

# Section 6.0

## Road Transportation Network



**TABLE OF CONTENTS**

	<b>PAGE</b>
<b>6.0 ROAD TRANSPORTATION NETWORK.....</b>	<b>6-1</b>
6.1 RATIONALE FOR SELECTION AS A VEC.....	6-1
6.2 BOUNDARIES FOR ENVIRONMENTAL EFFECTS ASSESSMENT .....	6-1
6.2.1 Spatial Boundaries.....	6-1
6.2.2 Temporal Boundaries .....	6-1
6.3 METHODOLOGY .....	6-1
6.3.1 Rideability Comfort Index (RCI).....	6-2
6.3.2 LEVEL OF SERVICE (LOS) .....	6-2
6.3.3 EXISTING TRAFFIC VOLUME DATA .....	6-4
6.3.4 Traffic Safety.....	6-6
6.4 DESCRIPTION OF EXISTING ENVIRONMENT.....	6-6
6.4.1 Description of Existing Environment.....	6-6
6.4.2 Description of Route 11 .....	6-10
6.4.3 Description of the Ramps on the Interchange of Route 11 and Route 8 (University Avenue) .....	6-12
6.4.4 Description of North Napan Road.....	6-12
6.4.5 Description of South Napan Road .....	6-12
6.4.6 Description of O'Donnell Road .....	6-12
6.5 POTENTIAL EFFECTS ASSESSMENT.....	6-13
6.5.1 Construction Phase Potential Effects .....	6-13
6.5.2 Operation, Maintenance and Rehabilitation (OMR) Phase Potential Effects..	6-13
6.5.3 Accidents, Malfunctions and Unplanned Events.....	6-14
6.6 MITIGATION MEASURES .....	6-14
6.7 SIGNIFICANCE OF RESIDUAL EFFECTS.....	6-16
6.8 MONITORING AND FOLLOW-UP REQUIREMENTS .....	6-17
6.9 ROAD TRANSPORTATION NETWORK - REFERENCES.....	6-17
6.9.1 Personal Communications.....	6-17

## LIST OF TABLES

Table 6.1	Surface Condition .....	6-2
Table 6.2	Level of Service (LOS) .....	6-3
Table 6.3	Kouchibouguac Traffic Count Station Data - AADT .....	6-5
Table 6.4	Accident Data in the Study Area .....	6-6
Table 6.5	Summary of Mitigation Measures for Road Transportation Network .....	6-15
Table 6.6	Significance of Residual Effects to the Road Transportation Network after Mitigation .....	6-16

## LIST OF FIGURES

Figure 6.1	Additional Counting Stations in the Study Area .....	6-5
Figure 6.2	Current Route 11 Alignment and Applicable Control Sections and Proposed Bypass Alignment .....	6-8
Figure 6.3	Study Area Network – General View .....	6-9
Figure 6.4	Study Area Network – Magnified O’Donnell Road Sector .....	6-9
Figure 6.5	Study Area Network – Magnified South/North Napan Rd Sector .....	6-10

## LIST OF APPENDICES

Appendix 6A	RCI Data for CS 10 and CS 11
-------------	------------------------------

## **6.0 ROAD TRANSPORTATION NETWORK**

### **6.1 Rationale for Selection as a VEC**

Consideration of the road transportation network as a VEC is based on assessing the environmental effects of the proposed Project on changes in road network infrastructure, the level of service (LOS) of the existing roads; and potential changes in the accident rates.

### **6.2 Boundaries for Environmental Effects Assessment**

#### **6.2.1 Spatial Boundaries**

The assessment of potential environmental effects to the Road Transportation Network includes both the proposed ROW for the Project, and the existing Route 11 from Glenwood to Miramichi (Study Area). Potential environmental effects for both temporary or permanent changes to the road infrastructure, LOS and safety will be assessed within this spatial boundary.

#### **6.2.2 Temporal Boundaries**

The temporal boundaries for the assessment of this Project were examined for two phases:

- construction of the bypass;
- OMR period of the bypass; and

### **6.3 Methodology**

The following parameters were selected to evaluate the Study Area Network within the Project area:

- **Rideability Comfort Index (RCI)**

Rideability is a measure of pavement surface condition and smoothness, referred to as RCIs based on a scale of 1 to 10, with higher numbers representing a smoother pavement surface.

- **Existing Traffic Volume Data**

The existing traffic is derived from periodical traffic counts performed by NBDTI. Such counts facilitate proper operation of the system, informing for instance the frequency of required maintenance and changes in safety features required.

- **Level of Service (LOS)**

LOS on highways is the measure of traffic operating conditions based on the prevailing traffic volumes, roadway geometrics and traffic control measures in place.

- **Traffic Safety**

In the context of the present report, traffic safety refers to the continued monitoring of the number and severity (i.e. the consequences) of traffic accidents recorded inside the boundaries of a particular roadway system for the purpose of informing decisions on safety precautions. Traffic safety can be expressed in terms of motor vehicle accidents per year, as well as the relative frequency and severity of the accidents.

### 6.3.1 Rideability Comfort Index (RCI)

The most recent RCI data available for the area is dated 2015, and was kindly provided by NBDTI. The RCI results are presented in Table 6.1 and indicates the surface condition (graded from very poor to good) according to the specific segment of the roadway, ranging between 2.15 to 6.82 on a 10 point scale.

**Table 6.1 Surface Condition**

Control Section (CS)	Description	Average RCI in 2015	Rating
10	Between Black River Rd and Searle Rd (9.062 km)	5.21	Good
11	Between Searle Rd and Route 8 (5.409 km)	5.51	Good

Although the average RCI is good (above 5.0 for both CS 10 and CS 11), there are segments where RCI is significantly lower. The complete data set is attached in Appendix 6A, where each of the two control sections are subdivided into five meter long segments and the RCI rating of every segment rated below “Good” is specified. The appendix data could be used as a reference in support of pavement maintenance efforts.

### 6.3.2 LEVEL OF SERVICE (LOS)

LOS is an alpha-based indexing metric employed by the road transportation sector to objectively rate traffic operating conditions. The LOS uses inputs such as regular traffic volumes, roadway geometrics and traffic control devices in the Study Area. The six (6) LOS for rural highways are designated by the letters A to F to define traffic flow conditions (Transportation Research Board, 2010) and are described qualitatively in Table 6.2 below.

**Table 6.2 Level of Service (LOS)**

LOS	Level of Service Description	Class I: Two-Lane Highway (PTSF)	Class II: Two-Lane Highway (PTSF)	Four-Lane Divided Freeway (Maximum Density in pc/mi/ln)
A	Free flow travel conditions ( <b>Excellent</b> ).	Less than or equal to 35% PTSF	Less than or equal to 40% PTSF	Less than or equal to 11 pc/mi/ln
B	Stable flow travel conditions ( <b>Very Good</b> ).	Greater than 35% and less than or equal to 50% PTSF	Greater than 40% and less than or equal to 55% PTSF	Greater than 11 and less than or equal to 18 pc/mi/ln
C	Stable flow travel conditions, with some traffic interaction, platoon formation and speed selection affected ( <b>Good</b> ).	Greater than 50% and less than or equal to 65% PTSF	Greater than 55% and less than or equal to 70% PTSF	Greater than 18 and less than or equal to 26 pc/mi/ln
D	Higher density and platoon conditions, with travel flow becoming unstable, and speed selection and freedom to maneuver restricted ( <b>Fair/Satisfactory</b> ).	Greater than 65% and less than or equal to 80% PTSF	Greater than 70% and less than or equal to 85% PTSF	Greater than 26 and less than or equal to 35 pc/mi/ln
E	Traffic volumes are approaching capacity, with unstable flow causing breakdowns, and maneuverability highly restricted ( <b>Poor</b> ).	Greater than 80% PTSF	Greater than 85% PTSF	Greater than 35 and less than or equal to 45 pc/mi/ln
F	Traffic demand exceeding capacity with heavily congested traffic flow and frequent variations in travel speeds and stoppages ( <b>Unacceptable</b> ).	Flow rate exceeds capacity	Flow rate exceeds capacity	Flow rate exceeds capacity

Source: Transportation Research Board, 2010

Notes:

PTSF = percent time spent following.

pc/mi/ln = passenger cars per mile per lane.

