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File: 2.0
Project # 5829

Memorandum

To: Denise Marshall – Northumberland County
Cc:
From: Tony Reitmeier – HDR
Guinevere Ngau – HDR
Date: March 23, 2012
Re: **County Road 2**
EA: Speed Surveys

1. INTRODUCTION

Speeding has been identified as an issue for local residents along the County Road 2 corridor within the EA project limits. HDR conducted speed surveys on the November 17, 2011 in both peak and off-peak periods to observe whether speeding along County Road 2 was a concern, and whether mitigative measures should be addressed as part of the County Road 2 EA study.

The speed surveys were conducted with a radar gun and the MTO spot speed survey forms at the following locations along County Road 2 in both the eastbound and westbound directions:

- 200 m east of the Hamilton Road intersection
- 400 m east of the Augustine Road intersection
- 100 m east of the Theatre Road intersection

The weather conditions were predominantly clear, with temperatures of approximately 2 degrees Celsius. At the time of the spot speed surveys, the conditions were fairly bright to dusk. The speed survey forms are in **Appendix A**.

2. METHODOLOGY

The speed survey results were analysed using two different methods:

- 85th percentile speed, and
- Percentage of drivers who are travelling at speeds that exceed above the posted speed limit by more than 15 km/h.

2.1 85th Percentile Speed

The 85th percentile speed is a method outlined in the Transportation Association of Canada (TAC) Design Guidelines for determining the maximum safe speed for a particular location. The 85th percentile speed concept is based on the theory that the speed at or below which 85% of people drive at any given location under free flow movement, good weather and high visibility conditions may be considered as the maximum safe speed for that location. This assumes that the large majority of drivers:

- Are reasonable and prudent,
- Do not want to have a crash, and
- Desire to reach their destination in the shortest possible time.

There are numerous and extensive empirical studies that substantiate the 85th percentile criterion. Statistical techniques show that a normal probability distribution occurs when a random sample of traffic is measured. Most cumulative speed distribution curves “break” at approximately 15 % and 85 % of the total number of observations (see **Exhibit 2-1**). Consequently, the motorists observed in the lower 15 % are considered to be traveling unreasonably slow and those observed above the 85th percentile value are assumed to be exceeding a safe and reasonable speed. The steep slope of the distribution curve below the 85th percentile value suggests that posting a speed below the critical value (e.g., 60th percentile speed) would penalize a large percentage of reasonable drivers (e.g., 25%).

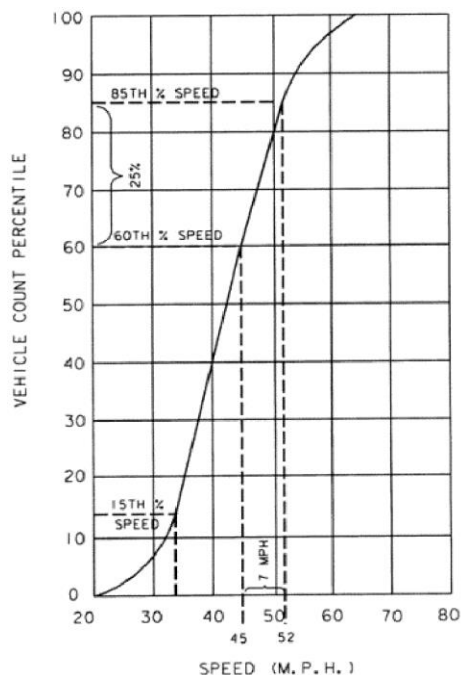


Exhibit 2-1: Cumulative Speed Distribution Curve

2.2 Demerit Points

The second methodology looks at the percentage of drivers travelling at speeds that exceed the posted speed limit by more than 15 km/h (e.g., for a posted speed limit of 50 km/h, this method would determine the percentage of drivers that are travelling at speeds that exceed 65 km/h). This method was used because it identifies the number of drivers that are travelling at speeds at which they would have demerit points recorded on their records for speed-related offences.

As per the *Highway Traffic Act, Ontario Regulation 339/94*, the following outlines the demerit point penalties for speeding offences:

- **6 Points** - Exceeding the speed limit by 50 km/h or more
- **4 Points** - Exceeding the speed limit by 30 to 49 km/h
- **3 Points** - Exceeding the speed limit by 16 to 29 km/h

3. THEATRE ROAD INTERSECTION

Spot speed surveys were conducted approximately 100 m east of the Theatre Road intersection between 1:45 pm to 2:20 pm for vehicles travelling in the eastbound direction and between 2:20 pm and 3:00 pm for vehicles travelling in the westbound direction. This is considered an off-peak period for travel along the County Road 2 study corridor.

The posted speed limit at this location is 80 km/h. The 85th percentile speed is 100 km/h for the eastbound direction and 102 km/h for the westbound direction. This suggests that the majority of the drivers are travelling at speeds well above the posted speed limit.

Vehicles that were observed to be travelling at speeds that exceed the posted limit by more than 15 km/h were also considered. **Exhibit 3-1** and **Exhibit 3-2** show the distribution of the speeds at which vehicles were observed to be travelling.

Of the 107 eastbound vehicles that were observed during the speed survey at this location, 44 vehicles were observed to be travelling at speeds above 95 km/h. That is, 41% of the vehicles were observed to be travelling at speeds above what would be considered reasonable by *Highway Traffic Act, Ontario Regulation 339/94*.

Of the 97 westbound vehicles that were observed during the speed survey at this location, 52 vehicles were observed to be travelling at speeds above 95 km/h. That is, 54% of the vehicles were observed to be travelling at speeds above what would be considered reasonable by *Highway Traffic Act, Ontario Regulation 339/94*.

