

Presented To:	Operations Committee
Presented:	Monday, Nov 16, 2015
Report Date	Wednesday, Oct 28, 2015
Type:	Managers' Reports

## Request for Decision

### Speed Limit Review of Various Roadways in Ward 3

#### Recommendation

THAT the City of Greater Sudbury increases the speed limit on Vermillion Lake Road from 260 metres north of Bradley Road to Nickel Basin Road from 60 km/h to 70 km/h;

AND THAT the City of Greater Sudbury maintains the existing speed limit on Vermillion Lake Road from Highway 144 to 260 metres north of Bradley Road and from Nickel Basin Road to the east end;

AND THAT the City of Greater Sudbury maintains the existing speed limit on Bradley Road, Joannette Road and Simmons Road;

AND THAT a by-law be prepared to amend Traffic and Parking By-Law 2010-1 in the City of Greater Sudbury to implement the recommended changes in accordance with the report from the General Manager of Infrastructure Services dated October 28, 2015.

#### Background

At the Operations Committee meeting held on May 4, 2015, the following recommendation was approved:

OP2015-14 Montpelier/Cormier: WHEREAS speed limit sign postings on Joannette, Bradley, Vermillion Lake and Simmons Roads in Chelmsford vary from 50 to 70 kilometres per hour;

AND WHEREAS residents in the area have expressed concerns about the inconsistency of speed limits and excessive speeding on Joannette, Bradley, Vermillion Lake and Simmons Roads;

AND WHEREAS a consistent lowered speed limit along these roadways may help to alleviate the speeding and safety concerns of the area residents;

THEREFORE BE IT RESOLVED that the City of Greater Sudbury directs staff to undertake a review and speed limit analysis along Joannette, Bradley, Vermillion Lake and Simmons Roads this spring, and report their findings to the Operations Committee as soon as possible.

In 2010, City Council adopted the Canadian Guidelines for Establishing Posted Limits published by the Transportation Association of Canada (TAC) for establishing posted speed limits on arterial and major collector roads. From the list of roads presented in the recommendation, Vermillion Lake Road is classified as a collector road and the remaining roads are classified as local roads.

The goal when setting speed limits is to post safe and reasonable speed limits that the majority of motorists will follow.

#### Signed By

##### Report Prepared By

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Services  
*Digitally Signed Oct 28, 15*

##### Division Review

David Shelsted  
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##### Recommended by the Department

Tony Cecutti  
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##### Recommended by the C.A.O.

Kevin Fowke  
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This is especially challenging in rural areas where residents have to travel long distances, development is limited, setbacks from the road are at greater distances, and traffic volumes are typically low.

### **Vermilion Lake Road**

Vermilion Lake Road is collector road, located west of Chelmsford, which provides a connection for the agricultural and residential properties to Highway 144 (see Exhibit A). It is constructed to a rural standard with a width which varies from 6.5 to 7.0 metres and gravel shoulders.

Currently, the speed limit is 60 km/h from Highway 144 to Nickel Basin Road. From Nickel Basin Road, the speed limit is 70 km/h for 7 km. The speed limit on this section of the road was reduced from 80 km/h in 2010. At this point, there is increased residential development and the speed limit changes back to 60 km/h. The 60 km/h speed zone continues for another 850 metres west and is then further reduced to 50 km/h until the westerly end of the road.

Greater Sudbury Police conducted a speed enforcement campaign on Vermilion Lake Road during the spring. They visited the area on nine separate occasions and issued a total of 28 tickets for speeding.

Speed studies were completed on Vermilion Lake Road and the other area roads to determine the operating speeds on these roads. The results of the studies can be seen in Exhibit B. Two of the speed studies were completed in locations where studies had been completed in 2010. A comparison of the recorded speeds is below.

Location	Year of Study	Speed Limit (km/h)	Average Speed (km/h)	85th Percentile Speed (km/h)
<b>Vermilion Lake Road</b> South of Bradley Road (950 Vermilion Lake Road)	2010	60	74	87
	2015	60	74	85
	<b>Difference:</b>		<b>0</b>	<b>-2</b>
<b>Vermilion Lake Road</b> At Davey Road	2010	80	80	93
	2015	70	78	92
	<b>Difference:</b>		<b>-2</b>	<b>-1</b>

The comparison shows that despite the 10 km/h speed limit reduction in 2010, there has been almost no change in the eighty fifth percentile speed on Vermilion Lake Road. The eighty fifth percentile speed is the speed at or below which eighty five percent of drivers are travelling and is generally accepted as a good indicator of an appropriate speed limit. It is commonly referred to as the operating speed.

