

## **D. CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN**

Appendix D documents preliminary recommendations for “Crime Prevention Through Environmental Design” (CPTED) principles for the Town of Cobourg. The information herein is not an exhaustive list of CPTED principles, rather it is meant to provide guidance and direction to the Town when implementing CPTED principles. A detailed CPTED strategy should be developed for the Town. Recommendations for a CPTED strategy are provided herein.

### **D.1 CPTED Defined**

CPTED is an approach to planning and development that reduces opportunities for crime. Communities, neighbourhoods, individual homes, and other buildings, streets, and parks can all be made safer through the application of design principles that make it more difficult to carry out inappropriate activities.

CPTED is part of a comprehensive approach to crime prevention. By emphasizing modifications to the physical environment, it complements community-based policing, Block Watch, and social programs that address some of the root causes of criminal behaviour. CPTED can reduce crime and fear through the following principles:

- Territoriality: Fostering residents’ interaction, vigilance and control over their neighbourhood,
- Surveillance: Maximizing the ability to spot suspicious people and activities
- Activity support - encouraging the intended use of public space by residents
- Hierarchy of space - identifying ownership by delineating private space from public space through real or symbolic boundaries
- Access control/target hardening - using physical barriers, security devices and tamper-resistant materials to restrict entrance
- Environment - a design or location decision that takes into account the surrounding environment and minimizes the use of space by conflicting groups
- Image/Maintenance - ensuring that a building or area is clean, well-maintained, and graffiti-free

### **D.2 CPTED Strategy**

#### **D.2.1 Key Steps in a CPTED Project / Strategy**

When developing a CPTED strategy or engaging in a CPTED project, the following key steps should be considered:

- Engage the support of residents and other key partners (refer to Section H.2.3)
- Identify crime and disorder problems in and around a site

- Analyze current or proposed designs based on existing crime problems and potential criminal activities,
- Carry out the preferred option
- Monitor and evaluation how the implemented option affects crime, resident surveillance, interaction and territoriality,
- Disseminate and promote evaluation results

A CPTED strategy can be used to identify and remove problems in proposed developments and to correct existing design problems that may invite crime.

## **D.2.2 CPTED Tactics**

CPTED can be used to identify and remove potential problems in proposed developments. It can also be used to correct existing design problems that may attract crime. The following “CPTED tactics” can be applied to deter crime:

### Neighbourhood

- Minimize the number of entry and exit points on a block
- Design roadways to discourage through-traffic
- maximize residents’ ability to view public spaces
- encourage residents’ use of public spaces
- provide appropriate lighting for streets, paths, alleys, and parks
- encourage residents to watch over each other

### Housing

- clearly delineate private property (e.g., yard, driveway, walkway) from public space (e.g., street, sidewalk) through shrubbery, alternate paving stone colour, and changes in grade
- provide unobstructed views of surrounding area
- ensure entrances are visible and overlooked by window
- avoid landscaping that may conceal offenders
- install bright security lights
- use solid-core exterior doors
- use solid door frames with proper strike plates

### Apartment Buildings

- provide common spaces to encourage tenant interaction
- minimize the number of units sharing a common entrance
- equip entrances with an intercom system
- ensure hallways are well-lit
- install deadbolt locks and peep holes on unit doors
- provide children’s areas that can be easily observed
- provide windows that allow for surveillance in laundry rooms

### Parking Lots and Garages

- avoid enclosed, underground, multi-story garages
- install bright lights over driving lanes and parking spaces
- use paint to increase light levels
- control access and egress with automatic doors and gates
- avoid pillars and recesses that may hide offenders

### Public Spaces

- encourage use by legitimate users
- avoid placing dark, and or hidden areas near activity nodes
- install appropriate lighting
- avoid placing covered outdoor areas where loitering may be a problem

## **D.2.3 Key Partnerships**

CPTED is most effective when it is fully supported by the community. The Town of Cobourg should consider forming strategic partnerships, identified below, as part of a CPTED strategy. Key partners should include:

- Neighbourhood residents who can make their communities safer through participation in the development and implementation of CPTED-based strategies for crime,
- New Home Buyers – who can ask for a home that is constructed to CPTED principles,
- Apartment Building Managers – who can organize the safety of tenants
- Elected Officials – who can encourage the integration of CPTED principles into official plans, zoning by-laws and development permits,
- Police Officers – who can conduct CPTED assignments in existing neighbourhoods and review applications for new developments
- Insurance Companies – who can offer discounts for safe designs.

**Appendix E**  
**Traffic Count Inventory**

**Table E1: Traffic Count Inventory**

<b>Data Type</b>	<b>Location</b>	<b>Count Date</b>
<b>Signalized Intersections</b>		
TMC	Albert Street at Hibernia Street	September 21, 2010
TMC	Albert Street at Third Street	September 21, 2010
TMC	De Palma Drive at Burnham Street	September 15, 2010
TMC	Division Street at Albert Street	September 16, 2010
TMC	Division Street at Densmore Road	September 16, 2010
TMC	Division Street at Ewart Street	September 21, 2010
TMC	Division Street at King Street	September 16, 2010
TMC	Division Street at Park Street-Munro Street	September 21, 2010
TMC	Division Street at University Avenue	September 16, 2010
TMC	Division Street at Veronica Drive (N)	September 16, 2010
TMC	Elgin Street at Birchwood Trail	September 15, 2010
TMC	Elgin Street at Burnham Street-William Street	September 15, 2010
TMC	Elgin Street at Division Street	September 15, 2010
TMC	Elgin Street at Frei Street	September 15, 2010
TMC	Elgin Street at New Amherst Blvd	September 15, 2010
TMC	Elgin Street at Ontario Street	September 15, 2010
TMC	Elgin Street at Rogers Road	September 15, 2010
TMC	Elgin Street at Strathy Road	September 15, 2010
TMC	King Street at Brook Road North	September 21, 2010
TMC	King Street at D'Arcy Street	September 21, 2010
TMC	King Street at George Street-Third Street	September 21, 2010
TMC	King Street at Spring Street-Hibernia Street	September 21, 2010
TMC	King Street at William Street-Ontario Street	September 21, 2010
TMC	Strathy Road at De Palma Drive	September 15, 2010
TMC	Strathy Road at Walmart Driveway	September 15, 2010
TMC	University Avenue at George Street	September 16, 2010
TMC	University Avenue at Ontario Street	September 16, 2010
TMC	William Street at Harden Street	September 16, 2010
TMC	William Street at Heath Street	September 16, 2010
TMC	William Street at University Avenue	September 16, 2010
<b>Two-way Stop Intersections</b>		
TMC	Albert Street at Ontario Street	September 21, 2010
TMC	University Avenue at D'Arcy Street	September 21, 2010
TMC	University Avenue at Spring Street	September 16, 2010

**Table E1: Traffic Count Inventory (cont.)**

<b>Data Type</b>	<b>Location</b>	<b>Count Date</b>
<b>Link Volumes</b>		
ATR	Albert Street between Second Street and Division Street	September 12-19, 2010
ATR	D'Arcy Street between King Street East and Queen Street	September 12-19, 2010
ATR	D'Arcy Street between King Street East and Chapel Street	September 12-19, 2010
ATR	D'Arcy Street between Burnet Drive and Elgin Street East	September 20-27, 2010
ATR	Densmore Road east of Division Street	September 12-19, 2010
ATR	De Palma Drive west of Burham Street	September 20-27, 2010
ATR	Division Street between King Street and Albert Street-Queen Street	September 12-19, 2010
ATR	Division Street between Swayne Street and Covert Street	September 20-27, 2010
ATR	Division Street north of Railway overpass	September 20-27, 2010
ATR	Division Street between Ballantine Street and Elgin Street	September 20-27, 2010
ATR	Division Street between Elgin Street and Veronica Street	September 20-27, 2010
ATR	Ewart Street east of Division Street	September 20-27, 2010
ATR	Frei Street, north of Elgin Street West	September 12-19, 2010
ATR	George Street between King Street and Covert Street	September 12-19, 2010
ATR	Harden Street west of William Street	September 12-19, 2010
ATR	Heath Street west of William Street	September 12-19, 2010
ATR	Hibernia Street between King Street and Albert Street	September 12-19, 2010
ATR	King Street between Bagot Street and Durham Street / Ball Street	September 12-19, 2010
ATR	King Street between Second Street and Division Street	September 12-19, 2010
ATR	King Street between McGill Street and College Street	September 12-19, 2010
ATR	Munroe Street east of Division Street	September 20-27, 2010
ATR	New Amherst Blvd south of Elgin Street West	September 12-19, 2010
ATR	Ontario Street north of Elgin Street West	September 12-19, 2010
ATR	Ontario Street south of Elgin Street West	September 12-19, 2010
ATR	Ontario Street north of Railway overpass	September 12-19, 2010
ATR	Ontario Street between University Avenue West and King Street West	September 12-19, 2010
ATR	Park Street between Park Lane and George Street	September 20-27, 2010
ATR	Rogers Road south of Elgin Street West	September 12-19, 2010
ATR	Spring Street between King Street and Orange Street	September 12-19, 2010
ATR	Strathy Road north of Elgin Street West	September 12-19, 2010
ATR	Third Street between Albert Street and King Street	September 12-19, 2010
ATR	University Avenue East between John Street and College Street	September 20-27, 2010
ATR	University Avenue West between Division Street and George Street	September 20-27, 2010
ATR	Veronica Street west of Division Street (north connection to Division Street near Baltimore Road)	September 12-19, 2010
ATR	William Street between King Street West and University Avenue West	September 12-19, 2010
ATR	William Street between Harden Street and Railway overpass	September 12-19, 2010
ATR	William Street south of Elgin Street West	September 20-27, 2010

TMC – Turning Movement Counts  
 ATR – Automatic Traffic Recorders

**Appendix F**  
**Collision History Review**

## F. COLLISION HISTORY REVIEW

As part of the scope of this TMP, the consultant reviewed the collision history of five collision “hot spots” identified by Town staff with input from Cobourg Police Services. The purpose of the collision analysis was to identify trends in collision history and determine whether the “hot spots” intersections are subject to operational issues. This collision analysis should not be taken for a road safety audit, a more in-depth assessment of issues and solutions.

The 3-year collision history, 2007 to 2009 inclusive, were collected and reviewed for the following five intersections:

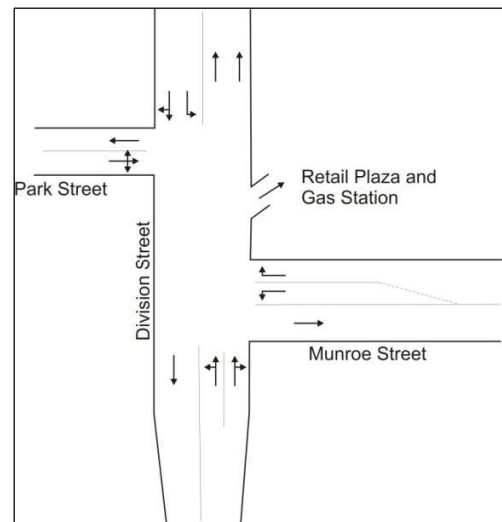
1. Division Street / Munroe Street-Park Street
2. Division Street / University Avenue
3. William Street / Heath Street
4. University Avenue / D'Arcy Street
5. King Street / George Street

### F.1 Division Street / Park Street-Munroe Street

#### Context

The intersection of Division Street / Park Street-Munroe Street is a jogged intersection, that is, the east and west approaches are off-set from each other. One set of traffic signals serves all approaches to the intersection. A number of commercial driveways are present on all approaches to the intersection, including an inbound driveway to the retail plaza and gas station within the intersection itself.

#### Exhibit F-1: Division Street / Park Street-Munroe Street Intersection



Not to scale.



## Collision History

The collision data treated this area as two separate intersections. For the purposes of this discussion the data was aggregated and treated as one intersection.

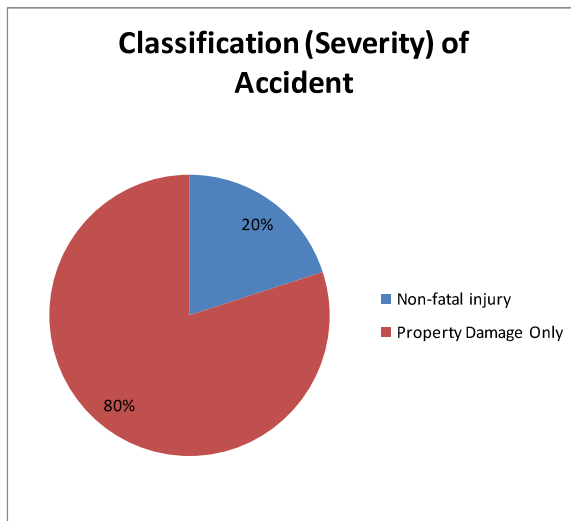
The analysis of 2007-2009 collision data revealed a total of twenty collisions at this jogged intersection, with a collision rate of 1.42 collisions per million vehicles that enter the intersection. As Exhibit F-2 illustrates, 80% of the collisions only caused property damage, while the other 20% of collisions resulted in a non-fatal injury.

Overall, rear-end collisions were most prevalent at this intersection, with angle collisions being the second most prevalent. Turning movement collisions, sideswipes and approach collisions make up the rest of the collision impact types at this intersection, as illustrated in Exhibit F-3. This is consistent with the findings when the direction of travel was reviewed. The majority of the collisions at this intersection involved two vehicles travelling in the same direction, which implies rear-end collisions are prevalent.

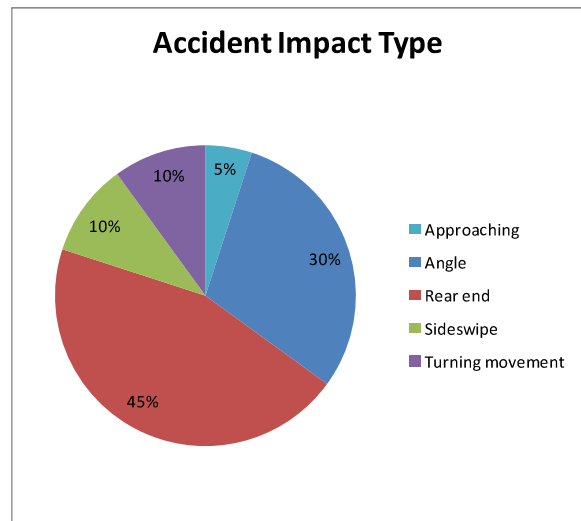
The “jog” formed by Park Street and Munroe Street, along with the six driveways onto adjacent commercial properties is a potential source of driver confusion, which likely results in a higher number of collisions at this intersection. However, it should be noted that traffic volumes at this intersection are also higher than average for Cobourg.

Eighty percent of the collisions occur in clear weather with dry pavement, while the remaining 20% occurred in wet or rainy conditions, as illustrated in Exhibit F-4. All 20 collisions occurred during daylight hours. The frequency of collisions that occur in poor weather conditions are consistent with general exposure of traffic to these conditions.

