# Greater Toronto Area 2004 Cordon Count Program

## **Analysis of Peak Periods**

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## Greater Toronto Area Cordon Count Analysis - Peak Periods

June 2007

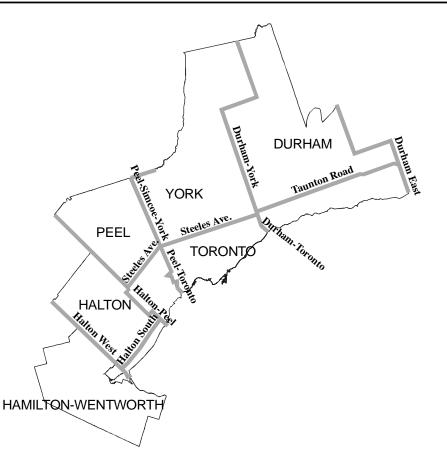
#### Prepared by: Data Management Group Joint Program in Transportation University of Toronto

The collection of traffic counts taken by various Regional Governments and the Province of Ontario at various locations in the Greater Toronto Area over the last several years have been assembled in one data base. This report presents a summary of conditions during the periods of maximum traffic flow at a collection of screenlines for the most recent counts in 2004. The data is presented without alteration or corrections as provided by the City of Toronto, the Regional Municipalities of Durham, Halton, Peel and York and the Ministry of Transportation Ontario. The data was collected in the May and June period of 2004.

Each Regional Municipality has their own set of needs and priorities for the data. Therefore, the data collection methods are somewhat different in each jurisdiction. The level of commonality in the data bases, which makes this report possible, is the result of efforts by the Transportation Research and Data Management Group (TRADMAG). TRADMAG is a technical committee with representatives from the Regional Municipalities mentioned above plus the City of Hamilton, GO Transit, Toronto Transit Commission and the Ministry of Transportation Ontario.

Eleven screenlines were chosen to illustrate the variation in vehicular counts. Common morning (6:00 to 10:00 A.M.) and evening (3:00 to 7:00 P.M.) time windows are used to represent the periods of peak travel and to provide a common frame for comparison. The screenlines are chosen to represent the interests of each jurisdiction in addition to providing information on the development of northsouth travel within some Regional Municipalities.

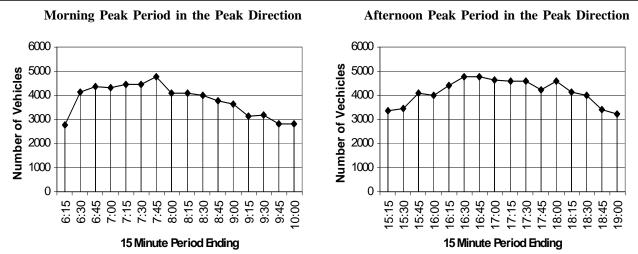
#### **Screenline Definitions**



## **Halton West Screenline**

This screenline is located at the western edge of the Regional Municipality of Halton as an extension of the common boundary between Halton and the City of Hamilton to intersect the Burlington Skyway. The screenline follows this straight path rather than the Regional boundary to minimize the influence of trips double crossing the line. The dominant direction is east-west although the direction of the Burlington Skyway is north-south. Northbound traffic on this bridge is assumed to be destined to eastbound routes, while the reverse is assumed for southbound traffic. East(north)bound is the peak direction in the morning peak period and west(south)bound is the peak direction in the afternoon. Contra-flow (flow in the opposite direction during the peak 3 hour period) represents 62% of the peak direction in the morning and 73% of the peak direction in the afternoon.

