Washington State Department of Transportation
Paula J. Hammond, P.E.
Secretary of Transportation

Transportation Building
310 Maple Park Avenue S.E.
P.O. Box 47300
Olympia, WA 98504-7300

360-705-7000
TTY: 1-800-833-6388
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January 15, 2010

Washington Utilities and Transportation Commission
C/O Kathy Hunter
PO Box 47250
Olympia, WA 98504-7250

RE: Pt. Defiance (Rail) Bypass – Petitions for modifications to Clover Creek Drive SW, North Thorne Lane SW, Berkeley Street SW, 41st Division Drive, and Barkesdale Street highway-rail grade crossings

Dear Ms. Hunter,

Enclosed are five petitions to the Washington Utilities and Transportation Commission (WUTC) requesting approval to modify the highway-rail grade crossings at Clover Creek Drive SW, North Thorne Lane SW, Berkeley Street SW, 41st Division Drive, and Barkesdale Street. The Washington State Department of Transportation (WSDOT) has prepared and is filing the petitions in support of the Pt. Defiance (Rail) Bypass Project. These include the improvements discussed at our diagnostic site visits in 2008.

The petitions will be sent to the United States Army (Fort Lewis) and to the cities of Lakewood and DuPont by the 20th of January to encourage them to sign the Waiver of Hearing. They have been asked to send their responses to you.

In the case of the three crossings in the city of Lakewood, we are not confident that the city will be signing the waivers. I request that you give them official notice as soon as you can administratively.

If you would like to discuss the details of the petitions in detail, I can be reached at 360-705-7982, or jefferk@wsdot.wa.gov.

Sincerely,

Kevin M. Jeffers

Enclosures (5)

KMJ

CC w/o enclosures: Jodi Mitchell, Sound Transit

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Washington State Department of Transportation Petitioner, vs. **Central Puget Sound Regional Transportation Authority and the United States Army (Fort Lewis)** Respondent	)	DOCKET NO. TR- 100130 PETITION TO MODIFY A HIGHWAY-RAIL GRADE CROSSING **41st Division Drive** USDOT CROSSING # **085830N** UTC CROSSING #

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

Section 1 – Petitioner's Information

Washington State Department of Transportation

Petitioner

310 North Maple Park Ave SE

Street Address

Olympia, WA 98504

City, State and Zip Code

PO Box 47307, Olympia, WA 98504-7407

Mailing Address, if different than the street address

Kevin Jeffers

Contact Person Name

360-705-7982; JefferK@wsdot.wa.gov

Contact Phone Number and E-mail Address

Section 2 – Respondent's Information

Central Puget Sound Regional Transportation Authority ("Sound Transit")

Respondent

401 South Jackson Street

Street Address

Seattle, WA 98104-2826

City, State and Zip Code

Mailing Address, if different than the street address

Jodi Mitchell

Contact Person Name

206-398-5080; Jodi.Mitchell@SoundTransit.org

Contact Phone Number and E-mail Address

United States Army – I Corps, Fort Lewis, ATTN: Public Works

Respondent

Box 339500, Mail Stop 17

Street Address

Fort Lewis, WA 98433

City, State and Zip Code

Mailing Address, if different than the street address

Mr. Steve Perrenot, Director

Contact Person Name

(253) 967-4713

Contact Phone Number and E-mail Address

Section 3 – Current Crossing Information

1. Railroad company(ies) _____
   - Tracks owned by: **Sound Transit**
   - Operating railroad: **Tacoma Rail, BNSF, Amtrak**

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

   ☐ Passenger ☐ Excursion

3. Type of tracks at crossing ☑ Main Line, number of tracks **1**
   ☐ Siding or Spur, number of tracks ____

4. Average daily train traffic, freight **2 per day (trains typically operate 4-5 days/week, max.)**

   Authorized freight train speed **10 mph** Operated freight train speed **10 mph**

5. Average daily train traffic, passenger **0**

   Authorized passenger train speed **N/A** Operated passenger train speed **N/A**

6. Describe current crossing configuration including type of train detection, active warning devices, preemption, etc.:
This is currently a single track crossing with cantilever-mounted flashing lights (no gates).

The existing detection circuitry is either a "C Style" or "Ring 10" relay-based track circuit.

There are no existing medians or crossing gates.