The LOS are expected to be at their worst during the peak hours of any given day. The AADT data from Section 6.3.3 below can be converted into peak hour volumes by means of a proportion factor. Based on empirical data and professional judgement, a conservative estimate of peak hour volume would be 10% of the total daily volume (i.e. for the 24 hours in the day). Under such assumption, this analysis will work with a bidirectional peak hour traffic volume of 810 vehicles per hour for the segment of Route 11 near the intersection of Route 11 with Route 8. Following the same rationale, the bidirectional peak hour traffic volume of Route 11 near Glenwood is estimated at 560 vehicles per hour.

The percentage of trucks and heavy vehicles in the overall traffic data is assumed to reflect the data available for the counting station at Kouchibouguac (available in Table 6.3 below), as well as the turning movement count of August/2012 for the intersection of Route 11 @ King Street. The latter indicates 12% of heavy vehicles and is deemed to be more relevant, as it was taken at a point inside the segment of Route 11 addressed in this study. Therefore, trucks and other heavy vehicles make up 12% of the traffic volume.

With the traffic volumes and heavy vehicle percentages estimated, consideration of the other relevant factors – that this segment of Route 11 is mostly flat, mostly straight, with no signal-generated delays – would suggest a good LOS, possibly A or B, which was supported by the arterial LOS report in Synchro. However, it is important to consider other factors:

- 12% of this traffic is made up of heavy vehicles, which move much slower than the posted speed limit of the highway.
- Except for a few, most of the intersections along Route 11 lack designated left-turn lanes.
- Most of the length of Route 11 in this segment is made up of a single lane in each direction, such that passing opportunities are limited to those segments where there is a discontinuous median line (indicating that passing is legal).

Once these elements are considered, the conclusion is that the LOS is continually variable along this segment of Route 11, and may not always be LOS A. For each particular trip, the LOS will be greatly influenced by the presence or absence of slower heavy vehicles ahead during the time and in the sector where the trip is taken. Anecdotal evidence suggests that some of the accidents reported in the segment of Route 11 between Glenwood and Miramichi are caused by impatient drivers forcing a passing maneuver where it is prohibited (see Section 6.3.4 below). Further analysis could be based on the length percentual and distribution of highway segments where passing is allowed, but that lies outside of the scope of the present study.

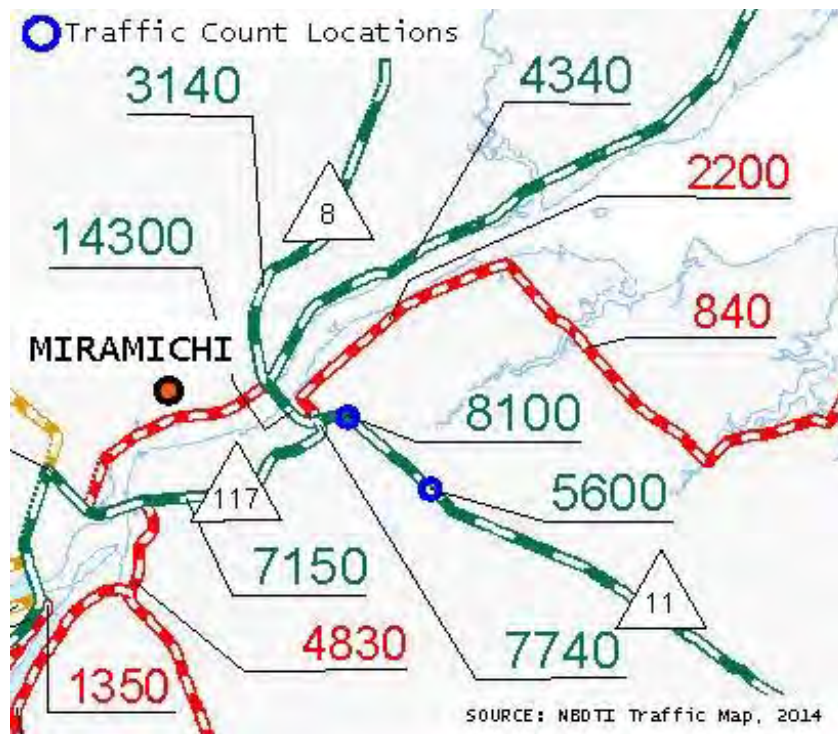
### **6.3.3 EXISTING TRAFFIC VOLUME DATA**

There is a traffic counting station located along Route 11 in the segment of interest, located in Kouchibouguac. The corresponding data is illustrated in Table 6.3 below and is reported in the form of AADT (G. Profit, Pers.comm, 2016).

**Table 6.3 Kouchibouguac Traffic Count Station Data - AADT**

Trucks			Cars			Totals		
2012	2013	2014	2012	2013	2014	2012	2013	2014
530	550	540	3,230	3,270	3,220	3,760	3,820	3,760

Kouchibouguac lies 29 km south of Glenwood, as such, the data for this Route 11 counting station must be treated with due consideration for this distance. Figure 6.1 below provides the AADT for 2 selected segments of Route 11 in the year 2014. The data from Figure 6.1 was extracted from the “2014 Traffic Map” provided by NBDTI. Based on the map features, the northernmost of the two locations (indicated by blue circles) is near the intersection of Route 11 with Route 8, while the southernmost is near Glenwood. The corresponding AADTs are 8100 and 5600, respectively.



**Figure 6.1 Additional Counting Stations in the Study Area**

The numbers are also supported by an intersection turning movement count provided by NBDTI, dated August 2012 for the intersection of Route 11 @ King Street. The AADT for the sections north and south of King Street are respectively 7,058 and 8,858 which are in line with the 8,100 of the location near the intersection of Route 11 with Route 8 identified in Figure 6.1 above. In the August 2012 turning movement count, the percentage of heavy vehicles along Route 11 was 12% (G. Profit, Pers.comm, 2016).



### 6.3.4 Traffic Safety

NBDTI maintains records of traffic accidents occurring on Provincial arterial and collector highways, such as Route 11. The exact locations are related to pre-defined segments denominated control sections. According to the Northumberland County control section manual, Control Section 10 extends from Upper Black River Road to Searle Road, and Control Section 11 extends from Searle Road to King George Highway/Route 8.

Traffic Safety can be expressed in terms of motor vehicle accidents per year, as well as the relative frequency and severity of accidents along particular sections of rural highways, or at urban intersections and roads.

Although NBDTI does not measure specific accident rates or severity thresholds that could potentially trigger the need to improve the safety of a particular section of highway, accident databases are regularly reviewed to identify locations with unusually high accident frequencies relative to other highways in the Province. NBDTI then assesses whether or not there may be contributing geometric, infrastructure, or traffic control elements at these locations that might need to be improved. Route 11 vehicular accident data in vicinity of the proposed Project was obtained from NBDTI for the period 2008-2012, and is presented in Table 6.4 below.

**Table 6.4 Accident Data in the Study Area**

Control Section	Description	Year	# of Accidents	# of Fatalities
10	Between Black River Rd and Searle Rd (9.062 km)	2008	12	0
		2009	17	0
		2010	13	0
		2011	13	0
		2012	12	3
11	Between Searle Rd and Route 8 (5.409 km)	2008	13	0
		2009	22	0
		2010	11	0
		2011	16	0
		2012	11	0

## 6.4 Description of Existing Environment

### 6.4.1 Description of Existing Environment

Route 11 is a provincial highway located in northeastern New Brunswick. The 435 km long road runs from Shediac to the Quebec border near Campbellton at the Interprovincial Bridge, following the province's eastern and northern coastlines.

Between Shediac and Miramichi, and between Bathurst and Campbellton, it is a two-lane road with some sections designed as a Super two expressway. The highway has been upgraded to a 4-lane section for 2 km in the Shediac region near the Route 15 interchange.

