LOGEN ROAD RAILWAY CROSSING CLOSURE

Traffic Impact Analysis

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The following traffic impact analysis (TIA) was prepared to address the traffic related issues associated with the proposed closure of the Logen Road crossing of the BNSF railway. The report will address the following traffic related issues:

- Statement of existing conditions including traffic volumes and roadway geometry; and
- Resultant traffic reassignment; and
- Impact on adjacent roadways and railway crossings in terms of existing and future traffic volumes and accidents,
- Impact on access to properties along Logen Road including emergency vehicle access; access to schools etc
- Impacts on safety
- Impacts on future development in the area.

Proposed Action

The BNSF Railway has petitioned the Washington Utilities and Transportation Commission for the closure of the public at-grade highway-railroad crossing located on Logen Road (aka 292nd Street NW) in the Stanwood area of Snohomish County. The crossing, USDOT Crossing Number 084713P, is located at railroad mile post LS 50 MP 56.92. Logen Road is under Snohomish County jurisdiction.

With closure of the Logen Road railway crossing, traffic currently crossing the railway at this location will be required to use alternative routes. The alternative crossings include Dettling Road (300th Street NW) to the north or 271st Street NW in downtown Stanwood.

The crossing is proposed for closure because BNSF and the Washington State Department of Transportation (WSDOT) are planning to extend the existing siding in Stanwood to the north through the Logen Road crossing.

BNSF is working with Snohomish County to mitigate the traffic impact of this proposed action by constructing the following street improvements:

- Cul-de-sac on Logen Road on the east side of the railway crossing; and
- Street improvements at Dettling Road (300th Street NW) to enhance emergency vehicle access; relocation of the gates and flashers on the west side of the railway to accommodate the new siding; and
- Street improvements at the 271st Street crossing to include new gates, flashers and bungalow for the proposed siding.

Existing Conditions

Logen Road

Logen Road is a 15 foot wide two way roadway which extends from Pioneer Highway on the east to Old Pacific Highway on the west. West of the railway crossing, Logen Road is also known as 292nd Street NW. There are no shoulders along the roadway, and in fact the roadway cross-section has extreme side slopes beyond the paved section which would

create significant damage and injury for errant vehicles. Field observation noted that it was very difficult for two vehicles to pass on Logen Road. It was also noted that it is very difficult if not impossible to make a right turn in a single maneuver from Pioneer Highway to Logen Road.

The Logen Road railway crossing is defined as a Common Carrier and Passenger type crossing. The railway crossing is located approximately 900 feet east of the Logen Road/Old Pacific Highway intersection and approximately 3800 feet north and west of the Pioneer Highway intersection. There is currently a single main line track across the railway. With the proposed siding project, a siding track will be added through the crossing. There are currently nine freight and four passenger trains per day through the crossing. The authorized train speed across the crossing is 60 mph for freight trains and 79 mph for Amtrak. The crossing is protected with flashing lights and gates, track equipped train signals, warning signs and advance pavement markings.

Traffic control along the corridor, in addition to the crossing devices includes stop signs on Logen Road at Old Pacific Highway and Pioneer Highway.

92nd Street NW

92nd Street NW provides a connection between Pioneer Highway and Logen Road north of the Logen Road intersection with Pioneer Highway. 92nd Street NW is a 15 foot wide roadway with no shoulder and sharp horizontal curves. 92nd Street NW provides an alternative for the south bound traffic on Pioneer Highway desiring to make a right turn to Logen Road as opposed to the Logen Road/Pioneer Highway intersection further to the south.

300th Street NW/Dettling Road

300th Street NW/Dettling Road is a two lane/two way rural local roadway that connects Old Pacific Highway with Pioneer Highway approximately 0.5 miles north of Logen Road. On the west end, in the vicinity of the railway crossing, the roadway is 28 feet wide with two foot shoulders on both sides. On the east end, the roadway reduces in width to 21 feet, although it is still channelized for two lanes.

The 300th Street NW/Dettling Road railway crossing (#084714W) is a public at-grade crossing located approximately 120 feet east of the 300th Street NW/Dettling Road intersection with Old Pacific Highway and 1200 feet west of the Pioneer Highway intersection. The railway crossing includes one main line track and is controlled by cantilevered and mast arm mounted flashers and gates. The track is also equipped with train signals. Other warning devices include cross bucks, advance warning signs and standard advance railroad pavement markings. There are approximately 13 trains per day including freight and Amtrak passenger trains using this crossing. The speed along the railway ranges from 1 to 79 mph.

