City of Connell

EASTERN WASHINGTON'S HARVESTLAND

Maria Peña, City Administrator
104 E. Adams, P.O. Box 1200 ♦ Connell WA 99326
(509) 234-2701 ext 1234 ♦ Fax: (509) 234-2704 ♦www.cityofconnell.com

March 29, 2018

Freight Mobility Strategic Investment Board
PO Box 40965
Olympia, WA 98504-0965

Dear FMSIB:

The City of Connell is pleased to submit our Connell Rail Interchange Project for the Freight Mobility Strategic Investment Program.

The Connell Rail Interchanges is a rail improvement project sponsored by the City of Connell and the Great Northern Corridor Coalition. This $24 million project will relocate, reconfigure and improve the critical rail interchange in rural Connell, WA where the Columbia Basin Railway (CBRW) enters onto the BNSF Railway mainline. The requested $4 million in FMSIB funds will be used to help fill the funding gap needed to construct infrastructure improvements to meet 21st 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 residential areas, school traffic patterns and emergency response routes. The existing railyard configuration is outdated, undersized, inefficient and cannot accommodate today's modern train service requirements.

The current yard configuration causes congestion at primary street crossings, bifurcates the city center and the main residential areas from local schools, and emergency services. Crossings may be blocked for up to 20 minutes at a time, on average they are blocked 10 to 15 minutes when switching trains. Congestion going east on Clark Street is particularly dangerous during the winter as this crossing is at the bottom of an incline and gets very icy. During icy weather school buses (37 per day on Clark St) must be rerouted to the state highway to avoid this intersection. This is over a 2 mile detour for our children. When both crossings are blocked, traffic heading west on both Clark Street and Adams Street but stopped at the crossings causes vehicles to back up onto the city's main street for several blocks. This causes the traffic to be at a standstill until the crossings have re-opened. Also, the inefficiency of the interchange creates a critical "pinch point" in serving both national and regional needs.

The primary goal of the Connell Rail Interchange project is to enable long trains operating westward on BNSF's Lakeside Subdivision (R1) from Spokane to be interchanged to the CBRW

shortline (R2) in Connell without the need to break trains apart. The outdated configuration leads to time-consuming switching and extensive roadway blockage at two at-grade-crossing in Connell's city center. It also impedes the efficient flow of rail traffic along the important BNSF Lakeside Subdivision. Background: BNSF and CBRW interchange rail cars in Connell along the Lakeside Subdivision of BNSF Railway's national rail system. With the completion of the Port of Warden's Pacific Coast Canola Processing Facility, unit trains of 100 cars of canola arrive from Canada every three weeks and have to be taken down to Pasco, where the engines are moved from the western end of the train, to the eastern end of the train before the train can return 35 miles back up to Connell before the train needs to be taken apart and placed into the current interchange yard to await for CBRW engines to reconnect the segments into a full train and take it to the Pacific Coast Canola Facility for delivery. On the outbound leg, the train operations have to be repeated to return the empty cars back to Canada to be refilled for the next delivery to Warden.

Thank you for your consideration of our project.

Respectfully,

Maria T. Peña,
City Administrator

Freight Mobility Strategic Investment Program
2018 Application Form

Project Summary

Project Title:	Connell Rail Interchange

Applicant Organization

Lead Agency:	**City of Connell**
Contact Person & Title:	**Maria Pena, City Administrator**
Email:	mpena@connellwa.org
Phone:	**509-234-2701 x 1234**
Address:	104 E Adams Street, PO Box 1200 Connell, WA 99326-1200

Project Location

City:	**Connell**	**Legislative**	**4th Congressional District,**
County:	**Franklin**	**District(s):**	**9th Legislative District**
GPS Coordinates:	46.662608 -118.862891		

STRATEGIC FREIGHT CORRIDOR on which this project is located.
(Attach a detailed map of the proposed project and all affected adjacent routes - see Q1)

R1- BNSF's Lakeside Subdivision of their Northwest Region in the vicinity of MP 110 - 112

PROJECT ADDRESSED IN REGIONAL and/or STATE TRANSPORTATION PLANS (see Q9)

Regional Plan:	**Benton-Franklin COG - 2017 Regional Metro Plan**	**2017**
	name of plan(s)	date
State Plan:	**WA STIP- Connecting WA**	**2016**
	WSDOT Project List	**2016**
	2017 Washington State Freight Systems Plan	**2017**
	name of plan(s)	date

List of Supplemental Documents:

- **Vicinity Map (required - see Q1B)**
- **Traffic Data (required - see Q1C)**

Supplemental Application Form	**used**	**N**
If yes, # of pages		

Project Financial Summary:

Total Public Sector Match:	$ 20,100,000	83.4%
Total Private Sector Match:		0.0%
Total Match:	$ 20,100,000	83.4%
FMSIB Request:	**$ 4,000,000**	16.6%
Total Project Cost:	**$ 24,100,000**	100.0%

Funding Detail

Partnerships:	Anticipated	Committed	Total
Public Sector Match			
Lead Agency Funds		$ 100,000	$ 100,000
Connecting WA - State		$ 10,000,000	$ 10,000,000
			$ -
			$ -
			$ -
Private Sector Match			
			$ -
			$ -
			$ -
			$ -
			$ -
Partnership Total	$ -	$ 10,100,000	$ 10,100,000

Funding Allocation:	PE	RW	CN	Total
FMSIB Request			$ 4,000,000	$ 4,000,000
Committed Public Sector				
Lead Agency Funds	$ 100,000			$ 100,000
State of WA -CW			$ 10,000,000	$ 10,000,000
				$ -
				$ -
				$ -
Committed Private Sector				
				$ -
				$ -
				$ -
				$ -
				$ -
Anticipated / Need			$ 10,000,000	$ 10,000,000
Total	$ 100,000	$ -	$ 24,000,000	$ 24,100,000

Tentative Dates	PE Completed	RW Completed	CN Ad	Apr-19
	18-Jul	N/A	Start	Jun-19
			Completed	Sep-20

Cash Flow Needs ($1,000's):

	pre-2017	2017-2019	2019-2021	2021-2023	2023-2025	Total
Total PE Phase	$ 100	$ 2,000				$ 2,100
Total RW Phase						$ -
Total Const. Phase		$ 1,000	$ 21,000			$ 22,000
FMSIB Request			$ 4,000			$ 4,000

Project Total	$ 24,100	100.0%
Partnership Total	$ 20,100	83.4%
FMSIB Total	$ 4,000	16.6%

Detailed Project Information

In addition to the Project Summary and Funding Detail submitted on page 1 and 2, the following information is required in order for this funding application to be considered complete.

