

TORONTO STAFF REPORT

August 24, 2006

To: Works Committee

From: Gary H. Welsh, General Manager, Transportation Services

Subject: Pedestrian Crossover Review (Part II) – Minor Arterial Roadways
(All Wards)

Purpose:

The purpose of this report is to follow up on a previous report to Works Committee in May 2006, on the review of pedestrian crossovers on major arterial roadways, with the results of our assessment of pedestrian crossovers on minor arterial roadways; and to respond to further recommendations from Works Committee.

Financial Implications and Impact Statement:

There are financial impacts to the City arising from the adoption of all or part of the recommendations in this report.

The estimated cost to replace 37 existing pedestrian crossover locations on minor arterial roadways with traffic control signals would be \$4,625,000.00 including the removal of the existing pedestrian crossovers.

The estimated cost for enhancing the visibility of the 216 remaining pedestrian crossovers on minor arterial roadways, through changes to flashing beacons, signs and pavement markings, would be \$1,944,000.00.

The total financial obligation to complete this project on minor arterial roadways would be \$6,569,000.00. This is in addition to the cost of \$3,630,000.00 for replacement of, and enhancement to, pedestrian crossovers on major arterial roadways in 2007, and the development of a public education program, that was identified in our report (dated April 21, 2006) to Works Committee and approved by City Council in May 2006.

Considering the financial impact of this project on minor arterial roadways, and considering that all the work required to implement these alterations could not be completed in a single year, this program should be implemented over a four-year time period. Work on major arterial roadways that was approved in principle by City Council in May 2006 would proceed first, in 2007.

Following this, it is recommended that an additional \$2,000,000.00 be included in the Transportation Services Capital Budget submission in 2008, 2009, 2010 and \$569,000.00 in 2011 to proceed with the conversion of 37 pedestrian crossover locations on minor arterial roadways to traffic control signals and enhancements to the pedestrian crossover flashing beacons, signs and pavement markings at 216 pedestrian crossover locations on minor arterial roadways.

It should also be noted that the added annual maintenance and operating costs associated with replacing a pedestrian crossover with a traffic control signal is approximately \$4,500.00 per location. The resultant additional annual maintenance and operating costs for 37 replacements on minor arterial roadways will be \$166,500.00.

Recommendations:

It is recommended that:

- (1) approval in principle be granted for replacement of the pedestrian crossovers, identified in Appendix 1, with traffic control signals to be designed by Transportation Services staff;
- (2) pedestrian crossovers, identified in Appendix 2, continue as a pedestrian crossing facility with suggested enhancements to flashing beacons, signs and pavement markings;
- (3) the implementation strategy for pedestrian crossover replacements and visibility enhancements on minor arterial roadways, outlined in Appendix 5, be approved;
- (4) a copy of this report be sent for information to the Toronto Police Service, the Ministry of Transportation for Ontario and the Ontario Traffic Conference; and
- (5) the appropriate City officials be authorized and directed to take the necessary action to give effect to the foregoing, including the introduction in Council of any Bills that may be required.

Background:

City Council, at its meeting of May 23, 24 and 25, 2006, in considering Clause No. 2 of Report No. 3 of the Works Committee, among other things, approved in principle the replacement of 24 pedestrian crossovers on major arterial roadways with traffic control signals, implementing enhancements at 53 pedestrian crossovers on major arterial roadways, developing a program for public education and awareness of the responsibilities of drivers and pedestrians at pedestrian crossovers, and the continuation of our assessment of pedestrian crossovers on the minor arterial roadways with a report in the Fall of 2006.