### **Peak Period Analysis**



### **Peak Three Hours**

East(north)bound		West(south)bound	
Time of Day	Total Number	Time of Day	Total Number
	of Vechicles		of Vechicles
6:00 to 9:00	48905	15:00 to 18:00	51474
6:15 to 9:15	49235	15:15 to 18:15	52220
6:30 to 9:30	48265	15:30 to 18:30	52766
6:45 to 9:45	46691	15:45 to 18:45	52069
7:00 to 10:00	45226	16:00 to 19:00	51278

The absolute peak three hour window in the morning occurs from 6:15 to 9:15 A.M., although the total number of vehicles in this three hour window is very similar for 6:00 to 9:00 A.M. In the afternoon, the peak three hours occur from 3:30 to 6:30 P.M., however, the number of vehicles is very similar in the three hour time windows beginning 15 minutes earlier and 15 minutes later. The number of vehicles in the peak three hours in the afternoon is 7% higher than the number in the morning peak, which reflects the sustained higher 15 minute traffic volumes over an extended period.

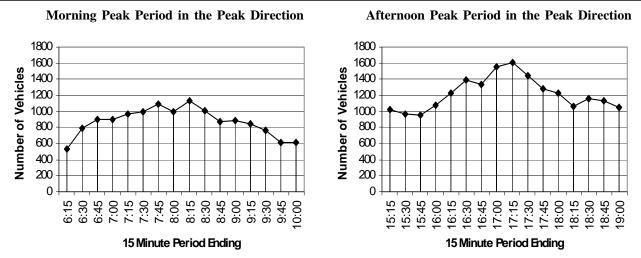
## Morning and Afternoon Peak Hour

The peak one hour window occurred between 6:45 and 7:45 A.M. with a total of 17995 vehicles representing 37% of the morning peak three hours. In the afternoon, the peak one hour window occurred between 4:15 and 5:15 P.M. with a total of 18571 vehicles representing 35% of the afternoon peak three hours. The afternoon peak hour is 3% larger than the morning peak hour.

## Halton South Street Screenline

This screenline consists of all major streets crossing Dundas Street (Regional Road 5) in the northern sections of Burlington. Historically, this screenline has included stations in both Burlington and Oakville, but no traffic counts were available for Oakville in the 2004 count. Thus, the analysis presented here is restricted to just the Burlington portion of the screenline. Although the actual direction is northeast and southwest, the screenline is considered to be east-west from Orchard Rd west to Indian Creek. The traffic directions are considered to be north and south. Northbound is the peak direction in the morning peak period and southbound is the peak direction in the afternoon. Contra-flow represents 30% of the peak direction in the morning and 69% of the peak direction in the afternoon.

## **Peak Period Analysis**



### **Peak Three Hours**

Northbound		Southbound	
Time of Day	Total Number of Vechicles	Time of Day	Total Number of Vechicles
6:00 to 9:00	11054	15:00 to 18:00	15087
6:15 to 9:15	11362	15:15 to 18:15	15140
6:30 to 9:30	11345	15:30 to 18:30	15333
6:45 to 9:45	11064	15:45 to 18:45	15516
7:00 to 10:00	10781	16:00 to 19:00	15480

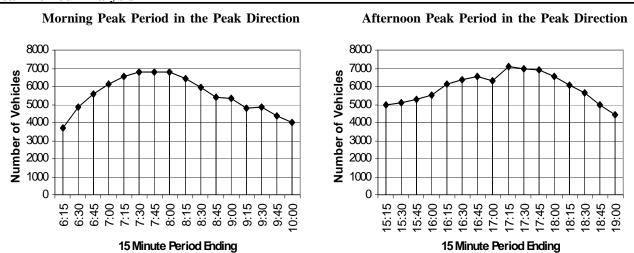
The absolute peak three hour window in the morning occurs from 6:15 to 9:15 A.M., although the total number of vehicles is very similar in the three hour time window beginning 15 minutes later. In the afternoon, the peak three hours occur from 3:45 to 6:45 P.M., however, the number of vehicles is very similar in the three hour time window beginning 15 minutes earlier and 15 minutes later. The number of vehicles in the peak three hours in the afternoon is 4% higher than the number in the morning peak.