Refer to the Freight Mobility Strategic Investment Program 2018 Guidelines and 2018 Criteria documents for further details and additional guidance.

Project Narrative and Required Supplemental Data:

Q1: Description and scope of project and supplemental data:
- **Q1A: Truck/Rail industry contact names**
- **Q1B: Vicinity and benefitted area map(s)**
- **Q1C: Traffic Data**

Freight Mobility for the Project Area:

Q2: Truck travel times, with and without the project, and other freight travel time benefits
Q3: Other project benefits
Q4: Calculate truck volume to capacity ratio
Q5: Rail capacity improvements

Freight Mobility for the Region, State, & Nation:

Q6: Significance of the project to regional economy
Q7: Significance of the project to state economy
Q8: Relation of project to port or international boundary access
Q9: Relation of project to a regional, state, or national freight corridor

General Mobility:

Q10: Non-truck travel times, with and without the project
Q11: If project includes at-grade railroad crossing improvements, reduction in travel delays
Q12: If project includes at-grade railroad crossing improvements, travel time to an unobstructed crossing
Q13: Is project improving an urban principal arterial

Safety:

Q14: Accident history
Q15: Emergency vehicle access
Q16: Extent of railroad crossing closure

Freight and Economic Value:

Q17: Benefit to mainline rail operations
Q18: Key employment areas
Q19: Improved train speed

Environment:

Q20: Non-attainment area
Q21: Sensitive receptor sites
Q22: Sustainability policies and plans
Q23: Air quality

Partnerships / Costs / Special Issues:

Q24: Critical timing of partnership investments
Q25: Project quantitative benefits
Q26: Least-cost alternatives
Q27: Special or unique circumstances

Signature and Certification

Detailed Project Application

Note: If inadequate space is provided for individual responses, please utilize the Supplemental Application Form (if utilized, note its use on the cover sheet)

Project Narrative and Required Supplemental Data:

Q1 **Please describe the scope of the freight mobility project and how the project will:**

(a) reduce barriers to or increase capacity for improved freight movement; and/or

(b) mitigate the impacts on local communities of increasing freight movement, including rail and road conflicts.

Reducing barriers or increasing capacity includes: truck climbing lanes, realignment and rerouting project to avoid excessive truck climbing grades or general congestion; alternate truck routes; dedicated truck lanes; access into and/or out of ports, intermodal freight facilities and freight terminals; truck turning lanes; changes in roadway or intersection geometry to better accommodate trucks; increasing weight limits; and the use of Intelligent Transportation Systems (ITS).

Mitigation includes grade separations, mitigating impacts of increasing truck and/or railroad traffic to a community and can be the use of ITS.

Answer:

This $24 million project will relocate, reconfigure and improve the critical rail interchange in rural Connell, WA where the Columbia Basin Railway (CBRW) enters onto the BNSF Railway mainline. The requested $4 million in FMSIB funds will be used to help construct infrastructure improvements to meet 21st 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, improving freight movement and safety, this investment will relocate the rail switch yard away from residential areas, school traffic patterns and emergency response routes.

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

A primary goal of the Connell Rail Interchange project is to enable long trains operating westward on BNSF's Lakeside Subdivision (R1) to be interchanged to the CBRW shortline (R2) without the need to break trains apart. The outdated configuration leads to time-consuming switching and extensive roadway blockage at two at-grade-crossing in Connell's city center. It also impedes the efficient flow of rail traffic along the important BNSF Lakeside Subdivision. **Background:** BNSF and CBRW interchange rail cars in Connell along the Lakeside Subdivision of BNSF Railway's national rail system. The current interchange yard at Connell was not built to serve as an interchange between two separate railroads nor trains longer than 25 cars. The rail line that is now owned by CBRW was originally built by Northern Pacific, BNSF's predecessor, as a branch line off their Great Northern Corridor Spokane-Pasco main line. Nor was the interchange constructed with the concept of 110 car unit-trains in mind. Instead, the current yard was intended for staging only 25 to 30 car length trains.

This project will allow for the simultaneous accommodation of the interchanges of an inbound and an outbound train between BNSF and CBRW, without one blocking the path of the other. The new interchange reconfiguration will allow rail operations such as switching arriving BNSF trains and repositioning or reconfiguring locomotive power, to occur without blocking the BNSF Lakeside Subdivision main line and the two Connell city center at-grade crossings. Additionally, each railroad operates a train to Connell, with both trains attempting to arrive simultaneously to exchange rail cars. BNSF operates a train called the "Connell Turn" from Pasco to Connell. This BNSF train delivers rail cars to CBRW as well as switches cars for local BNSF-served industries between Pasco and Connell. CBRW originates a train at the Port of Warden and delivers cars to BNSF in the current interchange yard. CBRW provides service to rail shippers along their line that travels northwest out of Connell to destinations such as Bruce, Warden, Othello, Royal City, Schrag, Wheeler and as far north as Moses Lake. (See map of CBRW rail route in supplemental information.) The interchange of cars occurs on BNSF track at Connell. The current capacity of the BNSF yard is a 5-track yard approximately 0.4 miles long with 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 the current interchange. BNSF's Lakeside Subdivision has a descending westbound grade of up to 0.7% out of Connell. The reconfiguration of the interchange yard will improve rail reliability, lower rail and truck operating costs, eliminate dangerous blockages in the City of Connell, and enhance the movement of freight along the Great Northern Corridor.

Q1A **Provide the names, contact information, and comments of the truck and/or rail representatives consulted on this project.**

Answer: BNSF is currently preparing the PE for this project. (James) Ryan Blumer, is the BNSF lead on this project (206.625.6146) or at James.Blumer@BNSF.com. This project has also been chosen by the Great Northern Corridor Coalition as one of two projects along the Corridor that they are sponsoring for federal funding. Railroad Contact is Colleen Weatherford, BNSF, Director Public Private Partnerships (1-807-694-0311) colleen.weatherford@bnsf.com

Q1B **Provide a map identifying the extent of the proposed project and identify all transportation facilities directly affected by the proposal.** (Provide this information as a separate document submitted with the hardcopy transmittal of the completed application.)