Section 4 – Expected Crossing Characteristics After Modification

1. Type of railroad operations at crossing ☑ Common Carrier ☐ Logging ☐ Industrial

☑Passenger ☐ Excursion

2. Type of tracks at crossing ☑ Main Line, number of tracks **1**
☐ Siding or Spur, number of tracks _____

3. Average daily train traffic, freight **2**

Authorized freight train speed **40 mph** Operated freight train speed **40 mph**

4. Average daily train traffic, passenger **16**

Authorized passenger train speed **79 mph** Operated passenger train speed **79 mph**

5. Will the modified crossing eliminate the need for one or more existing crossings?
Yes ____ No **X**

6. If so, state the distance and direction from the modified crossing.

_____

_____

_____

7. Does the petitioner propose to close any existing crossings and if yes, which crossings?
Yes ____ No **X**

_____

Section 5 – Proposed Temporary Crossing

1. Will a temporary crossing be installed? Yes ____ No __X__

2. If so, describe the purpose of the crossing and the estimated time it will be needed

_____

_____

_____

3. Will the petitioner remove the crossing at completion of the activity requiring the temporary crossing? Yes ____ No ____ **N/A**

Approximate date of removal _____

Section 6 – Current Highway Traffic Information

1. Name of roadway/highway **41st Division Drive**

2. Roadway classification **Arterial connecting US Military Installations on both sides of I-5**

3. Road authority **US Military / WSDOT**

4. Average annual daily traffic (AADT) **13090 (in year 2006)**

5. Number of lanes **2 NB lanes (one off ramp, one through), 2.5 SB lanes at crossing (an exit lane begins diverging from the two through lanes in the crossing).**

6. Roadway speed **35mph**

7. Is the crossing part of an established truck route? Yes **X** No _____

8. If so, trucks are what percent of total daily traffic? **1% (PM peak)**

9. Is the crossing part of an established school bus route? Yes **X** No _____

10. If so, how many school buses travel over the crossing each day? **60**

11. Describe any changes to the information in 1 through 7, above, expected within ten years: **AADT estimated to grow to 18020 (in year 2020); as part of the project, a new median will be added to the south side of the crossing. Median on the north side will be extended to accommodate a new crossing gate in the median. The current channelization on the south side of the crossing, which employs traffic cones to narrow from two lanes to one on the Northbound approach, will be "formalized" with a new curb and gutter.**

Section 7 – Alternatives to the Proposed Modifications

1. Does a safer location for a crossing exist within a reasonable distance of the current or proposed location? Yes ____ No **X**

2. If a safer location exists, explain why the crossing should not be located at that site.

3. Are there any hillsides, embankments, buildings, trees, railroad loading platforms or other barriers in the vicinity which may obstruct a motorist's view of the crossing?
Yes **X** No ____

4. If a barrier exists, describe:
- ♦ Whether petitioner can relocate the crossing to avoid the obstruction and if not, why not.
- ♦ How the barrier can be removed.
- ♦ How the petitioner or another party can mitigate the hazard caused by the barrier.

Views are obstructed by trees on military property and by the roadway geometry, which curves away from the track on the Southbound approach. Trees in a motorists' line-of-sight on the railroad R/W will be removed.

5. Is it feasible to construct an over-crossing or under-crossing at the proposed location as an alternative to an at-grade crossing?
Yes ____ No **X**

6. If an over-crossing or under-crossing is not feasible, explain why.
The existing site is bounded by Interstate 5 and a military installation (and associated checkpoint). Constructing an overcrossing or undercrossing would require elimination or relocation of some or all of these facilities.

7. Does the railway line, at any point in the vicinity of the modified crossing, pass over a fill area or trestle or through a cut where it is feasible to construct an over-crossing or an under-crossing, even though it may be necessary to relocate a portion of the roadway to reach that point?

Yes ____ No __X__

8. If such a location exists, state:
   - ♦ The distance and direction from the proposed crossing.
   - ♦ The approximate cost of construction.
   - ♦ Any reasons that exist to prevent locating the crossing at this site.

_____

_____

_____

_____

_____

_____

9. Is there an existing public or private crossing in the vicinity of the proposed modified crossing?

Yes ____ No __**X**__

10. If a crossing exists, state:
   - ♦ The distance and direction from the proposed crossing.
   - ♦ Whether it is feasible to divert traffic from the proposed to the existing crossing.