## **Morning and Afternoon Peak Hour**

The peak one hour window occurred between 7:30 and 8:30 A.M. with a total of 4208 vehicles representing 37% of the morning peak three hours. In the afternoon, the peak one hour window occurred between 4:30 and 5:30 P.M. with a total of 5947 vehicles representing 38% of the afternoon peak three hours. The afternoon peak hour is 41% larger than the morning peak hour.

## **Halton-Peel Screenline**

This screenline follows the western boundary of the Regional Municipality of Peel, including the full length of the common boundary with the Regional Municipality of Halton. The screenline follows the jurisdictional boundary and includes all major roads crossing the boundary in the east-west direction. Eastbound traffic is the dominant direction in the morning peak period and westbound traffic is the dominant direction in the afternoon peak period. Contra-flow represents 57% of the peak direction in the morning and 65% of the peak direction in the afternoon.



#### **Peak Period Analysis**

### **Peak Three Hours**

Eastbound		Westbound	
Time of Day	Total Number of Vechicles	Time of Day	Total Number of Vechicles
6:00 to 9:00	70164	15:00 to 18:00	73618
6:15 to 9:15	71256	15:15 to 18:15	74699
6:30 to 9:30	71284	15:30 to 18:30	75263
6:45 to 9:45	70057	15:45 to 18:45	74973
7:00 to 10:00	67940	16:00 to 19:00	73903

The absolute peak three hour window in the morning occurs from 6:30 to 9:30 A.M. but is very similar to the three hour window beginning 15 minutes earlier. In the afternoon, the peak three hours occur from 3:30 to 6:30 P.M. but is very similar to the three hour window beginning at 3:45 P.M. The number of vehicles in the peak three hours in the afternoon is 5% higher than the number of vehicles in the morning peak.

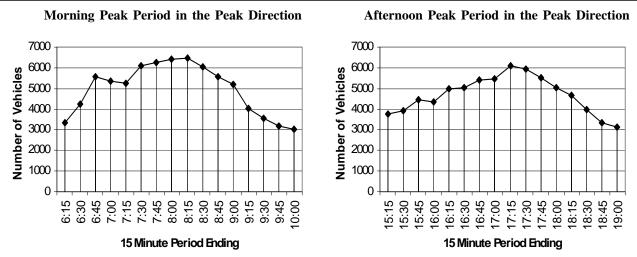
### Morning and Afternoon Peak Hour

The peak one hour window occurred between 7:00 and 8:00 A.M. with a total of 26898 vehicles representing 38% of the morning peak three hours. In the afternoon, the peak one hour window occurred between 5:00 and 6:00 P.M. with a total of 27425 vehicles representing 36% of the afternoon peak three hours. The afternoon peak hour is 2% larger than the morning peak hour.

## Peel Steeles Avenue Screenline

This screenline follows Steeles Avenue in the southern portion of the City of Brampton close to its common boundary with the City of Mississauga all within the Regional Municipality of Peel. The line extends in an east-west direction from the common boundary with the City of Toronto to the common boundary with the Regional Municipality of Halton. The screenline includes all major roads crossing the screenline in the north-south direction. Southbound traffic is the dominant direction in the morning peak period and northbound traffic is the dominant direction in the afternoon peak period. Contra-flow represents 50% of the peak direction in the morning and 65% of the peak direction in the afternoon.

## **Peak Period Analysis**



### **Peak Three Hours**

South	Southbound		Northbound	
Time of Day	Total Number of Vechicles	Time of Day	Total Number of Vechicles	
6:00 to 9:00	65761	15:00 to 18:00	60009	
6:15 to 9:15	66410	15:15 to 18:15	60908	
6:30 to 9:30	65687	15:30 to 18:30	60952	
6:45 to 9:45	63325	15:45 to 18:45	59844	
7:00 to 10:00	60967	16:00 to 19:00	58638	

The absolute peak three hour window in the morning occurs from 6:15 to 9:15 A.M. In the afternoon, the peak three hours occur from 3:30 to 6:30 P.M., although the total number of vehicles is very similar in the three hour windows beginning 15 minutes before and 15 minutes after. The number of vehicles in the peak three hours in the morning is 8% higher than the number in the afternoon peak.

