

Chapter Three Proposed Action and Alternatives

This chapter describes the alternatives considered for the proposed project, as well as the alternatives that were excluded from consideration. Two alternatives are analyzed in depth in this Preliminary Environmental Assessment (EA): the Build Alternative and the No Build Alternative.

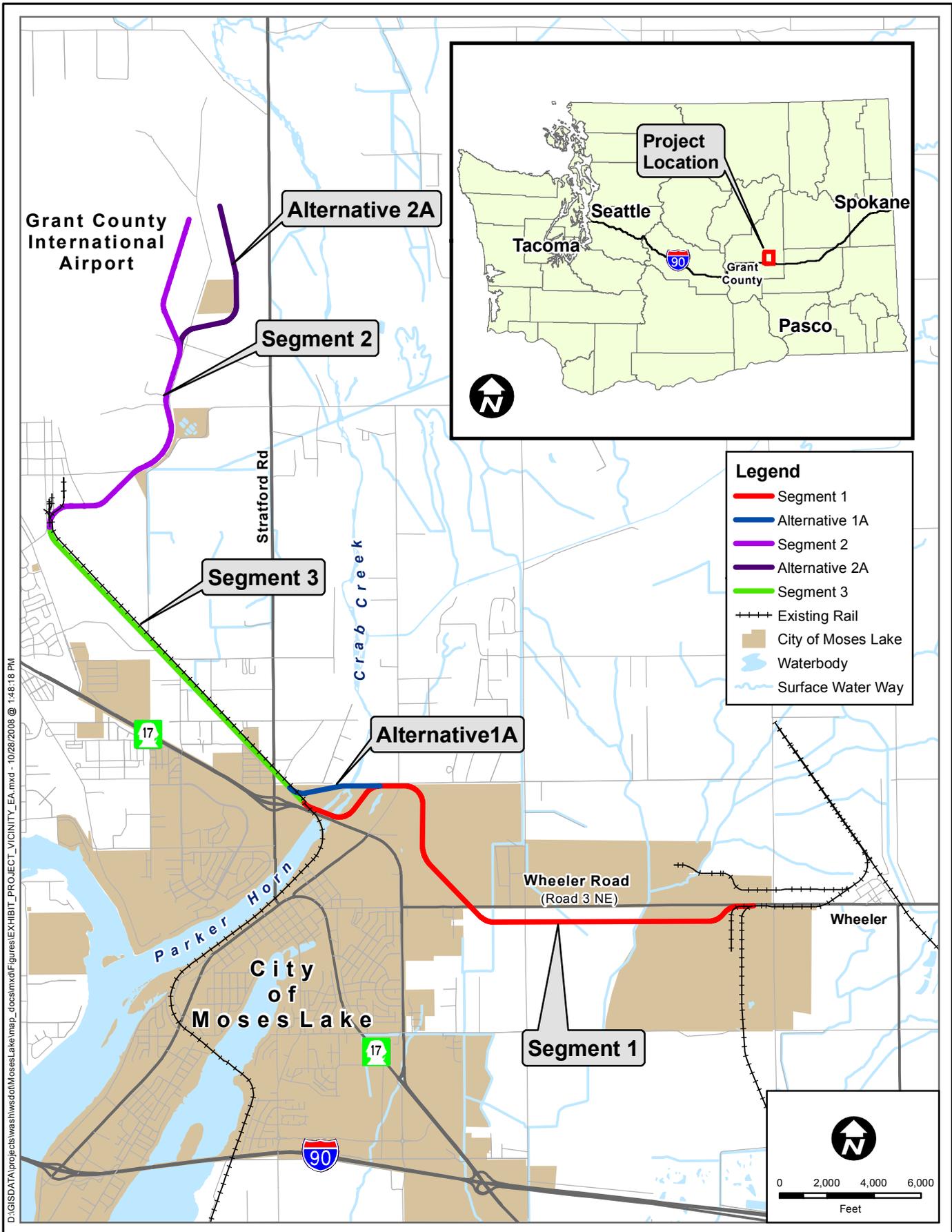
What alternatives are evaluated in this Environmental Assessment?

- **Build Alternative.** The Build Alternative includes the acquisition, construction and operation of rail lines that would provide rail service to lands designated for industrial development in the northern part of the City of Moses Lake and to the south and east of the Grant County International Airport (GCIA), as well as enhance opportunities for economic development in the area. The proposed rail project consists of three components, two of which would require the construction of new rail line segments. This EA includes analysis of alternate alignments for both of the proposed new rail line segments. The third segment is an existing rail line that would be acquired and rehabilitated.
- **No Build Alternative.** Under the No Build Alternative, the proposed project would not be constructed and rail service would continue on the existing Columbia Basin Railroad Company (CBRW) system. In addition, under this alternative there would be no potential for rail service to lands designated for industrial development in the northern part of the City of Moses Lake or to the lands to the south and east of the GCIA. However, rehabilitation of the existing line (Segment 3) would not be precluded under this alternative and could take place in the future.

What is the Build Alternative?

The Build Alternative, also known as the proposed Northern Columbia Basin Railroad (NCBR) Project, is defined in Chapter Two, Purpose and Need. It includes the following (See **Exhibit 3.1**):

- Segment 1 - Construction of an approximately 4.5-mile-long rail line that would allow trains to bypass downtown Moses Lake and would provide access to the industrial areas along Wheeler Road (Road 3 NE), including one of two alternatives for a bridge crossing at Parker Horn or Crab Creek;



- Segment 2 - Construction of one of two alternatives (3.1 miles or 3.6 miles long) that would connect the existing CBRW line to the south and east of the GCIA; and
- Segment 3 - Rehabilitation of the 3.0 miles of existing CBRW rail line between Parker Horn and the GCIA.