Q1C **Provide traffic data within the project boundaries describing four scenarios:**

(1) current traffic values with no project
(2) current traffic values with project completed, if different than (1)
(3) predicted traffic values 10-years in the future with no project
(4) predicted traffic values 10-years in the future with project completed, if different than (3)

Required "Traffic Values" for each of 1-4 above:

(1) Percentage of various vehicle types
(2) Average weekday/average weekend
(3) AM and PM peak period volumes, or 24-hour continuous fluctuation, for both travel directions for vehicles
(4) Provide separate peak period data, or 24-hour continuous fluctuation, pertaining to trucks if freight movement has different timing/peak flow characteristics than other traffic

(Provide this information as a separate document submitted with the hardcopy transmittal of the completed application.)

Freight Mobility for the Project Area:

Q2 **Provide travel time for truck traffic between logical termini that reflect the benefits of the proposal:**

- **during free-flow with and without the project**
- **during current truck peak hours with and without the project**
- **during truck peak hours 10-years in the future with and without the project**

Include with the response a description of the logical termini utilized.
(Provide this information below or submit this information as a separate document attached to the hardcopy transmittal of the completed application.)

Answer: As this is a rail project, the City does not have specific data on truck traffic. The FRA reports that both E Adams and Clark have 26% truck traffic. Additional information for the two crossings is that both crossings are often closed between 10-15 minutes and up to 20 minutes at a time during the switching of the trains. This causes traffic to back up into downtown Connell, blocking all other streets in the Center of Connell. These closures not only cause freight delays, but also provide safety issues and emergency response delays.

Q2 continued

Describe other freight mobility benefits from reduced truck travel time as a result of the project.

Answer:

The relocation of the interchange yard to approximately 1 mile south of Connell's City Center will improve the mobility of trucked freight that cross the BNSF Mainline at two at-grade crossings that are currently blocked as the trains arrive, depart and perform interchange activities in the current yard. **Background**: The City of Connell has a population of approximately 5400 people; however these two crossings have a very high percentage of truck traffic (26%) with a combined total of 360 trucks using these two crossings every day. The two crossing are only 660 feet apart. In 2016, there were an average of 44 trains per day creating blockages due to both train traffic and switching. Switching is completed at no more than 10 MPH; and through trains average speeds of 45 MPH through the area. Combined, at a minimum of there is a 2.5 minutes closure per mainline train + an average of 2 switching events per day of 20 minutes each. This totals over 150 minutes each day of closure at each crossing when traffic, emergency vehicles and truck freight is blocked from movement in Connell. The amount of these closures will drop by 40 minutes per day or 36%, when the new yard is completed.

In addition, the new location of the yard will eliminate this dangerous, and costly impediment to the movement of freight in the region. The new yard will be under an overpass and will not have any at-grade road crossings. By relocating and enlarging the yard to the south, and eliminating the current blockages, more freight can be moved efficiently by rail and truck. This added capacity will improve the overall freight mobility of the region and allow more freight to be transported competitively by rail versus truck into Central Washington.

Q3 **What are some of the benefits that this project will have to improve safety, eliminate noise, reduce emissions, eliminate grade crossings, reduce vehicular delays, or result in other environmental benefits?**

Answer: The following are benefits from the project:

Economic Development - Construction of the Connell Rail Interchange will improve rail transportation of agricultural and industrial goods in Eastern and Central Washington. It will enhance economic development.

Greater Capacity - The new rail interchange will allow greater capacity of current rail traffic by improving the flow and velocity of trains.

Future Growth - Rail interchange improvements will provide for future growth in product transport and minimize the increase in rail movements.

Improved Crossing Activity - The new interchange will reduce the overall impacts of train-interchange activities by moving them away from the at-grade crossings.

Better 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.

Enhanced Access - Vehicular and pedestrian accessibility will be greatly improved over existing conditions due to the reduction in multiple trains stopped across road crossings causing traffic delays.

Net Impact

Without the new rail interchange, existing conditions would continue to be a pinch point in the regional rail system, resulting in rail transport inefficiencies, and limit economic development. Local residents and visitors would continue to experience significant delays at grade crossings.

A full Benefit Cost Analysis can be found on the project's webpage on the City of Connell's website at http://www.cityofconnell.com/index.asp?SEC=A9165AB6-61EA-4D8B-96BF-BA9AF7E3228E&Type=B_BASIC

Q4 **What is the improvement in the volume to capacity ratio (v/c) for truck peak-hour movements?**
(Perform the following calculation. If you believe this question does not apply or cannot be performed as outlined, explain why within the space provided for assumptions. If multiple intersections and/or dissimilar roadway segments are involved, the applicant should provide this information as a separate document attached to the hardcopy transmittal of the completed application.)

Describe any assumptions utilized in gathering and/or applying the data:

Answer: N/A This is a rail project and we do not have traffic data to this level.

Note: HCM = 2000 ITE Highway Capacity Manual

For determination of truck volume to capacity ratio for intersection improvements, go directly to Step 4, skipping Steps 1 and 3.

Step 1: Calculate the current peak hour truck volume

Current peak volume	(A)		vehicles / hour
Current truck percentage	(B)		%
Current peak hour truck volume (C = A x B / 100)	(C)	0	trucks/peak hour

Step 2: Convert peak hour truck volume to passenger car equivalents

Factor for converting trucks to passenger car equivalents (PCE) Use a factor of 1.5 except for the following conditions: For upgrades use the value from Exh 21-9 of the HCM using the specific site conditions For downgrades use the value from Exh 21-11 of the HCM using the specific site conditions	(D)		PCE
Passenger car equivalents (E = C x D)	(E)	0	PCE's / peak hour

Step 3: Determine the current facility capacity (without the project)

Highway capacity value from the HCM For multilane highways, use the value from Exh 21-2 for the posted speed and LOS D For basic freeway sections on four-lane or more freeways, use Exh 23-2 for the posted speed and LOS D	(F)		PCPHPL
Number of current lanes in the direction of peak hour flow	(G)		lanes
Current capacity (H = F x G)	(H)	0	PCPH

Step 4: Determine the current truck volume to capacity ratio (v/c)

For Intersections --- The capacity value (I) is typically computed using computer software developed for this purpose, or can be hand calculated using the procedure established in the HCM (Chapter 16 for signalized intersections, or Chapter 17 for un-signalized intersections)	(I)		capacity
Intersection truck v/c (J = E / I)	(J)	#DIV/0!	int. truck v/c

OR

For Highways Highway truck v/c (J = E / H)	(J)	#DIV/0!	hwy. truck v/c

Step 5: Determine the projected truck volume to capacity ratio using the methods presented in the above Steps 1 through 4 with the proposed improvements in place