Staff also reviewed collision data for Vermilion Lake Road. From 2009 to 2014, there was one reported collision where it was indicated that speed was a contributing factor to the collision.

To determine the recommended speed limit from the Canadian Guidelines for Establishing Posted Speed Limits, staff divided Vermilion Lake Road into 4 segments based on the residential density and existing speed limits. The risk score and recommended posted speed limit for each segment can be found in the table below. The complete evaluations based on the Canadian guidelines can be found in Exhibits C, D, E and F.

Location	Existing Speed Limit (km/h)	Risk Score	Recommended Posted Speed Limit (km/h)
Highway 144 to 260 metres north of Bradley Road	60	42	60
260 metres north of Bradley Road to Nickel Basin Road	60	32	70
Nickel Basin Road to the 60 km/h zone west of Gordon Lake Road	70	29	70
60 km/h zone west of Gordon Lake Road to the 50 km/h zone	60	39	60

The Canadian guidelines indicate that based on the engineering characteristics of the road, three of the evaluated segments have appropriate speed limits while the segment from 260 metres north of Bradley Road to Nickel Basin road should have a posted speed limit of 70 km/h. When evaluating the speed limit on Vermilion Lake Road, staff divided the segment from Highway 144 to Nickel Basin Road into 2 segments. From Highway 144 to 260 metres north of Bradley Road there is a high density of residential development while the remainder is mainly agricultural land with very few driveways. This is reflected in the risk score for each segment. The segment with a greater number of driveways has an increased risk for motorists and as a result has a lower recommended speed limit. Based on the Canadian guidelines, staff recommend raising the speed limit of Vermilion Lake Road from 260 metres north of Bradley Road to Nickel Basin Road to 70 km/h. This will be a more appropriate speed limit for this segment of road which will help to emphasize to motorists the change in residential density and the need for a reduction in speed.

#### **Bradley Road, Joannette Road, Simmons Road**

Bradley Road, Joannette Road and Simmons Road are all local roads located west of Chelmsford which are constructed to a rural standard with gravel shoulders. Bradley Road and Joannette Road are surface treated roads with a roadway width of 6.1 metres. Simmons Road from New Cobden Road to Gordon Lake Road is surface treated with a roadway width of 6.9 metres and a gravel surface from Gordon Lake Road to Pilon Crescent. The speed limit of each road can be found on Exhibit A.

Speed studies were completed on all three roads to determine the operating speeds. The results of the studies can be seen in Exhibit B. On Bradley Road, Joannette Road and Simmons Road, between New Cobden Road and Gordon Lake Road, the recorded operating speeds exceed the speed limit between 11 km/h and 24 km/h. These operating speeds are typical for these types of rural roads. Significant police enforcement would be required to bring operating speeds more closely in line with the existing speed limits. On Simmons Road, between Gordon Lake Road and Pilon Crescent, the operating speeds are 5 km/h below the posted speed limit of 60 km/h. This is likely due to the gravel surface and the sharp horizontal curve which has a posted advisory speed of 40 km/h.

Staff also reviewed collision data for the three roads. From 2009 to 2014, there was one reported collision where it was indicated that speed was a contributing factor on Joannette Road and one on Simmons Road. There were no collisions where speed was a contributing factor on Bradley Road.

For most local roads, the City of Greater Sudbury uses the Statutory Speed limit of 50 km/h. However, on some local rural roads higher posted speed limits have been set. Typically these are set based mainly on the operating speed of traffic with considerations given to the design of the road, collisions, and the level of development adjacent to the road. This approach is supported by the Canadian guidelines which state:

“Road safety may be enhanced through credible posted speed limits that match the expectation of drivers for a given roadway and its surrounding area.”

