

Location: Connell, WA

Project Type: Rural

Applicant: City of Connell

Co-Sponsor: Great Northern Corridor Coalition

Type of Applicant: City Government

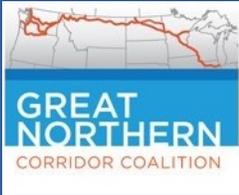
BUILD Funding Requested: \$16.6 Million

DUNS Number: 618129605

Website: [www.cityofconnell.com](http://www.cityofconnell.com)

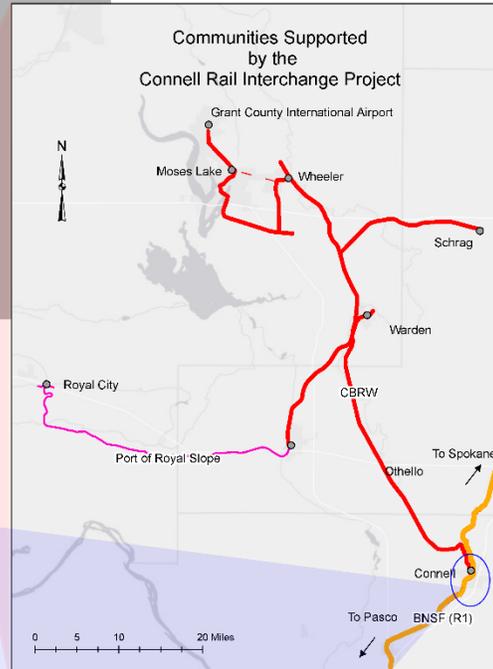
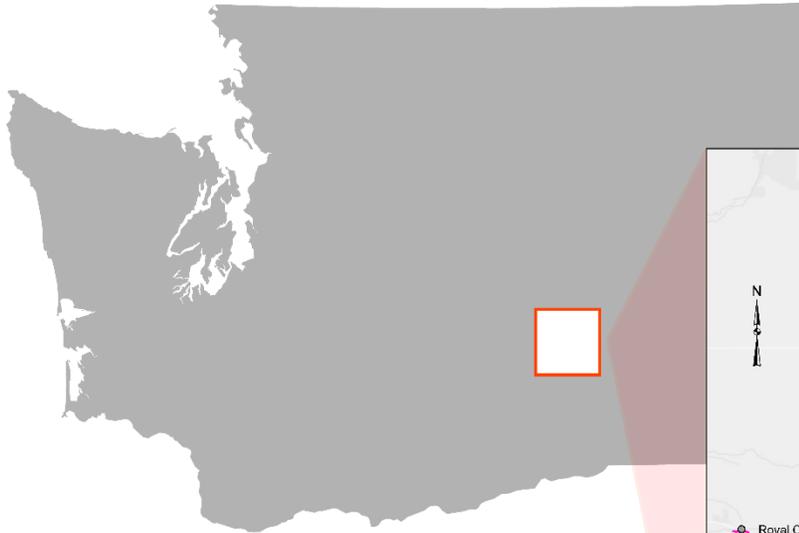
Contact: Maria Pena, City Administrator

104 E. Adams Street PO Box 1200 Connell, WA 99326-1200

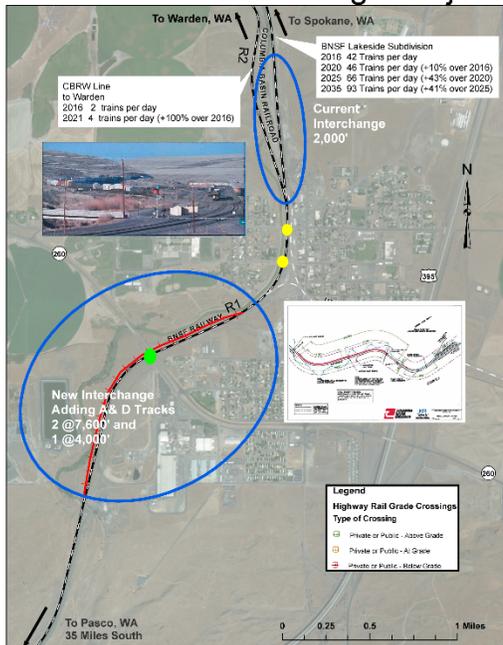




# Location Map for Connell Rail Interchange Project



## Connell Rail Interchange Project





## Coversheet

<b>Project Title:</b>	<b>Connell Rail Interchange</b>
<b>Project Location:</b>	Connell, Washington, Rural Area
<b>State, County, City and District</b>	Washington, Franklin County, Connell 4 <sup>th</sup> Congressional District WA State House and Senate District 9
<b>Demographics</b>	Population City of Connell (2017): 5,535 Population of Franklin Co. (2017): 92,125 Median Household Income (Connell): \$49,221 Persons Below the Poverty Level (Connell): 29.5 %
<b>Lead Applicant:</b>	City of Connell, Washington
<b>Co-Sponsor:</b>	Great Northern Corridor Coalition
<b>Applicant Type:</b>	Incorporated City
<b>Total Project Cost:</b>	\$28,700,000
<b>Total BUILD Request:</b>	\$16,600,000 (58%)
<b>Matching Support:</b>	\$12,100,000 (42%)
<b>Project Classification:</b>	Rural
<b>Benefit Cost Analysis</b>	1.3 at 7%

**Supporting Documentation Link:**

[City of Connell Connell Rail Interchange Webpage](#)





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# I. PROJECT DESCRIPTION

## OVERVIEW

The City of Connell and the Great Northern Corridor Coalition (GNCC) request \$16.6 million in federal funding to complete the Connell Rail Interchange project (the Project). This \$27.8 million Project will relocate, reconfigure and improve a critical rail interchange on the Great Northern Corridor (GNC) in rural Connell, WA where the Columbia Basin Railway (CBRW) enters onto the BNSF Railway mainline. The requested \$16.6 million in BUILD 2018 funds will be used to construct infrastructure improvements to meet 21<sup>st</sup> Century rail demands by re-locating and expanding the rail interchange outside of Connell to industrial lands south of the City. In addition to adding capacity and improving freight movement, this investment will relocate the rail switch yard away from Connell's residential areas, school traffic patterns and emergency response routes. This Project will increase the efficiency of delivering goods to market on the GNC, thereby reducing the cost of doing business and bringing new private investment along the CBRW line.

State and federal investments in rail infrastructure at the Port of Moses Lake, the Port of Warden and on the CBRR rail line are achieving their desired outcomes. Manufacturers are investing in upgrading and expanding facilities, agricultural producers are exploring new markets for their products (e.g. exports of hay), and Ports in Central Washington are responding to inquiries from new businesses. The Adams and Grant County Economic Development Councils are working to assist expansion of food processing, advanced manufacturing, technology and aerospace industries. The tree fruit sector is piloting new ways to get their products to domestic and international markets.

The Columbia Basin Railroad, which serves this vital rural region of Washington state, is working to keep up with demand from within its service area; however, in the end, all of its service must pass through the Connell Rail Interchange. Accordingly, the Connell Rail Interchange ultimately determines if rail investments at the Port of Moses Lake, the Port of Warden, the Port of Royal Slope and elsewhere will achieve their potential economic impact. Under the current yard configuration, the interchange limits the ability of new, and existing industries to move goods by rail to domestic and international markets. Investing in the new yard configuration, 1 mile south of the City center, will leverage the tens of millions of dollars invested in the CBRR service area in rail improvements, new rail, and private sector investments in plant and equipment.

In 2017, USDOT chose to invest in freight rail improvements at the Grant County International Airport in Central Washington. Investment in this Project will leverage the benefits of that project by eliminating a bottleneck in the freight supply chain to/from the Grant County International Airport's Industrial Center<sup>1</sup>.

The Project reduces train/vehicle blockages on the Great Northern Corridor that divides residential areas from the City's schools that are on the opposite side of the interchange yard.

The existing railyard configuration is outdated, undersized, inefficient and cannot accommodate today's modern train service requirements. The current yard configuration causes congestion at

<sup>1</sup> Northern Columbia Basin Rail Project received a \$10 million small project FASTLANE grant to reinstate rail service to Grant County International Airport and the adjacent Employment Center.





primary street crossings, bifurcates the city center and the main residential areas from local schools, and emergency services. It also creates a critical “pinch point” in serving both national and regional needs.

The City of Connell’s two primarily at-grade rail crossings: Clark Street (DOT Crossing #089686M) and East Adams Street (DOT Crossing # 089687U) are routinely blocked by the movement of the trains being switched into and out of this outdated and undersized interchange yard. In addition, more blockages occur because of the 42 BNSF (2016 data) trains that move daily through the City on the BNSF mainline.

Our three-county region needs to expand and modernize the Connell Rail Interchange to accommodate growing demands from local agriculture and manufacturers. The inefficiency of the interchange impedes mainline freight movement – the new interchange will improve operations on this critical national rail corridor.

The new rail interchange will improve the ability of BNSF and CBRW to complete the interchange of longer trains by reducing the time that interchange operations interfere with mainline flow and capacity. The planned improvements will facilitate better service and improve transit times for unit trains. Significantly, a reconfigured rail interchange will improve accessibility and safety for citizens and students by reducing conflicts at grade crossings within Connell. The project will deliver improved service, efficiencies and safety on the Great Northern Corridor.

**The Transportation Challenges:**

**Challenge 1: Safety and mobility are compromised because the rail lines divide Connell**

The current configuration divides the City of Connell (see Exhibit 3). To the east are emergency services, commercial and most of the residential areas; and, to the west, is a school complex, including (clockwise from the North) Connell Elementary School, Robert Olds Junior High, and Connell High School and a school administration building. *More than 64 school buses cross the two at-grade crossings per day.* Current projections show that the mainline traffic on this subdivision of the GNC will increase from 42<sup>2</sup> trains per day in 2016 to 46 trains per day by 2020. *This is expected to increase to 93<sup>3</sup> trains per day by 2035.* The new interchange will reduce the current and future conflicts between the through trains on the GNC and trains moving to and from the CBRW.

**Challenge 2: The century-old rail infrastructure is not adequate to meet today’s needs for nationwide freight movement and system reliability.**

The current interchange is limited to exchanging approximately 2,000 feet of train lengths without significant delays to automotive traffic and the railroad. The 2,000’ length can handle a 31-car train with two locomotives. However, the typical daily train interchanged today at Connell is 44 cars long, creating the need for short movements, slowdowns and blockages. At least 50% of the time one or both of the railroads are unnecessarily delayed or experience inefficiencies because of the current constraints at the interchange.

Photos in Exhibit 1 and 2 will illustrate the existing conditions and challenges:

Exhibit 1 shows the existing small interchange which is only 400 feet from primary street

<sup>2</sup> Washington Ports Forecast 2017, Aug 31,2017 BST Table 6-1: Three Day Average Train Volumes pg. 108.

<sup>3</sup> *ibid.*





crossings. The short length of the old interchange can only accommodate 25-30 train cars. Consequently, unit trains must be broken into four, or more, segments. Each of these changes entails blocking main street crossings. Exhibit 4 is a closer look at the movement through the interchange a few minutes later when all three trains are closing in on the Clark Street Crossing.

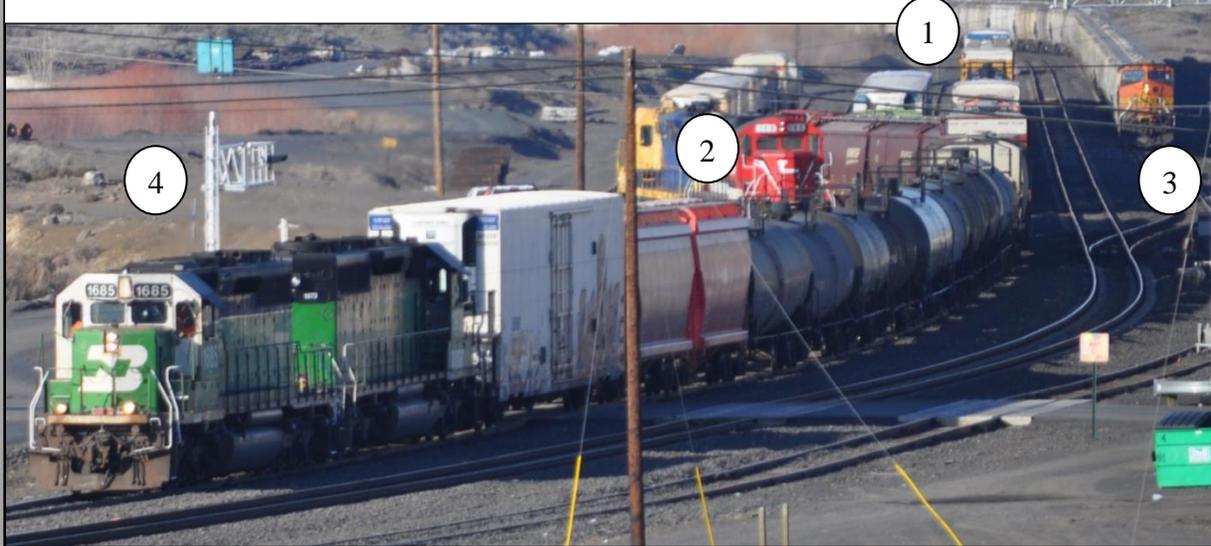
*Exhibit 1: View of the Connell Interchange in Action*

Photo 1 Looking North toward the interchange from Clark St (Crossing # 089686M) Connell, WA #1= two string of cars in the yard, #2 is the CBRW arriving off the CBRW short-line, #3 is the BNSF mainline



*Exhibit 2: Photo 2 shows the same site with the rail congestion that occurs as multiple (3) trains approach the area.*

Photo 2: A few minutes later when three trains are approaching the rail crossing, including a new train (#4) which is pushing cars back into to the yard off the BNSF mainline, next to the two railcar strings (#1).



### **Current Operations and Interchange at Connell**

BNSF and CBRW interchange rail cars in Connell. Typically, each railroad operates a train to Connell, with both trains attempting to arrive simultaneously to exchange rail cars. BNSF operates a train along the GNC from Pasco called the “Connell Turn” that delivers cars to CBRW and switches cars for local BNSF-served industries between Pasco and Connell. CBRW





originates a train at the Port of Warden that delivers cars to BNSF and provides service to rail shippers in Bruce.

In Exhibits 3 & 4, the CBRW train can be seen arriving from the CBRW line on to the BNSF line. The BNSF train, on the right, is moving through Connell on the BNSF Mainline. The two train sets in the middle (highlighted in the circle) are in the current interchange yard.

The interchange of cars occurs on BNSF track at Connell. BNSF has a 5-track yard approximately 0.4 miles long, and a 1.5-mile-long controlled siding. These are all located east of the switch where the CBRW connects with BNSF. The CBRW main line comes east – down a 1% grade to reach the interchange with BNSF at Connell. BNSF’s Lakeside Subdivision has a descending westbound grade of up to 0.7% in Connell.

**The current interchange yard at Connell was not built to serve as an interchange between two separate railroads.** The rail line that is now owned by CBRW (entering from the left on Exhibit 1 and 2) was originally built by Northern Pacific, BNSF’s predecessor, as a branch line off their GNC Spokane-Pasco main line. **Nor was the interchange constructed with the concept of unit-train volumes in mind.** Instead the current yard was intended for staging only 25 to 30 car trains.

### *21<sup>st</sup> Century Rail Transportation Needs*

Reconfiguring and expansion of the Connell interchange is needed for CBRW to improve, and modernize, service to growing agricultural producers and manufactures in the region. The reconfiguration will improve reliability and lower operating costs, enhancing the competitiveness of freight rail along the Great Northern Corridor. A primary goal of the project is to enable long trains operating westward on BNSF’s Lakeside Subdivision to be interchanged to the CBRW without the need for breaking the train apart, time-consuming switching, or extensive roadway grade-crossing blockages. The interchange reconfiguration will allow for operations such as switching arriving BNSF trains, or repositioning or reconfiguring motive power, to occur without blocking the BNSF Lakeside Subdivision main line.

The interchange reconfiguration will allow for the simultaneous accommodation of an inbound and an outbound train between BNSF and CBRW, without one blocking the path of the other. The minimum number of tracks required for this type of operation is three, with a clear length of 8,600 feet (7,500 feet minimum) each. This configuration will enable unit trains, with a typical length of 7,400 feet, to arrive or depart from any track, with adequate stopping and clearance distance in each track.

### **Challenge 3: Freight movement vital to the region’s economy is impaired because there is no direct northbound connection from the BNSF line to the CBRW line.**

The introduction of inbound unit trains of canola seed in late 2013 placed additional capacity demands on the Connell interchange. The unit trains originate in south central Canada and operate through Spokane on the GNC. The canola is destined for the Port of Warden. Because of the outdated track configuration at the Connell interchange, BNSF runs the unit canola trains from Spokane *past* Connell to BNSF’s yard in Pasco. There, the operating-end of the train is moved from the west to the east end of the train, and the train travels back to Connell to be interchanged with the CBRW for final delivery to Port of Warden. This allows the unit trains to enter CBRW directly from the BNSF line without the need to switch at Connell. The train then proceeds to the Port of Warden for final delivery.





The same route must be replicated in reverse for empty unit trains returning from the Port of Warden as it comes off the CBRW on to the Great Northern Corridor. In this case, the train is taken 35 miles west of Connell to Pasco before changing direction to ultimately return for reloading in Canada. This adds unnecessary costs to the shippers that will be eliminated with the completion of this Project.

BNSF must operate unit trains in this fashion because the current configuration of the Connell interchange cannot handle an easy transition of unit trains from the North to the CBRW line that serves the Port of Warden. Additionally, the BNSF Lakeside Subdivision's train frequency is too great to allow a 110-car unit train to block the main line for any extended period to allow for a change in operating ends and reconfiguration of power.