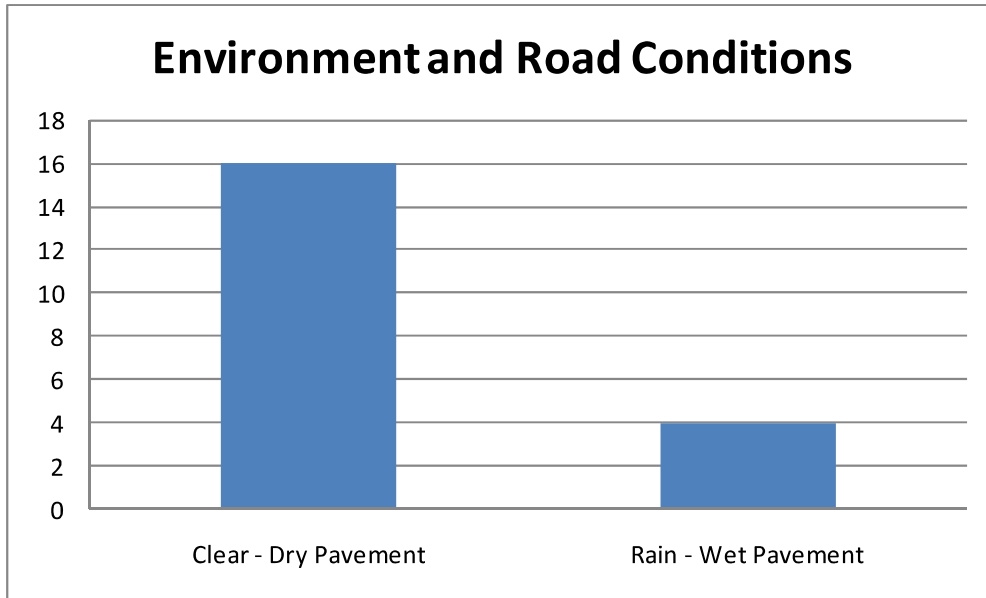
**Exhibit F-2: Collision Impact Type Summary**



**Exhibit F-3: Collision Classification Summary**



**Exhibit F-4: Weather and Road Conditions Summary**



**Table F-1: Division Street / Park Street Collision Summary**

Impact Type	Total	Direction of Travel	Total	Classification (Severity) of Accident	Total	Environment Condition	Total	Road Condition	Total	Light	Total
Approaching	0	NB / SB	1	Non-fatal Injury	1	Clear	3	Dry	3	Daylight	3
Angle	0	NB / NB	1	Property Damage Only	2	Rain	0	Wet	0	Dark	0
Rear end	1	SB / SB	1			Snow	0	Packed Snow	0	Dark w/ artificial light	0
Sideswipe	1										
Turning movement	1										
Other	0										
<b>Total</b>	<b>3</b>	<b>Total</b>	<b>3</b>	<b>Total</b>	<b>3</b>	<b>Total</b>	<b>3</b>	<b>Total</b>	<b>3</b>	<b>Total</b>	<b>3</b>

**Table F-2: Division Street / Munroe Street Collision Summary**

Impact Type	Total	Direction of Travel	Total	Classification (Severity) of Accident	Total	Environment Condition	Total	Road Condition	Total	Light	Total
Approaching	1	NB / NB	4	Non-fatal Injury	3	Clear	13	Dry	13	Daylight	17
Angle	6	NB / WB	3	Property Damage Only	14	Rain	4	Wet	4	Dark	0
Rear end	8	SB / EB	3			Snow	0	Packed Snow	0	Dark w/ artificial light	0
Sideswipe	1	EB / EB	2								
Turning movement	1	WB / WB	2								
Other	0	NB / SB	1								
		SB / SB	1								
		NB / EB	1								
<b>Total</b>	<b>17</b>	<b>Total</b>	<b>17</b>	<b>Total</b>	<b>17</b>	<b>Total</b>	<b>17</b>	<b>Total</b>	<b>17</b>	<b>Total</b>	<b>17</b>

### Recommendations

Compared to all other Cobourg intersections (of non-County Roads), this intersection has the highest number of collisions in Cobourg. One reason for the higher rate of collisions at this location is the “jogged” intersection which is unexpected to drivers. Eliminating the jog between Park Street on the west and Munroe Street on the east and reducing the number of driveways in close proximity to the intersection could reduce the collision rate at this location.

Several options for geometric improvement could be considered:

- Realign Munroe Street to the north by acquiring land from the No Frills plaza on the east side.
- Realign Park Street to the south by acquiring land from the Animal Hospital on the west side.
- Reduce conflicting movements through the intersection by converting Park Street to one-way westbound.

Operational improvements that could be implemented without realigning the intersection include:

- Closure of the No Frills inbound driveway located within the intersection between Munroe Street and Park Street.

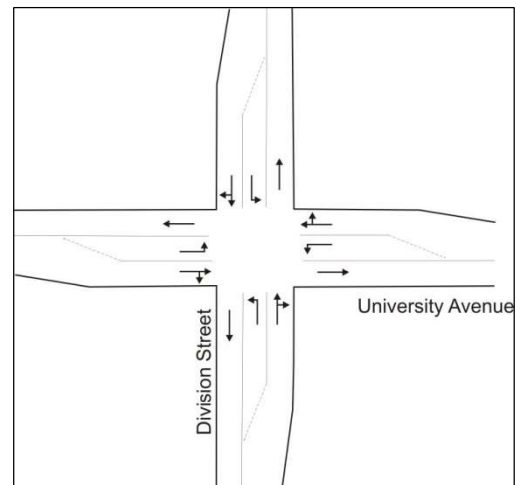
- Closure or relocation of commercial driveways located in close proximity to the intersection to reduce conflicts between vehicles in queue at the intersection and vehicles exiting/entering the commercial properties.
- Installation of optically programmable signal heads to reduce driver confusion within the intersection. Currently, drivers unfamiliar with the jogged intersection may unexpectedly stop in the middle of the intersection as they may treat the single intersection as two separate intersections and perceive the farside signal heads to be for the second “intersection.”
- Closure of the access between Park Street and Division Street (both ways).

## **F.2 Division Street / University Avenue**

### **Context**

The intersection of Division Street/ University Avenue is located two blocks south of the Division Street / Park Street-Munroe Street intersection. On each approach to this intersection, exclusive left-turn lanes are provided. A number of private residential, commercial and institutional driveways are located in close proximity to this intersection.

### **Exhibit F-5: Division Street / University Avenue Intersection**



Not to scale.

### **Collision History**

The analysis of 2007-2009 collision data revealed a total of sixteen collisions at the signalized four-way intersection of Division Street and University Avenue for a collision rate of 1.023 collisions per million vehicles entering this intersection. Seven of these collisions, or 44%, resulted a non-fatal injury, while the remaining nine, or 56%, resulted in property damage only as summarized in Exhibit F-6. Exhibit F-7 summarizes the collision impact type.

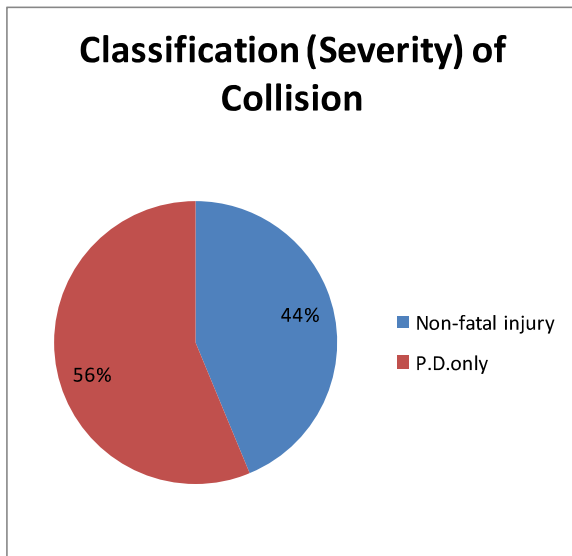
Overall, rear-end collisions were most prevalent at this intersection, which can occur due to drivers failing to stop before the traffic light queue. Half of these collisions were either angle

or turning movement collisions which could indicate that the collisions are a result of drivers disobeying their traffic signals at this intersection. The remaining three collisions are sideswipe collisions.

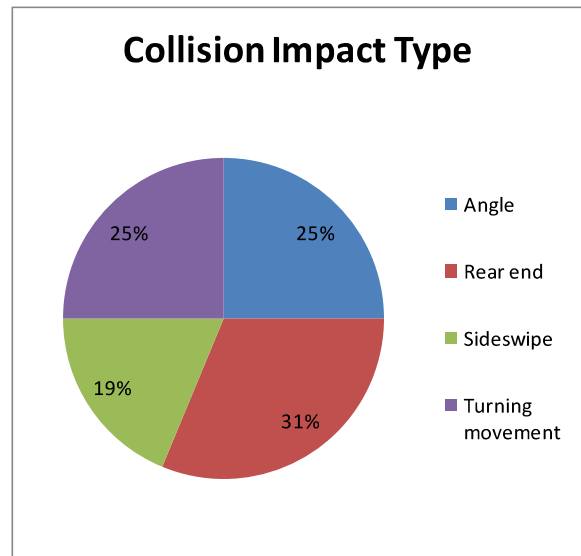
When the collision types are checked with the direction of travel for the vehicles involved, it is evident that the angle and turning movement collisions involve vehicles travelling in conflicting directions. The higher than average traffic volumes at this intersection may have contributed to the higher than average frequency of collisions.

Seventy-five percent of the collisions occur in clear weather with dry pavement, while the rest occurred in wet or rainy conditions, as illustrated in Exhibit F-8. Thirteen of the 16 collisions occurred during daylight hours. The frequency of collisions that occur in poor weather conditions and during non-daylight hours are consistent with general exposure of traffic to these conditions.

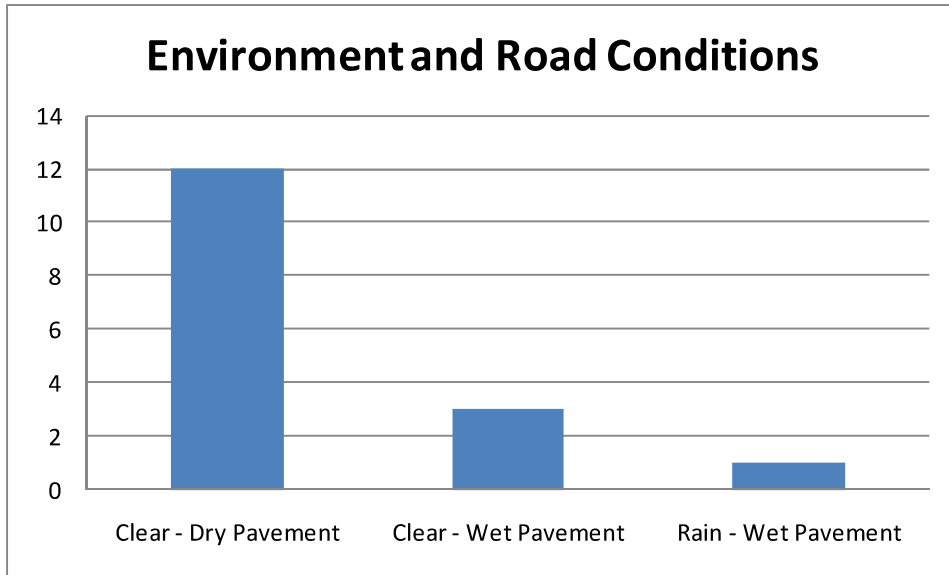
**Exhibit F-6: Collision Classification Summary**



**Exhibit F-7: Collision Impact Type Summary**



**Exhibit F-8: Weather and Road Conditions Summary**



**Table F-3: Division Street / University Avenue Collision Summary**

Impact Type	Total	Direction of Travel	Total	Classification (Severity) of Accident	Total	Environment Condition	Total	Road Condition	Total	Light	Total
Approaching	0	SB / SB	4	Non-fatal Injury	7	Clear	15	Dry	12	Daylight	13
Angle	4	EB / WB	2	Property Damage Only	9	Rain	1	Wet	4	Dark	1
Rear end	5	SB / EB	2			Snow	0	Packed Snow	0	Dark w/ artificial light	2
Sideswipe	3	EB / EB	2								
Turning movement	4	NB / SB	2								
Other	0	NB / EB	1								
		EB	1								
		NB / NB	1								
		SB / WB	1								
<b>Total</b>	<b>16</b>	<b>Total</b>	<b>16</b>	<b>Total</b>	<b>16</b>	<b>Total</b>	<b>16</b>	<b>Total</b>	<b>16</b>	<b>Total</b>	<b>16</b>

## Recommendations

Observed traffic operations at this intersection indicate that this is a busy intersection with queuing during the peak periods and interaction of traffic flows / queues between this intersection and Division Street / Park Street-Munroe Street intersection. Potential operational improvements include:

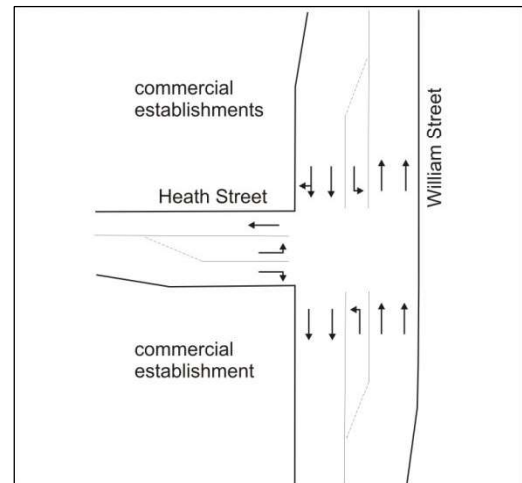
- Traffic signal coordination between Division Street / University Avenue and Division Street / Park Street-Munroe Street.
- Set-back stop bars for left-turn lanes – several larger vehicles (buses, school buses, etc.) were observed at this intersection. For turning movements, set-back stop bars would provide additional “space” for completing left-turn movements.

## F.3 William Street / Heath Street

### Context

The intersection of William Street / Heath Street is a 3-legged, T-intersection. On the northbound and eastbound approaches, exclusive left-turn lanes are provided. A Wendy's and a McDonald's establishments are located on the northwest quadrant. A Tim Horton's establishment is located on the southwest quadrant. All of the commercial establishments have a drive-through window. A median was recently installed on the north leg of the intersection to prohibit left-turn movements from two of the three driveways located north of the intersection.

### Exhibit F-9: William Street / Heath Street Intersection



Not to scale

### Collision History

The analysis of 2007-2009 collision data revealed a total of twelve collisions at the signalized T-intersection of William Street and Heath Street with a collision rate of 0.781 collisions per

million vehicles that enter the intersection. As Exhibit F-10 demonstrates, 75% of the collisions caused property damage only, while 25% of the collisions resulted in a non-fatal injury.

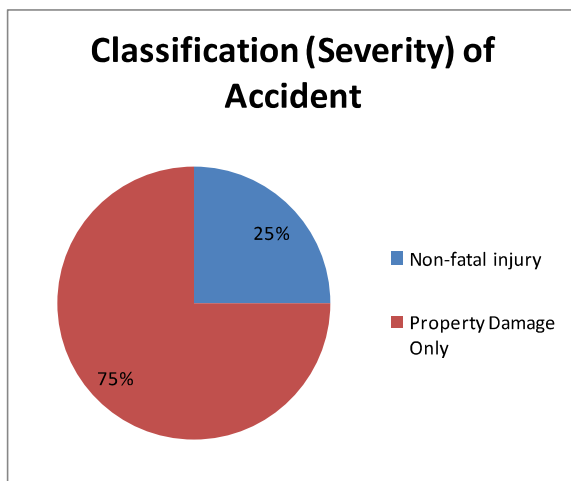
Overall, rear-end collisions were most prevalent at this intersection, which can occur due to drivers failing to stop before the traffic light queue. Turning movement collisions were the second most prevalent types of impact followed by angle and sideswipe collisions, as illustrated in see Exhibit F-11. When the vehicles' direction of travel are investigated, the higher incidence rear-end collisions is confirmed as the majority of collisions involve vehicles that are travelling in the same direction.

The most common direction of vehicles involved in collisions at this intersection is southbound which can be explained by higher southbound volumes through this intersection due to the presence of the three right-in / right-out driveways which add to traffic volumes on this stretch of William Street.

