UTC
LITIES AND TRANSPORTATION
COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Whatcom County Petitioner, vs. BNSF Railway Respondent	)	DOCKET NO. TR- 130221-P PETITION TO CONSTRUCT OR RECONSTRUCT A HIGHWAY-RAIL GRADE CROSSING AND INSTALL AN INTER-TIE BETWEEN A HIGHWAY SIGNAL AND A RAILROAD CROSSING SIGNAL SYSTEM USDOT CROSSING NO.: 084845A

Prior to submitting a Petition to **Construct** a highway-rail grade crossing and install an inter-tie between a Highway Signal and a Railroad Crossing Signal System to the Washington Utilities and Transportation Commission (UTC), State Environmental Protection Act (SEPA) requirements must be met. Washington Administrative Code (WAC) 197-11-865 (2) requires:

> **All actions of the utilities and transportation commission under statutes administered as of December 12, 1975, are exempted, except the following:**
>
> **(2) Authorization of the openings or closing of any highway/railroad grade crossing, or the direction of physical connection of the line of one railroad with that of another;**

Please attach sufficient documentation to demonstrate that the SEPA requirement has been fulfilled. For additional information on SEPA requirements contact the Department of Ecology.

The Petitioner asks the Washington Utilities and Transportation Commission to approve construction or reconstruction of a highway-rail grade crossing and inter-tie the highway signal with the railroad crossing signal system.

Construction ✓ **Reconstruction**

Section 1 – Petitioner's Information

Whatcom County
Petitioner

Joe Rutan, P.E., County Engineer/Ass't Director Michael Lorette for Joe Rutan
Signature

322 N. Commerical St, Ste. 301, Bellingham, WA 98225
Street Address

Bellingham, WA 98225
City, State and Zip Code

Mailing Address, if different than the street address

Kevin M. Thompson, Project Engineer
Contact Person Name

360-676-6707, ext 50690 kthompso@co.whatcom.wa.us
Contact Phone Number and E-mail Address

Section 2 – Respondent's Information

BNSF Railway
Respondent

2454 Occidental Ave S#1-A
Street Address

Seattle, WA 98134
City, State and Zip Code

Same
Mailing Address, if different than the street address

Rick Wagner, Manager Public Projects
Contact Person Name

206-625-6152 richard.wagner@bnsf.com
Contact Phone Number and E-mail Address

Section 3 – Proposed Crossing Location

1. Existing highway/roadway Birch Bay – Lynden Rd

2. Existing railroad BNSF Railway

3. Location of proposed crossing:
   Located in the NW 1/4 of the NE 1/4 of Sec. 27, Twp. 40N , Range 1E W.M and
   Located in the SW1/4 of the SE 1/4 of Sec. 22, Twp. 40N, Range 1E W.M.
4. GPS location, if known

5. Railroad mile post (nearest tenth) MP 113.6, DOT 084845A

6. City Custer, WA County Whatcom

Section 4 – Proposed Crossing Information

1. Railroad company BNSF Railway

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 9

   Authorized freight train speed 60 mph Operated freight train speed 60 mph

6. Average daily train traffic, passenger 4

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

7. Will the proposed crossing eliminate the need for one or more existing crossings?
   Yes ____ No X

8. If so, state the distance and direction from the proposed crossing.

9. Does the petitioner propose to close any existing crossings?
Yes ____ No X

Section 5 – Temporary Crossing

1. Is the crossing proposed to be temporary? 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 ____

Approximate date of removal _____

Section 6 – Current Highway Traffic Information

1. Name of roadway/highway Birch Bay Lynden Rd

2. Roadway classification Rural Major Collector

3. Road authority Whatcom County

4. Average annual daily traffic (AADT) appr. 14,200 in 2011

5. Number of lanes Two (2)

6. Roadway speed 35 MPH

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

8. If so, trucks are what percent of total daily traffic? 4%

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? 2

11. Describe any changes to the information in 1 through 7, above, expected within ten years:

Average Daily Traffic expected to be approximately 18,000 by 2023

Section 7 – Alternatives to the Proposal

1. Does a safer location for a crossing exist within a reasonable distance of the 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.

