

Exhibit No. ____ -T (RJ-1T)
Docket No. TR-070696
Witness: Robert Johnston

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

BNSF RAILWAY COMPANY,

Petitioner,

v.

CITY OF MOUNT VERNON,

Respondent.

DOCKET NO. TR-070696

**TESTIMONY
OF
ROBERT JOHNSTON**

**ON BEHALF OF THE STAFF OF
THE WASHINGTON UTILITIES
AND TRANSPORTATION COMMISSION**

November 5, 2007

1 **Q. Please state your name, employer, and business address.**

2 A. My name is Robert Johnston. My employer is the Washington Utilities and
3 Transportation Commission (Commission). My business address is 1300 South
4 Evergreen Park Drive Southwest, P.O. Box 47250, Olympia, Washington, 98504-
5 7250. My business e-mail address is bjohnsto@utc.wa.gov.

6
7 **Q. What is your work history with the Commission?**

8 A. I have worked at the Commission for over 29 years. For 20 years, from July 1978 to
9 April 1999, I held various positions in the Motor Carrier Safety Section, where I
10 conducted safety inspections and investigations of trucking companies. From April
11 1999 to October 2002, I worked as a Compliance Specialist, investigating utility and
12 transportation companies for compliance with state laws, Commission rules, and
13 company tariffs. Since October 2002, I have been employed in the Rail Safety
14 Section as a Transportation Specialist 4.

15

16 **Q. What are your duties as a Transportation Specialist 4?**

17 A. I am certified by the Federal Railroad Administration as a hazardous materials
18 inspector. I conduct inspections of rail containers and related documents used in
19 hazardous materials shipments. In addition, I participate in diagnostic safety reviews
20 of railroad crossings, often with local jurisdictions, the railroad, and the Federal
21 Railroad Administration, to determine what measures Commission Staff would
22 recommend to improve safety at an existing or proposed crossing. I also conduct
23 inspections of railroad crossings.

1

2 **Q. In your work at the Commission, how many crossing inspections have you**
3 **conducted?**

4 A. Since January 2002 to present, I have conducted approximately 2,225 crossing
5 inspections.

6

7 **Q. How many railroad crossings exist in the state, and how often does Commission**
8 **Staff inspect each one?**

9 A. There are approximately 2,700 public railroad crossings. We inspect each at least
10 once every three years. There are an additional 3,000 private railroad crossings
11 (approximately) that we do not inspect because the Commission does not have
12 jurisdiction over private crossings.

13

14 **Q. Describe the Commission's railroad crossing inspection program.**

15 A. The purpose of the railroad crossing inspection program is to ensure that crossings
16 meet state standards for public safety. To accomplish this, we have an inspection
17 form and written procedures that each staff use and follow in conducting crossing
18 inspections.

19

20 **Q. What do you look at when you conduct a crossing inspection?**

21 A. There are a number of items we look at during a crossing inspection. We look at
22 general crossing information, including the type and location of crossing, and
23 crossing identification numbers (both federal and state). We look at roadway

1 information, including the type and location of the roadway, and any nearby
2 roadways, composition of road surface, roadway direction and grade, road width,
3 number of vehicle travel lanes, and angle of the roadway to the tracks. We look at
4 similar information for the railroad line, including the number and type of tracks over
5 the crossing. We look at the location, number, and type of each warning device
6 present at the crossing. We look at the actual crossing surface, including the type of
7 materials used in the crossing. We determine sight distance for motorists at the
8 crossing. We identify the location of bicycle lanes and sidewalks relevant to the
9 crossing. We look at each of these items to gather information and to ensure the
10 crossing meets state standards. In addition, I note unusual roadway-railroad
11 geometry, structures near the tracks, or other conditions that exist that may detract
12 from an ideal crossing configuration.

13
14 **Q. What do mean by ‘state standards’?**

15 A. In the Revised Code of Washington, Title 81, the law gives the Commission
16 jurisdiction over the safety of railroad crossings in our state. Consequently, the
17 Commission adopted rules in Washington Administrative Code (WAC) 480-62 that
18 set state standards for railroad crossings. WAC 480-62 is based on standards set by
19 state law, the Manual on Uniform Traffic Control Devices published by the United
20 States Department of Transportation Federal Highway Administration, and Manual
21 for Railroad Engineering published by the American Railway Engineering and
22 Maintenance-of-Way Association, a nationally recognized industry association that
23 sets standards for railroad engineering, including crossing configuration.