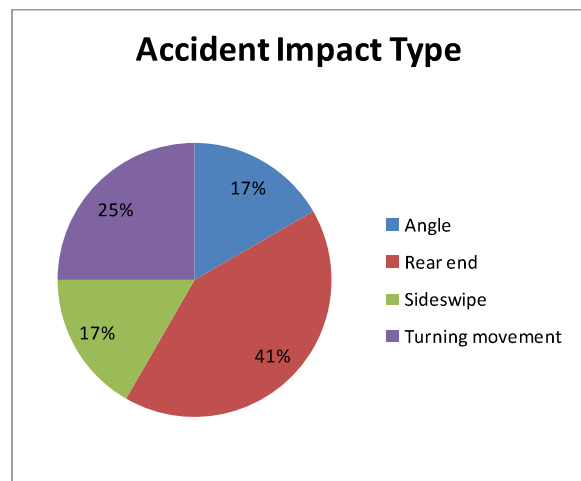
The alignment of these driveways is a possible cause of higher turning volumes at this intersection on both William Street and Heath Street, which in turn may be one of the reasons behind the higher than average frequency of traffic collisions at this intersection.

As shown in Exhibit F-12, six of the 12 collisions occurred in clear weather with dry pavement, while the rest occurred in less than ideal conditions, such as wet pavement, rain and snow. This is a higher than average proportion of collisions that occur in poor weather or road conditions and it should be noted that three of the collisions at this intersection occurred due to drivers losing control of their vehicles in slippery road conditions. All twelve collisions occurred during daylight hours.

**Exhibit F-10: Collision Classification Summary**

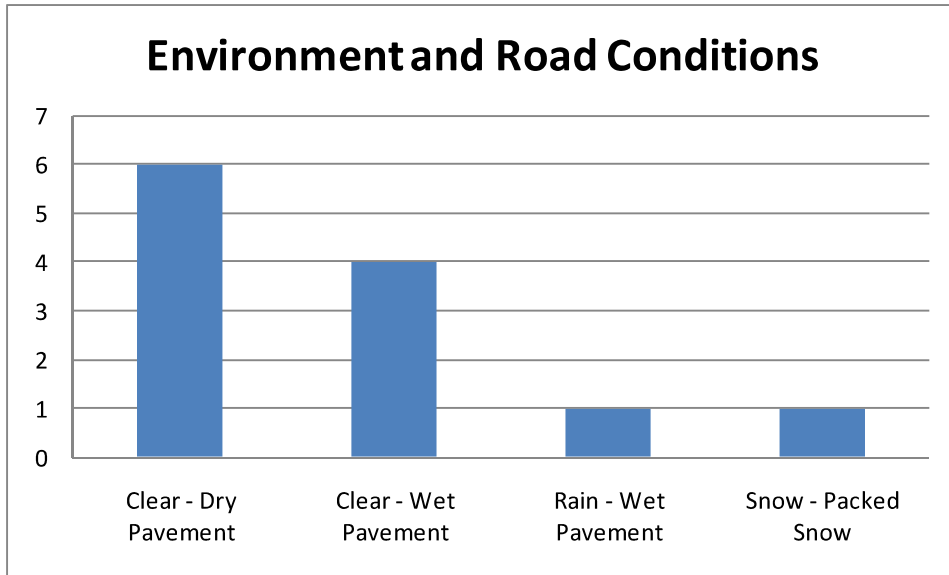


**Exhibit F-11: Collision Impact Type Summary**





**Exhibit F-12: Weather and Road Conditions Summary**



**Table F-4: William Street / Heath Street Collision Summary**

Impact Type	Total	Direction of Travel	Total	Classification (Severity) of Accident	Total	Environment Condition	Total	Road Condition	Total	Light	Total
Approaching	0	SB / SB	4	Non-fatal Injury	3	Clear	10	Dry	6	Daylight	12
Angle	2	SB / EB	3	Property Damage Only	9	Rain	1	Wet	5	Dark	0
Rear end	5	NB / NB	2			Snow	1	Packed Snow	1	Dark w/ artificial light	0
Sideswipe	2	EB / EB	2								
Turning movement	3	EB	1								
Other	0										
<b>Total</b>	<b>12</b>	<b>Total</b>	<b>12</b>	<b>Total</b>	<b>12</b>	<b>Total</b>	<b>12</b>	<b>Total</b>	<b>12</b>	<b>Total</b>	<b>12</b>

**Recommendations**

Recent improvements along William Street, including a centre median, have reduced a number of conflict points on the William Street southbound approach.

Other recommendations resulting from a review of the current operations include:

- Adopting access management guidelines to prevent similar situations with closely-spaced driveways that reduce storage potential for queues and create blockages to the driveways.

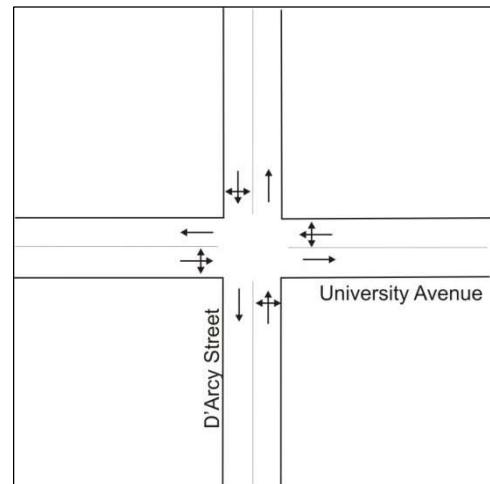
- Increase on-site queue storage for drive-through establishments to reduce the potential for queue spill-back on to the roadway.

## **F.4 D’Arcy Street / University Avenue**

### **Context**

D’Arcy Street is currently under construction north of university and closed to through traffic at the time of the field review. The intersection is stopped controlled on University Avenue with a flashing overhead beacon (flashing red for University Avenue and flashing amber for D’Arcy Street).

### **Exhibit F-13: D’Arcy Street / University Avenue Intersection**



Not to scale.

### **Collision History**

The analysis of 2007-2009 collision data revealed a total of four collisions at the four-way, unsignalized intersection of D’Arcy Street and University Avenue with a collision rate of 0.544 collisions per million vehicles that enter this intersection. All four collisions resulted in property damage only. Overall, there were three angle collisions and one turning movement collision at this intersection. These types of collisions are consistent with the direction of travel for the vehicles involved in these collisions, since all of the collisions involve vehicles travelling in conflicting movements. All four collisions were in clear, dry conditions and two of the collisions occurred during daylight hours.

### **Recommendations**

The collision history does not indicate any collision trends or issues and no recommendations are identified. As D’Arcy Street is currently under construction north of University Avenue, a further review of this intersection could be conducted after a few years of operation.

**Table F-5: D’Arcy Street / University Avenue Collision Summary**

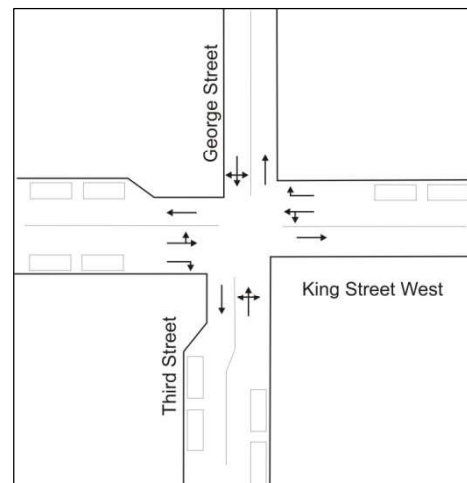
Impact Type	Total	Direction of Travel	Total	Classification (Severity) of Accident	Total	Environment Condition	Total	Road Condition	Total	Light	Total
Approaching	0	NB / EB	2	Non-fatal Injury	0	Clear	4	Dry	4	Daylight	2
Angle	3	SB / EB	1	Property Damage Only	4	Rain	0	Wet	0	Dark	1
Rear end	0	NB / WB	1			Snow	0	Packed Snow	0	Dark w/ artificial light	1
Sideswipe	0										
Turning movement	1										
Other	0										
<b>Total</b>	<b>4</b>	<b>Total</b>	<b>4</b>	<b>Total</b>	<b>4</b>	<b>Total</b>	<b>4</b>	<b>Total</b>	<b>4</b>	<b>Total</b>	<b>4</b>

## **F.5 King Street / George Street-Third Street**

### **Context**

The intersection of King Street / George Street-Third Street is located in the retail main street area of Cobourg. George and Third Streets are separate north-south streets that do not align exactly with each other, forming a minor “jogged” intersection. One set of traffic signals serves all intersection approaches. On-street parking is provided on King Street and George Street (south of King Street). Exclusive right-turn lanes are provided on King Street.

### **Exhibit F-14: King Street / George Street-Third Street Intersection**



Not to scale.

## Collision History

The analysis of 2007-2009 collision data revealed a total of four collisions at this intersection for a collision rate of 0.600 collisions per million vehicles that enter the intersection. Three of the four collisions resulted in property damage only. Overall, there were two angle collision, one sideswipe collision and another accident involving a single vehicle. All four collisions were in clear, dry conditions during daylight hours. Although there was not a high frequency of accidents at this intersection it should be noted that the “jogged” nature of this intersection could add to driver confusion.

**Table F-6: King Street and George Street Collision Summary**

Impact Type	Total	Direction of Travel	Total	Classification (Severity) of Accident	Total	Environment Condition	Total	Road Condition	Total	Light	Total
Approaching	0	WB / WB	2	Non-fatal Injury	1	Clear	3	Dry	3	Daylight	4
Angle	2	EB	1	Property Damage Only	3	Rain	1	Wet	1	Dark	0
Rear end	0	NB / EB	1			Snow	0	Packed Snow	0	Dark w/ artificial light	0
Sideswipe	1										
Turning movement	0										
Other	1										
<b>Total</b>	<b>4</b>	<b>Total</b>	<b>4</b>	<b>Total</b>	<b>4</b>	<b>Total</b>	<b>4</b>	<b>Total</b>	<b>4</b>	<b>Total</b>	<b>4</b>

## Recommendations

The collision history does not indicate any collision trends or issues and no recommendations are identified.

# **Appendix G**

## **Land Use Forecasts**

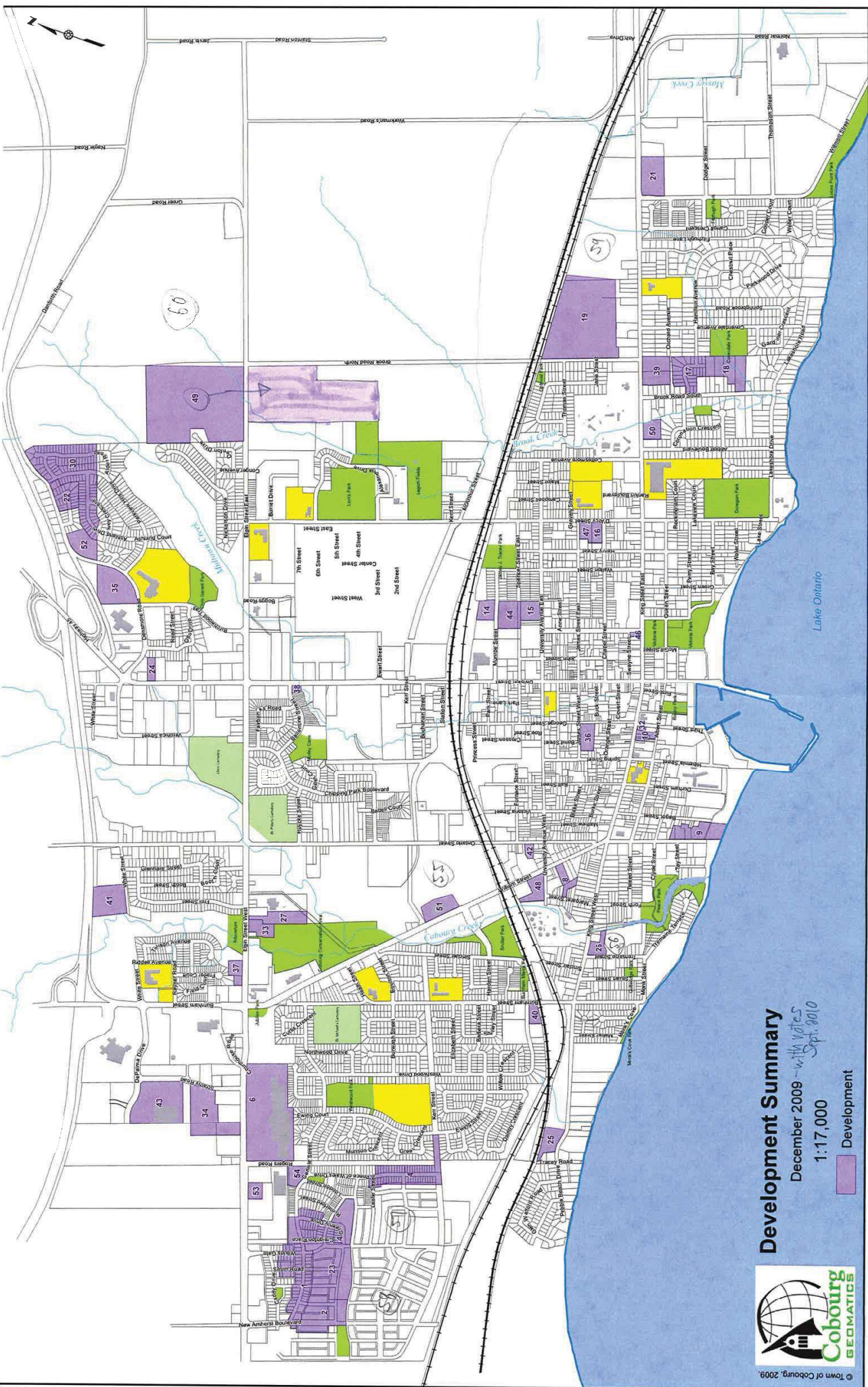
Town of Cobourg - Future Developments

Map #	Commercial Projects	Location	Status	Estimated Completion Prior to			Floor Space (ft <sup>2</sup> )
				2016	2021	2031	
-	MacCoubrey Funeral Home	30 King St E	construction	X	-	-	8,705
6	Northumberland Mall new bldgs	1001 Elgin St w	construction	X	-	-	18,654
43	Wal-Mart expansion	75 Strathy Rd	construction	X	-	-	45,095
48	Home Hardware addition	429 Willam St	approved	X	-	-	4,147
21	Grocery store & shopping centre	545 King St E	approved	X	-	-	60,000
34	Loblaws	Strathy Rd	rezoned	-	X	-	100,000
-	997 Division St	997 Division St	proposed	-	X	-	4,379
53	Tim Hortons & gas station	1125 Elgin St w	proposed	-	X	-	2,406
24	Hotel	1144 Division St	inactive	-	-	X	70 rooms
	<b>Total</b>						243,386

Map #	Mixed Use Projects	Location	Status	Estimated Completion Prior to			Non-Residential (ft <sup>2</sup> )	Residential Units
				2016	2021	2031		
32	The Plaza apartments	73 King St W	construction	X	-	-	1,150	8
10	King George Mews garages	79-91 King St W	construction	X	-	-	10 garages	-
38	1 Ballantine St	1 Ballantine St	proposed	-	X	-	3,990	2
	<b>Total</b>						5,140	10