There are large alder trees that line the railroad tracks north and south of the crossing. These trees could possibly be cut down to improve sign distance approaching the tracks.

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 cost to construct an over or under crossing would be economically unfeasible.

7. Does the railway line, at any point in the vicinity of the proposed 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 crossing?
   Yes X No ____

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.

There is a BNSF railway public crossing at Valley View Rd (0.5 mile south)

and one at Loomis Trail Rd (1.4 miles north) of the Birch Bay – Lynden Rd / Portal Way Int.

Section 8 – Sight Distance

1. Complete the following table, describing the sight distance for motorists when approaching the tracks from either direction.

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

Direction of sight (left or right)	Number of feet from proposed crossing	Provides an unobstructed view for how many feet (measured along track)
Right	300	50
Right	200	60
Right	100	70
Right	50	Unlimited
Right	25	Unlimited
Left	300	35
Left	200	45
Left	100	180
Left	50	Unlimited
Left	25	Unlimited

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

Direction of sight (left or right)	Number of feet from proposed crossing	Provides an unobstructed view for how many feet (measured along track)
Right	300	390
Right	200	440
Right	100	500
Right	50	Unlimited
Right	25	Unlimited
Left	300	440
Left	200	470
Left	100	570
Left	50	Unlimited
Left	25	Unlimited

2. Will the new 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. The approach grade is -0.04% west of the tracks and -0.84% grade east of the tracks.

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

Yes X No ____

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

Section 9 – Illustration of Proposed Crossing Configuration

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

- ♦ The vicinity of the proposed 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.

SEE ATTACHED PLAN SHEETS FOR THIS INFORMATION

Section 10 – Sidewalks

1. Provide the following information:
   a. Provide a description of the type of sidewalks proposed.
   b. Describe who will maintain the sidewalks.
   c. Attach a proposed diagram or design of the crossing including the sidewalks.

No sidewalks are planned for this project.

Section 11 – Proposed Warning Signals or Devices

1. Explain in detail the number and type of automatic signals or other warning devices planned at the proposed crossing, including a cost estimate for each. If requesting pre-emption include the type of train detection circuitry, sequencing and advanced preemption time, justification for the changes and its effects on current warning devices and warning times for drivers.

The railroad signal work will remove and replace the existing cantilever type warning devices and gates. The existing bungalow will also be removed and replaced. The project will require the installation of one cantilevered and 2 shoulder mounted warning devices and three gates. A new 6 x 6 railroad cabinet will be installed. The estimated cost for railroad upgrades is approximately $800,000.

The county intersection improvements will include a new fully actuated traffic signal at the Portal Way/BBLR intersection, replacing an all-way stop control. The system will include signal heads for each leg of the intersection, with an advanced traffic signal west of the railroad on BBLR for eastbound traffic. A total of three signal poles will be installed. Additionally, the project includes road reconstruction, drainage upgrades, illumination, channelization, and alignment upgrades. The estimated cost for the traffic signals is $250,000 for construction with the entire roadway construction cost estimated at $2,400,000.

A signal intertie providing preemption will be installed and interconnected to the county traffic signal .The train detection circuitry is DAX Cable and Relay.

We understand the preemption time will be lengthened from the existing conditions in order to clear vehicles from the railroad for the new traffic signal .

2. Provide an estimate for maintaining the signals for 12 months. BNSF will maintain.

3. Is the petitioner prepared to pay to the respondent railroad company its share of installing the warning devices as provided by law?

Yes X No ____

Section 12 – 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.
Advanced

If advance preemption, what is the preemption time.
From the Traffic Signal Preemption Calculations (dated 10.7.11, attached), per Section 3 the maximum preemption time is 51.3 secs The calculations need formal review by BNSF.

Section 13 – Additional Information

Provide any additional information supporting the proposal, including information such as the public benefits that would be derived from constructing a new crossing as proposed.

Whatcom County's proposed signalization of the intersection will increase safety for the public motoring traffic at the intersection and also increases safety by upgrading the existing railroad crossing.