Traffic control along 300th Street NW/Dettling Road includes, in addition to the railway crossing protection devices, a stop sign on 300th Street NW /Dettling Road at Old Pacific Highway and a four way stop at the intersection with Pioneer Highway.

271st Street NW/Cedarhome Drive
271st Street NW is a is two lane/two way rural minor collector arterial that connects Pioneer Highway with downtown Stanwood approximately 1.5 miles south of Logen Road. 271st Street NW is approximately 24 feet wide with a six foot sidewalk on the north side of the street and an eight foot shoulder on the south side of the street in the vicinity of the railway crossing.

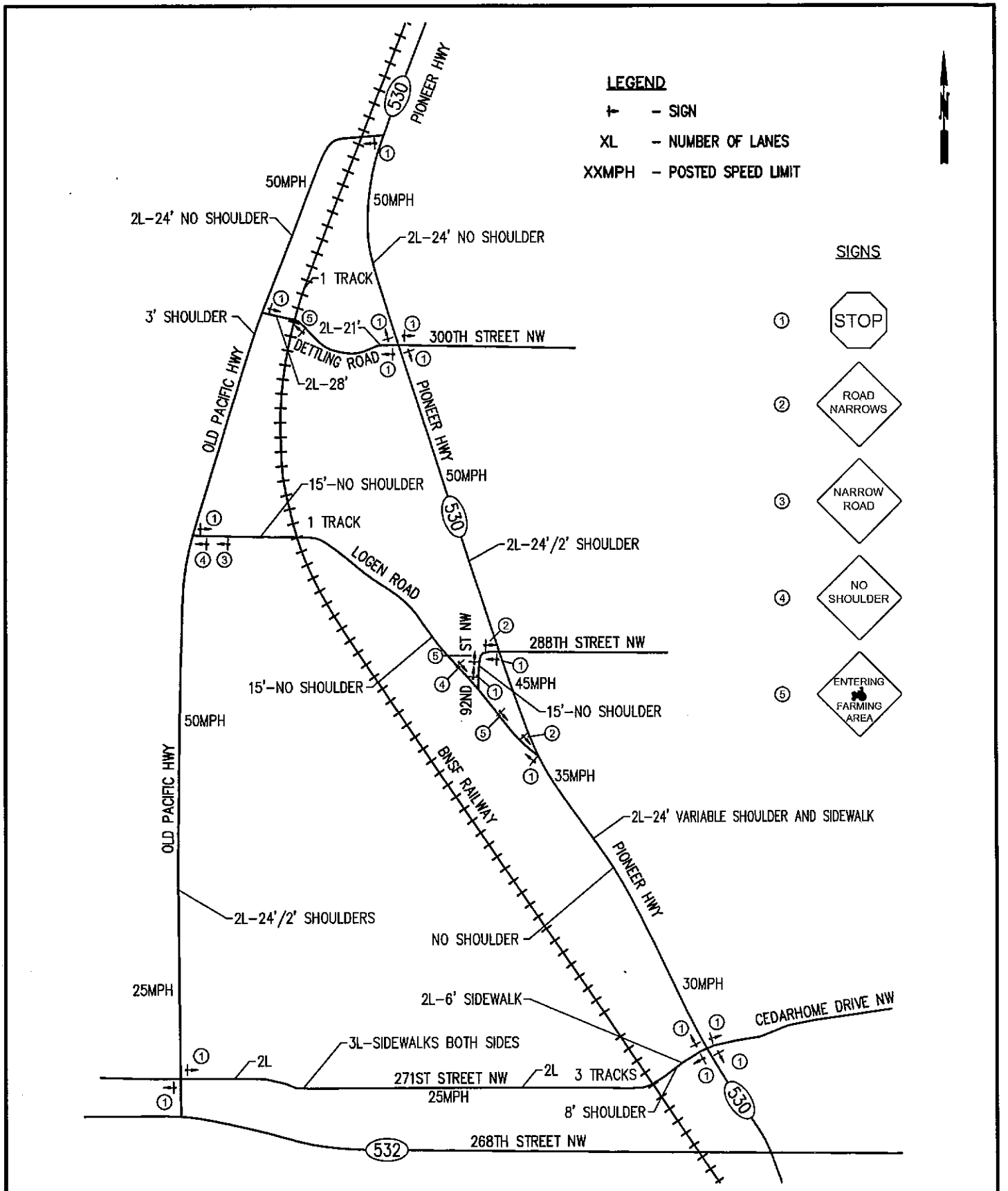
The 271st Street NW railway crossing (#084687C) is a public at-grade crossing. The railway crossing is located approximately 80 feet east of the 84th Avenue NW/Florence Road intersection and 800 feet west of the Pioneer Highway intersection. The railway includes one mainline track and two siding tracks. The railway crossing is controlled by mast arm mounted flashers and gates. The track is equipped with train signals. The warning devices also include cross bucks and standard advance railroad pavement markings. There are approximately 19 trains per day including freight and passenger. The train speed along the railway ranges between one and 79 miles per hour.