Map #	Residential Projects	Location	Status	Estimated Completion Prior to			Single-Detached	Semis, Towns	Multiple Units
				2016	2021	2031			
1	New Amherst Ph. 2	New Amherst Blvd	construction	X	-	-	44	10	16
4	West Park Village Ph. 3	Carlisle St	construction	X	-	-	83	20	-
14	70-98 Munroe St	70-98 Munroe St	construction	X	-	-	-	10	33
44	Ryerson Commons Ph. 2	Munroe St	construction	X	-	-	-	26	-
-	Ryerson Commons Ph. 3	Munroe St	-	-	X	-	-	-	40
17	Brook Meadows Ph. 1	Brook Rd S	construction	X	-	-	22	-	-
18	Brook Meadows Ph. 2	Brook Rd S	construction	X	-	-	24	-	-
30	Parkview Hills North	Parkview Hills Dr	construction	X	-	-	79	-	-
22	Parkview Hills Block 88	Densmore Rd	construction	X	-	-	-	60	-
25	King & Tracey subdivision	King St W	construction	X	-	-	8	-	-
9	West Colony Bay (Illahee Lodge)	110 Ontario St	construction	X	-	-	5	-	-
36	Mansions on George	323 George St	construction	X	-	-	-	-	45
54	West Park Court	Rogers & Carlisle	construction	X	-	-	-	25	-
35	Densmore Village	Densmore Rd	draft approved	-	X	-	-	34	80
19	Gates of Camelot Ph. 1	King St E	draft approved	-	X	-	51	166	-
49	Heritage Village Ph. 1	Elgin & Brook	draft approved	-	X	-	104	22	90
8	377 William St.	377 William St	rezoned	-	X	-	-	29	-
37	440-448 Elgin St W	440-448 Elgin St W	rezoned	-	X	-	-	28	-
2	New Amherst Phase 3	New Amherst Blvd	proposed	X	-	-	19	60	-
23	New Amherst Phase 4	New Amherst Blvd	proposed	X	-	-	31	17	-
50	Sidbrook renovation	411 King St W	proposed	X	-	-	-	-	6
56	Tremaine Commons	Tremaine St	proposed	X	-	-	-	-	50
57	West Park - final	Carlisle St	inactive	-	-	X	-	300	-
60	Heritage Village - final	Elgin & Brook	inactive	-	-	X	-	1,200	-
59	Gates of Camelot Ph. 2	King St. E	inactive	-	-	X	-	250	-
58	New Amherst - final	New Amherst Blvd	inactive	-	-	X	-	800	-
26	Factory Creek	King & Tremaine	inactive	-	X	-	-	22	-
27	Lord Elgin Place	357 Elgin St W	inactive	-	X	-	-	-	87
33	Elgin Terrace	361 Elgin St W	inactive	-	-	X	-	-	40
39	Tangemere Estates	427-429 King St E	inactive	-	-	X	-	48	-
40	Burnham & Westwood	357 Westwood Dr	inactive	-	-	X	-	-	36
41	320 White St	320 White St	inactive	-	-	X	-	-	150
42	Ontario St Development	431 Ontario St	inactive	-	-	X	-	-	38
	<b>Total</b>						470	3,127	711

Map #	Public & Institutional Projects	Location	Status	Estimated Completion Prior to			Floor Space (ft <sup>2</sup> )
				2016	2021	2031	
-	Cobourg Community Centre	750 D'Arcy St	construction	X	-	-	142,715
52	Densmore Rd retirement home	Densmore Rd	construction	X	-	-	102,786
47	Palisade Gardens Phase 2	240 D'Arcy St	approved	X	-	-	9,580
-	County public works garage	60 Elgin St W	sumitted	-	-	X	3,155
55	Cobourg Innovation Centre	William St	-	-	-	X	142,715
	<b>Total</b>						400,951



# Development Summary

December 2009 - with notes  
 1:17,000  
 Sept. 2010

Development



# **Appendix H**

## **Travel Demand Forecasts**



Table F-1: Screening Analyses

Road	Dir	Lanes per Dir	Capacity (Vphpl)	Total Capacity	2010 Existing Conditions			2016 Conditions			2021 Conditions			2031 Conditions						
					AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
					Volume	V/C	Volume	V/C	Volume	V/C	Volume	V/C	Volume	V/C	Volume	V/C	Volume	V/C	Volume	V/C
West of Burnham/William	WB	1	500	1000	69	0.13	365	0.36	108	0.11	307	0.37	137	0.13	429	0.43	159	0.16	479	0.48
		2	700	1400	460	0.33	864	0.62	615	0.44	1025	0.77	653	0.47	1226	0.88	1247	0.89	1747	1.25
		3	900	1800	620	0.34	1128	0.63	827	0.46	1382	0.77	1006	0.50	1783	1.00	2030	1.11	2517	1.39
	WB	1	400	400	337	0.84	210	0.53	342	0.86	224	0.56	345	0.86	231	0.58	356	0.89	257	0.64
		2	800	800	674	0.84	420	0.53	684	0.86	448	0.56	690	0.86	462	0.58	712	0.89	514	0.64
		3	1200	1200	1011	0.84	630	0.53	1026	0.86	672	0.56	1035	0.86	774	0.89	1026	1.11	1270	1.04
	WB	1	400	400	47	0.12	50	0.13	64	0.16	76	0.19	66	0.17	87	0.22	71	0.18	95	0.24
		2	800	800	94	0.12	100	0.13	128	0.16	152	0.19	132	0.17	174	0.22	142	0.18	190	0.24
		3	1200	1200	141	0.12	150	0.13	192	0.16	228	0.19	201	0.17	276	0.22	213	0.18	335	0.24
WB	1	400	400	151	0.26	123	0.39	140	0.33	210	0.47	158	0.35	248	0.45	231	0.35	332	0.44	
	2	800	800	302	0.26	246	0.39	280	0.33	420	0.47	316	0.35	496	0.45	462	0.35	664	0.44	
	3	1200	1200	453	0.26	369	0.39	420	0.33	630	0.47	474	0.35	744	0.45	693	0.35	996	0.44	
East of Ontario Street	WB	1	500	1000	1275	0.28	1367	0.35	1500	0.33	2014	0.45	1701	0.38	2299	0.51	2379	0.53	3332	0.75
		2	700	1400	493	0.35	637	0.46	591	0.42	766	0.53	650	0.46	882	0.63	1038	0.74	1414	1.01
		3	900	1800	644	0.35	836	0.46	789	0.42	1022	0.53	866	0.46	1158	0.63	1552	1.01		
	WB	1	500	500	337	0.67	300	0.55	395	0.71	388	0.71	427	0.78	471	0.86	541	1.06	755	1.37
		2	700	700	480	0.67	420	0.55	552	0.71	523	0.71	576	0.78	645	1.06	755	1.37		
		3	900	900	623	0.67	540	0.55	735	0.71	702	0.71	765	0.78	864	1.06	1000	1.37		
	WB	1	500	500	120	0.24	120	0.24	126	0.25	125	0.25	129	0.26	127	0.25	130	0.26	128	0.26
		2	700	700	160	0.24	160	0.24	162	0.25	161	0.25	163	0.26	162	0.25	164	0.26	163	0.26
		3	900	900	200	0.24	200	0.24	204	0.25	202	0.25	206	0.26	204	0.26	208	0.26	206	0.26
WB	1	500	500	300	0.60	270	0.54	360	0.72	342	0.63	450	0.90	423	0.84	540	1.08	516	1.04	
	2	700	700	420	0.60	378	0.54	480	0.72	456	0.63	594	0.90	564	0.84	720	1.08	696	1.04	
	3	900	900	540	0.60	495	0.54	630	0.72	606	0.63	792	0.90	756	0.84	960	1.08	924	1.04	
WB	1	500	500	115	0.23	124	0.25	124	0.25	124	0.25	124	0.25	124	0.25	124	0.25	124	0.25	
	2	700	700	153	0.23	165	0.25	165	0.25	165	0.25	165	0.25	165	0.25	165	0.25	165	0.25	
	3	900	900	191	0.23	216	0.25	216	0.25	216	0.25	216	0.25	216	0.25	216	0.25	216	0.25	
WB	1	500	500	1227	0.41	1388	0.53	1461	0.49	1944	0.65	1639	0.56	2175	0.73	2280	0.76	2946	0.98	
	2	700	700	1636	0.41	1851	0.53	1944	0.49	2592	0.65	2219	0.56	2967	0.73	3144	0.76	4128	0.98	
	3	900	900	2045	0.41	2344	0.53	2496	0.49	3324	0.65	3093	0.56	4053	0.73	4392	0.76	5824	0.98	
West of Division Street	WB	1	500	1000	545	0.39	745	0.53	643	0.46	854	0.61	702	0.50	990	0.71	1068	0.76	1454	1.04
		2	700	1400	763	0.39	1027	0.53	857	0.46	1138	0.61	936	0.50	1245	0.71	1356	0.76	1874	1.04
		3	900	1800	1011	0.39	1370	0.53	1144	0.46	1522	0.61	1248	0.50	1662	0.71	1874	0.76	2562	1.04
	WB	1	400	400	282	0.51	357	0.65	324	0.59	441	0.80	384	0.70	505	0.92	462	0.80	624	1.43
		2	800	800	564	0.51	714	0.65	648	0.59	882	0.80	768	0.70	910	0.92	924	1.43		
		3	1200	1200	846	0.51	1071	0.65	972	0.59	1323	0.80	1152	0.70	1386	0.92	1386	1.43		
	WB	1	500	500	119	0.24	238	0.48	123	0.25	243	0.49	126	0.25	245	0.49	126	0.25	246	0.49
		2	700	700	159	0.24	317	0.48	164	0.25	324	0.49	168	0.25	326	0.49	168	0.25	326	0.49
		3	900	900	208	0.24	426	0.48	216	0.25	426	0.49	216	0.25	426	0.49	216	0.25	426	0.49
WB	1	500	500	1283	0.38	1769	0.52	1510	0.44	2066	0.61	1622	0.48	2337	0.69	2220	0.66	3171	0.93	
	2	700	700	1711	0.38	2359	0.52	2014	0.44	2755	0.61	2429	0.48	3303	0.69	3171	0.66	4362	0.93	
	3	900	900	2139	0.38	2947	0.52	2466	0.44	3386	0.61	3093	0.48	4174	0.69	4053	0.66	5544	0.93	
East of Division Street	WB	1	500	1000	523	0.37	687	0.48	625	0.45	854	0.60	761	0.54	988	0.69	1151	0.82	1529	1.02
		2	700	1400	697	0.37	916	0.48	833	0.45	1138	0.60	1015	0.54	1311	0.69	1484	0.82	1974	1.02
		3	900	1800	925	0.37	1221	0.48	1111	0.45	1522	0.60	1352	0.54	1743	0.69	1974	0.82	2646	1.02
	WB	1	500	500	282	0.51	357	0.65	324	0.59	441	0.80	384	0.70	505	0.92	462	0.80	624	1.43
		2	800	800	564	0.51	714	0.65	648	0.59	882	0.80	768	0.70	910	0.92	924	1.43		
		3	1200	1200	846	0.51	1071	0.65	972	0.59	1323	0.80	1152	0.70	1386	0.92	1386	1.43		
	WB	1	500	500	127	0.36	141	0.43	144	0.43	187	0.54	1707	0.50	2088	0.61	2483	0.73	2961	0.87
		2	700	700	170	0.36	188	0.43	192	0.43	250	0.54	2262	0.50	2772	0.61	3372	0.73	4148	0.87
		3	900	900	213	0.36	237	0.43	236	0.43	333	0.54	3003	0.50	3603	0.61	4371	0.73	5316	0.87
WB	1	500	500	320	0.46	424	0.61	364	0.49	505	0.69	429	0.50	584	0.71	506	0.56	696	0.71	
	2	700	700	427	0.46	565	0.61	485	0.49	673	0.69	572	0.50	778	0.71	675	0.56	864	0.71	
	3	900	900	534	0.46	720	0.61	610	0.49	866	0.69	726	0.50	942	0.71	1008	0.71	1152	0.71	
WB	1	500	500	114	0.29	229	0.59	114	0.29	229	0.59	114	0.29	229	0.59	114	0.29	229	0.59	
	2	700	700	152	0.29	305	0.59	152	0.29	305	0.59	152	0.29	305	0.59	152	0.29	305	0.59	
	3	900	900	190	0.29	407	0.59	190	0.29	407	0.59	190	0.29	407	0.59	190	0.29	407	0.59	
WB	1	500	500	179	0.45	224	0.56	244	0.61	308	0.77	275	0.69	344	0.86	367	0.92	430	1.08	
	2	700	700	239	0.45	299	0.56	324	0.61	397	0.77	366	0.69	451	0.86	483	0.92	570	1.08	
	3	900	900	304	0.45	398	0.56	432	0.61	530	0.77	489	0.69	591	0.86	670	0.92	810	1.08	
WB	1	500	500	255	0.46	319	0.58	309	0.46	412	0.75	348	0.63	455	0.80	487	0.89	620	1.49	
	2	700	700	340	0.46	425	0.58	412	0.46	550	0.75	464	0.63	610	0.80	670	0.89	860	1.49	
	3	900	900	425	0.46	564	0.58	480	0.46	735	0.75	552	0.63	744	0.80	950	0.89	1140	1.49	
WB	1	500	50																	