Step 1:			
Current peak volume	(a)		vehicles / hour
Current truck percentage	(b)		%
Current peak hour truck volume (c = a x b / 100)	(c)	0	trucks/peak hour
Step 2:			
1.5 or HCM Exh 21-9 or HCM Exh 21-11	(d)		PCE
Passenger car equivalents (e = c x d)	(e)	0	PCE's / peak hour
Step 3: With project improvements in place			
HCM Exh 21-2 or HCM Exh 23-2	(f)		PCPHPL
number of lanes	(g)		lanes
Capacity (h = f x g)	(h)	0	PCPH
Step 4:			
Intersection capacity with improvements in place	(i)		capacity
Intersection truck v/c (K = e / i)	(K)	#DIV/0!	int. truck v/c
OR			
Highway truck v/c (K = e / h)	(K)	#DIV/0!	hwy. truck v/c

Step 6: V/C Improvement			
Enter "J" from the intersection or highway calculation above	(J)		v/c w/o project
Enter "K" from the intersection or highway calculation above	(K)		v/c w/ project
V/C Improvement (L = J - K) (Note: a value of zero will be utilized for evaluation purposes if the calculation result is less than zero)	(L)	0.000	

Q5 **If this project results in improved railroad operating efficiencies, please describe the increases to train velocity, the reduction in train delays, and/or increases in capacity.**

Answer:
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 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 Canola Plants in the region. It is anticipated that as the Canola Plant continues to invest, this frequency will 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 yard track lengths. This is time-consuming, costly and causes extensive roadway grade-crossing blockages

A primary goal of the project is to enable unit trains operating westward on BNSF's Lakeside Subdivision to be interchanged to the CBRW . To accomodate unit train interchange, a minimum of three tracks is 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).

Freight Mobility for the Region, State, & Nation:

Q6 **What is the significance of this project to the regional economy? Describe the project's impact on the regional freight transportation system and the regional economy** (i.e., nature of the improvement and principal freight moved; improved intraregional and interregional freight movement in terms of products, industries and direct employment; improved freight movement and access to domestic and international markets in terms of freight, industries and direct employment; benefits to other regional industries; and access and links to intermodal connections and facilities.)

Answer: 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. 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. Additionally, the efficient movement of CBRW and BNSF trains in the region will improve the ability of the agricultural producers, food processors and the growing manufacturing sector in the region to competively move raw materials and finished product to points east and west.

Q7 **What is the significance of this project to the state economy? Describe the project's impact on the state (outside the region) freight transportation system and the state (outside the region) economy.** (i.e., improved intrastate freight movement in terms of products, industries and direct employment; improved freight movement to domestic and international markets in terms of freight, industries and direct employment; and benefits to other state industries.)

Answer:
The economic value of good and services from the 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, both of the industries sited on the CRBW line as well as those products moving by rail to our WA Columbia River and Puget Sound Ports.

Q8 **Does the project improve the freight movement for direct port access or across an international border?**

Yes	X		No	

If yes, explain the proximity and the relationship of the project to the port or border and how it improves freight flow.

Answer:
Although, this project is not within the first or last mile of a port, this project will improve direct delivery of the Pacific Coast Canola Project at the Port of Warden and well as other Ports on the CBRW line. The canola crushing facility produces expeller-pressed canola oil and high quality canola meal is a great example of potential growth opportunities that need efficient rail services. The plant is the first commercial-scale canola crushing operation west of the Rockies. The Interchange project also will provide improve rail serve to the recently completed CHS Fertilizer plant near Warden.
Additionally, another Port that will gain direct service is the Port of Moses Lake. The new Rail Interchange will provide the capacity required to serve the $30 Million Rail expansion project at the Port of Moses Lake. That rail expansion project connects, throught the CBRW, to the Connell interchange. It will access 1,250 acres of industrial lands available for development in the GCIA Employment Center. Further, this new Moses Lake route, which bypasses Downtown Moses Lake, will also deliver rail access to more than 1,000 acres of industrial lands along the Wheeler Industrial Corridor outside the City of Moses Lake. It will eliminate a major impediment to retaining and attracting new industries in rural Central Washington by providing a cost-effective transportation option for existing businesses, agricultural producers and new industries to ship to/from PNW ports and the Midwest. The reconfigured Interchange at Connell is vital to the short and long term success of these ventures.

Q9 **Is this project part of a regional corridor solution or major system improvement?**

Yes	x		No	

If yes, is your regional planning council supportive of the project? Describe.

Answer: Yes, 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 3200 mile route that merits their sponsorship for federal funding requests.

If yes, list the state and regional plans which include the proposed project. List the stakeholders involved and describe the process by which the proposed project was selected and prioritized.

Answer: 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. Stakeholders are Benton Franklin Transit, Franklin County, Benton County, Port of Pasco, Port of Benton, Port of Kennewick, WSDOT - South Central, City's of; Benton City, Kennewick, Richland, Pasco, West Richland, Mesa, Connell, Kahlotus, and Prosser.
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 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. During four meetings between May and October 2016, WSDOT consulted with WAFAC on the solicitation process, schedule and prioritization criteria for developing a freight project list.

General Mobility:

Q10 **Provide travel time for non-truck traffic, between logical termini that reflect the benefits of the proposal:**

- **free-flow with and without the project**
- **during current AM and PM peak hours with and without the project**

Note if this is the same logical termini as used in Q2. If it is a different one, include with the response a description of the logical termini utilized.

(Provide this information below or submit this information as a separate document attached to the hardcopy transmittal of the completed application.)

Answer: The City has not collected travel time data for non-truck traffic. We do know that currently there are over 40 trains per day moving on the BNSF mainline through Connell that block the two at-grade crossings for up to 20 minutes per train if a switch is occuring. Non-truck traffic crossing the train tracks at both at-grade crossings is estimated by the railroad to be 74% of the daily traffic, including a total of 64 school buses, which have to stop at the crossing whether there is a train or not.

Describe other non-truck traffic benefits from reduced travel time as a result of the project.

Answer: Reduction in the minutes per day of crossing closures will reduce the impact of idling vehicles on air emissions and un-needed fuel usage as vehicles await the reopening of blocked Railroad crossings.