**The inefficiency of this interchange adds about 70 additional miles to each unit train move. The new interchange will alleviate this deficiency and allow efficient moves by unit trains coming from either direction.**

#### *Challenge 4 - The current interchange increases congestion and is unsafe*

The current 42 trains/day on the BNSF mainline, when combined with the inefficient movement of CBRW trains adds significant delays for motorists at crossings in Connell. It is anticipated that by 2035 a total of 93 trains/day will transit through the area on the BNSF mainline through this area. In addition, more than 64 school buses per day must cross the two Connell at-grade crossings. The challenge is magnified because many of the switch moves over these two grade crossings are performed with a shove move; where rail cars are pushed over the crossing without the enhancement of the locomotive's lights, horns, and bells. These crossings are currently equipped with only shoulder-mounted lights and gates. A new configuration will eliminate the need for trains to be shoved across the two City of Connell at-grade crossings and will allow the two railroads to conduct timely train inspections away from areas prone to congestion and delay.

#### *The Solution to the Transportation Challenges - A new interchange south of Connell*

##### *The Goals for the project include:*

- Allow unit trains (up to 7,500' length) traveling on BNSF line from either direction to enter the new interchange without the need for reverse movements or the need to "break" the trains into smaller segments.
- Allow interchange related operations, such as removing or reconfiguring power, to take place clear of the BNSF mainline track.
- Allow the BNSF or CBRW to stage a train for interchange without blocking arriving or departing trains. This requires at least three parallel tracks.
- Reduce the duration of train disruptions at the Adams and Clark Street at-grade crossings.

This Project will result in improved railroad operating efficiencies by increasing train velocities, reducing train delays and increasing the rail network capacity.





Exhibit 3: Map of Project

## Connell Rail Interchange Project

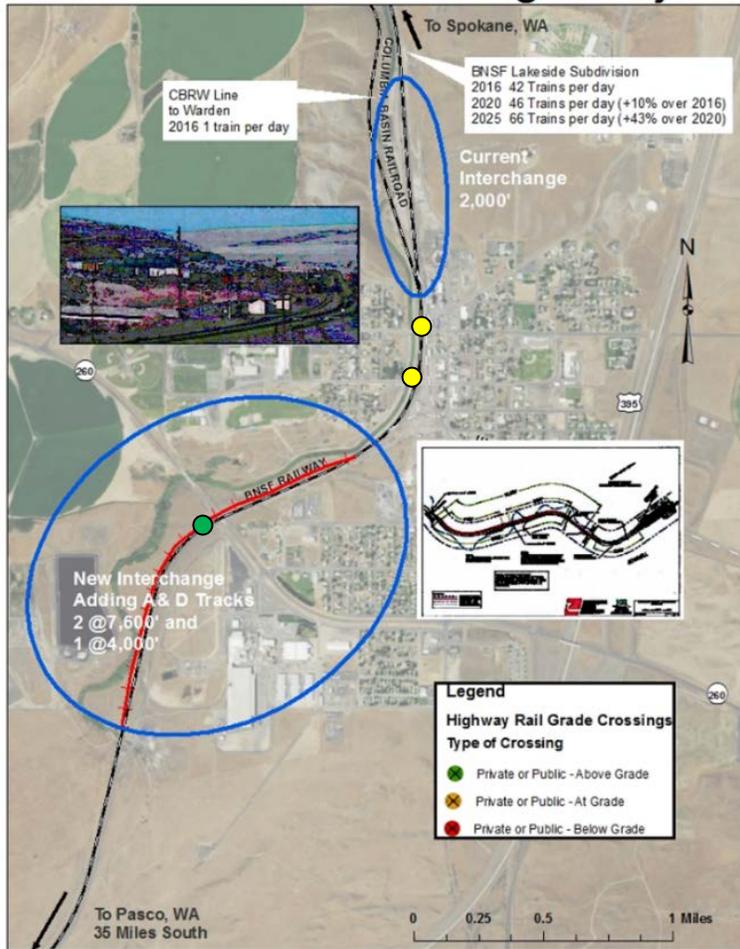


Exhibit 4 displays the proposed modern rail interchange. The interchange is along the Great Northern Corridor mainline and will be located approximately 1 mile south of the existing interchange in Connell.

The South Alternate is positioned parallel to existing BNSF main track between MP 112.55 and MP 110.45. It connects to the main track at MP 112.55 and 110.65 using #15 turnouts. It includes two 7500-foot capacity tracks and one 3600-foot capacity track. A track extension (lead track) between MP 110.45 and 110.65 will be used by the CBRW to reach the existing BNSF Auxiliary tracks. This allows for interchange movements to take place clear of BNSF signalized track. Actual track capacities are: Track 1 = 7,600 feet,

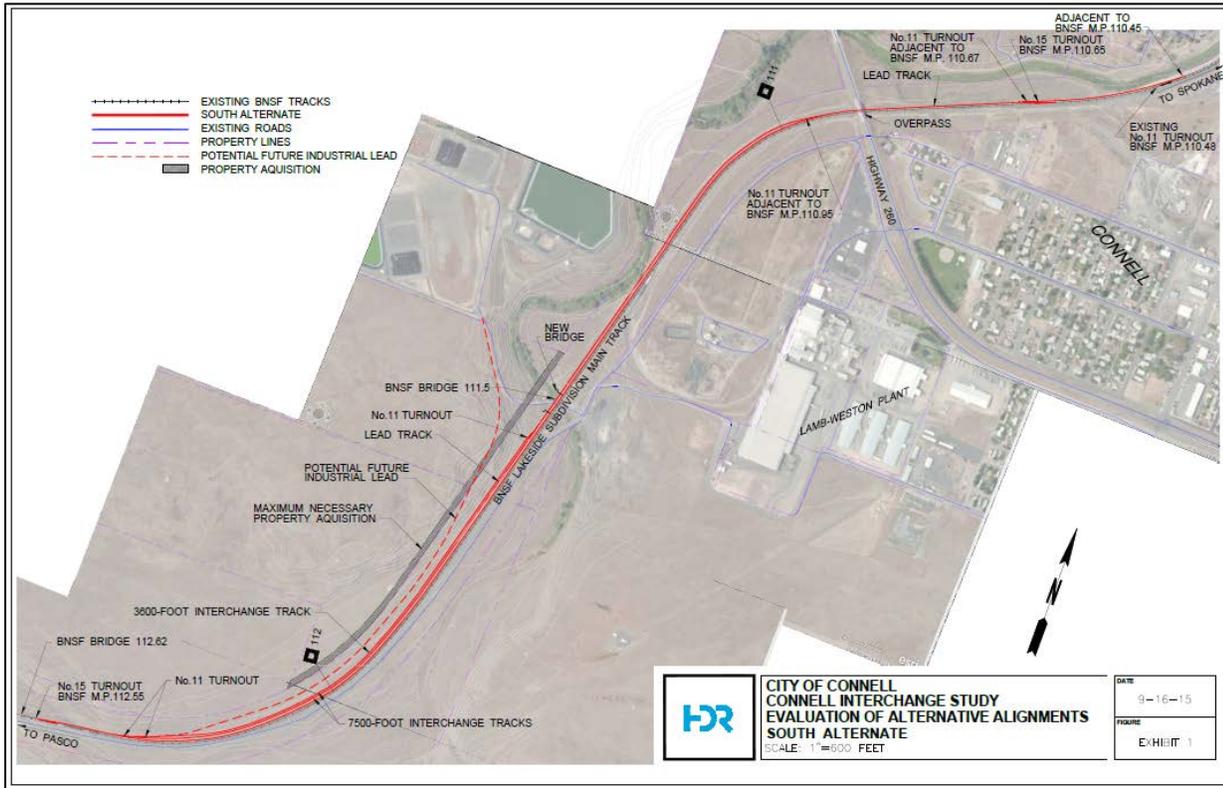
Track 2 = 7,550 feet, and Track 3 = 4,000 ft. (As per the 30% Plans).

The new rail interchange would be operated as a joint facility of the BNSF and CBRW. Accordingly, the new interchange will be used by both railroads under an operating agreement to be developed upon project funding. The operating agreement will be structured to improve operating efficiencies and to achieve mutual goals for rail traffic flow and safety.





Exhibit 4: Relocated Interchange Yard



### History of the Project

In March 2015, a Washington State Community Economic Revitalization Board (CERB) Planning Grant, was awarded for initial design work for the new rail interchange. This funding allowed for design elements to be developed, which reinforced the benefits of the project. Later that year, the State Legislature awarded \$10 million towards further design, permitting, and construction of the project.

### Current Status

Preliminary engineering design (30%) was completed in May 2018. Sixty percent design (Appendix H) was just completed and reviewed in July by BNSF and WSDOT. Ninety percent design is anticipated later this year. BNSF has started identifying permit requirements and application processes. See Project Readiness Section V for more details. Construction is targeted to begin Summer of 2019. The goal for project completion is Summer 2020.

### Related Rail Infrastructure Projects

Washington State also designated \$2 million for **Port of Warden Rail Infrastructure Expansion**. Their project increases rail capacity and improves service by adding 1 mile of storage siding track to support their industrial properties. In addition to the canola seed crushing facility that receives unit trains, the Port of Warden has attracted other businesses, including fresh food processing for frozen and dehydrated food products and necessary warehouse space. The new businesses have leveraged existing rail capacity, making the additional rail storage track essential for maintaining efficient operations on the CBRW.





**Port of Moses Lake’s Northern Columbia Basin Rail Project**, which will be served by the CBRW was recently awarded a FASTLANE 2017 small project grant of \$10 million to complete their \$31 million rail project. The project will extend rail service to the industrial areas around the Grant County International Airport.

Columbia Basin Rail Road been actively investing in their line. For the years 2012 – 2018 (2018 estimated) they will have installed over 55,000 ties (cross ties, switch ties, bridge ties) and changed out 4.5 miles of rail (112-115 lb. rail, approximately 1.5 miles to be completed this fall), completed numerous crossing rehabs and bridge repairs, and other routine daily maintenance and inspections all at a cost of approximately \$12,950,000.

## II. PROJECT LOCATION

The Connell Rail Interchange is in the City of Connell in eastern Washington. Connell is on the Great Northern Corridor, where the Columbia Basin Railroad (CBRW) line intersects with BNSF Railway (BNSF). Located in Franklin County, just off U.S. Highway 395 in sunny southeastern Washington, historic Connell embodies the best of small town America. According to the U.S. Census Bureau, Connell is in a rural area, common to Eastern Washington.

### Rail-Specific Location

The project, referred to as the “South Alternate”, is positioned parallel to existing BNSF main track between MP 112.55 and MP 110.45. It connects to the main track at MP 112.55 and 110.65 using #15 turnouts. In addition, a track extension (lead track) between MP 110.45 and 110.65 will be used by the CBRW to reach the existing BNSF. The Connell site provides access to a wide three-county region with abundant agriculture and industry.

*Exhibit 5: Site of Rail Project*



### Geospatial Data:

- East (north) end:
- Latitude: 46°39'33"N
- Longitude: 118°51'56"W
- West (south) end:
- Latitude: 46°38'14"N
- Longitude: 118°53'32"W

Connell is located at MP 110 on BNSF’s 149-mile Lakeside Subdivision, which connects Spokane and Pasco, Washington. Both Spokane and Pasco are railroad articulation points of regional and national significance along the GNC, with multiple lines converging on both cities. The Lakeside Subdivision is a segment of high-density freight main line that funnels traffic between the Midwest and Pacific Northwest. This GNC main line is one of six “transcontinental” railroad lines in the U.S., that connect Central U.S. railroad hubs such as Chicago, St. Louis, Kansas City, Memphis, and New Orleans with the west coast urban areas and major ports of Seattle/Tacoma, Portland, San Francisco/Oakland, and Los Angeles/Long Beach. The BNSF main line is one of two main lines which provide direct connectivity between Chicago and Seattle/Tacoma and Portland. The other is the Union Pacific





(UP) main line that enters Portland from the east and goes north to Seattle/Tacoma.

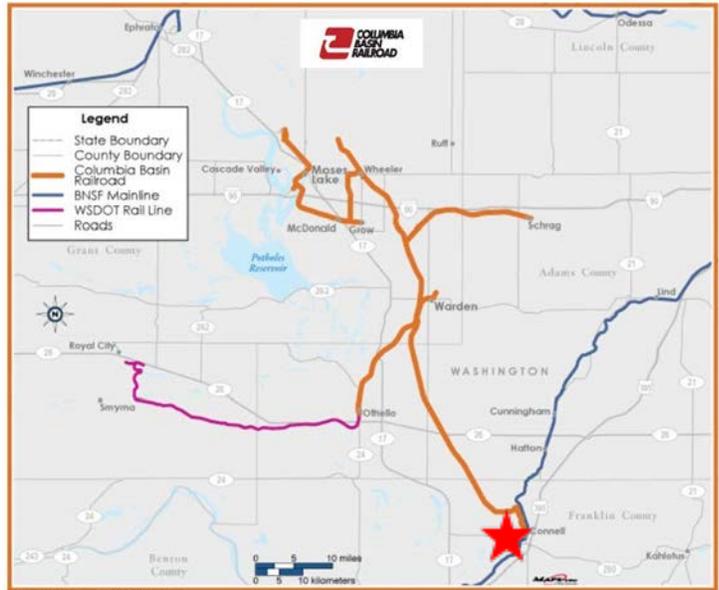
Exhibit 6: Great Northern Corridor



This importance of this request is reinforced by the regional and national significance of this project. The project is included in two recently completed statewide freight/rail studies (discussed herein) and the GNCC's two-phased Multi-State Planning and Development Study. <http://greatnortherncorridor.org/study/>

The CBRW line is the life line between producers and manufacturers in Grant and Adams County in Central Washington (see Exhibit 7). The ability to provide service to the CBRW service area is constrained by the capacity to move cargo through the Connell Rail Interchange. As the constraint worsens, the communities served by the CBRW are increasingly cut off from both domestic and international markets. Further, the inefficiency of the BNSF Mainline and the CBRW causes increased congestion along the BNSF Lakeside Division, which impacts the efficiency of the rail movement along the entire northern tier of the US from Puget Sound to Chicago.

Exhibit 7: CBRW and BNSF Connections





### III. GRANT FUNDS, SOURCES AND USES OF PROJECT FUNDS

*Exhibit 8: Project Costs:*

Use of Funds		
Project Budget	in Millions	%
CN	\$22.5	79%
FE/ CN Engineering	\$1.6	5%
Prior costs	\$0.1	
Contingency	\$4.5	16%
<b>Total Cost</b>	<b>\$28.7</b>	<b>100%</b>

Project costs reflect the update to the 60% design level completed in July 2018.

*Exhibit 9: Funding Source*

Project Funding	in Millions	%
Federal Request	\$16.6	58%
Local Match	\$12.1	42%
	<b>\$28.7</b>	<b>100%</b>

The plan for full funding for this important project includes commitments from both state, local and federal parties. The project cannot be fully funded from state and local sources. The project does include participation from project beneficiaries and sets realistic expectations for costs and benefits. The Connell Rail Interchange project is a prime example of the value of public infrastructure combined with private investment to achieve economic development, safety improvements, and regional growth.

This funding request of \$16.6 million in BUILD 2018 funds will allow this project to be completed in a timely manner to support the transportation needs of both the region and the nation.

The project did receive initial funding from the Washington Community Economic Revitalization Board for initial planning and design engineering.

**Washington State Legislature has committed \$10 million** from the 2015 *Connecting Washington* funding program. The Connecting Washington program is a multi-year, \$16 billion investment in Washington’s transportation system. The commitment in Connecting Washington demonstrates that the state recognizes the regional, and national, benefits of the project. See Appendix C.

The requested BUILD 2018 grant will complete the funding necessary to construct the project. This is an appropriate federal contribution because much of the benefits accrue to the movement of freight across the nation through the GNC. The Nation also benefits from the ability to move U.S. agricultural products to both domestic and international markets in a timely and efficient manner. The state and local contributions reflect the benefits in economic growth in Central Washington.





Exhibit 10: Sources and Uses of Funds

CONNELL RAIL INTERCHANGE PROJECT			
Funding Sources	Amount in Millions	Status	Use
City of Connell/ Local	\$ 0.1	Committed	PE
FMSIB	\$ 2.0	Requested	Construction
Connecting WA	\$ 10.0	Committed	FE, Enviromental, and Construction
Federal BUILD 2018	\$ 16.6	Requested	Construction
<b>Total Project Funding</b>	<b>\$ 28.7</b>		

Source	Total Project Cost	
	in Millions	%
Total Federal	\$16.6	58%
Total Local	\$12.1	42%
<b>Total Project Funding</b>	<b>\$28.7</b>	<b>100%</b>

*Reduced Delivery Delays* can be achieved with Federal aid in this funding round. If the Project is not funded in this round, the project has a risk of losing the Connecting Washington (CWA) appropriation. The CWA funds are available this biennium (2017-2019). If federal funds to complete the project are not secured by December 2018, this project will have to request the State funds be re-appropriated into the next biennium (2019-2021). Project phasing has been considered and found not to be a good option as it would not provide any utility until both phases were completed. Phase I would be sitework only (\$18 M). Phase II would place the rail and install the signals (\$10.7M). It would also increase the cost of the Project due to the additional costs in remobilization.

## IV. CRITERIA

### Merit Criteria

#### a. Safety

The new interchange will improve multi-modal safety by decreasing train congestion and switching that result in blocked intersections. It will improve Emergency Response times to schools and residences on the west side of Connell by reducing blockages along the BNSF mainline rail crossing that bifurcate downtown. The two at-grade crossings are often both closed for an average of 10-15 minutes and up to 20 minutes at a time during the switching of the trains in and out of the current yard. This causes traffic to back up into downtown Connell, blocking all other streets in the center of Connell.