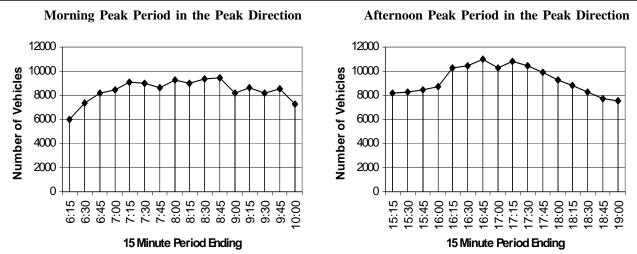
## **Morning and Afternoon Peak Hour**

The peak one hour window occurred between 7:15 and 8:15 A.M. with a total of 25195 vehicles representing 38% of the morning peak three hours. In the afternoon, the peak one hour window occurred between 4:45 and 5:45 P.M. with a total of 23053 vehicles representing 39% of the afternoon peak three hours. The morning peak hour is 9% larger than the afternoon peak hour.

## **Peel-Toronto Screenline**

This screenline is located at the western boundary of the City of Toronto and coincides with a portion of the eastern boundary of the Regional Municipality of Peel. The potential for vehicles double crossing the jurisdictional boundary is very high in the areas of the south and east of Toronto International Airport. For the sake of consistency, the stations included in the analysis are the same used by the Region of Peel. The screenline includes all major roads crossing the boundary in the east-west direction. Eastbound traffic is the dominant direction in the morning peak period and westbound traffic is the dominant direction in the afternoon peak period. Contra-flow represents 86% of the peak direction in the morning and 89% of the peak direction in the afternoon.

## **Peak Period Analysis**



### **Peak Three Hours**

Eastbound		Westbound	
Time of Day	Total Number of Vechicles	Time of Day	Total Number of Vechicles
6:00 to 9:00	101925	15:00 to 18:00	116099
6:15 to 9:15	104582	15:15 to 18:15	116712
6:30 to 9:30	105346	15:30 to 18:30	116720
6:45 to 9:45	105697	15:45 to 18:45	115996
7:00 to 10:00	104516	16:00 to 19:00	114848

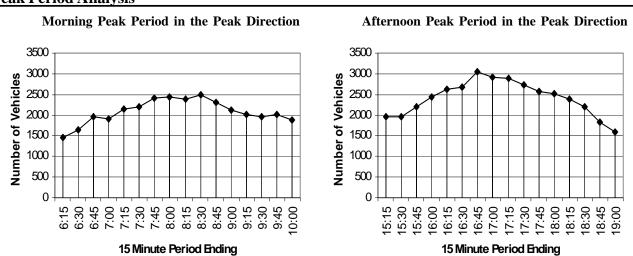
The absolute peak three hour window in the morning occurs from 6:45 to 9:45 A.M. In the afternoon, the peak three hours occur from 3:30 to 6:30 P.M., however, the number of vehicles is similar in the three hour time window starting 15 minutes later. The number of vehicles in the peak three hours in the afternoon is 10% higher than the number in the morning peak.

### **Morning and Afternoon Peak Hour**

The peak one hour window occurred between 7:45 and 8:45 A.M. with a total of 37123 vehicles representing 35% of the morning peak three hours. In the afternoon, the peak one hour window occurred between 4:15 and 5:15 P.M. with a total of 42575 vehicles representing 36% of the afternoon peak three hours. The afternoon peak hour is 15% larger than the morning peak hour.