Traffic control along 271st Street NW/Cedearhome Drive includes all way stops at the Cedarhome Drive/Pioneer Highway intersection and the other major intersecting streets along the corridor; two way stop signs on the minor streets; and stop signs on 271st Street NW at the intersection with Old Pacific Highway (aka 102nd Avenue NW).

A graphical depiction of the roadway geometry and traffic control signing is presented in Figure 1.

Traffic Volumes
Logen Road
According to a recent traffic count taken by Snohomish County Traffic Engineering on July 10, 2008, the daily volume on Logen Road west of the railway crossing is 142 vehicles. The count indicates there are 11 vehicles during the AM peak and 19 vehicles during the PM peak. A PM peak period turning movement count taken on March 3, 2009 indicated there were eight vehicles during the PM peak hour on Logen Road north of Pioneer Highway and south of 92nd Street; 14 vehicles north of 92nd Street and south of the railway; and 12 vehicles between the railway and Old Pacific Highway.

There are seven single family residences which have direct access to Logen Road. Five of the homes are located between 92nd Street NW and the railway, the two remaining residences are located between 92nd Street NW and Pioneer Highway, one of which also has access to Pioneer Highway. Using trip generation rates presented in the Institute of Transportation Engineers Trip Generation Report, it is estimated the seven single family residences would generate 67 daily trips with seven during the PM peak and five during the AM peak. Comparing the daily volumes to the estimated trips generated by residences along Logen Road suggest that approximately half of the traffic on Logen is generated by the single family homes along the corridor.



DN TRAFFIC CONSULTANTS	EXISTING ROADWAY GEOMETRICS FIGURE 1	LOGEN ROAD RAILWAY CROSSING CLOSURE STUDY

300th Street NW/Dettling Road
Snohomish County Traffic Engineering count data indicated there are approximately 800 vehicles per day on Dettling Road west of Pioneer Highway. This was based on count data collected on a Tuesday in October 2008. The count indicated 54 percent of the traffic was westbound and 46 percent was east bound. The peak hour occurs between 4:30 PM and 5:30 PM with 48 vehicles westbound and 47 vehicles eastbound.

271st Street NW/Cedarhome Drive
A PM peak period count was taken at the 271st Street NW railway crossing on March 3, 2009. The results of the count indicated there were a total 786 vehicles crossing the railway during the PM peak hour. The results in a daily volume of approximately 7800.

A summary of the existing traffic volumes is presented in Figure 2.

Accidents
A summary of the crash history at each of the three (3) railway crossings was obtained fro the Federal Railroad Administration (FRA). The crash history dates back to 1978. The crash history is summarized in Table 1 below.

