UTC
UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

| | | |
|---|---|---|
| | ) | DOCKET NO. TR- 152114-P |
| | ) | |
| | ) | PETITION TO INSTALL OR |
| Washington State Dept. of Transportation | ) | MODIFY AN INTER-TIE BETWEEN |
| Petitioner, | ) | A HIGHWAY SIGNAL AND A |
| | ) | RAILROAD CROSSING SIGNAL |
| vs. | ) | SYSTEM |
| | ) | |
| Tri City Railroad | ) | |
| Respondent | ) | |
| | ) | USDOT No.: 310402M |
| | ) | |

The Petitioner asks the Washington Utilities and Transportation Commission to approve installation of an inter-tie between a highway signal and a railroad crossing signal system.

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

Washington State Department of Transportation
Petitioner

11/6/15
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

Ahmer Nizam
Contact Person Name

360-705-7271 nizama@wsdot.wa.gov
Contact Phone Number and E-mail Address

## *Section 2 – Respondent's Information*

Tri City Railroad
Respondent

PO Box 1700
Street Address

Richland, WA 99352
City, State and Zip Code

Mailing Address, if different than the street address

Rhett Peterson
Contact Person Name

509-371-8313 or 509-727-8824 rhettwater@me.com
Contact Phone Number and E-mail Address

## *Section 3 – Crossing Location*

1. Existing highway/roadway SR 240 (signal) at Airport Way

2. Existing railroad Tri City Railroad

3. USDOT Crossing No. 310402M

4. Located in the NE 1/4 of the NW 1/4 of Sec.3, Twp. T9N, Range R28E W.M.

5. GPS location, if known

7. Railroad mile post (nearest tenth) 39.5

8. City Richland County Benton

### *Section 4 – Vehicle Traffic*

1. Type of public road at the crossing ☒ State ☐ County ☒ City

☐ Port ☐ State Park ☐ Other _____

2. Name of public road SR 240 and Airport Way

3. Road authority WSDOT

4. Average daily vehicle traffic over the crossing 784 on Airport Way in 1996 (27,000 on SR 240 in 2014)

Vehicle speed limit 25 MPH on Airport Way

5. Number of lanes Airport Way is a city street with two lanes approaching the intersection and a single lane leaving the intersection. SR 240 is a six lane state highway plus a turn lane in each direction.

6. Trucks (commercial vehicles) are what percent of average daily traffic 8%

7. Number of school buses over the crossing each day N/A

### *Section 5 – Railroad Traffic*

1. Name of railroad(s) operating at crossing

Tri City Railroad

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 1

5. Average daily train traffic, freight: 4 (increasing to 6 by 2016)

Authorized freight train speed 20 Operated freight train speed 10

6. Average daily train traffic, passenger 0

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

*Section 6 – 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.

Shoulder mounted flashing lights with gates

*Section 7 – Description of Proposed Changes*

1. Describe in detail the proposed changes, including train detection circuitry, sequencing and advanced preemption time, justification for the changes and its effects on current warning devices and warning times for drivers.

Install new eight wire preemption which will improve the communication between the train detection system and the WSDOT traffic signal, upgrade signals to LED. Upgrade track circuitry to support 8 wire system and additional preemption time needed.

WSDOT to improve right turn radius from SB 240 to Airport. Install R8-10 or R8-10a "Stop Here" signs and repaint road markings as appropriate.

All improvements funded under Section 130.

## *Section 8 – Illustration of Current and Proposed Layout*

Attach a detailed diagram, drawing, map or other illustration showing the current and proposed layout of the road, crossing surface and railway in the vicinity of the crossing, including shoulders, sidewalks, lanes of travel, bike lanes, warning devices and any other applicable crossing conditions.


## *Section 9 – Traffic Signal Preemption*

Complete the attached Guide for Determining Time Requirements for Traffic Signal Preemption at Highway-Rail Grade Crossings.

1. Specify simultaneous or advance preemption requested.

Advance preemption

If advance preemption, what is the preemption time.

43 seconds

*Section 10 – Waiver of Hearing by Respondent*

**Waiver of Hearing**

The undersigned represents the Respondent in the petition to install or modify an inter-tie between the highway signal and the railroad crossing signal system at the following crossing.

USDOT Crossing No. 310402M

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 inter-tire should be installed and consent to a decision by the commission without a hearing.

Dated at 10:40 AM, Washington, on the 3rd day of NOVEMBER, 2015.