Section 14 – Waiver of Hearing by Respondent

Waiver of Hearing

The undersigned represents the Respondent in the petition to construct or reconstruct a highway-railroad grade crossing and inter-tie the highway signal with the railroad crossing signal system.

USDOT Crossing No.: ___084845A _____

We have investigated the conditions at the proposed or existing crossing site. We are satisfied the conditions are the same as described by the Petitioner in this docket. We agree that a crossing be installed or reconstructed and the highway signals inter-tied with the railroad crossing signal system and consent to a decision by the commission without a hearing.

Dated at _____ , Washington, on the _____ day of

_____, 20 13 .

_____

Printed name of Respondent

_____

Signature of Respondent's Representative

_____

Title

_____

Phone number and e-mail address

_____

_____

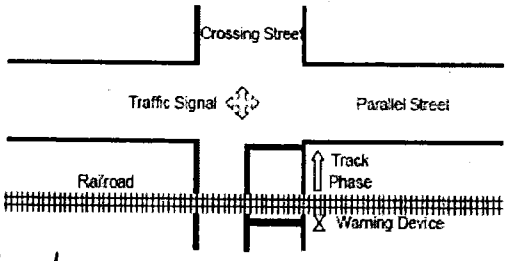
Mailing address

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

City Custer
County Whatcom
District

Date 07-Oct-2011
Completed by M. Creeden
District Approval

Show North Arrow



Parallel Street Name: Portal Way
Crossing Street Name: Birch Bay-Lynden Rd.

Railroad BNSF Railroad
Crossing DOT# 084845A

Railroad Contact Megan McIntyre
Phone 206-625-6413

SECTION 1: RIGHT-OF-WAY TRANSFER TIME CALCULATION

Preempt verification and response time

			Remarks
1. Preempt delay time (seconds)	1.	0.0	From Bellingham
2. Controller response time to preempt (seconds)	2.	0.1	Controller type: NEMA
3. Preempt verification and response time (seconds): add lines 1 and 2	3.	0.1	

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	From Bellingham
6. Other green time during right-of-way transfer (seconds)	6.	0	"
7. Yellow change time (seconds)	7.	4	"
8. Red clearance time (seconds)	8.	1	"
9. Worst-case conflicting vehicle time (seconds): add lines 5 through 8	9.	11	

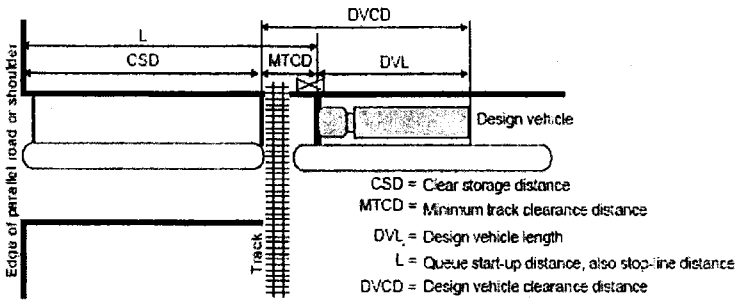
Worst-case conflicting pedestrian time

			Remarks
10. Worst-case conflicting pedestrian phase number	10.		
11. Minimum walk time during right-of-way transfer (seconds)	11.	0	From Bellingham
12. Pedestrian clearance time during right-of-way transfer (seconds)	12.	0	"
13. Vehicle yellow change time, if not included on line 12 (seconds)	13.	4	"
14. Vehicle red clearance time, if not included on line 12 (seconds)	14.	1	"
15. Worst-case conflicting pedestrian time (seconds): add lines 11 through 14	15.	5	

Worst-case conflicting vehicle or pedestrian time

16. Worst-case conflicting vehicle or pedestrian time (seconds): maximum of lines 9 and 15	16.	11
17. Right-of-way transfer time (seconds): add lines 3 and 16	17.	11.1

