UTC
TILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

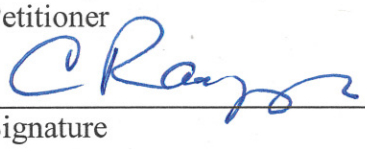
| | | |
|---|---|---|
| Washington State Dept. of Transportation<br>Petitioner,<br><br>vs.<br>BNSF Railway Company<br>Respondent<br><br>. . . . . | ) | DOCKET NO. TR-<br><br>PETITION TO MODIFY HIGHWAY-RAIL GRADE CROSSING ACTIVE WARNING DEVICES<br><br>USDOT #104520Y |



The Petitioner asks the Washington Utilities and Transportation Commission to approve modification of highway-rail grade crossing warning signals.

***Section 1 – Petitioner's Information***

Washington State Department of Transportation
Petitioner



Signature

310 Maple Park Avenue SE, Suite 2B
Street Address

Olympia, WA 98504
City, State and Zip Code

PO Box 47329 Olympia, WA 98504-7329
Mailing Address, if different than the street address

Connie Raezer
Contact Person Name

360-705-7459 raezerc@wsdot.wa.gov
Contact Phone Number and E-mail Address

### *Section 2 – Respondent's Information*

BNSF Railway Company
Respondent

2454 Occidental Avenue South, Suite 2D
Street Address

Seattle, WA 98134
City, State and Zip Code

Mailing Address, if different than the street address

Stephen Semenick
Contact Person Name

206.625.6152 stephen.semenick@BNSF.com
Contact Phone Number and E-mail Address

### *Section 3 – Crossing Location*

1. Existing highway/roadway State Route 223

2. Existing railroad BNSF

3. USDOT Crossing No. 104520Y

4. Located in the NW 1/4 of the SE 1/4 of Sec. 30, Twp. 10N Range 21E W.M.

5. GPS location, if known 46.32782 -120.23553

6. Railroad mile post (nearest tenth) 66.10

7. City Toppenish County Yakima

## *Section 4 – Current Highway Traffic Information*

1. Name of highway State Route 223

2. Road authority Washington State Department of Transportation

3. Average annual daily traffic (AADT) 2015 MP 0.00 4,900 and MP 2.27 6,700

4. Number of lanes One 12' lane and one 12' pullout and no shoulders at the track. 12' pullout turns into a 10' shoulder away from the crossing.

5. Roadway speed 55 mph

6. Is the crossing part of an established truck route? Yes X No ____

7. If so, trucks are what percent of total daily traffic? 10

8. Is the crossing part of an established school bus route? Yes X No ____

9. If so, how many school buses travel over the crossing each day? 20

10. Describe any changes to the information in 1 through 7, above, expected within ten years: No known changes anticipated to the highway

## *Section 5 – Current Crossing Information*

1. Railroad company BNSF Railway Company

2. Type of railroad at crossing ☒ Common Carrier ☐ Logging ☐ Industrial

☐ Passenger ☐ Excursion

3. Type of tracks at crossing ☒ Main Line ☐ Siding or Spur

4. Number of tracks at crossing One

5. Average daily train traffic, freight 8 trains per day

Authorized freight train speed ____ Operated freight train speed 49

6. Average daily train traffic, passenger N/A

Authorized passenger train speed Operated passenger train speed

7. Describe any changes to the information in 1 through 4, above, expected within ten years: No changes expected.

8. What is the available sight distance from the stop bar (or 25 feet from the tracks if no stop bar) on both approaches to the crossing? Unobstructed

9. If the sight distance is less than 400 feet, describe the structures, roadway or track curvature, visual obstacles or other characteristics that limit sight distance.

### *Section 5 – Current Warning Devices*

1. Provide a complete description of the warning devices currently located at the crossing, including signs, gates, lights, train detection circuitry and any other warning devices.

Crossing currently includes Gates, Overhead Flashing Signals, Shoulder Mounted Flashing Signals, Crossbucks, Stop Bars, and W10-01 Advanced Warning Sign with Pavement Markings

### *Section 6 – Description of Proposed Changes*

1. Describe in detail the proposed changes to the crossing. Include the funding source for the proposed installation, if applicable.

**RR work:** Install new four-quadrant gate system with upgraded LED signals and upgrade circuitry to constant warning.

**WSDOT work:** Install active advance warning system with intertie to RR system and install guard rail (standard plan) if not included in BNSF work.

Improvements to be funded under Federal Section 130 Program.