Q11 **If the project involves an at-grade road/railroad crossing, what is the reduced queuing and backup as a result of this project?** (perform the following calculation or ignore if not applicable)

Using the Watson Equation: Q = V x R

Q = Average queues length (in number of vehicles per lane)

V = Volume expressed in ADT divided by number of lanes in one direction

R = Percentage of time per day either the crossing is closed or vehicles are stopped at a crossing

Step 1: Calculate the current queuing (without the project)			
Current Average Daily Traffic (ADT)	(A)		vehicles / day
Number of lanes in one direction	(B)		lanes
Volume per lane (C = A / B)	(C)	#DIV/0!	vehicles / lane
Current closure or stoppage time either measure or calculated	(D)		%
Average queue length (E = C x D / 100)	(E)	#DIV/0!	vehicles / lane
Step 2: Calculate the projected queuing with the proposed improvement			
Projected Average Daily Traffic (ADT) (current +10-years)	(F)		vehicles / day
Number of lanes in one direction with proposed improvements	(G)		lanes
Volume per lane (H = F / G)	(H)	#DIV/0!	vehicles / lane
Estimate or calculated closure or stoppage time	(I)		%
Average queue length (J = H x I / 100)	(J)	#DIV/0!	vehicles / lane
Step 3: Reduction in queuing (K = E - J) (Note: a value of zero will be utilized for evaluation purposes if the calculation result is less than zero)	(K)	#DIV/0!	vehicles / lane

Supplemental Notes:

Q12 **If the project involves an at-grade road/railroad crossing, what is the shortest travel time to an unobstructed crossing in minutes?**

Answer: The closest unobstructed crossing is an average 1.25 miles away from the two at-grade crossings. It is about three minutes driving distance on the nearest street at 25 mph.

If present queuing can result in emergency vehicle delay, describe the most logical alternate emergency vehicle route and include the added distance and travel time.

Answer: The most logical emergency route to the western side of Connell is to the south across the Hwy 395 overpass which is approximately 1.25 miles south of the two at-grade crossing that are consistently blocked by rail traffic.

Q13 **Is the project on a designated urban principal arterial?**

Yes			No	x

Safety:

Q14 **Have there been any accidents at the project location that this freight project will help reduce?**

Yes			No	x

If yes, summarize the 5-year accident history and explain how the project will reduce each type of accident. (Separate railroad crossing accidents from non-railroad crossing accidents. Provide this information below or submit this information as a separate document attached to the transmittal of the completed application.)

Answer: No Reported Railroad/ Vehicle accidents. Although, numerous fender benders due to incliment weather and steep grade of Clark Street at crossing.

Q15 **Is the project located on an essential emergency vehicle access route?**

Yes	X		No	

If yes, describe (i.e., fire, police, ambulance, school bus route and include closest alternative emergency access)

Answer: The current yard configuration routinely blocks the City of Connell's two primary at-grade rail crossings: Clark St and East Adams St. as trains are being switched into and out of the outdated and undersized interchange yard. In addition, more blockages occur as 42 BNSF trains move along the BNSF mainline through the City each day. Connell is a very small town with one health center and a main fire and police station all located east of the mainline in downtown Connell. The mainline bifurcates these services from the schools and the play field that are located west of the BNSF mainline. If theses crossings are blocked, emergency vehicles must travel an additional 2 miles to reach the school grounds. This delay can cost lives and increase the recovery time of accident or injury victims. In addition, the fire response time delay can result in additional loss of property.

Q16 **Does this project result in additional road/rail closures?**

Yes			No	x

If yes, how many and where?

Answer: N/A

Freight and Economic Value:

Q17 **Does the project result in operational efficiencies to the railroad network/system and benefit economic development and the overall capacity and movement of freight within the State/Region?**

Answer: This project was identified in the 2014 WA State Rail Plan to help improve rail connectivity in central Washington. CBRW offers a cost- effective alternative to lengthy truck transportation and is now the busiest short line railroad in eastern Washington. The rail line has more than 60 active shippers and handles more than 10,000 carloads per year. WSDOT has designated CBRW as a R2 Freight Rail Corridor. Most other Washington State rail lines are classified as R3 or R4 lines that handle much less tonnage. Traffic volumes continue to grow with the opening of the Port Warden unit train unloading facility in 2013. The Port Warden Canola facility allows CBRW to receive 110- car unit trains of canola seed from BNSF for delivery to Pacific Coast Canola crushing and oil refining facility. In addition to unit trains, CBRW trains serve new and expanding industrial sites and facilities in Moses Lake and agricultural shipping centers of Bruce and Schrag. When the Moses Lake Rail Project is complete, CBRW will also provide service to over 2500 acres of vacant industrial lands near, or adjacent to, the Grant County International Airport.

Q18 **Does the project improve access to key employment areas?**

Yes	X		No	

If yes, describe and include the number of temporary jobs created during construction and the number of permanent jobs preserved and/or created. Include the names of businesses and/or the types of permanent jobs affected.

Answer: The construction of this project will generate an estimated 182 temporary jobs. When completed, the project will assist in preserving existing agricultural, food processing and manufacturing jobs in the region and will help in maintaining the current 45 jobs at the Canola processing facility. The completion of the Moses Lake project will provide rail service to the Grant County International Airport Employment Center that is anticipated to bring new manufacturing employment generating between 13,000-19,000 people when fully built out.

Q19 **If, as a result of this improvement, train speed limits can be increased, will the applicant be supportive?**

Yes	X		No			N/A	

If yes, describe level of support. If no, why?

Answer: The posted train speed is 45 mph, but the actual speeds are much less because of the inefficiency of the rail interchange. The applicant supports train movement through the City at 45 mph. The project will make these speeds achievable by reducing the queuing at the two at-grade crossing created by the current yard inefficiencies.

Environment:

Q20 **Is the project located in a non-attainment area for air pollution?**

Yes			No	x

Q21 **How many sensitive receptor sites are affected by the reduction in train whistle noise in the vicinity of the grade separation?** (Vicinity is identified as a quarter of a mile up and down the track and 600 feet each side of centerline. Sensitive receptor sites include residences, schools, churches, hospitals, hotels and motels, each counted as individual facilities.)

Answer: N/A, this is not a grade separation project and already is in a Quiet Zone that was established at these two crossing in 2015.

