TR-071914

Washington State Department of Transportation
Douglas B. MacDonald
Secretary of Transportation

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

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September 19, 2007

Kathy Hunter, Transportation Safety Compliance Manager
Washington Utilities and Transportation Commission
PO Box 47250
Olympia, WA 98504-7250

Subject: Petition for Reconstruction of 3 Grade Crossings

Dear Ms. Hunter:

Please docket and initiate proceedings for the enclosed petitions for reconstruction of two railroad grade crossing at Avon-Allen Road and Pulver Road, and relocation of one grade crossing at Peterson Road in Skagite County, Washington. **I am also copying Megan McIntyre of the BNSF Railway Company for her review and consideration of waiver of hearing in this matter.**

I am available to meet with you at any time to discuss this project or petition. Please contact me at (360) 705-7271 if I can be of any assistance.

Sincerely,

Ahmer Nizam
WSDOT Railroad Liaison

cc: Dawn Yankauskas, WSDOT
Dean Holman, WSDOT

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

	)	DOCKET NO. TR-
The Washington State Department	)	
of Transportation	)	PETITION FOR RECONSTRUCTION OF A
	)	HIGHWAY-RAIL GRADE CROSSING
Petitioner,	)	
	)	
vs.	)	
	)	WUTC CROSSING NO. 2C 13.90
The BNSF Railway Company	)	
	)	USDOT CROSSING NO. 092249V
Respondent.	)	
. . . . .	)	

Petition is hereby made to the Washington Utilities and Transportation Commission for an order authorizing the reconstruction of a grade crossing at the crossing identified above and described in this petition:

1. Identifying information for the crossing

a. Existing roadway: Avon-Allen Road

b. Existing railway: BNSF Railway Company

2. Character of rail line

a. Is this a main line, branch line, siding or spur? Branch Line

b. Do passenger trains use the crossing? No

c. Legal maximum speed for passenger and/or freight trains: 10 MPH (May increase to 20 mph in the near future).

d. Actual or estimated train traffic in 24 hours: 2 (1 round trip)

3. Character of Roadway

a. Government agency responsible for maintaining the road: The crossing is located within WSDOT limited access right-of-way, designating WSDOT as the road authority until that portion of the road is formally turned back to Skagit County (upon project completion).

b. Number of traffic lanes in each direction. One

c. Number of traffic lanes in each direction that would exist after the project completion: Southbound: two 12'lanes + 5' shoulder. Northbound: one 12' lane + 8' shoulder.

d. Posted vehicle speed limit for cars and trucks: 35 MPH

e. Estimated vehicle traffic in 24 hours: 4350

f. Is the crossing part of a truck route? Yes

4. Type (*e.g.* wood plank, concrete, asphalt) and length of the current crossing surface: Currently 50' rubber surface

5. Project description:

Avon-Allen Road intersects with SR-20 approximately 140 feet south of the railroad grade crossing. A WSDOT plan to widen SR-20 requires improvements at the roadway intersection, which in turn impact the railroad grade crossing due to the short distance between the two. The project will add an additional southbound lane across the tracks and will add sidewalks in both directions. The project will require upgrading the crossing surface with concrete materials, upgrading the railroad warning devices, and interconnecting the railroad signals with a new highway signal that will be installed at the SR-20/Avon-Allen roadway intersection.

6. Existing warning system

a. Describe existing warning devices at the crossing:
Warning devices at the crossing include cantilever-mounted flashing light signals.

b. Describe the type of existing crossing circuitry, if any: AC/DC-Type

7. How would the project affect warning devices at the crossing? The proposal includes use of the existing cantilevers at their current location. The signals on the cantilevers will be replaced with 12" LED signals, gates will be installed on each approach, and train detection circuitry will be upgraded to constant warning type circuitry. In addition, the signals will be interconnected with the highway traffic signal to be installed at the SR-20/ Avon-Allen Road intersection in order to clear vehicles off of the tracks when trains approach (See attached railroad preemption worksheet). When signals are in railroad preemption, right turns from SR-20 into the crossing will be prohibited via an R3-1a active sign (or equivalent), and left turns will be prohibited via a red arrow.

8. Drawings. Sketches drawn to scale are attached accurately showing the current and proposed layout of the highway (including shoulders, sidewalks, lanes of travel, bike lanes and crossing warning devices), of the crossing surface and of the railway in the vicinity of the crossing. If highway grades will be changed, sketches drawn to scale accurately displaying the existing and proposed highway profile for 50 feet on each side of the crossing should also be attached.