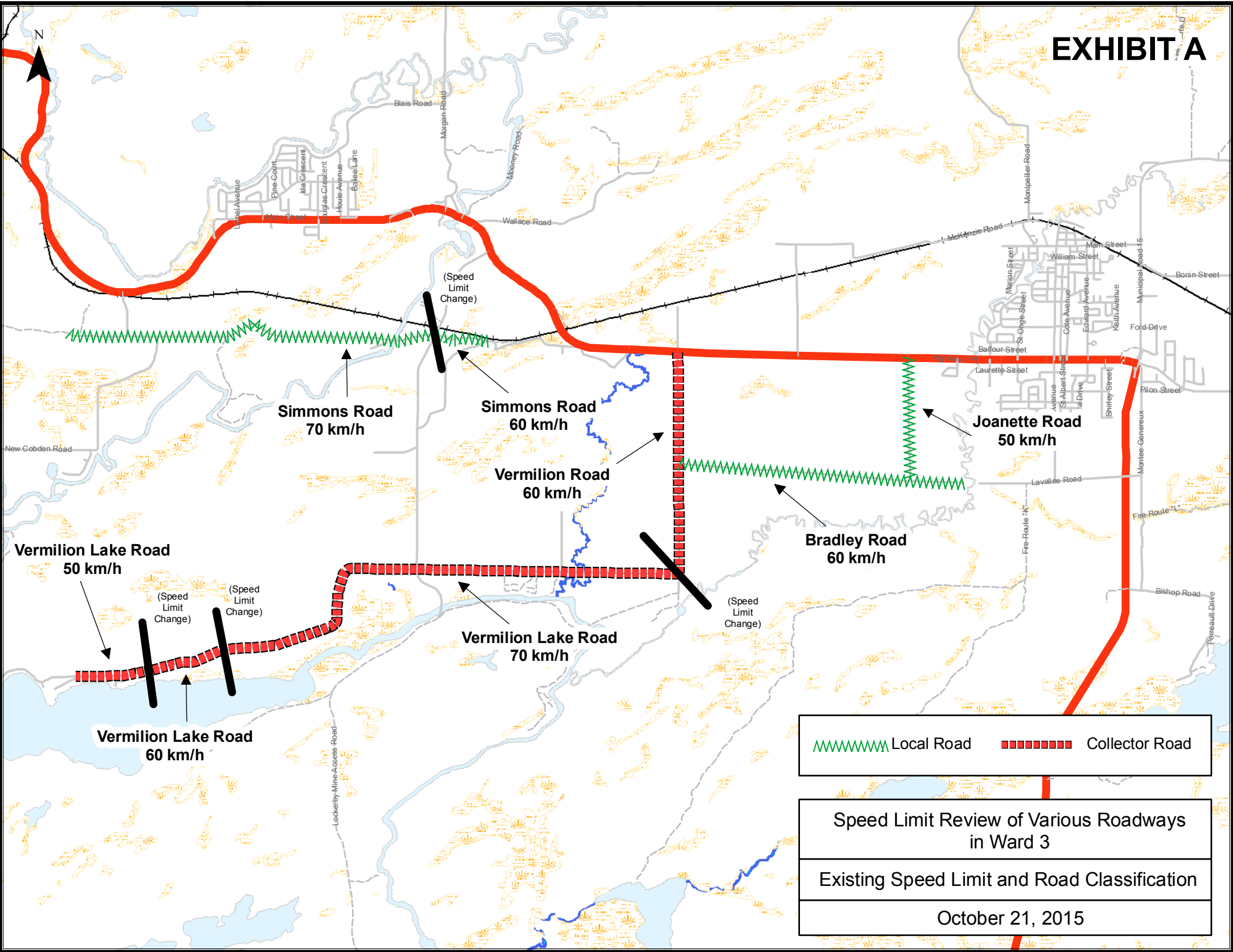
Development on Bradley Road is predominantly agricultural with a few residential properties. The existing dwellings are well setback from the road and the average annual daily traffic volume (AADT) is just over 200 vehicles. Based on the existing operating speeds, low volume of traffic and the level of development on Bradley Road, it is recommended that the speed limit remain 60 km/h.

Development on Joannette Road is similar to Bradley Road except there is a higher density of residential development on the east side of the road near Highway 144. This is reflected in the operating speeds on the road as they are 5 km/h lower than those recorded on Bradley Road. The AADT on Joannette is approximately 450 vehicles. Based on the existing operating speeds, low volume of traffic and the level of development on Joannette Road, it is recommended that the speed limit remain 60 km/h.