Q22 **What sustainability** (i.e., greenhouse gas reduction (GHG)) **policies and plans has the applicant adopted?** (These could be in project design, construction, maintenance and/or operations.) **Will these plans or policies be used in developing the project and to reduce the use of fossil fuels (GHG) emissions?**

Answer: In April of 2010, the City of Connell adopted Resolution No. 2010-05 adopting policy to reduce greenhouse gas emissions and enhance energy conservation.
POLICY: The City will publicly encourage and endeavor to employ in its general operations energy conservation practices that result in the reduction of greenhouse gas emissions. This will be implemented by:
1) Encouraging energy conservation practices in buildings by raising awareness of City employees' own energy use.
2) Promoting in partnership with applicable energy providers weatherization programs for existing buildings and providing information to all citizens of available weatherization assistance programs.
3) Conducting energy audits of publicly owned buildings, evaluating potential conservation measures, and carrying out appropriate and affordable measures to reduce energy consumption.
4) Encouraging city employees to utilize commute trip reduction methods such as ride-sharing, van-pooling, walking, and bicycling.
5) Publicizing energy conservation actions to raise public awareness of the value of wise energy use.

Q23 **Freight projects have the potential to not only improve the movement of commerce, but also improve local air quality. Explain how this project provides an overall health and environmental benefit.** (e.g. reduction of particulate emissions, contribution to attainment standards in non-attainment area, etc.) **How was the information and evaluation arrived at to support the benefit statement?** (e.g. traffic model, air emissions model, etc.)

Answer: Additional potential consequences of these impacts can include but were not quantified in the Port's Benefit Cost Analysis (BCA):
* loss of life or increased injury severity due to inadequate response time to emergency situations,
* higher property damages due to fires or other disasters,
*higher emergency service costs due to the potential for dispatching additional units when the first responder is blocked at a rail crossing or operating redundant emergency stations to account for potential rail crossing delays,
*negative public image issues when emergency vehicles are stopped at a blocked crossing with their sirens and lights activated.
The project will also allow for more movement of freight by rail versus truck, lowering emissions and reducing wear and tear on the regions roads and highways. The Project's BCA estimated 51,062 MT of CO2 would be saved over the 20 year period post construction of this project by having the capacity to move freight by rail vs. truck. The BCA calculations did not try to monetize the fuel saving from reduced idling at the two crossings.

Partnerships / Costs / Special Issues:

Q24 **What is the timing for the implementation of the proposed project** (i.e., matching with other state/federal funds, phasing with other projects, meeting a concurrency requirement)**? Are there critical timing issues associated with this project?** (e.g. available funding that may expire, project impact, deteriorating infrastructure or other critical timing issues.)

Answer: The Project is currently in the final phases of the PE. This project has $10 million in Connecting WA funds in the current biennium. With a funding gap of $14 Million. The City will have to consider either phasing the project using a portion of the $10 Million and risk no having an adequate match to make the project fully eligible for federal funds, or postpone the construction and ask for the Connection WA funds to be reappropriated into a later biennium when the remaining funds are secured. The City is agressively applying for funds to fill the $14 Million gap. This application is the 4th funding application the City has submitted for this project in the last 6 months. The biggest funding challenge for this project is that the City of Connell as small as it is, has taken on try to fund this regionally significant project in a very competitive funding environment.

Q25 **What are the greatest quantitative benefits of this project?** (i.e. reduced truck/train delay, lowered v/c ratio, improved travel for trucks, job creation/retention, etc. --- this information will be used by FMSIB to develop a cost effectiveness measure.)

Answer: Project BCA resulted in:
Safety- Reduction of fatalities due to reduction of Vehicle miles traveled (VMT)= $4.7 million saved from the reduction of 0.57 fatalities
State of Good Repair: Reduction of maintenance on US Roads, Hwys, Consistent with State and Regional Plans =46 million VMT off the highways
Economic Competiveness: Fuel saved by transporting freight on rail vs truck= 6 million gallons saved by using rail vs. truck
Economic Competiveness: Operating Cost Saving 455 million ton miles at $0.071 per mile saving rail vs truck
Total Benefits exceed Cost by $7.5 Million when discounted at 7% for a BCA of 1.4 to 1.

Q26 **Describe the degree to which least-cost alternatives were analyzed and considered for this project.**

Answer:
An Alternatives Analysis Engineering Study evaluated concept design, technical aspects, and opinion of probable construction cost estimate for three possible interchange location alternatives. With this analysis, two alternate alignments were eliminated from further consideration because of higher design and construction cost without more realistic benefit than the selected alignment. The cost estimates ranged from $23 million for the preferred alternative to over $40 million. The current alternative meets all the minimum design criteria, has the smallest overall footprint, provides for future industrial rail access, requires the least if any land acquisition and is the least expensive.

Q27	**Describe the uniqueness of this project based on factors not addressed by previously asked questions.**
	Answer: The Grant, Adams and Franklin county region needs the expansion and modernization of the Connell Rail Interchange to accommodate growing demands from local agriculture and manufacturing. The inefficiency of the current interchange impedes mainline freight movement - the new interchange will improve operations on this critical national rail corridor. The new interchange will improve the ability of BNSF and CBRW to complete the interchange of longer trains by reducing the time that the interchange operations interfere with mainline flow and capacity. The planned improvements will facilitate better service and improved transit time for all trains, especially the unit trains bound for the expanding shuttle facilities on the CBRW line. Significantly, a reconfigured interchange will improve accessibility and safety for citizens, especially students, by reducing conflicts at the at-grade crossings within Connell. The project will deliver improved rail service, efficiencies and safety on the Great Northern Corridor. This project also supports the state and federal investment in freight rail improvements at the Grant County International Airport in Central Washington north of Connell. This investment 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 that is served by CBRW.

Signature and Certification

Freight Mobility Strategic Investment Program
Application Form

Certification

(To be signed by a Duly Authorized Official of the Applicant Organization)

I certify that City of Connell *supports the proposed*
(Applicant Organization)
project, has the legal authority to pledge matching funds, and has the legal authority to apply for Freight Mobility Strategic Investment Board funds. I further certify that matching funds are available or will be available for the proposed project. I understand that this is a request for reimbursement from the state and that all state rules for contracting, auditing, and payment will apply to this project.

