Exhibit No._____ (GN-1T)

BEFORE THE WASHINGTON STATE

UTILITIES AND TRANSPORTATION COMMISSION

CHELAN COUNTY, Petitioner vs. BNSF RAILWAY COMPANY, Respondent	DOCKET NO: TR-061142 PREFILED TESTIMONY OF GARY NORRIS

INTRODUCTION

1. Please state your name and business address.

My name is Gary Norris, P.E. and P.T.O.E. My business address is 3150 Richards Road, Suite 200, Bellevue, WA 98005. My business email address is: garyn@gsassoc-inc.com.

2. By whom are you employed and in what capacity?

I am a Senior Project Engineer at Garry Struthers Associates, Inc.

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3. Please explain your background and qualifications for analyzing traffic engineering.

I am a senior engineer with 31 years experience in transportation planning and traffic engineering, as both a consulting engineer and a traffic engineer/planner for local governments. I graduated from the University of Washington with a B.S. in Civil Engineering, Traffic Engineering in 1973, and with an M.S. in Civil Engineering, Transportation Planning in 1977. I hold the following professional registrations and licenses: Professional Engineer, WA (1980); Professional Engineer, Oregon (1998); Professional Engineer, Idaho (2003); and Professional Traffic Operations Engineer, WA (2004).

While at GSAI, I have managed the development PS&E for major signal and illumination projects, work zone traffic control plans for large public works projects, and traffic impact analyses for proposed railway crossing closure and other development proposals. I have conducted in excess of 1,000 traffic impact analyses.

As Renton's City Traffic Engineer for ten years, I was responsible for planning, design, construction, operation, and maintenance of the City's transportation facilities. I managed the City of Renton's $10 million Capital Improvement Program and the $1.2 million transportation department budget. I determined mitigation measures, established design standards, and inspected construction of roadway widening, traffic signals and street lighting projects.

As Transportation Planning Engineer for the City of Bellevue for five years, I conducted a long-range transportation study to identify transportation issues with Bellevue's Planning Commission.

I am a past president of the Washington State Section, Institute of Transportation Engineers.

Please see my CV, which is attached as Exhibit A.

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4. Have you presented testimony before the Washington Utilities and Transportation Commission in other cases?

Yes. I presented testimony in the proposed crossing closure of 156th Street in the Marysville area of Snohomish County. I also presented testimony in the proposed Hickox Road crossing closure in Mount Vernon, Washington (Skagit County).

5. Are you familiar with Chelan County's petition to reconfigure the railroad bridge over the Chumstick Highway and, if so, what is the extent of your knowledge or involvement with that project?

Yes. I was asked to determine the validity of the county's position that it must widen the existing roadway and increase the radius of the curve under the BNSF trestle at issue to improve public safety. I was asked to determine whether alternative options exist to increase public traffic safety on the Chumstick Highway underpass without altering, relocating, or rebuilding the BNSF trestle.

6. What issues did Chelan County identify as the reasons for requesting funds to reconstruct the Chumstick Highway through milepost 1.83?

The County set forth the following reasons:

- The roadway and underpass are outdated. The Chumstick Highway is in essence a 1930's vintage highway.
- The roadway is only 24 feet wide under the trestle which is less than current road standards which suggest a 32 foot cross section.
- The curve through the trestle is substandard as the highway has posted a 50 mph speed limit and the curve is signed at 25 mph.
- The abrupt change from a long straight roadway to a sharp curve is a hazard.
- There have been a number of accidents at or near the underpass.

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- Chelan County considers this a dangerous location on its highway that can be made much safer by constructing a modern grade-separated crossing with a wider opening below the trestle and an improved road design.

7. Do you believe the County has provided sufficient justification to warrant reconstruction of the roadway at this location?

No, I do not.

8. What is the basis of your conclusion?

I based my conclusion on field studies and an analysis of County-provided data.