## Peel-Simcoe-York Screenline

This screenline is located at the western boundary of the Regional Municipality of York where it is coincident with the eastern boundary of the Regional Municipality of Peel and a portion of the south-eastern boundary of the County of Simcoe. Because it is a combination of directions, the screenline includes all major roads crossing the boundary regardless of the direction of the road. This analysis combines the eastbound with the southbound traffic and the westbound with the northbound traffic, which is consistent with travel entering or leaving the Greater Toronto Area. Contra-flow represents 83% of the peak direction in the morning and 82% of the peak direction in the afternoon.



## **Peak Period Analysis**

### **Peak Three Hours**

East(south)bound		West(north)bound	
Time of Day	Total Number of Vechicles	Time of Day	Total Number of Vechicles
6:00 to 9:00	25480	15:00 to 18:00	30605
6:15 to 9:15	26050	15:15 to 18:15	31027
6:30 to 9:30	26367	15:30 to 18:30	31269
6:45 to 9:45	26408	15:45 to 18:45	30882
7:00 to 10:00	26363	16:00 to 19:00	30053

The absolute peak three hour window in the morning occurs from 6:45 to 9:45 A.M. although the total number of vehicles in the periods starting 15 minutes earlier and 15 minutes later are very similar. In the afternoon, the peak three hours occur from 3:30 to 6:30 P.M. The number of vehicles in the peak three hours in the afternoon is 16% higher than the number in the morning peak.

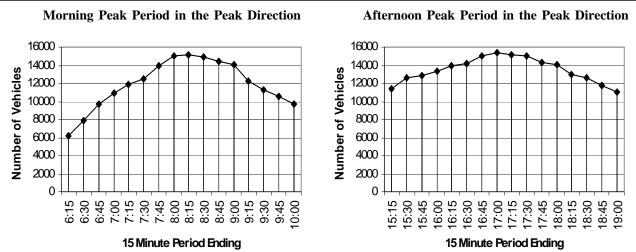
## **Morning and Afternoon Peak Hour**

The peak one hour window occurred between 7:30 and 8:30 A.M. with a total of 9724 vehicles representing 37% of the morning peak three hours. In the afternoon, the peak one hour window occurred between 4:30 and 5:30 P.M. with a total of 11615 vehicles representing 37% of the afternoon peak three hours. The afternoon peak hour is 19% higher than the morning peak hour.

## **Steeles Avenue Screenline**

This screenline is located along Steeles Avenue at the northern boundary of the City of Toronto and coincides with the southern boundary of the Regional Municipality of York. The potential for vehicles double crossing the jurisdictional boundary is very high as Steeles Avenue is a major thouroughfare. Counts are taken on the northern side of Steeles Avenue to minimize the impact of these double crossings. The screenline includes all major roads crossing the boundary in the north-south direction. Southbound traffic is the dominant direction in the morning peak period and northbound traffic is the dominant direction in the afternoon peak period. Contra-flow represents 73% of the peak direction in the morning and 82% of the peak direction in the afternoon.

## **Peak Period Analysis**



### **Peak Three Hours**

Southbound		Northbound	
Time of Day	Total Number of Vechicles	Time of Day	Total Number of Vechicles
6:00 to 9:00	146869	15:00 to 18:00	167222
6:15 to 9:15	152873	15:15 to 18:15	168765
6:30 to 9:30	156204	15:30 to 18:30	168799
6:45 to 9:45	156962	15:45 to 18:45	167594
7:00 to 10:00	155700	16:00 to 19:00	165324

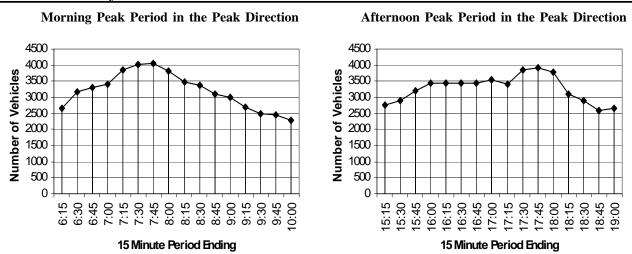
The absolute peak three hour window in the morning occurs from 6:45 to 9:45 A.M. In the afternoon, the peak three hours occur from 3:30 to 6:30 P.M., however, the number of vehicles is very similar in the three hour time window beginning at 3:15 P.M. The number of vehicles in the peak three hours in the afternoon is 7% higher than the number in the morning.