City Council also requested that the General Manager, Transportation Services, report to the Works Committee on reviewing the possibility of consolidating the pedestrian crossovers at The Queensway immediately east of Milton Street and The Queensway immediately west of

Holbrooke Avenue into one location with traffic control signals. This request will be reported on under separate cover. In addition, staff are also reporting separately to the Toronto and East York Community Council on the conversion of the existing pedestrian crossover on Dundas Street West immediately west of Sheridan Avenue as this location has previously satisfied the warrants for the installation of traffic control signals. Etobicoke York District staff will be reporting separately to Etobicoke York Community Council in 2007 regarding the conversion of the existing pedestrian crossover on Royal York Road at Glenroy Avenue to traffic control signals. Scarborough District staff will be reporting separately to Scarborough Community Council regarding the potential removal and/or relocation of the existing pedestrian crossover on Warden Avenue, 396m north of Firvalley Court to traffic control signals.

The Works Committee also referred a recommendation of the Toronto Pedestrian Committee to the General Manager, Transportation Services, for consideration and report thereon as part of the report to be submitted to the Works Committee in the Fall of 2006 on crosswalks on minor arterial roads.

Furthermore, at its meeting on May 3, 2006, Works Committee referred back the communication (April 10, 2006) from the Toronto and East York Community Council and our report (April 21, 2006) to the General Manager, Transportation Services with a request that he report on replacing the existing pedestrian crossover at Felstead Avenue and Greenwood Avenue with traffic control signals as part of his review of pedestrian crossovers on minor arterial roads (Clause 21(a) in Report No. 3 of the Works Committee, as received by City Council at its meeting of May 23, 24 and 26, 2006).

Comments:

Transportation Services has completed a comprehensive assessment of pedestrian crossovers on minor arterial roadways. This is a continuation of our assessment of pedestrian crossovers on the major arterial roadways, which was completed in May 2006. This report presents the results of the individual reviews of pedestrian crossovers on minor arterial roadways, addresses the further suggestions from the Toronto Pedestrian Committee, and presents an implementation strategy for a five-year programme for replacing and enhancing pedestrian crossovers on arterial roadways.

Pedestrian Crossovers on Minor Arterial Roadways

There are currently 253 pedestrian crossovers on minor arterial roadways in the City of Toronto. Appendix 3 contains a list of all pedestrian crossovers on minor arterial roadways in the City of Toronto. The breakdown of their locations by Community Council area is provided in the table below:

Community Council	Number of pedestrian crossovers
Etobicoke York	61
North York	25
Scarborough	48
Toronto and East York	119
Total	253

In our initial review of pedestrian crossovers on major arterial roadways, a number of characteristics of a location were identified that would affect the successful operation of a pedestrian crossover. These characteristics are referred to as “environmental criteria” and are described below:

- (1) Vehicle operating speeds on the roadway should be less than 60 km/hr;
- (2) The roadway should be not more than four lanes wide on a two-way street, or three lanes wide on a one-way street;
- (3) The traffic volume should be less than a total of 35,000 vehicles per day in both directions;
- (4) No visibility problems should exist for either the pedestrian or the motorist;
- (5) There should be no driveways or entrances nearby that would interfere with the operation of the pedestrian crossover;
- (6) There should not be a significant volume of turning vehicles that would interfere with the operation of the pedestrian crossover;
- (7) There should be no loading zones in the immediate vicinity of the pedestrian crossover; and
- (8) There should be not less than 200 metres to another pedestrian crossover or traffic control device.

Transportation Services staff reviewed all pedestrian crossovers on minor arterial roadways to determine their appropriateness relative to the environmental criteria. Specifically, staff conducted a site visit when environmental data was collected, conducted a speed study and completed a collision analysis with emphasis on pedestrian collisions over a five-year period.

In this assessment, it was determined that the speed, volume and road width criteria are critical. If motorists’ speeds are too high, the traffic volumes are too great, or the road is too wide, the operational safety of the pedestrian crossover is compromised. It should therefore be replaced because of the increased potential risk for pedestrians to be exposed to injury.

The results of the review of 253 pedestrian crossover locations on minor arterial roadways revealed that 37 pedestrian crossover locations did not satisfy at least one or more of the speed, volume and width criteria. As a result, it is recommended that these pedestrian crossovers be replaced with traffic control signals in order to provide a more positive type of control with clearer direction to motorists and pedestrians. Appendix 1 lists each location recommended for replacement with traffic control signals. These locations have been prioritized based on the number of elements of the environmental criteria that were not satisfied, and based on pedestrian collision data.