9. What field studies did you collect?

I did a site visit and observed the existing conditions, I conducted a 24-hour traffic count and speed study on both approaches to the trestle. The traffic count and speed study data are attached as Exhibit 2.

10. What did you observe on your site visit?

I observed a curve that was below the 50 mph speed limit; 24-foot roadway under the trestle; bridge abutment protected by jersey barriers on both sides in both directions; overhead height on the trestle of 15'3". I did not unnecessarily or adversely affect traffic on my site visit. I observed that other places on Chumstick Highway were worse in terms of the concerns the County has raised in their petition - such as road width, bridge clearances, and general condition of the roadway surface. To be frank, I was surprised that the County has focused on this section of the Chumstick Highway as a priority.

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11. In your opinion, do you believe the underpass conditions create an unsafe or hazardous condition such so that the roadway must be redesigned (and the railroad trestle reconfigured)?

No.

12. Would you please explain why you do not believe the conditions at the underpass create an unsafe or hazardous condition such that it must be reconfigured?

The terms "unsafe," "hazardous" and "dangerous" are adjectives and generally based upon a comparative condition. By themselves they are ambiguous and do not clearly articulate the roadway condition. A roadway section or condition may not be consistent with current design standards but that does not necessarily make it "unsafe or hazardous." However, if sufficient information in regard to how the driver is to maneuver through a roadway section is not properly conveyed to the motorist and the motorist is led into an unexpected situation, I would consider such a condition to be "unsafe" and "hazardous."

In the case of Chumstick Highway at MP 1.83, the County has appropriately signed the curve through the trestle with a curve warning sign and emphasized that sign with a flashing beacon; posted the curve with a 25 m.p.h. advisory speed; posted chevrons through the curve to inform the driver of the sharpness of the curve; posted a sign in advance of the trestle warning of the clearance height of the trestle; and provided jersey barricades on both approaches to protect the bridge abutments from errant vehicles.

Furthermore, it should be noted that the prevailing roadway conditions in the vicinity of MP 1.83 are consistent with the roadway geometry along the extent of the Chumstick Highway. In my field visit, I drove the Chumstick Highway from US 2 to MP 10.00. Along this route I found substandard curves with advisory speeds of 25 m.p.h.; roadway cross-sections at bridges of 24 feet, and railroad trestles with height clearances of 14'2". In fact, in the recently reconstructed section of the Highway noted in Greg Pezoldt's testimony, i.e., south of MP 1.00 there is a substandard curve with a 35 m.p.h. advisory speed sign. Therefore, it is reasonable to assume that

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motorists traveling the Chumstick Highway would be familiar with the substandard conditions which exist along the corridor and drive accordingly.

13. You indicated you did a 24-hour count. How was this done, and what did you find?

I hired the firm of Traffic Data Gathering, Inc. to conduct a 24-hour traffic volume study and a 24-hour speed study. The study was performed by installing counting tubes across the Chumstick Highway approximately 150 to 250 feet in advance of the curve (under the trestle) on both approaches to the trestle. The tubes had to be placed outside the curve in order to ensure accuracy as the vehicle tires tend to alter the reading when not approaching the tubes at a 90-degree angle. The study was done during the week of March 17, 2008.

The results of the 24-hour tube count indicated an existing average daily volume of 2,357 vehicles per day during the average weekday. The Friday volume was found to be 2,473 vehicles per day. Adjusting these volumes to reflect an annual average daily volume, the volume becomes 2,758 vehicles per day for the average weekday at 2,893 vehicles per day for Friday. These volumes are consistent with the data provided by Chelan County (2,800 vehicles per day) for this section of the Chumstick Highway.

14. You also indicated you did a 24 hour speed study. How as this done, and what did you find?

The 24-hour speed study was conducted in the same manner as the volume study. To determine the speed, an additional tube is added which times the vehicle between the crossing of the first tube and the crossing of the second. The tubes are set at a specified distance such that it is a simple matter of dividing the time measured by the distance between the tubes.