Table F-1: Screening Analyses

Road	Dir	Lanes per Dir	Capacity (Veh/h)	Total Capacity	2010 Existing Conditions			2016 Conditions			2021 Conditions			2031 Conditions			
					AM Peak Hour		PM Peak Hour	AM Peak Hour		PM Peak Hour	AM Peak Hour		PM Peak Hour	AM Peak Hour		PM Peak Hour	
					Volume	V/C	Volume	V/C	Volume	V/C	Volume	V/C	Volume	V/C	Volume	V/C	
North of Elin Street	NR	1	500	1000	151	0.15	431	0.43	173	0.17	476	0.48	278	0.28	626	0.63	
	SR	2	700	1400	450	0.32	596	0.43	538	0.38	700	0.50	602	0.43	929	0.66	
	NR	1	400	400	21	0.05	63	0.16	26	0.07	69	0.17	29	0.08	73	0.18	
	SR	1	500	500	93	0.19	206	0.41	116	0.23	236	0.47	145	0.29	259	0.52	
	NR	2	700	1400	700	0.50	985	0.69	789	0.56	1070	0.76	864	0.62	1149	0.82	
	SR	1	700	700	445	0.39	261	0.48	162	0.23	253	0.36	188	0.27	281	0.40	
	Total			4700			1842		1842		2332		2332		2811		3747
	V/C						0.48		0.54		0.60		0.60		0.81		0.80
South of Elin Street	SR	2	500	1000	173	0.17	429	0.43	152	0.15	455	0.46	223	0.22	580	0.58	
	SR	2	700	1400	604	0.43	634	0.44	661	0.47	743	0.53	689	0.49	831	0.59	
	SR	1	400	400	65	0.16	41	0.10	66	0.17	46	0.12	68	0.17	50	0.13	
	SR	1	500	500	152	0.30	123	0.25	176	0.35	150	0.30	188	0.38	177	0.35	
	SR	2	700	1400	934	0.67	760	0.54	1035	0.74	918	0.66	1108	0.79	1050	0.75	
	SR	1	700	700	1925	0.41	1867	0.42	2110	0.45	2312	0.49	2276	0.48	2688	0.57	
	Total			4700			2457		2457		3021		2460		3021		3815
	V/C						0.44		0.45		0.55		0.44		0.59		0.68
New Amherst Blvd	SR	1	500	500	182	0.36	151	0.30	205	0.41	169	0.34	226	0.45	177	0.35	
	SR	1	400	400	43	0.11	59	0.15	68	0.17	75	0.19	82	0.21	90	0.23	
	SR	1	700	700	463	0.47	715	0.51	751	0.54	832	0.59	792	0.57	919	0.66	
	SR	1	500	500	135	0.27	214	0.43	165	0.33	250	0.50	177	0.35	271	0.54	
	SR	2	700	1400	849	0.61	773	0.55	951	0.68	909	0.65	1018	0.74	1028	0.73	
	SR	1	700	700	298	0.43	188	0.27	419	0.60	330	0.47	428	0.61	360	0.51	
	SR	1	700	700	158	0.23	107	0.15	158	0.23	107	0.15	158	0.23	107	0.15	
	Total			4200			2330		2886		3041		2819		3212		4079
V/C						0.34		0.44		0.52		0.48		0.59		0.60	
North of Wall	NR	2	700	1400	490	0.35	644	0.46	542	0.39	731	0.52	581	0.42	779	0.56	
	NR	1	500	500	128	0.26	165	0.33	149	0.30	188	0.38	159	0.32	200	0.40	
	NR	2	700	1400	640	0.46	817	0.58	747	0.53	944	0.67	815	0.58	1030	0.74	
	NR	1	700	700	133	0.19	90	0.13	144	0.21	119	0.17	172	0.25	212	0.30	
	NR	1	700	700	1532	0.33	1071	0.40	1273	0.37	1337	0.45	1514	0.41	1661	0.52	
	Total			4700			1871		2137		2137		2137		2461		2555
	V/C						0.33		0.37		0.45		0.42		0.52		0.55
	NR	1	500	500	566	0.40	627	0.45	624	0.45	720	0.51	648	0.46	786	0.56	
South of University	NR	2	700	1400	233	0.17	315	0.23	264	0.19	372	0.27	297	0.21	408	0.29	
	NR	1	500	500	51	0.10	49	0.10	63	0.13	61	0.12	69	0.14	71	0.14	
	NR	1	500	500	177	0.25	158	0.26	130	0.26	139	0.28	133	0.27	144	0.29	
	NR	1	500	500	255	0.52	311	0.60	349	0.63	384	0.72	378	0.68	445	0.81	
	NR	1	500	500	295	0.54	311	0.60	349	0.63	384	0.72	378	0.68	445	0.81	
	NR	1	500	500	197	0.36	212	0.39	233	0.42	308	0.56	260	0.47	399	0.73	
	NR	1	500	500	1166	0.29	1064	0.27	1342	0.34	1335	0.33	1400	0.38	1665	0.42	
	Total			4000			1240		1194		1502		1344		1664		1775
V/C						0.25		0.30		0.38		0.34		0.42		0.44	
South of University	SR	2	700	1400	296	0.21	291	0.21	326	0.23	337	0.24	342	0.24	384	0.27	
	SR	1	500	500	128	0.26	82	0.16	130	0.26	84	0.17	133	0.26	85	0.17	
	SR	1	500	500	40	0.08	76	0.15	56	0.11	99	0.20	65	0.13	100	0.20	
	SR	1	500	500	292	0.53	225	0.45	352	0.64	393	0.71	386	0.70	449	0.82	
	SR	1	500	500	233	0.42	194	0.35	275	0.50	291	0.52	353	0.64	347	0.63	
	SR	1	700	700	141	0.20	155	0.22	183	0.26	155	0.22	186	0.27	190	0.28	
	SR	1	700	700	1121	0.28	1024	0.28	1232	0.34	1242	0.34	1308	0.38	1478	0.42	
	Total			4200			1424		1424		1624		1424		1624		1824
V/C						0.28		0.34		0.42		0.38		0.42		0.42	
North of King	NR	2	700	1400	305	0.22	377	0.33	348	0.25	396	0.38	387	0.28	451	0.32	
	NR	1	500	500	110	0.22	85	0.17	120	0.24	98	0.20	130	0.26	109	0.22	
	NR	1	500	500	40	0.08	76	0.15	56	0.11	99	0.20	65	0.13	100	0.20	
	NR	1	500	500	292	0.53	225	0.45	352	0.64	393	0.71	386	0.70	449	0.82	
	NR	1	500	500	233	0.42	194	0.35	275	0.50	291	0.52	353	0.64	347	0.63	
	NR	1	700	700	141	0.20	155	0.22	183	0.26	155	0.22	186	0.27	190	0.28	
	NR	1	700	700	1121	0.28	1024	0.28	1232	0.34	1242	0.34	1308	0.38	1478	0.42	
	Total			4200			1424		1424		1624		1424		1624		1824
V/C						0.28		0.34		0.42		0.38		0.42		0.42	
South of King	SR	2	700	1400	272	0.19	310	0.22	303	0.22	357	0.26	329	0.24	405	0.29	
	SR	1	500	500	101	0.20	97	0.19	101	0.20	97	0.19	101	0.20	97	0.19	
	SR	1	500	500	38	0.08	91	0.18	49	0.10	100	0.20	49	0.10	100	0.20	
	SR	1	500	500	245	0.45	208	0.39	314	0.57	353	0.64	360	0.55	408	0.74	
	SR	1	500	500	168	0.24	129	0.18	168	0.24	129	0.18	168	0.24	129	0.18	
	SR	1	700	700	168	0.24	129	0.18	168	0.24	129	0.18	168	0.24	129	0.18	
	SR	1	700	700	995	0.24	1127	0.27	1147	0.27	1369	0.33	1384	0.33	1653	0.39	
	Total			4200			1824		1824		2184		2184		2584		2884
V/C						0.24		0.27		0.33		0.33		0.46		0.46	

**Appendix I**  
**Review of Submissions from**  
**Sustainable Cobourg**

## **Sustainable Cobourg Transportation Master Plan Study – Interim Report and Final Report**

The Interim Report was the first of a two part submission from Sustainable Cobourg to the Cobourg Transportation Master Plan Study, identifying various recommendations for improving cycling infrastructure in the Town. Key improvements identified in the Interim Report include:

- Installation of Share-the-Road Signage on a variety of streets throughout the Town
- Conversion of arterial roads using “Road Diet” design – including the elimination of one motor-vehicle travel lane on a 4 lane arterial to provide on-road bike lanes, two motor vehicle travel lanes and a centre two-way left-turn lane
- Adding Bike Lanes
- Identification of “Hot Spots”, intersections that do not provide safe accommodation for cyclists
- Conducting a study for additional bicycle parking
- The study also identified a recommended cycling/pedestrian network, including recommended cycling facilities for every proposed cycling route.

The second part of the submission (Final Report) provides a proposed vision statement and goals for cycling to be included in the Cobourg Transportation Master Plan study. The key “Cycling Vision Statement” identified in the report is as follows:

*“Make bicycling an integral part of daily life in Cobourg, thereby making Cobourg a model for health promotion, environmental sustainability, and quality of life”.*

Transportation and land use planning objectives identified in the report recommended that the Town create a community of compact, walkable, transit and bicycle-oriented mixed-use neighbourhoods, districts and corridors.

Various policy initiatives are also recommended in the study, which include the implementation of cycling promotional and educational programs such as bike-to-school programs, can-bike training programs, public outreach programs, working with employers to encourage commuting by bike and tourism initiatives.

A number of the findings and recommendations from Sustainable Cobourg have been incorporated into the Transportation Master Plan.

**Appendix J**  
**Active Transportation Network**  
**Recommended Facilities**

## J. ACTIVE TRANSPORTATION NETWORK

Appendix H documents preliminary recommendations for pedestrian and cycling facilities, accommodating bike lanes with on-street parking, and other initiatives that could be undertaken by the Town. The information herein is to provide guidance and direction to the Town in undertaking a detailed Cycling Master Plan in conjunction with Northumberland County, Sustainable Cobourg, the Bicycle Action Committee, and other relevant organizations, to confirm the feasibility of these recommendations and any other cycling initiatives undertaken in Cobourg.

### J.1 Shared-Road Cycling Facilities

As outlined in **Section 6.5** of the TMP, many of the recommended Priority Cycling routes utilize roadways where signed-only cycling routes and shared-road facilities would be provided. Along such routes, where no designated cycling facilities, such as bike lanes or pathways are provided, improvements along the roadway to increase driver awareness to the presence of cyclists in a shared-road facility should be considered.

“Share the road” signage is especially useful for cycling routes on roadways where the right-of-way is constrained, such as at an intersection due to the presence of turning lanes, where narrow travel lanes are present, and along roadways with rural cross-sections (no curb) and limited space for paved shoulders. Applications of share the road signage on such roadways are illustrated in **Exhibit J-1**.

Other recommendations include the addition of bicycle stencils or “sharrows” to the roadway along roadways with wide curb lanes (lanes wider than 3.5m) to further increase driver awareness to the presence of cyclists along a roadway, as illustrated in **Exhibit J-2**.

#### Exhibit J-1: Examples of “Share the Road” Signage along Roads with Rural Cross-Sections



Source: [www.cyclehaliburton.ca/sharetheroad.htm](http://www.cyclehaliburton.ca/sharetheroad.htm)

Source: [www.howto.wired.com/wiki/Share\\_the\\_Road\\_With\\_Cyclists](http://www.howto.wired.com/wiki/Share_the_Road_With_Cyclists)

Source: [www.cynthiadunsford.com](http://www.cynthiadunsford.com)

## Exhibit J-2: Example of a Wide Curb Lane with Bicycle Pavement Markings

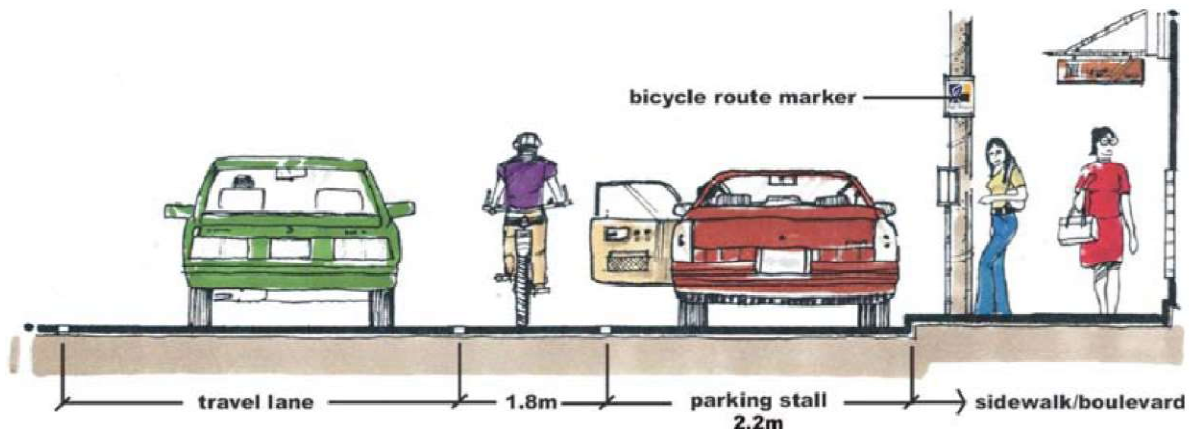


### J.2 Accommodating Cyclists and On-Street Parking

The provision of cycling facilities adjacent to on-street parking lanes can be a potentially hazardous situation, with drivers inadvertently opening their car doors into the path of a passing cyclist (“dooring”). To minimize the potential for this to occur, it is recommended that separate, designated cycling facilities be provided adjacent to parking bays.

Bike lanes on roads with on-street parking are typically located to the left of and adjacent to parked vehicles along the curb. In order to allow clearance for vehicle doors, and to minimize collisions with cyclists, the combined width of the bicycle and parking lanes should be a minimum of 4.0 m. This width allows for a 1.8 m bike lane and a 2.2 m wide curbside parking stall. The extra distance added to the typical 2.0 m wide parking stall provides space for the opening of car doors, and encourages cyclists to travel a safe distance from the parked vehicles. An example of this design is illustrated in **Exhibit J-3**. As an alternative, the width of the bike lane may be reduced if the parking aisle is greater than 2.4 m wide.

### Exhibit J-3: Example of On-Street Bicycle Lane Adjacent to On-Street Parking Stall



Source: City of Ottawa - Ottawa Cycling Plan

## Exhibit J-4: Example of Bike Lanes Adjacent to On-Street Parking



Source: Planning Alliance

In locations where sufficient right-of-way is not available to provide a designated bicycle lane, other options may be considered such as the application of bicycle stencils to the pavement to the left side of parked vehicles, either on the left side of the parking bay, or on the right side of the adjacent travel lane. Examples of these applications are illustrated in **Exhibit J-5**.

## Exhibit J-5: Examples of Bicycle Pavement Markings Adjacent to On-Street Parking Areas.



Source: [www.bicycledriving.org/roads/shared-use-symbols](http://www.bicycledriving.org/roads/shared-use-symbols)





Source: [www.sdotblog.seattle.gov/2009/09/](http://www.sdotblog.seattle.gov/2009/09/)

The addition of these bicycle stencils help increase a motorists awareness of the presence of cyclists along the roadway, both when they are driving and when they are parked. The addition of “share the road” or “watch for cyclists” signs adjacent to locations with on-street parking can also increase driver awareness to the presence of cyclists, and reduce the potential for “dooring”.

### **J.3 Accommodating Cyclists at “Bulb-Outs” / Curb-Extensions**

On roadways where “bulb-outs”, sometimes referred to as “curb-extensions”, are provided to designate on-street parking areas, the “bulb” of the curb should not extend beyond the width of the parking stall. For example, as illustrated in **Exhibit J-3**, if the parking stall width is 2.2m, the width of the “bulb” on the curb should also be 2.2m. Therefore, the same treatments used for providing cycling facilities adjacent to on-street parking would still be applicable where bulb-outs are used. An example of this application is illustrated in **Exhibit J-6**.

#### **Exhibit J-6: Bike Lane Adjacent to Curb Extension and On-Street Parking**



Source: <http://picasaweb.google.com/lh/photo/bGqe0-bbvTyogjqkFBuhUA>

In locations where bulb-outs are provided on roadways with no on-street parking with “shared-road” cycling facilities (e.g. no dedicated cycling facilities are provided), poor design of the bulb-out can lead to potentially hazardous situations between cyclists and motorists. This design forces cyclists to “squeeze” through the “pinch-point” at the bulb-out and share the narrowed road space with motor-vehicles, which can lead to an increased potential for collisions between motor vehicles and cyclists.

To reduce the potential for collisions between motor-vehicles and cyclists at these pinch-points, a minimum width of 3.75m should be provided for the shared motor-vehicle/cycling lane through this pinch-point. The application of “share-the-road” signage and bicycle stencils at the bulb-out would also increase cycling presence to motorists along the roadway.

Examples of cycling pavement markings are provided in **Exhibit J-7**.

### **Exhibit J-7: Example of Cycling Pavement Markings at Curb Extensions**



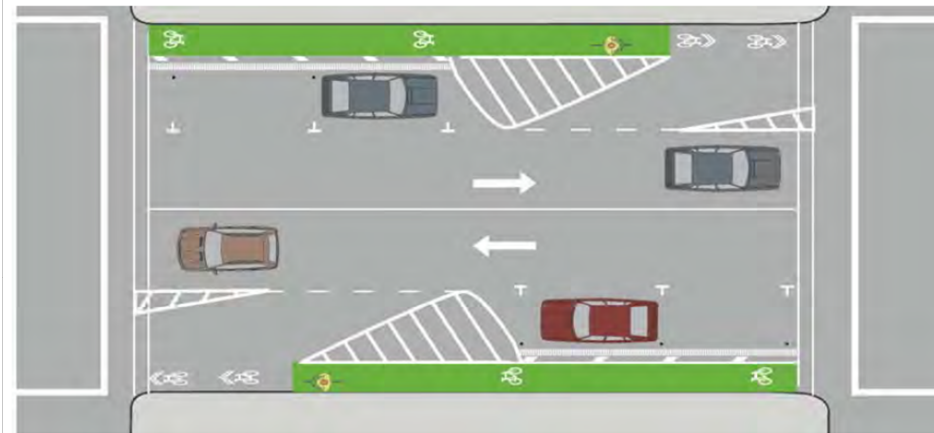
Source: [http://commons.wikimedia.org/wiki/File:Bike\\_symbol\\_adjacent\\_curb\\_extension.jpg](http://commons.wikimedia.org/wiki/File:Bike_symbol_adjacent_curb_extension.jpg)

Source: <http://bikeportland.org/2009/09/09/the-division-streetscape-project-aims-to-create-green-main-street-23270>

The preference however is to only use bulb-outs in conjunction with on-street parking, and providing a dedicated bike lane between the parking bays or bulb-out and the motor-vehicle travelled portion of the roadway, if sufficient right-of-way is available.

Another option is to place the bulb-out or other traffic-calming measures used along the roadway to the left of the portion of the roadway where cyclists would travel, with continuous cycling facilities provided alongside the curb of the roadway. **Exhibit J-8** provides a schematic of on-road bike lanes located between the sidewalk (curb-side) and on-road traffic calming measures. **Exhibit J-9** illustrates a “cycling slip” located between a curb-extension and the sidewalk.