### *Section 7 – Illustration of Proposed Warning Devices*

Attach a detailed diagram, drawing, map or other illustration showing the proposed warning devices. **See attached Diagnostic Team Worksheet**

*Section 8 – Waiver of Hearing by Respondent*

**Waiver of Hearing**

The undersigned represents the Respondent in the petition to modify a highway-rail grade crossing warning signals at the following crossing.

USDOT Crossing No. 104520Y

We have investigated the conditions at the crossing. We are satisfied the conditions are the same as described by the Petitioner in this docket. We agree the warning signals should be installed and consent to a decision by the commission without a hearing.

Dated at _____ , Washington, on the _____ day of November, 2017.

Stephen Semenick
Printed name of Respondent

_____
Signature of Respondent's Representative

Manager Public Projects
Title

206.625.6152 stephen.semenick@BNSF.com
Phone number and e-mail address

2454 Occidental Avenue South, Suite 2D, Seattle, WA 98134
Mailing address

# WSDOT RAILROAD GRADE CROSSING
# DIAGNOSTIC TEAM REVIEW WORKSHEET*

Reviewers: WSDOT (Ahmer Nizam, Connie Raezer, Chuck Wickham SCR: Todd Daley Jeff Davis, Bob Hooker); FHWA (Don Peterson); UTC (Paul Curl, Betty Young); BNSF (Rick Wagner)

Date: September 13, 2016

Location: SR 223 Mile Post 0.51 WSDOT Region - SCR

Railroad: BNSF Railway USDOT No.: 104520Y

**Highway Data**

No. of lanes in each direction: One 12' lane and one 12' pullout and no shoulders at the track. 12' pullout turns into a 10'shoulder away from the crossing.

Are sidewalks or bike paths present? Yes □ No X

ADT 2015 at MP 0.00 (begin) 4,900 at MP 2.27 6,700 Roadway speed limit: 55mph posted

School bus route? Yes Truck route? Yes Hazmat transporters? Yes

Crossing angle: Approximately 125 degrees

Approach curvature: SR 223 has an 1100' radius curve 30' west of the crossing. Crossing is in a tangent section.

Approach grades: 0% entering / 0% exiting

- Evidence of scrape marks at the crossing from low vehicle clearance? Yes □ No X

Comments on highway data:
Includes stop refuge in both directions. The intersection of South Track Road and SR 223 is about 150 feet west of the crossing. The intersection is not signalized.

**Railway Data**

No. of Tracks: one set Trains per Day: 8

Train Speed Limit: 49 Approach curvature: Tangent section.

Passenger Trains? Yes □ ☒ No Unknown □

Comments on railway data
Mainline

* This report of survey is undertaken in order to comply with 23 United States Code Section 130. The use of this data is governed by 23 United States Code Section 409 and shall not be subject to discovery or admitted into evidence in a federal or state court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

**Warning Devices (check all that apply)**

X Gates X Overhead flashing lights X Shoulder-mounted flashing lights
X Crossbucks □ # Tracks sign X Stop Bars

Are advance warning signs and pavement markings (including stop line) properly placed and in good condition?
Yes No **X**

If "no" explain __the W10-1 sign and railroad symbol are in good condition but not placed in conjunction with each other, as required by the standard plan and MUTCD_____

Note the presence of other warning or regulatory signs associated with the crossing. For example:

□ Stop or Yield □ Exempt □ Do Not Stop on Tracks □ Skewed Crossing
□ Low Clearance □ Other(s) _____

Is the USDOT number posted? Yes X No □
Is an emergency notification phone number posted? Yes X No □

**Crossing Surface**

X Concrete □Asphalt □Timber □ Rubber □ Other_____

Comments on crossing surface __Good condition_____

**Sight Distance**

Approach Sight Distance
Distance from the crossing along the north –bound highway approach where the crossing becomes clearly visible:
Unobstructed

Distance from the crossing along the opposing highway approach where the crossing becomes clearly visible:
Unobstructed after curve to left

Clearing Sight Distance
If the crossing has **no gates,** does the clearing sight distance meet the guidance criteria in Design Manual Figure 1350-1 (Case 1)? NA

Sight Triangle
If the crossing is **passive**, does the sign triangle meet the guidance criteria in Design Manual Figure 1350-1 (Case 2)? N/A

Is the crossing illuminated? Yes

**Other Roadways**

Are there any roadway intersections in the vicinity of the crossing that may cause traffic to queue back over the tracks? Yes. Queue may form due to left turn movements at S. Track Rd

If yes:

- What is the available storage space? Approximately 175 feet

Are traffic signals located within 200 feet of the crossing or otherwise contributing to vehicle queues approaching the tracks? Yes □ No X