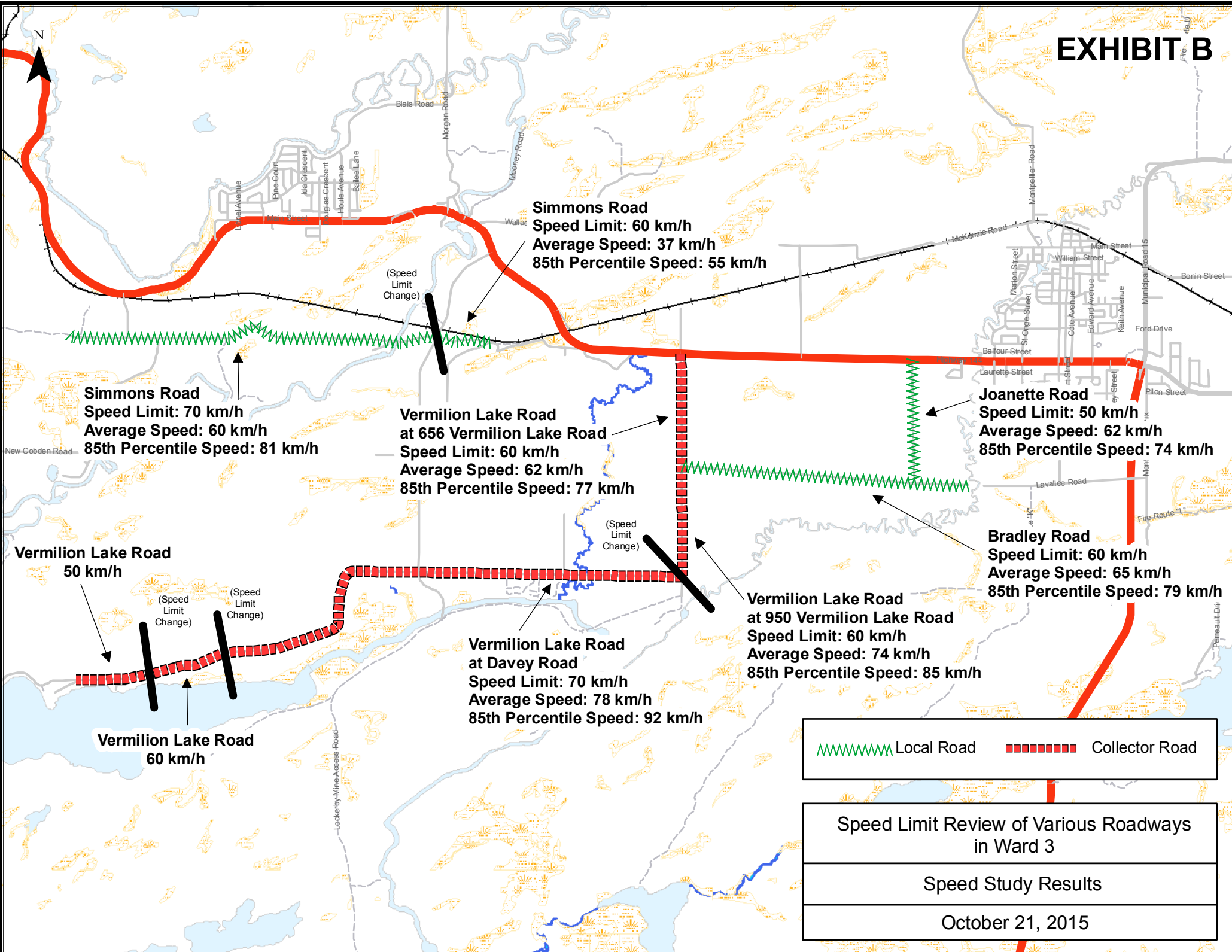
Simmons Road near New Cobden Road, has several open pits which are accessed from Simmons Road. There is a small amount of residential development near Gordon Lake Road. Similar to other local roads in this area, the AADT is only 300 vehicles. The gravel portion of Simmons Road between Gordon Lake Road and Pilon Crescent has four residential properties which access the road. The remainder of the road frontage is undeveloped. The AADT on this section of road is approximately 100 vehicles. Operating speeds on this road are below the posted speed limit. Based on the existing operating speeds, low volume of traffic and the level of development on Simmons Road, it is recommended that the speed limit remain 70 km/h between New Cobden Road and Gordon Lake Road and 60 km/h

between Gordon Lake Road and Pilon Crescent.

