate surfacing for this trail. An asphalt surface is not as compatible with equestrian use.

The Gales Creek Trail is a mountain bike, horse and hiking trail that can be accessed from Reehers Camp Campground 2.5 miles west of Timber. This trail crosses the Corridor at MP 796 and continues south 10 miles to the Gales Creek Trailhead off Highway 6. From there, it connects 2.5 miles along Gales Creek to the Summit Trailhead. From the Gales Creek TH, another loop is also possible to the Storey Burn trail and trailhead. There are also numerous low-traffic logging roads that can be accessed from the Corridor, including the Round Top Road and Rice Road, which form smaller loop trails in conjunction with the Gales Creek Trail and the smaller Step Creek Trail spur. Other roads include NW Wheeler Creek Road and NW Carson Creek Road as well as the Dober Road, which provides a connection southeast to the Timber Road and a loop back to the Corridor or back to Forest Grove on Hwy 6.

Given that the Banks Vernonia Trail is directly adjacent to approximately 4.5 miles of the Corridor, a separate trail on the Corridor is not proposed and rails could remain for use by PNWR to the extent required. At MP 779, where NW Pihl Road crosses the Corridor, a new multi-use trail could be constructed, taking advantage of the existing Manning Trailhead on the Banks Vernonia Trail. This trailhead has limited parking, so a new parking lot would likely be needed, either on the private industrial parcel east of the trailhead (owned by West 26), or the parcel north of Pihl Road, where an old commercial building now stands, owned by the Groszmann family.

At the western edge of the segment, a new multi-use trail could eventually extend into the Salmonberry Canyon (if a multi-use trail is proven feasible in Segment B.) See the detailed description of this Segment in the following pages.

For a multi-use trail and indeed all trail types, the numerous bridges in this Segment would need to be evaluated and repaired as needed as part of the overall design for the trail segment. The topography surrounding the Walcott Tunnel is steep, so a detour is not feasible. The major repairs to this tunnel would need to be completed for this to be a safe option for trail users.

If this and other Segments become multi-use trails, their design should include consideration for control of trespass on the trail by ATVs and other motorized vehicles.

Feasibility: Minor Challenges

Horse and Hiking Trail

The above discussion still applies to the concept of a horse and hiking trail in this segment that is not intended for bicycles or skates. Such a trail could be gravel or dirt instead of asphalt and narrower than what a multi-use trail typically requires. The existing ballast can serve as the trail underlay, but may be too coarse for equestrian trail use, so an additional layer of crushed rock may be needed. Bridges and trestles will still require decking improvements. At the Walcott Tunnel, horses and hikers could detour up and over, thus avoiding the need to repair the tunnel.

Feasibility: Minor Challenges

Hiking Trail

The simplest option for the Segment would be to convert it to a hiking-only trail. It is essentially serving as one currently, and POTB allows public access on Corridor, but there is probably limited usage since the Corridor is becoming overgrown with vegetation and it's somewhat difficult to walk long distances on railway ties. A hiking-only trail would only require the removal of rails and ties, not additional ballast and where this is not possible at the Walcott Tunnel, a parallel trail could be built. Such a trail (and other detours) could be less than 2' in width and have a dirt or ballast surface. Bridges would require some safety decking and railings but these could be less extensive than for multi-use or horse trails.

Feasibility: Minor Challenges

Segment B: Cochran (MP 800) to Nehalem Confluence (MP 816)



Introduction

This 16-mile segment of the Corridor is the wildest, most remote and most damaged portion of the line. The segment has the most potential for providing Corridor visitors with an experience of the deep Coast Range forest and the scenic Salmonberry River but the segment also presents serious challenges to access, with major storm damage and limited road or trail connections into the heart of the segment.

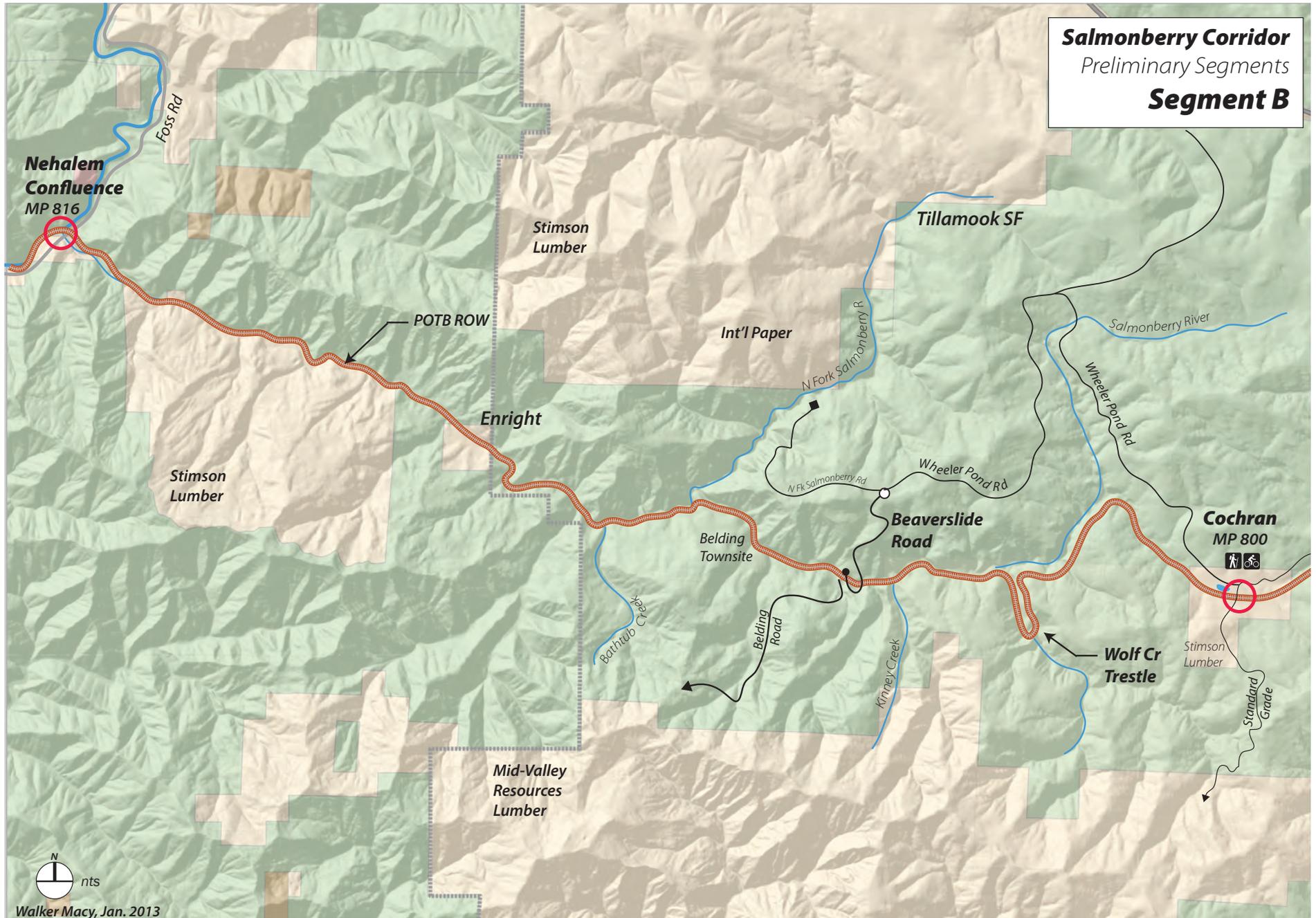
Physical Structure

This segment begins at the former town site of Cochran, surrounded by the private parcel owned by International Paper, which includes a long siding as well as a spur line into a disused rock quarry (which was once owned by POTB and could be a source of ballast rock for repairs). The ROW of the segment is consistently 100', widening to accommodate the Cochran siding. At MP 811, at the former town site of Enright, the segment crosses another private in-holding surrounded by Tillamook State Forest and includes a short spur line (not a siding)

This segment includes some stretches of track that are about as steep as possible for railroad track, at a 3% gradient. The Corridor's highest point is at Cochran, which also straddles the watershed boundary between the Salmonberry River drainage (Pennoyer Creek) and the Nehalem River, flowing west and then counterclockwise back into the Coast Range. The line drops steeply, crossing Baldwin Creek on a large trestle, then looping south in a long switchback that drops almost 400', then continues a more gentle descent over the next 12 miles. The total elevation drop between Cochran and the Nehalem Confluence is approximately 1560'.

There are several bridges and trestles in this segment, 16 of which require major repairs, as described in detail in the FEMA Structural Engineering Assessment work, prepared by WH Pacific for IBIS Group. The most significant bridges are two trestles, the Baldwin Creek Trestle at MP 802, which was deemed undamaged in 2008 and the large trestle crossing Wolf Creek, at MP 803.61, which did sustain \$350,000 of damage. These trestles have the potential to become visitor attractions due to their height, views and unique structure. There are a few railroad relics, including an old steel shipping container, or Stac-Pac, at MP 805.6 (known as the B&B by POTB employees), an old water tank at the Baldwin Creek trestle and another water tank at Enright. None of these were deemed significant in the 2008 NRHP Evaluation.