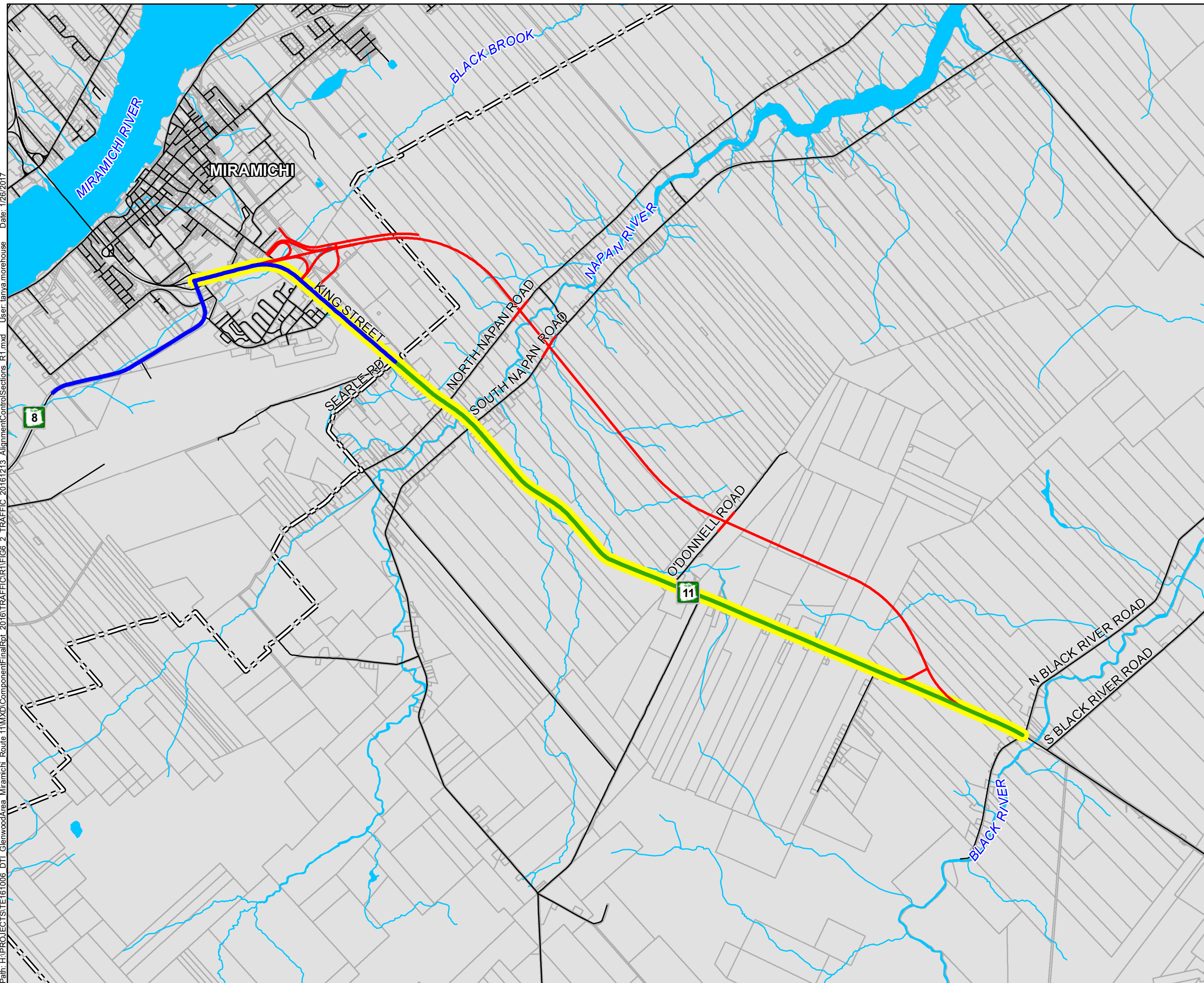
The segment of the existing Route 11 that is the object of this assessment extends from just north of Black River (south of MacDonald Road) in Glenwood to the intersection of University Avenue in Chatham. Additionally, the following are included in the assessment:

- all ramps of the existing interchange of Route 11 and Route 8 (University Avenue);
- north Napan Road (up to 150 m from Route 11 on either side);
- south Napan Road (up to 150 m from Route 11 on either side); and
- O'Donnell Road (up to 150 m from Route 11).

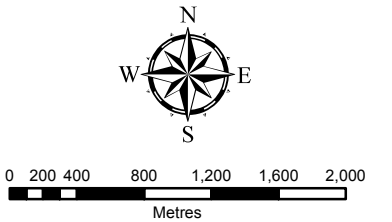
A general view of the Study Area is illustrated in Figure 6.2, where the analysed highway segments are marked in red.

As stated previously, the Route 11 segment that is being assessed extends from just north of Black River (south of MacDonald Road) in Glenwood to the intersection of University Avenue in Chatham (Figure 6.3). Figures 6.4 and 6.5 are a closer look at the intersections identified in Figure 6.3. The illustrations are followed by detailed descriptions of each of the relevant segments included in this assessment.

Path: H:\PROJECTS\TE161006 DTI GlenwoodArea Miramichi Route 11\Map\Components\Final\Sp1 2016\TRAFFIC\R1\Fig6 2 TRAFFIC 20161213 AlignmentControlSections R1.mxd User: tanya.morehouse Date: 1/26/2017



- LEGEND:
- Traffic Control Section 11 (between Black River Rd & Searle Rd)
  - Traffic Control Section 10 (between Searle Rd & Route 8)
  - Bypass Alignment
  - Current Route 11 Alignment
  - Watercourse
  - Road Network
  - Municipal Area (Miramichi)
  - SNB Property Boundaries (Northumberland County)



CLIENT:

NEW BRUNSWICK  
DEPARTMENT OF  
TRANSPORTATION AND INFRASTRUCTURE

amec foster wheeler

PROJECT: ENVIRONMENTAL FIELD STUDIES  
VALUED ENVIRONMENTAL COMPONENT ASSESSMENT  
TRAFFIC STUDY  
ROUTE 11 GLENWOOD AREA TO  
MIRAMICHI BYPASS PROJECT

TITLE: CURRENT ROUTE 11 ALIGNMENT AND  
APPLICABLE CONTROL SECTIONS AND  
PROPOSED BYPASS ALIGNMENT

DATUM:	DWN BY:	DATE:
NAD 83 CSRS	TM	JAN 2017
PROJECTION:	CHK'D BY:	SCALE:
NB Stereographic	DP	1:45,000
PROJECT NO:	REV NO:	FIGURE NO:
TE161006	R1	6.2

The map shown here has been created with all due and reasonable care and is strictly for use with Amec Foster Wheeler Project Number: TE161006. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Amec Foster Wheeler assumes no liability, direct or indirect, whatsoever for any such third party or unintended use. SOURCE: City of Miramichi Imagery 2010, NBDNR Imagery 2012