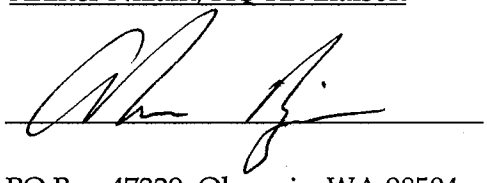
I certify under penalty of perjury that the foregoing is true and correct.

Dated at Olympia, Washington this 19th day of September 2007.

Petitioner:

Washington State Department of Transportation

By: Ahmer Nizam, HQ RR Liaison



PO Box 47329, Olympia, WA 98504

WAIVER OF HEARING BY RESPONDENT

The respondent has investigated the conditions existing at and in the vicinity of the grade crossing described herein and is satisfied that such conditions are substantially as described in the petition. Respondent consents to the modification of the crossing as proposed by petitioner. Hearing in this proceeding is hereby waived.

Dated at _____, Washington, on the _____ day of _____, 2007.

Respondent:

BNSF Railway Company

By: _____

_____

_____
(Address)

INSTRUCTIONS

Petitioner can be the railroad, the road authority or the Washington Utilities and Transportation Commission. If the railroad is the petitioner, the road authority will be the respondent. If the road authority is the petitioner, the railroad will be the respondent.

The original and two copies of the petition must be filed with the Washington Utilities and Transportation Commission.

If the waiver of hearing is executed, the petition will be investigated and a decision made within approximately two weeks from receipt of the documents.

If the waiver of hearing is not executed on the petition filed, a copy of the petition will be served upon the respondent by the Commission for answer within 20 days. Upon receipt of respondent's answer or after the 20 day period has elapsed, the application will be processed. Time for making a decision will depend on whether an answer is filed and the content of the answer.

Washington State Department of Transportation
TRANSPORTATION BUILDING
PO BOX 47300
OLYMPIA, WA 98504-7300

Version 4-27-2006

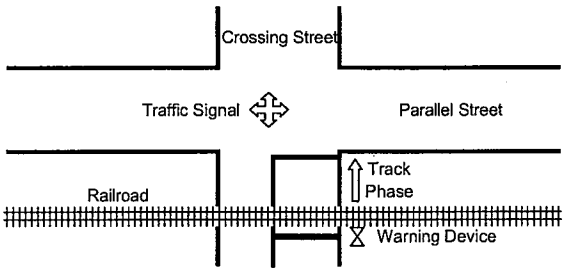
GUIDE FOR DETERMINING TIME REQUIREMENTS FOR TRAFFIC SIGNAL PREEMPTION AT HIGHWAY-RAIL GRADE CROSSINGS

City _____ Date 09/10/07

County Skagit Completed by Patrick Armijo

District NW Region District Approval _____

Show North Arrow



Parallel Street Name: SR 20

Crossing Street Name: Avon Allen Rd.

Railroad BNSF Railroad Contact Megan McIntyre

Crossing DOT# 092249V Phone 206 625-6029

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.	6	
5. Minimum green time during right-of-way transfer (seconds)	5.	7.0	
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.	2.0	
9. Worst-case conflicting vehicle time (seconds): add lines 5 through 8	9.	14.0	

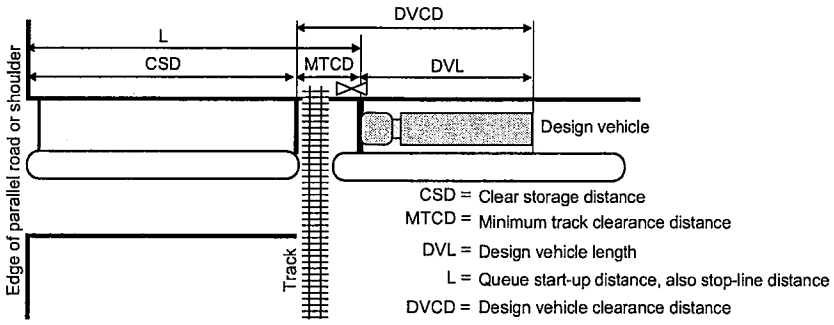
Worst-case conflicting pedestrian time

			Remarks
10. Worst-case conflicting pedestrian phase number	10.	6	
11. Minimum walk time during right-of-way transfer (seconds)	11.	0.0	Minimum Walk truncated
12. Pedestrian clearance time during right-of-way transfer (seconds)	12.	10.0	
13. Vehicle yellow change time, if not included on line 12 (seconds)	13.	4.0	
14. Vehicle red clearance time, if not included on line 12 (seconds)	14.	1.0	
15. Worst-case conflicting pedestrian time (seconds): add lines 11 through 14	15.	15.0	