Physical Assessment



Segment B: Cochran (MP 800) to Nehalem Confluence (MP 816)



Natural Setting

This segment's most striking natural features are the Nehalem and Salmonberry Rivers. The Salmonberry is one of the most significant steelhead rivers in Oregon. The ecology of each of these rivers and surrounding State Forest is described in detail in the 2008 Environmental Assessment, prepared by AECOM. The NW Oregon State Forest Management Plan should also be consulted. There is a designated Aquatic Anchor habitat adjacent to the Segment, the South Fork Salmonberry River, that establishes a special habitat management area for implementing aquatic and riparian strategies. This Anchor runs from Wolf Creek to the confluence of the North Fork Salmonberry. This will add to regulations for management and construction on the Corridor. Repairs to the Corridor in this segment will likely trigger environmental review due to unavoidable impacts on habitat, primarily salmon and steelhead habitat in the Salmonberry River, which sustained serious damage in 2007 due to sedimentation from landslides and channel modification. Salmon are still unable to access Wolf Creek and Kinney Creek due to the damage. The ROW also passes Cochran Pond, a remnant mill pond which may have some habitat value with edge wetlands.

Adjacent Land Uses

This Segment runs almost exclusively through timberland, starting in a large International Paper parcel, with a subsequent 11 miles running through publicly-owned Tillamook State Forest. At the former town site of Enright, two cottages stand in a 160-acre private in-holding parcel surrounding the POTB ROW. This parcel could theoretically be accessed via a long circuitous logging road route from the Foss Road. Between MP 812 and MP 816, the line is bordered to the south by a Stimson Lumber Company parcel, which has been logged extensively. At the confluence of the Salmonberry and Nehalem Rivers, there are several rural residential parcels south of the Salmonberry, accessed by Tin Hat Road. There are compatibility issues with adjacent forest land, specifically with harvesting activities, but there will also be a need to prevent Off-Highway Vehicle use of the trail.

Physical Assessment

2007 Damage

This segment was extensively damaged in the storm of December 2007. Of 19 recorded structural damage locations, the most significant occurred at the following points (damage estimates are for re-establishment of freight rail service. Repairs to accommodate other uses may not be as extensive):

MP 801.73 Tunnel 26	\$256,000 (repairs)
MP 802.2 Side Hill Bridges	\$170,000 (repairs)
MP 803.6 Wolf Creek Trestle	\$350,000 (repairs)
MP 805.7 Kinney Creek Bridge	\$2.07 Million
(replacement cost)	
MP 806.34 Creek Bridge	\$2 Million
(replacement cost)	
MP 806.97 Belding Creek Bridge	\$2 Million
(replacement cost)	
MP 808.95 Bathtub Creek Bridge	\$1.8 Million (repairs)
MP 811.93 7 th Salmonberry Bridge	\$1.6 Million
(replacement cost)	
MP 814.22 8 th Salmonberry Bridge	\$100,000 (repairs)

Of greater concern are the 114 noted landslide and embankment failures along this Segment of the ROW. The most significant damage occurred at the following points:

MP 803.45 Wolf Creek Landslides	>\$3 million (repairs)
MP 807.4 Grade Failure	>\$2 million (repairs)
MP 807.64 Grade Failure	±\$1 million (repairs)
MP 808.2 Grade Failure	\$0.5 Million (repairs)
MP 808.7 Grade Failure	\$1.8 Million (repairs)
MP 809.55 Grade Failure	\$1.9 Million (repairs)
MP 815.8 Grade Failure	±\$4 Million (repairs)

These are significant repairs with the above lists alone totaling over \$25 million in repairs, not including permitting, which is half of the total estimated costs of repairs in the Corridor, not counting deferred maintenance needs. The biggest concern for future Corridor planning, beyond the source of funding for such repairs, is whether the Corridor will simply experience

damage in other locations. Many of the major damage points occur where drainages perpendicular to the ROW empty into the Salmonberry and these drainages will continue to shed earth and vegetation in potentially catastrophic ways. This is a natural geomorphological process. The only way to avoid recurring damage is to build long spans under which material can pass and this is not feasible on many of the drainages. Even this is no guarantee—the Bathtub Creek Bridge was almost entirely buried with debris, despite a wide span over that drainage.

Additionally, the entire Segment runs within a steep canyon, whose slopes are prone to landslide, with unstable soils on shallow basalt bedrock washing out regularly as a natural process which is sometimes exacerbated by logging. Finally, in many locations, the ROW was built on filled embankments within the Salmonberry River's natural channel course, with no alternative route due to steep slopes. The River is also constantly shifting course. Many of these embankments have washed away and replacements will require extensive permitting for in-water work and channel modification. On-going maintenance will be a major concern for future Corridor use.

Since the 2008 storm, there may have been additional damage to the Corridor, which should be verified before detailed design begins on trail alternatives. Vegetation growth and downed trees along the tracks are likely to be the biggest challenges since then.

Segment B: Cochran (MP 800) to Nehalem Confluence (MP 816)



Segment B Potential

The damage to this Segment's rail line is extensive and repairs to restore freight rail service are likely to be prohibitively expensive. Considering the physical context of this segment, we can propose preliminary responses to a range of 5 possible future corridor configurations:

Rail

The POTB was awarded funding from FEMA for post-disaster recovery. Since the railroad line between Tillamook and Banks was not profitable, the POTB elected to re-direct the money to other industrial uses. (The steep grade of the central Corridor, which requires multiple engines and slows travel times, was a major constraint to profitability.) There is not likely to be another source for the millions of dollars required to upgrade the Corridor for rail traffic.

The OCSR lease with the POTB states that they have a desire to restore tourist rail service deep into this Segment, to 0.5 miles east of Enright (MP 811). At a meeting of the Salmonberry Coalition on January 18th, 2012, a representative of the OCSR requested that the existing tracks be left in the Corridor up to MP 800. He also offered OCSR assistance to transport materials for reconstruction. The OCSR has opened 35 miles of the Corridor for use by excursion trains this year, mainly by clearing vegetation and minor slides. The OCSR has also proposed using the train to ferry hikers and anglers on the train into the Canyon.

Given the extent and expense of repairs needed between the Nehalem Confluence and Enright, as well as the difficulty of regulatory approvals for work within the Salmonberry River channel, this may be a difficult undertaking, likely requiring significant engineering consulting and years of regulatory agency review. The funding source for such repairs is unclear.

Feasibility: Very Difficult.

Rail with Trail

As explored above, if continued rail service on the segment between Enright and Cochran is unlikely, the question of whether to build a rail with trail project probably does not apply in that section of corridor. Between Enright and the Nehalem Confluence, there are significant challenges to a rail-with-trail alignment, due to topographic constraints, proximity to the river and damaged bridges. This will require further detailed study with more detailed LIDAR mapping and field investigation.

Feasibility: Very Difficult.

Physical Assessment

Multi-Use Trail

If the rails are removed, this segment theoretically offers some promise for potential multi use trails, and a significant draw for visitors, but the notion of a continuous multi use trail, on either asphalt or crushed rock, must consider the extensive repairs necessary on this Segment. Previous damage assessments evaluated the repair of the Corridor to restore freight rail service and the construction of a multi-use trail may not require such extensive repairs. But it will still require a certain baseline amount of restoration, at significant expense. All of the 114 landslides in this Segment are blocking the ROW and would need some level of repair to allow a 10' wide trail. The 17 damaged bridges would need to be repaired and have new decking added to accommodate the trail surface as well as safety railings on either side of most bridges, which would need to be higher than pedestrian bridges to provide safety for equestrian and bike use. As with the rail repairs, access for heavy machinery into the canyon would present another expense and challenge, although the OCSR has offered to provide transport of equipment and materials into the Canyon for trail building purposes.

At the western edge of the segment, a new multi-use trail could eventually extend into the Salmonberry Canyon from the Nehalem Confluence for a short distance, if the major embankment repair at 815.8 is pursued. The next major damage points are the 8th Salmonberry Bridge, at \$227,000 and the 7th Salmonberry Bridge, requiring a replacement with costs estimated in 2008 at \$1.6 Million. One could also envision a short multi use trail extending the 5 miles from the Confluence to a point before the 7th Bridge, allowing trail users coming from the Coast to cycle into the Canyon.

At the eastern end of the Segment, the multi-use trail

proposed from Manning to Cochran could potentially be continued 2 miles from Cochran to the scenic Baldwin Creek trestle at MP 802 but would encounter the need for major repairs at Tunnel 26 (MP 801.73) to make this extension possible. A section of multi-use trail isolated within the Canyon, accessed via the Beaverslide Road, is not a feasible idea, since such a trail could not be built to any distance without requiring major repairs to the ROW or bridges.