JOHN J. MILLER

Printed name of Respondent

John J. Miller

Signature of Respondent's Representative

VICE PRESIDENT & CHIEF OPERATIONS OFFICER

Title

509-578-8557 MILLER@TCRY.COM

Phone number and e-mail address

TRI CITY RAILROAD
PO BOX 1700

RICHLAND, WA 99352

Mailing address

Version 4-27-2006

Minnesota Department of Transportation

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

City Richland, WA

County

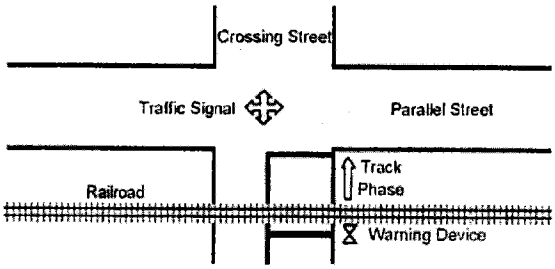
District

Date 10/07/14

Completed by Joe DeGroat

District Approval

Show North Arrow




Parallel Street Name: SR240

Crossing Street Name: Airport Way

Railroad Tri-City RR

Crossing DOT# 310402M

Railroad Contact Rhett Peterson

Phone (509) 371-0901

## SECTION 1: RIGHT-OF-WAY TRANSFER TIME CALCULATION

**Preempt verification and response time**

| | | | Remarks |
|---|---|---|---|
| 1. Preempt delay time (seconds) | 1. | 0.0 | |
| 2. Controller response time to preempt (seconds) | 2. | 0.0 | Controller type: |
| 3. Preempt verification and response time (seconds): add lines 1 and 2 | 3. | 0.0 | |

**Worst-case conflicting vehicle time**

| | | | Remarks |
|---|---|---|---|
| 4. Worst-case conflicting vehicle phase number | 4. | 2 | |
| 5. Minimum green time during right-of-way transfer (seconds) | 5. | 10.0 | |
| 6. Other green time during right-of-way transfer (seconds) | 6. | 0.0 | |
| 7. Yellow change time (seconds) | 7. | 5.0 | |
| 8. Red clearance time (seconds) | 8. | 1.5 | |
| 9. Worst-case conflicting vehicle time (seconds): add lines 5 through 8 | 9. | 16.5 | |

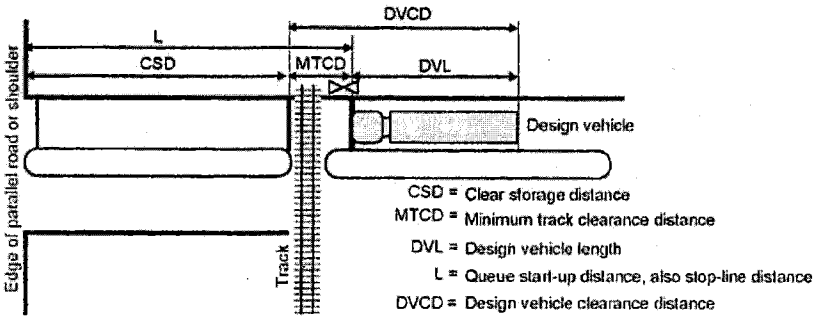
**Worst-case conflicting pedestrian time**

| | | | Remarks |
|---|---|---|---|
| 10. Worst-case conflicting pedestrian phase number | 10. | 2 | |
| 11. Minimum walk time during right-of-way transfer (seconds) | 11. | 7.0 | |
| 12. Pedestrian clearance time during right-of-way transfer (seconds) | 12. | 19.0 | |
| 13. Vehicle yellow change time, if not included on line 12 (seconds) | 13. | 5.0 | |
| 14. Vehicle red clearance time, if not included on line 12 (seconds) | 14. | 1.5 | |
| 15. Worst-case conflicting pedestrian time (seconds): add lines 11 through 14 | 15. | 32.5 | |

**Worst-case conflicting vehicle or pedestrian time**

| | | |
|---|---|---|
| 16. Worst-case conflicting vehicle or pedestrian time (seconds): maximum of lines 9 and 15 | 16. | 32.5 |
| 17. **Right-of-way transfer time (seconds): add lines 3 and 16** | 17. | 32.5 |

## SECTION 2: QUEUE CLEARANCE TIME CALCULATION




| | | | Remarks |
|---|---|---|---|
| 18. Clear storage distance (CSD, feet) | 18. | 35 | |
| 19. Minimum track clearance distance (MTCD, feet) | 19. | 29 | |
| 20. Design vehicle length (DVL, feet) | 20. | 75 | Design vehicle type: |
| 21. Queue start-up distance, L (feet): add lines 18 and 19 | 21. | 64 | |
| 22. Time required for design vehicle to start moving (seconds): calculate as 2+(L÷20) | 22. | 5.2 | Remarks |
| 23. Design vehicle clearance distance, DVCD (feet): add lines 19 and 20 | 23. | 104 | |
| 24. Time for design vehicle to accelerate through the DVCD (seconds) | 24. | 13.5 | Read from Figure 2 in Instructions. |
| **25. Queue clearance time (seconds): add lines 22 and 24** | **25.** | 18.7 | |