**Exhibit J-8: Schematic of curbside bike lanes adjacent to on-road traffic-calming facilities**



Source: A Guide to the Use of Kerbside Running Bike Lanes, alta planning+design, September 2010

**Exhibit J-9: Example of a “Cycling-Slip” provided at a “Bulb-Out” pedestrian crossing**



Source: <http://www.fhwa.dot.gov/publications/research/safety/pedbike/05085/chapt20.cfm>

**J.4 Implementation of Boulevard Pathways**

As indicated in **Section 3.4.1** of the TMP, the Town has many two-way boulevard pathways such as those illustrated in **Exhibit J-10**. However, various safety studies have shown that cyclists using two-way bike paths have a higher-frequency of collisions between motor-vehicles at intersections when compared to cyclists operating within the traffic stream (e.g. on an on-road bike lane or shared-road facility).<sup>1</sup>

<sup>1</sup> Kane County Bicycle and Pedestrian Plan, Chapter 5: Bikeway Facility Design Guide “Sidepaths”,

Two-way boulevard pathways should only be considered if the following two conditions are met:

- A buffer is provided between the pathway and the adjacent roadway (minimum 1.5m),
- If there are less than 12 residential driveways, 6 commercial driveways/minor streets, or 3 major street intersections per kilometre,

Therefore, the continued application of two-way multi-use pathways directly adjacent, as illustrated in **Exhibit J-10**, is not recommended, unless it can be determined that on-road facilities along the roadway are not feasible.

#### **Exhibit J-10: Example of Two-Way Boulevard Pathway on DePalma Drive**



**Exhibit J-11** illustrates an existing two-way boulevard pathway on Division Street looking north towards the railway overpass. The lane for southbound cyclists is blocked by a concrete column for the railway bridge, forcing southbound cyclists either into the northbound cycling lane, or into the northbound motor vehicle traffic lane. In both cases, the cyclist would be riding against traffic, a potentially dangerous situation, which should not be encouraged.

The Town should also undertake a cycling master plan study to better assess the applicability of two-way boulevard pathways along its arterial road network.

## Exhibit J-11: Example of Two-Way Boulevard Pathways Directly on Division Street



### **J.5 Summary of Cycling Improvements and Initiatives**

To encourage maximum use of the Town’s cycling network, the following short-term and long term cycling improvements and initiatives are recommended as part of the Town’s goals to encourage more walking and cycling and to support the implementation of the Town’s cycling network:

- The continued implementation of on-road cycling facilities such as bike lanes, paved shoulder bikeways and signed-only cycling routes where appropriate as part of the development of a cycling network,
- Boulevard Pathways should only be considered when designated on-road cycling facilities are not feasible,
- The use of “share-the-road” signage and “sharrow” pavement markings where appropriate,
- The provision of bicycle parking facilities at major destinations such as schools, community centres, shopping malls/plazas, the downtown business area, the VIA rail station, major employment areas and the waterfront are needed to support the cycling network. The Town should consider establishing opportunities for public and private sector initiatives with respect to bicycle parking, as part of an overall Parking Management Strategy.
- Consider the feasibility of “Road Diets” along multi-lane roadway arterials such as William Street and Elgin Street,
- Explore options for accommodating cyclists through “Hot-Spot” intersections identified as part of this study and from other organizations such as Sustainable Cobourg and the Bicycle Action Committee,
- Provide enhanced mid-block crossing treatments at locations where on and/or off-road cycling routes cross roadways between intersections, such as the addition of pavement markings, pedestrian refuge islands and/or crosswalk signals,
- Develop a set of guidelines for incorporating either on- or off-road bike lanes into intersections, which could include a variety of measures to ensure the safety of cyclists

such as “bike boxes” (pavement markings), delayed signals, or lane markings alongside right-hand turn lanes,

- Develop a “branding” and signage strategy including bicycle route and “share the road” signage, as well as “way-finding” signs that may include a network logo and appropriate regulatory and warning signs where appropriate,
- Refer to the Town’s capital works programs and construct designated cycling facilities where appropriate, along any roads that have been identified as cycling routes that are scheduled for reconstruction / rehabilitation / resurfacing as part of the road reconstruction project.
- Develop a Town Cycling Map in conjunction with cycling and tourism groups in the Town as well as Northumberland County,
- Promote public awareness for cycling through special events that encourage cycling, and through the distribution of promotional and educational information to households, businesses and individuals,
- Build public awareness and use of safe cycling practices by on-road cyclists and pathway users, through public education, cycling skills training and other road safety initiatives,
- Continue to work with agencies like Sustainable Cobourg and the Bicycle Action Committee as part of any cycling initiatives undertaken by the Town or Northumberland County.

This list is not meant to be all inclusive, rather it is meant to provide some guidance and direction to the Town as it develops its cycling network and initiatives. It is recommended that the Town undertake a detailed Cycling Master Plan in conjunction with Northumberland County, Sustainable Cobourg, the Bicycle Action Committee, and other relevant organizations, to confirm the feasibility of these recommendations and any other cycling initiatives undertaken in Cobourg.

**Appendix K**  
**Final Public Comments**

**Fwd: Comments for Transportation Study Final #4**

**From:** Barry Thrasher  
**To:** [REDACTED]  
**Date:** 6/22/2011 8:24 AM  
**Subject:** Fwd: Comments for Transportation Study Final #4  
**Attachments:** 11transstudy#4.doc

Hi [REDACTED] I think this will be the last one.  
Barry

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>>> [REDACTED] 6/22/2011 1:58 AM >>>  
hi Barry,

Below and attached are the same.

----- Original Message -----

**From:** [REDACTED]  
**To:** [REDACTED]  
**Sent:** Wednesday, June 22, 2011 1:53 AM  
**Subject:** 11transstudy#4.doc

Comments on Transportation Study Final (Draft #4) [REDACTED]

1. Items that I would consider in assessing transportation issues
  - a. Maintenance program for pedestrians and bicyclists and transit; also, provisions of service eg. facility priority lists at budget time, and, alternatives to address capacity constraints eg. reducing posted speed could better accommodate cyclists.
  - b. Standard details for all modes using street eg. markings at intersections, universal accessibility at crossings.
  - c. Set priority for street amenities/facilities, in order eg. 1. Pedestrian, 2. Bicycles, 3. Transit, 4. Transport of goods and services, (reverse 3 and 4?) 5. other vehicles
  - d. For new roads or reconstruction include assessment of current policy which appears to direct storm water into existing natural creeks and rivers, concern for water quality and quantity impacting existing built up areas downstream.
  - e. Prefer smaller bus fleet in terms of size of vehicle but more in number.
2. How to Use this document, how and when do we review the recommendations in a periodic manner (at budget?) and assess performance/milestones in a public forum?



3. Need consistency to signalization/programming at intersections to make them pedestrian dominant (like downtown) as this would not appear to negatively impact traffic flow unless there is actually a pedestrian present. Bicycles and motorbikes also have problems at signalized intersections, a service problem.
4. Ensure all maps translate well in hard copy 11x17 format, adjust graphics to suit eg. yellow very hard to read with a white background.
5. Section 3.1 assesses movement of vehicles as highest priority on road network□how does ranking of other transportation modes eg. high pedestrian use downtown and other shopping nodes, affect efficiency of vehicular movement and is this accounted for?
6. □.6.6 include winter maintenance hierarchy for sidewalks as a recommendation to address discontinuities in sidewalk system even though mention is made on page 43 recommendations.
7. Could we assess in-house capacity and ability to undertake identified studies, in whole or in part?
8. LOS/screen line assessments, measurable in terms of street hierarchy for all modes of transportation eg. impact of removing a car lane for two bike lanes and reducing posted speed ?
9. It seems that without exception our 4 and 5 lane roads leading downtown and east-west corridors are unattractive. The distance between downtown and the 401 is relatively short, and east-west corridors are potential by-passes. Therefore, change perceptions and expectations of the car driver. I question the justification for the proposed widening of Elgin, and, King Street East between town limit and D□Arcy. Road widening as proposed would be detrimental to community identity and reduce all important human scale in a walkable community. Make it a pleasure for a driver to experience and not to by-pass our town.
10. Make it a priority to improve street function for all modes and to improve boulevard design and amenities for existing main roads between 401 and downtown. People regularly walk here.  
End.

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  - a. Maintenance program for pedestrians and bicyclists and transit; also, provisions of service eg. facility priority lists at budget time, and, alternatives to address capacity constraints eg. reducing posted speed could better accommodate cyclists.
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10. Make it a priority to improve street function for all modes and to improve boulevard design and amenities for existing main roads between 401 and downtown. People regularly walk here.  
End.

**From:** Barry Thrasher  
**To:** [REDACTED]  
**Date:** 6/21/2011 8:12 AM  
**Subject:** Fwd: Cobourg Transportation Plan Oliver submission  
**Attachments:** Cob TrafPlnRevRev 110624.doc

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>> [REDACTED] 6/19/2011 6:31 PM >>>

Attached please find my submission to the public consultation process regarding the May 2011 Draft Transportation Master Plan.

Please confirm receipt and that the attachment opened correctly.

Instead of appearing as a delegate before Council I am taking the liberty of e-mailing my submission to each member of Council and to Planner McGlashon.

Thank you

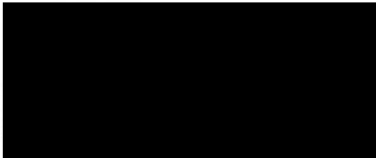
[REDACTED]

# Cobourg Transportation Master Plan May 2011 Draft The Public Consultation Process

This response to the May 2011 Draft is addressed to:

Mayor Brocanier` and Members of Cobourg Town Council  
Barry Thrasher at Cobourg Public Works  
Rob Franklin at the Cobourg Planning Department  
Sherwin Gumbs of HDRITrans Consultants

From



## In General:

The planning components that influence the growth and development of human settlements of any size or history must have as their clear objectives the enhancement of the quality-of-life of all residents. Too often they are limited to economic interests and/or the movement of vehicles. My belief is that all interests must and can be satisfied. So often we see this being accomplished in places like 20<sup>th</sup> century Europe. The difference between here and there is that until the mid-1900s one could argue that growth and development in Europe was slow and all interests had time to react. This is not the case in most areas of North America. and so we need well intended and comprehensive planning.

The tools used to recognize and define problems to be addressed, corrected or avoided, should be comprehensible to all and should include **(1) those that are capable of being measured and quantified,** and **(2) those that are subjective, incapable of being quantified and represent commonly held values.**

The May 2011 Draft Report is replete with the former (1) in the form of statistical measurements under such headings as ; "localized capacity restraints", "queue storage potential", "levels of service", "collisions per one million vehicles", but deficient in (2) by the absence of any attempt to describe and attribute human values to any aspect of the analysis and proposed solution to problems.

As an example of the human values referred to (2) I offer ... an individual's sense of personal safety; the sense of adequate separation from vehicle traffic noise and immediate air pollution; and being confident in the safety of the environment surrounding the family home to the point where parents allow their children to play outside unattended. There are more.

## Recommendations:

- (A) The treatment of vehicular traffic, cyclists and pedestrians (the three modes) should differ in respect to one another in different areas of the Town.** Accepting this the Transportation Master Plan should be coordinated with the existing and anticipated land-use in Cobourg, and should recognize, define and divide the Town into different **Pedestrian/Vehicle Priority Travel Districts**. In each district (example below) different means would be used to facilitate the movement and safety of each of the three modes. The different means could include such tools as roundabouts, traffic lights, pedestrian controlled cross-walks, speed bumps, the width of vehicle lanes and sidewalks and bike paths, different textures of pavement, and the use of stop signs and right-of-way signs.

**VP - Vehicle Priority**, wherein vehicles have priority, speeds are highest and pedestrians are provided limited but safe means of crossing the path of vehicles such as traditional traffic lights.

**VPE- Vehicle Pedestrian Equality**, where the relationship between pedestrians and vehicle is the same as that found in mall parking lots, each watching out for the other.

**PP - Pedestrian Priority**, where vehicles are subservient to individuals on foot or on bike. Applies to neighbourhood streets where children can feel safe and to King Street between Spring and Church Streets. Traffic calming measures in place. Vehicles wanting to move quickly to a particular destination would learn to avoid these Districts.

- (B) **As an attractive alternative to the in-town use of automobiles, the importance of establishing an effective pedestrian/biking pathway grid.** On a town-wide scale, and recognizing that travel on foot and by bicycle is slower than by car, and acknowledging that the time spent in motion getting to a desired destination determines the level of satisfaction an individual experiences when traveling, ... work to define and establish a **pedestrian/biking pathway grid** that is finer than, and where possible, offset from, the automobile roadways. For the reasons given above much of such a grid would be separate from roads (instead of following then as pedestrian/cycle pathways do now) and the length of such a pathway could be as much as twice the length of the roadways available to vehicles.

*Not always recommended (see many entrances)*

An example of such an omission that I believe exists in the proposed Transportation Master Plan is that there is no planned way for pedestrians or cyclists to cross the two industrial parks from East to West. They literally have to go around these large areas, which is discouraging to travel by foot or by bike.

- (C) **Eliminate the proposed Nagle Road 401 Interchange.** This proposed interchange is unnecessary considering Cobourg is already served by two interchanges that feed into a well designed Town road system, an existing system that offers automobile and truck drivers a number of clear choices as to how they can reach their intended destination.

*MTO issued*

An interchange with the 401 at Nagle Road would not only be expensive to build considering the poor sight lines, but would most likely result in unwanted truck traffic through the Cobourg East Centre and along Brook Road North, this to the detriment of many parts of Cobourg East.

Trucks to get to the three manufacturing areas that presently exist, or to the proposed areas between Kerr Street and the railway tracks, could otherwise use Division or Burnham/William Streets when traveling North/South. As well as having direct access into the two existing industrial areas, turning onto the East/West streets of Elgin, Kerr or King, would allow trucks to arrive at their intended destination with a minimum of conflict with residential and shopping areas. In the absence of the Nagle Road interchange the truck routes are predictable and do not conflict with other land-uses.

A plan for an interchange at Nagle Road, unless changed, raises legitimate expectations on the part of land-owners that manufacturing and industrial uses will be allowed and serviced on lands along Danforth Road. If one accepts the argument that this interchange is both unnecessary and undesirable, to keep it in the 20 year Transportation Master Plan is unfair to land owners and a likely source of future legal conflict.

One basic function of a 401 interchange is to provide a link to other important roads that lead to significant destinations. This will not be true of an interchange at Nagle Road. A majority of the interchanges west of Cobourg serve populations in the range of 35,000 to 50,000 per interchange. With three interchanges Cobourg would have to have population of 100,000 to equal the least of these two figures.

Thank you for considering my contribution to the Public Consultation process.

Respectfully submitted.



[REDACTED] - Fwd: transportation master plan

**From:** Barry Thrasher  
**To:** [REDACTED]  
**Date:** 6/21/2011 8:12 AM  
**Subject:** Fwd: transportation master plan

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>>> [REDACTED] 6/20/2011 11:34 PM >>>

Dear Mr. Thrasher and Mr. Gumbs

I'm writing this email to comment on the poor condition of King St. between Burnham and Tracey Road. It's condition has continually degraded over the 10 years in which I've lived in the Glen Watford/Ravensdale neighbourhood and yet it is getting significantly more pedestrian and bike traffic. I wish I could've captured on video the scene that unfolded before me this afternoon around 4:30 pm. I was travelling in my car going westbound on King St just past Mahar. A car travelling eastbound had already passed me. I could see another eastbound car approaching a couple hundred metres away. Between myself and this other car was a jogger and a woman walking her dog - all going eastbound on the north side of the road. Also going east bound were a group of 3 cyclists on the south side. Both myself and the other car had to take turns pulling out to go around everyone. There isn't enough safe space for cars/busses/trucks AND any environmentally friendly form of transportation! This scene is becoming increasingly common. It is becoming increasingly dangerous too especially with the number of young children trying to bike, scooter or roller blade to school. Instead of cars, there is a parade of school busses going east and west bound from 8-9 am and again from 3-4 pm. Last Fall, a car rolled off the road at the curved section of King St just east of Tracey Rd. Thankfully, no one was injured. Unfortunately, many of the families living in this neighbourhood anticipate even more accidents in the near future because of the increased use of this road way and because of it's poor condition.