Feasibility: Moderately Difficult

Horse and Hiking Trail

The above discussion still applies to the concept of a horse and hiking trail in this segment that is not intended for bicycles. Such a trail could be gravel or dirt instead of asphalt and narrower than what a multi-use trail typically requires. The existing ballast can serve as the trail underlay, but may be too coarse for equestrian trail use, so an additional layer of crushed rock may be needed. Bridges and trestles will still require major repairs as well as decking improvements. The key factor in favor of a horse or hiking trail is that horses and hikers could detour up, over and around major landslides, thus avoiding the need to completely repair them. Access with a horse trailer to the heart of the Salmonberry Canyon is not possible down the Beaverslide Road (although equestrians could park at the top and ride down.)

Feasibility: Moderately Difficult.

Hiking Trail

The simplest option for the Segment would be to convert it to a hiking-only trail. It is essentially serving as one currently, but there is probably limited usage since the Corridor is becoming overgrown with vegetation and it's somewhat difficult to walk long distances on

railway ties. A hiking-only trail would only require the removal of rails and ties, not additional ballast and where this is not possible at major damage points, a parallel trail could be built to detour around the damage. Such a trail (and other detours) could be less than 2' in width and have a dirt or ballast surface. It could be developed somewhat organically, allowing users to establish a preferred trail alignment, with minimal stabilization of major damage points. Bridges would require some safety decking and railings but these could be less extensive than for multi-use or horse trails.

Hikers can access the Corridor from the Cochran Road to the east and from the Foss Road or Lower Nehalem Road at the Nehalem Confluence on the western end, hiking in a set distance and returning to their vehicles. There are also some opportunities for trail loop connections, primarily using the Beaverslide Road, combined with the Cochran Road. If hikers have two cars, a shuttle hike can be arranged, parking at Cochran and at the top of the Beaverslide Road. Hikers could descend 1.75 miles into the Corridor, a 1500' drop, then hike uphill on the ROW about 6 miles to their second car left at Cochran Pond. Another potential hike using the Corridor involves the North Fork Salmonberry Road (and Trail) to descend a wild forested area to the main stem of the Salmonberry, where hikers can ford the river in summer low water to rejoin the POTB Corridor. A network of logging roads near Enright climbing up towards Pinochle Peak then west to Buck Mountain and Hatchery Creek could potentially serve as future hiking trails out of the Corridor connecting with Foss Road.

The website www.foresthiker.com offers a wide range of potential hikes in the vicinity of the corridor.

Feasibility: Moderately Difficult

Segment C: Nehalem Confluence (MP 816) to Wheeler (MP 833)



Introduction

This 17-mile segment of the Corridor runs from the Nehalem Confluence, where a washed-out bridge on the Lower Nehalem/Foss Road has been recently repaired, along the Nehalem River into rural farm and forest lands before turning west at Mohler, and running along the edge of the Nehalem estuary into Wheeler, on Nehalem Bay.

Physical Structure and 2007 Damage

This segment begins where the ROW crosses the Nehalem River at MP 816. The Right of Way is a standard 100' all the way to Wheeler. There is one siding in this Segment, at Batterson, where POTB trains once idled waiting to exchange railcars from Banks. This segment begins at El. 231' at the Nehalem Confluence, having dropped dramatically in the previous 16 miles from Cochran. The total elevation drop is approximately 200'.

There are few bridges in this segment, with only 3 requiring minor ballast repairs, repairs to small culverts, and repair of minor scour of bridge and trestle abutments. These are described in detail in the FEMA Structural Engineering Assessment work, prepared by WH Pacific for IBIS Group. The most significant bridges are in this Segment are the two Nehalem River bridges, at MP 816 and MP 830.81. The 2nd Nehalem Bridge requires \$84,000 of damage repair. The first bridge at the Confluence has a significant washout to the west, where the new Foss Bridge over the Salmonberry was recently re-opened. A repair to this section, taking the new road bridge into account (and requiring removal of that bridge's guardrails) was designed by an engineering firm in 2009 but final design or permitting has not been pursued. There are no significant washouts over the ROW and the OCSR has operated a test for excursion service as far as Batterson. From visual inspection of the Corridor, it appears that there have been minor trees downed over the ROW and some minor rockfall.

Natural Setting

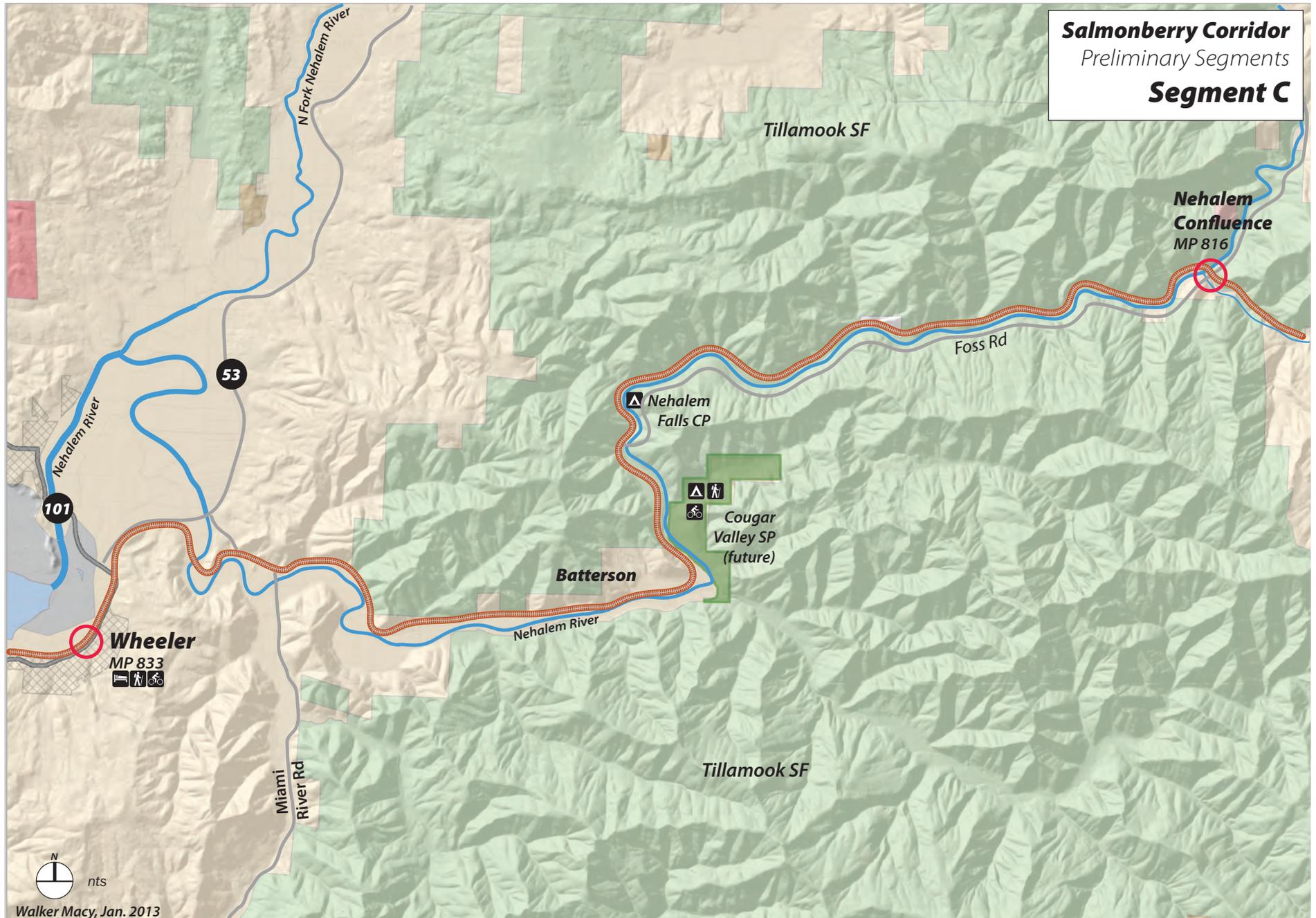
This segment runs along the Nehalem River, a significant fish habitat. West of the Nehalem Confluence, it runs along the north bank, below a remote, roadless area of the Tillamook State Forest. At the western end of this Segment, the ROW runs along the Necanicum Highway, with views across the Nehalem Estuary.

Adjacent Land Uses

From MP 816 to MP 824, the ROW is bordered by Tillamook State Forest land, which has minimal roads and does not show evidence of extensive recent logging. At MP 822.5, the ROW passes Nehalem Falls, with an ODF park on the east bank accessed from Foss Road. A short distance south of the Foss Road bridge over the Nehalem River, OPRD owns a 314-acre parcel of land (with a preliminary name of Cougar Valley State Park), with long-term plans to develop the site for recreation.

At MP 825, the Corridor turns west with the Nehalem River and runs adjacent to several parcels of Green Diamond Resources timberland. The Blue Rock quarry at Batterson is active, across Foss Road from a long siding on the ROW. The ROW is adjacent to a strip of farmland along the Nehalem River then passes Mohler Sand & Gravel at MP 828. The ROW hugs Foss Road until its intersection with Miami Foley Road and at MP 830 begins to loop southwards with a bend in the river, curving northwards again over the 2nd Nehalem Bridge and passing the Nehalem Bay Winery. The final mile of this Segment passes along the south edge of the Nehalem Estuary before turning south and entering Wheeler. There are minimal private residences abutting the ROW in this Segment, mainly small farms.