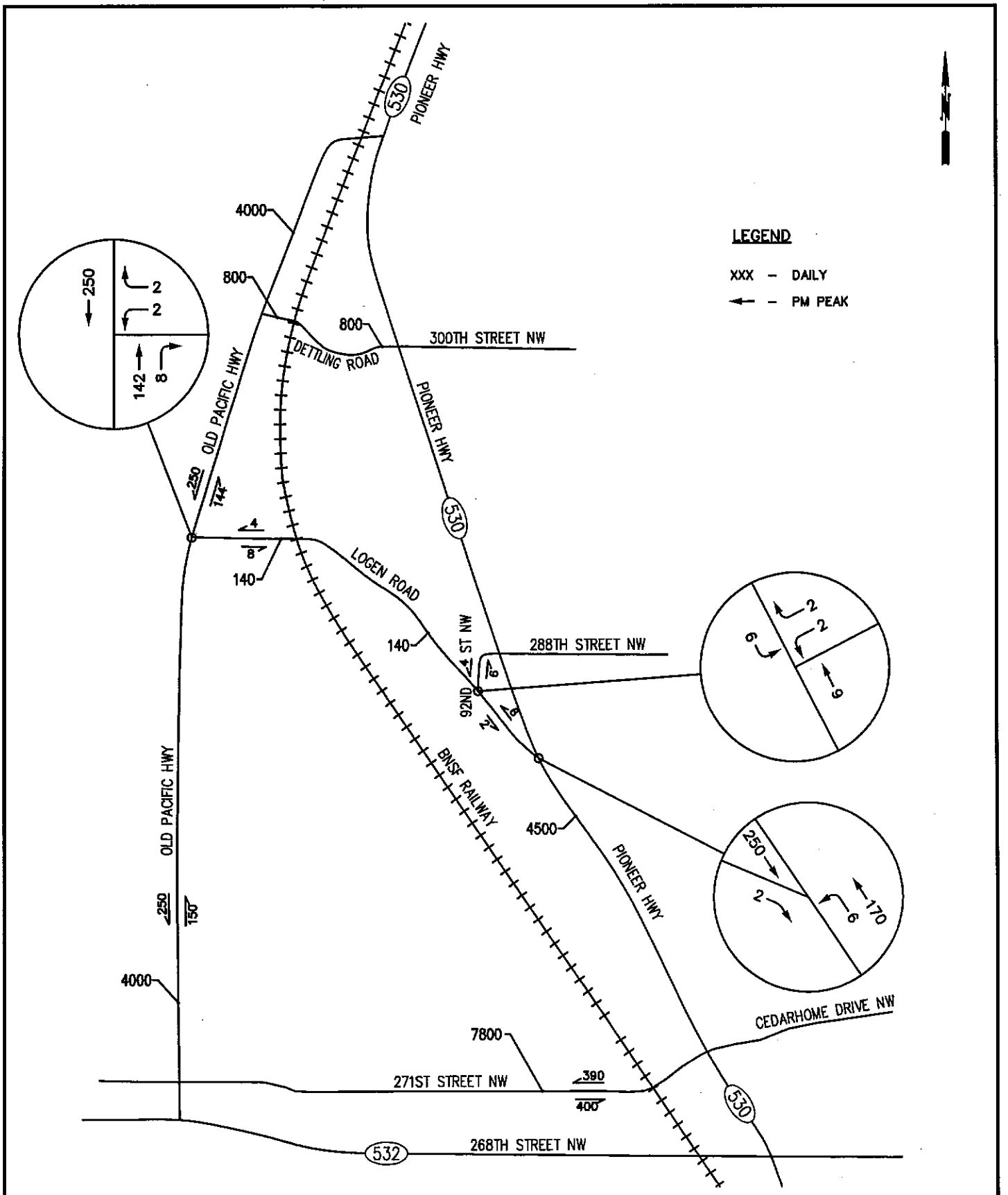
Table 1. Crash History at the Three Railway Crossing

Location	Crossing Number	Total Crashes/Incidents	Date
271st Street NW	08487C	5	04/18/75
			01/26/89
			12/11/91
			11/29/03
			01/07/08
Dettling Road	084714W	2	07/13/78
			11/03/80

As shown in Table 1, there have been a total of seven (7) train/vehicle crashes at the three railway crossings since 1975. There have been no accidents at the Logen Road railway crossing during this time period.

Of the five (5) accidents at the 271st Street NW railway crossing, two involved pedestrians one of which walked around the gate and three involved vehicles with two driving around the gates and ignoring the warning equipment. With the proposed closure of the Logen Road railway crossing, the 271st Street NW crossing will receive new gates and flashers which should mitigate the current accident history.

Of the two accidents at the Dettling Road railway crossing, both involved vehicles failing to stop at the railway crossing. At the time of these accidents, however, the crossing warning devices only included "cross bucks". Since the time the crossings have been upgraded to include gates and flashers. With the improvements there have been no accidents.



DN TRAFFIC CONSULTANTS	TRAFFIC VOLUMES FIGURE 2	LOGEN ROAD RAILWAY CROSSING CLOSURE STUDY

Emergency Services
Primary emergency response to the Logen Road area is provided by the Snohomish County Fire District #14 "North County/EMS – Station 96 located at 3231 300th Street NW, which is on the west side of I-5 at Exit 215. North County also has a "mutual aid" agreement with the City of Stanwood/Camano Island Fire Department which has a station located at 8117 267th Street NW in downtown Stanwood.