The FRA reports that both E Adams and Clark streets have 26% truck traffic. These closures not only cause freight delays, but also exacerbate the safety issues and emergency response delays.





The use of rail to support agricultural producers north of Connell will reduce the number of truck related accidents in the region.

Although this Project does not close either of the affected at-grade crossings, reducing the wait time at these crossings will reduce the chance that pedestrians or motorists will try to unsafely cross this active rail line. Based on current rail traffic levels, the rail crossings are blocked 2.1 hours per day due to mainline rail traffic. With no change, this is expected to increase to 3.9 hours per day as rail traffic on the mainline increases to 2035 projected levels.

The problem is magnified by adding in train blockages caused by switching movements that can close the crossings for an additional hour on a busy day.

**Safety benefits are estimated at \$4.7 million** in total social benefit due to 0.57 lives saved over the 20 years after project construction is completed. These benefits are based upon the reduction of potential fatalities resulting from diverting freight from trucks to rail along the 432-mile sample route. The reduction of potential fatalities has been monetized; however, the social benefits of preventing other less severe accidents has not been monetized.

Diverting more freight from truck to rail will result in fewer accidents involving trucks and automobiles on local roads and highways. It will foster a safe, connected, accessible rail transportation system for the multimodal movement of goods and people.

To summarize, the reduction in blockages in Connell will improve emergency response times and reduce vehicle accidents by those trying to “beat” a train. Additionally, the diverting freight from trucks to rail will improve safety on local roads and highways, reducing accidents and possible fatalities.

**b. State of Good Repair**

The new interchange reconfiguration will allow for the simultaneous accommodation of an inbound and an outbound train between BNSF and CBRW without one blocking the path of the other. The current yard configuration is limited to exchanging approximately 2,000 feet of trains without significant delays to vehicular traffic and the railroads themselves. Based upon an average length of 60 feet, this equates to approximately a 31-car train with two locomotives.

The typical daily train, not including the unit trains, interchanged is 44 cars long. At least, 50% of the time, one or both railroads are unnecessarily delayed or experience inefficiencies at the interchange. In addition to these average train lengths, a 110-car unit train with canola seed arrives every three weeks to bring raw material to the Pacific Coast Canola (PCC) Plant in Warden. It is anticipated that as the PCC production continues to grow, the train frequency will also grow. Today, a unit train must travel 35 miles west before being reconfigured and driven back 35 miles to Connell. Once back in Connell, the train needs to be broken apart into shorter strings of cars that fit into the track lengths in the current yard. This is time-consuming, costly and causes extensive roadway grade-crossing blockages.

One of the primary goals of the project is to enable unit trains operating westward on BNSF’s Lakeside Subdivision to be interchanged directly to the CBRW in Connell without having to transit 35 miles south to Pasco and then return over that same 35 miles back to Connell. In addition to removing those extra miles, the reconfigured yard will be able to hold the 110 car trains without the need to break the train into sections while it is awaiting an interchange between the mainline and the shortline.





To accommodate unit train interchange, a minimum of three tracks are required with a clear length of 8,600 feet (7,500 feet minimum) each. This configuration will enable unit trains, with a typical length of 7,400 feet, to arrive or depart from any track, with adequate stopping and clearance distance in each track. This project will achieve such reconfiguration; improving reliability, lowering operating costs, and enhancing the competitiveness of freight rail along the Great Northern Corridor. The interchange reconfiguration will allow for operations such as switching of the arriving BNSF trains, or repositioning or reconfiguring motive power, to occur without blocking the BNSF Lakeside Subdivision main line (which currently has 42 trains per day and is anticipated to grow to 93 trains per day by 2035).

Historically, secular GDP growth in the U.S. adds 1.5% to 2% annual growth in railroad freight traffic. Over the 25-year period of 2010-2035, freight traffic in Washington is likely to increase by a factor of 1.65 independent of growth in import/export traffic. Accordingly, if the Connell interchange mirrors national patterns, it would be expected to have traffic growth of 1.65 times current volumes by 2035. If the interchange is not relocated and expanded, it is likely this freight traffic will be moved by truck. If this occurs, then there will be more trucks on the region's roads, requiring additional investment in maintenance and repair.

The increased rail capacity for the regional network will provide the regional shippers with transportation options. It is anticipated that there will be a reduction of 46 million truck miles because of the increased rail capacity resulting from the Connell Rail Interchange project. This is a total savings in road maintenance of \$5 million over the 20-year post-construction analysis period. With the new interchange, both CBRW and BNSF can handle increased freight volumes, diverting more from trucks to rail. That, in turn, keeps the cargo off local roads and highways, reducing maintenance and upkeep costs.

**c. Economic Competitiveness**

Economic Competitiveness benefits are calculated by monetizing the reduced operational costs to the shipper by diverting from truck to more cost-effective rail transportation. The estimated operational cost savings based upon the differential cost savings of \$0.071 per ton/mile (before fuel costs) totals \$32 million over the analysis period. The analysis anticipates that the interchange will provide additional rail capacity to the CBRW service area, leading to growth in existing, or new, rail dependent industries along the CBRW line.

The economic value of the goods and services from Agriculture and Food Processing in the three-county area (Adams, Franklin, and Grant County) served by the Connell Interchange exceeds \$3.55 Billion.<sup>4</sup> There are 7,323 jobs in agriculture and food processing in the Columbia Basin that will benefit by improved rail infrastructure at the Connell Rail Interchange.

The Connell interchange is a “pinch point” encumbering the region and the nation to meet both the expected increases in volume, and to grow the value of Eastern Washington goods and services. Replacing the interchange is a high priority need, allowing for the anticipated growth, in the nation, for commodities and goods traveling east and west – across the nation.

The CBRW is a critical lifeline for commerce in the region. If a rail line, like CBRW, deteriorates to an unusable condition, and cannot meet the Class I railroad (BNSF) connection requirements, shippers will bear significant private costs to divert to trucks. Additionally, they

<sup>4</sup> [http://agr.wa.gov/AgInWa/Crop\\_Maps.aspx](http://agr.wa.gov/AgInWa/Crop_Maps.aspx)





will risk loss market share due to both costs, and constraints on truck movement.

**The CBRW is vital to the economic prosperity of rural Central Washington.**

*Exhibit 11: Freight Rail Corridors in Washington State*



The inability for CBRW to efficiently, and safely, connect with the BNSF line increases both private and public societal costs to Washington residents and shippers. The project will allow the CBRW to bring more efficient service to current, and future industries in Central Washington. According to a recent Washington State Freight and Goods Transportation System report published by the Washington State Department of Transportation (WSDOT)<sup>5</sup>, the CBRW is an "R2" Freight Rail Corridor, which handles 1 million to 5 million tons per year. The report shows the Columbia Basin Railroad as the busiest short line in Eastern Washington. The Connell Rail Interchange is a critical rail connection point that

impacts the entire mainline corridor, the region, our businesses, and citizens. The CBRW provides first mile connectivity between rural agricultural production areas and the main line rail transcontinental networks so that Washington State farmers, manufacturers and other sectors have access to national and global markets.

The project will:

- *Decrease transportation costs in this rural area of Washington state for both the rail users and the local citizens*

By shifting the interchange south 1 mile out of downtown Connell, the Project will remove excess switching of the railcars into and out of the current out dated yard. As noted above, the current yard configuration does not allow a full train to be staged while awaiting either the BNSF or CBRW hook on their engines to transport the full train to its next destination. This inefficiency in the current layout of the yard increases transportation costs for: 1) the users of the mainline because of the delay/ blockage of the mainline that is caused while a train is placed or removed from interchange yard 2) the users of the CBRW shortline because increased time (cost) is required to position the train to move on or off the CBRW line, 3) local citizens and visitors because of the train blockages on two at-grade crossing in downtown Connell. The rail lines bifurcate downtown Connell from the westside where the schools and outside recreation fields are located.

The rail line blockages cannot be planned for because there is no schedule for these train movements. This adversely impacts resident's reliability and timely access to their job, schools, and downtown Connell.

<sup>5</sup> [www.wsdot.wa.gov/Freight/FGTS/default.htm](http://www.wsdot.wa.gov/Freight/FGTS/default.htm)





- Improves long-term efficiency, reliability and costs in movement of workers and goods

The mobility improvements for both freight and people resulting from the relocation and modernization of the interchange yard will improve long-term efficiencies in mobility of both road and rail users. It will improve the reliability and decrease the time each user has to wait at the two at-grade crossings while trains are passing through, or interchanging, in the City. The new location will significantly reduce this conflict; however, it will not eliminate it entirely because of the need to accommodate through trains on the BNSF mainline. Delays caused by the switching into the interchange yard will be eliminated for these two crossings.

- Increases economic productivity on the adjacent land as well as provides improved service to all rail users along the CBRW line

The improved productivity at the interchange point will provide additional capacity to the CBRW to service current and new customers along the shortline. This added capacity will encourage other rail dependent users to locate on the CBRW line where available land is ready for development and can be supported by the available workforce of the region.

- Improved efficiencies will result in long-term job creation and other economic opportunities along the CBRW line

The economic value of goods and services from Agriculture and Food Processing in the three-county area (Adams, Franklin, and Grant County) served by the Connell Rail Interchange exceeds \$3.55 billion. There are over 7,400 jobs in agriculture and food processing in the Columbia Basin service area that will benefit from the completion of the improved rail interchange in Connell. The Connell Rail Interchange is a pinch point encumbering the region and nation in meeting increased needs for freight volume nationally, and to grow the value of Eastern Washington goods and services. The CBRW is a critical transportation lifeline for agricultural producers, food processors and the growing manufacturing sector in the region. If the CBRW cannot efficiently interchange trains with its BNSF partner, then this vital economic region, and industries are at risk. Replacing the interchange is a high priority project to meet current and future growth, for both industries sited on the CRBW line as well as those products moving by rail to Washington Columbia River and Puget Sound Ports.

The project will bring new economic opportunities to the region. The CBRW provides service to three Grant County inland ports that all have reasonable priced available lands ready for development.



**Port of Warden:** In 2006, as part of the State’s Energy Freedom program, the Port of Warden, received two ten-year, low-interest loans totaling \$3.3 million through the Washington State Department of Agriculture to help develop an in-state biodiesel industry based on Washington-grown oilseed. The Port partnered with Washington Biodiesel, LLC, of Seattle, Washington, on a project that would construct a canola crushing facility and a biodiesel production and glycerin refining facility in Warden, which could produce 35 million gallons of biodiesel annually. The Port used the Energy Freedom program loan proceeds to finance the acquisition of land and grain silos, which it then

*Exhibit 12: Pacific Coast Canola Plant in the Port of Warden*





leased to Washington Biodiesel, and to help finance the construction of a new electrical substation, which would provide power to the new facility. In 2007, as part of project financing, Washington Biodiesel transferred its assets to a newly established company called Home Grown Oil and began using the business name Pacific Coast Canola (PCC). Construction of the crushing facility began in summer 2011 and the first canola was crushed in December 2012. The canola crushing facility, makes canola oil available for biodiesel production. The biodiesel production can be produced at the site when feasible.

The PCC facility is served by the CBRW which delivers full unit trains consisting of 110-cars of canola from Canada for processing at the facility. This same rail loop is used to outload the processed oil and meal for deliver to manufacture and farms in Washington state.

Port of Warden’s successful partnership with Pacific Coast Canola (PCC) is but one example of how this region is position itself in innovative ways to bringing jobs to the local communities.

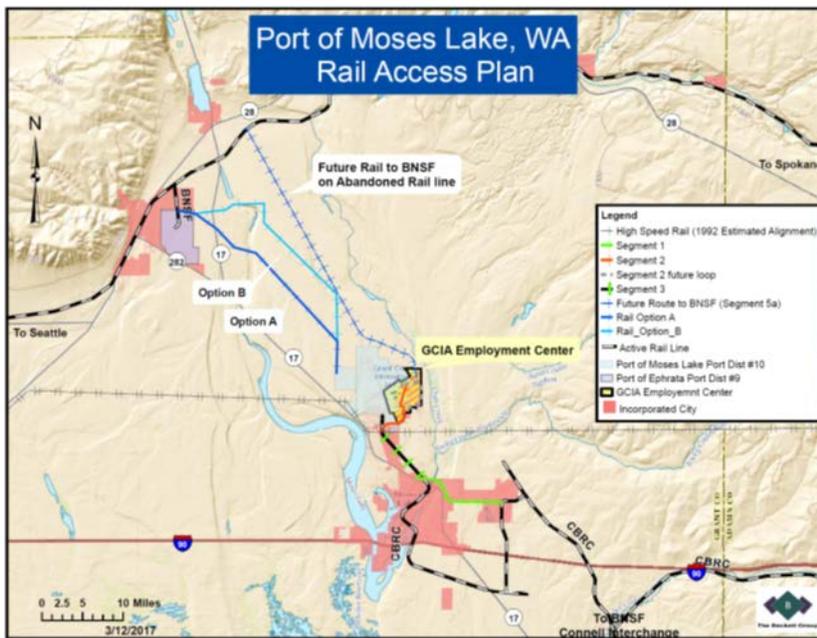


Exhibit 13: Port of Moses Lake Long-term Rail Access Plan

The **Port of Moses Lake** is moving forward to build out the Grant County International Airport (GCIA) Employment Center that will be serviced by the extension of the CBRW operated rail line. The Northern Columbia Basin Railroad Project (NCBRP) will restore rail service lost in 2009, to Moses Lake, the Grant County International Airport, the Wheeler Corridor and industrial lands available for development at the GCIA Employment Center. The NCBRP will bring rail service to more than 1,000 acres of industrial lands

along the Wheeler Industrial Corridor and 1,250 acres of industrial lands at the GCIA Employment Center. It is estimated that the GCIA Employment Center alone will bring new business with the capacity for between 13,500 and 19,000 new jobs.

The Port of Moses Lake has recently announced its intent to submit a proposal for Boeing’s next generation aircraft manufacturing plant. The Port competed for the 787 Dreamliner facility; however, the lack of rail service was a major impediment for the Port. The NCBRP, in combination with the re-located Connell rail interchange, will allow the Port to provide a compelling case for new aircraft manufacturing at the Grant County International Airport.

[http://www.columbiabasinherald.com/business/20180612/port\\_mulls\\_boeing\\_aircraft\\_bid](http://www.columbiabasinherald.com/business/20180612/port_mulls_boeing_aircraft_bid)

**Port of Royal Slope** acquired the Royal Slope Railroad in the fall of 2015 with the help of Washington State Legislators. The Port leased the rail line in February 2016, to Operator, Paul Didelius who has deemed it the WRL — Washington Royal Line. The Port and the Operator





have been contacting local businesses to see what their interest is in having rail service. Though this is a “start-up” situation, there have already been several trains with fertilizer and corn moving in the region.

The Port has two industrial parks now served by rail, the Port’s Industrial Park seen in Exhibit 14 and the Hiawatha Industrial Park seen in Exhibit 15.

The 26-mile WRL runs south from the Port’s Industrial and Hiawatha Industrial Parks for about 6 miles to the base of Saddle Mountain. It then goes east approximately 20 miles to interchange in Othello with the CBRW. The CBRW line then connects with the BNSF at Connell.



*Exhibit 14: Port of Royal Slope Saddle Mountain Industrial Park*



*Exhibit 15: Hiawatha Industrial Park*

Saddle Mountain Industrial Park is a 280-acre industrial park with 13 available lots for sale or lease ranging in size from 3 to 23 acres. The lots have been zoned light to heavy industrial. With paved road access, potable water and fire flow protection, the lots are “ready to go” for those businesses needing a home.

All three of these growing Ports have very favorable attributes for customers looking for available land to locate their businesses.

- Low power rates
- Paved road access
- Potable water & fire flow protection on site
- Low water rates
- Lot sizes range from 3 to 23 acres
- Room for growth
- Property is zoned light to heavy industrial
- Land for Sale or Lease
- Centrally Located in Washington State
- Minutes from I-90
- Rail Service Available
- Immediate Possession of Property Possible
- Minutes from Grant County International Airport
- Fiber Optics Available





- Located in the Foreign Trade Sub-Zone

- Helps the United States compete in the global economy by facilitating efficient and reliable freight movements from Grant and Adams County to Washington state deep water Ports

The three inland ports cited above are served by the CBRW line and are dependent on the Connell Interchange to move cargo to/from the BNSF mainline. The BNSF mainline connects these Ports with the deep-water ports in Western Washington and to the rest of nation via the Great Northern Corridor. When completed this Project will facilitate the efficient and reliable freight movements from rural Central Washington Counties of Grant and Adams to/from the international seaports in Western Washington and to the rest of the nation. The shippers and farmers of the agricultural products grown and processed along the rail lines served by the Connell Interchange will benefit economically from the transportation cost savings and connectivity that rail service can provide. This project will enable the three ports to grow faster and provide expanded transportation options for their customers both current and future.

**d. Environmental Protection**

The project will reduce energy consumption in three ways:

First, reduction of train blockage time will reduce emissions from idling vehicles at the two affected at-grade crossings.

Second, it will provide the rail capacity to this rural area so that cargo can move by rail versus truck. Less fuel will be used by trucks as more freight is diverted to rail in Central WA areas served by the CBRW. Moving a container by truck traveling 25 miles would require 4.2 gallons compared to a train consuming approximately 1.5 gallons fuel for the same move. In comparison

Third, the project will improve the economic viability of biodiesel produced at the PCC plant in Warden as an alternative fuel.

Bringing more efficient rail service will reduce truck movement in the area, reducing emissions of greenhouse gases in the environment. Using the route sample, it is estimated that the project will reduce emissions by 51,000 MT of CO2 during the first 20 years of operation of this project.

**e. Quality of Life**

This project will provide rail capacity to the region which will allow local and regional shippers to use rail versus trucks to deliver their products. Removing trucks off the local roads will provide road capacity for those citizens needing to use local roads and highways to access jobs, health care and other quality of life essential services such as educational facilities.