1

2 **Q. What do you do if you find a crossing that does not meet state standards?**

3 A. We notify the railroad company or road authority in writing of any out-of-compliance
4 conditions and allow them 30 days to respond. A response must include how the
5 condition was corrected or what plans and timeframes the railroad proposes to correct
6 the condition.

7

8 **Q. You said that you “note unusual roadway-railroad geometry, structures near the**
9 **tracks, or other conditions that exist that may detract from an ideal crossing**
10 **configuration.” What does an ideal crossing look like?**

11 A. An ideal crossing consists of a single railroad track that intersects a simple, two-lane
12 roadway with a slight ascending grade on both sides of the roadway approach. The
13 intersection of the road and the tracks is a perfect 90-degree angle. The crossing
14 surface, where the road crosses the track, would be level and smooth so that motorists
15 could cross easily without slowing down. The warning devices at the crossing would
16 include flashing lights and gates that come down to prevent a motorist from entering
17 the crossing when a train is approaching. There would be no intersecting roads in the
18 vicinity.

19 Motorists approaching the crossing from either side would have unobstructed
20 sight distance in all directions so they can see approaching trains. Likewise, train
21 crews would be able to see the crossing and identify any potential problems well
22 ahead of the train’s arrival. When discussing sight distance, we typically divide a
23 crossing into four ‘quadrants,’ consisting of two quadrants on each road approach—

1 one to the left and one to the right. We call these the northwest, northeast, southwest,
2 and southeast quadrants. An ideal crossing has good sight distance in all four
3 quadrants. If pedestrian access is a common occurrence, an ideal crossing will have
4 sidewalks that traverse the crossing parallel to the roadway.

5
6 **Q. What conditions may detract from an ideal crossing configuration?**

7 A. There are a number of factors that may affect an ideal crossing. In fact, most
8 crossings in our state are not ideal for one reason or another. Examples include
9 crossings with multiple railroad tracks or multiple vehicle lanes, and crossings with
10 rough road surfaces so that motorists are not able to easily, quickly, and comfortably
11 cross the tracks. The number of tracks makes a difference for two reasons. First, it
12 simply takes more time to cross multiple tracks, exposing the vehicle to the railroad
13 for a great amount of time. Second, multiple tracks can present motorists with
14 confusing or misleading information. For example, when one train crosses on a set of
15 tracks, motorists often believe it is then safe to cross the tracks. They do not consider
16 that another train may come from a different direction on the second set of tracks.
17 The same is true when one set of tracks is a siding track. The motorist may believe,
18 when a train is stopped at the siding track, that it is safe to traverse the crossing
19 because the train is stopped. They do not realize that another train may come on the
20 main line track.

21 It would also include crossings where the intersection of the road and track is
22 less than the optimal 90 degrees (we call this a 'skewed' crossing). Skewed crossings
23 are problematic because it limits sight distance and, in some cases, obscures it

1 entirely. In order to see down the tracks, a motorist must look back over his/her
2 shoulder at a skewed crossing. In some vehicles, there are obstructions such as
3 headrests or door posts that make this difficult. External obstructions such as trees or
4 buildings can also impede proper sight distance at skewed crossings. The more acute
5 the angle, the more of a problem it is for motorists. The second problem with a
6 skewed crossing is that motorcycles, bicycles, wheelchairs, baby strollers, or similar
7 wheeled devices may lose control if their front tire hits the skewed track and is
8 trapped or thrown off course by the flange way (the space between the actual railroad
9 track and the crossing surface). Again, the more acute the angle, the more of a
10 problem this is for motorcycles and bicycles.

11 Another factor that detracts from an ideal crossing is the grade of the roadway.
12 When the grade is steep, motorists cannot see as clearly down the tracks (we call this
13 a 'humped' crossing). In addition, vehicles that are required to stop before a humped
14 crossing cannot accelerate quickly on steep grades. This is especially true of heavy
15 vehicles such as semi-trucks, farm equipment, and school buses. Severely humped
16 crossings can interfere with a vehicle's undercarriage, causing them to become high-
17 centered on the tracks and unable to dislodge themselves.

18 Less than ideal crossings would not include flashing lights and gates, and may
19 have poor sight distance for motorists and train crews. Existing or new construction
20 of buildings or other structures near the tracks can also detract from an ideal crossing.

21

1 **Q. Do you make notes of these conditions when you conduct a crossing inspection?**

2 A. Yes, I do, generally at the time of the inspection. I take digital pictures of the
3 crossing as well, particularly if there is a condition that may affect ideal safety
4 conditions. We post these to our crossing database, so we can review them at any
5 time.