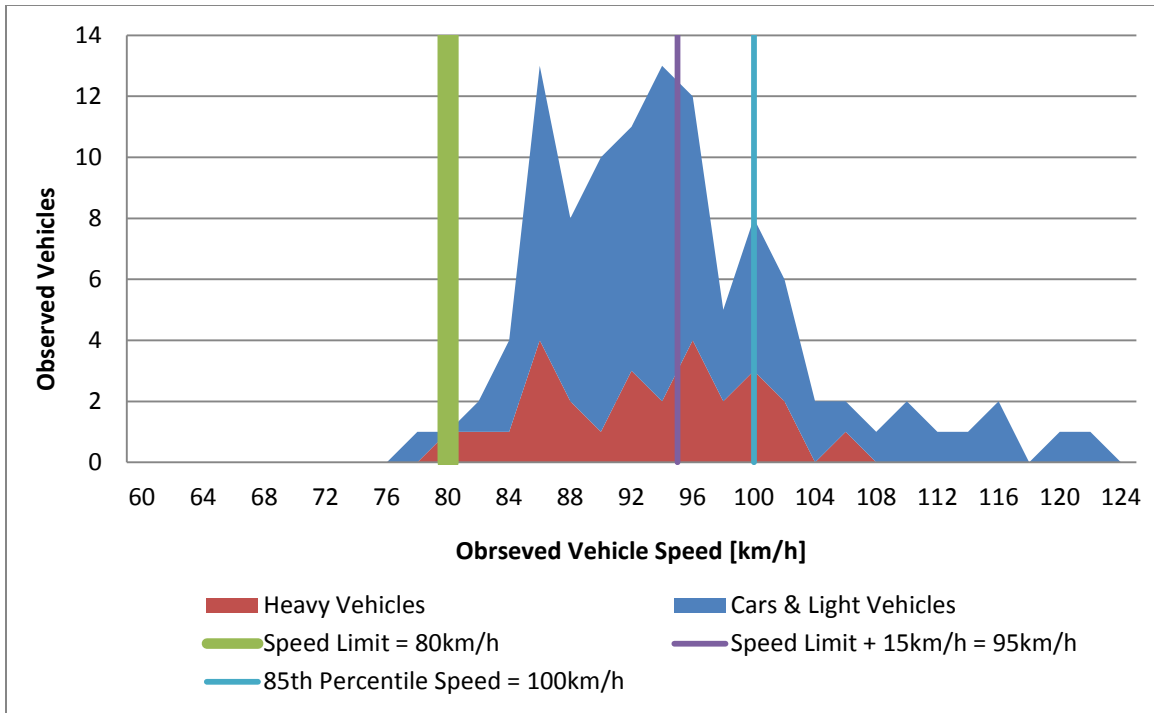


Exhibit 3-1: Speed Survey at Theatre Road (Eastbound Traffic)

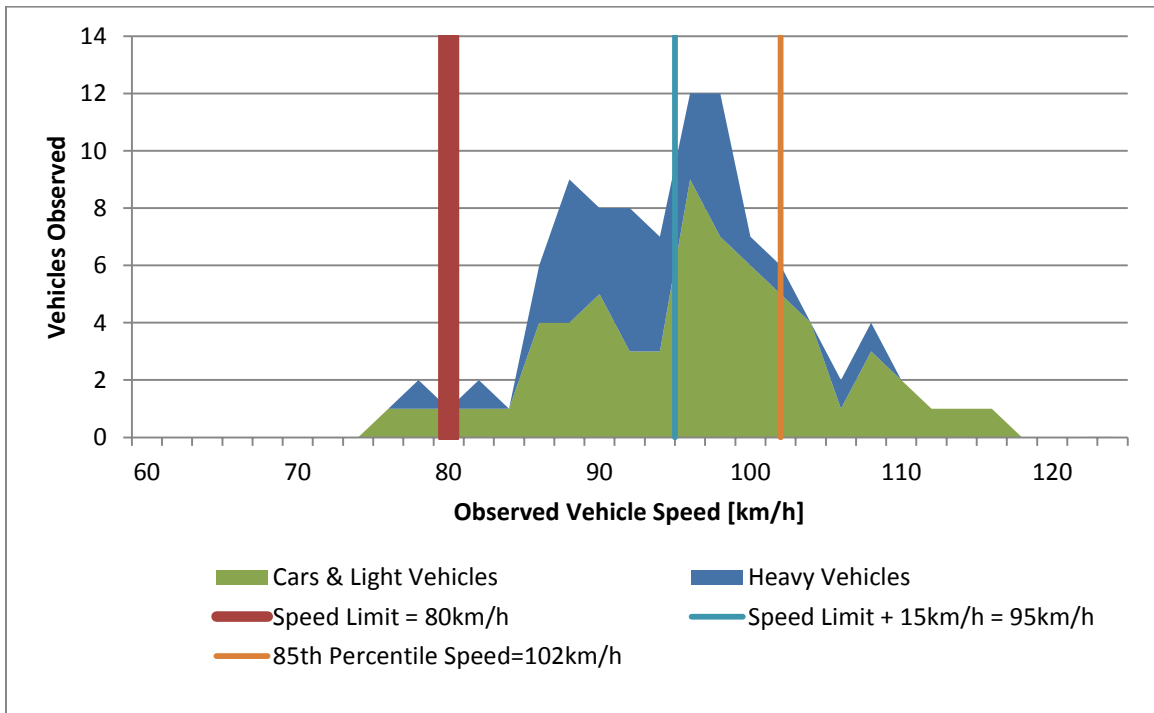


Exhibit 3-2: Speed Survey at Theatre Road (Westbound Traffic)

4. AUGUSTINE ROAD INTERSECTION

Spot speed surveys were conducted approximately 400 m east of the Augustine Road intersection between 3:00 pm to 4:00 pm for vehicles travelling in the eastbound direction and between 4:00 pm and 5:00 pm for vehicles travelling in the westbound direction. This is considered an off-peak period for eastbound travel and a peak period for westbound travel along the County Road 2 study corridor.