Although, the properties along Logen Road are within the North County service area, it is anticipated that any calls to this area would be served by the City of Stanwood. Response times from the North County Station 96 are estimated to be 12 minutes as the station is approximately 4.8 miles from Logen Road. Response times from the Stanwood Fire Station are estimated to take four minutes as the station is approximately 1.6 miles from Logen Road.

With the construction of the siding track in the Logen Road railway crossing, the likelihood of this area being served by Stanwood/Camano Island Fire is increased. If the railway remains open, the crossing will experience periodic closures as trains wait on the siding track. This will result in the uncertainty of emergency access across the railway forcing the responders to select the Pioneer Highway access from the east as opposed to the Old Pacific Highway access from the west. However, the roadway geometrics accessing Logen Road from the north on the east side are constrained particularly at the intersection of Logen Road and 92nd Street NW, which may create difficulty for emergency vehicles coming from the north to access properties on Logen Road to the north. With these conditions, it is assumed the Stanwood Fire Station will become the first responders.

Although there are several health care facilities in downtown Stanwood, the nearest primary medical hub is located at Skagit Valley Hospital in downtown Mount Vernon, approximately 14 miles from Logen Road. It is expected that any life threatening incidents occurring on the Logen Road corridor would be responded to by Medic One units from the Stanwood Fire Station which would transfer patients to the hospital. Skagit Valley Hospital also has a heliport to service extreme life threatening situations.

The closing of the Logen Road railway crossing is not expected to have a significant adverse impact on emergency response.

Schools
A telephone conversation with the Transportation Department of Stanwood School District indicated there are currently no bus routes that use Logen Road. However, it was noted that there are no students currently living along the corridor. Bus routing is evaluated on an annual basis to address the changing location of district students. Because of the uncertainty of being able to cross the railway, the use of Logen Road as a bus route should not be considered.

Conclusions

In general, in the interest of motor vehicle safety it is recommended that at-grade railway crossings be eliminated wherever possible. To evaluate the viability of closing the Logen Road railway crossing several factors must be considered.

First, are there conditions at the existing crossing which warrant crossing closure?. The current proposal includes widening the railway crossing to accommodate the construction of a siding track which will allow safe and efficient switching operations and passing of other trains. This action will result in periodic, temporary closures of the railway as it is anticipated the crossing will be blocked for significant lengths of time. With the unscheduled blockages, vehicular traffic will be discouraged from using Logen Road as an east west route connecting Old Pacific Highway to Pioneer Highway. This is particularly important when considering the use of Logen Road as a secondary access to the residential properties on the east side of the track for emergency response vehicles and school buses.

Secondly, what is the importance of Logen Road in the overall transportation network serving north Stanwood and Snohomish County? The strongest indication of the significance of this route is illustrated by existing traffic volumes. The volumes along Logen Road are very low, 140 per day or approximately 14 in the peak hour. Based on ITE trip generation rates, approximately half of these trips are generated by the residences along the Logen Road corridor. It is assumed the remainder of the vehicles comes from traffic using Logen as a connection between Old Pacific Highway and Pioneer Highway.

Thirdly, if Logen Road were closed, would it create a significant adverse impact on other roadways? As discussed above, the closure of the railway crossing would direct all traffic generated along Logen Road from the existing residences to Pioneer Highway. All traffic using Logen Road as a connection between Pioneer Highway and Old Pacific Highway would be diverted to Dettling Road on the north or 271st Street NW on the south. Based on a review of the existing traffic volumes on these routes, the traffic diverted from Logen Road would not be of a magnitude to be detected by traditional traffic counting equipment.

Fourthly, would the closure of Logen Road have a significant impact on other community services and emergency response? As discussed above, the closure of the railway crossing will not have an adverse impact on community service or emergency response. Community services are located in the downtown area of Stanwood which is south of Logen Road. The shortest time path from Logen Road to downtown Stanwood is along Pioneer Highway to 271st Street NW. This route will not be impacted by closure of the railway crossing.

Fifthly, is the existing roadway connection needed for future growth and development of the area. A review of the Snohomish County Zoning Map indicates there is little development related potential in this area in the near term. This is substantiated by the fact that Logen Road lies outside the Stanwood UGA in an area where the zoning is A-

10, or 10 acres per parcel. Furthermore, the cost of improving Logen Road because of its narrow width and steep slopes would be excessive and not justified based on traffic demand.

Recommendation

Based on the foregoing discussion, it is recommended that the Logen Road railway crossing be closed.