_____

_____

_____

_____

_____

Section 8 – Sight Distance

1. Complete the following table, describing the sight distance for motorists when approaching the tracks from either direction after modification. "**Number of feet from proposed crossing" is measured from the crossing gate along the centerline of the "outside" lane. Sight distance is measured from the edge of traveled way (edge of fog line or curb line) along the CL of track at the crossing. NOTE - for "Left" sight distances, the edge of traveled way is on the *opposite* side of the roadway.**

Note that sight distances from the I-5 Southbound Off Ramp are NOT reflected in the tables below at those locations where vehicles are traveling roughly parallel to the railroad. The I-5 Off Ramp is both parallel and very close to the tracks. Motorists on the Off-Ramp may have their forward visibility along the track, at certain angles, obstructed somewhat by the railroad crossing cantilever mast and gate mechanism. Since the tracks also extend behind motorists on the Off-Ramp, rearward visibility is likely to be zero, based on motorists' tendency to not look behind them. At specific locations, the most conservative distance is shown along the I-5 Off Ramp, where it curves toward the tracks. Where the distance is measured based on the Off-Ranp sight distance, an asterisk (*) has been included.

a. Approaching the crossing from **SOUTH** (North, South, East, West), the current approach provides an unobstructed view as follows:

Direction of sight (left or right)	Number of feet from proposed crossing	Provides an unobstructed view for how many feet
Right	300	**30 (obscured by trees)**
Right	200	**30 (obscured by trees)**
Right	100	**80 ***
Right	50	**130 ***
Right	25	**55 ***
Left	300	**20 (obscured by trees)**
Left	200	**20 (obscured by trees)**
Left	100	**130**
Left	50	**130**
Left	25	**130**

b. Approaching the crossing from **NORTH** (Opposite direction-North, South, East, West), the current approach provides an unobstructed view as follows:

Direction of sight (left or right)	Number of feet from proposed crossing	Provides an unobstructed view for how many feet
Right	300	**0 (obscured by topography)**
Right	200	**70 (obscured by topography)**
Right	100	**250**
Right	50	**250**
Right	25	**225**
Left	300	**0 (obscured by topography)**
Left	200	**165**
Left	100	**225**
Left	50	**225**
Left	25	**165**

2. Will the modified crossing provide a level approach measuring 25 feet from the center of the railway on both approaches to the crossing?

Yes ____ No __X__

3. If not, state in feet the length of level grade from the center of the railway on both approaches to the crossing.

At the South side of the crossing, the roadway slopes down from the crossing at approximately 0.8%. The slope begins approximately 2' from the edge of the crossing panels. The roadway grade to the North of the crossing is nearly level, sloping downward toward the crossing at 0.12%

4. Will the modified crossing provide an approach grade of not more than five percent prior to the level grade?

Yes __X__ No ____

3. If not, state the percentage of grade prior to the level grade and explain why the grade exceeds five percent.

_____

_____

_____

_____

Section 9 – Illustration of Modified Crossing Configuration

Attach a detailed diagram, drawing, map or other illustration showing the following:

- ♦ The vicinity of the modified crossing.
- ♦ Layout of the railway and highway 500 feet adjacent to the crossing in all directions.
- ♦ Percent of grade.
- ♦ Obstructions of view as described in Section 7 or identified in Section 8.
- ♦ Traffic control layout showing the location of the existing and proposed signage.

Existing features (buildings, trees, etc) that are obstructions are shown on the accompanying plan in "screened" or "grayscale" lines.

Section 10 – Proposed Warning Signals or Devices

1. Explain in detail the number and type of proposed automatic signals or other warning devices planned at the crossing, including a cost estimate for each. If the proposed medications include adding or modifying preemption, contact UTC for the additional worksheets.
Modifications to the existing warning devices include removal of the existing cantilevers. New crossing gates will be provided; a gate and flashing lights will be provided for each lane, with some gates located in median strips to provide better visibility to motorists.

The control equipment for the railroad warning devices will be upgraded to modern constant warning time units, replacing the existing case and hardware. The interconnection between the grade crossing control equipment and the roadway signal traffic controller will be upgraded to a 6-wire supervisory configuration. The roadway authority can use 2 or 6 of these wires, depending upon their interconnection wiring preferences.

A traffic signal will be installed on the Southbound Off-Ramp from Interstate 5 and on the Northbound roadway approach to the crossing on 41st Division Drive; at both locations, the traffic signals will be positioned to stop traffic before traffic gets to the grade crossing. The traffic signals will be interconnected to the grade crossing warning devices and simultaneous pre-emption will be provided. In addition, the traffic signals will be connected to queue-detector loops placed north of the tracks. The intent of the loop detection is to cycle the signal to "red" when stopped traffic is detected on the loops before the queue reaches the tracks. In so doing, the signal will deter additional traffic from stopping on the tracks. Note that this form of loop detection is not a "fail-safe" system.

A "Signal Ahead" sign will be used to warn motorists on the Southbound I-5 Off-Ramp of the new traffic signal on the Off-Ramp.