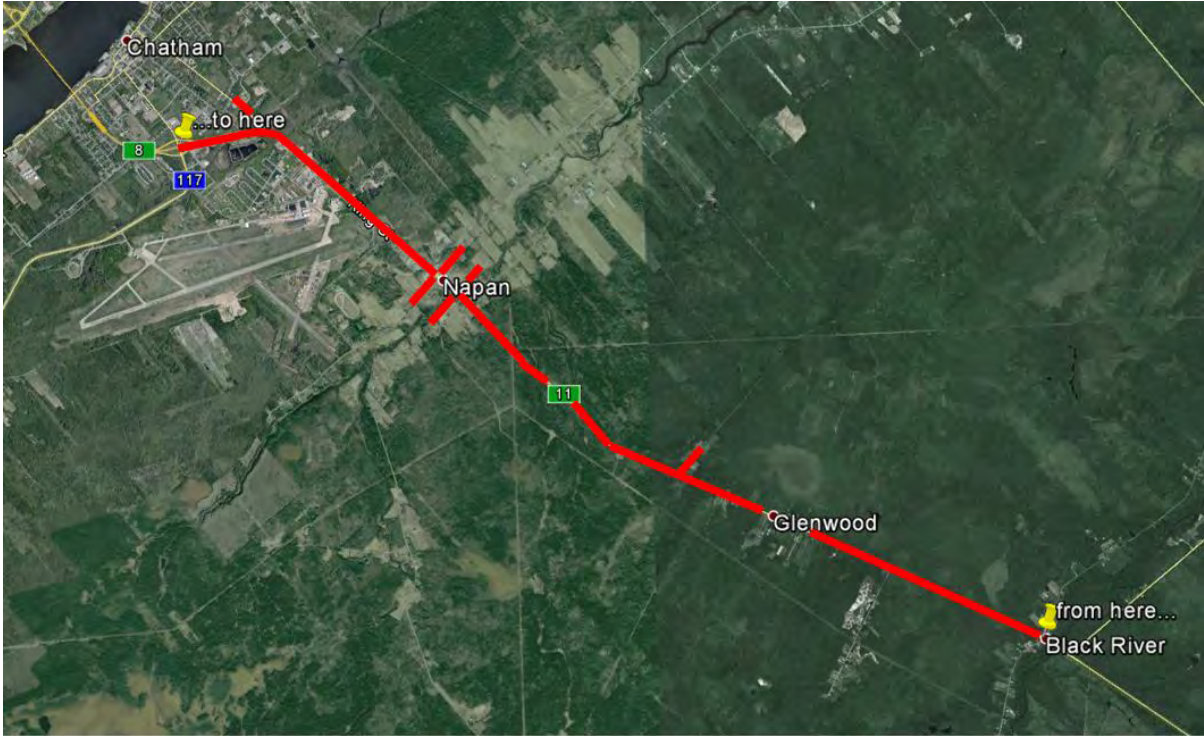


Figure 6.3 Study Area Network – General View

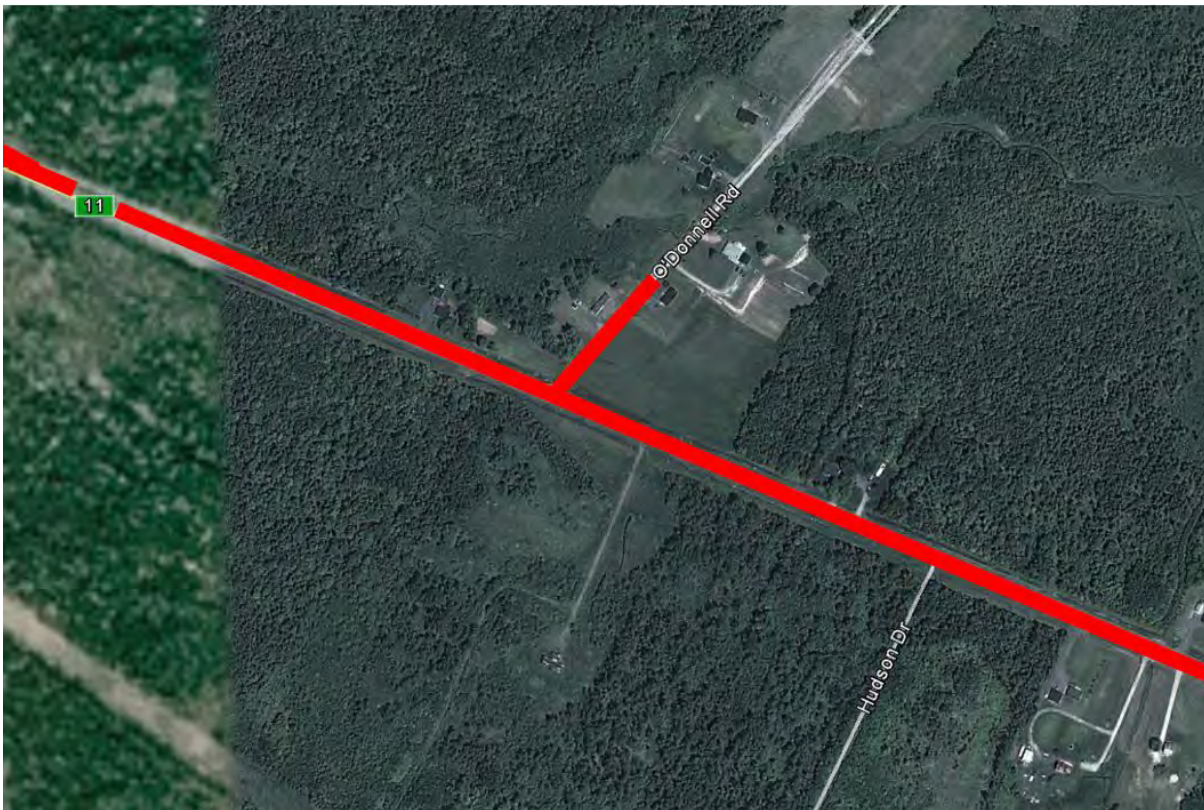


Figure 6.4 Study Area Network – Magnified O'Donnell Road Sector



**Figure 6.5 Study Area Network – Magnified South/North Napan Rd Sector**

#### **6.4.2 Description of Route 11**

Under existing conditions, the segment of Route 11 just north of Black River Rd has one lane per direction. The highway is paved and is bordered by a paved shoulder portion, followed by an unpaved (gravel) shoulder portion on either side. The adjacent land use is mostly forest, with sparse residential occupation on either side of the road. The few residences neighbouring the highway have direct access to it via driveways. Access to Route 11 on the intersection with Black River Rd is stop-controlled (stop signs on Black River Rd only), with a left-turn storage bay on the median of Route 11 for both directions of traffic. There is no designated pedestrian crossing at this intersection. Based strictly on visual appearance, the pavement condition seems good. There is signage warning motorists about wildlife presence. Alignment is mostly straight and slopes are very minor.

1.96 km further north, the “T”-shaped intersection of Route 11 with McDonald Rd operates as stop-controlled (stop sign on McDonald Rd only) with no storage lane for left turning vehicles. There is signage indicating 90 km/h as the maximum speed. North of this intersection there is a somewhat denser occupation on either side of the road, still almost entirely residential.

2.68 km further north, the “T”-shaped intersection of Route 11 with O’Donnell Rd operates as stop-controlled (stop sign on O’Donnell Rd only) with no storage lane for left turning vehicles. North of this intersection occupation on either side of the road is once more sparse.

2.35 km further north – just south of South Napan Rd – there is a sign indicating “end of controlled access highway” and a sign indicating posted speed of 80 km/h. the occupation on either side of the road gets denser, with a fair proportion of commercial uses (garages, service stations, trailer parks, etc.). The intersection with South Napan Rd is stop-controlled (stop signs on South Napan Rd only), with a left-turn storage bay on the median of Route 11 for the southbound directions of traffic only. There are hanging sets of red traffic lights in addition to the stop signs facing traffic coming from South Napan Rd on both sides of Route 11. There is no designated pedestrian crossing at this intersection.

0.41 km further north there is the intersection with North Napan Rd, which is stop-controlled (stop signs on North Napan Rd only) with a left-turn storage bay on the median of Route 11 for the southbound direction of traffic only. There are hanging sets of red traffic lights in addition to the stop signs facing traffic coming from North Napan Rd on both sides of Route 11. There is no designated pedestrian crossing at this intersection.

0.81 km further north, the “T”-shaped intersection of Route 11 with Searle Rd defines the Miramichi City limits. This intersection operates as stop-controlled (stop sign on Searle Rd only) with no storage lane for left turning vehicles.

1.0 km further north there is a speed limit sign indicating 70 km/h. Then the “T”-shaped intersection of Route 11 with General Manson Way. This intersection operates as stop-controlled (stop sign on General Manson Way only) with no storage lane for left turning vehicles.

0.24 km further north there is the “T”-shaped intersection of Route 11 with Torbay St. This intersection operates as stop-controlled (stop sign on Torbay St only) with no storage lane for left turning vehicles.

0.28 km further north there is the “T”-shaped intersection of Route 11 with Maher St. This intersection operates as stop-controlled (stop sign on Maher St only) with no storage lane for left turning vehicles. Between the intersections with Maher St and King St, Route 11 provides 2 lanes per direction.