The posted speed limit at this location is 80 km/h. The 85th percentile speed is 74 km/h for both the eastbound and westbound directions. This suggests that the majority of the drivers are travelling at speeds below the posted speed limit.

Vehicles that were observed to be travelling at speeds that exceed the posted limit by more than 15 km/h were also considered. **Exhibit 4-1** and **Exhibit 4-2** show the distribution of the speeds at which vehicles were observed to be travelling.

Of the 89 eastbound vehicles that were observed during the speed survey at this location, no vehicles were observed to be travelling at speeds above 95 km/h. That is, none of the vehicles were observed to be travelling at speeds above what would be considered reasonable by *Highway Traffic Act, Ontario Regulation 339/94*.

Of the 63 westbound vehicles that were observed during the speed survey at this location, no vehicles were observed to be travelling at speeds above 95 km/h. That is, none of the vehicles were observed to be travelling at speeds above what would be considered reasonable by *Highway Traffic Act, Ontario Regulation 339/94*.

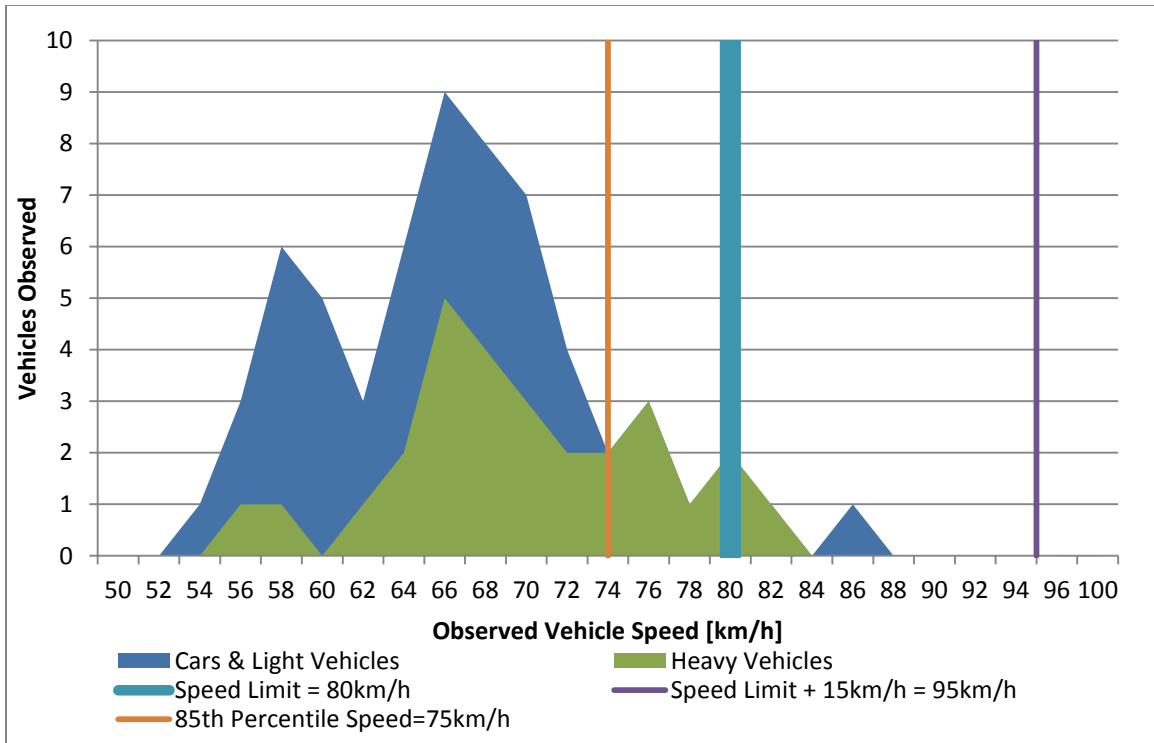


Exhibit 4-1: Speed Survey at Augustine Road (Eastbound Traffic)