Physical Assessment



Segment C: Nehalem Confluence (MP 816) to Wheeler (MP 833)



Segment C Potential

Considering the physical context of this segment, we can propose preliminary responses to a range of 5 possible future corridor configurations:

Rail

The Oregon Coast Scenic RR (OCSR) currently has an Agreement with the POTB that allows tourist train operations through this Segment, with potential eventual expansion to Enright. Thus far, the OCSR has been able to clear vegetation as far as the Nehalem Confluence at MP 815.8 and ran Fall Splendor trains between Wheeler and Batterson on October 6th and 7th 2012, two trips each day. They have had inquiries for excursions to the Confluence. It has been suggested that in future, trains from the Coast could transport bikes, hikers, anglers and even boaters deep into the Salmonberry Canyon. Until repairs are made, this could still be feasible currently from the Coast up to the Nehalem Confluence (the Western Maryland Scenic RR is mentioned as a precedent.)

There is no potential for freight traffic in this Segment; with no loading facilities, timber from nearby forest land is more efficiently moved by truck and the existing quarries near the ROW are too small to warrant moving product by rail.

Feasibility: Minor Challenges

Rail with Trail

Generally, the physical constraints of this line's context make RWT development difficult, mainly due to the narrow and wooded conditions along the ROW, which would need to be widened to accommodate the setback distance needed from an active rail, although this setback can be narrowed with negotiation. The two Nehalem River bridges will be very expensive to widen.

There are also sections of the Corridor that cross probable wetland areas along the Nehalem River near Mohler, which would need to be filled for a trail adjacent to the rail line, which is typically on an embankment in such areas. The permitting challenges involved would add another level of complexity to the RWT concept.

Feasibility: Difficult

Multi-Use Trail

If the rails are removed, this segment could be a popular trail corridor connecting coastal recreation and visitor attractions with the deep forest of the Salmonberry drainage and with future State Park facilities at Cougar Valley. The Segment could link with trails to Nehalem Bay State Park and with the next Segment D of this Corridor.

It is worth questioning whether it is worthwhile to invest in the expense of a multi-use trail for the 6 miles of this Segment that runs along the north bank of the Nehalem River, when the Foss Road runs parallel to the Corridor on the south bank and provides access to the Nehalem Confluence and the western end of Segment B. This existing road is wide, with a good gravel surface appropriate for cycling and offers access to Nehalem Falls County Park. However, logging truck and recreational vehicle traffic pose safety challenges for users of this road.

Physical Assessment

West of the Foss Road bridge, the same question can be posed, but as we move west on the Corridor, vehicle traffic will only increase, adding to safety concerns for cyclists and equestrians. The road is also paved west of the bridge and narrower. A trail parallel to the road would be a safe alternative and provide access to Cougar Valley State Park, with a particularly scenic section of trail south of Mohler along the Nehalem and crossing the 2nd Nehalem Bridge. Residents of Wheeler and Mohler would probably enjoy a multi-use trail between the two villages.

The POTB rail ROW is sufficiently wide to support a 10' wide asphalt multi use trail, laid atop the existing ballast, with additional ballast structure added if necessary once the rails and ties are removed. Bridge crossings will likely need additional decking to allow bikes to safely cross, as well as safety railings. Subsequent master planning will determine appropriate surfacing for this trail. An asphalt surface is not as compatible with equestrian use.

Feasibility: Minor Challenges

Horse and Hiking Trail

The above discussion still applies to the concept of a horse and hiking trail in this segment that is not intended for bicycles. Such a trail could be gravel or dirt instead of asphalt and narrower than what a multi-use trail typically requires. The existing ballast can serve as the trail underlay, but may be too coarse for equestrian trail use, so an additional layer of crushed rock may be needed. Bridges and trestles will still require decking improvements.

Feasibility: Minor Challenges

Hiking Trail

The simplest option for the Segment would be to convert it to a hiking-only trail. It is essentially serving as one currently, but there is probably limited usage since it's somewhat difficult to walk long distances on railway ties. A hiking-only trail would only require the removal of rails and ties, not additional ballast. Such a trail could be less than 2' in width and have a dirt or ballast surface. Bridges would require some safety decking and railings but these could be less extensive than for multi-use or horse trails.

Feasibility: Minor Challenges

Segment D: Wheeler (MP 833) to Tillamook Industrial Park (MP 859.13)



Introduction

This 26-mile westernmost segment of the Corridor runs along the Coast, from the small community of Wheeler on Nehalem Bay, to Rockaway Beach, Garibaldi and Tillamook, ending at the Port of Tillamook's Industrial Park adjacent to the Tillamook Air Museum. This segment is currently partially leased to the Oregon Coast Scenic Railroad (OCSR), which runs excursion trains from Garibaldi to Rockaway, with excursions to Wheeler and aspirations to extend trips to Tillamook and Enright.

Physical Structure and 2007 Damage

This segment begins in the town of Wheeler, at the Depot used by OCSR. The Right of Way (ROW) varies, beginning at 60' in width in Wheeler, where it becomes a standard 100' ROW all the way along Nehalem Bay until Nedonna Beach, where it reverts to 60'. It widens briefly to 100' before entering Rockaway, where the ROW is directly adjacent to US 101. It is difficult to interpret where the two ROWs meet, because existing GIS mapping is incomplete. The ROW remains at 60' through Twin Rocks, then widens to 100' as it passes the large property owned by the Oregon Methodist Church and rounds Barview and enters Garibaldi. From Garibaldi to its terminus, the ROW remains 100'. The POTB owns a large parcel just south of MP 835, which appears to be undeveloped and may be a parcel that was once a mill with a dock. There are two sidings in this Segment, at Wheeler and Garibaldi (adjacent to the Port of Garibaldi). At MP 856, there are several sidings and spurs related to former loading operations at the Hampton Lumber Mill. At the Industrial Park, several sidings are now serving as storage for derelict railcars and one spur even leads into the Air Museum hangar.

The OCSR currently utilizes this Segment for tourist train excursions, so the Corridor is operable and in good condition. The OCSR noted that the quality of rails in this Segment is lower than in the Salmonberry Canyon (Segment B) and they would like to replace these rails with a higher grade of steel, although they currently have sufficient supplies of such steel and will not need to salvage rails from other locations in the Corridor.

This Segment was not extensively damaged in the 2007 Flood, but there are several bridges and trestles in this segment, 12 of which require minor ballast repairs, repairs to small culverts, and repair of minor scour of bridge and trestle abutments. Some of this damage may have occurred in the 2007 event. These are described in detail in the FEMA Structural Engineering Assessment work, prepared by WH Pacific for IBIS Group. None of these repairs exceeds \$33,000. The most significant bridges requiring repairs span the Wilson River and the Trask River, the two largest rivers draining the Coast Range between Wheeler and Tillamook. The Wilson River bridge (MP 854.32) is estimated to require replacement, at a cost of \$2.6 Million. The Trask River bridge would cost \$2.24 Million to replace. Another short bridge, over Slack Water Lake near Wheeler, requires \$225,000 in repairs.

Physical Assessment



Segment D: Wheeler (MP 833) to Tillamook Industrial Park (MP 859.13)



Natural Setting

This segment begins and ends essentially at sea-level so there are no major grade changes in the Segment. The Segment runs along the banks of Nehalem Bay south of Wheeler, passing the Slack Water Lake marsh as the line bends southwards following the outline of the Bay. The Corridor runs parallel to US 101 for much of the Segment, passing Manhattan Beach State Park and a number of small lakes and wetlands. South of Rockaway Beach, the line crosses Smith Lake (part of the Oregon Methodist's Camp Magruder) on an embankment. The line hugs the edge of the entrance to Tillamook Bay at Barview, protected from waves by large rock riprap. South of Garibaldi, the line crosses the estuary of the Miami River, which is significant habitat for Coho, Chinook and Steelhead. The Corridor crosses under 101 and runs adjacent to the highway as it parallels the shore, once again passing under the highway after MP 849 so that the line is adjacent to the Bay. The remainder of the Corridor runs through primarily rural or agricultural land, with the exception of Stasek Slough on the Kilchis River, at MP 852.

Adjacent Land Uses

This segment is the most urban and complex in terms of property adjacencies of all four segments, passing through several coastal communities including Rockaway Beach, Garibaldi, Bay City and Tillamook. There are several miles along the shores of Nehalem Bay and Tillamook Bay and through Tillamook County farmland. At no point does the line run directly along the Oregon Coast proper, since there are always private parcels between the beaches and the ROW. In one location, at MP 839, the ROW is adjacent to Manhattan Beach State Park

Most of the adjacent properties are residential lots, with a varying amount of definition to property lines along the ROW, which will require clarification if a trail is proposed. In several locations, the line runs adjacent to commercial or public uses, such as Neah-kahnie High School, the Garibaldi Hardwoods Mill, the Pacific Oyster Company in Bay City, the Tillamook Creamery complex, Misty Meadows Dairy in Tillamook, the Hampton Lumber Mill in Tillamook and the POTB Industrial Park.