# EXHIBIT A



# EXHIBIT B





## Automated Speed Limit Guidelines

### FORM A - Automated Speed Limit Guidelines Spreadsheet

10-Apr-09

Name of Corridor:	Vermilion Lake Road		
Segment Evaluated:	Highway 144	to	260 m North of Bradley Road
Geographic Region:	Chelmsford		
Road Agency:	City of Greater Sudbury		
Road Classification:	Collector	Length of Corridor:	1,310 m
Urban / Rural:	Rural	Design Speed: (Required for Freeway, Expressway, Highway)	km/h
Divided / Undivided:	Undivided	Current Posted Speed: (For information only)	60 km/h
Major / Minor:	Minor	Prevailing Speed: (85th Percentile - for information only)	77 km/h
# Through Lanes Per Direction:	1 lane	Policy: (Maximum Posted Speed)	No policy

		RISK	Score
A1	GEOMETRY (Horizontal)	Lower	2
A2	GEOMETRY (Vertical)	Lower	2
A3	AVERAGE LANE WIDTH	Medium	2
B	ROADSIDE HAZARDS	Higher	9
C1	PEDESTRIAN EXPOSURE	Medium	2
C2	CYCLIST EXPOSURE	Higher	3
D	PAVEMENT SURFACE	Medium	6
E1	NUMBER OF INTERSECTIONS WITH PUBLIC ROADS	Number of Occurrences	0
	STOP controlled intersection	0	
	Signalized intersection	0	
	Roundabout or traffic circle	0	
	Crosswalk	0	
	Active, at-grade railroad crossing	0	
	Sidestreet STOP-controlled or lane	0	
E2	NUMBER OF INTERSECTIONS WITH PRIVATE ACCESS DRIVEWAYS	Number of Occurrences	15
	Left turn movements permitted	50	
	Right-in / Right-out only	0	
E3	NUMBER OF INTERCHANGES	Number of Occurrences	0
	Number of interchanges along corridor	0	
F	ON-STREET PARKING	Lower	1

**Total Risk Score:**

42

**Recommended Posted Speed Limit (km/h):**

As determined by road characteristics

60

As determined by policy

No policy

The recommended posted speed limit may be checked against the prevailing speeds of the roadway and the road's safety performance.

**Comments:**





# Automated Speed Limit Guidelines

## FORM A - Automated Speed Limit Guidelines Spreadsheet

Version:  
10-Apr-09

Name of Corridor:	Vermilion Lake Road		
Segment Evaluated:	260 m North of Bradley Road	to	Nickel Basin Road
Geographic Region:	Chelmsford		
Road Agency:	City of Greater Sudbury		
Road Classification:	Collector	Length of Corridor:	1,800 m
Urban / Rural:	Rural	Design Speed: (Required for Freeway, Expressway, Highway)	km/h
Divided / Undivided:	Undivided	Current Posted Speed: (For information only)	60 km/h
Major / Minor:	Major	Prevailing Speed: (85th Percentile - for information only)	85 km/h
# Through Lanes Per Direction:	1 lane	Policy: (Maximum Posted Speed)	No policy

		RISK	Score
A1	GEOMETRY (Horizontal)	Lower	2
A2	GEOMETRY (Vertical)	Lower	2
A3	AVERAGE LANE WIDTH	Medium	2
B	ROADSIDE HAZARDS	Higher	9
C1	PEDESTRIAN EXPOSURE	Medium	2
C2	CYCLIST EXPOSURE	Higher	3
D	PAVEMENT SURFACE	Medium	6
E1	NUMBER OF INTERSECTIONS WITH PUBLIC ROADS	Number of Occurrences	1
	STOP controlled intersection	0	
	Signalized intersection	0	
	Roundabout or traffic circle	0	
	Crosswalk	0	
	Active, at-grade railroad crossing	0	
	Sidestreet STOP-controlled or lane	2	
E2	NUMBER OF INTERSECTIONS WITH PRIVATE ACCESS DRIVEWAYS	Number of Occurrences	4
	Left turn movements permitted	14	
	Right-in / Right-out only	0	
E3	NUMBER OF INTERCHANGES	Number of Occurrences	0
	Number of interchanges along corridor	0	
F	ON-STREET PARKING	Lower	1

**Total Risk Score:**

32

**Recommended Posted Speed Limit (km/h):**

As determined by road characteristics

70

As determined by policy

No policy

The recommended posted speed limit may be checked against the prevailing speeds of the roadway and the road's safety performance.