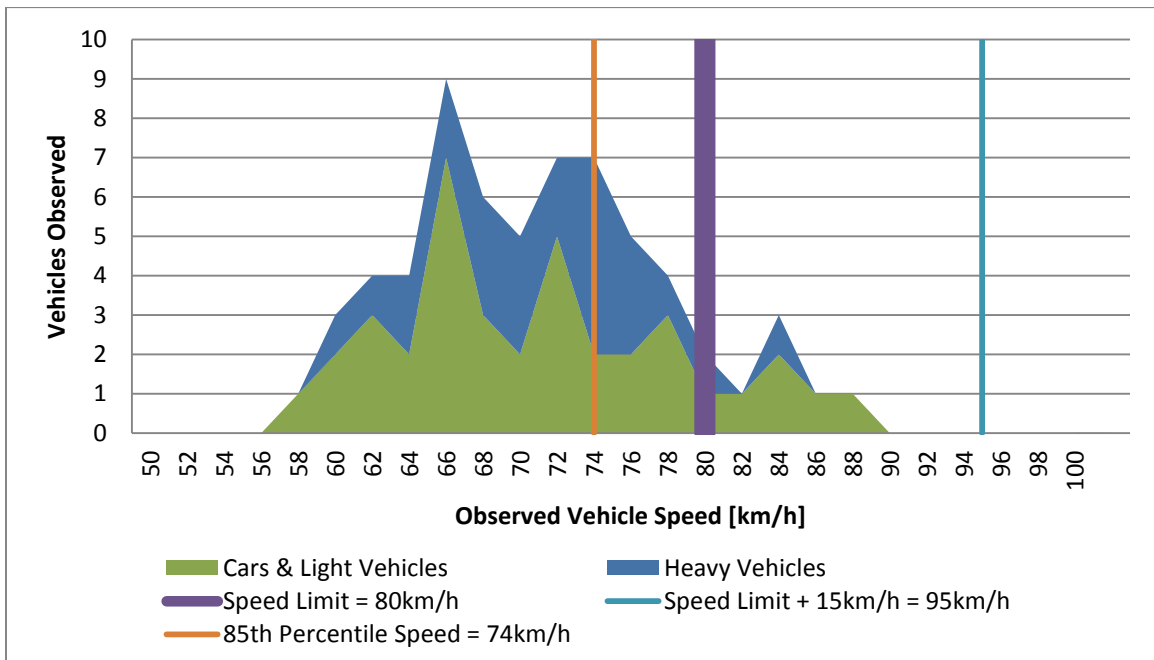


Exhibit 4-2: Speed Survey at Augustine Road (Westbound Traffic)

5. HAMILTON ROAD INTERSECTION

Spot speed surveys were conducted approximately 200 m east of the Hamilton Road intersection between 5:00 pm to 5:35 pm for vehicles travelling in the eastbound direction and between 5:35 pm and 6:15 pm for vehicles travelling in the westbound direction. This is considered a peak period for travel along the County Road 2 study corridor.

The posted speed limit at this location is 60 km/h. The 85th percentile speed is 78 km/h for the eastbound direction and 74 km/h for the westbound direction. This suggests that the majority of the drivers are travelling at speeds above the posted speed limit.

Vehicles that were observed to be travelling at speeds that exceed the posted limit by more than 15 km/h were also considered. **Exhibit 5-1** and **Exhibit 5-2** show the distribution of the speeds at which vehicles were observed to be travelling.

Of the 99 eastbound vehicles that were observed during the speed survey at this location, 26 vehicles were observed to be travelling at speeds above 75 km/h. That is, 26% of the vehicles were observed to be travelling at speeds above what would be considered reasonable by *Highway Traffic Act, Ontario Regulation 339/94*.

Of the 61 westbound vehicles that were observed during the speed survey at this location, 10 vehicles were observed to be travelling at speeds above 75 km/h. That is, 16% of the vehicles were observed to be travelling at speeds higher than the reasonable range of the posted speed limit.

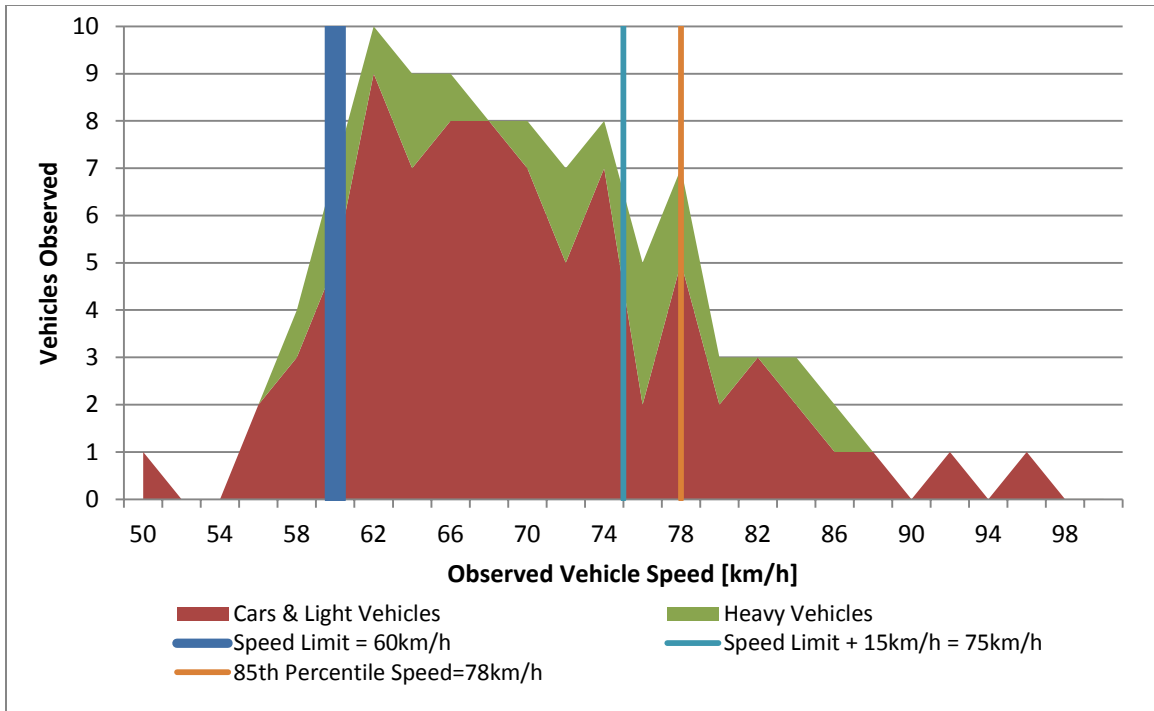


Exhibit 5-1: Speed Survey at Hamilton Road (Eastbound Traffic)