What is the proposed route of the Build Alternative?

Segment 1

Exhibit 3.2, Sheet 1 illustrates the location of Segment 1, which would consist of approximately 4.5 miles of new track. Beginning on the east, Segment 1 would connect to an existing industrial track that currently serves Central Leasing at the old sugar processing plant (south of Wheeler Road [Road 3 NE]). This industrial track is connected to CBRW's main line at Wheeler.

The proposed rail line would diverge south and head west, parallel to and about 620 feet south of Wheeler Road (Road 3 NE). The line would proceed west through land currently used for agricultural purposes (although zoned for development with industrial uses) and cross Road L, then swing to the northwest and cross Wheeler Road (Road 3 NE).

Across Wheeler Road (Road 3 NE), the Segment 1 track would cross additional land zoned for industrial uses but currently used for agricultural purposes, before turning north and then west again to cross Road K just south of Road 4 NE (Cherokee Road). The line would sweep to the south and then again to the west and come parallel to and just north of State Route (SR) 17. The track would cross Parker Horn north of the SR 17 bridge, and then swing slightly to the north and connect to the southeast end of Segment 3. Maximum grade for the entire segment would be 1.7 percent.

Alternative 1A (alternate crossing of Parker Horn)

Because of the sensitive wetland habitat in and around Parker Horn, which is an arm of Moses Lake, the project team developed an alternate crossing of this water body. The alternate crossing, known as Alternative 1A (shown on **Exhibit 3.2, Sheet 1**), would diverge from Segment 1 at Reference Point (RP) 3.8, then continue west, south of Road 4 NE (Cherokee Road), crossing Parker Horn about 1,000 feet farther to the north than Segment 1. This alternative, approximately the same length as Segment 1, would descend more directly from the bluff, minimizing intrusion into wetland areas and crossing Parker Horn at the mouth of Crab Creek, parallel to Road 4 NE (Cherokee Road). Maximum grade for Alternative 1A would be 1.7 percent.

Segment 2

The construction of Segment 2, which would consist of approximately 3.1 miles of new track, would begin at a turnout¹ installed at the north end of Segment 3 (the existing rail line). The line would turn and cross Forbes Road, then initially proceed due east. The line would swing to the northeast and then cross Randolph Road about 3,700 feet east of the intersection of Randolph Road and 22nd Street. The line would generally follow Randolph Road as it swings to the north around the east side of the GCIA. Just south of Tyndall Road, Segment 2 would head northwest, diverge away from Randolph Road, and run west of Moses Lake Industries. At that point, the line would generally run north and slightly east, parallel to Randolph Road, before terminating about 6,000 feet from the Tyndall Road crossing. **Exhibit 3.2, Sheet 3** illustrates the location of Segment 2. Maximum grade for the segment would be 1.7 percent.

Alternative 2A

An alternate alignment for the north end of Segment 2 is being considered to provide access to the east side of the GCIA industrial area, as shown on **Exhibit 3.2, Sheet 3**. Alternative 2A would consist of approximately 3.6 miles of new track, which would be approximately 0.5 miles longer than Segment 2. This alternative would re-cross Randolph Road about 700 feet north of the intersection of Randolph and Tyndall Roads, then curve to the north and extend about 7,000 feet before terminating. Maximum grade for Alternative 2A would be 1.7 percent.

Segment 3

In Segment 3, approximately 3.0 miles of the existing CBRW rail line between Parker Horn and the GCIA would be rehabilitated. **Exhibit 3.2, Sheet 2** illustrates the location of Segment 3. This segment was constructed in approximately 1942 to service the construction and operation of Larson Air Force Base, now the GCIA. Adjacent residences in the Longview neighborhood were built in 1943, shortly after the rail line was constructed.

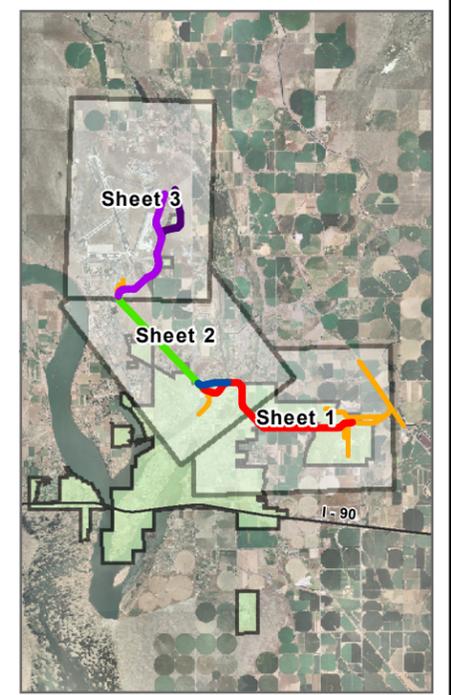
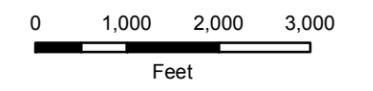
What are the physical features of the Build Alternative?

For Segment 1, Alternative 1A, Segment 2, and Alternative 2A, a new single track would be constructed within a 100-foot-wide right of way, with the exception of a small portion of Segment 1 between RPs 2 and 3. For that portion of the alignment, an excavation approximately 20 feet deep would be cut into the hillside to allow the rail to keep its vertical alignment. Grading for this part of the line would extend out from the track farther than the standard 100-foot-wide right of way, and so the right of way in this area would be widened up to 120 feet.