## SECTION 3: MAXIMUM PREEMPTION TIME CALCULATION

| | | | Remarks |
|---|---|---|---|
| 26. Right-of-way transfer time (seconds): line 17 | 26. | 32.5 | |
| 27. Queue clearance time (seconds): line 25 | 27. | 18.7 | |
| 28. Desired minimum separation time (seconds) | 28. | 4.0 | |
| **29. Maximum preemption time (seconds): add lines 26 through 28** | **29.** | 55.2 | |

## SECTION 4: SUFFICIENT WARNING TIME CHECK

| | | | | Remarks |
|---|---|---|---|---|
| 30. Required minimum time, MT (seconds): per regulations | 30. | 20.0 | | |
| 31. Clearance time, CT (seconds): get from railroad | 31. | 1.0 | | |
| 32. Minimum warning time, MWT (seconds): add lines 30 and 31 | | | 32. 21.0 | Excludes buffer time (BT) |
| 33. Advance preemption time, APT, if provided (seconds): get from railroad | | | 33. 0.0 | |
| 34. Warning time provided by the railroad (seconds): add lines 32 and 33 | | | 34. 21.0 | |
| **35. Additional warning time required from railroad (seconds): subtract line 34 from line 29, round up to nearest full second, enter 0 if less than 0** | | | **35.** 35 | |

If the additional warning time required (line 35) is greater than zero, additional warning time has to be requested from the railroad. Alternatively, the maximum preemption time (line 29) may be decreased after performing an engineering study to investigate the possibility of reducing the values on lines 1, 5, 6, 7, 8, 11, 12, 13 and 14.

**Remarks:**

## SECTION 5: TRACK CLEARANCE GREEN TIME CALCULATION (OPTIONAL)

### Preempt Trap Check

36. Advance preemption time (APT) provided (seconds): 36. 43.0 Line 33 only valid if line 35 is zero.

37. Multiplier for maximum APT due to train handling 37. 1.25 See Instructions for details.

38. Maximum APT (seconds): multiply line 36 and 37 38. 53.8 **Remarks**

39. Minimum duration for the track clearance green interval (seconds) 39. 15.0 For zero advance preemption time

40. Gates down after start of preemption (seconds): add lines 38 and 39 40. 68.8

41. Preempt verification and response time (seconds): line 3 41. 0.0 **Remarks**

42. Best-case conflicting vehicle or pedestrian time (seconds): usually 0 42. 0.0

43. Minimum right-of-way transfer time (seconds): add lines 41 and 42 43. 0.0

44. Minimum track clearance green time (seconds): subtract line 43 from line 40 44. 68.8

### Clearing of Clear Storage Distance

45. Time required for design vehicle to start moving (seconds), line 22 45. 5.2

46. Design vehicle clearance distance (DVCD, feet), line 23 46. 104 **Remarks**

47. Portion of CSD to clear during track clearance phase (feet) 47. 35 CSD* in Figure 3 in Instructions.

48. Design vehicle relocation distance (DVRD, feet): add lines 46 and 47 48. 139

49. Time required for design vehicle to accelerate through DVRD (seconds) 49. 16.0 Read from Figure 2 in Instructions.

50. Time to clear portion of clear storage distance (seconds): add lines 45 and 49 50. 21.2

51. **Track clearance green interval (seconds): maximum of lines 44 and 50, round up to nearest full second ....** 51. 69

## SECTION 6: VEHICLE-GATE INTERACTION CHECK (OPTIONAL)

52. Right-of-way transfer time (seconds): line 17 52. 32.5

53. Time required for design vehicle to start moving (seconds), line 22 53. 5.2

54. Time required for design vehicle to accelerate through DVL (on line 20, seconds) 54. 11.7 Read from Table 3 in Instructions.

55. Time required for design vehicle to clear descending gate (seconds): add lines 52 though 54 55. 49.4

**Remarks**

56. Duration of flashing lights before gate descent start (seconds): get from railroad 56. 3.0

**Remarks**

57. Full gate descent time (seconds): get from railroad 57. 12.0

58. Proportion of non-interaction gate descent time 58. 0.30 Read from Figure 5 in Instructions.

59. Non-interaction gate descent time (seconds): multiply lines 57 and 58 59. 3.6

60. Time available for design vehicle to clear descending gate (seconds): add lines 56 and 59 60. 6.6

61. **Advance preemption time (APT) required to avoid design vehicle-gate interaction (seconds): subtract line 60 from line 55, round up to nearest full second, enter 0 if less than 0 .....** 61. 43