Physical Assessment

Segment D Potential

Considering the physical context of this segment, we can propose preliminary responses to a range of 5 possible future corridor configurations:

Rail

The Port of Tillamook Railroad operated as an essentially one-way freight operation, hauling timber from mills in Tillamook and Garibaldi to the Banks Lumber Company and returning empty to the coast. At one point, there would have also been grain shipments to dairy farmers in Tillamook County. Without a destination for freight traffic, there is presumably no economic justification for resuming rail service. As part of the 2008 FEMA Environmental Assessment (EA), a barge facility for railcars was briefly considered, to bring railcars from Tillamook County mills to Astoria, but the EA states that there is not a suitable harbor for this and the expense of building a new loading facility would likely be prohibitive.

The OCSR currently operates an excursion steam and diesel-powered train from Garibaldi to Rockaway Beach. There are several daily trips in the summer with weekend off-season trips and special fall color and Christmas trips (as well as periodic 'speeder' trips for enthusiasts). Ridership has been steadily increasing (there were over 18,000 riders in 2012) and there is a committed group of supportive volunteers maintaining the line and promoting the service. The operating budget is less than \$300,000. The OCSR entered into a new Agreement with the POTB, effective until 2016 with potential for renewal for two subsequent 5-year periods. This Agreement is limited to tourist operations and allows use of the POTB ROW in exchange for OCSR's ongoing rehabilitation and maintenance of the ROW between Enright (MP 810.5) and the Tillamook Industrial Park (MP 859.13). This work includes rail,

ballast and tie replacement, vegetation management and land slide repair. The Agreement states that Rails to Trails work can occur within the ROW, if it allows for continued use of the OCSR. The Agreement also allows OCSR to recover 18 log cars that are currently stranded on a siding at Enright.

Feasibility: Minor Challenges, related to costs of ongoing maintenance of rail operations

Rail with Trail

There are sections of this Segment that could potentially accommodate a trail parallel to the POTB/OCSR rail line but a continuous corridor would be difficult to achieve, due to a range of physical constraints, including stretches of line that run along the coast or across wetlands. At these points, topography or open water would make it difficult to add a multi-use trail with a sufficient setback from active rail, although detours could be added, including boardwalks over wetlands. The trail need not be continuous. Smith Lake and Tillamook Bay near Barview are particularly constrained examples. Another significant constraint is the number of bridges that would need to be widened to accommodate both rail and trail.

The most likely parts of Segment D that could accommodate a rail with trail are the urban ones. The concept of a multi-use trail between the Tillamook Air Museum and downtown Tillamook could be appealing for both residents and tourists. Short stretches of trail could be added within the ROW in downtown Garibaldi, as well as through Bay City's waterfront and in Wheeler, connecting local destinations. The roadway adjacent to the ROW in Rockaway and Manhattan Beach could easily accommodate a trail, or at least a striped bike/pedestrian lane.

Feasibility: Moderately Difficult

Segment D: Wheeler (MP 833) to Tillamook Industrial Park (MP 859.13)



Multi-Use Trail

If the rails are removed, this segment offers a promising potential new Coastal trail route and an alternative to US 101 for cyclists. The expense of repairing or replacing the Wilson and Trask River bridges could potentially be reduced since there would not be as much weight loading the bridges. Such a trail might be heavily used by coastal residents and visitors. To the north, it could link major destinations such as Wheeler with Nehalem Bay State Park and Manzanita's trail network. It would provide trail access to Manhattan Beach SP, Twin Rocks SP and Barview County Park and allow campers at state parks the opportunity to take short cycle trips into nearby communities and thus potentially reduce vehicle use. It would be a safe alternative for cyclists riding the entire length of the Oregon Coast, a popular summer activity, particularly with European tourists. The trail could be used as a loop option for hikers in combination with the beach itself.

Feasibility: Minor Challenges

Horse and Hiking Trail

The above discussion still applies to the concept of a horse and hiking trail in this segment that is not intended for bicycles. Such a trail could be gravel or dirt instead of asphalt and narrower than what a multi-use trail typically requires. The existing ballast can serve as the trail underlay, but may be too coarse for equestrian trail use, so an additional layer of crushed rock may be needed. Bridges and trestles will still require decking improvements.

Feasibility: Minor Challenges

Hiking Trail

The simplest option for the Segment would be to convert it to a hiking-only trail. It is essentially serving as one currently, but there is probably limited usage since it's somewhat difficult to walk long distances on railway ties. A hiking-only trail would only require the removal of rails and ties, not additional ballast. Such a trail could be narrow and have a dirt or ballast surface. Bridges would require some safety decking and railings but these could be less extensive than for multi-use or horse trails.

Feasibility: Minor Challenges



Ownership

The ROW is currently owned fee simple by the Port of Tillamook Bay, purchased in 1990 from Southern Pacific in with assistance from the State of Oregon. The 2008 FEMA Environmental Assessment (p 3-4) identifies 37 existing or pending ROW lease agreements, which include road crossings, utility crossings and seven private property encroachments. POTB and OPRD have detailed maps of the Corridor, originally prepared by SP but updated after the purchase. These maps describe the legal extents and constraints on the Corridor. (Other precedent Rails With Trails in the US are evenly split between public agency and private railroad ownership.)

There is a fiber optic cable easement along the length of the POTB corridor, from Banks to Nedonna Beach and it includes a duct bank containing three individual cables, each supporting high-capacity international undersea cable systems, installed by WCI cable primarily in 1999, under a \$4 million agreement. The cables include the Southern Cross Cable to Oahu and Australia, the Tata TGN cables to Japan and NorthStar cable to Alaska. These fiber optic cables were damaged by the 2007 storm and are currently inoperable. WCI performed a damage study and found that 9 total miles were completely washed away, presumably now sitting under debris or in the Salmonberry River itself. The cables were installed 4' deep, typically at a 9' setback from the rails, never under rails. Given the importance of this cable connection, WCI may be interested in contributing money to restoring the Corridor. Assuring maintenance access to their cables, potentially even by vehicle, will probably be a condition.

From an initial assessment of legal documents describing the transfer from SP to POTB, it is probable that SP has retained the right to subsurface mineral rights.

The original agreement that granted money from the State of Oregon's Department of Economic Development (now Business Oregon) to the POTB for purchase of the line from SP required that the POTB operate the rail line for freight purposes, to Class II standards. The State of Oregon may still hold a form of lien on the Corridor. It is unclear if the POTB currently meets these obligations or if they have been released from responsibility due to the storm damage. It is also unclear whether ownership of the Corridor would revert to the State of Oregon if the POTB is not meeting its obligations. One esoteric, but potentially real concern is whether, when a ROW is washed away, it remains 'suspended in air', until it is reconnected over the washout.

The following steps were proposed by Alice Beals, a property specialist with OPRD:

1. There should be an initial review and determination of the Corridor's status and the status of the State's interest by Business Oregon
2. It is highly recommended that a full 'Chain of Title' report be commissioned to clarify the current legal status of easements and property along the line.
3. This Title report should be reviewed by the Oregon Dept of Justice to clarify and confirm the Corridor's status.

Legal Assessment

Abandonment and Railbanking

The process of railbanking was developed out of concerns in the 1970s that many unprofitable freight lines were ceasing operations and abandoning their rights of way, which was leading to reversion of these rights of way or easements to adjoining properties. If not utilized actively in a certain time period, it can be considered abandoned. Once abandoned, a railroad loses all parcels of land within the corridor to which it held only an easement. The corridor legally no longer exists. In such instances acquiring a corridor can be very complex as it is likely owned by many different people. If the corridor is not yet abandoned, railbanking is an option.

The US Surface Transportation Board developed this process, whereby a railroad may donate, sell or lease the ROW of an unprofitable rail line to a public or private entity for interim use as a trail, as long as the rail ROW remains connected to other active rail lines and can be theoretically re-activated. The trail operating entity then assumes the responsibility for the management of the ROW. Fewer than 20% of the country's rails-trails have been railbanked.

When a trail is railbanked the land remains under federal jurisdiction. Once the management is transferred, the trail manager can remove tracks and ties, but cannot build any permanent structures on the ROW. Railbanked lines are subject to possible future rail service. If a railroad decides to resume service on a railbanked line the trail manager would be entitled to compensation. Only one such railbanked corridor has reverted to rail use, in Wallaceton Pennsylvania, but it never had a trail built. If the railbanked corridor ever loses its connection to active rail, it can also lose its status and revert to adjacent landowners (if the ROW is an easement and not a fee simple ownership).

There are several “takings” cases pending in courts from trail opponents. They argue that railbanking results in a taking of private property without compensation. If a line is abandoned as opposed to railbanked the easement is extinguished and the adjacent property owners would regain the property.

There are three Oregon trails on railbanked corridors, the Astoria Riverwalk (5.1miles), the OC&E Woods Line State Trail (100mi) and the Springwater Corridor (14mi).

Liability

There are a number of potential scenarios for the development of the Salmonberry Corridor vision and they will result in different liability issues.

Rails With Trails (RWT)

If there is to be a trail alongside the OCSR railroad, the primary liability concerns will be safety related. RWT projects will increase numbers of people adjacent to the tracks and increase incidents of trespassing and inevitably increase the number of people exposed to injury from railroad operations.