I commuted by bike to work and school in Toronto for 14 years and yet I feel my safety is more threatened biking along this section of King St. then I did in Toronto. This is a result of how narrow the road is and how inconsistent the surface is. Last summer, the road was topped with asphalt but it was left super graded. Now it's hard to avoid drifting down to the side of the road. This might be acceptable if the edges of the road were not chewed up or if the shoulders were paved or if the ditches weren't so close to the edge. Numerous times I've tried biking to Burnham School with my 5 year old son because it promotes a healthy, active lifestyle. But, given the condition the road is in I'm seriously questioning my judgement. He finds it difficult biking in the gravel of the shoulder and he doesn't want to bike into the ditch! The slope of the road makes it equally difficult for him to stay tight to the side of 'paved' road. The preferred place to bike ends up being about 2 feet into the road. Of course this is fine as long as there isn't vehicular traffic.

We have no alternative exit route from our neighbourhood and we need help to make this road way safer for everyone! We need a bike lane or at least a side walk. I believe the town owns the land between King St. and the railway tracks. I often imagine a pathway meandering through the trees on the north side of this road. Pedestrians and bikers would have their safe space and the cars would have theirs.

[REDACTED] 6/22/2011

Sincerely,



**From:** Barry Thrasher  
**To:** [REDACTED]  
**Date:** 6/21/2011 8:11 AM  
**Subject:** Fwd: COMMENTS TO DRAFT COBOURG TRANSPORTATION MASTER PLAN  
**Attachments:** Master Trans Plan Report Response, Sustainable Cobourg, June 21, 2011-FINAL.pdf

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>> [REDACTED] 6/21/2011 7:12 AM >>>

June 21, 2011

**From:** Sustainable Cobourg ([www.sustainablecobourg.ca](http://www.sustainablecobourg.ca))

**To:**  
Barry Thrasher  
Deputy Director of Public Works  
Town of Cobourg  
Sherwin Gumbs, P.Eng.  
Consultant Project Coordinator  
HDR | ITRANS

Please find attached Sustainable Cobourg's comments to the *Transportation Master Plan for the Town of Cobourg, Final Draft Report*.

These comments and recommendations were prepared jointly by Sustainable Cobourg's Bicycle Action Committee and Town Hall Committee, and approved by Sustainable Cobourg's Board of Directors.

Regards,

[REDACTED]





154 Stuart St., Cobourg, Ontario K9A 2Y2

June 21, 2011

**From:** Sustainable Cobourg ([www.sustainablecobourg.ca](http://www.sustainablecobourg.ca))

**To:**

Barry Thrasher  
Deputy Director of Public Works  
Town of Cobourg  
390 King St. West  
E-mail: [bthrasher@cobourg.ca](mailto:bthrasher@cobourg.ca)  
Phone : 905-372-9971  
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Sherwin Gumbs, P.Eng.  
Consultant Project Coordinator  
HDR | iTRANS  
100 York Boulevard, Suite 300  
E-mail : [sherwin.gumbs@hdrinc.com](mailto:sherwin.gumbs@hdrinc.com)  
Phone : 905-882-4100 ext. 5381  
Fax: 905-882-1557

**Response to Cobourg's Master Transportation Plan Final Draft Report – May 2011**

Sustainable Cobourg congratulates the Town of Cobourg Project Team and the HDR / iTRANS Project Team. The draft Master Transportation Plan report goes a long way towards shifting the balance from the needs of vehicular traffic towards the needs of more sustainable modes of transport. The combination of provisions in the Official Plan and the ones proposed in this Master Transportation Plan Study, once implemented, have the potential to create more sustainable, safer, and efficient options for transport in Cobourg. We note that you have listened and heard the arguments for more sustainability, and incorporated many of the recommendations from our Bicycle Action Committee.

In this response, we will note what we see are the highlights of the report, some concerns, and some further recommendations

**Highlights**

- The recommendation for a Travel Demand Management Master Plan – see notes below.
- The call for a Master Cycling and Pedestrian Plan. This is referred to no less than nine times! A Master Cycling and Pedestrian Plan can flesh out and provide more specifics that will allow for the development of the safe and efficient “Active Transport” infrastructure.
- The recommendation to implement a “cycling spine” network which “would form an integrated and continuous basic network of on-road cycling facilities linking key attractions and destinations within the Town and would act as a catalyst for development and promotion of

cycling initiatives in Cobourg. The spine network addresses existing discontinuities and the lack of existing cycling connections in and through downtown Cobourg". (p.58).

- The recommendation (Section 5) that the Town incorporate new policies into the Transportation Master Plan that promote active transportation in high-density areas, particularly in new, developing communities or in redevelopments.
- The recommendation for off-road corridors which "can provide connection opportunities between various on-road cycling facilities where a direct on-road connection may not be in place." (p.60) We especially like the recommendation for the construction of "[a] pathway following the general alignment of the future Kerr Street as a precursor to construction of the full roadway." (p.60). Given the location of the new Cobourg Community Centre, along with the soccer fields behind the CCC, the Legion Fields baseball facilities and the combined soccer and baseball facilities on south D'Arcy, this means of transport is significant!
- Appendix J. This appendix is full of specific areas for improvement and examples of what could work.

The report points out that the approach to Active Transport in Cobourg is one where it hasn't been a priority and isn't working. While the existing road infrastructure has challenges for meeting future needs, it is by and large meeting today's traffic needs. The same cannot be said for the Active Transport Network. "Although there is wide variety of cycling and pedestrian facilities provided throughout Cobourg, the existing active transportation network is fragmented and few existing routes connect directly to other dedicated cycling and pedestrian facilities."(p.28) We agree! To address these issues we look forward to working with the Town of Cobourg over the next year to develop a first class Cycling and Pedestrian Master Plan.

### **Broader Concerns**

While there is so much to be excited about in this Study, we are concerned by the study's recommendation to accommodate significant increases in vehicular traffic volumes, resulting in proposals, among others, for the reconstruction and widening of Elgin Street East, Brook Road North, and King Street East. The study bases this recommendation on the assumption that Cobourg's population is projected to increase by 57% from 18,210 persons to 28,500 persons by 2031, and employment is projected to increase by 27% from 12,060 jobs to 15,300 jobs by 2031.

The assumption of the study is that these increases in population and jobs will result in a corresponding increase in traffic volumes. Aside from the possibility that the forecast population and employment growth will not materialize, or that it will materialize but not with the same transportation needs that have characterized historical population growth, it is important to note that anticipatory investment in automobile infrastructure has the effect of facilitating and encouraging this unsustainable mode of transportation.

Any assumption for motorized vehicular traffic increases must be considered in the context of climate change and policies needed to address climate change over the next several decades (the planning time horizon of this transportation study). To adequately address climate change (see Appendix A for a

discussion of climate change), reductions in greenhouse gas emissions of greater than 50% below current levels are needed by 2020. Reductions of approximately 90% below current levels are needed by 2040.

Meeting these targets will require a profound change in the way we design our town so that we are much less dependent on the automobile. While cars will no doubt get cleaner and more efficient, we will also require our communities and our neighbourhoods to be designed so that people can get access to the employment, shopping, educational, recreational, and cultural amenities they want with less rather than more automobile dependence. Now is the time to plan for that future by shifting investment from the car to active transportation infrastructure.

**A New “Lens”: Travel demand management (TDM)**

The draft Master Transportation Plan report provides an excellent section (6.2) describing TDM and recommends that Cobourg adopt a “TDM culture”. We could not agree more. We believe, in fact, that the recommendations in Section 6.2 are “game changing” and that they have not been fully reflected in the other recommendations and assumptions in the report.

Travel demand management includes many strategies as described in Table 1 below.

**Table 1 TDM Strategies<sup>1</sup>**

<b>Improves Transport Options</b>	<b>Incentives</b>	<b>Land Use Management</b>	<b>Policies and Programs</b>
<ul style="list-style-type: none"> <li>• Transit improvements</li> <li>• Non-motorized improvements</li> <li>• Rideshare programs</li> <li>• Flextime</li> <li>• Car sharing</li> <li>• Telework</li> <li>• Taxi improvements</li> <li>• Bike/transit integration</li> <li>• Guaranteed ride home</li> <li>• HOV Priority</li> </ul>	<ul style="list-style-type: none"> <li>• Road pricing</li> <li>• Distance-based fees</li> <li>• Commuter financial incentives</li> <li>• Parking pricing</li> <li>• Pay-as-you-drive vehicle insurance</li> <li>• Fuel tax increases</li> <li>• Non-motorized encouragement</li> </ul>	<ul style="list-style-type: none"> <li>• Smart growth</li> <li>• New urbanism</li> <li>• Location-efficient development</li> <li>• Parking management</li> <li>• Transit oriented development</li> <li>• Car free planning</li> <li>• Traffic calming</li> </ul>	<ul style="list-style-type: none"> <li>• TDM Programs</li> <li>• Commute trip reduction</li> <li>• Campus transport management</li> <li>• Freight transport management</li> <li>• Tourist transport management</li> <li>• TDM marketing</li> <li>• Least-Cost planning</li> <li>• Market reforms</li> <li>• Performance Evaluation</li> </ul>

Transportation demand management is a new “lens” through which we must view transportation planning. Historically, transportation planning has generally assumed that motorized vehicular demand (trip rates, traffic volumes) will be “business as usual”<sup>2</sup>. The primary concern has been how to meet this demand with additional supply (more roads, more lanes, more turning lanes, more ramps, fewer driveways, better signaling, etc.). The challenges currently facing society require that we change this approach. Priorities have shifted. Our new priorities are climate change, pollution, resource scarcities, rising health costs, and the depletion of fossil fuels over the next several decades.

<sup>1</sup> This table is taken from <http://www.vtpi.org/tdm/tdm12.htm>

<sup>2</sup> For example, the draft Transportation Master Plan report has estimated future traffic demand using trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation (8th Edition)* publication. These rates are based on historical data.

These new priorities need to be reflected in new transportation planning priorities, priorities which reflect a shift from transportation supply management to transportation demand management:

#### **Supply Management Priorities**<sup>3</sup>

- Roadway design and construction
- Congestion reduction
- Traffic control and management
- Vehicle parking
- Freight management
- Technological innovation (intelligent transportation systems)

#### **Demand Management Priorities**

- Environmental concerns
- Energy conservation
- Equity – serving disadvantaged populations
- Sustainability
- Land use integration (smart growth)
- Public health and fitness

To address these new transportation priorities, we need, among other measures, to significantly reduce travel distances and traffic volumes. The focus of future transportation planning in Cobourg needs to shift from accommodating additional vehicular traffic volumes to designing transportation and land use systems where:

- transportation demand management becomes the primary goal of transportation planning and design
- travel distances are minimized
- daily needs can be largely met within neighbourhoods through walking, cycling, and transit
- transportation and land use planning and design supports and reflects a compact urban form

We are recommending, therefore, that transportation demand management become the primary goal of Cobourg's future transportation planning and design and that all other recommendations in the Transportation Master Plan report be reconsidered in this context. Taking this approach, we would recommend the following:

#### **RECOMMENDATIONS:**

1. That a Transportation Demand Management (TDM) Master Plan become the primary planning tool for future transportation planning in Cobourg.
2. That a Transportation Demand Management Master Plan include:
  - a. A Cycling and Pedestrian Master Plan
  - b. Parking Management strategies<sup>4</sup>
  - c. TDM Marketing and Promotion<sup>5</sup>, including:
    - i. Survey users and potential users of alternative modes to determine preferences, knowledge, barriers and opportunities for changing travel behavior and providing TDM services.
    - ii. Targeted, personalized marketing campaigns, which identify consumers who are most able and willing to change their travel patterns and providing them with suitable incentives to try alternatives.
    - iii. Educate public officials and businesses about TDM strategies they can implement.
    - iv. Promote benefits and changing public attitudes about alternative modes. For example, promote alternative modes as enjoyable, healthy and prestigious.

<sup>3</sup> Taken from "TDM Planning and Implementation", see <http://www.vtpi.org/tdm/tdm50.htm>

<sup>4</sup> See "Parking Management: Strategies, Evaluation and Planning", [http://www.vtpi.org/park\\_man.pdf](http://www.vtpi.org/park_man.pdf)

<sup>5</sup> See <http://www.vtpi.org/tdm/tdm23.htm>

- v. Produce a Multi-Modal Access Guide that provides concise information on how to access a particular destination by alternative modes.
  - vi. Improve wayfinding (guidance for navigating around an area and through a transportation system), particularly for use of alternative modes.
  - vii. Make alternative modes more affordable, with appropriate prices and discounts.
  - viii. Identify and overcome barriers to the use of alternative modes.
  - ix. Encourage transit ridership by making transit service convenient and attractive.
  - x. Provide information that encourages people to have friendly competition to achieve travel change objectives, such as contests between individuals, businesses and communities
- d. Consideration of the establishment of a **Cobourg Transportation Management Association**<sup>6</sup>
- e. A **Transit Master Plan**, including:
- i. Increased service - more routes, increased frequency, and longer operating hours.
  - ii. Improved coordination among modes – inter-regional buses, trains.
  - iii. Improved stops and stations, including shelters (enclosed waiting areas), Wayfinding and other Navigation Tools, internet services, and other convenience and comfort features.
  - iv. Lower fares and discounts, and more convenient fare payment (such as electronic “smart cards”).
  - v. Improved rider information and marketing programs, including real-time information on transit vehicle arrival.
  - vi. Transit Oriented Development and Smart Growth, which result in land use patterns more suitable for transit transportation.
  - vii. Pedestrian and cycling improvements that improve access around transit stops.
  - viii. Universal Design of vehicles, stations and pedestrian facilities to accommodate people with disabilities and other special needs.
  - ix. Multi-Modal Access Guides, which includes maps, schedules, contact numbers and other information on how to reach a particular destination by public transit.
  - x. Shuttle Services<sup>7</sup>
- f. **Commute Trip Reduction strategies**, including:
- i. Commuter Financial Incentives<sup>8</sup> (Parking Cash Out and Transit Allowances)
  - ii. Rideshare Matching
  - iii. Alternative Scheduling (Flextime and Compressed Work Weeks)
  - iv. Telework (allowing employees to work at home, and using telecommunications to substitute for physical travel in other ways).
  - v. Guaranteed Ride Home<sup>9</sup>.
  - vi. Provide Wayfinding and Multi-Modal Navigation Tools which provide guidance on how to reach a worksite by walking, cycling, and transit.
  - vii. Worksite amenities such as on-site childcare, restaurants and shops, to reduce the need to drive for errands.
  - viii. Company travel reimbursement policies that reimburse bicycle or transit mileage for business trips when these modes are comparable in speed to driving, rather than only reimbursing automobile mileage.

<sup>6</sup> For an extensive discussion of Transportation Management Associations see <http://www.vtpi.org/tdm/tdm44.htm>

<sup>7</sup> See <http://www.vtpi.org/tdm/tdm39.htm>

<sup>8</sup> See <http://www.vtpi.org/tdm/tdm8.htm>

<sup>9</sup> See <http://www.vtpi.org/tdm/tdm18.htm>

3. That funding for expanding existing road capacity and for new road capacity be considered only after a complete Transportation Demand Management Master Plan has been developed and implemented.