A similar traffic signal and queue detector loop configuration will be installed in the Southbound lanes of 41st Division, with the traffic signal located north of the tracks (to stop traffic before the traffic reaches the tracks) and the detector loops located south of the tracks (to detect queues before they reach the tracks) in both lanes of 41st Division Drive, as well as in the Southbound Interstate 5 On-Ramp.

The military checkpoints at Fort Lewis have the potential to impact traffic in the vicinity of the crossing. At high national security alert levels, vehicle movement times through the checkpoint queues may lengthen significantly, with potential impacts on the overall traffic operations, and potentially prevent the "track clearance" features of the traffic signal phasing from operating as intended.

The approximate cost for railroad crossing signal improvements at 41st Division Drive is $500,000.

Section 11 – Justification of Installation of Wayside Horn (if applicable)

1. Describe in detail why this crossing should have a wayside horn installed. Also include a description of where the wayside horns and indicator lights will be installed at the crossing.

Section 12 – Additional Information

Provide any additional information supporting the proposal, including information such as the public benefits that would be derived from modifying the crossing as proposed. **New concrete crossing panel crossing surfaces will be installed, and the roadway repaved to match the elevation of the panels. New median will be added on the south side of the crossing.**

Section 13 – Waiver of Hearing by Respondent

Waiver of Hearing

The undersigned represents the Respondent in the petition to modify a highway-railroad grade crossing.

We have investigated the conditions at the crossing proposed for modification. We are satisfied the conditions are the same as described by the Petitioner in this docket. We agree the crossing be modified and consent to a decision by the commission without a hearing.

Dated at _____ , Washington, on the _____ day of

_____, 20 ____.

_____

Printed name of Respondent

_____

Signature of Respondent's Representative

_____

Title

_____

Phone number and e-mail address

_____

_____

Mailing address

GUIDE FOR DETERMINING TIME REQUIREMENTS FOR TRAFFIC SIGNAL PREEMPTION AT HIGHWAY-RAIL GRADE CROSSINGS

WASHINGTON UTC UTILITIES AND TRANSPORTATION COMMISSION

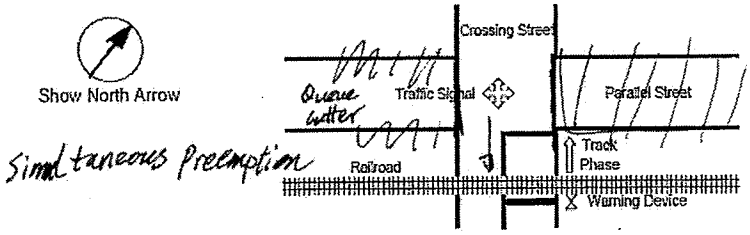
GUIDE FOR DETERMINING TIME REQUIREMENTS FOR
TRAFFIC SIGNAL PREEMPTION AT HIGHWAY-RAIL GRADE CROSSINGS

City _____ Date 6/3/2008

County Pierce Completed by Tony Wang

District _____ District Approval _____

Show North Arrow



Simultaneous Preemption

Parallel Street Name: None

Crossing Street Name: 41st Division Dr

Railroad Sound Transit Railroad Contact Jodi Mitchell

Crossing DOT# 085830N Phone 206-398-5000

SECTION 1: RIGHT-OF-WAY TRANSFER TIME CALCULATION

Preempt verification and response time

			Remarks
1. Preempt delay time (seconds)	1.		
2. Controller response time to preempt (seconds)	2.		Controller type:
3. Preempt verification and response time (seconds): add lines 1 and 2	3.		

Worst-case conflicting vehicle time

			Remarks
4. Worst-case conflicting vehicle phase number	4.		
5. Minimum green time during right-of-way transfer (seconds)	5.		
6. Other green time during right-of-way transfer (seconds)	6.		
7. Yellow change time (seconds)	7.		
8. Red clearance time (seconds)	8.		
9. Worst-case conflicting vehicle time (seconds): add lines 5 through 8	9.		

Worst-case conflicting pedestrian time

			Remarks
10. Worst-case conflicting pedestrian phase number	10.		
11. Minimum walk time during right-of-way transfer (seconds)	11.		
12. Pedestrian clearance time during right-of-way transfer (seconds)	12.		
13. Vehicle yellow change time, if not included on line 12 (seconds)	13.		
14. Vehicle red clearance time, if not included on line 12 (seconds)	14.		
15. Worst-case conflicting pedestrian time (seconds): add lines 11 through 14	15.		

Worst-case conflicting vehicle or pedestrian time

16. Worst-case conflicting vehicle or pedestrian time (seconds): maximum of lines 9 and 15	16.	
17. Right-of-way transfer time (seconds): add lines 3 and 16	17.	