## **Morning and Afternoon Peak Hour**

The peak one hour window occurred between 7:45 and 8:45 A.M. with a total of 59621 vehicles representing 38% of the morning peak three hours. In the afternoon, the peak one hour window occurred between 4:30 and 5:30 P.M. with a total of 60556 vehicles representing 36% of the afternoon peak three hours. The afternoon peak hour is 2% larger than the morning peak hour.

## **Durham-Toronto Screenline**

This screenline follows the eastern boundary of the City of Toronto and is coincident with a portion of the western boundary of the Regional Municipality of Durham. The screenline follows the jurisdictional boundary and includes all major roads crossing the boundary in the east-west direction. Westbound traffic is the dominant direction in the morning peak period and eastbound traffic is the dominant direction in the afternoon peak period. Contra-flow represents 42% of the peak direction in the morning and 52% of the peak direction in the afternoon.



#### **Peak Period Analysis**

### **Peak Three Hours**

Westbound		Eastbound	
Time of Day	Total Number of Vechicles	Time of Day	Total Number of Vechicles
6:00 to 9:00	41227	15:00 to 18:00	41123
6:15 to 9:15	41287	15:15 to 18:15	41436
6:30 to 9:30	40617	15:30 to 18:30	41434
6:45 to 9:45	39791	15:45 to 18:45	40845
7:00 to 10:00	38682	16:00 to 19:00	40057

The absolute peak three hour window in the morning occurs from 6:15 to 9:15 A.M. In the afternoon, the peak three hours occur from 3:15 to 6:15 P.M., and is essentially the same as the total traffic in the three hour period starting 15 minutes later. The number of vehicles in the peak three hours in the morning is virtually the same as the number in the afternoon peak.

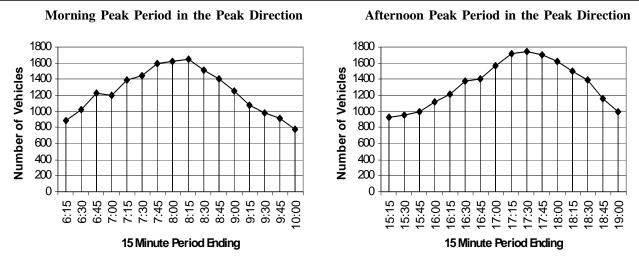
### **Morning and Afternoon Peak Hour**

The peak one hour window occurred between 7:00 and 8:00 A.M. with a total of 15768 vehicles representing 38% of the morning peak three hours. In the afternoon, the peak one hour window occurred between 5:00 and 6:00 P.M. with a total of 14935 vehicles representing 36% of the afternoon peak three hours. The morning peak hour is 6% larger than the afternoon peak hour.

## **Durham-York Screenline**

This screenline is located at the eastern boundary of the Regional Municipality of York where it coincides with the western boundary of the Regional Municipality of Durham. Because it is a combination of directions, the screenline includes all major roads crossing the boundary regardless of the direction of the road. This analysis combines the eastbound with the southbound traffic and the westbound with the northbound traffic. Although this combination of directions is somewhat arbitrary, it is consistent with traffic moving between Durham and York. In addition, the definition is consistent with peak directions of traffic flow. West and northbound traffic is the dominant direction in the morning peak period and east and southbound traffic is the dominant direction in the afternoon peak period. Contra-flow represents 43% of the peak direction in the morning and 44% of the peak direction in the afternoon.