6

7 **Q. When and why did you last inspect the three crossings relevant to this**
8 **testimony—the Stackpole Road, Hickox Road, and Blackburn Road crossings?**

9 A. On October 5, 2007, I inspected them as part of a routine crossing inspection of the
10 2B Line in Skagit County. We last inspected that line in 2004, so it was due for
11 inspection in 2007.

12

13 **Q. What did you find during your inspection?**

14 A. I did not find any defects at any of the three crossings. In other words, each crossing
15 met state standards.

16

17 **Q. Did you make any observations during your inspection that would help identify**
18 **whether conditions exist at each of these crossings that would detract from an**
19 **ideal crossing configuration?**

20 A. I did. I will talk about each crossing separately.

21 The Stackpole Road crossing is a fairly good crossing. On the plus side, the
22 crossing surface is smooth concrete and easy to maneuver across. There is good sight
23 distance for motorists and the railroad crew (1,500 feet in all directions). It is not a

1 skewed crossing, meaning the angle of the road to the tracks is between 60 and 90
2 degrees. There is only one set of railroad tracks, and the road has only two lanes. To
3 detract from an ideal crossing, there are no flashing lights or gates. The roadway
4 grade is slightly elevated on both approaches, causing a slight hump. Please refer to
5 Exhibits No. ____ (RJ-2) through ____ (RJ-5) to view photographs of the Stackpole
6 Road crossing.

7 The Hickox Road crossing is also a good crossing. Again, the crossing
8 surface is smooth concrete and easy to maneuver across. There is good sight distance
9 for motorists and the railroad crew in three of the four quadrants (1,500 feet). It is not
10 a skewed crossing, meaning the angle of the road to the tracks is between 60 and 90
11 degrees. There is only one set of railroad tracks and the road has only two lanes.
12 There are flashing lights and gates. To detract from an ideal crossing, the roadway
13 grade is slightly elevated on both approaches, causing a hump. In addition, the
14 southwest quadrant has a sight distance of only 400 feet because the signal controls
15 (called a 'bungalow') blocks an unrestricted view down the tracks. Please refer to
16 Exhibits No. ____ (RJ-6) through ____ (RJ-9) to view photographs of the Hickox Road
17 crossing.

18 The Blackburn Road crossing configuration causes some concerns that the
19 other crossings do not. On the positive side, the Blackburn crossing has flashing
20 lights and gates, and the railroad signals are interconnected with the traffic signals.
21 The crossing surface is smooth concrete and easy to maneuver across. Sidewalks are
22 available over the crossing for pedestrians. Please refer to Exhibits No. ____ (RJ-10)
23 through ____ (RJ-15) to view photographs of the Blackburn Road crossing.

1 However, there are a number of conditions at Blackburn that detract from an
2 ideal crossing. First, it has limited sight distance in all four quadrants—200 feet in
3 the northwest, 50 feet in the northeast, 500 feet in the southwest, and 300 feet in the
4 southeast. Second, this is a skewed crossing. South Second Street (Old Highway 99)
5 and the track intersect at an angle between 30 and 59 degrees. Third, the Blackburn
6 Road crossing has two railroad tracks—a main line track and a siding. Finally,
7 Blackburn Road intersects with South Second Street at the same point it intersects
8 with the tracks. This complicates the situation. For the most part, vehicles need to
9 move quickly through rail crossings with few distractions. There is a lot going on at
10 this crossing. There are traffic lights intermingled with rail signals and turning
11 movements onto or off of South Second Street right in the middle of the crossing,
12 creating the potential for vehicle collisions right on top of the tracks. The Blackburn
13 Road crossing appears to be a potentially confusing crossing for drivers, particularly
14 for drivers unfamiliar with the intersection and its myriad of streets, tracks, and
15 signals.

16

17 **Q. In terms of the conditions that exist at each of these three crossings, what effect**
18 **would the closure of the Hickox Road crossing have on potential safety for**
19 **motorists?**

20 A. If the Hickox Road crossing is closed, traffic will divert from there to either
21 Stackpole Road or Blackburn Road. The Stackpole Road crossing is a good one,
22 although there are no lights or gates and it is slightly humped. The Blackburn Road

1 crossing is more problematic because it has limited sight distance, it is skewed, it has
2 two tracks over it, and it has a road intersection directly on top of the tracks.

3

4 **Q. Does this conclude your testimony?**

5 A. Yes, it does.

6