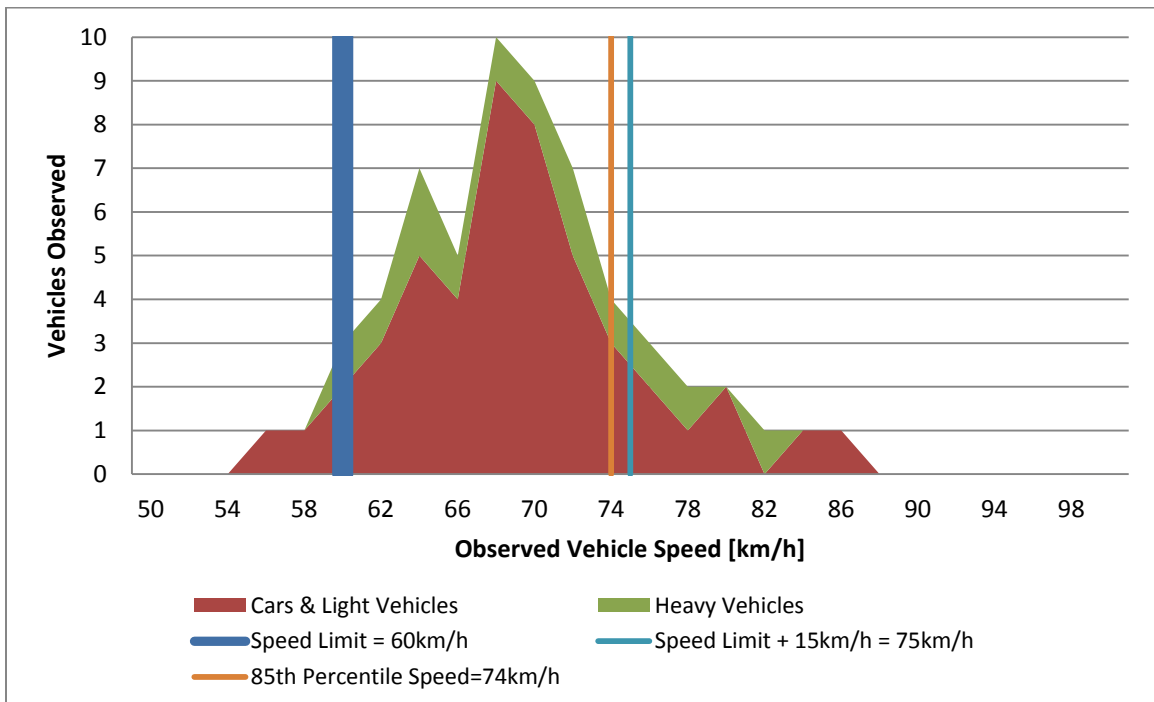


Exhibit 5-2: Speed Survey at Hamilton Road (Westbound Traffic)

6. OBSERVATIONS AND DISCUSSION

The speed surveys show observed speeding in the study limits during both the peak and off-peak time periods. The high occurrence of speeding, up to 54% of drivers travelling at speeds above the posted speed limit by 15 km/h or more, up to 124 km/h within the rural section of the study corridor, makes it difficult for drivers that are trying to access their residential properties or enter into local businesses that front onto County Road 2. In addition, the excessive speeds create safety concerns for these property owners. This confirms the need for a two-way centre left turn lane as a refuge for drivers trying to make a left turn into properties fronting onto County Road 2 as well as drivers trying to exit from their properties and access County Road 2.

The observed difference between the posted speed limits and the observed 85th percentile speed show that most drivers are driving at speeds that are above the posted speed limit. This suggests that the road geometry may encourage speeding, particularly at Theatre Road and Hamilton Road.

In most cases, speeding results from habit and poor road design, not from an intentional decision to break the law. Drivers often speed because they are so familiar with their own neighborhood that they do not realize how fast they are traveling. Other reasons include drivers trying to keep up with other traffic; or they perceive that they can drive fast on County Road 2. Drivers commonly speed on streets that are too straight and wide open. Drivers perceive County Road 2 to be a “fast” road because it is fairly straight and flat with a wide roadway platform and infrequent crossroads. Widening County Road 2 would exacerbate the perception of County Road 2 being a “fast” road. Widening would also make it more difficult for drivers to make a left turn to access properties that front onto County Road 2 because they would need to wait longer for a gap in two lanes of traffic to execute their turn.

The observed speed survey results near the Augustine Road intersection suggest that speeding may not be an issue at that location. The stretch of County Road 2 at this location is characterized by a greater number of properties with accesses onto County Road 2 with a short setback from the road right-of-way. The combination of closely spaced driveways with properties that are highly visible to drivers may contribute to the perception of this section of County Road 2 as being more “urban” and may discourage drivers from driving at increased speeds.

7. CONCLUSIONS

This speed study was conducted to confirm whether speeding was an issue on County Road 2 and to raise awareness about the issue of speeding along this corridor. To address the issue of speeding, the County Road 2 EA Technical Advisory Committee (TAC) proposed:

- To reduce the posted speed limit along the rural section of County Road 2 from 80 km/h to 70 km/h and
- To increase police enforcement of the speed limits.

It is noted that the above measures alone may not be sufficient for modifying driver behaviour. This is because the road geometry may be conducive to speeding in certain locations of the study corridor. Furthermore, enforcement should not be seen as a complete fix because officers will only be present on a temporary basis.