### **Peak Period Analysis**



### **Peak Three Hours**

West(north)bound		East(south)bound	
Time of Day	Total Number	Time of Day	Total Number
	of Vehicles		of Vehicles
6:00 - 9:00	16207	15:00 - 18:00	16343
6:15 - 9:15	16403	15:15 - 18:15	16907
6:30 - 9:30	16362	15:30 - 18:30	17345
6:45 - 9:45	16050	15:45 - 18:45	17498
7:00 - 10:00	15627	16:00 - 19:00	17377

The absolute peak three hour window in the morning occurs from 6:15 to 9:15 A.M., however, the number of vehicles is very similar in the three hour time window starting 15 minutes before and after. In the afternoon, the peak three hours occur from 3:45 to 6:45 P.M., however, the number of vehicles is very similar in the three hour windows 15 minutes after. The number of vehicles in the peak three hours in the afternoon is 6% higher than the number in the morning peak.

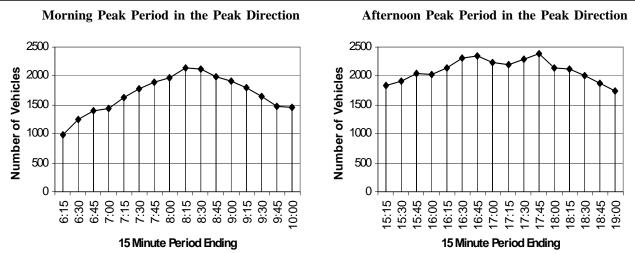
## Morning and Afternoon Peak Hour

The peak one hour window occurred between 7:30 and 8:30 A.M. with a total of 6372 vehicles representing 39% of the morning peak three hours. In the afternoon, the peak one hour window occurred between 5:00 and 6:00 P.M. with a total of 6786 vehicles representing 39% of the afternoon peak three hours. The afternoon peak hour is 6% larger than the morning peak hour.

## **Durham South (Taunton Road) Screenline**

This screenline consists of all major streets crossing Taunton Road, or a continuation of the alignment of this road, in the northern sections of the local municipalities of Pickering, Ajax, Whitby, Oshawa and Clarington. The screenline runs east-west from the eastern boundary of the Regional Municipality of Durham to the common boundary between Durham and the City of Toronto. The traffic directions on the intersecting roads are north and south. Both directions are similar in both morning and afternoon peak periods but for our purposes, southbound is considered the peak direction in the morning peak period and northbound is considered the peak direction in the afternoon. Contra-flow represents 90% of the peak direction in the morning and 92% of the peak direction in the afternoon.

## **Peak Period Analysis**



### **Peak Three Hours**

South	bound	North	bound
Time of Day	Total Number of Vehicles	Time of Day	Total Number of Vehicles
6:00 - 9:00	20470	15:00 - 18:00	25833
6:15 - 9:15	21283	15:15 - 18:15	26119
6:30 - 9:30	21686	15:30 - 18:30	26220
6:45 - 9:45	21763	15:45 - 18:45	26037
7:00 - 10:00	21779	16:00 - 19:00	25759

The absolute peak three hour window in the morning occurs from 7:00 to 10:00 A.M., however, the number of vehicles is very similar in the three hour time window starting 15 minutes before. In the afternoon, the peak three hours occur from 4:00 to 7:00 P.M. The number of vehicles in the peak three hours in the afternoon is 20% higher than the number in the morning peak.

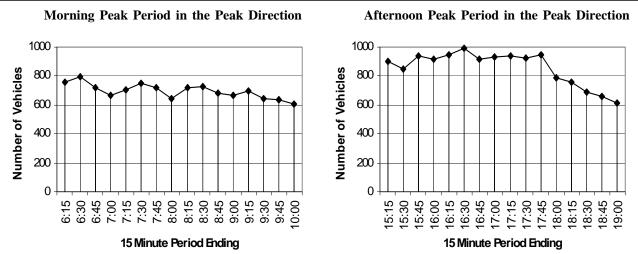
## Morning and Afternoon Peak Hour

The peak one hour window occurred between 7:45 and 8:45 A.M. with a total of 8212 vehicles representing 38% of the morning peak three hours. In the afternoon, the peak one hour window occurred between 4:45 and 5:45 P.M. with a total of 9088 vehicles representing 35% of the afternoon peak three hours. The afternoon peak hour is 11% larger than the morning peak hour.