0.21 km further north there is the “T”-shaped intersection of Route 11 with King St, where Route 11 goes back to one lane per direction. This intersection operates as stop-controlled (stop sign on King St only) with a left-turn storage bay on the median of Route 11 for the southbound direction of traffic only. Posted speed is 80 km/h.

The overpass of University Avenue is 1.17 km further north. Upon approaching the interchange with University Ave (Route 8), Route 11 features 2 lanes per direction. The curbside lanes

develop to/from the off/on ramps on either side, while the median lanes of Route 11 continue or pass under the University Ave (Route 8) overpass.

In general the pavement status along the segment of Route 11 that extends from Glenwood to Miramichi is in a reasonable state of repair. There are some potholes on North Napan Rd south of Route 11.

Operationally, the absence of passing lanes creates platoons on Route 11 whenever there is a slower vehicle travelling this segment. This creates a frustrating situation for drivers of faster vehicles and can contribute to accidents due to unsafe passing manoeuvres.

#### **6.4.3 Description of the Ramps on the Interchange of Route 11 and Route 8 (University Avenue)**

Under existing conditions, the ramps connecting Route 11 just to Route 8 are single lane, with paved shoulders followed by an unpaved (gravel) portion on either side. The ramp terminal intersections are stop-controlled (stop signs on the ramps from Route 11 only), with a left-turn storage bay on the median of the Route 8 overpass for turning into Route 11 in both directions. There is no designated pedestrian crossing at the ramp terminal intersections. Based strictly on visual appearance, the pavement condition seems good.

#### **6.4.4 Description of North Napan Road**

In the segments up to 150 m away from either side of Route 11, North Napan Road has one lane in each direction, with paved shoulders followed by an unpaved (gravel) portion on either side. The intersection of Route 11 at North Napan Road is stop-controlled (stop signs on the North Napan Road approaches only), with no left-turn storage bays. There is no designated pedestrian crossing. Based strictly on visual appearance, the pavement condition seems good, except for some potholes on the segment west of Route 11. There are posted speed limits of 70 km/h for the segment west of Route 11 and 80 km/h for the segment east of Route 11.

#### **6.4.5 Description of South Napan Road**

West of the Route 11 intersection, South Napan Road is called Weldfield-Collette Road. In their segments up to 150 m away from either side of Route 11, both South Napan Road and Weldfield-Collette Road have one lane in each direction, with unpaved shoulders on either side. The intersection of Route 11 is stop-controlled (stop signs on the South Napan Road and Weldfield-Collette Road approaches only), with no left-turn storage bays. There is no designated pedestrian crossing. Based strictly on visual appearance, the pavement condition seems good in the segments up to 20 to 30 m away from the highway – after that, the visual impression is that the pavements requires maintenance. South Napan Road has a posted speed limit of 80 km/h. Weldfield-Collette Road has a posted speed limit of 80 km/h as well as a sign right by the intersection with Route 11 reading “Road closed to thru traffic – 15 km”.

#### **6.4.6 Description of O'Donnell Road**

In the segment up to 150 m away from Route 11, O'Donnell Road presents an unmarked surface that appears wide enough to accommodate one lane in each direction. There are no paved shoulders on either side. The intersection with Route 11 is stop-controlled (stop sign on the

O'Donnell Road approach only), with no left-turn storage bays. There is no designated pedestrian crossing. Based strictly on visual appearance, the pavement condition seems very bad, with a large bump due to the presence of a culvert beneath the road. At the very end of O'Donnell Street – which occupation is but a few residential properties – there is a small unpaved plaza for U-turn manoeuvring. An unpaved trail develops from this plaza, leading away from Route 11.

## **6.5 Potential Effects Assessment**

### **6.5.1 Construction Phase Potential Effects**

#### **6.5.1.1 Road Infrastructure**

During construction, short term traffic delays could occur at intersections where the Project and existing roads come together including the start and end points of the proposed Project.

Except for where the Project and the existing Route 11 merge, construction activities will not occur on the existing Route 11. Construction related traffic; however, will be required to travel over the existing Route 11. For the duration of the construction period, this will result in additional truck traffic on the existing roads in the proximity of the Project.

#### **6.5.1.2 Level of Service (LOS)**

Additional construction related traffic along the existing Route 11 and local roads will be required to service the construction activities for the Project. The daily movement of construction equipment, building materials and supplies, construction works will increase the traffic on the local road network.

At new intersections and interchanges the LOS on the local road network has the potential to be impacted during the construction. Temporary effects on the LOS may occur if temporary speed limits, lane closures or road closures are required.

#### **6.5.1.3 Traffic Safety**

As noted above, construction related traffic will likely increase the daily traffic along the existing Route 11 and roads connecting to the Project area. The incremental service, worker and construction vehicle traffic during the construction period could potentially result in a short term increase in the frequency of accidents.

### **6.5.2 Operation, Maintenance and Rehabilitation (OMR) Phase Potential Effects**

#### **6.5.2.1 Road Infrastructure**

During the OMR phase of the Project, if any existing roads are to be cut-off by the new Project the potential for adverse environmental effects exists by limiting access or increasing travel times along local routes. The proposed Project alignment provides for an additional 3 km of parallel property access roads thereby reducing these adverse effects to local traffic.



### **6.5.2.2 Level of Service (LOS)**

During the OMR phase of the Project is likely there will be positive effect on the LOS in the area. Users of the existing Route 11 may also experience an improved LOS as through traffic will be diverted to the by-pass route. Potential travel time for users of the proposed bypass will be shortened due to the higher speed limit than the current Route 11.

During periodic maintenance activities (road resurfacing and repairs) along the proposed Project LOS could be affected through the closing of a lane or reduced speed limits.

### **6.5.2.3 Traffic Safety**

During operations, because through traffic will be diverted to the bypass, and the resultant reduced level of traffic along the current Route 11, the proposed Project is expected to have a net positive effect on traffic safety.

### **6.5.3 Accidents, Malfunctions and Unplanned Events**

There is a potential for accidents to occur during all phases of the Project. Accidents may impact the road infrastructure, LOS and traffic safety are fire or vehicular accidents.

#### **6.5.3.1 Fire**

During both construction and OMR operation phases of the Project, the potential for fires exists. Sources of fire include hot exhaust or equipment, discarded cigarettes, or sparks and vehicle accidents. Fires could potentially temporarily affect LOS in the Project area and affect traffic safety.

#### **6.5.3.2 Vehicular Accidents**

During both construction and OMR operation phases of the Project, the potential for a vehicle accident in the Project area exists. Accidents could potentially temporarily affect LOS in the Project area by reducing traffic flow or requiring traffic to be detoured around the accident. Vehicle accidents can also cause damages to the Project's infrastructure.

## **6.6 Mitigation Measures**

Table 6.5 presents a summary of Potential Effects, Standard NBDTI EMM Mitigation Measures and any additional mitigation measures recommended in order to minimize potential effects of the road transportation network during construction and OMR.

**Table 6.5 Summary of Mitigation Measures for Road Transportation Network**

Environmental and Project Component	Summary of Potential Effects	Standard NBDTI EMM Mitigation Measures <sup>1</sup>	Additional Recommended Mitigation Measures
<b>Construction</b>			
<b>Infrastructure</b>			
All aspects of highway construction	<ul style="list-style-type: none"> <li>Change in Road Infrastructure.</li> <li>Change in LOS.</li> <li>Change in Traffic Safety.</li> </ul>	<ul style="list-style-type: none"> <li>5.5 Detouring.</li> <li>5.22 Work Progression.</li> </ul>	No additional protective measures required.
<b>Operation, Maintenance and Rehabilitation (OMR)</b>			
<b>Infrastructure and Winter Maintenance</b>			
All aspects of Project construction and OMR	<ul style="list-style-type: none"> <li>Change in Road Infrastructure.</li> <li>Change in LOS.</li> <li>Change in Traffic Safety.</li> </ul>	<ul style="list-style-type: none"> <li>5.4.4 Culvert Maintenance.</li> <li>5.5 Detouring.</li> <li>5.15.2 Structure Maintenance.</li> <li>5.16 Summer Maintenance.</li> <li>5.22 Work Progression.</li> </ul>	No additional protective measures required.
<b>Accidents, Malfunctions and Unplanned Events</b>			
<b>Vehicle Accident</b>			
All aspects of Project construction and OMR	<ul style="list-style-type: none"> <li>Change in LOS.</li> <li>Damage to Infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>5.5 Detouring.</li> <li>5.12 Spill Management.</li> <li>5.13 Storage and Handling of Petroleum Products.</li> <li>5.14 Storage and Handling of Other Hazardous Materials.</li> <li>5.19 Vehicle and Equipment Management.</li> </ul>	NBDTI/Contractor will ensure appropriate signage and clean-up, if required.
<b>Fire</b>			
All aspects of Project construction and OMR	<ul style="list-style-type: none"> <li>Change in LOS.</li> </ul>	<ul style="list-style-type: none"> <li>5.10 Fire Prevention Contingency.</li> </ul>	No additional protective measures required.