**f. Innovation**

As a freight rail interchange yard, there is limited innovation in environmental review and permitting, experimental project delivery or safety and technology applications that can be employed. BNSF is under contract with WSDOT to finalize the design of the yard to BNSF standards and current operating standards. The Project is being constructed within BNSF right of ways; accordingly, it is anticipated to qualify for a Categorical Exclusion from NEPA (via FRA).





There are a number of innovations being pioneered for this project:

**i. Innovative Technologies**

This project has been designed with cost-effect safety technology as it will be interacting with the BNSF mainline.

**ii. Innovative Project Deliveries**

Quality design efficiencies has been utilized since the start of this project and have continued through the design phases of the Project. The partners joined together to seek matching funds to jump start the initial design. In 2015, a planning study (Feasibility, Preliminary Design, and Cost Estimate) was funded by a grant from the Washington State Department of Commerce Community Economic Revitalization Board (CERB). Early in project development, the partners looked at options to streamline the implementation of the Project including the implementation of a thorough logistics engineering review. This resulted in evaluating multiple alternatives and the selection of a preferred option that met the needs for a realistic layout and practical design solution. This initial grant provided the resources for the initial project planning efforts (performed by HDR Engineering).

After the Connell Rail Interchange Coalition successfully secured \$10 million in state funds, WSDOT and BNSF partnered to update the HDR 30% design. The partners are completing design, engineering and will initiate project permitting. WSDOT and BNSF bring a team of experienced, qualified personnel to lead and perform the design, engineering, and construction expertise required for this project. In addition, both entities have internal qualified resources available to perform the primary and supporting functions needed to fully and successfully execute the proposed project within the proposed timeframe and budget. Significantly, both organizations bring team members experienced in working together over the past seven years to deliver similar projects funded by ARRA. This team of experts will provide oversight and support for this project.

**iii. Innovative Financing**

**Activities to Maximize Non-Federal Match-** The plan for full funding for this important project (detailed in Section IV) includes commitments from both state, local and federal parties. The project cannot be fully funded from state and local sources. The project has broad public support from Coalition members and the State Legislature and sets realistic expectations for costs and benefits. The Connell Rail Interchange project is a prime example of the value of public infrastructure combined with private investment to achieve economic development, safety improvements, and community growth.

Local funding is limited in this part of rural Central Washington due to other needs of the region. To jump start the Project, the partners gathered matching funds and contributions for the initial planning. BNSF and Columbia Basin Railroad each provided \$5000. Supplemental matching funds (of \$1000 each) were received from five port districts, three economic development organizations, and the City of Connell. Additionally, Franklin County provided a \$10,000 grant for preparation of the BCA and supporting analysis for the project.

**Evaluation of Private Funding Options-** BNSF cannot make any additional financial or in-kind commitments at this time. BNSF is a valuable partner and critical for the following:





- The placement of the new rail interchange on BNSF right-of-way.
- To provide aerial mapping, survey and geotechnical data, conducted at their expense.
- To participate and collaborate on the project design and development.
- To contribute funding to the CERB planning grant.

BNSF in-kind contributions such as engineering and other planning costs add value to the project.

The CBRW is working to increase business and economic development on the CBRW line. The initial reaction is positive and CBRW is currently funding upgrades on other portions of the line that will funnel into the Connell interchange. Currently, CBRW does not have funds available to participate in this project as a funding partner.

**Fiscal Constraints of the City-** The City of Connell has a population of only 5500 people. The Median household income for 2016 was \$49,577, 20% below the average in the State. Poverty is approaching 27% compared to Washington State at 11.3% and the US as a whole at 12.7%. the per capita income is \$14,070 which is 44% of Washington State's and 49% of the US average. This community cannot carry the financial burden of this regional project.

When the City was preparing their last Fiscal Year budget, it became evident that the General Fund could no longer support street operations. This left a shortage of approximately \$40,000 for operations and maintenance of city streets. To help offset the shortage, the Council reallocated funds from the Street Improvement Reserve to Street Operations, now leaving a shortage in the Street Reserve. Accordingly, despite the fiscal constraints imposed by its size and personal income levels, the City Council put a proposition on the November 2017 Ballot asking voters to approve an increase of 0.002 (.2%) in the City's retail sales and use tax for a period of 10 years to help raise funds for city streets.

Even though, this Project would offer the local citizens relief from traffic congestion, the City and its citizens get no financial benefit from this project and must stay focused on providing city services with their limited funds. Thus, the City does not have any additional funds that they can devote to the Project.

**g. Partnerships**

This Project is a collaboration between public and private stakeholders which include the three-county area of Adams, Grant and Franklin Counties. The Connell Rail Interchange Coalition includes elected officials, state and local agency officials, ports, the two railroads, as well as shippers.

There are five primary project partners committed to delivering this project to completion. The City of Connell is the primary applicant for this funding request. The City has worked closely with the Great Northern Corridor Coalition (GNCC), WSDOT, BNSF and CBRW on the development of this Project. The City has taken the responsibility of submitting this Project for BUILD funding in partnership with the GNCC.



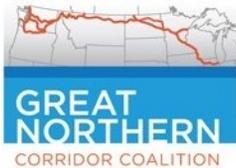
Connell is a vibrant rural community in Eastern Washington, with less than 5,500 residents including 2,600 inmates. The community was established in 1883 as a railroad stop called Palouse Junction.

The community later became known as Connell, named after Northern Pacific Station Agent, Joseph Connell. The Connell Post Office was authorized in January 1887. Much of the old town was destroyed by fire in the late 1890s and was rebuilt along the present Columbia Avenue. A major portion of the business district again burned in July





1905. Connell was incorporated in 1910. The primary industrial base is food processing, agricultural chemicals and correction facilities. Connell is the site of the Coyote Ridge Corrections Center, a medium security prison, housing 2600 inmates. Coyote Ridge is tied with Monroe Corrections Complex as the largest prison facility in the state. The community is also home to the North Franklin School District with a high school, alternative high school, junior high, elementary school and administration offices. Both Washington State and Franklin County have transportation facilities in the community.



**The Great Northern Corridor Coalition** is a regional coalition comprised of eight states, ports, BNSF Railway, and other interested stakeholders along a multi-modal Corridor. The Coalition’s mission is to promote a premier multi-state corridor by acting collectively to promote public policy, research, and multimodal infrastructure development that expands commerce and enhances safety on the corridor.



BNSF rail system is a major provider of freight movement across the country. It is one of two nationwide lines that serve Washington State. The BNSF line passes through Connell on a route that ultimately connects to major Ports along the Columbia River and Western Washington. The BNSF serves the major grain and bulk commodity export/import ports on the lower Columbia River and Grays Harbor, Washington. Through its northerly connection, it serves the Ports in Western Washington. It is a preferred route for heavy unit trains of agricultural products, coal, minerals, and other bulk commodities traveling west from loading points in the Midwest to export facilities in the Pacific Northwest. The route is also used by high-priority intermodal trains and merchandise trains traveling in both directions; as well as for empty grain, coal, and other bulk commodity trains cycling back east.

Data in the 2014 Washington State Rail Plan shows that, in 2010, the BNSF’s Lakeside Subdivision (between Spokane and Pasco) averaged 32 trains per day. The maximum capacity of the subdivision, in 2010, was approximately 37 trains per day. Since the rail plan’s publication, traffic volumes have increased slightly with unit trains of agricultural and industrial products. BNSF has also made recent infrastructure improvements on the Lakeside Subdivision and along the Great Northern Corridor to increase the capacity of trains on the line. Currently, there are between 30 and 40 trains per day using this subdivision.



Columbia Basin Railroad (CBRW) is a privately held Short Line railroad operating in central Washington. The CBRW provides a direct connection to BNSF from shippers in central Washington. The CBRW offers a cost-effective alternative to lengthy truck transportation. **CBRW has grown its traffic to become the busiest short line in eastern Washington State** (Washington State Freight and Goods Transportation System Report, WSDOT, November 2014). The railroad has 60 active shippers and handles more than 10,000 carloads per year. It moves more than 1 million tons of freight annually (tons =U.S. short tons of 2,000 lbs.). In 2014, WSDOT designated the CBRW as an “R2” Freight Rail Corridor, i.e., a corridor which handles between 1 million and 5 million tons per year. Most other Washington State short lines are classified as R3 or R4 lines that handle much less tonnage.

Traffic volumes on CBRW grew with the opening of a unit train unloading facility at the Port of Warden in November 2013. The terminal allowed CBRW to begin receiving 110-car unit trains





of canola seed from BNSF for delivery to Pacific Coast Canola crushing and oil refining facility at the Port of Warden. The facility is the first commercial-scale canola seed crushing operation west of the Rocky Mountains. In addition to unit trains, local freight trains operated by CBRW serve new and expanding industrial sites and facilities in Moses Lake and agricultural shipping centers of Bruce and Schrag.

Originally formed in 1986 as the Washington Central Railroad, the Columbia Basin Railroad is headquartered in Yakima, under the management of Brig Temple, along with an affiliated short line, the Central Washington Railroad. Major commodities handled by CBRW include canola, agricultural products such as grain and animal feed, inbound fertilizer and chemicals, and outbound frozen potatoes, and vegetables. CBRW interchanges its cars with BNSF at Connell.

The Columbia Basin Railroad recognizes its important role for improving service to agricultural shipping centers. WSDOT, when they designated CBRW as an R2 line, stated:

*“Columbia Basin Railroad believes that these locations have tremendous potential for increased economic growth and is working with Adams County and the Port of Othello on improving rail infrastructure.”*



WSDOT is administering the Connect Washington funds that the State Legislature designated for the Connell Rail Interchange in 2015. WSDOT will ensure that all contracting procedures are followed. The WSDOT State Rail & Marine Office is currently finalizing a contract with BNSF to complete final design and permitting of the project. WSDOT has years of experience overseeing the completion of federally funded rail infrastructure projects. Since 2010 WSDOT has worked with FRA to complete nearly \$800 million of rail projects funded by federal high-speed rail funds. The Rail and Marine Office is well versed in the requirements of federally funded programs and will be a partner with the City by providing appropriate oversight of the project.

Teamwork is a hallmark of the Connell Rail Interchange project. This collaboration is the foundation that will make our project successful. The project’s proponents include: Port of Pasco, City of Othello, Port of Othello, Port of Warden, Port of Moses Lake, Benton Franklin Council of Governments, Port of Royal Slope, Tri-City Development Council, Adams County Development Council, Adams County Commissioners, Franklin County Commissioners, and Grant County Economic Development Council. State support comes from: Washington State Legislature, Washington State Department of Transportation, Washington State Department of Commerce, Community Economic Revitalization Board, Great Northern Corridor Coalition, and the Rail Caucus.

Our cornerstones for success are: Communication – Collaboration – Commitment – Community.

**h. Non-Federal Revenue for Transportation Infrastructure Investment**

As noted above, the City of Connell was selected to be the lead agency on this project due to the Project’s location within the city limits of the Connell. The City will not receive any financial benefit from this project and has very limited resources to provide mandated city services. Thus, the City is not in a position to generate non-Federal revenue to support the development of this Project. As the Connell Rail Interchange is located in the City of Connell which is in Franklin County, nor are the ports or counties of Adams and Grant are in a legal or fiscal position to generate any type of non-Federal revenue to support this Project.





## V. PROJECT READINESS)

### A. Technical Feasibility

An Alternatives Analysis Engineering Study evaluated concept design, technical aspects, and opinion of probable construction cost estimate for three possible interchange location alternatives.

During this review, two alternate alignments were eliminated from further consideration because of higher design and construction cost without accompanying benefits than the selected alignment.

#### *Detailed Project Description*

The Project construction phase as seen in the Project Drawings will:

- Perform site work on approximately 8 acres of land including excavation of approximately 270,000 cubic yards of soil
- Construct a crash wall at MP 110.88
- Construct a bridge at MP 111.58
- Build retaining walls at MP 110.47 and 111.30
- Complete 24,469 linear feet of track.

#### *OUTLINE OF DETAILED STATEMENT OF WORK, Technical and Engineering Aspects*

##### **Final Design and Permitting**

Task 1 Contract Management and Administration

Task 2 Property Survey and Boundary Work

Task 3 Geotechnical Investigation

Task 4 Track and Civil Design

Task 5 Hydraulic Engineering

Task 6 Bridge and Crash Wall Engineering

Task 7 Environmental and Permitting

##### **Construction**

Task 8: Construction

### B. Project Schedule

Final Design (90%) will be completed by August 2018. The detailed Project Schedule identifies all major project milestones. It demonstrates that: a) all necessary activities will be completed; b) the project can begin construction quickly; and c) no property acquisition will be needed as the work will be completed on BNSF Right of Way.

Construction could begin as early as Fall 2018 and be completed by Fall 2019 if the project was able to achieve full funding using local funds only.

But will be delayed while the City and the project stakeholders work to secure full funding for the Project. The schedule below assumes a longer schedule based upon award of Federal Funds in December 2018. Connect Washington funding is available now, but the City is deferring use of the funds to apply them towards a match to the federal funds. During obligation negotiations, the City will request pre-award authorization to enable the City to account for the state funds spent on the design to be included in the local project match. Since the Project will be shovel ready by the time of award, any funds needed to achieve obligation will be requested to be included in the





match calculation. It should be noted that the State funds are currently programmed into the FY2017-2019 biennium and will need to be reprogrammed if not used by June 2019. This request will have to go to the State Legislature in their 2019 Session which begins in January 2019. If federal money is not secured in this round of BUILD, the project risks losing the \$10 million in State funds.

*Exhibit 16: Project Schedule*

Task	Scheduled Completion
Complete 60% Design	Completed
Complete Final Design	Aug-18
Complete NEPA/SEPA	Aug-18
Receive Federal Permits	N/A
Notice of Federal Award	Dec-18
Finalization of Implementation and Operating Agreements	Jan-19
Obligation of Federal Award	Jun-19
Programming on the STIP	Jun-19
Issue Call-For-Bids	Jul-19
Award Construction Contract	Sep-19
Begin Construction	Oct- 19
<b>Substantially Completed</b>	<b>Jun-20</b>

The Project schedule demonstrates that all USDOT requirements under BUILD:

- i. All necessary activities will be completed to enable obligation by Sept 30, 2020
- ii. Project can begin construction quickly upon obligation and all BUILD Transportation funds expended by September 30,2025
- iii. There is no real property and row acquisition required for this Project as the project is all on BNSF owned property.

### **C. Require Approvals**

#### **1. Environmental Permits and Reviews**

An Environmental Overview was completed to identify potential areas of concern for Critical Areas including Wetlands, Critical Aquifer Recharge Areas and Wellhead Protection Areas, Surface Water and Floodplains, Wildlife, and Geologically Hazardous Areas. Federally-Listed Species, Pipelines, and Zoning impacts were also evaluated.

##### **a) NEPA status**

Environmental analysis has proceeded as described, including timely completion of NEPA requirements, as project milestones were met. Based upon prior experience with projects of this





scope and size, the BNSF anticipates that this Project will meet the criteria for a Categorical Exclusion from the FRA.

Final Design will coordinate proper environmental compliance, by the following actions:

- Delineate wetlands
- Flag ordinary high-water mark (OHWM)
- Create baseline assessment of fish and wildlife use
- Prepare wetland and stream delineation report

Prepare biological assessment (BA)

- Comply with Endangered Species Act (ESA)
- Prepare a critical area report (CAR)
- Prepare SEPA checklist
- Identify suitable wetland/stream mitigation concepts
- Prepare a Joint Aquatic Resource Project Application (JARPA)

***b) Agency Reviews***

Anticipated consultation with local, state, and federal groups, together with permitting is shown: in Exhibit 17 below

*Exhibit 17: Required Permits/ Approvals*

Agency	Permit/Approval
City of Connell	<ul style="list-style-type: none"> <li>– NEPA/ SEPA Environmental Checklist and Determination</li> <li>– Critical Area Review/Report</li> <li>– Right of Way Permit (not necessary due to no new road crossings)</li> <li>– Conditional Use Permit (depending upon alignment)</li> </ul>
Franklin County	<ul style="list-style-type: none"> <li>– NEPA/SEPA Environmental Checklist and Determination</li> <li>– Critical Area Review/Report</li> <li>– Land Use Permit (process to be determined)</li> </ul>
WSDOT	<ul style="list-style-type: none"> <li>– NEPA/SEPA review</li> </ul>
WDFW	<ul style="list-style-type: none"> <li>– Hydraulic Project Approval (HPA)</li> </ul>
Ecology	<ul style="list-style-type: none"> <li>– Construction Stormwater NPDES Permit</li> <li>– NEPA/SEPA review</li> </ul>
Corps	<ul style="list-style-type: none"> <li>– Project review/approval (process to be determined)</li> <li>– NEPA review (if triggered)</li> <li>– Section 404 Permit (if wetlands were filled)</li> </ul>
USBR/SCBID	<ul style="list-style-type: none"> <li>– Project review/approval (process to be determined)</li> <li>– NEPA review (if triggered)</li> </ul>
USFWS	<ul style="list-style-type: none"> <li>– ESA review (if NEPA is triggered)</li> </ul>





Agency	Permit/Approval continued
NMFS/NOAA Fisheries	– ESA review (if NEPA is triggered)
BNSF	– Is under contract with WSDOT to design and permitting the Project. Thus, their participation in review/approval of the project is on-going

Final Design involves a comprehensive pattern of review to assure environmental compliance.

**c) Environmental studies or other documents.**

Initial Design engineering and construction drawings were completed to 30% Design by HDR Engineering in 2015-2016. HDR produced a 126-page document including the following Engineering & Design Studies, Reports and Drawing:

- Alternatives Alignment Analysis (7-page report and 4 exhibits).
- Rail Freight Flow (9-page report).
- Environmental Overview (5-page report).
- Engineering Basis of Design (62-page report).
- Operating Basis of Design (18-page report).
- Engineering 30% Design (21-exhibits).