## **Durham East Screenline**

This screenline follows the eastern boundary of the Regional Municipality of Durham. The screenline is northsouth in some portions and east-west in others. This analysis combines eastbound with northbound traffic on intersecting roads as a representation of traffic leaving the Greater Toronto area. Conversely, westbound and southbound traffic are combined to represent traffic entering the GTA. West(south)bound traffic is the dominant direction in the morning peak period and east(north)bound traffic is the dominant direction in the afternoon peak period. Contra-flow represents 54% of the peak direction in the morning and 89% of the peak direction in the afternoon.

## **Peak Period Analysis**



### **Peak Three Hours**

West(south)bound		East(north)bound	
Time of Day	Total Number	Time of Day	Total Number
	of Vehicles		of Vehicles
6:00 - 9:00	8555	14:45 - 17:45	11100
6:15 - 9:15	8497	15:00 - 18:00	10987
6:30 - 9:30	8343	15:15 - 18:15	10839
6:45 - 9:45	8262	15:30 - 18:30	10681
7:00 - 10:00	8205	15:45 - 18:45	10403

The absolute peak three hour window in the morning occurs from 6:00 to 9:00 A.M., however, the number of vehicles is very similar in the three hour period starting 15 minutes later. In the afternoon, the peak three hours occur from 2:45 to 5:45 P.M. It should be noted that the afternoon peak period for this screenline is unique in that it occurs earlier than the usual peak period time frame observed so far in this report. The number of vehicles in the peak three hours in the afternoon is 23% higher than the number in the morning peak.

## Morning and Afternoon Peak Hour

The peak one hour window occurred between 6:00 and 7:00 A.M. with a total of 2933 vehicles representing 34% of the morning peak three hours. In the afternoon, the peak one hour window occurred between 3:30 and 4:30 P.M. with a total of 3796 vehicles representing 34% of the afternoon peak three hours. The afternoon peak hour is 29% larger than the morning peak hour.

## **Cordon Count Information**

#### pages 2, 3

- Halton West Screenline
- Halton South Screenline

Data on these pages were extracted from records from the cordon count program carried out by the Regional Municipality of Halton. For more information on counts in this Region, please contact:

Lisa Zinkewich (905) 825-6000 X7556

#### pages 4,5

- Halton-Peel Screenline
- Peel Steeles Avenue Screenline

Data on these pages were extracted from records from the cordon count program carried out by the Regional Municipality of Peel. For more information on counts in this Region, please contact:

Edmond Wu (905) 791-7800 X4554

#### pages 6, 8, 9

- Peel-Toronto Screenline
- Steeles Avenue Screenline
- Dundas-Toronto Screenline

Data on these pages were extracted from records from the cordon count program carried out by the City of Toronto (previously the Municipality of Metropolitan Toronto). For more information on counts in this Region, please contact: Jeff Bateman (416) 397-0254

#### pages 7, 10

- Peel-Simcoe-York Screenline
- Durham-York Screenline

Data on these pages were extracted from records from the cordon count program carried out by the Regional Municipality of York. For more information on counts in this Region, please contact:

Omeed El-Zabet (905) 830-4444 X5028

#### pages 11, 12

- Durham South (Taunton Road) Screenline
- Durham East Screenline

Data on these pages were extracted from records from the cordon count program carried out by the Regional Municipality of Durham. For more information on counts in this Region, please contact:

Chris Leitch

(905)668-7711 X2567