Note:

1. Source: NBDTI EMM (2010)

## 6.7 Significance of Residual Effects

A Project related adverse residual effect on the road transportation network would be where the Project has a long term negative effect on the road infrastructure.

A Project related adverse residual effect on LOS would be if, for a prolonged period, the LOS on the proposed Project or existing road network is reduced below a LOS of D.

A Project related adverse residual effect on Traffic Safety is if the number or severity of accidents in the Project areas of significantly increase.

The likelihood of the potential of the proposed Project activities to cause significant adverse environmental effects on road transportation network is presented in Table 6.6 below.

**Table 6.6 Significance of Residual Effects to the Road Transportation Network after Mitigation**

Project Related Environmental Effect	Magnitude	Geographic Extent	Duration and Frequency	Reversibility	Ecological Context	Significant Effect
<b>Construction – Activities / Interactions</b>						
Road Infrastructure	L	L	Construction	Yes	Construction related traffic on existing Route 11.	No
LOS	L	L	Construction	Yes	Local traffic and through traffic will be temporarily effected.	No
Traffic Safety	L	L	Construction	Yes	Local traffic safety could be temporality affected if signage and speed limits not obeyed.	No
<b>Operation, Maintenance and Rehabilitation (OMR) – Activities / Interactions</b>						
Road Infrastructure	L	M	OMR	No	Lower traffic loads on existing route and bypass will reduce impacts on road network infrastructure	Positive Effect
LOS	L	M	OMR	No	Lower traffic loads on existing route and bypass will improve LOS.	Positive Effect
Traffic Safety	L	M	OMR	No	Lower traffic loads on existing route and bypass will improve Traffic Safety.	Positive Effect

Notes:

**Magnitude:**

- High (H)* Values regularly exceed guidelines (Entire Route 11 affected);
- Moderate (M)* Values affected, but generally below guidelines (Route 11 between Glenwood and Miramichi affected); and
- Low (L)* Values not affected (Sections of Route 11 between Glenwood and Miramichi affected).

**Geographic Extent:**

- High (H)* Entire Route 11 affected;
- Moderate (M)* Route 11 between Glenwood and Miramichi affected; and
- Low (L)* Sections of Route 11 between Glenwood and Miramichi affected.

## **6.8 Monitoring and Follow-up Requirements**

No follow-up or monitoring is recommended.

## **6.9 Road Transportation Network - References**

New Brunswick Department of Transportation (NBDTI). 2010. Environmental Management Manual. Fourth Edition. Accessed online: <http://www.gnb.ca/0113/publications/EMM/EMM-e.pdf>.

New Brunswick Department of Transportation (NBDTI). 2011. Standard Specifications. [http://www.gnb.ca/0113/publications/2011\\_Standard\\_Specs-e.pdf](http://www.gnb.ca/0113/publications/2011_Standard_Specs-e.pdf).

New Brunswick Department of Transportation and Infrastructure (NBDTI). 2014. 2014 Traffic Map.

Transportation Research Board. 2010. Highway Capacity Manual, 4<sup>th</sup> Edition, 2010. National Research Council, Washington, DC. Accessed online: <http://onlinepubs.trb.org/onlinepubs/trnews/trnews273HCM2010.pdf>.

### **6.9.1 Personal Communications**

Greg Profit, P.Eng, Design Branch/New Brunswick Department of Transportation and Infrastructure. Contacted in 2016 regarding updated traffic data for Project area.



**APPENDIX 6A**  
**RCI Data for CS 10 and CS 11**

The following are descriptions of Control Sections 10 and 11, followed by the Rideability Comfort Index (RCI) data for every 5 meter segment of each of these two Control Sections, as well as an indication of those segments which rating is below 5.0 (Good).

**Control Section 10**

2016 CONTROL SECTION MANUAL			
ROUTE: R0011	CS: 010	COUNTY: NORTHUMBERLAND	DISTRICT: 02
KM	LEFT DESCRIPTION	CODE	RIGHT DESCRIPTION
0.000		JR	BCS NORTH BLACK RIVER ROAD
0.013	UPPER BLACK RIVER ROAD	JL	
1.971	MACDONALD ROAD	JL	
4.282	HUDSON ROAD (PB)	JL	
4.654		JR	ODONNELL ROAD
6.700	TEMPORARY COUNTER (ID#1045)	TTC	(TTC011-10-1)
7.052		PL	CL HYDROLINE
7.841	WELDFIELD-COLLETTE ROAD	JT	SOUTH NAPIN ROAD
8.031	(NAPIN RIVER # 4)	BRID	CL BRIDGE N050
8.251	NORTH NAPIN ROAD	JT	NORTH NAPIN ROAD
8.284		MISC	RWIS LOCATION
8.356	BEGIN MEASURED 2 KILOMETER	BMS	(DISTRICT 2)
9.062	SEARLE ROAD	JL	
SECTIONS RECORD LAST UPDATED:			March 2015

**Table 6A-1 RCI Data for Control Section 10**

Year	Route	CS	District	From	To	Length	RCI	Rating
2015	11	10	2	3.300	3.350	0.05	5.77	
2015	11	10	2	3.350	3.400	0.05	5.42	
2015	11	10	2	3.400	3.450	0.05	5.41	
2015	11	10	2	3.450	3.500	0.05	4.95	Poor
2015	11	10	2	3.500	3.550	0.05	5.31	
2015	11	10	2	3.550	3.600	0.05	5.67	
2015	11	10	2	3.600	3.650	0.05	3.27	Poor
2015	11	10	2	3.650	3.700	0.05	5.54	
2015	11	10	2	3.700	3.750	0.05	5.91	
2015	11	10	2	3.750	3.800	0.05	6.31	
2015	11	10	2	3.800	3.850	0.05	5.94	
2015	11	10	2	3.850	3.900	0.05	6.12	
2015	11	10	2	3.900	3.950	0.05	5.58	
2015	11	10	2	3.950	4.000	0.05	3.51	Poor
2015	11	10	2	4.000	4.050	0.05	4.09	Poor
2015	11	10	2	4.050	4.100	0.05	3.93	Poor