Worst-case conflicting vehicle or pedestrian time

16. Worst-case conflicting vehicle or pedestrian time (seconds): maximum of lines 9 and 15	16.	15.0
17. **Right-of-way transfer time (seconds): add lines 3 and 16**	17.	15.0

SECTION 2: QUEUE CLEARANCE TIME CALCULATION



			Remarks
18. Clear storage distance (CSD, feet)	**18.**	131	
19. Minimum track clearance distance (MTCD, feet)	**19.**	59	
20. Design vehicle length (DVL, feet)	**20.**	55	Design vehicle type:
21. Queue start-up distance, L (feet): add lines 18 and 19	**21.**	190	
22. Time required for design vehicle to start moving (seconds): calculate as 2+(L÷20)	**22.**	11.5	
23. Design vehicle clearance distance, DVCD (feet): add lines 19 and 20	**23.**	114	
24. Time for design vehicle to accelerate through the DVCD (seconds)	**24.**	15.0	Read from Figure 2 in Instructions.
25. Queue clearance time (seconds): add lines 22 and 24	**25.**	26.5	

SECTION 3: MAXIMUM PREEMPTION TIME CALCULATION

			Remarks
26. Right-of-way transfer time (seconds): line 17	**26.**	15.0	
27. Queue clearance time (seconds): line 25	**27.**	26.5	
28. Desired minimum separation time (seconds)	**28.**	4.0	
29. Maximum preemption time (seconds): add lines 26 through 28	**29.**	45.5	

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.**			
32. Minimum warning time, MWT (seconds): add lines 30 and 31	**32.**		20.0	Excludes buffer time (BT)
33. Advance preemption time, APT, if provided (seconds): get from railroad	**33.**			
34. Warning time provided by the railroad (seconds): add lines 32 and 33	**34.**		20.0	
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.**		26	

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.** 36.0 — 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.** 45.0

39. Minimum duration for the track clearance green interval (seconds) **39.** 15.0

Remarks

For zero advance preemption time

40. Gates down after start of preemption (seconds): add lines 38 and 39 ..... **40.** 60.0

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

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

Remarks

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.** 60.0

Clearing of Clear Storage Distance

45. Time required for design vehicle to start moving (seconds), line 22 ..... **45.** 11.5

46. Design vehicle clearance distance (DVCD, feet), line 23 ..... **46.** 114

47. Portion of CSD to clear during track clearance phase (feet) ... **47.** 76

Remarks

CSD* in Figure 3 in Instructions.

48. Design vehicle relocation distance (DVRD, feet): add lines 46 and 47 ..... **48.** 190

49. Time required for design vehicle to accelerate through DVRD (seconds) ..... **49.** 19.0 — Read from Figure 2 in Instructions.

50. Time to clear portion of clear storage distance (seconds): add lines 45 and 49 ..... **50.** 30.5

51. **Track clearance green interval (seconds): maximum of lines 44 and 50, round up to nearest full second** **51.** 60

SECTION 6: VEHICLE-GATE INTERACTION CHECK (OPTIONAL)

52. Right-of-way transfer time (seconds): line 17 ..... **52.** 15.0

53. Time required for design vehicle to start moving (seconds), line 22 ..... **53.** 11.5

54. Time required for design vehicle to accelerate through DVL (on line 20, seconds) ..... **54.** 10.0 — Read from Table 3 in Instructions.

55. Time required for design vehicle to clear descending gate (seconds): add lines 52 though 54 ..... **55.** 36.5

Remarks

56. Duration of flashing lights before gate descent start (seconds): get from railroad **56.** 5.0

Remarks

57. Full gate descent time (seconds): get from railroad **57.** 15.0

58. Proportion of non-interaction gate descent time ..... **58.** 0.50 — Read from Figure 5 in Instructions.

59. Non-interaction gate descent time (seconds): multiply lines 57 and 58 ..... **59.** 7.5

60. Time available for design vehicle to clear descending gate (seconds): add lines 56 and 59 ..... **60.** 12.5

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.** 24