¹ A turnout is a set of tracks that connect the main line to a siding or rail yard. A turnout allows the train to move on or off the main line.

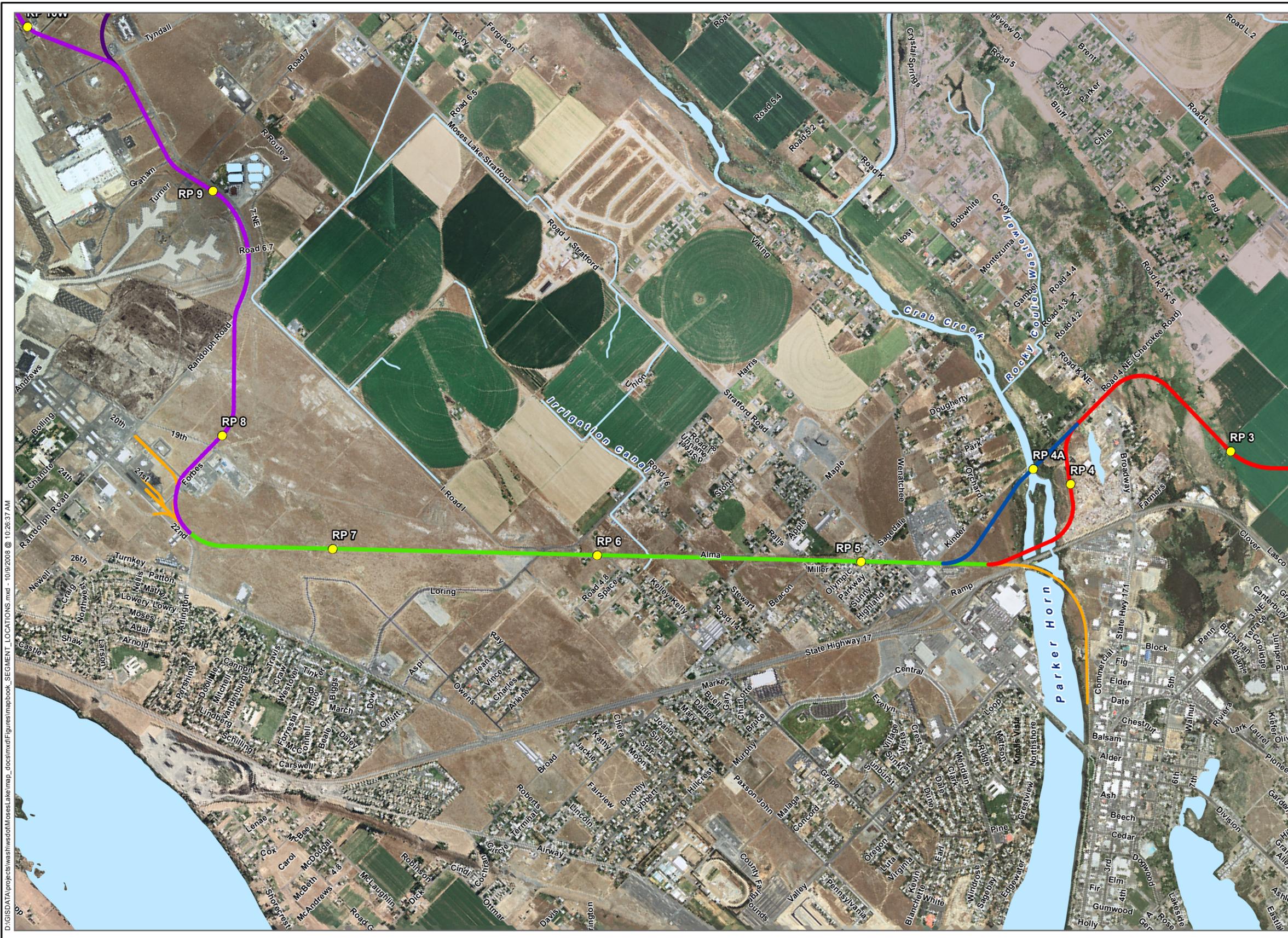


- Legend**
- Segment 1
 - Alternative 1A
 - Segment 2
 - Alternative 2A
 - Segment 3
 - Existing Active Rail
 - Reference Point (approx 1 mile apart)
 - Water Body
 - Surface Waterway

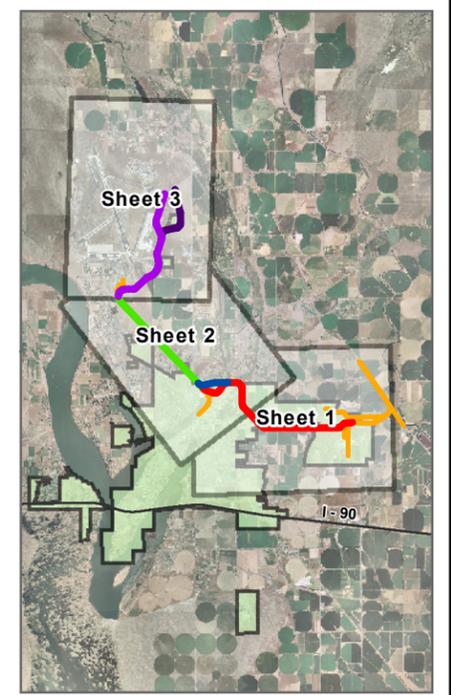
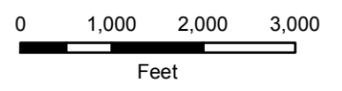