**Table 6A-1 RCI Data for Control Section 10**

Year	Route	CS	District	From	To	Length	RCI	Rating
2015	11	10	2	4.100	4.150	0.05	3.84	Poor
2015	11	10	2	4.150	4.200	0.05	4.21	Poor
2015	11	10	2	4.200	4.250	0.05	4.99	Poor
2015	11	10	2	4.250	4.300	0.05	4.81	Poor
2015	11	10	2	4.300	4.350	0.05	4.98	Poor
2015	11	10	2	4.350	4.400	0.05	4.35	Poor
2015	11	10	2	4.400	4.450	0.05	3.79	Poor
2015	11	10	2	4.450	4.500	0.05	5.00	Poor
2015	11	10	2	4.500	4.550	0.05	6.16	
2015	11	10	2	4.550	4.600	0.05	5.47	
2015	11	10	2	4.600	4.650	0.05	5.72	
2015	11	10	2	4.650	4.700	0.05	5.47	
2015	11	10	2	4.700	4.750	0.05	4.93	Poor
2015	11	10	2	4.750	4.800	0.05	4.49	Poor
2015	11	10	2	4.800	4.850	0.05	5.89	
2015	11	10	2	4.850	4.900	0.05	6.26	
2015	11	10	2	4.900	4.950	0.05	6.17	
2015	11	10	2	4.950	5.000	0.05	5.51	
2015	11	10	2	5.000	5.050	0.05	4.56	Poor
2015	11	10	2	5.050	5.100	0.05	5.19	
2015	11	10	2	5.100	5.150	0.05	5.58	
2015	11	10	2	5.150	5.200	0.05	3.98	Poor
2015	11	10	2	5.200	5.250	0.05	6.05	
2015	11	10	2	5.250	5.300	0.05	5.44	
2015	11	10	2	5.300	5.350	0.05	4.20	Poor
2015	11	10	2	5.350	5.400	0.05	5.22	
2015	11	10	2	5.400	5.450	0.05	4.92	Poor
2015	11	10	2	5.450	5.500	0.05	4.28	Poor
2015	11	10	2	5.500	5.550	0.05	5.30	
2015	11	10	2	5.550	5.600	0.05	4.94	Poor
2015	11	10	2	5.600	5.650	0.05	5.05	
2015	11	10	2	5.650	5.700	0.05	5.36	
2015	11	10	2	5.700	5.750	0.05	5.28	
2015	11	10	2	5.750	5.800	0.05	4.67	Poor
2015	11	10	2	5.800	5.850	0.05	5.45	
2015	11	10	2	5.850	5.900	0.05	5.29	
2015	11	10	2	5.900	5.950	0.05	6.19	

**Table 6A-1 RCI Data for Control Section 10**

Year	Route	CS	District	From	To	Length	RCI	Rating
2015	11	10	2	5.950	6.000	0.05	5.55	
2015	11	10	2	6.000	6.050	0.05	4.78	Poor
2015	11	10	2	6.050	6.100	0.05	3.93	Poor
2015	11	10	2	6.100	6.150	0.05	5.83	
2015	11	10	2	6.150	6.200	0.05	4.67	Poor
2015	11	10	2	6.200	6.250	0.05	6.53	
2015	11	10	2	6.250	6.300	0.05	5.94	
2015	11	10	2	6.300	6.350	0.05	5.83	
2015	11	10	2	6.350	6.400	0.05	4.04	Poor
2015	11	10	2	6.400	6.450	0.05	4.78	Poor
2015	11	10	2	6.450	6.500	0.05	6.15	
2015	11	10	2	6.500	6.550	0.05	5.78	
2015	11	10	2	6.550	6.600	0.05	5.86	
2015	11	10	2	6.600	6.650	0.05	5.35	
2015	11	10	2	6.650	6.700	0.05	5.38	
2015	11	10	2	6.700	6.750	0.05	5.36	
2015	11	10	2	6.750	6.800	0.05	5.58	
2015	11	10	2	6.800	6.850	0.05	4.28	Poor
2015	11	10	2	6.850	6.900	0.05	4.78	Poor
2015	11	10	2	6.900	6.950	0.05	5.86	
2015	11	10	2	6.950	7.000	0.05	5.35	
2015	11	10	2	7.000	7.050	0.05	5.85	
2015	11	10	2	7.050	7.100	0.05	5.84	
2015	11	10	2	7.100	7.150	0.05	4.96	Poor
2015	11	10	2	7.150	7.200	0.05	3.07	Poor
2015	11	10	2	7.200	7.250	0.05	5.26	
2015	11	10	2	7.250	7.300	0.05	5.85	
2015	11	10	2	7.300	7.350	0.05	5.29	
2015	11	10	2	7.350	7.400	0.05	5.94	
2015	11	10	2	7.400	7.450	0.05	5.32	
2015	11	10	2	7.450	7.500	0.05	5.45	
2015	11	10	2	7.500	7.550	0.05	5.47	
2015	11	10	2	7.550	7.600	0.05	5.99	
2015	11	10	2	7.600	7.650	0.05	4.84	Poor
2015	11	10	2	7.650	7.700	0.05	2.81	Very Poor
2015	11	10	2	7.700	7.750	0.05	4.97	Poor
2015	11	10	2	7.750	7.800	0.05	5.31	



**Table 6A-1 RCI Data for Control Section 10**

Year	Route	CS	District	From	To	Length	RCI	Rating
2015	11	10	2	7.800	7.850	0.05	4.96	Poor
2015	11	10	2	7.850	7.900	0.05	6.10	
2015	11	10	2	7.900	7.950	0.05	4.38	Poor
2015	11	10	2	7.950	8.000	0.05	5.53	
2015	11	10	2	8.000	8.050	0.05	2.70	Very Poor
2015	11	10	2	8.050	8.100	0.05	3.85	Poor
2015	11	10	2	8.100	8.150	0.05	4.66	Poor
2015	11	10	2	8.150	8.200	0.05	5.26	
2015	11	10	2	8.200	8.250	0.05	4.19	Poor
2015	11	10	2	8.250	8.300	0.05	4.38	Poor
2015	11	10	2	8.300	8.350	0.05	5.99	
2015	11	10	2	8.350	8.400	0.05	4.57	Poor
2015	11	10	2	8.400	8.450	0.05	5.65	
2015	11	10	2	8.450	8.500	0.05	3.94	Poor
2015	11	10	2	8.500	8.550	0.05	4.15	Poor
2015	11	10	2	8.550	8.600	0.05	6.23	
2015	11	10	2	8.600	8.650	0.05	6.01	
2015	11	10	2	8.650	8.700	0.05	6.41	
2015	11	10	2	8.700	8.750	0.05	5.99	
2015	11	10	2	8.750	8.800	0.05	6.66	
2015	11	10	2	8.800	8.850	0.05	6.21	
2015	11	10	2	8.850	8.900	0.05	6.43	
2015	11	10	2	8.900	8.950	0.05	5.67	
2015	11	10	2	8.950	9.000	0.05	6.58	
2015	11	10	2	9.000	9.050	0.05	6.76	
2015	11	10	2	9.050	9.062	0.012	5.68	
<b>Average =</b>							<b>5.21</b>	

**Control Section 11**

2016 CONTROL SECTION MANUAL				
ROUTE: R0011		CS: 011	COUNTY: NORTHUMBERLAND	DISTRICT: 02
KM	LEFT DESCRIPTION	CODE	RIGHT DESCRIPTION	
0.000	SEARLE ROAD	JL	BCS	
0.010	MIRAMICHI CITY LIMITS	CL		
1.009	GENERAL MANSON WAY	JL		
1.247	TORBAY STREET	JL		
1.294	END MEASURED 2 KILOMETER	EMS	(DISTRICT 2)	
1.519	MAHER STREET	JL		
1.731		JR	TO KING STREET	
1.900		JR	KING STREET	
1.925		JR	FROM KING STREET	
2.577	FROM AIRPORT ROAD (ROUTE 117)	JL		
2.618		JR	TO UNIVERSITY AVE (EXIT 119)	
2.889	(ROUTE 117)	UP	CENTERLINE UNDERPASS C248	
2.890	(BEGIN DUAL NUMBER-ROUTE 8)	BMS		
3.177	TO AIRPORT RD (RTE 117)	JL	(EXIT 119)	
3.210		PL	CENTERLINE HYDROLINE	
3.224		JR	FROM UNIVERSITY AVE (RTE 117)	
3.508	TEMPORARY COUNTER (ID#776)	TTC	(TTC011-11-1) (2 LOOPS)	
3.977	FROM CHURCH STREET	JL		
4.004		JR	TO CHURCH STREET (EXIT 120)	
4.006	END RATING SECTION 1	ERS		
4.083	TO CHURCH STREET (EXIT 120)	JT	FROM CHURCH STREET	
4.100	TEMPORARY COUNTER (ID#777)	TTC	(TTC011-11-2) (2 LOOPS)	
4.127	(MIRAMICHI RIVER #1)	BRID	BEGIN BRIDGE C244	
4.130	(CHURCH STREET)	OP	CENTERLINE OVERPASS	
4.395	(WATER STREET)	OP	CENTERLINE OVERPASS	
5.288	(MIRAMICHI RIVER #1)	BRID	END BRIDGE C244	
5.392	(FERRY ROAD OVERPASS)	OP	BEGIN OVERPASS F190	
5.408	(END DUAL NUMBER-ROUTE 8)	EMS		
5.409	(KING GEORGE HWY) (ROUTE 8)	OP	(CL OVERPASS F190)	ECS
SECTIONS RECORD LAST UPDATED:			April 2016	