But there have been few RWT projects to test the liability of rail lines. Many cases are settled out of court. Trespassing and injuries to trespassers could occur more frequently as a result of the trail and injured trail users could seek to sue. In OCSR's current lease with POTB, they agree to hold POTB harmless for anything related to OCSR operations and OCSR does currently hold liability insurance as part of their lease. Trail users would likely not be considered trespassers if the POTB permits a trail within their ROW. They would be considered 'licensees' or 'invitees' and as such, the POTB or OCSR would have a duty to “exercise reasonable care” in protecting them. The POTB currently allows public

access on the Corridor and did so even when freight trains were running in the Corridor. To protect RWT users completely would require fencing, which would be cost-prohibitive on a corridor of this length. Grade crossings are inspected by ODOT and would continue to be required to meet ODOT regulations.

Trails Only

If a state agency such as Oregon Parks and Recreation (OPRD) were to operate a trail along this Corridor, they would likely be shielded from liability for any injuries suffered on the ROW through Oregon's Recreational Use Statute (ORS 105), which holds an agency such as OPRD harmless as long as a fee is not collected for trail use and as long as they recognize potential dangers and warn users. The damaged bridges and tunnels would be an example of an 'attractive nuisance' that would probably require at minimum some stabilization to reduce State liability.

The following section summarizes the initial analysis of potential economic benefits and sources of demand for recreational uses along the Salmonberry Corridor. A key next step in studying the feasibility of planning this Corridor will be to work on defining specific types of activities, and the general demand for the activities, with the potential assistance of existing survey, state-wide or regional data. A significant question is whether this project would create new demand, or just shift demand from other places within driving distance of Portland and other nearby population centers.

SCORP surveys

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) includes survey data for recreational activities in Regions 1 (NW Coast) and 2 (Portland Metro), which account for the length of the Corridor. Recent survey results (November 2012) supporting the 2013-2017 SCORP, note that the top two activities in both Regions include “walking on local sidewalks” (61.6% of population participating in Region 1 and 68.9% in Region 2) and “walking on local trails/paths” (59.9% and 62.1% respectively).

The population is aging rapidly, so low impact activity such as walking is increasing dramatically in popularity, with biking and day hiking also gaining. The highest priority needs noted by the SCORP surveys are walking paths, public access to waterways, nature viewing, off street bicycle trails and paved paths. Improving physical health and fitness is the most valued benefit of these outdoor amenities. Travel Oregon is doing a statewide bicycle study for next 2 years, which will help determine the economic value of cycling to coastal communities.

Outdoor Recreation

The fact that this Corridor traverses a relatively wild section of the Coast Range, with few roads, could make the Corridor popular with hikers, campers, kayakers and anglers. It is currently highlighted in some blogs as a hiking destination (and was featured in a Sierra Club hiking guide to the Tillamook State Forest.) Anglers are walking along the rail line and driving down the Beaverslide Road to access the river. There is a State Water trail from the Nehalem Confluence west and some kayakers have ventured east towards Enright to paddle the rapids within the Canyon (some even travel cross-country to access the North Fork of the Salmonberry.)

Long Distance User Demand

In terms of the demand for a continuous long distance multi use bicycle trail, there are some aspects of the Corridor worth emphasizing that differentiate it from other long trails in the US. Segments A-C of the Corridor stretch 58 miles from Banks to Wheeler, so if the entire trail is eventually built, it is unlikely that many cyclists would attempt to ride to the Coast and back in a single day, simply because of the physical difficulty in doing so. A one-way ride could be more feasible, but it is still a long ride. Cyclists would thus need to plan for an overnight stay at a campsite along the route, which currently would be at Reeher’s Camp and Nehalem Falls County Park and they’d need to carry their gear, which requires a touring bicycle with a strong enough frame to carry panier bags. It is unlikely that any other type of commercial accommodation would be built in that 58 mile stretch of Corridor, simply because of the difficulty of access and the lack of private land, as well as the seasonal basis for recreation. A non-profit cabin or lodge, maintained by a club or organization such as Hostelling International, could be an option and could simply close in the off-season.

Segment Demand for Recreation

There are a few gateways to the Salmonberry Corridor, as well as Corridor communities that can be considered as likely to benefit from recreational improvements. In studies of precedent corridors across North America, such communities are often referred to as “trail towns”. These are communities where there are typically existing commercial uses. Most tourist revenue from a full or partial trail on the Corridor would likely be derived in ‘trail towns’ on the Oregon Coast, specifically Tillamook, Bay City, Garibaldi, Rockaway Beach and Wheeler. There may be some benefit for Banks, as a trail town, but not much for Timber, which does not have any commercial uses currently. A small bike rental and repair shop has recently opened near the trailhead to the Banks Vernonia Trail.

Segment A

In terms of individual segments, there is likely to be strong demand for recreational use on the Segment A from Manning to Timber, building on the existing demand for the Banks Vernonia Trail and taking advantage of the Portland metro-area population base. OPRD is currently studying the number of trail users on the Banks Vernonia and that data will be useful in gauging potential users of Segment A.

Segment B

Segment B may remain only as a hiking and/or mountain bike trail, attractive as an eco-tourism destination, with some visitors drawn by the railroad relics and damage. Hikers and backpackers could make use of remote campsites within the Canyon which would not require significant development. Some hikers could reasonably be expected to use a remote lodge as described above. Mountain-bikers would likely see the Segment as a day-trip opportunity.

Economic Assessment

Segment C

Segment C might see most demand from visitors already at the Oregon Coast who use the Corridor as a day trip into the State Forest along the Salmonberry as far as they are able, returning to accommodation in Wheeler or Nehalem Bay State Park. The proposed Cougar Valley State Park could serve the same function (as well as providing campsites for users of Segment B heading east.) This Segment and Segment D continue to offer passive recreation in the form of scenic train trips along the Corridor.

Segment D

This Segment, passing through numerous coastal communities, or ‘trail towns’ and close to a large number of tourist hotels and rental homes, would be popular with casual day users and would not require significant investment in trailheads since many users could access the trail on foot or bike. The Corridor here could link to and capitalize on existing visitor attractions. (We assume that this Segment’s proximity to US 101 would deter equestrian users.) This segment would also be of potential interest as a recreational resource for full-time residents on the Coast for fitness and casual use as well as for commuting to work.

Oregon Coast Scenic Railroad

The Oregon Coast Scenic Railroad (OCSR) is currently a popular tourist attraction in Tillamook County, providing an activity for families staying at the beach and for tourists passing up and down the Oregon Coast. Ridership continues to grow and has increased by over 16,000 annually since 2003 (there were over 18,000 riders in 2012) and there is a committed group of supportive volunteers maintaining the line and promoting the service. Operations in the winter are curtailed due to lower demand but they run special seasonal trains.

The OCSR entered into a new Agreement with the POTB, effective until 2016 with potential for renewal for two subsequent 5-year periods. This Agreement is limited to tourist operations and allows use of the POTB ROW in exchange for OCSR’s ongoing rehabilitation and maintenance of the ROW between Enright (MP 810.5) and the Tillamook Industrial Park (MP 859.13). This work includes rail, ballast and tie replacement, vegetation management and land slide repair. The Agreement states that Rails to Trails work can occur within the ROW, if it allows for continued use of the OCSR. The Agreement also allows OCSR to recover 18 log cars that are currently stranded on a siding at Enright. Volunteers have also moved an old depot from 3rd Avenue in Tillamook and are raising funds to rebuild the depot at the Air Museum.

In order to expand the railroad’s operations into the heart of the Salmonberry Canyon, the OCSR will need to contribute a significant amount of money and volunteer labor and materials to for corridor repairs, especially of washouts between the Nehalem Confluence and Enright. Since there is a strong likelihood of continued storm damage in the Canyon, another related concern would be the continued instability of the Corridor and the cost of repairs of future damage (and who would be considered responsible for these

repairs.) There are tourists interested in a long trip to Enright from Garibaldi or Wheeler. One suggested option would be for a smaller self-propelled car like a ‘speeder’ to take visitors beyond Wheeler, for Corridor users such as kayakers or fishers.

Rail Trail demand, benefits and demographics

In our review of precedent projects, we found a number of studies (listed in Appendix A) that address the Economic Impact of Rail-Trail projects. There is ample support for the suggestion that such trails are generators of economic activity and benefit nearby communities. Three of the most recent studies provided several facts about rail-trail users that may inform planning for the Salmonberry Corridor:

Great Allegheny Passage Trail (Pennsylvania and Maryland, 2012)

The most detailed is provided by the Allegheny Trail Alliance, a group of 7 trail managers and advocates who are coordinating the linking of several rail trails into one 150-mile long corridor. Their recent surveys found the following information:

- An estimated 800,000 trips are taken on the Great Allegheny Passage each year. (Note: this corridor runs close to several large cities, including Washington DC, Baltimore and Philadelphia.)
- The trail hosts visitors from all over the world.
- Over \$40 million in direct annual spending is attributable to trail user spending (up from \$7.26 million in 2002).
- Businesses surveyed attribute, on average, 25% of their sales to trail user spending. The percentage is higher for lodging properties and bike shops.
- 75 percent reported being Pennsylvania residents
- Almost 80 percent of visitors had a previous visit to the trail most often trail users come in pairs (44%) to ride, walk or hike the trails.