Design modifications and traffic calming measures can slow the speeds of drivers on such streets in two ways:

1. Horizontal changes (i.e., changing the road geometry) require drivers to do something other go straight (e.g., going around a traffic circle).
2. Vertical changes: motorists must go up and down (e.g., going over a raised crosswalk or speed hump).

While speed reductions can greatly increase pedestrian safety, the safety benefits of reduced speeds also extend to drivers and to cyclists. Roundabouts are considered an effective design modification and traffic calming measure to slow down traffic. A study published in London showed a 65% reduction in accidents when an intersection was converted to a roundabout.¹ A study of American roundabouts found that the introduction of roundabouts results in a reduced number of collisions. This study assessed rural, urban and suburban contexts separately. For rural locations where an intersection with a two-way stop on the minor street is converted to a roundabout, the study found a 71% reduction in all collisions and an 87% reduction in more severe Injury Collisions².

The TAC supported the use of roundabouts as a traffic calming measure for the County Road 2 study corridor. Consequently, a roundabout is recommended as a traffic calming measure at the Theatre Road intersection to reducing the travelling speed of drivers along County Road 2, particularly during the non-peak periods.

¹ Schoon, C. and van Minnen, J., "The Safety of Roundabouts in The Netherlands." *Traffic Engineering & Control*, Vol. 35, No. 3, London, United Kingdom, Hemming Information Services, (1994) pp. 142-148

² Rodegerdts, L. A., Blogg, M., Wemple, E., Myers, E., Kyte, M., Dixon, M., List, G., Flannery, A., Troutbeck, R., Brilon, W., Wu, N., Persaud, B., Lyon, C., Harkey, D., and Carter, D., "NCHRP Report 572: Applying Roundabouts in the United States." Washington, D.C., Transportation Research Board, National Research Council, (2007)

In summary, the following is recommended to reduce the travel speed of County Road 2 drivers in the rural section of the study corridor during the off-peak period:

1. Reduce the posted speed limit in the rural section of County Road 2 study area from 80 km/h to 70 km/h.
2. Increase police enforcement of speed limits, as appropriate.
3. Include the design of a roundabout in the middle of the rural section, at Theatre Road, to modify the design of the road so that drivers are forced to slow down.

Appendix A
Spot Speed Survey Forms

SPOT SPEED STUDY FORM

Request No. _____

**Ministry of
Transportation**

Highway No.	<u>County Rd 2</u>	Location	<u>200 m E of Hamilton Rd</u>
Region	<u>Hamilton</u>	Municipality	<u>Direction EB</u>
Date	<u>17-Nov-11</u>	Time Period	<u>17:00 - 17:35</u>
Study Conditions		Existing Speed Limit	<u>80</u>
Dist. From radar to edge of pavement	_____ (m)	Operator	<u>AP</u>
Weather:	<u>clean, partly cloudy, cloudy, sunshine, rain, snow, fog.</u>	Total traffic passing test point:	
Light:	<u>bright, dull, dusk, dark</u>	Vehicles:	<u>99</u>
Road surface:	Type: <u>Asphalt</u> Width: _____ (m)	Bicycles:	_____
Shoulders:	Type: <u>Exist</u> Width: _____ (m)	Pedestrians:	_____
Median:	Type: <u>None</u> Width: _____ (m)	Est. 85%-ile	_____
Sidewalks:	Type: <u>None</u> Width: _____ (m)		

Km/hr	* CARS AND LIGHT VEHICLES	TOTAL	HEAVY VEHICLES	TOTAL	Total Veh.	Cum Total	Cum %
over					0	0	0%
124					0	0	0%
122					0	0	0%
120					0	0	0%
118					0	0	0%
116					0	0	0%
114					0	0	0%
112					0	0	0%
110					0	0	0%
108					0	0	0%
106					0	0	0%
104					0	0	0%
102					0	0	0%
100					0	0	0%
98					0	0	0%
96	1	1			1	1	1%
94					0	1	1%
92	1	1			1	2	2%
90					0	2	2%
88	1	1			1	3	3%
86	1	1	1	1	2	5	5%
84	2	2	1	1	3	8	8%
82	3	3			3	11	11%
80	2	2	1	1	3	14	14%
78	5	5	2	2	7	21	21%
76	2	2	3	3	5	26	26%
74	7	7	1	1	8	34	34%
72	5	5	2	2	7	41	41%
70	7	7	1	1	8	49	49%
68	8	8	0		8	57	58%
66	8	8	1	1	9	66	67%
64	7	7	2	2	9	75	76%
62	9	9	1	1	10	85	86%
60	5	5	2	2	7	92	93%
58	3	3	1	1	4	96	97%
56	2	2			2	98	99%
54					0	98	99%
52					0	98	99%
50	1	1			1	99	100%
48					0	99	100%
46					0	99	100%
44					0	99	100%
42					0	99	100%
40					0	99	100%
under					0	99	100%
Total:	80	80	19	19	99	99	100%

SPOT SPEED STUDY FORM

Request No. _____

**Ministry of
Transportation**

Highway No.	County Rd 2	Location	200 m E of Hamilton Rd
Region	Hamilton	Municipality	Direction WB
Date	17-Nov-11	Time Period	Existing Speed Limit 80
Study Conditions			Operator AP
Dist. From radar to edge of pavement	_____ (m)		
Weather: clean, partly cloudy, cloudy, sunshine, rain, snow, fog.			Total traffic passing test point:
Light: bright, dull, dusk, dark			Vehicles: 61
Road surface: Type: <u>Asphalt</u>	Width: _____ (m)		Bicycles: _____
Shoulders: Type: <u>Exist</u>	Width: _____ (m)		Pedestrians: _____
Median: Type: <u>None</u>	Width: _____ (m)		
Sidewalks: Type: <u>None</u>	Width: _____ (m)		Est. 85%-ile _____