SECTION 2: QUEUE CLEARANCE TIME CALCULATION



			Remarks
18. Clear storage distance (CSD, feet)	18.	48	Stop Bar at Intersection
19. Minimum track clearance distance (MTCD, feet)	19.	186	Stop Bar for Pre-Signal
20. Design vehicle length (DVL, feet)	20.	74	Design vehicle type: WB-67
21. Queue start-up distance, L (feet): add lines 18 and 19	21.	234	
22. Time required for design vehicle to start moving (seconds): calculate as 2+(L÷20)	22.	13.7	Remarks: $2+(\frac{234}{20})$
23. Design vehicle clearance distance, DVCD (feet): add lines 19 and 20	23.	260	
24. Time for design vehicle to accelerate through the DVCD (seconds)	24.	22.5	Read from Figure 2 in Instructions.
25. **Queue clearance time (seconds): add lines 22 and 24**	25.	36.2	

SECTION 3: MAXIMUM PREEMPTION TIME CALCULATION

			Remarks
26. Right-of-way transfer time (seconds): line 17	26.	11.1	
27. Queue clearance time (seconds): line 25	27.	36.2	
28. Desired minimum separation time (seconds)	28.	4.0	
29. **Maximum preemption time (seconds): add lines 26 through 28**	29.	51.3	

SECTION 4: SUFFICIENT WARNING TIME CHECK

				Remarks
30. Required minimum time, MT (seconds): per regulations	30.	20		From BNSF
31. Clearance time, CT (seconds): get from railroad	31.	2		"
32. Minimum warning time, MWT (seconds): add lines 30 and 31	32.		22	Excludes buffer time (BT)
33. Advance preemption time, APT, if provided (seconds): get from railroad	33.		0	From BNSF
34. Warning time provided by the railroad (seconds): add lines 32 and 33	34.	22		
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** (51.3 - 22)	35.	30		

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: Preemption/warning times are preliminary, based on preliminary crossing layout. These times will be revised and updated and coordinated with BNSF during crossing and traffic signal design.

SECTION 5: TRACK CLEARANCE GREEN TIME CALCULATION (OPTIONAL)

Preempt Trap Check

36. Advance preemption time (APT) provided (seconds): ..... 36. **0** — Line 33 only valid if line 35 is zero.

37. Multiplier for maximum APT due to train handling ..... 37. **1.0** — See Instructions for details.

38. Maximum APT (seconds): multiply line 36 and 37 ..... 38. **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. **15**

41. Preempt verification and response time (seconds): line 3 ..... 41. **0.1**

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

Remarks:

43. Minimum right-of-way transfer time (seconds): add lines 41 and 42 ..... 43. **0.1**

44. Minimum track clearance green time (seconds): subtract line 43 from line 40 ..... 44. **14.9**

Clearing of Clear Storage Distance

45. Time required for design vehicle to start moving (seconds), line 22 ..... 45. **13.7**

46. Design vehicle clearance distance (DVCD, feet), line 23 ..... 46. **260**

47. Portion of CSD to clear during track clearance phase (feet) ... 47. **40**

Remarks: CSD* in Figure 3 in Instructions.

48. Design vehicle relocation distance (DVRD, feet): add lines 46 and 47 ..... 48. **308**

49. Time required for design vehicle to accelerate through DVRD (seconds) ..... 49. **24.5** — Read from Figure 2 in Instructions.

50. Time to clear portion of clear storage distance (seconds): add lines 45 and 49 ..... 50. **38.2**

51. **Track clearance green interval (seconds): maximum of lines 44 and 50, round up to nearest full second** 51. **39**

SECTION 6: VEHICLE-GATE INTERACTION CHECK (OPTIONAL)

52. Right-of-way transfer time (seconds): line 17 ..... 52. **11.1**

53. Time required for design vehicle to start moving (seconds), line 22 ..... 53. **13.7**

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. **36.5**

56. Duration of flashing lights before gate descent start (seconds): get from railroad 56. **3**

Remarks: From BNSF

57. Full gate descent time (seconds): get from railroad 57. **12**

Remarks: From BNSF

58. Proportion of non-interaction gate descent time ..... 58. **0.37** — Read from Figure 5 in Instructions.

59. Non-interaction gate descent time (seconds): multiply lines 57 and 58 ..... 59. **4.4**

60. Time available for design vehicle to clear descending gate (seconds): add lines 56 and 59 ..... 60. **7.4**

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. **30**