- About one-third of trail users are alone
- Trail users are all ages, but those between the age of 45 and 54 are the largest group of users (27.8 percent) followed by those aged 55 to 64 (22.8 percent).
- The age group 45-54 is the most likely to frequent the trail at any location, while under 10 is the least likely to use the trail at any location. The second highest group to use the trail at any location is the age group 55-64.
- Only 23% of trail users reported a multiple day trip. Of these, 30 percent were planning to stay at a campground while 28% were planning to stay at a bed and breakfast. For those who plan to stay overnight the mean amount spent per night was \$114.
- Most trail users start and stop at the same location.
- Those in groups were more likely to spend more money (\$51.36) than an individual (\$17.69).
- The majority of spending from trail users was on snacks/beverages and restaurants.

Katy Trail Economic Impact (Missouri, 2012)

Another recent survey of economic impact was prepared for Missouri State Parks, on the nation's longest rail-trail (over 250 miles):

- Average spent per user was \$45 (\$18 without lodging)
- Average travel distance to access the trail was 83 miles. (This trail is not close to a major population center, other than Columbia, MO, with 110,000 residents)
- 67% of visitors were nonlocal
- First-time visitors spent more
- Total added value to community was \$8 million per year

Trail User Surveys and Economic Impact (2009)

The Rails to Trails Conservancy prepared a detailed comparison of over 20 rail trails in the NE United States:

- Biking was a primary use, and the primary reason cited was health and recreation
- The majority of users were aged 45+ and were male
- The average amount of money spent per user, per trip was \$13
- But the total spent per year ranged from \$2.3 to \$7 Million for a typical trail.

Economic Assessment

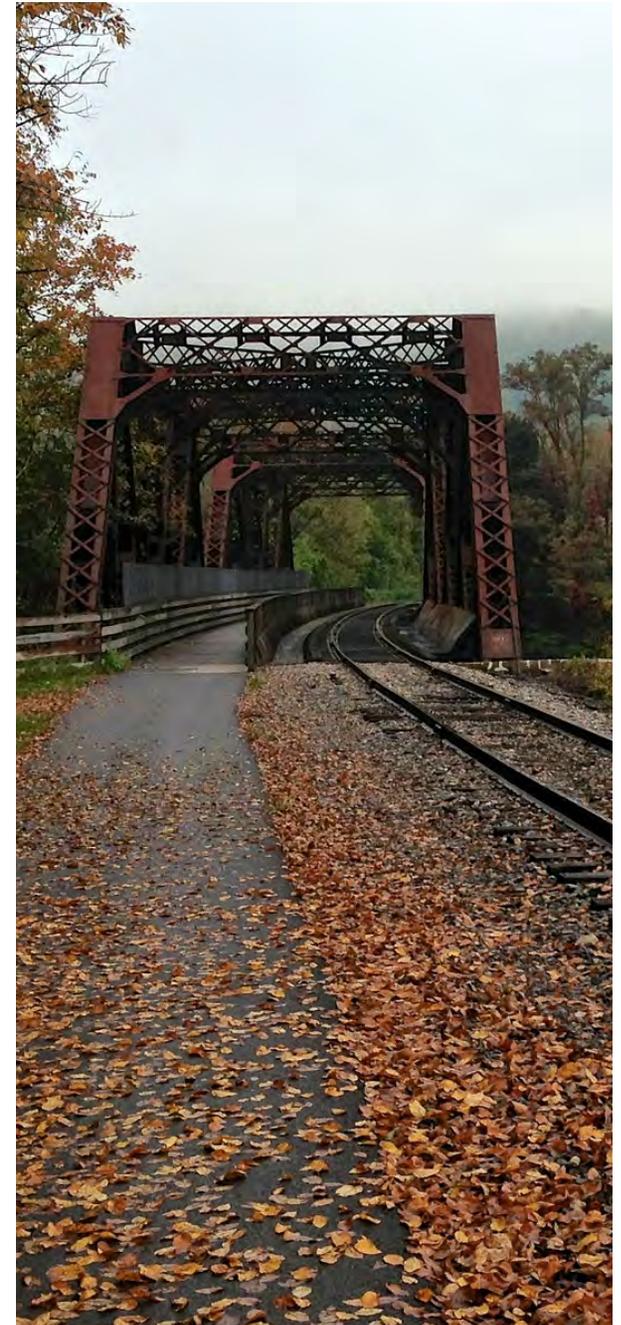
Trail Construction Costs

By far the greatest expense in implementing the Salmonberry Corridor vision will be for repairs to the damage caused by the 2007 storm, which was estimated at over \$80 million for restoration of rail service and deferred maintenance. Trail construction on the ROW can obviously be expected to cost less, with less structure required, but there will be major baseline costs for repairs and permitting. OCSR may be able to assist with trail construction on Segments B, C and D by transporting materials and equipment to the end of their line.

For trail construction along the Corridor, we can consider a range of order of magnitude costs for different trail types. The design and permitting of trails will be an additional expense that is very difficult to estimate. The cost of surfacing a trail with asphalt or concrete may be prohibitive in the beginning stages of trail building. This initial expense shouldn't deter plans to start trail development right away. Trail operators can always upgrade from a "soft surface" like dirt or crushed stone to a hard surface like asphalt or concrete once more funding is secured. As a comparable, the Banks Veronia Trail cost \$20 per lineal foot. It required federal funding, which triggered federal code and permit requirements, which raised the cost significantly.

Boardwalks are the most expensive trail per mile to build, followed by concrete and asphalt (cost estimates below are per mile):

- Boardwalk: \$1.5 mil – \$2 mil
- Concrete: \$300K - \$500K
- Asphalt: \$200K - \$300K (Asphalt has a 15-year lifespan before re-paving.)
- Crushed/granular stone: \$80K - \$120K
- A fine gravel over larger grained crushed rock is a good alternative (fine rock alone would be susceptible to rutting).
- Soil cement: \$60K - \$100K
- Resin-based stabilized material: cost varies
- Natural earth is a very cheap option, at \$50k-70k per mile for 10-foot wide trail but requires more extensive maintenance to fix drainage problems, repair eroded areas and remove new vegetation. Volunteer labor can often be used for such trails.
- Wood chips: \$65k-85k per mile for 10-foot-wide trail. Wood chip trails blend well with the natural environment and work well as parallel tread next to asphalt or concrete. However the chips decompose rapidly; do not accommodate wheelchair use; require constant maintenance to keep width and surface steady and require ongoing replacement.



Rail With Trail, Allegheny Corridor; note that typical setback and fencing have been waived for this project through negotiation with the railroad.



Salvage

If it is eventually determined that rail service is unfeasible in any of the Corridor segments, there is significant potential for gaining revenue from salvaging railroad infrastructure, whether or not this revenue is used to fund trail construction. There are companies that have expressed interest in purchasing the salvageable materials within the Corridor. Some companies, such as Nevada Rail, specialize in salvaging rail and ties and restoring them for resale to other railroads. Some of the trackage is of interest to the OCSR for upgrading their coastal route. The POTB's lease with OCSR includes provisions that grant OCSR permission to keep proceeds from the 18 log railcars trapped at Enright, if they can access them. Such a railcar might fetch \$6000 in salvage if broken up for scrap.

The primary challenge to salvaging materials will be the cost of retrieving it from deep within the Corridor and the costs of disposing of creosote-treated ties. (But much of the track at either end of the Canyon can easily be salvaged in areas not being used by OCSR.) Another critical consideration is that over time, rails get wet and corrode, especially sitting on gravel ballast. If the rails aren't used, they get pitted and cannot be reused, but could still be reclaimed as scrap but if too much time elapses, the rails could become too corroded even for scrap.

Some of the rail on this Corridor, particularly on the Coast, is 90lbs/yard (steel rails are measured in weight per yard). Such track is probably old and not meant for heavy mainline use and preferred for trackage in switching yards. This may be one reason why the OCSR trains offer a swaying, bumpy ride along the Coast and OCSR representatives expressed a desire to upgrade to heavier rail, potentially using track salvaged from the Salmonberry Canyon. Within the Canyon, heavier rail (up to 136lb/yd) was installed, because this was a

mainline and perhaps as recognition that this needed to be a more durable line.

The salvage value of this heavier, newer mainline track is approximately \$1200-\$1300/ton which equates to roughly \$150,000 per mile. Its value also depends on past use and how many million gross tones have rolled over it. But this still represents significant value if the rail can be accessed. Some areas just won't ever be salvageable because damage has cut them off from access with trackage machines which can remove and stack rail automatically, but potentially this rail could be removed and slid to one side of the Corridor for future salvage if that ever becomes easier. Removing rails with a helicopter is an expensive alternative.