Signature		**Date**	**3/29/2018**
Printed Name and Title	**Maria Peña , City Administrator**		
Project Title	**Connell Rail Interchange**		

Submission Requirements:

1. **Respond to all applicable questions and prepare/provide all requested information.**
2. **Transmit electronically the above completed application in Excel format to FMSIB at *saelidg@fmsib.wa.gov* , including a completed cover sheet noting the supplemental documents (PDF format) that will be attached to the submission.**

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

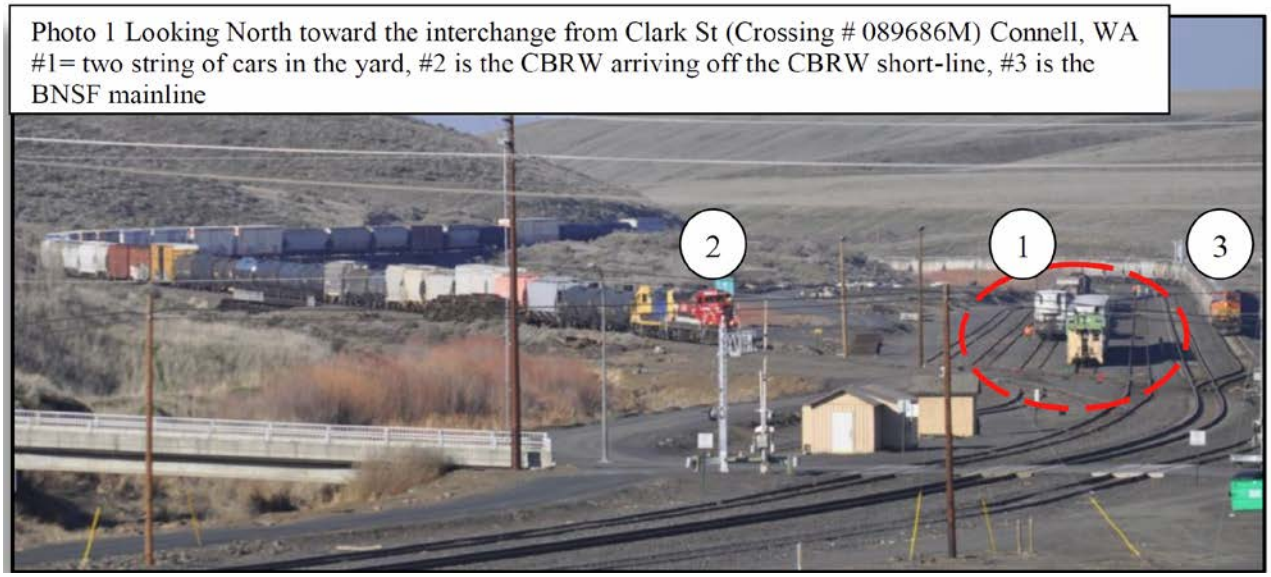
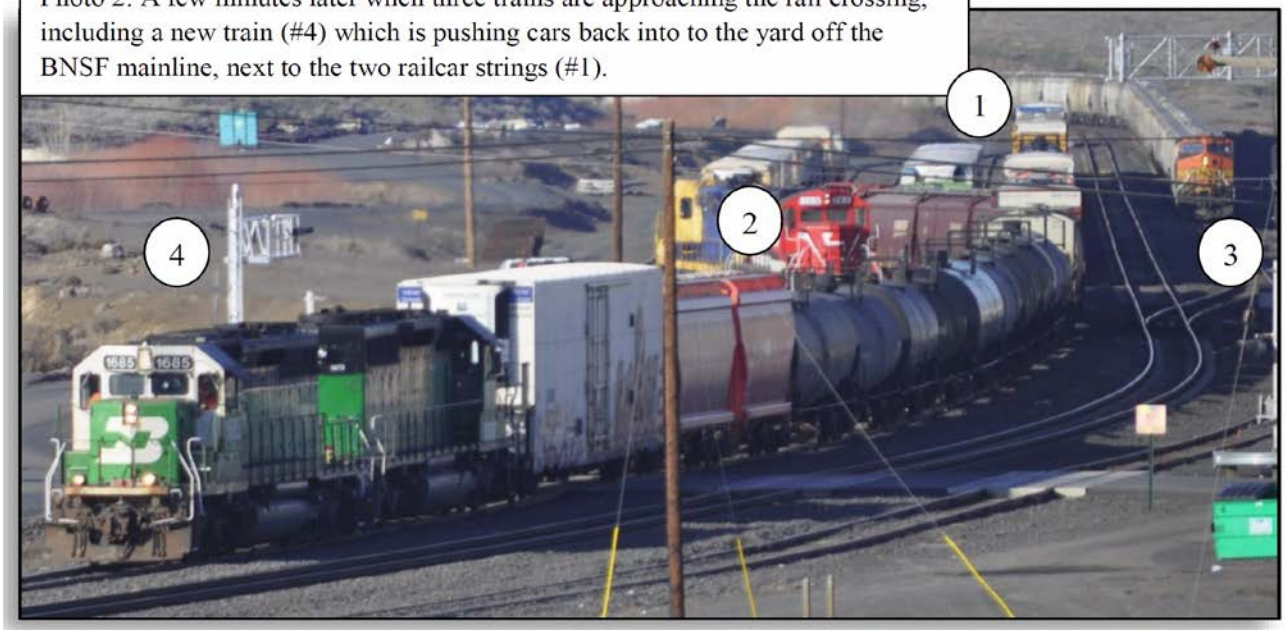
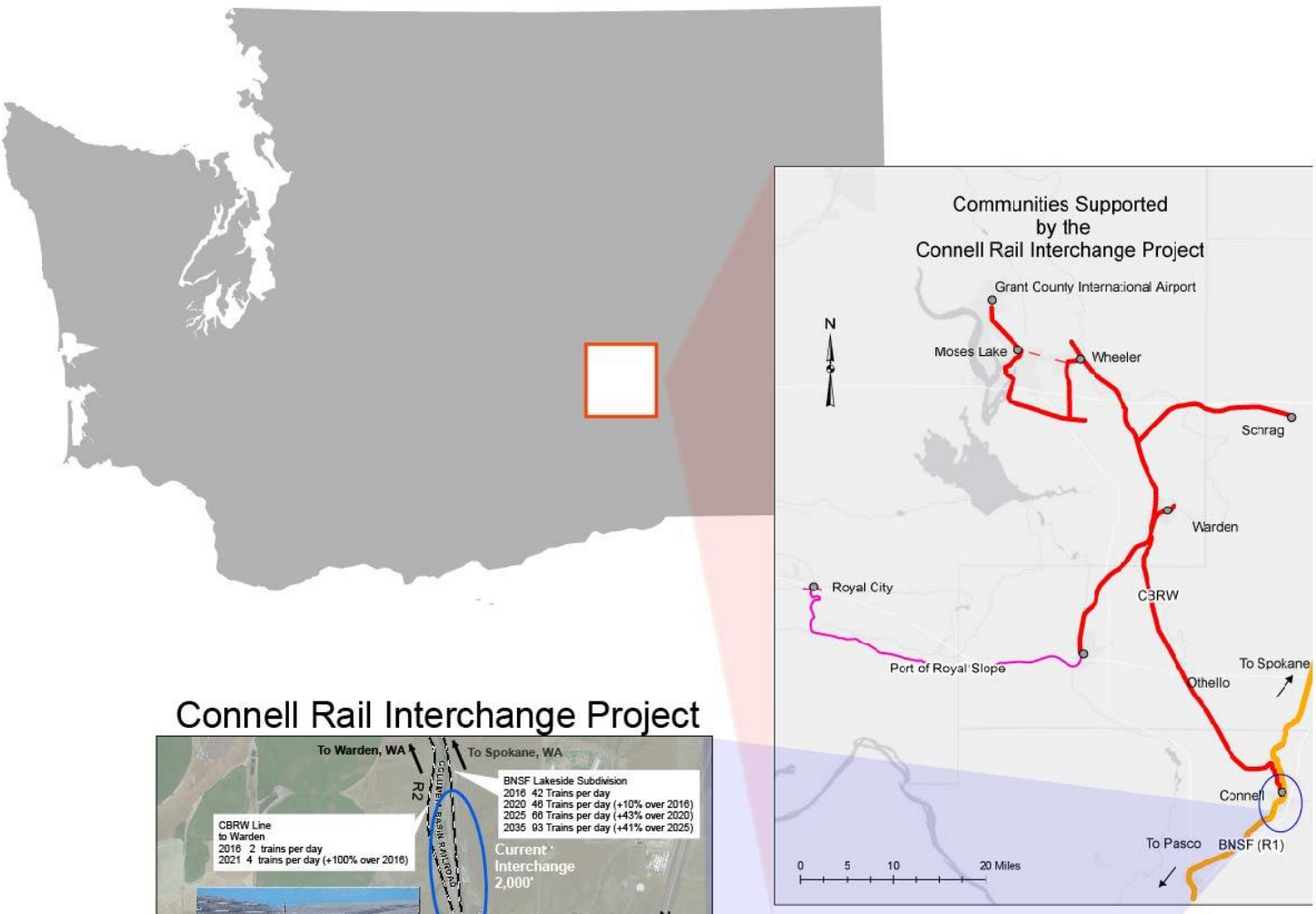