## Appendix A

### AVERTING CLIMATE CATASTROPHE

"IF HUMANITY WISHES TO PRESERVE A PLANET SIMILAR TO THAT ON WHICH CIVILIZATION DEVELOPED AND TO WHICH LIFE ON EARTH IS ADAPTED, PALEOCLIMATE EVIDENCE AND ONGOING CLIMATE CHANGE SUGGEST THAT CO<sub>2</sub> WILL NEED TO BE REDUCED FROM ITS CURRENT 385 PPM TO AT MOST 350 PPM"

James Hansen, NASA's Goddard Institute for Space Studies

During a Toronto heat wave in 1988, Canada hosted the first-ever international scientific conference on climate change, *Our Changing Atmosphere: Implications for Global Security*. The consensus statement from the assembled scientists was "HUMANITY IS CONDUCTING AN UNINTENDED, UNCONTROLLED, GLOBALLY PERVASIVE EXPERIMENT, WHOSE ULTIMATE CONSEQUENCES ARE SECOND ONLY TO GLOBAL NUCLEAR WAR."

When the Kyoto agreement was signed by Canada in 1998, Canada committed to reducing its emissions by 6% below 1990 levels during the period 2008-2012. Since then, by 2007 our emissions had instead risen to 26% above 1990 levels, almost 34% above the level of our Kyoto commitments. Globally, emissions have risen faster than any of the models produced by the Intergovernmental Panel on Climate Change (IPCC), with alarming results. Glaciers are melting, threatening global water supplies. Sea levels are rising, leading to evacuations of people from low-lying island nations and increasing the threats of storm damage in coastal areas. Coral reefs are dying. Tropical storms are intensifying. Many areas are experiencing unprecedented heat waves and droughts. Conflict in places like Darfur is exacerbated by climate-induced drought, and heralds the arrival of resource wars fuelled by the climate crisis.

The situation is getting worse. As the ice melts in the Arctic, less sunlight is reflected and the ocean heats up more quickly. This accelerates the melting of permafrost, releasing ancient deposits of methane (a greenhouse gas twenty times more powerful than carbon dioxide) into the atmosphere. The oceans are losing their ability to absorb excess carbon.

Climate change now claims the lives of 315,000 people annually and is expected to create 700 million refugees by mid-century. If unchecked, it will reduce the Earth's carrying capacity to just 1 billion by century's end. Less than a sixth of today's population will survive unless we act now. Canadians have felt the impacts from coast to coast to coast: floods and firestorms; droughts and water shortages; heat waves and smoggy days; hurricanes; catastrophic wind and ice storms shutting down communities; insect infestations killing millions of hectares of trees. The permafrost from Siberia to the Mackenzie Valley is melting. As it melts, whole villages face the need to relocate, and caribou sink in the mud as they try to migrate. The glaciers, whether in the Alps, the Rockies, the Yukon, or the Andes, are all in rapid retreat. The intensity of hurricanes is increasing. While some hurricane specialists are not yet convinced, increasingly, research at MIT and Princeton demonstrates that the energy packed in the hurricane's punch has increased by 50-80% from 1950 to 2003. Warmer waters in the ocean lead to more severe

hurricanes. In the fall of 2003, Hurricane Juan was the first full force tropical hurricane ever to slam into Nova Scotia. Normally, cooler ocean water to our south would have downgraded Juan to a tropical storm, but it hit Nova Scotia as a full force tropical hurricane.

Scientists are increasingly talking about climate as being less a dial, than a switch. What is described in the literature as "non-linear perturbations" can be translated as "nasty shocks" or sudden and abrupt climate catastrophes. A number of scientists have determined that the risk of "tipping point events" (the loss of the Gulf Stream, the collapse of the Western Antarctic Ice Shelf, and the Greenland Ice Sheet) is increased if global average temperature goes up by 2° C above the pre-Industrial Revolution temperature. This, they estimate, could happen if concentrations of CO<sub>2</sub> in the atmosphere were to increase to somewhere between 400 to 450 ppm. We are 384 ppm now, up from 275 ppm in the 1800s, and now rising at 3 ppm per year.

In Copenhagen in December 2009 the world failed to negotiate a new climate treaty. In 2007, in Bali, industrialized nations agreed to negotiate reductions in the range of 25-40% below 1990 levels by 2020. The 25-40% emissions reduction range is likely too low. It is based on a stabilization target of 450 ppm of atmospheric CO<sub>2</sub>. Based on recently observed trends, a 350 ppm goal is now being embraced by climatologists and is becoming the new scientific consensus. While there has been no rigorous analysis of the policy implications, a much more aggressive emissions reduction plan would be necessary to achieve it.

The coming decade will largely determine the type of planet we will have at century's end. If we act boldly and decisively to reduce our dependence on finite polluting energy, we can still deliver a planet that sustains humanity and most other life. If we fail to change existing patterns, we will almost surely usher in an era of conflict and irreversible changes.

"WE ARE RISKING THE ABILITY OF THE HUMAN RACE TO SURVIVE."

Dr. Rajendra Pachauri, Chair of the Intergovernmental Panel on Climate Change ([www.ipcc.ch](http://www.ipcc.ch))

**[REDACTED] - Fwd: Comments on the Transportation Master Plan**

**From:** Barry Thrasher  
**To:** [REDACTED]  
**Date:** 6/21/2011 8:15 AM  
**Subject:** Fwd: Comments on the Transportation Master Plan

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>> [REDACTED] 6/12/2011 3:25 PM >>>

**To the Mayor and Council, and the Deputy Director of Public Works:**

**Transportation Master Plan**

It appears that Transportation Master Plan concentrates on finding expensive solutions to simple problems, and it also suggests excessive spending on major road improvements that no longer represent the reality of Cobourg .

For instance:

***a. Division/Munroe/Park intersection***

The plan correctly identifies this as problem intersection. But it never was such a creator of a traffic bottlenecks before the last "improvements" that made the intersection longer and changed all the traffic signal timings.

I suggest as a way to get action very quickly and inexpensively the Town could do the following:

1. Close access to vehicles between Park and Division, (both ways) Such closures are frequent in Toronto when a very small road meets a major one, they are popular both with motorists and residents.

This would allow the intersection to shrink back to Munroe only.

2. Adjust the traffic signal sequences back to what they used they used to be.

This could be done for a trail period of 3 months, but I am sure it would be so successful that it could be become permanent.

It would also be very inexpensive compared to the alternatives which include completely realigning Monroe Street, but traditionally the Town has never been interested in saving money on public works.



***b. King Street East.***

So, they want to turn King Street East into a **4 lane arterial Road** east of D'Arcy! Why? I would think most residents in eastern Cobourg would be completely against turning King East into an arterial Road from D'Arcy to downtown, so what is the point of doing it east of D'Arcy? Is it another way to subsidize local construction firms? Another step on the process of turning Cobourg into Oshawa? This is outdated thinking and the Town should not encourage it.

The Transportation Master Plan envisages the population of Cobourg expanding by another 10,000 people. Yet Cobourg was **not** designated as a growth community by the province, and even the transportation master plan admits that such an expansion is not evident from building permits for current and proposed developments.


**c. Simple cycling suggestions**

i. King Street East at College is very unsafe for cyclists. This has been known for some time and the Transportation Plan mentions that oversized bump-outs are dangerous as they force cyclists into the traffic stream, but it is not clear in the plan that simple improvements will be implemented.

ii. Cycling along King West at the intersection with William.

At this intersection the traffic signals will only let east-west traffic proceed if the signals are triggered by a vehicle. Unfortunately bicycles do not trigger the signals. The solution is to adjust signals to allow east west-traffic every signal cycle. This is another example of how a simple adjustment of traffic signal sequencing could rapidly and inexpensively make traffic management better.

My suggestion is that the Council should look very carefully at the Traffic Master Plan before adopting it, as it is a document to guide the future of Cobourg for the next 20 years. It would be better if the plan was based on realistic population projections, and if it did not suggest plans for massive road widening that may not be necessary and would serve to destroy the character of Cobourg rather than enhancing it.





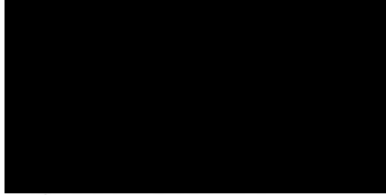
THE CORPORATION OF THE TOWN OF COBOURG

VICTORIA HALL  
55 KING STREET WEST  
COBOURG, ONTARIO  
K9A 2M2

Telephone: 905-372-4301  
Fax: 905-372-1533  
Fax: 905-372-7421

File No. T01 SL.....

June 15, 2011



Dear



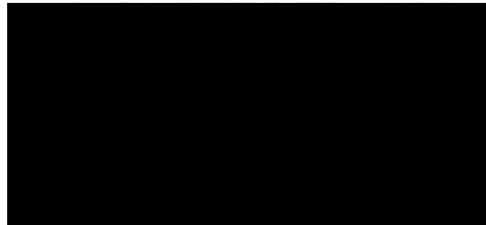
Re: Request for Traffic Light at Elgin and D'Arcy Streets, Cobourg

Your letter dated May 27, 2011 regarding a request for a traffic light at Elgin and D'Arcy Streets was presented at the Regular Council meeting held on Monday, June 13, 2011.

The Members of Council received your letter for information purposes and have included it as part of the Final Master Transportation Plan public comment submissions.

Thank you for bringing this matter to Council's attention.

Yours very truly,



LVB/lrc

p.c. Councillor M. Mutton  
B. Thrasher ✓



## Memorandum

**To:** Barry Thrasher  
**Cc:** Sherwin Gumbs  
**From:** July 6, 2011 (Updated August 18, 2011)  
**Date:**  
**Re:** **Town of Cobourg TMP – Final Draft #4  
 Response to Public Comments**

Barry,

This memo provides a response to the public comments on the Final Draft #4 of the Cobourg Transportation Master Plan, received on Thursday June 30<sup>th</sup>. It outlines our responses to the questions raised, and identifies any proposed changes to the TMP report for finalization.

Comment No.	Response	Proposed Changes to Report
<b>Correspondence #1</b>		
1a.	Maintenance programs for cycling/pedestrian facilities to be determined through a cycling/pedestrian master plan study and available budget from the Town.	No Change
1b.	Street markings at intersections can vary based on the roadway type and the facilities provided along the intersecting roadways at intersections (e.g. bike lanes, sidewalks, turn lanes, etc.). Recommendations in the Town's Urban Design Guidelines should be referred to as well as other applicable standards.	No Change
1c.	Recommended focus should be on providing universal-access to/from all new and existing development areas, rather than prioritizing one mode of travel over the other.	No Change
1d.	To be determined by Town's Engineering / road design department and through detailed design studies.	No Change

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1e.	Town of Cobourg Transit Department to determine bus fleet requirements.	No Change
2.	Town of Cobourg to determine.	No Change
3.	Comment noted. Adjustments to signal timings should be made, as needed, to ensure that pedestrians and vehicles (autos & cyclists) can be safely accommodated at intersections.	No Change
4.	Colour-test completed	No Change
5.	This has been accounted for.	No Change
6.	Comment noted	Added to recommendations on page 64
7.	[Don't understand this question]	
8.	LOS/screenline assessments measure auto capacity along the roadway. The impacts of removing a travel lane would be used to illustrate the reductions in auto capacity along the roadway. However, the Bicycle Compatibility Index (example found here: <a href="http://safety.fhwa.dot.gov/tools/docs/bci.pdf">http://safety.fhwa.dot.gov/tools/docs/bci.pdf</a> ) can be used to measure the cycling "level of service" along a roadway based on the travel characteristics in the adjacent travel lane beside a cycling facility (e.g. number of lanes beside a cycling facility, speed limit, auto volumes). If an auto travel lane is removed or if the speed limit is reduced, the impacts to "cycling-capacity" cannot be measured, but the impacts to the overall cycling level of service can be quantified.	No Change
9.	Elgin Street widening/reconstruction would be required to accommodate any cycling facilities proposed as part of Northumberland County's cycling master plan study, and to accommodate future traffic growth, especially as Cobourg East develops as required. The need to widen King Street east of D'Arcy is in response to traffic capacity constraints that may be experienced along King Street as a result of future development, mainly in Cobourg East beyond 2016. Although the roadway is not expected to be at capacity by 2016, levels of congestion may be experienced that would not be desirable by Cobourg residents. King Street is also the only continuous east-west corridor, east of D'Arcy Street that is south of the railway tracks. Traffic conditions along King Street should be monitored over the coming years to confirm the need for widening as future development occurs.	No Change
10.	Refer to recommendations in the Urban Design Guidelines.	No Change
<b>Correspondence #2</b>		
A.	It is recommended that the land use planning objectives identified in the Town's official plan be followed as well as the recommendations in the Urban Design Guidelines. There should be focus on providing "universal access" for all modes of transportation in all areas. "Priority" by different travel modes is somewhat reflected in the hierarchy of the road system (e.g. arterial roads	No Change

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	<p>designed to move a high number of vehicles at relatively high speeds, local road designed to move a lesser number of vehicles at a lower speed, etc.) However, for all roadway types, it is recommended that cycling and pedestrian facilities be provided to allow for equal-access opportunities. For example, although the Elgin Street corridor is designed to move a high number of vehicles, it is not recommended that it be designated as a “Vehicle-Priority” corridor, as it can also serve as a priority corridor for cyclists.</p>	
B.	<p>The feasibility of this could be determined through a cycling master plan study. However, this could be difficult to implement given the significant amount of property impacts that would likely occur as a result of providing a denser pedestrian/biking/pathway grid. As recommended in the TMP report however, the use of off-road pathways corridors should be considered for cycling/pedestrian facilities.</p>	No Change
C.	<p>Nagle road interchange should be protected for as this interchange will likely be required as Cobourg East develops. Goods movement could be restricted to the arterial road network to avoid traffic infiltration within the Cobourg East neighbourhoods.</p>	No Change
<b>Correspondence #3</b>		
General comment	<p>Comment noted. Recommendations for improving roads with rural cross-sections, including King Street East, are provided in the first paragraph on Page 52 (Section 6.4.2) of the TMP report.</p>	No Change
<b>Correspondence #4</b>		
General comments	<p>TDM recommendations should be examined as part of a TDM study to determine what strategies would be applicable to the Town of Cobourg.</p>	No Change
1.	<p>To be determined by the Town.</p>	No Change
2.	<p>Agree. These recommendations outline a TDM strategy that can be studied in more detail to confirm the applicability of these strategies to the Town of Cobourg, and associated costs.</p>	No Change
3.	<p>Decision to be made by the Town.</p>	No Change
<b>Correspondence #5</b>		
a.	<p>Recommendation to close access between Park and Division can be considered. This may place additional traffic “pressure” on Spencer Street West, especially for EBLT motorists who can no longer to left from Park onto Division Street and may divert to Spencer Street.</p>	Recommendation to be added to the report
b.	<p>The need to widen King Street east of D’Arcy is in response to traffic capacity constraints that may be experienced along King Street as a result of future development, mainly in Cobourg East beyond 2016. Although the roadway is not expected to be at capacity by 2016, levels of congestion may be experienced that would not be desirable by Cobourg residents. King Street is also the only continuous east-west corridor, east of D’Arcy Street that is south of</p>	No Change

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c.	<p>the railway tracks. Traffic conditions along King Street should be monitored over the coming years to confirm the need for widening as future development occurs.</p> <p>Appendix J of the TMP report provides recommendations on accommodating cyclists at bulb-outs. However, it is recommended in the short-term that Albert Street be designated as a cycling route as part of the cycling spine network. Modifications and/or reconstruction would likely be required to King Street to better accommodate cyclists. A general recommendation is provided in Section 6.4.1 of the TMP report (Intersection Improvement) that, in order to maximize intersection capacity, existing infrastructure and transportation system management tools should be used. This recommendation includes measures such as signal timing modifications, which is applicable to the King Street/William Street intersection.</p>	No Change
<b>Correspondence #6</b>		
N/A	Signalization is recommended. See page 55	No Change



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