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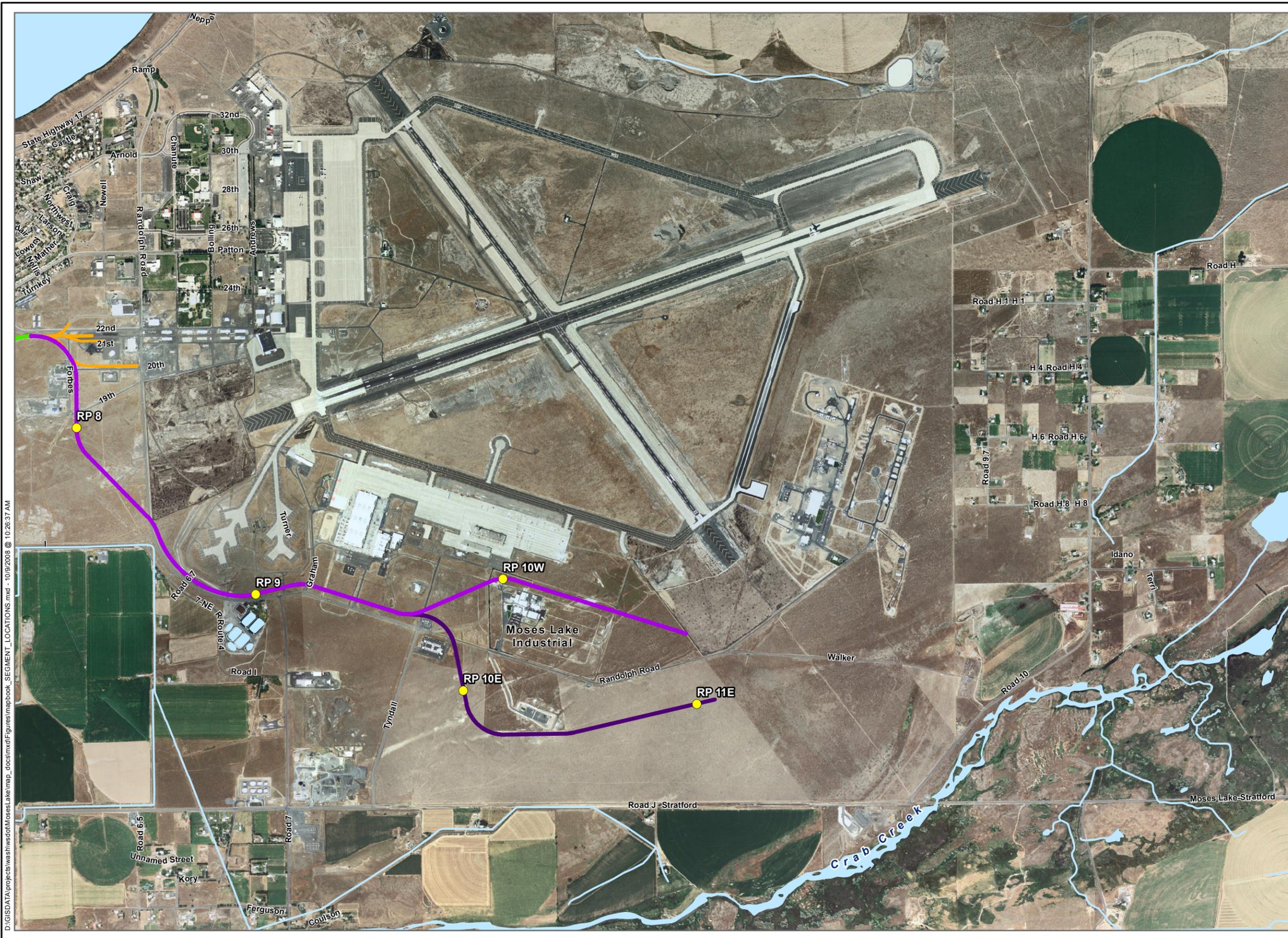


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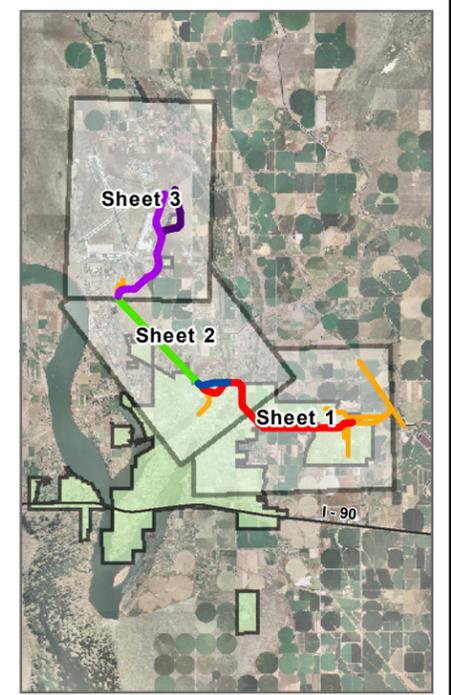
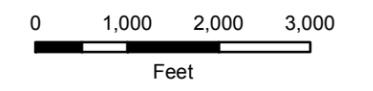


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- Legend**
- Segment 1
 - Alternative 1A
 - Segment 2
 - Alternative 2A
 - Segment 3
 - Existing Active Rail
 - Reference Point (approx 1 mile apart)
 - Water Body
 - Surface Waterway



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What roads would be crossed by the Build Alternative?