Using these documents as a base, BNSF was contracted by WSDOT to complete the design engineering, construction drawings and permitting in preparation for construction. As of June 2018, HNTB has updated the original 30% drawings, completed a 60% Design and is preparing the permitting applications for submittal this summer. See Appendix H and J for design details.

**d) Discussions with FRA**

There have not been any discussions with the FRA as of this point. As the project moves forward with the design and NEPA determinations, WSDOT and the City of Connell will work with the FRA to ensure federal environmental compliance and approval is completed in a timely manner.

**e) Public Engagement**

From its inception, Connell Rail Coalition has work diligently to engage the public and stakeholders. The result has been broad based support across the region. There have been more than thirty-three media reports highlighting the importance of the project: Appendix F highlights presentations and media coverage. Additionally, more than 150 state and regional leaders have been contacted about the project. This project is discussed routinely at the City of Connell Council meetings where the public can ask questions and make public comment on the Project. To date the biggest question on the community’s mind is when will the Project be fully funded and built.

**2. State and Local Approvals**

Connecting Washington funds are being administered by WSDOT’s Freight Office. There are no additional Legislative approvals needed for this project other than re-programming the funds to the next biennium if needed. This project is currently in the WA State Transportation Improvement Plan (STIP) as required under FAST ACT. The City has been working closely with WSDOT, the Administrator of the Connect Washington funds, to ensure this project meets all State and Local planning requirements as required under the current federal transportation statutes. As was





discussed earlier, the CBRW has been identified as a R2 rail line on the Washington State Freight and Goods Transportation System (FGTS). This is a classification system for roadways, railways, and waterways based on freight volume. The FGTS is used to establish funding eligibility for [Freight Mobility Strategic Investment Board](#) grants, fulfill federal reporting requirements, support transportation planning process, and plan for pavement needs and upgrades. WSDOT uses this data to designate [Freight Economic Corridors](#).

### 3. Federal Transportation Requirements Affecting State and Local Planning

This project is in the Benton Franklin County of Governments Transportation Improvement Program (TIP). State policy states that only fully funded projects will appear on the State Transportation Improvement Program (STIP). Once fully funded the Project will be included in the STIP. See Appendix D for links to planning documents. This project has been included in the required State and regional planning documents including the State Freight Plan and is supported by the State Freight Advisory Committee for inclusion in the said plan.

This project has been identified by the Great Northern Corridor Coalition, WSDOT, the State Legislature and the Benton-Franklin COG as a project that offers a major system improvement to the regional highway and rail system. All these agencies recognize this project as a regional system improvement that will improve safety and reduce congestion on both our road and rail systems. The regional transportation planning councils are all in support of these improvements because they will reduce the congestion on the BNSF Lakeside subdivision and, therefore, improve efficiency of moving goods to/from Washington Ports along the Columbia River, Puget Sound, and inland ports in Central and Eastern Washington. This project helps meet the current economic need of the region by enabling the capacity to meet future growth. It is estimated that rail growth will more than double (by 51 trains per day) along this route by 2035. The State of Washington is a financial partner in this project, and the Great Northern Corridor Coalition has picked this project as one of only two projects along their 3,200-mile route that merits their sponsorship for federal funding requests.

This project is in the Benton- Franklin COG's 2017 Regional Metro Plan as well as listed in the COG's Transition2040 Plan. These Plans go through the traditional technical planning committee review before approval by the COG's board. These multi-modal planning documents identify the mobility needs of the region. In addition, the project is in WSDOT's 2016 Project List and listed in WSDOT's 2017 Washington State Freight Systems plan as not eligible for NHFP funding. The Freight Plan was developed with guidance from Washington Freight Advisory Committee (WAFAC), WSDOT collaborated with the Washington State Freight Mobility Strategic Investment Board (FMSIB) and coordinated with the MPOs and RTPOs across the state in developing the solicitation process, recommendations for consideration, and prioritized project list.

### D. Assessment of Project Risks and Mitigation Strategies

Risk categories were identified: Financial, Management, Contracting/Procurement, Construction, Environmental, Right-of-Way, Structural/Geotech, Utilities, and Operations/Maintenance.

As mentioned previously, extensive geo-technical engineering work is planned within the project scope, schedule, and budget – to verify acceptable slope stabilization requirements and to assure rail track bed integrity. Another risk mitigation measure – which is well underway – involves





deliberate coordination with railroads and all project partners – to assure top-quality performance and practical function. Other risk mitigation measures include a comprehensive pattern of environmental review/permits. This aim will make certain that the project resolves any concerns and is on-time and on-budget. It is anticipated that WSDOT would administer the BUILD award like they are administering the Connecting Washington funds allocated to this Project.

*Exhibit 18: Risk Matrix*

Potential Risk Area	Risk Type	Current Status/ Proposed Mitigation	Risk Level
Technical Feasibility	Feasibility	Preliminary design developed with input from customers and the railroads	Low
Design Standards Conformance	Feasibility	Preliminary design developed with input from customers and the railroads	Low
Partner Approvals	Schedule	Preliminary design developed with input from customer and railroads	Low
Local Jurisdiction Approvals	Schedule	Past history of multi-agency cooperation and collaboration is anticipated to continue.	Low
Environmental Approvals	Cost, schedule	Impact on built and natural environment appears is assessed as low.	Low
Public and Stakeholder Support	Cost, schedule	Extensive public involvement effort was done as part of the project’s planning and budgeting processes. Level of public interest is high, particular from nearby residential neighborhoods and the users of the CBRW.	Low
Construction	Cost, schedule	Currently entering into final design phase for the rail improvements. To mitigate potential risks, conservative prices and quantities were used. In addition, Project Budget contains \$4.8 million in contingency funds	Low
Funding Remaining Gap	Funding	The City of Connell nor the State have funds to complete the full build out of the project. Concern over losing CWA funds if postponed.	High

## VI. BENEFIT COST ANALYSIS

The Benefit Cost Analysis (BCA) demonstrates the cost effectiveness of this Project. Exhibit 10 displays the summary of the BCA. Quantified benefits include the transportation cost savings of modal conversion to rail, reduced emissions due to reduced truck miles, better fuel efficiency, and improved safety by the reduction of potential accidents anticipated from the reduction of truck vehicle miles traveled when this project is completed.

This BCA follows guidance set forth in the Benefit-Cost Analysis Resource Guide and the June 2018 Benefit-Cost Analysis Guidance for Discretionary Grant Applications.

A discount rate of 7 % was used, following the U.S Department of Transportation Benefit-Cost Analysis Guidance for Discretionary Grant Programs updated June 2018. The bottom line, the present value (PV) of costs in 2017 dollars is \$23.5 million and the PV of benefits is \$30.1 million. This rate yields conservative estimates of NPV and benefit cost ratio. This is appropriate because funds are public and would be spent on other public projects. This analysis yields a NPV of \$7.5 million and a benefit-cost ratio of 1.3:1. The greatest share of benefits is Economic Competitiveness from operational savings because of the use of rail for the forecasted





freight shipments.

Exhibit 19: Project Benefit to Cost Ratio Analysis Summary

Benefit Cost Analysis Summary				
Long-term Outcomes	Social Benefit	Inputs	Value	Monetized Value Discount Rate 7%
Safety	Reduced fatalities from reduction of VMT	Fatality cost savings of 0.54 fatalities	\$4.7 million saved	\$ 1,976,250
State of Good Repair	Reduction of maintenance on US Roads & Hwys, Consistent with State and Regional Plans	Maintenance, preservation and upgrade savings of Highways	46 million VTM reduced off the highways	\$ 2,287,326
Economic Competiveness	Fuel savings due to cargo transported Rail vs. Truck	Gallons of fuel saved	6 million gallons of fuel saved by reducing miles traveled with modal shift to Rail	\$ 8,971,664
Economic Competiveness	Operational cost savings	Savings of rail transport vs. truck transport	455 million ton miles @ \$0.071 savings (non fuel) per mile (truck vs. rail)	\$ 13,511,980
Environmental Sustainability	Environmental Benefits from Reduced Emissions by modal change to rail	Saving in CO2	51,062 MT Saved	\$ -
Quality of Life	Improved Transportation Choices for Rural Producers	Not Quantified	Not Quantified	
Total Cost				(\$23,484,853)
Total Benefits				\$30,974,653
<b>Net Present Value</b>				<b>\$ 7,489,800</b>
<b>Benefit to Cost Ratio</b>				<b>1.3:1</b>

**The project will open new industrial lands for development**

The Connell Rail Interchange will also allow for rail service on lands planned for industrial development near the interchange. It will enhance economic value by attracting new rail-dependent businesses to those areas. The Connell site will give shippers an alternate, lower-cost transportation mode for freight that currently moves in and out of the area by truck. It will assist in preserving existing manufacturing jobs and related investment, and help attract new business opportunities, job creation, and economic development.

**The Project will bring more efficient movement of freight on the GNC**

The new interchange will eliminate the inefficient unit train movements by providing a rail line





that can access the CBRW rail in Connell. The current configuration of the interchange yard at Connell requires unit trains serving the canola plant at the Port of Warden to travel an additional 35 miles to Pasco (70 miles roundtrip) to turn north to access the rail line to Warden.

According to WSDOT (2014 State Rail Plan<sup>6</sup>), tonnage handled by railroads is expected to increase to 260 million tons by 2035 – a doubling of the tonnage handled in 2010. The increase is expected from a tripling of export grain and other export bulk commodities. Additionally, it is expected that imported goods in containers and imported motor vehicles will double over the same period. This activity originates at vessels at ports in Western Washington and Oregon.

In addition to the already noted economic vitality indicators, the Great Northern Corridor Coalition has been collaborating for several years to promote corridor-wide cooperation in transportation planning and shared infrastructure investment. Studies funded by two Federal Highway Administration Multimodal Corridor Operations and Management grants and contributions from Coalition stakeholders identified solutions to enhance the Corridor and achieve the Coalition’s goals and objectives. The Connell Rail Interchange Project was identified in this analysis and exemplifies infrastructure development that expands commerce while enhancing safety on the Corridor. *For additional information, please refer to the entire GNCC study at <http://greatnortherncorridor.org/study/>*

*Exhibit 20: Examples of Delays Experienced at Connell Crossings*



## VII. SUMMARY

The Connell Rail Interchange will benefit local, regional and, significantly, national freight mobility. It will reduce the risk of accidents, reduce school bus conflicts with rail at crossings, and dramatically improve freight movement at a major “pinch point” on the Great Northern Corridor. It is a well-planned and designed project that leverages state and local investments to bring about greater regional economic development and more efficient movement of important

<sup>6</sup> [www.wsdot.wa.gov/.../0/StateRailPlanFinal201403.pdf](http://www.wsdot.wa.gov/.../0/StateRailPlanFinal201403.pdf)





agricultural products from Eastern Washington.

This Project will help USDOT achieve its National Goals, by removing trucks from the highways, therefore improving safety, reducing wear and tear on the highways, reducing congestion, enhancing the natural environment through reduced emissions and generating economic vitality for the region. The lands along the CBRW are ready for private investment, such as the recently completed CHS Fertilizer plant near Warden. The CHS plant has already increase the number of carloads by over 400 percent from their previous facility near Bruce, WA.

Growth as experienced by CHS will not be able to continue without the expanded rail capacity that this Project will achieve. Other private firms are looking to invest in rail served properties. Completion of this Project will make those investments a reality.

It has the commitment of engaged project partners, and support of state and local governments. The project can move forward on a timely basis with the support from the Federal Government. With the requested funding, the Connell Rail Interchange is On-Track for Growth!





## Connell Rail Interchange



On-Track  
For Growth!

EASTERN  
WASHINGTON'S  
HARVESTLAND

### Appendices:

**A: Benefit-Cost Analysis Technical Narrative**

**B: Benefit Cost Analysis Excel Spreadsheet.**

The following can be found on the project webpage at [www.cityofconnell.com](http://www.cityofconnell.com)

Under the Project Webpage: [City of Connell - Connell Rail Interchange Webpage](#)

**C: Connecting WA Funding Documentation**

**D: State Planning Documents**

**E: Market Demand**

**F: Examples of Public Outreach – Presentations & Media Coverage**

**G: List of Support Letters**

**H: 2018 HNTB 60% Design Estimate and Cover sheets July 2018**

**I: Design and Agreements Completed to Date**

**J: 2018 HNTB 30% Design Estimate March 2018, reviewed May 2018**

**K: Connell Interchange 30% Opinion of Construction**

**Cost Estimate HDR: Construction plans; HDR Project No. 259968. 2016**





## Appendix C: Connecting WA Funding Documentation

Posted on project webpage:

[City of Connell Connell Rail Interchange Webpage](#)





## Appendix D: State Planning Documents

The project is listed in the following State and Local Planning documents.

- 2014 Washington State Rail Plan
- City of Connell Comprehensive Plan
- Great Northern Corridor Coalition’s Multi-State Planning and Development Study-Phase II Project List
- Connecting Washington Account  
Project ID # L2000173
- WSDOT 2016 Prioritized Freight Project List  
<http://www.wsdot.wa.gov/publications/fulltext/LegReports/15-17/2016PrioritizedFreightProjectList.pdf> Project can be found in the list on page 4 of Appendix C.
- 2018-2019 Update to the STIP  
[http://www.wsdot.wa.gov/NR/rdonlyres/A0A216CF-DFCD-434E-AAE9-0A0EBE26787A/0/DRAFT\\_2014\\_2017.pdf](http://www.wsdot.wa.gov/NR/rdonlyres/A0A216CF-DFCD-434E-AAE9-0A0EBE26787A/0/DRAFT_2014_2017.pdf) Following this link will display the file named; Final Draft 2018-2021 STIP Write 112117.doc. This Project is not listed yet as it is not fully funded. State Policy states “If a project only has partial funding reasonably available for a given phase, the phase would not be programmed in the STIP, until the funds necessary to complete the phase are considered reasonably available.”
- Benton-Franklin Council of Governments (BFCG) TMA, MPO, and Benton-Franklin RTPO  
<http://bfcog.us/wp-content/uploads/2017/09/Appendix-G.pdf>

The Connell Rail Interchange project is consistent with the City of Connell Comprehensive Plan. It pertains specifically to key goals and policies, all in accordance with state GMA Planning requirements.

These goals and policies include:

- Economic diversification
- Cost effective development
- Coordinated transportation planning
- Enhanced access to rail service
- Top priority to transportation facilities
- Advocacy and support by:
  - Great Northern Corridor Coalition (GNCC)





- Washington State Legislative Rail Caucus
- Benton-Franklin Council of Governments (BFCOG)
- WSDOT





## Appendix E: Market Demand

### National Rail Transportation Trends

Each year, the U.S. moves over \$20 trillion in goods weighing over 17 billion tons between hundreds of cities, towns and regions. An increasing percentage of these shipments are being made through our nation's ports and intermodal rail facilities.

The Connell site, situated on the mainline of BNSF, enjoys good access to major international container port operations in Seattle/Tacoma three and a half hours to the west as well as to Class I intermodal rail facilities in Spokane, one and a half hours to the northeast.

Over 25 million containers and trailers are being moved annually using intermodal transportation, the fastest growing mode of shipment in the U.S. supply chain. International container shipments are likewise projected to increase tremendously at West Coast ports like Seattle/Tacoma over the next several years fueled by a recovering global economy, new U.S. trade agreements and growing U.S. exports, especially to China and Southeast Asia's growing middle class.

Both trends are playing major roles in shaping site selection decisions in the U.S. Locations in Eastern Washington, including the Connell Rail Interchange service area are well-positioned to capitalize on these port and intermodal-related transportation trends.

Sources: <http://www.growadamscounty.com/site-selection/blueprint-for-action-report/>

<http://www.growadamscounty.com/site-selection/comparative-distribution-warehousing-costs-in-port-and-intermodal-proximate-cities/>

## SUMMARY OF RAIL FREIGHT FLOW REPORT

### Introduction

A rail freight flow evaluation was performed in 2016 by HDR Engineering; to describe existing freight railroad traffic and patterns across the BNSF Railway (BNSF) and Columbia Basin Railroad (CBRW) interchange in the City of Connell, Washington, and to forecast potential future freight railroad traffic and patterns for a 10-year horizon.

### Overview

The City of Connell is served by two freight railroads: BNSF, a Class I railroad with a 32,500-mile network that spans the Western United States, and CBRW, a locally owned and operated short line that extends west from Connell with an 86-mile network of lines serving Moses Lake, Wheeler, Schrag, and Othello, Washington. The 10-year horizon was chosen as freight railroad traffic is volatile in response to global, national, and regional economic activity and patterns, and commodity flows may shift drastically depending on demand, costs of production, technological innovation, and regulatory changes.

### Summary

Railroad freight traffic through the Connell interchange between BNSF and CBRW has grown approximately 10 percent annually during the last five years. This compares to a national average for rail traffic of near zero growth during the last five years (AAR, Annual U.S. Rail Tons). Connell interchange rail traffic growth is due to expansions of commodity processing, conversion





of transportation from truck to rail, and improvements in rail service that reduce transportation costs, enabling shippers and receivers in the CBRW service area to expand their markets.

Growth in agricultural commodity processing, growth in manufacturing, and truck conversion to railroad transportation is expected to continue to occur.

Regionally, rail traffic is expected to grow at approximately 1.5 to 2 percent annually during the next ten years. This growth will be driven by increased exports of agricultural, mineral, and energy commodities, increased regional manufacturing, increased import and export of consumer goods and heavy capital goods, and increased conversion of freight from truck to rail (Washington State Rail Plan; Federal Railroad Administration). Follow the link at:

<http://www.wsdot.wa.gov/NR/rdonlyres/F67D73E5-2F2D-40F2-9795-736131D98106/0/StateRailPlanFinal201403.pdf>

**Additional Cargo information:**

In an interview for this Rail Freight Flow report, CBRW provided a traffic breakdown in Table 1, based on an annual volume of 10,200 carloads in 2014. (Note: a typical carload of agricultural bulk commodities or chemicals varies from 100 to 110 net tons; a typical carload of frozen or refrigerated perishables ranges from 60 to 100 tons.)