The results of the speed study provided some very interesting information. Data was provided for both the north and south sides of the trestle in both the north and south directions.

For the section north of the trestle, the average measured speed was approximately 38 m.p.h. in the northbound direction and 40 m.p.h. in the southbound direction. The northbound

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traffic had just come out of the curve and the southbound traffic was approaching the curve. There were vehicles measured traveling as fast as 58 m.p.h. in both the northbound and southbound directions.

For the section south of the trestle, the average observed speed was approximately 44 m.p.h. in the northbound direction (coming into the curve) and 35 m.p.h. going out of the curve (southbound).

The conclusion of these observations is that the average motorist traveling through the underpass is reducing their speed, although it is unknown whether motorists reduced their speed down to 25 m.p.h. at the curve itself (because of the count equipment limitations described above).

15. What Chelan County data did you review?

I reviewed collision data provided by Chelan County, the prefiled testimony of Gregory Pezoldt, P.E. and the County's petition before the WUTC.

16. What collision data did you review?

I was provided with seven individual State of Washington Police Traffic Collision reports from February 2000 through December 2006.

17. What did you find?

Based on the information provided, there were two (2) collisions in 2000; two (2) in 2001; zero (0) in 2002; one (1) in 2004; one (1) in 2005; and two (2) in 2006. Of these collisions, three (3) involved alcohol with two drivers cited for DUI; four (4) were charged with "speed too fast for conditions"; and one (1) with "improper lane travel." Five of the eight collisions were northbound on the Chumstick Highway. Eighty-eight percent (88%) of the accidents involved traffic violations.

Based on these accident reports, the collisions are the result of driver error rather than a roadway deficiency. Secondly, the records suggest that even though there have been some

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collisions the roadway design is very forgiving as indicated by the fact that most of the collisions were limited to "property damage only."

18. Does this collision history indicate an "unsafe" or "dangerous" condition alluded to in Mr. Pezoldt's testimony?

As I indicated previously, terms like "unsafe" or "dangerous" indicate a comparison against some other condition. In the traffic engineering community, a determination of the relative safety of a roadway condition is based on a comparison against the collision history at similar locations. This comparison is made by determining the collision rate and comparing it against collision rates for similar facilities.

Collision rates are typically calculated for three year periods using the latest available three year data. In this case, the latest three year data would be the period from 2004-2006 which had four (4) collisions. Using the prevailing volumes determined from the traffic counts discussed above, it was determined that this section of Chumstick Highway had a collision rate of 1.30 collisions per million vehicle miles.

Other three year periods were also evaluated. The period from 2000-2002 also had four (4) reported collisions with the same collision rate of 1.30 collisions per million vehicle miles. The period with the lowest number of collisions was the 2002-2004 period which had one (1) reported collision which resulted in a rate of 0.33 collisions per million vehicle miles. The rate for the entire seven year period was also 1.30 collisions per million vehicle miles.

Again, these rates don't really imply much unless they are compared against a standard. If we compare the rate against the rate for all roads in Chelan County, we find the County rate of 2.03 collisions per million vehicle miles as reported in the Washington State Department of Transportation Annual Collision Report (2006). Compared to this rate, this section of the Chumstick Highway appears to be relatively "safe" and not particularly "dangerous." If we compare the Chumstick historical rates against the rate for State Highways in Chelan County (1.78 collisions per million vehicle miles), we again find the Chumstick Highway relatively safe. If we

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compare the rate for Rural Collectors in the State of Washington (1.55 collisions per million vehicle miles), the Chumstick history is significantly less.

Therefore, I think it is safe to say that this section of the Chumstick Highway is not "unsafe" or "dangerous." Furthermore, as stated above, when collisions do occur the roadway has been very forgiving as indicated by the number of property damage only accidents.