The proposed project would add new at-grade crossings in Segments 1 and 2 (and Alternative 2A, if selected), and would upgrade existing crossings in Segment 3. At all crossings, streets in the immediate vicinity of the crossings would be reconstructed to provide a better crossing approach surface. The proposed single track would be constructed through the road, closely matching the existing roadway surface.

A concrete crossing surface would be installed and the existing roadway approaches would be repaved to match the crossing surface.

Segment 1

The grade crossings at Road L NE (RP 1.9), Wheeler Road (Road 3 NE) (RP 2.4), and Road K NE (RP 3.6) would be constructed with flashing lights and crossing gates.

Segment 2

The grade crossing at Randolph Road (RP 8.5) would be constructed with flashing lights and crossing gates. The grade crossings at Turner Road NE (RP 9.2), Graham Road NE (RP 9.5), and Tyndall Road NE (RP 9.7) would be constructed with crossbuck signs² rather than with gates and signals because the traffic on the streets is limited. If Alternative 2A was selected, then crossbuck signs would also be installed at Randolph Road (RP 9.9).

Segment 3

The existing warning devices at Stratford Road (RP 4.8) and Loring Drive (RP 6.1) would be upgraded. Warning signals (flashing lights and ringing bells) would be modified to provide appropriate warning time for 25-mph train traffic.

How would the Build Alternative cross Parker Horn or Crab Creek?

Prior to crossing Parker Horn, the proposed line would need to drop down in elevation from the top of the bluff on the east side to an elevation suitable for crossing the waterway. Because of the sensitive nature of the crossing of Parker Horn, the project team is considering two alternate crossings (Segment 1 and Alternative 1A) to descend from the bluff and cross Parker Horn.

Segment 1 would cross Parker Horn approximately 150 feet north of the existing SR 17 bridge, and then would swing slightly more to the north and connect to the southeast end of Segment 3. In Segment 1, the bridge over Parker Horn would be 16 feet wide and a total of 865 feet long, with 21 spans

² A crossbuck sign is an X-shaped warning sign for vehicular traffic used where a railroad crosses a street.

that were 35 or 45 feet long. Of the 21 spans, 19 would be located over the floodplain. Stormwater falling on the bridge would be collected within the bridge and conveyed to treatment facilities (ditches) on either side of Parker Horn; it would not be allowed to run off the bridge nor flow directly into Parker Horn.

Alternative 1A was proposed in part to reduce the impacts associated with the bridge length, the number of piers in the floodplain, and water/wetland impacts resulting from Segment 1. The line for Alternative 1A would descend more directly from the bluff, minimizing intrusion into wetland areas, and would cross Parker Horn at the mouth of Crab Creek at RP 4A, which is approximately 1,000 feet north of SR 17. Although the same width (16 feet), the bridge for Alternative 1A would be 475 feet long, which is considerably shorter than the bridge for Segment 1. For Alternative 1A, there would be 11 total spans 35 or 45 feet long, with ten piers in the floodplain. Only four of those would be in the active channel of Crab Creek. As with the bridge in Segment 1, stormwater falling on the bridge in Alternative 1A would be collected within the bridge and conveyed to treatment facilities (ditches) on either side of Crab Creek.

For both bridges, work would need to be conducted in the water of Parker Horn or Crab Creek; this would include placing fill and constructing bridge piers, foundations, and abutments. The bridges would meet hydrologic flow requirements.

How would the Build Alternative be constructed?

For Segments 1 and 2 and Alternatives 1A and 2A, track work would consist of constructing new track using concrete ties, elastic rail fasteners, ballast, and welded or jointed rail. New industry track connections might be constructed using either wood or concrete ties; elastic rail fasteners or cut spikes; ballast; and welded or jointed rail. The work might be performed using a mechanized track laying machine.

The work on Segment 3 would primarily consist of replacing rails, ties, and other track materials. The rail line upgrade would permit use of the newer, larger railcars. Upgrades to the two signalized grade crossings (Stratford Road and Loring Drive) would also be included in the design, although these crossings are currently in good to excellent condition. With these upgrades, this portion of the rail line could be operated at 25 mph. All work would meet or exceed Federal Railroad Administration (FRA) inspection criteria. The existing alignment for Segment 3 would not be changed.

All earthwork would be contained within the project right of way. Fill materials would need to be hauled from one area to another within the project limits. This might be accomplished with dump trucks or small scrapers using the existing access roads as haul roads, where available. For short trips, construction vehicles would stay within the proposed right of way. For longer

trips, it might be necessary for construction vehicles to use public roads. Construction equipment would operate primarily within the right of way, except when accessing the earthwork staging and equipment turnaround sites. One or two major staging areas or several minor material staging areas would be used.³

In areas where new track would be constructed, the top of the existing ground would be cleared and grubbed of trees and vegetation (organic materials would be removed) and a new subgrade constructed. The grading contractor would be required to dispose of excess excavated materials. This material could be used on-site in the form of access roads or landscaping or could be completely removed from the site and used on other construction projects. Any subballast material, the granular material that underlies the ballast or gravel that supports the ties and track, would need to be imported onto the site. Subballast would be spread evenly in an approximately six-inch-deep layer and compacted on the newly constructed subgrade. **Exhibit 3.3** summarizes the general quantities of subballast material needed for the Build Alternative where new track would be constructed.