**Comments:**





## Automated Speed Limit Guidelines

### FORM A - Automated Speed Limit Guidelines Spreadsheet

10-Apr-09

Name of Corridor:	Vermilion Lake Road			
Segment Evaluated:	Nickel Basin Road	to	60 km/h zone West of Gordon Lake Road	
Geographic Region:	Chelmsford			
Road Agency:	City of Greater Sudbury			
Road Classification:	Collector	Length of Corridor:	7,030	m
Urban / Rural:	Rural	Design Speed: (Required for Freeway, Expressway, Highway)		km/h
Divided / Undivided:	Undivided	Current Posted Speed: (For information only)	70	km/h
Major / Minor:	Major	Prevailing Speed: (85th Percentile - for information only)	92	km/h
# Through Lanes Per Direction:	1 lane	Policy: (Maximum Posted Speed)	No policy	

		RISK	Score
A1	GEOMETRY (Horizontal)	Lower	2
A2	GEOMETRY (Vertical)	Lower	2
A3	AVERAGE LANE WIDTH	Medium	2
B	ROADSIDE HAZARDS	Medium	6
C1	PEDESTRIAN EXPOSURE	Medium	2
C2	CYCLIST EXPOSURE	Higher	3
D	PAVEMENT SURFACE	Medium	6
E1	NUMBER OF INTERSECTIONS WITH PUBLIC ROADS	Number of Occurrences	1
	STOP controlled intersection	1	
	Signalized intersection	0	
	Roundabout or traffic circle	0	
	Crosswalk	0	
	Active, at-grade railroad crossing	0	
	Sidestreet STOP-controlled or lane	3	
E2	NUMBER OF INTERSECTIONS WITH PRIVATE ACCESS DRIVEWAYS	Number of Occurrences	4
	Left turn movements permitted	58	
	Right-in / Right-out only	0	
E3	NUMBER OF INTERCHANGES	Number of Occurrences	0
	Number of interchanges along corridor	0	
F	ON-STREET PARKING	Lower	1

**Total Risk Score:**

29

**Recommended Posted Speed Limit (km/h):**

As determined by road characteristics

70

As determined by policy

No policy

The recommended posted speed limit may be checked against the prevailing speeds of the roadway and the road's safety performance.

**Comments:**



## Automated Speed Limit Guidelines

### FORM A - Automated Speed Limit Guidelines Spreadsheet

Version:  
10-Apr-09

Name of Corridor:	Vermilion Lake Road		
Segment Evaluated:	60 km/h zone West of Gordon Lake Road	to	50 km/h zone
Geographic Region:	Chelmsford		
Road Agency:	City of Greater Sudbury		
Road Classification:	Collector	Length of Corridor:	850 m
Urban / Rural:	Rural	Design Speed: (Required for Freeway, Expressway, Highway)	km/h
Divided / Undivided:	Undivided	Current Posted Speed: (For information only)	60 km/h
Major / Minor:	Major	Prevailing Speed: (85th Percentile - for information only)	km/h
# Through Lanes Per Direction:	1 lane	Policy: (Maximum Posted Speed)	No policy

		RISK	Score
A1	GEOMETRY (Horizontal)	Lower	2
A2	GEOMETRY (Vertical)	Lower	2
A3	AVERAGE LANE WIDTH	Medium	2
B	ROADSIDE HAZARDS	Higher	9
C1	PEDESTRIAN EXPOSURE	Medium	2
C2	CYCLIST EXPOSURE	Higher	3
D	PAVEMENT SURFACE	Medium	6
E1	NUMBER OF INTERSECTIONS WITH PUBLIC ROADS	Number of Occurrences	0
	STOP controlled intersection	0	
	Signalized intersection	0	
	Roundabout or traffic circle	0	
	Crosswalk	0	
	Active, at-grade railroad crossing	0	
	Sidestreet STOP-controlled or lane	0	
E2	NUMBER OF INTERSECTIONS WITH PRIVATE ACCESS DRIVEWAYS	Number of Occurrences	12
	Left turn movements permitted	20	
	Right-in / Right-out only	0	
E3	NUMBER OF INTERCHANGES	Number of Occurrences	0
	Number of interchanges along corridor	0	
F	ON-STREET PARKING	Lower	1

**Total Risk Score:**

39

**Recommended Posted Speed Limit (km/h):**

As determined by road characteristics

60

As determined by policy

No policy

The recommended posted speed limit may be checked against the prevailing speeds of the roadway and the road's safety performance.

**Comments:**