If "yes", is Railroad Preemption provided? Yes □ No □

Comments/Observations

---

**Accident Data**

No. vehicle-train collisions in the last 5 years

Fatal 1

Injury 1

Property Damage 1- 2015

No. non-train-related vehicle collisions at crossing in the last 5 years

Fatal _0_

Injury _0_

Property Damage _0_

No. pedestrian-related incidents in the last 5 years

Fatal _0_

Injury _0_

Information on reported near misses between vehicles and trains at the crossing

According to UTC staff, BNSF train crews have communicated instances of near misses mainly involving trucks

Other Notes
There were 2 accidents in 2005:

9-13-05: 2 fatalities
From UTC website:

- 9/13/2005 GRANGER - 67 year-old male driver and 57 year-old female passenger struck by BNSF freight train at the SR 223 crossing near Granger. Incident occurred on the BNSF Railway Northwest Division (Yakima Valley Subdivision) at milepost 66.12. Driver drove around lowered gates and through flashing lights.

9-23-05: 1 injury – FRA report states that "driver drove around or thru lowered gates."

Accident in 2015:
10-5-15: One property damage accident involving a pick up that circumvented gates.

**Crossing Diagram**


**Recommendations/Action Items**

RR work: Install new four quadrant gate system with upgraded LED signals and upgrade circuitry to constant warning

WSDOT work: Install active advance warning system with intertie to RR system and install guard rail (standard plan) if not included in BNSF work

**Estimated Cost**: _total estimate as of 9/13/2016 is 1 million

A site visit was conducted on October 27th to review the proposed four quadrant gate system. Summary notes attached.

Concurrence:
FHWA: 11/02/16 via email
UTC: 10/31/16 via email
BNSF: 10/28/16 via email

**Section 130 Diagnostic Evaluation Meeting Summary**
**SR 223, USDOT 104520Y**

**Team Participants:**
**WSDOT**: Ahmer Nizam, Jamil Anabtawi, Todd Daley
**UTC**: Betty Young, Paul Curl
**BNSF**: Rick Wagner, Rick Van Wey

On October 27, 2016, a Section 130 Diagnostic Evaluation Team was convened to discuss a final recommendation for improvements at the SR 223 railroad grade crossing near Granger, Washington within the limits of the Yakama Nation Reservation.

Following the determination that funds were not available to grade separate the crossing, WSDOT submitted to the Team a report from a value engineering study that recommended improving warning devices in lieu of grade separation, and thus necessitated the reconvening of the Section 130 Diagnostic Team.

The Team met on site and discussed various alternatives including four quadrant gates, active advance warning, median separators, lowering the speed limit, and adding rumble strips.

Based on 1) the nature of accident history and near miss reports; 2) the operating characteristics of the roadway; and 3) the limited ability for enforcement oversight by the Washington State Patrol within the Yakama Nation Reservation, the Team, with FHWA's concurrence, will issue a final recommendation to:

- Install four quadrant gates;
- Upgrade existing signals with LED heads;
- Install an active advance warning system; and
- Upgrade circuitry to constant warning.

WSDOT will update the Diagnostic Team Review Worksheet following concurrence of this summary from the participants.

BNSF RAILWAY COMPANY
FHPM ESTIMATE FOR
WA DOT

LOCATION TOPPENISH | DETAILS OF ESTIMATE | PLAN ITEM : 000289335 | VERSION : 4

PURPOSE, JUSTIFICATION AND DESCRIPTION

SR-223 - TOPPENISH, WA; REPLACE CONSTANT WARNING / FLASHERS / GATES / CANT; NORTHWEST DIV; YAKIMA SUBDIV; LS 48; MP 66.12; DOT# 104520Y; SEQ# 67214.

MONTHLY POWER UTILITY COST CENTER : 61504.

THE MATERIAL LIST BELOW REFLECTS TYPICAL REPRESENTATIVE PACKAGES USED FOR ESTIMATING PURPOSES ONLY.

THIS ESTIMATE IS GOOD FOR 180 DAYS. THEREAFTER THE ESTIMATE IS SUBJECT TO CHANGE IN COST FOR LABOR, MATERIAL, AND OVERHEAD.

CONTRACTS HAVE BEEN ESTABLISHED FOR PORTIONS OF SIGNAL WORK ON THE BNSF RAILROAD.

********** SIGNAL WORK ONLY **********

THE STATE OF WASHINGTON IS FUNDING 100% OF THIS PROJECT.

MAINTAIN PROPRIETARY CONFIDENTIALITY.