Exhibit 3.3
Quantities of Subballast Material Needed for the Build Alternative

Segment	Track Constructed (miles)	Total Excavation Cut (CY)	Embankment Fill (CY)	Excess Material (CY)	Grading Footprint (acres)	Proposed Total Right of Way (acres)	Subballast (CY)
1	4.5	192,000	76,000	69,000	30	55	15,000
1A	4.5	190,000	88,000	55,000	30	55	15,000
2	3.1	85,000	14,000	41,000	18	38	10,000
2A	3.5	96,000	45,000	17,000	21	45	11,000

Note: All quantities are rounded and approximate.
CY = cubic yards

Approximately three miles of existing track would be rehabilitated along Segment 3. This work would consist of replacing existing, worn, or otherwise defective ties with new ties; adding ballast; and re-surfacing, lining, and tamping the track. These activities are typical of the maintenance work regularly performed on most railroads and are accomplished without removing the track. Existing drainage paths would be cleared of blockages. Little or no new grading work would be required.

³ Additional details about construction of the proposed project are provided in the *Northern Columbia Basin Railroad Project Conceptual Construction Plan*. This document is available upon request from the Washington State Department of Transportation (WSDOT) Rail & Marine Office. Contact information is provided on the back of the title page.

How would the project operate if it is constructed?

Although train traffic would increase from current levels (two trains / one round trip per month), the rate of increase would depend on the addition of new customers. Any rail traffic resulting from the proposed project would not be expected to exceed two trains per day (one round trip) for the foreseeable future. In general, rail operations after completion of the proposed NCBR Project would be similar to current operations. Two trains per day (one round trip) would operate between Warden (See **Exhibit 2.1**) and the GCIA, picking up and delivering rail cars. At the outset, a train on the proposed line would operate only occasionally. However, as industrial development proceeded along the line, train size and frequency would be expected to increase to up to two trains per day (one round trip), the maximum for the foreseeable future. CBRW expects that each train would consist of three to six cars, with a total of 500 to 1,000 cars per year. To be conservative, the project team used a greater train length of ten cars in conducting the environmental analysis. Goods to be shipped would vary depending on the specific industries along the route, but would likely consist of steel, manufactured parts, and specialty chemicals.

There would be one notable difference between current rail operations and the proposed operations. Instead of the single existing through-route between Wheeler and the GCIA through McDonald and the southern part of the City of Moses Lake, as shown on **Exhibit 2.1**, the Build Alternative would add a second route between Wheeler and the GCIA located north of the City of Moses Lake. The existing route would still be usable.⁴ Service to the GCIA and to Moses Lake or McDonald on the same day would require separate trips from Wheeler.

The maximum speed on the line would be 25 mph. Trains would generally operate at or near the maximum allowable speed. Trains might operate at a lower speed in some areas depending upon conditions.

The following typical railroad practices would be implemented upon completion of construction:

- All track maintenance and inspection would be conducted in compliance with FRA standards.
- A bridge maintenance plan for the Parker Horn / Crab Creek crossing would be developed in compliance with FRA regulations.
- Machinery and equipment associated with the proposed operations would be checked regularly for fluid leaks.

⁴ A separate petition would need to be filed for the abandonment of any of the existing line, requiring a separate environmental analysis and a separate action by the STB.

- A contingency plan to minimize any impacts associated with emergencies, such as derailments or natural disasters, would be prepared.

What is the No Build Alternative and why is it included?

Pursuant to the Council on Environmental Quality (CEQ) regulations,⁵ a brief discussion of the alternatives that are being considered in this EA is required. The No Build Alternative describes what the baseline condition would be if the proposed project was not built.

Under the No Build Alternative, the proposed new rail lines (Segments 1 and 2) would not be constructed and rail service would continue on the existing CBRW system, serving customers on demand. The constraints on the existing line (Segment 3) related to size and weight of railcars could still be remedied if the line were rehabilitated as a separate project, so that newer, larger, and heavier railcars could be used in the future. Any rehabilitation of the existing line would likely be similar to what is currently proposed under the Build Alternative for Segment 3.

Under the No Build Alternative, there would be no rail service to the areas designated for industrial development along Wheeler Road (Road 3 NE) and next to the GCIA. Although opportunities for developing these areas would still arise as planned in the City's and County's comprehensive plans and zoning, without the proposed rail lines, development would rely on trucks rather than trains to haul products or supplies. The intention to develop these areas with rail-serving industries would not be met; therefore, industries that require rail access to be profitable would not be likely to locate in these designated areas. However, since the area is zoned and designated for industrial uses by the City of Moses Lake and Grant County, other industries could still locate there.

What other alternatives were examined, and why were they not carried forward?

Two feasibility studies, the *Moses Lake Railroad Task Force Feasibility/Cost Study (2003 Study)* and the *2006 Northern Columbia Basin Railroad Feasibility Study (2006 Study)*, were used as background data throughout the engineering analysis to develop and evaluate potential routes that would meet the current project's general goals.⁶

The *2003 Study* investigated alternative investment options that would move the rail line but maintain rail access to the GCIA and its industrial areas. Since that time, the purpose and need for the project has been refined to include

⁵ 40 CFR § 1508.9(b).

⁶ The *2003 Study* and the *2006 Study* are available upon request from the WSDOT Rail & Marine Office. Contact information is provided on the back of the title page.

access to other industrial land in the City of Moses Lake outside the GCIA. Accordingly, the *2006 Study* used the *2003 Study* as a basis for identifying rail alignments that would provide rail service to the Moses Lake industrial lands along Wheeler Road (Road 3 NE) and to the eastern side of the GCIA.