Km/hr	* CARS AND LIGHT VEHICLES	TOTAL	HEAVY VEHICLES	TOTAL	Total Veh.	Cum Total	Cum %
over					0	0	0%
124					0	0	0%
122					0	0	0%
120					0	0	0%
118					0	0	0%
116					0	0	0%
114					0	0	0%
112					0	0	0%
110					0	0	0%
108					0	0	0%
106					0	0	0%
104					0	0	0%
102					0	0	0%
100					0	0	0%
98					0	0	0%
96					0	0	0%
94					0	0	0%
92					0	0	0%
90					0	0	0%
88					0	0	0%
86	1	1			1	1	2%
84	1	1			1	2	3%
82			1	1	1	3	5%
80	2	2			2	5	8%
78	1	1	1	1	2	7	11%
76	2	2	1	1	3	10	16%
74	3	3	1	1	4	14	23%
72	5	5	2	2	7	21	34%
70	8	8	1	1	9	30	49%
68	9	9	1	1	10	40	66%
66	4	4	1	1	5	45	74%
64	5	5	2	2	7	52	85%
62	3	3	1	1	4	56	92%
60	2	2	1	1	3	59	97%
58	1	1			1	60	98%
56	1	1			1	61	100%
54					0	61	100%
52					0	61	100%
50					0	61	100%
48					0	61	100%
46					0	61	100%
44					0	61	100%
42					0	61	100%
40					0	61	100%
under					0	61	100%
Total:	48	48	13	13	61	61	100%

NWR - Dec 05

SPOT SPEED STUDY FORM

Request No. _____

**Ministry of
Transportation**

Highway No.	County Rd 2	Location	600 E of Augustine Rd
Region	Hamilton	Municipality	EB
Date	17-Nov-11	Time Period	15:00 - 16:00
Study Conditions		Existing Speed Limit	80
Dist. From radar to edge of pavement	_____ (m)	Operator	AP
Weather:	clean, partly cloudy, cloudy, sunshine, rain, snow, fog.	Total traffic passing test point:	
Light:	bright, dull, dusk, dark	Vehicles:	89
Road surface:	Type: Asphalt Width: _____ (m)	Bicycles:	_____
Shoulders:	Type: Exist Width: _____ (m)	Pedestrians:	_____
Median:	Type: None Width: _____ (m)	Est. 85%-ile	_____
Sidewalks:	Type: None Width: _____ (m)		

Km/hr	* CARS AND LIGHT VEHICLES	TOTAL	HEAVY VEHICLES	TOTAL	Total Veh.	Cum Total	Cum %
over					0	0	0%
124					0	0	0%
122					0	0	0%
120					0	0	0%
118					0	0	0%
116					0	0	0%
114					0	0	0%
112					0	0	0%
110					0	0	0%
108					0	0	0%
106					0	0	0%
104					0	0	0%
102					0	0	0%
100					0	0	0%
98					0	0	0%
96					0	0	0%
94					0	0	0%
92					0	0	0%
90					0	0	0%
88					0	0	0%
86	1	1			1	1	1%
84					0	1	1%
82	1	1	1	1	2	3	3%
80	1	1	2	2	3	6	7%
78	1	1	1	1	2	8	9%
76	3	3	3	3	6	14	16%
74	2	2	2	2	4	18	20%
72	4	4	2	2	6	24	27%
70	7	7	3	3	10	34	38%
68	8	8	4	4	12	46	52%
66	9	9	5	5	14	60	67%
64	6	6	2	2	8	68	76%
62	3	3	1	1	4	72	81%
60	5	5			5	77	87%
58	6	6	1	1	7	84	94%
56	3	3	1	1	4	88	99%
54	1	1			1	89	100%
52					0	89	100%
50					0	89	100%
under					0	89	100%
Total:	61	61	28	28	89	89	100%

SPOT SPEED STUDY FORM

Request No. _____

**Ministry of
Transportation**

Highway No.	County Rd 2	Location	400 E of Augustine Rd
Region	Hamilton	Municipality	Direction WB
Date	17-Nov-11	Time Period	Existing Speed Limit 80
Study Conditions			Operator AP
Dist. From radar to edge of pavement	_____ (m)		
Weather: clean, partly cloudy, cloudy, sunshine, rain, snow, fog.			
Light: bright, dull, dusk, dark			
Road surface: Type: _____	Asphalt	Width: _____ (m)	Total traffic passing test point:
Shoulders: Type: _____	Exist	Width: _____ (m)	Vehicles: 63
Median: Type: _____	None	Width: _____ (m)	Bicycles: _____
Sidewalks: Type: _____	None	Width: _____ (m)	Pedestrians: _____
			Est. 85%-ile _____

Km/hr	* CARS AND LIGHT VEHICLES	TOTAL	HEAVY VEHICLES	TOTAL	Total Veh.	Cum Total	Cum %
over					0	0	0%
124					0	0	0%
122					0	0	0%
120					0	0	0%
118					0	0	0%
116					0	0	0%
114					0	0	0%
112					0	0	0%
110					0	0	0%
108					0	0	0%
106					0	0	0%
104					0	0	0%
102					0	0	0%
100					0	0	0%
98					0	0	0%
96					0	0	0%
94					0	0	0%
92					0	0	0%
90					0	0	0%
88					0	0	0%
86	1	1			1	1	2%
84	1	1			1	2	3%
82	2	2	1	1	3	5	8%
80	1	1			1	6	10%
78	1	1	1	1	2	8	13%
76	3	3	1	1	4	12	19%
74	2	2	3	3	5	17	27%
72	2	2	5	5	7	24	38%
70	5	5	2	2	7	31	49%
68	2	2	3	3	5	36	57%
66	3	3	3	3	6	42	67%
64	7	7	2	2	9	51	81%
62	2	2	2	2	4	55	87%
60	3	3	1	1	4	59	94%
58	2	2	1	1	3	62	98%
56	1	1			1	63	100%
54					0	63	100%
52					0	63	100%
50					0	63	100%
under					0	63	100%
Total:	38	38	25	25	63	63	100%