19. Are there any other issues in regards to Mr. Pezoldt's testimony?

Yes. The allusion in his testimony is that with the reconstruction of this section of the Chumstick Highway, the roadway will be a modern roadway consistent with current design standards. As stated previously, beginning at MP 3, the roadway is similar to the conditions observed at the BNSF trestle and south of the trestle in the so-called "modernized" section there still exist substandard curves.

On page 3, line 21, Mr. Pezoldt indicates the curve is posted with a warning sign which advises a "30 miles per hour" speed through the curve. In fact, the advisory speed is 25 m.p.h. on both approaches.

20. What other measures could be implemented to improve traffic circulation without reconstructing the roadway?

Traffic operations improvements could be made to both approaches to encourage better compliance with the advisory speed, although the speed studies indicate that most drivers are reducing their speed as they approach the curve. Such improvements could include better centerline and edge of the roadway delineation which would stand up during all weather conditions. A row of buttons could be installed across the lane at each warning sigh location to catch the driver's attention. Flashing beacons could be mounted on the chevrons through the curve and the number of chevrons increased to draw attention to the angle of the curve. These are some suggestions that could help with compliance.

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21. Did you review the seven (7) proposed design drawing alternatives labeled Option A through Option G?

Yes, I did. They are attached as Exhibit 3.

22. What did you find?

First, by virtue of the number of alternatives presented, it appears the County does not yet know what the design will be and therefore the cost is also unknown. To require the railroad to commit to a project when the design, not to mention the cost impact, is unknown is at best premature.

Secondly, all of the alternatives have significant impacts which must be addressed before the project can proceed. Some of the issues include impacts on Chumstick Creek; impacts to the Richard Schroeder water well easement on the north end of the project; the lowering of the Chumstick Highway or raising of the railway to accommodate the increased bridge clearance; the impacts of raising the railway or lowering the roadway on the overall alignment; any impacts to the water table if lowering the roadway is the preferred option; impacts to right-of-way requirements; impact of relocating the Freund Canyon Road and the overall impact to the ground topography. It appears that considerable additional pre-design work is necessary to answer some of those questions before engaging the railroad and beginning the "design process."

Finally, the most significant issue of all as it relates to this discussion, is that six (6) of the seven options provide a "substandard" design. The County Road Standards require a 50 m.p.h. design speed for this road which should realistically be higher with a posted speed of 50 m.p.h. on the Chumstick Highway. A 50 m.p.h. design speed requires a horizontal curvature or curve radius of 835 feet. Only one option (Option F) meets this standard. All the other options are below this value with one having a curve radius of 300 feet which suggests a speed of 30 m.p.h. If this were the selected option, it would be inconceivable to spend millions of dollars to improve this section of roadway to achieve a 5 m.p.h. increase in the advisory speed through the trestle area.

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In my opinion, the County should go back, address the critical issues surrounding the project, refine their design, and then approach the railroad to participate in the project.

DECLARATION

I, Gary Norris, declare under penalty of perjury under the laws of the State of Washington that the foregoing PREPARED TESTIMONY OF GARY NORRIS is true and correct to the best of my knowledge and belief.

DATED this 28th day of March, 2008.

Gary G. Norris

GARY NORRIS

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CERTIFICATE OF SERVICE

I am over the age of 18; and not a party to this action. I am the assistant to an attorney with Montgomery Scarp MacDougall, PLLC, whose address is 1218 Third Avenue, Suite 2700, Seattle, Washington, 98101.

I hereby certify that the original and 5 copies of PREFILED TESTIMONY OF GARY NORRIS have been sent by FedEx to Carole J. Washburn at WUTC and a PDF version sent by electronic mail. I also certify that true and complete copies have been sent via electronic mail and U.S. Mail to the following interested parties:

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I declare under penalty under the laws of the State of Washington that the foregoing information is true and correct.

DATED this 28th day of March, 2008 at Seattle, Washington.

Lisa Miller, Paralegal

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