Public Alternatives

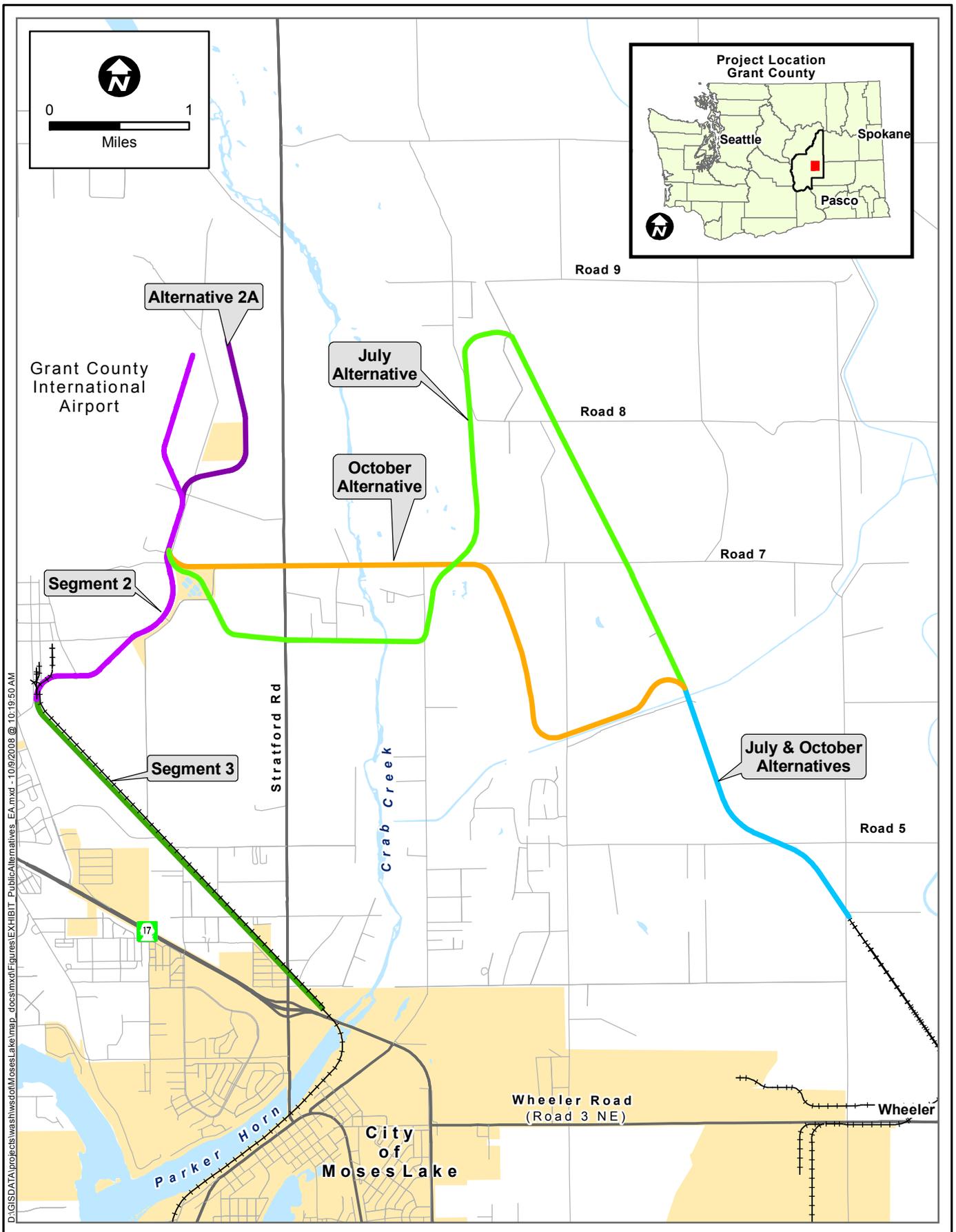
As part of the environmental review process, the Surface Transportation Board's Section of Environmental Analysis (SEA) and WSDOT held a Public Open House in the City of Moses Lake, Washington, on July 19, 2007. As a result, the public requested that the project team consider a northern route (referred to as the July Alternative) that would entirely bypass the existing developed area of Moses Lake. The suggested locations for a northern route varied and included constructing a rail line parallel to Road 4 NE (Cherokee Road), parallel to Road 7, or along the former Northern Pacific Railway (NP) Wheeler-Adrian railroad right of way.⁷ Based on these suggestions, the project team developed an alternative, known as the July Alternative.

July Alternative

The July Alternative would consist of approximately 9.7 miles of new track, and 4.9 miles of this alternative would be located within a former NP right of way. As illustrated in **Exhibit 3.4**, it would extend from a point near the eastern terminus of Segment 1 north of Wheeler, move north along the abandoned NP alignment, and curve down to the southwest at a grade of 1.7 percent to cross Crab Creek. The location of the creek crossing was selected to minimize disturbance to the creek and associated wetlands. The July Alternative would then ascend at a grade of 1.2 percent and travel westward to intersect Segment 2 adjacent to the GCIA. Segment 2 would still need to be constructed to provide access to the industrial lands to the south and east of the GCIA, and to connect to the north end of the existing line (Segment 3).