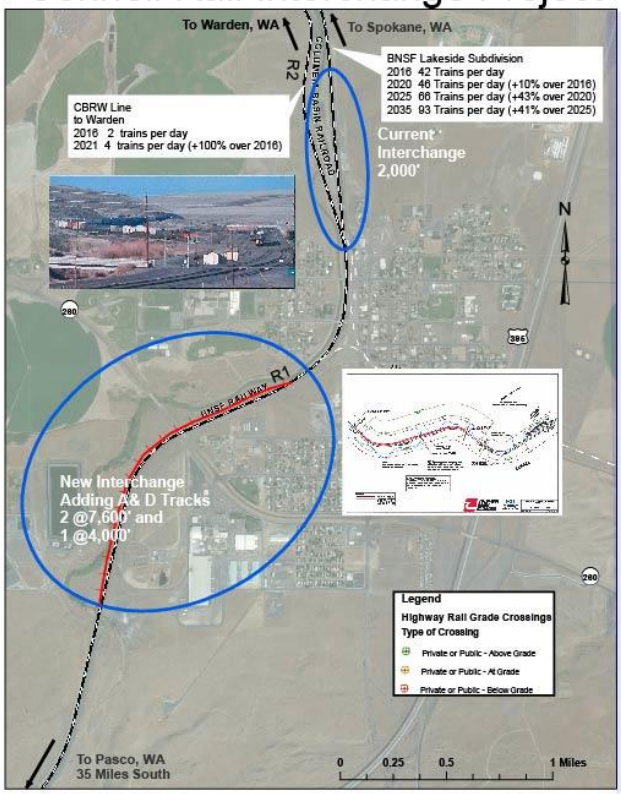
Photo 2: A few minutes later when three trains are approaching the rail crossing, including a new train (#4) which is pushing cars back into to the yard off the BNSF mainline, next to the two railcar strings (#1).



Location Map for Connell Rail Interchange Project



Connell Rail Interchange Project



Date Saved: 3/11/2018 3:28:54 PM

Document Name: Connell Interchange Project v4 imagery bkg

Connell Rail Interchange Project

To Warden, WA

To Spokane, WA

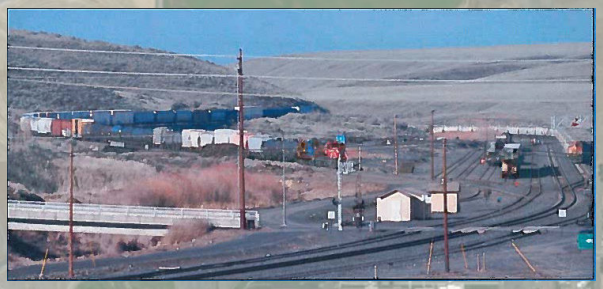
R2

COLUMBIA BASIN RAILROAD

BNSF Lakeside Subdivision
2016 42 Trains per day
2020 46 Trains per day (+10% over 2016)
2025 66 Trains per day (+43% over 2020)
2035 93 Trains per day (+41% over 2025)

CBRW Line
to Warden
2016 2 trains per day
2021 4 trains per day (+100% over 2016)

Current Interchange 2,000'



N

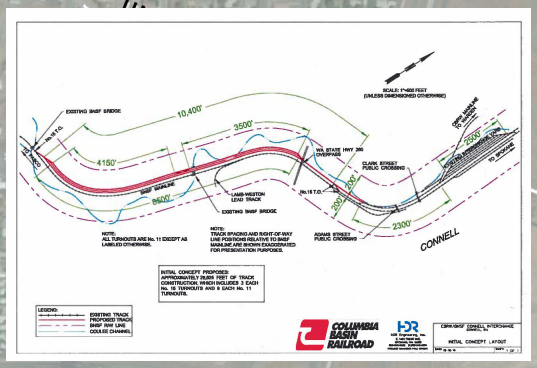
260

395

R1

BNSF RAILWAY

New Interchange
Adding A& D Tracks
2 @7,600' and
1 @4,000'



260

Legend

Highway Rail Grade Crossings

Type of Crossing

Private or Public - Above Grade

Private or Public - At Grade

Private or Public - Below Grade

To Pasco, WA
35 Miles South

0 0.25 0.5 1 Miles

Date Saved: 3/11/2018 3:28:54 PM

Document Name: Connell Interchange Project v4 imagery bkg