Table 1: CBRW Freight Commodities, 2014

Commodity	Percentage of total traffic
Outbound frozen potato products	20%
Inbound fertilizer	15%
Inbound canola seed (for PCC crushing)	15%
Chemicals (mostly inbound, some outbound)	10%
Inbound paper (rolls)	5%
Cooking oil (inbound and outbound)	5%
Outbound canola meal	5%
Inbound feed	5%
Outbound grain (primarily wheat)	5%
Other traffic (inbound and outbound)	15%

Again, to apply the data:

**Economic Value is over \$3.55 Billion** in the three-county area (Adams, Franklin, Grant) based on Ag Market Value and Food Processing Sales. [http://agr.wa.gov/AgInWa/Crop\\_Maps.aspx](http://agr.wa.gov/AgInWa/Crop_Maps.aspx)

**Volume/Value of Agricultural Products Shipped by Rail**

Table 2 below indicates the value of freight shipped by CBRW and other state railroads. Note that canola has 1.7 times the value per pound than grain (mostly wheat and some barley); canola oil has 3.8 times the value of grain. **Thus, the Connell interchange is supporting one of the most valuable transportation patterns in eastern Washington on a per-ton basis.**





Table 2: Value of freight moving by rail in Eastern Washington

Commodity	Value (\$)	Unit	Source and Notes
Paper	\$0.40	lb.	Index Mundi (wood pulp)
Canola oil	\$0.38	lb.	USDA (canola oil)
Steel	\$0.33	lb.	Steel on the Net (cold rolled steel coil)
Fertilizer	\$0.21	lb.	Index Mundi
Seed	\$0.17	lb.	USDA (canola seed)
Scrap	\$0.16	lb.	USGS.gov (2013, iron and steel scrap)
Feed	\$0.12	lb.	USDA (Barley No. 3)
Grain	\$0.10	lb.	Index Mundi (wheat)
Cement	\$0.04	lb.	USGS.gov (2012 value)
Chemicals	Too general		n/a
Frozen food	Too general		n/a

### BNSF and CBRW Freight Growth and Infrastructure Development

In its 2014 rail plan, Washington state expects the tonnage handled by its railroads to reach 260 million tons by 2035, **more than double the volume** moved in 2010, driven by a tripling of export grain and other export bulk commodities, as well as a doubling of imported goods shipped in containers and imported motor vehicles that will be transloaded from vessel to rail at Washington state ports.

Historically, secular GDP growth in the U.S. on its own adds 1.5% to 2% annual growth in railroad freight traffic. Over the 25-year period of 2010-2035, freight traffic in Washington is likely to increase by a factor of 1.65 independent of growth in import/export traffic. Accordingly, if the Connell interchange mirrors national patterns, it would be expected to have traffic growth of 1.65 times current volumes by 2035.

### SHORT LINE RAIL REPORT

Washington State Department of Transportation (WSDOT) completed a research report: Washington State Short Line Rail Inventory and Needs Assessment, WA-RD 842.1, June 2015, authored by Dr. Jeremy Sage, Dr. Ken Casavant, and J. Bradley Eustice. An overview is given. For the full report (95 pages): <http://www.wsdot.wa.gov/research/reports/fullreports/842.1.pdf>

The purpose of the study was to provide a framework for a data-based evaluation of the condition and capital needs of the entire short line rail system within the state. It was a collaborative effort between WSDOT and researchers with the Freight Policy Transportation Institute (FPTI) at Washington State University (WSU).

State policies recognize that:

- Rail systems have the potential to create and sustain regional economic growth.

Investment in rail can produce public benefit to:

- Improve safety of rail operations
- Avoid greater capital costs in rural road networks
- Reduce highway congestion and enhance safety
- Reduce airborne contaminants
- Enhance competitiveness and employment
- Preserve rail segments for current and future use





## Appendix F: Examples of Public Outreach

### Presentations and Media Coverage

	<b>SOURCE</b>	<b>TITLE</b>
1	WA St Tran Commission	Statewide Rail Capacity and System Needs Study - Technical Memorandum
2	The Royal Register	Connell Rail interchange needs upgrades
3	Columbia Basin Farmer	Columbia Basin Railroad is busiest short line in eastern Washington
4	Railway Track Structures	Columbia Basin Railroad named busiest shortline in eastern Washington
5	Progressive Railroading	Columbia Basin Railroad remains a busy short line in Washington state
6	KXLY, Moses Lake	Meeting regarding the Connell Rail Interchange held in Moses Lake
7	PR Newswire	Important Meeting Held Regarding the Connell Rail Interchange
8	Progressive Railroading	Columbia Basin eyes BNSF interchange upgrades
9	Railway Track Structures	Meeting held to discuss Connell Rail Interchange
10	Western Farmer	Important Meeting Held Regarding the Connell Rail Interchange
11	Grant County EDC	Can a Rail Line Operate at 170% of its Practical Capacity?
12	Columbia Basin Farmer	Connell Rail Interchange needs discussed at December meeting
13	City Council Memo	Connell Rail Interchange
14	Capital Press	Coalition seeks funds to study rail interchange improvements
15	Tri-City Herald	Connell seeks help with railroad interchange
16	Railway Age	Rail bottleneck relief sought for Connell, Wash.
17	Franklin County Graphic	City Council hears presentation on Connell Interchange, plans to ease rail issues
18	Great Northern Corridor	Multi-State Planning and Development Study
19	City Council Memo	CERB Planning Grant Application - Connell Rail Interchange
20	Progressive Railroading	Washington port freight-rail projects part of state funding package
21	Senate Transportation	Senate Transportation Package - LEAP Transportation Document 2015 NL-1
22	WCMA Newsletter	Connell city administrator Jed Crowther reports
23	City Council Memo	Connell Rail Interchange Update
24	Basin Business Journal	CERB awarded \$50,000 Planning Grant for Connell Rail Interchange
25	CERB Press Release	Community Economic Revitalization Board announces \$1.7 million in grants/loan
26	Franklin County Graphic	Goal→Plan→Action – To Improve and Modernize Connell Rail Interchange
27	Attorney General of WA	Letter re: Freight Rail Assistance Account, RCW 47.76.250(11)
28	Franklin County Graphic	CERB awards \$50,000 towards study of Connell Rail Interchange
29	Capital Press	Planning grant to help city untangle rail congestion
30	Tri-City Herald	Newhouse opens Tri-City office
31	WPPA	Freight project backers eye \$500 million in INFRA grants
32	City Council Memo	Community Economic Revitalization Board (CERB) Award Acceptance
33	House Transportation	House Transportation Package - LEAP Transportation Document 2015 NLH-1





## PRESENTATIONS

A Fact Sheet and Frequently Asked Questions (FAQs) Sheet were widely distributed.

[http://www.cityofconnell.com/vertical/sites/%7B5EC177C6-8A65-48BE-BB20-78D21372A172%7D/uploads/Connell\\_Rail\\_Interchange\\_-\\_Fact\\_Sheet\\_3-16-2015\(1\).pdf](http://www.cityofconnell.com/vertical/sites/%7B5EC177C6-8A65-48BE-BB20-78D21372A172%7D/uploads/Connell_Rail_Interchange_-_Fact_Sheet_3-16-2015(1).pdf)

Ten public presentations occurred; including CERB, WSDOT and State Rail Caucus.

[http://www.cityofconnell.com/vertical/sites/%7B5EC177C6-8A65-48BE-BB20-78D21372A172%7D/uploads/Connell\\_Rail\\_Presentation\\_11\\_16\\_15.pdf](http://www.cityofconnell.com/vertical/sites/%7B5EC177C6-8A65-48BE-BB20-78D21372A172%7D/uploads/Connell_Rail_Presentation_11_16_15.pdf)





## Appendix G: List of Support Letters

Full list of Support letters can be found on the project webpage

[City of Connell](#) [Connell Rail Interchange Webpage](#)

### Organizations

- ◆ U.S. Senator Maria Cantwell
- ◆ U.S. Senator Patty Murray
- ◆ Congressman Dan Newhouse
- ◆ BNSF
- ◆ CBRW
- ◆ Port of Pasco
- ◆ Port of Othello
- ◆ Port of Warden
- ◆ Port of Moses Lake
- ◆ Port of Royal Slope
- ◆ Tri-City Development Council
- ◆ Adams County
- ◆ Grant County
- ◆ City of Othello
- ◆ Benton /Franklin COG
- ◆ WSDOT
- ◆ Adams County Commissioners
- ◆ Franklin County Commissioners
- ◆ Great Northern Corridor Coalition
- ◆ WA State Senator Mark Schoesler
- ◆ WA State Senator Judy Warnick
- ◆ WA State Representative Mary Dye
- ◆ WA State Representative Joe Schmick
- ◆ WA State Representative Tom Dent
- ◆ WA State Representative Matt Manweller





Merrill G. Lieb  
Assistant Vice President  
Shortline Development

BNSF Railway Company  
2500 Lou Menk Dr., AOB-1  
Fort Worth, TX 76131  
(817) 694-0311 (a)

merril.lieb@bnsf.com

October 13, 2017

The Honorable Elaine Chao  
Secretary of Transportation  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Dear Secretary Chao:

BNSF Railway supports efforts by the City of Connell to secure funding from the 2017 TIGER and INFRA funding programs for the Connell Rail Interchange project. The Connell Rail Interchange project is located on BNSF's Lakeside Subdivision on the Great Northern Corridor and connects the Columbia Basin Railroad to the national rail network and the global marketplace.

The Connell Rail Interchange project would construct new interchange tracks that would improve the efficiency, capacity and safety of the interchange between BNSF Railway and the shortline operator that serves central Washington, the Columbia Basin Railroad. The proposed project would replace the existing constrained interchange that cannot efficiently handle growing freight volumes, including unit trains, without impacting mainline operations and capacity.

BNSF looks forward to continuing its collaboration on this project with project partners, including reaching an agreement with Columbia Basin Railroad for the usage of the proposed new infrastructure that will be constructed on BNSF property. BNSF has a strong partnership with Columbia Basin Railroad and believes an agreement will be reached in a timely manner.

BNSF is prepared to proceed pending satisfactory review of funding requirements, final engineering, operating impacts, financial impacts, and negotiation of definitive agreement.

Sincerely,

Merrill Lieb  
AVP Shortline Development





July 16, 2018

The Honorable Elaine Chao  
 Secretary of Transportation  
 U.S. Department of Transportation  
 1200 New Jersey Ave., S.E.  
 Washington, D.C. 20590

RE: **Support of Build 2018 Grant for Connell Rail Interchange Infrastructure Improvement Project**

Dear Secretary Elaine Chao:

**I am writing on behalf of Columbia Basin Railroad in strong support of a Build 2018 Grant for the Connell Rail Interchange infrastructure improvement project.**

The Connell Rail Interchange is a key rail interchange in Eastern Washington where the Columbia Basin Railroad line intersects with BNSF Railway's busy Lakeside Subdivision line, which runs between Spokane, WA and Pasco, WA. The Columbia Basin Railroad Line, which intersects the BNSF mainline at Connell, serves industries and the agricultural sector throughout the heart of the Columbia Basin in eastern Washington. We provide service to Moses Lake, Wheeler, Schrag, Warden, Bruce, Othello and Connell in Grant, Adams and Franklin Counties.

In recent years, a significant amount of economic development has been occurring in communities on the Columbia Basin Railroad Line, especially in Grant and Adams Counties. Consequently, the Columbia Basin Railroad line has become one of the busiest short lines in Washington State, hauling over 10,000 carloads annually of various agricultural, industrial commodities and other cargo for 60 active rail shippers in the Columbia Basin. Our customers employ nearly 7,000 people in Grant and Adams Counties.

The Connell Rail Interchange was built nearly 100 years ago, and the configuration of the Interchange is outdated and inefficient. **As a result, the Connell Rail Interchange needs to be upgraded and improved to accommodate the tremendous growth in rail cargo that is flowing to and through Connell.**

The Connell Rail Interchange also sits on the Northern Corridor Rail Line, which is a key strategic freight transportation corridor that spans the northern US between the Pacific Northwest and the Midwest. The Corridor unifies the population centers of the Midwest and Pacific Northwest and is a critical logistics channel for goods produced or consumed in the Northern Tier.

Without a new and improved rail interchange at Connell, the existing conditions there will create a choke/pinch point which could adversely impact rail velocity on the Northern Corridor and hinder economic growth in several communities in the Columbia Basin.

**In conclusion and for the above-mentioned reasons, Columbia Basin Railroad urges USDOT to approve the City of Connell's BUILD 2018 grant application to improve and upgrade the Connell Rail Interchange.**

Thank you for your consideration of this request.

Sincerely,



Brig Temple  
 President/CEO  
 Columbia Basin Railroad  
 111 University Parkway, Suite 200  
 Yakima, WA 98901





GREAT NORTHERN

CORRIDOR COALITION

The Mission of the Great Northern Corridor Coalition is to:  
"Promote a premier multi-state corridor by acting collectively to promote public policy, research, and multimodal infrastructure development that expands commerce and enhances safety on the corridor."

P. O. Box 1255 Williston, North Dakota 58802 (360) 567-7521

Members:

Idaho Transportation Department

July 17, 2018

Minnesota DOT

Montana DOT

North Dakota DOT

The Honorable Elaine L. Chao  
Secretary of Transportation  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Oregon DOT

Washington State DOT

Wisconsin DOT

Subject: City of Connell & Port of Moses Lake – Rail Interchange Project Build Grant Program Application

Federal Highways Administration

Dear Secretary Chao,

BNSF Railway

The Northwest Seaport Alliance

The purpose of this letter is to provide the Great Northern Corridor Coalition's support as a Project Co-Sponsor with the City of Connell and the Port of Moses Lake to secure federal funding for the above referenced BUILD grant application that constructs a relocated rail interchange yard and other safety improvements in the City of Connell, Washington.

Port of Everett

Port of Seattle

Port of Tacoma

Port of Grays Harbor

Port of Vancouver, USA

Port of Portland, OR

Port of Pasco

Port of Quincy

The Great Northern Corridor Coalition is a Multi-State, Multimodal Coalition which represents 8 States, 162 Counties and over 38 Million Americans. With the assistance of two FHWA Multi-State Corridor Operations and Management grants and our member contributions, we have been collaborating for several years to promote regional cooperation around Safety, Mobility, Economic Development and Project Prioritization and Support across the Great Northern Corridor.

WA Public Ports Association

Our collaboration with Coalition Members has helped to create a collective identification and prioritization of corridor enhancing projects that contribute to the seamless movement of freight and people across our great country. We are indeed a linked system!

Port of Northern Montana

City of Spokane Valley

The Connell Rail Interchange Project supports regional economic vitality by improving freight and passenger mobility, reducing the potential for critical rail crossing exposures and leverages Federal Funding through a robust public private partnership.

City of Connell

City of Moorhead

The Great Northern Corridor is an east-west artery for commerce that is a vital link in the nation's supply chain for agriculture, energy





products, raw materials and finished goods that support major U.S. Industries and consumer markets in our 8 states and provides a vital link for global trade. The underlying thread and primary focus of the Great Northern Corridor is the railroad and roadway infrastructure networks that connects the Great Lakes to the Pacific Northwest, and the Connell Rail Interchange Project certainly plays an important role as a shortline railroad connector that serves many other Central Washington Communities and Inland Washington Ports beyond just the City of Connell, WA.

The Connell Rail Interchange Project would add vital transportation mobility to our region and to the Great Northern Corridor. This project supports the Coalition's vision for "a globally competitive, multi-state and multimodal freight corridor consisting of a seamless road and rail network that promotes economic growth for neighboring communities and accommodates the demand for safe, efficient and environmentally sound transportation services."

We thank you for the opportunity to support this important project and urge your consideration for the Connell Rail Interchange Project funding from the BUILD grant program.

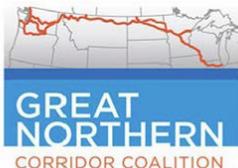
Sincerely,

**Curtis E. Shuck, Jr.**

*Executive Director*

**Great Northern  
Corridor Coalition**

P.O. Box 1255  
Williston, North Dakota 58802  
(360) 567-7521 / Mobile  
[www.greatnorthernrailroad.org](http://www.greatnorthernrailroad.org)



CC: Maria Pena - City of Connell, Washington





## Appendix H: 60% Cost Estimate and Design HNTB July 2018

BNSF Connell Interchange Track Project BNSF Contract No. July, 2018			
Engineer's Construction Cost Estimate - 60% Design July, 2018			
<b>COST SUMMARY</b>			
<b>A. CONTRACTED WORK</b>			
NO.	CATEGORY	CONTIN- GENCY	COST w/ CONTINGENCY
A1	Sitework	20%	\$10,841,600
A2	Bridges / Bridge Protection	20%	\$4,343,657
A3	Retaining Walls	20%	\$1,679,086
	<b>SUBTOTAL</b>		<b>\$16,864,343</b>
<b>B. BNSF WORK (Not in contract)</b>			
NO.	CATEGORY	CONTIN- GENCY	COST w/ CONTINGENCY
B1	Trackwork, Signalwork	20%	\$9,604,325
B2	Bridges	0%	\$0
B3	Right of Way	0%	\$0
B4	BNSF Flag Protection	20%	\$540,000
	<b>SUBTOTAL</b>		<b>\$10,144,325</b>
<b>C. WORK BY OTHERS (Not in contract)</b>			
NO.	CATEGORY	CONTIN- GENCY	COST w/ CONTINGENCY
C1	Utilities	0%	\$0
	<b>SUBTOTAL</b>		<b>\$0</b>
<b>TOTAL ALL WORK</b>			<b>\$27,008,668</b>

Cost estimate does not include engineering or construction services costs. The cost shown above represents an estimate of probable construction cost prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials or equipment or any control over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated price will not vary from this estimate.