**Table 6A-2 RCI Data for Control Section 11**

Year	Route	CS	District	From	To	Length	RCI	Rating
2015	11	11	2	0.000	0.050	0.05	6.57	
2015	11	11	2	0.050	0.100	0.05	6.67	
2015	11	11	2	0.100	0.150	0.05	6.33	
2015	11	11	2	0.150	0.200	0.05	5.98	
2015	11	11	2	0.200	0.250	0.05	5.57	
2015	11	11	2	0.250	0.300	0.05	6.65	
2015	11	11	2	0.300	0.350	0.05	6.33	
2015	11	11	2	0.350	0.400	0.05	6.23	
2015	11	11	2	0.400	0.450	0.05	6.12	
2015	11	11	2	0.450	0.500	0.05	6.07	
2015	11	11	2	0.500	0.550	0.05	5.85	

**Table 6A-2 RCI Data for Control Section 11**

Year	Route	CS	District	From	To	Length	RCI	Rating
2015	11	11	2	0.550	0.600	0.05	5.92	
2015	11	11	2	0.600	0.650	0.05	6.14	
2015	11	11	2	0.650	0.700	0.05	6.22	
2015	11	11	2	0.700	0.750	0.05	6.05	
2015	11	11	2	0.750	0.800	0.05	5.93	
2015	11	11	2	0.800	0.850	0.05	6.22	
2015	11	11	2	0.850	0.900	0.05	5.90	
2015	11	11	2	0.900	0.950	0.05	6.51	
2015	11	11	2	0.950	1.000	0.05	6.66	
2015	11	11	2	1.000	1.050	0.05	5.91	
2015	11	11	2	1.050	1.100	0.05	6.45	
2015	11	11	2	1.100	1.150	0.05	6.61	
2015	11	11	2	1.150	1.200	0.05	6.11	
2015	11	11	2	1.200	1.250	0.05	6.60	
2015	11	11	2	1.250	1.300	0.05	5.66	
2015	11	11	2	1.300	1.350	0.05	6.11	
2015	11	11	2	1.350	1.400	0.05	6.55	
2015	11	11	2	1.400	1.450	0.05	6.36	
2015	11	11	2	1.450	1.500	0.05	6.20	
2015	11	11	2	1.500	1.550	0.05	5.54	
2015	11	11	2	1.550	1.600	0.05	5.83	
2015	11	11	2	1.600	1.650	0.05	6.29	
2015	11	11	2	1.650	1.700	0.05	6.19	
2015	11	11	2	1.700	1.750	0.05	5.60	
2015	11	11	2	1.750	1.800	0.05	4.97	Poor
2015	11	11	2	1.800	1.850	0.05	4.95	Poor
2015	11	11	2	1.850	1.900	0.05	5.58	
2015	11	11	2	1.900	1.950	0.05	5.65	
2015	11	11	2	1.950	2.000	0.05	6.26	
2015	11	11	2	2.000	2.050	0.05	5.70	
2015	11	11	2	2.050	2.100	0.05	5.93	
2015	11	11	2	2.100	2.150	0.05	6.82	
2015	11	11	2	2.150	2.200	0.05	5.52	
2015	11	11	2	2.200	2.250	0.05	6.51	
2015	11	11	2	2.250	2.300	0.05	6.47	
2015	11	11	2	2.300	2.350	0.05	6.28	
2015	11	11	2	2.350	2.400	0.05	6.07	

**Table 6A-2 RCI Data for Control Section 11**

Year	Route	CS	District	From	To	Length	RCI	Rating
2015	11	11	2	2.400	2.450	0.05	6.20	
2015	11	11	2	2.450	2.500	0.05	5.83	
2015	11	11	2	2.500	2.550	0.05	6.66	
2015	11	11	2	2.550	2.600	0.05	6.15	
2015	11	11	2	2.600	2.650	0.05	6.52	
2015	11	11	2	2.650	2.700	0.05	6.54	
2015	11	11	2	2.700	2.750	0.05	6.30	
2015	11	11	2	2.750	2.800	0.05	6.13	
2015	11	11	2	2.800	2.850	0.05	5.87	
2015	11	11	2	2.850	2.900	0.05	6.19	
2015	11	11	2	2.900	2.950	0.05	6.37	
2015	11	11	2	2.950	3.000	0.05	6.67	
2015	11	11	2	3.000	3.050	0.05	6.37	
2015	11	11	2	3.050	3.100	0.05	6.22	
2015	11	11	2	3.100	3.150	0.05	6.37	
2015	11	11	2	3.150	3.200	0.05	6.00	
2015	11	11	2	3.200	3.250	0.05	6.26	
2015	11	11	2	3.250	3.300	0.05	6.20	
2015	11	11	2	3.300	3.350	0.05	6.00	
2015	11	11	2	3.350	3.400	0.05	5.61	
2015	11	11	2	3.400	3.450	0.05	5.58	
2015	11	11	2	3.450	3.500	0.05	5.94	
2015	11	11	2	3.500	3.550	0.05	4.39	Poor
2015	11	11	2	3.550	3.600	0.05	5.01	
2015	11	11	2	3.600	3.650	0.05	4.61	Poor
2015	11	11	2	3.650	3.700	0.05	5.59	
2015	11	11	2	3.700	3.750	0.05	5.27	
2015	11	11	2	3.750	3.800	0.05	4.90	Poor
2015	11	11	2	3.800	3.850	0.05	5.53	
2015	11	11	2	3.850	3.900	0.05	5.38	
2015	11	11	2	3.900	3.950	0.05	4.90	Poor
2015	11	11	2	3.950	4.000	0.05	4.90	Poor
2015	11	11	2	4.000	4.050	0.05	5.92	
2015	11	11	2	4.050	4.100	0.05	6.55	
2015	11	11	2	4.100	4.150	0.05	2.44	Very Poor
2015	11	11	2	4.150	4.200	0.05	2.16	Very Poor
2015	11	11	2	4.200	4.250	0.05	2.25	Very Poor

**Table 6A-2 RCI Data for Control Section 11**

Year	Route	CS	District	From	To	Length	RCI	Rating
2015	11	11	2	4.250	4.300	0.05	2.95	Very Poor
2015	11	11	2	4.300	4.350	0.05	3.38	Poor
2015	11	11	2	4.350	4.400	0.05	3.13	Poor
2015	11	11	2	4.400	4.450	0.05	3.47	Poor
2015	11	11	2	4.450	4.500	0.05	2.15	Very Poor
2015	11	11	2	4.500	4.550	0.05	3.25	Poor
2015	11	11	2	4.550	4.600	0.05	4.54	Poor
2015	11	11	2	4.600	4.650	0.05	4.90	Poor
2015	11	11	2	4.650	4.700	0.05	5.75	
2015	11	11	2	4.700	4.750	0.05	5.14	
2015	11	11	2	4.750	4.800	0.05	5.21	
2015	11	11	2	4.800	4.850	0.05	5.32	
2015	11	11	2	4.850	4.900	0.05	3.60	Poor
2015	11	11	2	4.900	4.950	0.05	5.22	
2015	11	11	2	4.950	5.000	0.05	4.65	Poor
2015	11	11	2	5.000	5.050	0.05	3.16	Poor
2015	11	11	2	5.050	5.100	0.05	3.66	Poor
2015	11	11	2	5.100	5.150	0.05	4.78	Poor
2015	11	11	2	5.150	5.200	0.05	5.51	
2015	11	11	2	5.200	5.250	0.05	3.81	Poor
2015	11	11	2	5.250	5.300	0.05	5.72	
2015	11	11	2	5.300	5.350	0.05	4.26	Poor
2015	11	11	2	5.350	5.400	0.05	4.33	Poor
2015	11	11	2	5.400	5.409	0.009	3.99	Poor
<b>Average =</b>							<b>5.51</b>	