Other potential salvage comes from rail spikes and from steel in damaged bridges and tunnels which need replacement. Railroad ties are considered toxic due to creosote treatment, but older ties may have already leached much of their creosote—which would solve the toxicity issue, but would likely mean the ties would disintegrate upon removal.

Economic Assessment

Funding

It is challenging to find funding for recreation projects and there are many competing projects for scarce dollars. The best approach for funding development of the Salmonberry vision is to consider a wide range of potential sources and amounts of money and proceed with implementation in a phased manner according to when money becomes available. The following list summarizes some typical funding sources for trail construction:

Federal (use of federal funding may trigger need for some additional federal regulatory reviews)

- Earmarks
- MAP-21 (Bike funding cut 70% compared to Safetea LU)
- Recreation Trails Program (RTP), administered by OPRD
- EPA Environmental Education Grants
- NRCS 'Resource Conservation and Development Program'
- Health-related funding

State

- Oregon State Lottery (and bonds)
- Land and Water Conservation Fund (L&WCF), managed by NPS
- OR State Parks Foundation
- ODOT Bicycle and Pedestrian Program Grants (must be within public ROW)
- OWEB Habitat Programs (grant program funded from Oregon Lottery)
- Oregon Solutions

Other

- Cycle Oregon
- The Conservation Fund
- American Whitewater
- Fishing groups
- Timber companies
- Recreational businesses
- Corporate sponsors
- WCI fiber optic company, to re-connect cables through Corridor
- Community Fundraising, Donations, and In-Kind Contributions (such as OCSR volunteers)
- Foreign EB5 investment. All non-metro counties are eligible. Hotels and senior housing are most popular and projects must create jobs and invest a minimum of \$1 million. Could be allocated to nodes within this corridor that would be appropriate for eco-tourism.



Conclusion

The Salmonberry Corridor presents an incredible opportunity to create a new recreational resource for the people of Tillamook and Washington counties and for the entire State. The Corridor traverses some of the most rugged landscapes of the Coast Range and offers access to a wide range of under-appreciated destinations within 2 hours of downtown Portland. It crosses numerous different ecosystems, from agricultural land, to commercial forest, to wilderness and coastal communities.

The initial findings of this report confirm that this is a project worth studying in greater detail. With the severe damage created by the December 2007 storms and subsequent decisions to cease freight operations through the Corridor, there are clear advantages to transforming the Corridor into a multi-faceted recreational amenity, one that considers many users, from hikers and bikers, to historic railroad buffs. The entire Corridor may not become a single type of trail over its entire length, and it may be many years until it can be considered for a continuous journey across the Coast Range.

There will also be significant further engineering and natural resource work as well as complex regulatory approvals required before the Visions outlined in this report are realized. But a Corridor with such outstanding scenic variety, historic interest and recreational potential should be a priority for further planning and political support at the State, County, Metro and local levels. With careful planning and the ongoing assistance of the Coalition, the Salmonberry Corridor will eventually become a memorable, iconic amenity for Oregonians and their guests.

Next Steps in Corridor process

1. Clarify current ownership of Salmonberry Corridor ROW and status of easements.
2. Identify options for ownership, oversight and management of the Corridor, including potential 'champions' for each Segment. Coalition continues to meet.
3. Build political support at the state and local level for the Corridor concept.
4. Complete LIDAR mapping of Corridor, as base mapping for subsequent studies.
5. Prepare a Master Plan for the Corridor, building off the findings in this study. The Milepost 2016 study prepared for the Columbia River Gorge Trail is a precedent worth considering.
6. Initiate important additional technical studies in support of the Master Plan, including a detailed assessment of likely permitting requirements as well as hydrology, geotechnical and more precise engineering studies.
7. Identify specific projects to implement the master plan and assemble funding.
8. Design these first specific projects, potentially according to Segments identified in this report, and initiate regulatory approvals.

Appendix A: Phone Interviews



Skip Haak, PBS Engineers, October 8, 2012

Brad Sheets, Tillamook County Planner, Oct 10th, 2012

Scott Wickert, Oregon Coast Scenic RR,
October 11, 2012

Brad Lejeune, WCI (Fiber Optic Cable Co),
October 12th, 2012

Rocky Houston, OPRD State Trails Coordinator,
Oct 15th, 2012

Tom Archer, PBS Engineers, Oct 18th, 2012

Jim Keany, AECOM consultants, Oct 24th, 2012

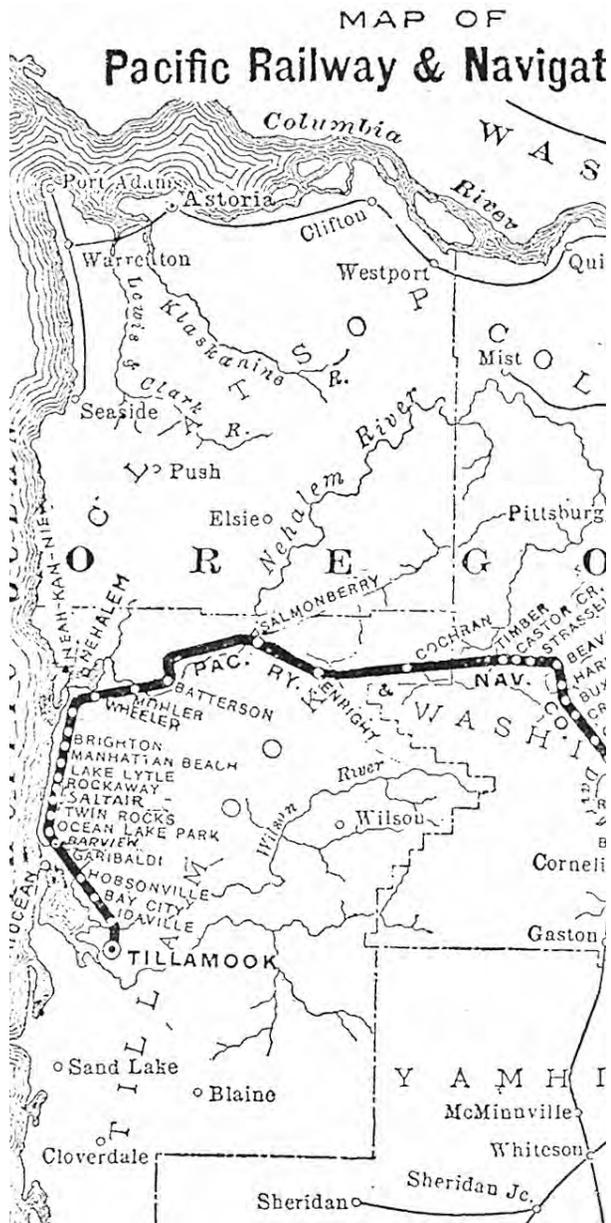
Alice Beals, OPRD Property Agent , Dec 21, 2012

David Anzur, PNWR (Portland and Western RR),
January 7, 2013

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Appendix C: GIS Mapping Issues



A preliminary mapping exercise was conducted for this study, using existing GIS information. A full Title Search will be required before further work on the Corridor to determine precise ownership, but this should be combined with a detailed mapping of the Corridor, using LIDAR data and the findings of the Title Report. The OPRD staff responsible for the existing GIS data noted the following issues with the data:

- Tillamook County Taxlot Data (2008) is missing Port of Tillamook Bay ownership data. The missing polygons form a gap in the taxlot layer. POTB ROW can be guessed at by filling in this gap in some places. In other places the gap overlays other missing data, such as streams or roads, and ROW cannot be estimated. The best example of this is the coastal stretch next to Hwy 101, but this stretch is also less relevant because ROW issues along Hwy 101 will be less of a problem.
 - Tillamook County Taxlot Data is also misaligned with the POTB Railroad Layer, so that the railroad does not fall within the assumed ROW (i.e., gap). This is most noticeable between the Washington County line and Wheeler. Between Wheeler and Tillamook the alignment seems accurate.
 - The Public Ownership Layer used by OPRD does not match the Tillamook/Washington County Taxlot data in some places. For example, some parcels near Stub Stewart State Park are listed as owned by the State of Oregon in the Public Ownership Layer, but are listed as privately owned in the Washington County Taxlot (2011) data. This is probably the result of outdated data in the Public Ownership Layer.
- There appears to have been a land swap between the State and private timber companies involving a number of parcels that resulted in acquisition of land for Stub Stewart State Park.
- Mileposts (RR_Features) were digitized from Southern Pacific maps. They are meant to be used as a location reference between maps and accuracy is not precise.
 - GIS-ready Floodplain Data is difficult to acquire for the Corridor (it may not exist for the Salmonberry Gorge section?). FEMA is currently updating maps for Washington and Tillamook County.
 - 2008 Damage Sites were digitized by Ian Matthews using the location maps provided in the technical reports. In some cases, the milepost number (ex: 806.31) given to a damage event in the technical report seemed to not match precisely the site shown on the map. These were assumed to be minor accuracy errors in the technical report, but the locations were not corrected when entering into GIS.
 - Marbled Murrelet Critical Habitat abuts the POTB railroad in several places. This was not included in any of the maps, but could have an impact on development. Also, ODF anchor habitats were not mapped – it is unclear if the data is easily available.



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