BNSF Connell Interchange Track Project					
BNSF Contract No. July, 2018					
<u>Engineer's Construction Cost Estimate - 60% Design</u> July, 2018					
A1. Sitework MP (Contractor)					
WBS No. Loc/Pay Item#	Description	Qty.	Unit	Unit Cost	Total Cost
	Mobilization	1	LS	\$240,200.00	\$240,200.00
	Demobilization	1	LS	\$120,100.00	\$120,100.00
	Construction Exit and Access and Staging Areas	60	CY	\$40.00	\$2,400.00
	Filter Fabric Fence - High Visibility, Orange Reinforced	12,500	LF	\$4.00	\$50,000.00
	Environmental Contingency	1	LS	\$10,000.00	\$10,000.00
	Aggregate Base Course	0	CY	\$30.00	\$0.00
	Asphalt Concrete Pavement	0	CY	\$27.00	\$0.00
	Temporary Orange Construction Fence	12,500	LF	\$2.00	\$25,000.00
	Beam Guardrail Type 1	0	LF	\$25.00	\$0.00
	Seed and Mulch All Disturbed Areas Using Bonded Fiber Matrix	8	AC	\$2,500.00	\$20,000.00
	18 In. Dia. Conc Pipe	0	LF	\$100.00	\$0.00
	Extend 24 In. Dia. Conc Pipe Culvert	0	LF	\$200.00	\$0.00
	Extend 36 In. Dia. Conc Pipe Culvert	15	LF	\$250.00	\$3,750.00
	Extend 56 In. Dia. CMP Culvert	17	LF	\$300.00	\$5,100.00
	108 In. Dia. Corrugated Metal Pipe Culvert	0	LF	\$885.00	\$0.00
	Concrete Connection Collar	2	EA	\$2,500.00	\$5,000.00
	Clearing and Grubbing	23	AC	\$5,500.00	\$126,500.00
	Embankment (Granular)	16,509	CY	\$35.00	\$577,815.00
	Common Excavation	270,513	CY	\$10.00	\$2,705,130.00
	Haul to Disposal Site	339,563	TON	\$10.00	\$3,395,630.00
	Subballast	23,975	CY	\$45.00	\$1,078,875.00
	Painted Stop Line	0	LF	\$3.00	\$0.00
	Painted Railroad Crossing Symbol	0	EA	\$350.00	\$0.00
	Pavement Removal	0	SY	\$25.00	\$0.00
	Concrete Sidewalk Removal	0	SY	\$12.00	\$0.00
	Curb and Gutter Removal	0	LF	\$4.00	\$0.00
	Remove Beam Guardrail	0	LF	\$4.00	\$0.00
	Remove Beam Guardrail Anchor	0	EA	\$200.00	\$0.00
	Beam Guardrail Anchor	0	EA	\$850.00	\$0.00
	Beam Guardrail Flared Terminal	0	EA	\$2,000.00	\$0.00
	<b>Subtotal Construction Costs</b>				<b>\$8,365,500.00</b>
	Sales Tax			8.0%	\$669,200.00
	Contingency			20%	\$1,806,900.00
	<b>TOTAL SITEWORK</b>				<b>\$10,841,600.00</b>





A2. Bridges / Bridge Protection (Contractor)

WBS No. Loc/Pay Item#	Description	Qty.	Unit	Unit Cost	Total Cost
	<b>Crashwall at MP110.88</b>				
	Mobilization (at 10% of bid items)	1	LS	10%	\$37,550.00
	Temporary Erosion Control	1	LS	\$3,000	\$3,000.00
	Structure Excavation	539	CY	\$100	\$53,900.00
	Structure Backfill	420	Ton	\$120	\$50,400.00
	Cast-in-Place Retaining Wall	700	SF	\$100	\$70,000.00
	Cast-in-Place Retaining Crash Wall and Footing	139	CY	\$700	\$97,300.00
	Shoring	1	LS	\$50,000	\$50,000.00
	Furnish and Install Beam Guardrail	60	LF	\$15	\$900.00
	Site Restoration and Mitigation	1	LS	\$50,000	\$50,000.00
	<b>Subtotal Construction Costs</b>				<b>\$413,050.00</b>
	Sales Tax			8.0%	\$33,044.00
	Contingency @ 20%	1	LS	20%	\$89,218.80
	<b>Crashwall at MP110.88 Total</b>				<b>\$535,312.80</b>
	<b>Bridge 111.5B</b>				
	Mobilization (at 10% of bid items)	1	LS	10%	144,612.56
	Temporary Erosion Control	1	LS	\$7,000	7,000.00
	Clearing and Grubbing	0.2	AC	\$10,000	2,000.00
	Seeding and Mulching	0.2	AC	\$5,000	1,000.00
	Structure Excavation	208	CY	\$100	20,800.00
	Structure Backfill	40	TON	\$120	4,800.00
	Steel Bearing Pile, HP 14x117 (Includes Pile Splicer)	12,034	LF	\$150	1,805,100.00
	Furnish and Install Precast 30"x7'-0" Double Cell Box Beam (31'-10")	12	EA	\$15,000	180,000.00
	Furnish and Install Precast 30"x7'-0" Double Cell Box Beam (35'-10")	12	EA	\$17,000	204,000.00
	Furnish and Install Standard Precast Abutment Caps	4	EA	\$15,000	60,000.00
	Furnish and Install Special Precast Abutment Caps	2	EA	\$16,500	33,000.00
	Furnish and Install Precast Bent Cap	9	EA	\$13,000	117,000.00
	Furnish and Install Precast Wing Wall	4	EA	\$7,000	28,000.00
	Furnish and Install Sacrificial Beams & Supports	1	EA	\$32,000	32,000.00
	Steel Pipe Handrail	553	LF	\$75	41,475.00
	Misc. Steel (C10x20 Bracing and B100 Brackets, 11,250 lbs @ \$3.00/lb)	1	LS	\$33,750	33,750.00
	Elastomeric Bearing Pad - Prestressed Concrete Box Girders	48	EA	\$500	24,000.00
	Site Restoration and Mitigation	1	LS	\$200,000	200,000.00
	<b>Subtotal Construction Costs</b>				<b>\$2,938,537.56</b>
	Sales Tax			8.0%	\$235,083.00
	Contingency @ 20%	1	LS	20%	\$634,724.11
	<b>Bridge 111.5B Total</b>				<b>\$3,808,344.68</b>
	<b>TOTAL BRIDGES / BRIDGE PROTECTION</b>				<b>\$4,343,657.48</b>

A3. Retaining Walls (Contractor)

WBS No. Loc/Pay Item#	Description	Qty.	Unit	Unit Cost	Total Cost
	<b>Retaining Wall 110.47</b>				
	Mobilization (at 10% of bid items)	1	LS	10%	\$52,712.00
	Temporary Erosion Control	1	LS	\$7,000	\$7,000.00
	Clearing and Grubbing	0.1	AC	\$10,000	\$1,000.00
	Seeding and Mulching	0.1	AC	\$5,000	\$500.00
	Structure Backfill	1426	TON	\$120	\$171,120.00
	Furnish and Install Precast T-Wall Panels	2970	SF	\$75	\$222,750.00
	Wire Rope Handrail	330	LF	\$75	\$24,750.00
	Site Restoration and Mitigation	1	LS	\$100,000	\$100,000.00
	<b>Subtotal Construction Costs</b>				<b>\$579,832.00</b>
	Sales Tax			8.0%	\$46,386.56
	Contingency @ 20%	1	LS	20%	\$125,243.71
	<b>Total Retaining Wall 110.47</b>				<b>\$751,462.27</b>
	<b>Retaining Wall 111.30</b>				
	Mobilization (at 10% of bid items)	1	LS	10%	\$65,069.00
	Temporary Erosion Control	1	LS	\$7,000	\$7,000.00
	Clearing and Grubbing	0.1	AC	\$10,000	\$1,000.00
	Seeding and Mulching	0.1	AC	\$5,000	\$500.00
	Structure Backfill	1647	TON	\$120	\$197,640.00
	Furnish and Install Precast T-Wall Panels	4224	SF	\$75	\$316,800.00
	Wire Rope Handrail	370	LF	\$75	\$27,750.00
	Site Restoration and Mitigation	1	LS	\$100,000	\$100,000.00





Subtotal Construction Costs				\$715,759.00
Sales Tax			8.0%	\$57,260.72
Contingency @ 20%	1	LS	20%	\$154,603.94
<b>Total Retaining Wall 111.30</b>				<b>\$927,623.66</b>
<b>TOTAL RETAINING WALLS</b>				<b>\$1,679,085.94</b>
<b>TOTAL CONTRACTED WORK (Sitework, Bridges/Bridge Protection and Retaining Walls)</b>				<b>\$16,864,343.41</b>
<p><i>Cost estimate does not include engineering or construction services costs. The cost shown above represents an estimate of probable construction cost prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials or equipment or any control over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated price will not vary from this estimate.</i></p>				





B1. Trackwork MP 109.9 to MP 137.3 (BNSF - Not in Contract)

WBS No. Loc/Pay Item#	Description	Qty.	Unit	Unit Cost	Total Cost
	Remove TO No. 11 Man, 136#	1	EA	\$8,621.00	\$8,621.00
	Remove TO No. 24 Pwrd, 136#	0	EA	\$8,621.00	\$0.00
	Remove Existing Track 136# Welded, Salvage Rail/OTM	1,266	TF	\$12.00	\$15,192.00
	Remove Existing Grade Crossing Panels	0	LF	\$15.00	\$0.00
	Remove Signal Instrument House	0	EA		
	Remove Signals	0	EA		
	Remove Switch Heater	0	EA		
	Remove Propane Tank	0	EA		
	Remove Rail Lubricator	0	EA		
	Remove Train Detector Device	0	EA		
	Install TO No. 11 LH, Electric Lock, 136#	3	EA	\$177,900.00	\$533,700.00
	Install TO No. 11 RH, Electric Lock, 136#	1	EA	\$177,900.00	\$177,900.00
	Install TO No. 11 RH, Pwrd, 136#	0	EA	\$185,735.00	\$0.00
	Install TO No. 15 LH, Pwrd, 136#	1	EA	\$249,003.00	\$249,003.00
	Install TO No. 15 RH, Pwrd, 136#	2	EA	\$249,003.00	\$498,006.00
	Install TO No. 24 LH, Pwrd, 136#	0	EA	\$260,684.00	\$0.00
	Install TO No. 24 RH, Pwrd, 136#	0	EA	\$260,684.00	\$0.00
	Resurface Existing Track 136# Welded	0	TF	\$39.00	\$0.00
	TLM New Track: 136# New Rail - VOSSLOH TIES	24,469	TF	\$185.00	\$4,526,765.00
	TLM - Mobilization	1	LS	\$80,000.00	\$80,000.00
	JIG New Track: 136# New Rail - VOSSLOH TIES	0	TF	\$215.00	\$0.00
	Concrete Grade Crossing (10' wide)	0	LF	\$965.00	\$0.00
	Timber Grade Crossing (10' wide)	0	LF		
	Install Signal Instrument House	2	EA		
	Install New Signals	2	EA		
	Relocate Existing Signals	0	EA		
	Relocate Existing Flasher and Gate	0	EA		
	Install Switch Heater	0	EA		
	Install Propane Tank	0	EA		
	Install Rail Lubricator	0	EA		
	Install Train Detector Device	0	EA		
	<b>Subtotal Construction Costs</b>				\$6,089,000.00
	Contingency			20%	\$1,218,000.00
	<b>TOTAL TRACKWORK</b>				<b>\$7,307,000.00</b>

*Cost estimate does not include engineering or construction services costs. The cost shown above represents an estimate of probable construction cost prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials or equipment or any control over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated price will not vary from this estimate.*

B2. Bridges (BNSF - Not in Contract)

WBS No. Loc/Pay Item#	Description	Qty.	Unit	Unit Cost	Total Cost
	<b>Subtotal Construction Costs</b>				\$0.00
	Contingency				\$0.00
	<b>TOTAL BRIDGES</b>				<b>\$0.00</b>

B3. Right-of-Way Acquisition (BNSF - Not in Contract)

WBS No. Loc/Pay Item#	Description	Qty.	Unit	Unit Cost	Total Cost
					\$0.00
					\$0.00
					\$0.00
	<b>Subtotal Costs</b>				\$0.00
	Contingency			0%	\$0.00
	<b>TOTAL ROW ACQUISITION</b>				<b>\$0.00</b>
	<b>TOTAL BNSF WORK (Trackwork, Bridges and ROW Acquisition)</b>				<b>\$7,307,000.00</b>







MACHINE RENTAL	143.0 DAY	29,744	
TOTAL OTHER ITEMS COST		191,744	191,744
PROJECT SUBTOTAL			1,926,387
CONTINGENCIES			370,938
BILL PREPARATION FEE			0
GROSS PROJECT COST			2,297,325
LESS COST PAID BY BNSF			2,297,325
TOTAL BILLABLE COST			0





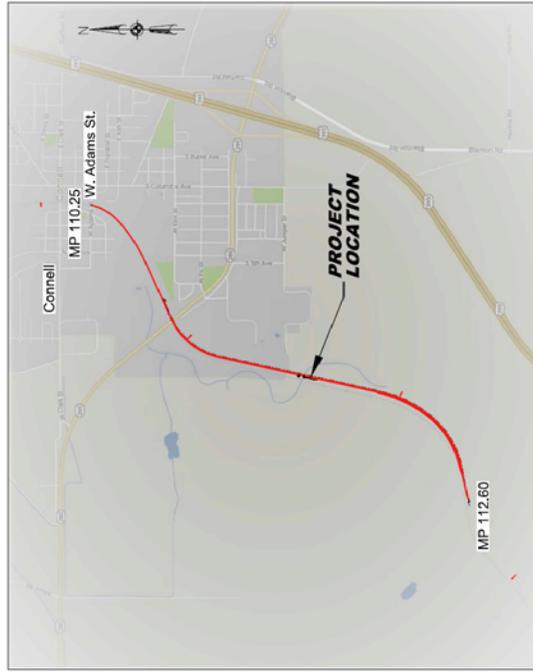
B4. BNSF Flag Protection (BNSF - Not in Contract)

<i>WBS No.</i>	<i>Description</i>	<i>Qty.</i>	<i>Unit</i>	<i>Unit Cost</i>	<i>Total Cost</i>
<i>Loc/Pay Item#</i>					
	BNSF Flagger	180.00	Day	1,250.00	\$225,000.00
	BNSF Sub-Group Coordinator	180	Day	1,250.00	\$225,000.00
	<b>Subtotal Costs</b>				<b>\$450,000.00</b>
	Contingency			20%	\$90,000.00
	<b>TOTAL BNSF FLAG PROTECTION</b>				<b>\$540,000.00</b>





**PRIVILEGED AND CONFIDENTIAL**  
**NORTHWEST DIVISION**  
**CONNELL INTERCHANGE TRACK**



**VICINITY MAP**  
NOT TO SCALE

**LAKESIDE SUBDIVISION  
LINE SEGMENT 46  
MP 110.25 TO MP 112.60**



**60% SUBMITTAL**

**DATE: JULY 12, 2018**

HNTB Corporation  
900 108th Avenue NE, Suite 900  
Bellevue, WA 98004  
Tel: (425) 455-3555 Fax: (425) 453-9179



**PRELIMINARY  
NOT FOR CONSTRUCTION**







## Appendix I: Designs and Agreements Completed to Date

- WSDOT Practical Design Review – Approved February 9, 2016.
- WSDOT Connecting Washington Design Agreement – Approved March 21, 2016.
- WSDOT - BNSF Design Agreement- Approve September 30, 2017.
- WSDOT and BNSF 30% design review- Completed May 2018
- WSDOT and BNSF 60% design review – Approved July 2018.





## Appendix J: Connell Interchange 30% Design HNTB March 2018

BNSF Connell Interchange Track Project BNSF Contract No. March, 2018			
<u>Engineer's Construction Cost Estimate - 30% Design</u> March, 2018 <b><u>COST SUMMARY</u></b>			
<b>A. CONTRACTED WORK</b>			
<i>NO.</i>	<i>CATEGORY</i>	<i>CONTIN- GENCY</i>	<i>COST w/ CONTINGENCY</i>
A1	Sitework	20%	\$10,839,450
A2	Bridges / Bridge Protection	20%	\$4,838,720
A3	Retaining Walls	20%	\$2,822,330
	<b>SUBTOTAL</b>		<b>\$18,500,500</b>
<b>B. BNSF WORK (Not in contract)</b>			
<i>NO.</i>	<i>CATEGORY</i>	<i>CONTIN- GENCY</i>	<i>COST w/ CONTINGENCY</i>
B1	Trackwork, Signalwork	20%	\$9,533,000
B2	Bridges	0%	\$0
B3	Right of Way	0%	\$0
B4	BNSF Flag Protection	20%	\$540,000
	<b>SUBTOTAL</b>		<b>\$10,073,000</b>
<b>C. WORK BY OTHERS (Not in contract)</b>			
<i>NO.</i>	<i>CATEGORY</i>	<i>CONTIN- GENCY</i>	<i>COST w/ CONTINGENCY</i>
C1	Utilities	0%	\$0
	<b>SUBTOTAL</b>		<b>\$0</b>
<b>TOTAL ALL WORK</b>			<b>\$28,573,500</b>

Cost estimate does not include engineering or construction services costs. The cost estimate is an estimate of probable construction cost prepared in good faith and with reasonable assumptions. It is not a commitment or an assurance of cost. It does not make any commitment or assume any duty to assure that bids or negotiated prices will be within the estimate.