NWR - Dec 05

SPOT SPEED STUDY FORM

Request No. _____

**Ministry of
Transportation**

Highway No.	<u>County Rd 2_loc1</u>	Location	<u>100 m E of Theatre Rd</u>
Region	<u>Hamilton</u>	Municipality	<u>Direction EB</u>
Date	<u>17-Nov-11</u>	Time Period	<u>13:45 - 14:20</u>
Study Conditions		Existing Speed Limit	<u>80</u>
Dist. From radar to edge of pavement	_____ (m)	Operator	<u>AP</u>
Weather:	<u>clean, partly cloudy, cloudy, sunshine, rain, snow, fog.</u>	Total traffic passing test point:	
Light:	<u>bright, dull, dusk, dark</u>	Vehicles:	<u>107</u>
Road surface:	Type: <u>Asphalt</u> Width: _____ (m)	Bicycles:	_____
Shoulders:	Type: <u>Exist</u> Width: _____ (m)	Pedestrians:	_____
Median:	Type: <u>None</u> Width: _____ (m)	Est. 85%-ile	_____
Sidewalks:	Type: <u>None</u> Width: _____ (m)		

Km/hr	* CARS AND LIGHT VEHICLES	TOTAL	HEAVY VEHICLES	TOTAL	Total Veh.	Cum Total	Cum %
over					0	0	0%
124					0	0	0%
122	1	1			1	1	1%
120	1	1			1	2	2%
118					0	2	2%
116	2	2			2	4	4%
114	1	1			1	5	5%
112	1	1			1	6	6%
110	2	2			2	8	7%
108	1	1			1	9	8%
106	1	1	1	1	2	11	10%
104	2	2			2	13	12%
102	4	4	2	2	6	19	18%
100	5	5	3	3	8	27	25%
98	3	3	2	2	5	32	30%
96	8	8	4	4	12	44	41%
94	11	11	2	2	13	57	53%
92	8	8	3	3	11	68	64%
90	9	9	1	1	10	78	73%
88	6	6	2	2	8	86	80%
86	9	9	4	4	13	99	93%
84	3	3	1	1	4	103	96%
82	1	1	1	1	2	105	98%
80			1	1	1	106	99%
78	1	1			1	107	100%
76					0	107	100%
74					0	107	100%
72					0	107	100%
70					0	107	100%
68					0	107	100%
66					0	107	100%
64					0	107	100%
62					0	107	100%
60					0	107	100%
under					0	107	100%
Total:	80	80	27	27	107	107	100%

NWR - Dec 05

SPOT SPEED STUDY FORM

Request No. _____

**Ministry of
Transportation**

Highway No.	<u>County Rd 2</u>	Location	<u>100 m E of Theatre Rd</u>
Region	<u>Hamilton</u>	Municipality	<u>Direction</u> <u>WB</u>
Date	<u>17-Nov-11</u>	Time Period	<u>14:20 - 15:00</u>
Study Conditions		Existing Speed Limit	<u>80</u>
Dist. From radar to edge of pavement	_____ (m)	Operator	<u>AP</u>
Weather:	<u>clean, partly cloudy, cloudy, sunshine, rain, snow, fog.</u>	Total traffic passing test point:	
Light:	<u>bright, dull, dusk, dark</u>	Vehicles:	<u>97</u>
Road surface:	Type: <u>Asphalt</u> Width: _____ (m)	Bicycles:	_____
Shoulders:	Type: <u>Exist</u> Width: _____ (m)	Pedestrians:	_____
Median:	Type: <u>None</u> Width: _____ (m)	Est. 85%-ile	_____
Sidewalks:	Type: <u>None</u> Width: _____ (m)		

Km/hr	* CARS AND LIGHT VEHICLES	TOTAL	HEAVY VEHICLES	TOTAL	Total Veh.	Cum Total	Cum %
over					0	0	0%
124					0	0	0%
122					0	0	0%
120					0	0	0%
118					0	0	0%
116	1	1			1	1	1%
114	1	1			1	2	2%
112	1	1			1	3	3%
110	2	2			2	5	5%
108	3	3	1	1	4	9	9%
106	1	1	1	1	2	11	11%
104	4	4			4	15	15%
102	5	5	1	1	6	21	22%
100	6	6	1	1	7	28	29%
98	7	7	5	5	12	40	41%
96	9	9	3	3	12	52	54%
94	3	3	4	4	7	59	61%
92	3	3	5	5	8	67	69%
90	5	5	3	3	8	75	77%
88	4	4	5	5	9	84	87%
86	4	4	2	2	6	90	93%
84	1	1			1	91	94%
82	1	1	1	1	2	93	96%
80	1	1			1	94	97%
78	1	1	1	1	2	96	99%
76	1	1			1	97	100%
74					0	97	100%
72					0	97	100%
70					0	97	100%
68					0	97	100%
66					0	97	100%
64					0	97	100%
62					0	97	100%
60					0	97	100%
under					0	97	100%
Total:	64	64	33	33	97	97	100%

NWR - Dec 05