Segment 3 (the existing rail line) would remain in place; CBRW would retain the ability to operate this existing line. From a rail operations perspective, construction of this alternative might allow for an efficient service pattern, with trains moving northwestward, and then turning south along the south part of Segment 2 to connect into the existing rail system at Segment 3. For this reason, in comparing the July Alternative with the Build Alternative, the project team assumed that Segment 3 would remain in place and would continue to be used for rail services as part of the existing CBRW network.

⁷ The community of Wheeler is located at the eastern end of the study area; the community of Adrian is located approximately 18 miles north of Wheeler. The Northern Pacific Railway formerly operated a rail line between the two locations. Although that line has been abandoned and no right of way retained, some of the old railroad grade remains.



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October Alternative

The project team presented a comparison of the July Alternative and the Build Alternative (Segment 1 alignment) to the Port of Moses Lake and the Moses Lake City Council on October 23, 2007. No additional alignments were suggested at the Port of Moses Lake or City Council meetings. However, following the City Council meeting, an additional northern alignment was suggested by a member of the public. This alternative is referred to as the October Alternative.

The October Alternative would be 7.0 miles long, and 2.1 miles of this alternative would be located within a former NP right of way. As illustrated in **Exhibit 3.4**, it would extend from a point near the eastern terminus of Segment 1 north of Wheeler, move north along the abandoned NP alignment to the point where it crosses the Bureau of Reclamation's irrigation canal north of Road 5.6, then turn west and run along the north side of the canal to the edge of the bluff. At this point, the line would turn north and run along the hill, descending at a 1.35 percent grade to a point south of Road 7, where the line would again turn west and run along the south side of Road 7. From that point, the line would then travel westward to intersect Segment 2 adjacent to the GCIA. Segment 2 would still need to be constructed to provide access to the industrial lands to the south and east of the GCIA, and to connect to the north end of the existing line (Segment 3).

Segment 3 (the existing rail line) would remain in place; CBRW would retain the ability to operate this existing rail, even if the October Alternative was constructed. From a rail operations perspective, the construction of this alternative might allow for an efficient service pattern, with trains moving northwestward, and then turning south along the south part of Segment 2 to connect into the existing rail system at Segment 3. For this reason, in comparing the October Alternative with the proposed project, the project team assumed that Segment 3 would remain in place and would continue to be used for rail services.

Conclusions for both the July and October Alternatives

After evaluating the alignment alternatives, the project team found that neither the July Alternative nor the October Alternative would meet the purpose and need for the proposed project, which are to provide rail service to industrial areas in the City of Moses Lake as well as to the eastern side of the GCIA, and to enhance opportunities for economic development. In addition, both the July Alternative and the October Alternative would cross the Gloyd Seeps Wildlife Area, managed by the Washington Department of Fish and Wildlife, which would require extensive permitting and would likely require substantial mitigation. Finally, both the July and October Alternatives are based in part on the former Northern Pacific Railway alignment. Although that line has been abandoned and no right of way retained, some of the old railroad grade

remains. However, much of the alignment has been converted to other uses and the right of way would have to be acquired and the line constructed anew.

These two northern alternatives were also withdrawn from further consideration because they were the longest in length, and therefore had the largest impact areas. They would cross more public roads, thereby increasing the potential for accidents, and would require more land acquisition for the right of way. In addition, these alternatives would cross land that is primarily zoned for agricultural and rural residential uses, while the Build Alternative would cross land that is primarily zoned for industrial use. For these reasons, the July Alternative and the October Alternative were not carried forward for further review in this EA.

A summary comparison of each project alternative is provided in **Exhibit 3.5**.

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**Exhibit 3.5
Comparison of Alternatives**

	Public Alternatives				Build Alternative					No Build Alternative
	Segment 1		Segment 2			Segment 3		Existing		
	July	October	Segment 1	Alternative 1A	Segment 2	Alternative 2A				
Distance of line in miles	9.7	7.0	4.5	4.5	3.1	3.5	3.0			
Right of way acquisitions/relocations	Affected parcels: 24 Relocations: unknown Acres of right of way required: 58	Affected parcels: 24 Relocations: unknown Acres of right of way required: 58	Affected parcels: 21 Relocations: 1 business / 0 residences Acres of right of way required: 55	Affected parcels: 19 Relocations: 1 business / 0 residences Acres of right of way required: 55	Affected parcels: 17 Relocations: none Acres of right of way required: 38	Affected parcels: 18 Relocations: none Acres of right of way required: 45	The Port would purchase the existing railroad. No additional land would be required	No impact		
Compatibility with existing and planned land uses	Generally no (land is zoned mostly for agriculture and rural residential)	Generally no (land is zoned mostly for agriculture and rural residential)	Generally yes (land is zoned mostly for industrial uses)	Generally yes (land is zoned mostly for industrial uses)	Generally yes (land is zoned mostly for industrial uses)	Generally yes (land is zoned mostly for industrial uses)	No additional land would be required	No additional land would be required		
Acres of wetlands within the 100-foot right of way	0.9 acres	4.8 acres	6.27 acres	4.654 acres	None	None	None	None		
Acres of encroachment into the Gloyd Seeps Wildlife Area	7.2 acres	10.5 acres	None	None	None	None	None	None		
Number of water crossings	6 (5 irrigation canals and Crab Creek)	5 (4 irrigation canals and Crab Creek)	7 (1 drain, 5 canals, and Parker Horn)	7 (1 drain, 5 canals, and Parker Horn at the mouth of Crab Creek)	No impact	No impact	No impact	No impact		
Number of public road crossings	12	10	3	3	1	1	No impact	No impact		
Meets the Purpose and Need	No	No	Yes	Yes	Yes	Yes	Yes	No		

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