BNSF Connell Interchange Track Project  
 BNSF Contract No.  
 March, 2018

Engineer's Construction Cost Estimate - 30% Design  
 March, 2018

A1. Sitework MP (Contractor)

WBS No. Loc/Pay Item#	Description	Qty.	Unit	Unit Cost	Total Cost
	Mobilization	1	LS	\$240,100.00	\$240,100.00
	Demobilization	1	LS	\$120,100.00	\$120,100.00
	Construction Exit and Access and Staging Areas	60	CY	\$40.00	\$2,400.00
	Filter Fabric Fence - High Visibility, Orange Reinforced	12,500	LF	\$4.00	\$50,000.00
	Environmental Contingency	1	LS	\$10,000.00	\$10,000.00
	Aggregate Base Course	0	CY	\$30.00	\$0.00
	Asphalt Concrete Pavement	0	CY	\$27.00	\$0.00
	Temporary Orange Construction Fence	12,500	LF	\$2.00	\$25,000.00
	Beam Guardrail Type 1	0	LF	\$25.00	\$0.00
	Seed and Mulch All Disturbed Areas Using Bonded Fiber Matrix	8	AC	\$2,500.00	\$20,000.00
	18 In. Dia. Conc Pipe	0	LF	\$100.00	\$0.00
	Extend 24 In. Dia. Conc Pipe Culvert	0	LF	\$200.00	\$0.00
	Extend 36 In. Dia. Conc Pipe Culvert	12	LF	\$250.00	\$3,000.00
	Extend 54 In. Dia. CMP Culvert	14	LF	\$300.00	\$4,200.00
	108 In. Dia. Corrugated Metal Pipe Culvert	0	LF	\$885.00	\$0.00
	Concrete Connection Collar	2	EA	\$2,500.00	\$5,000.00
	Clearing and Grubbing	23	AC	\$5,500.00	\$126,500.00
	Embankment (Granular)	16,509	CY	\$35.00	\$577,815.00
	Common Excavation	270,513	CY	\$10.00	\$2,705,130.00
	Haul to Disposal Site	339,563	TON	\$10.00	\$3,395,630.00
	Subballast	23,975	CY	\$45.00	\$1,078,875.00
	Painted Stop Line	0	LF	\$3.00	\$0.00
	Painted Railroad Crossing Symbol	0	EA	\$350.00	\$0.00
	Pavement Removal	0	SY	\$25.00	\$0.00
	Concrete Sidewalk Removal	0	SY	\$12.00	\$0.00
	Curb and Gutter Removal	0	LF	\$4.00	\$0.00
	Remove Beam Guardrail	0	LF	\$4.00	\$0.00
	Remove Beam Guardrail Anchor	0	EA	\$200.00	\$0.00
	Beam Guardrail Anchor	0	EA	\$850.00	\$0.00
	Beam Guardrail Flared Terminal	0	EA	\$2,000.00	\$0.00
	<b>Subtotal Construction Costs</b>				<b>\$8,363,750.00</b>
	Sales Tax			8.0%	\$669,100.00
	Contingency			20%	\$1,806,600.00
	<b>TOTAL SITEWORK</b>				<b>\$10,839,450.00</b>





A2. Bridges / Bridge Protection (Contractor)

WBS No. Loc/Pay Item#	Description	Qty.	Unit	Unit Cost	Total Cost
<b>Crashwall at MP110.88</b>					
	Mobilization (at 10% of bid items)	1	LS	10%	\$38,154.82
	Temporary Erosion Control	1	LS	\$3,000	\$3,000.00
	Structure Excavation	539	CY	\$100	\$53,925.93
	Structure Backfill	420	Ton	\$120	\$50,400.00
	Cast-in-Place Retaining Wall	700	SF	\$100	\$70,000.00
	Cast-in-Place Retaining Crash Wall and Footing	149	CY	\$700	\$104,222.30
	Shoring	1	LS	\$50,000	\$50,000.00
	Site Restoration and Mitigation	1	LS	\$50,000	\$50,000.00
	<b>Subtotal Construction Costs</b>				<b>\$419,700.00</b>
	Sales Tax			8.0%	\$33,600.00
	Contingency @ 20%	1	LS	20%	\$90,700.00
	<b>Crashwall at MP110.88 Total</b>				<b>\$544,000.00</b>
<b>Bridge 111.5B</b>					
	Mobilization (at 10% of bid items)	1	LS	10%	301,256.34
	Temporary Erosion Control	1	LS	\$7,000	7,000.00
	Clearing and Grubbing	0.2	AC	\$10,000	2,000.00
	Seeding and Mulching	0.2	AC	\$5,000	1,000.00
	Structure Excavation	208	CY	\$100	20,819.19
	Structure Backfill	40	TON	\$120	4,819.25
	Steel Bearing Pile, HP14x117 (Includes Pile Splicer)	13920	LF	\$150	2,088,000.00
	Furnish and Install Precast 30"x7'-0" Double Cell Box Beam (31'-10")	12	EA	\$15,000	180,000.00
	Furnish and Install Precast 30"x7'-0" Double Cell Box Beam (35'-10")	12	EA	\$17,000	204,000.00
	Furnish and Install Precast Abutment Cap	6	EA	\$15,000	90,000.00
	Furnish and Install Precast Bent Cap	9	EA	\$13,000	117,000.00
	Furnish and Install Precast Wing Wall	4	EA	\$7,000	28,000.00
	Steel Pipe Handrail	272	LF	\$75	20,425.00
	Misc. Steel (deck plates, brackets, conn., C10x20s etc.)	12500	LB	\$3	37,500.00
	Elastomeric Bearing Pad - Prestressed Concrete Box Girders	24	EA	\$500	12,000.00
	Site Restoration and Mitigation	1	LS	\$200,000	200,000.00
	<b>Subtotal Construction Costs</b>				<b>\$3,313,820.00</b>
	Sales Tax			8.0%	\$265,100.00
	Contingency @ 20%	1	LS	20%	\$715,800.00
	<b>Bridge 111.5B Total</b>				<b>\$4,294,720.00</b>
	<b>TOTAL BRIDGES / BRIDGE PROTECTION</b>				<b>\$4,838,720.00</b>

A3. Retaining Walls (Contractor)

WBS No. Loc/Pay Item#	Description	Qty.	Unit	Unit Cost	Total Cost
<b>Retaining Wall 110.47</b>					
	Mobilization (at 10% of bid items)	1	LS	10%	\$82,438.45
	Temporary Erosion Control	1	LS	\$7,000	\$7,000.00
	Clearing and Grubbing	0.1	AC	\$10,000	\$1,136.36
	Seeding and Mulching	0.1	AC	\$5,000	\$568.18
	Structure Backfill	3564	TON	\$120	\$427,680.00
	Furnish and Install Precast T-Wall Panels	3510	SF	\$75	\$263,250.00
	Steel Pipe Handrail	330	LF	\$75	\$24,750.00
	Site Restoration and Mitigation	1	LS	\$100,000	\$100,000.00
	<b>Subtotal Construction Costs</b>				<b>\$906,820.00</b>
	Sales Tax			8.0%	\$72,500.00
	Contingency @ 20%	1	LS	20%	\$195,900.00
	<b>Total Retaining Wall 110.47</b>				<b>\$1,175,220.00</b>
<b>Retaining Wall 111.30</b>					
	Mobilization (at 10% of bid items)	1	LS	10%	\$115,537.71
	Temporary Erosion Control	1	LS	\$7,000	\$7,000.00
	Clearing and Grubbing	0.1	AC	\$10,000	\$1,110.54
	Seeding and Mulching	0.1	AC	\$5,000	\$555.27
	Structure Backfill	5814	TON	\$120	\$697,680.00
	Furnish and Install Precast T-Wall Panels	4331	SF	\$75	\$324,843.75
	Steel Pipe Handrail	323	LF	\$75	\$24,187.50
	Site Restoration and Mitigation	1	LS	\$100,000	\$100,000.00
	<b>Subtotal Construction Costs</b>				<b>\$1,270,910.00</b>
	Sales Tax			8.0%	\$101,700.00
	Contingency @ 20%	1	LS	20%	\$274,500.00
	<b>Total Retaining Wall 111.30</b>				<b>\$1,647,110.00</b>





TOTAL RETAINING WALLS	\$2,822,330.00
<b>TOTAL CONTRACTED WORK (Sitework, Bridges/Bridge Protection and Retaining Walls)</b>	<b>\$18,500,500.00</b>
<p><i>Cost estimate does not include engineering or construction services costs. The cost shown above represents an estimate of probable construction cost prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials or equipment or any control over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated price will not vary from this estimate.</i></p>	







**C1. Utilities (By Others - Not in Contract)**

<i>WBS No. Loc/Pay Item#</i>	<i>MP, Location, Utility, Owner, Action</i>	<i>Qty.</i>	<i>Unit</i>	<i>Unit Cost</i>	<i>Total Cost</i>
					\$0.00
					\$0.00
	<b>Subtotal Construction Costs</b>				\$0.00
	Contingency			0%	\$0.00
	<b>TOTAL UTILITIES</b>				\$0.00

**C2. Miscellaneous Work (By Others - Not in Contract)**

<i>WBS No. Loc/Pay Item#</i>	<i>Description</i>	<i>Qty.</i>	<i>Unit</i>	<i>Unit Cost</i>	<i>Total Cost</i>
	<i>Category Not Used</i>				\$0.00
	<b>Subtotal Construction Costs</b>				\$0.00
	Contingency			0%	\$0.00
	<b>TOTAL MISC. WORK</b>				\$0.00
<b>TOTAL BY OTHERS WORK (Utilities and Miscellaneous Work)</b>					\$0.00





## Appendix K: Connell Interchange 30% Opinion of Construction Cost Estimate 3/2016

### [City of Connell](#) [Connell Rail Interchange Webpage](#)

#### *Opinion of Construction Cost Estimate HDR 3/2016*

HDR prepared Order of Magnitude – Opinion of Construction Cost Estimates for each interchange alternative. The cost estimates include all foreseeable items related to construction including but not limited to; engineering design, civil elements to construct the roadbed for the tracks, railroad elements to construct the tracks, permitting, construction management, utility accommodations, erosion control measures, and other details. **An overall 30% contingency is included which is typical to assign for this level of estimate detail.**

The following assumptions have been included in the South alternative estimate:

- Area of clearing and grubbing includes the entire earthwork footprint to remove organics and other potential debris which cannot be reintroduced into the subgrade construction.
- Top soil stripping depth assumed to be 6" average over 70% of each alternate's footprint.
- Engineering Geotextile fabric would be used on 50% of the earthwork footprint of each alternative to mitigate any poor subgrade conditions encountered during construction.
- Storm water treatment and disposal is assumed to be handled by track side ditches.
- Rock excavation for each of the alternatives was based on available soils data and is a percentage of the overall excavation ranging from 20% to 30%, and estimated quantities assume vertical rock excavation.
- Sub ballast will be 1-foot deep and includes the area adjacent to track access roads.
- Borrow sources are assumed to be in close proximity and provided at limited cost.
- Retaining walls are assumed to be an average of 10' tall at all potential wall areas.
- The estimate includes a limited utility accommodation allowance and is not based on specific known data or information.
- Costs for industrial leads (if presented) are not included.
- Costs assume work provided within a public works project without Buy America rules. The estimate accounts for certain elements of work within BNSF Right of Way that must be performed by BNSF (such as track and signal work) due to union agreements.

The estimate for the South Alternative is \$24 million, which includes contingency funds.





**Connell Interchange 30% Opinion of Construction Cost Estimate** **WORKING DRAFT**  
3/8/2018

Item #	Description	Unit	Unit Cost	Qty	Total
<b>Project Items</b>					
1	Mobilization	LS	4%	1	\$ 843,763.04
2	Performance and Payment Bond	LS	1.5%	1	\$ 241,411.14
3	Construction Surveying	LS	\$ 100,000.00	1	\$ 100,000.00
4	Material and Construction Testing	LS	\$ 30,000.00	1	\$ 30,000.00
5	Temporary Water Pollution/Erosion Control	LS	\$ 40,000.00	1	\$ 40,000.00
<b>SUBTOTAL OF PROJECT ITEMS (Excluding Mob and Bonds)</b>					<b>\$170,000</b>

<b>Roadway/Civil Items</b>					
6	Project Temporary Traffic Control	LS	\$ 7,500.00	1	\$ 7,500.00
7	Clearing and Grubbing	AC	\$ 2,500.00	23	\$ 57,500.00
8	Strip Topsoil	CY	\$ 2.50	12987	\$ 32,468.33
9	Roadway Excavation Including Haul	CY	\$ 5.50	258513	\$ 1,421,819.67
10	Rock Excavation	CY	\$ 25.00	39500	\$ 987,500.00
11	Embankment Compaction	CY	\$ 2.50	14700	\$ 36,750.00
12	Common Borrow Including Haul	CY	\$ 4.50	0	\$ -
13	Remove and Restore Borrow Area Overburden	CY	\$ 4.00	0	\$ -
14	Dispose of Excess Materials	CY	\$ 3.00	283313	\$ 849,939.00
15	Geotextile Fabric	SY	\$ 3.00	35700	\$ 107,100.00
16	Furnish and Install Subballast	CY	\$ 28.00	28750	\$ 805,000.00
17	Furnish and Install Retaining Wall System	SF	\$ 70.00	11300	\$ 791,000.00
18	36" Dia Steel Culvert Pipe	LF	\$ 85.00	32	\$ 2,720.00
19	Riprap Slope Protection	SY	\$ 30.00	12750	\$ 382,500.00
20	Bridge	LF	\$ 12,000.00	276	\$ 3,312,000.00
21	Pier Protection and Access Rd Accom @ SR260	LS	\$ 80,000.00	1	\$ 80,000.00
22	Permanent Mitigation and Erosion Control Features	LS	\$ 100,000.00	1	\$ 100,000.00
23	Seeding, Fertilizing and Mulching	AC	\$ 3,000.00	13.3	\$ 39,900.00
<b>SUBTOTAL OF ROADWAY / CIVIL ITEMS</b>					<b>\$8,013,896</b>

Area of earthwork footprint, no deductions  
70% grub area top soil strip at 0.5'

Assumes full volume but only 13% of overall excavation will be rock.

Borrow sources are assumed to be in close proximity and provided at limited cost  
Based on 50% footprint of top of grade and includes adjacent to track access road.  
Based on footprint of top of grade and includes access roads and turnout pads.  
Wall area increased due to second access road.

Estimated max area of 1.5:1 embankment or cut slope w/ 1.5' cover depth.  
Pile length and foundations are still in question. Width of bridge increased to accommodate second road.

<b>Railroad Items</b>					
24	BNSF Signalization	EA	\$ 1,100,000.00	1	\$ 1,100,000.00
25	Furnish and Install Track BNSF	TF	\$ 180.00	22241	\$ 4,003,380.00
26	Furnish and Install Track Other	TF	\$ 180.00	0	\$ -
27	Common Standard #15 Turnout BNSF	EA	\$ 220,000.00	3	\$ 660,000.00
28	Common Standard #11 Turnout BNSF	EA	\$ 180,000.00	5	\$ 900,000.00
29	Common Standard Turnout Other	EA	\$ 135,000.00	0	\$ -
30	Common Standard Derrail BNSF	EA	\$ 83,000.00	1	\$ 83,000.00
31	Common Standard Derrail Other	EA	\$ 35,000.00	0	\$ -
32	Furnish and Install Wood Panel Crossing	TF	\$ 500.00	288	\$ 144,000.00
33	Furnish and Install Walkway	LF	\$ 10.00	4000	\$ 40,000.00
<b>SUBTOTAL OF RAILROAD ITEMS</b>					<b>\$6,910,380</b>
SUBTOTAL OF BID ITEMS (EXCLUDING MOB and BOND)					\$16,094,076
<b>SUBTOTAL OF BID ITEMS (INCLUDING MOB and BOND)</b>					<b>\$16,979,250</b>

\* Cost could possibly be reduced

\* Cost could possibly be reduced

\* Cost could possibly be reduced

<b>Additional Required Items</b>					
	Utility Accomodations Allowance				\$ 20,000.00
	Railroad Flagging Cost				\$ 200,000.00
	Misc Access Road Extra Costs	DAY	\$ 1,000.00	200.00	\$ 200,000.00
	Approx Property Costs				\$ 50,000.00
	Agency Fees / Costs	AC	\$ 10,000.00	0.10	\$ 1,000.00
	Construction Testing QA Allowance				\$ 200,000.00
	Agreements				\$ 30,000.00
	Engineering (Railroad/Rail related civil including geotech and survey)				\$ 300,000.00
	Partial Construction Management				\$ 150,000.00
	Environmental Permitting and Mitigation				\$ 150,000.00
<b>SUBTOTAL OF ADDITIONAL ITEMS</b>					<b>\$1,131,000</b>
	Tax (8.0% of bid items and additional items)			8.0%	\$ 1,448,820
<b>TOTAL (BID ITEMS, ADDITIONAL, TAX)</b>					<b>\$19,559,070</b>
	Contingency			20%	\$3,811,814.04
<b>GRAND TOTAL</b>					<b>\$23,470,884</b>

Unit Prices based on 2015 prices for similar projects where quantities are shown.  
Stormwater treatment and disposal is assumed to be handled by track side ditches.  
The estimate includes a limited utility accommodation allowance and is not based on specific known data or information.  
Costs assume work provided within a public works project without Buy America  
The estimate accounts for certain elements of work within BNSF Right of Way that must be performed by BNSF (such as track and signal work) due to union agreements\*.  
(\* If the facility is owned by others, BNSF would only need to perform construction on items that it would own and maintain)