PRIMARY FUNDING SOURCE IS FHWA
** BUY AMERICA(N) APPLIES **

| DESCRIPTION | QUANTITY | U/M | | COST | TOTAL $ |
|---|---|---|---|---|---|
| ********** | | | | | |
| LABOR | | | | | |
| ********** | | | | | |
| ELECTRICAL LABOR F/SIGNAL EQUIPMENT | 54.0 | MH | | 1,669 | |
| SIGNAL FIELD - REPLACE | 832.0 | MH | | 25,651 | |
| SIGNAL SHOP LABOR - CAP | 1.2 | MH | | 41 | |
| PAYROLL ASSOCIATED COSTS | | | | 16,002 | |
| DA OVERHEADS | | | | 25,551 | |
| EQUIPMENT EXPENSES | | | | 5,331 | |
| INSURANCE EXPENSES | | | | 4,592 | |
| TOTAL LABOR COST | | | | 78,837 | 78,837 |
| ********** | | | | | |
| MATERIAL | | | | | |
| ********** | | | | | |
| ARRESTOR, MDSA-2 XS | 1.0 | EA | N | 766 | |
| BATTERY, 46 VGL-350 | 1.0 | LS | N | 14,398 | |
| BELLS | 4.0 | EA | N | 784 | |
| BUNGALOW 8X8 W/ AC | 1.0 | LS | N | 10,038 | |
| BUNGALOW MATERIAL | 1.0 | LS | N | 7,476 | |
| CABLE, 2C/6 TW | 500.0 | FT | N | 640 | |
| CABLE, 3C/2 | 250.0 | FT | N | 1,473 | |
| CABLE, 5C/10 | 70.0 | FT | N | 139 | |
| CABLE, 5C/6 | 1000.0 | FT | N | 4,350 | |
| CABLE, 7C/14 | 1000.0 | FT | N | 1,830 | |
| CANTILEVER (NO QUOTE) | 2.0 | EA | N | 34,808 | |
| CHARGERS, 12/80 (20/40/60) | 2.0 | EA | N | 2,170 | |
| CONSTANT WARNING, XP4, 1TK | 1.0 | EA | N | 17,805 | |
| ELECTRICAL MATERIAL | 1.0 | EA | N | 1,500 | |
| ELGX EGMS | 1.0 | EA | N | 18,000 | |
| EVENT RECORDER | 1.0 | EA | N | 3,560 | |
| FIELD MATERIAL | 1.0 | LS | N | 7,372 | |
| FILL DIRT | 20.0 | CY | N | 500 | |
| FOUNDATION, CANT | 2.0 | EA | N | 8,124 | |
| FOUNDATION, CONCRETE | 4.0 | EA | N | 1,200 | |
| GATE KEEPER | 4.0 | EA | N | 7,452 | |
| GATE MECHANISM, S-60 | 4.0 | EA | N | 24,064 | |
| GUARD RAIL, DUAL | 2.0 | EA | N | 2,508 | |
| HAWK 48 DIM | 1.0 | EA | N | 1,425 | |
| LED LIGHT | 24.0 | EA | N | 4,824 | |
| LIGHT OUT DETECTOR | 2.0 | EA | N | 2,008 | |

| | | | |
|---|---|---|---|
| PD LOOP | 1.0 LS N | 42,000 | |
| RELAY | 10.0 EA N | 7,500 | |
| RELAY, EOR | 1.0 EA N | 750 | |
| RELAY, ER | 1.0 EA N | 750 | |
| RELAY, ISLAND | 2.0 EA N | 1,500 | |
| SHUNT, NBS | 2.0 EA N | 2,238 | |
| SURFACE ROCK | 30.0 CY N | 1,500 | |
| U-1400 | 4.0 EA N | 10,000 | |
| USE TAX | | 23,180 | |
| OFFLINE TRANSPORTATION | | 3,075 | |
| TOTAL MATERIAL COST | | 271,707 | 271,707 |
| ********** | | | |
| OTHER | | | |
| ********** | | | |
| AC POWER SERVICE | 1.0 EA N | 5,000 | |
| BUNGALOW, WIRE AND TEST | 1.0 LS N | 5,643 | |
| CONTRACT ENGINEERING | 1.0 LS N | 12,000 | |
| CONTRACT SIGNS/CONES/FLAGGING | 1.0 LS N | 10,000 | |
| DIRECTIONAL BORING | 150.0 FT N | 7,500 | |
| TOTAL OTHER ITEMS COST | | 40,143 | 40,143 |
| PROJECT SUBTOTAL | | | 390,687 |
| CONTINGENCIES | | | 37,960 |
| BILL PREPARATION FEE | | | 4,287 |
| GROSS PROJECT COST | | | 432,934 |
| LESS COST PAID BY BNSF | | | 0 |
| TOTAL BILLABLE COST | | | 432,934 |