Detailed traffic signal plans will be prepared for each of the 37 pedestrian crossovers to be replaced in priority order and installation will be contingent upon funding and consultation with the Ward Councillor. It is likely that the cost estimate for each location will vary depending on the traffic control signal design, but a typical cost to replace a pedestrian crossover with traffic control signals is \$125,000.00. The total estimated cost of this work is \$4,625,000.00.

In our initial review, a number of enhancements to the existing pedestrian crossover design were identified for implementation at the pedestrian crossovers to be retained on major arterial roadways. A summary of these enhancements, and the potential benefit and estimated cost of each, is listed in Appendix 4. It is recommended that the remaining 216 pedestrian crossovers on minor arterial roadways also receive the same enhancements to signs, pavement markings and illumination. These pedestrian crossover locations are listed in Appendix 2. They have been prioritized based on the number of secondary environmental criteria that were not satisfied and pedestrian collision data.

The attached Drawing No. 421F-8286, dated April 2006 provides a diagram of the typical existing pedestrian crossover design, and Drawing No. 421F-8287 dated April 2006 provides a diagram of a typical pedestrian crossover with all of the proposed enhancements listed in Appendix 4.

The typical cost to implement these enhancements at an existing pedestrian crossover location is estimated at \$9,000.00. For the 216 pedestrian crossovers on minor arterial roadways that require the enhancements, the total cost is estimated to be \$1,944,000.00.

Pedestrian Committee Recommendations:

The Pedestrian Committee requested that Transportation Services work with Toronto Pedestrian Committee to continuously explore various improvements to pedestrian crossovers. These include:

- (a) Fines – increase amount;
- (b) Zebra striping;
- (c) Widening of the crosswalk;
- (d) Using strobe lights;
- (e) Pinch points other than major arterial;
- (f) Reviewing the minimum distance of 200 metres from signals to a shorter distance where lower traffic speeds permit and where pedestrians wish to cross;
- (g) Lights embedded in pavement;
- (h) Pole placement (so as not to obscure the pedestrian from motorists); and
- (i) Visibility of the early warning light to the Pedestrian.

We have committed to continuing to work with Pedestrian Committee on these suggestions. However, we have done some preliminary consideration and have the following comments:

(a) Fines

Fines have already been increased under Bill 169, in which the Province amended HTA Section 140 (pedestrian crossover) and Section 144 (Pedestrian crosswalks at traffic control signals) to increase the minimum fine from \$60.00 to \$150.00 and increase the demerit point penalty to three points for driver yield-to-pedestrian offences. However, regardless of the increased fines, the success of this measure is contingent upon police enforcement.

(b) Zebra striping & (c) Widening of the crosswalk

Both of these issues concern pavement marking applications. Zebra stripes are one of the enhancements that have been approved by City Council for pedestrian crossovers on major arterial roadways and are recommended in this report for implementation at pedestrian crossovers on minor arterial roadways.

The intent of widening the crosswalks is to create a buffer area between the vehicles and the pedestrians and to prevent motorists from encroaching into the crossing area. This is feasible. However, at many locations it is difficult to widen the distance between the lines due to physical features in the immediate area such as poles, driveways, and intersecting streets. Understanding the intention to stop motorists further away from the crossing, there may be other measures that would be more effective in providing the visual cues to attempt to stop motorists in advance of the pedestrian crossover.

One such measure that may merit testing is the use of a “yield” line with a “Yield Here to Pedestrians” sign. This is something that has been used in jurisdictions in the United States and is being considered by the Transportation Association of Canada. This measure involves installing pavement markings and signs at a specified distance in advance of the pedestrian crossover directing motorists where to yield to pedestrians. Over the next year we will be exploring further the legal requirements for testing this type of measure and, if possible, testing it at select locations in the City of Toronto.

(d) Using strobe lights & (g) Lights imbedded in pavement

Several enhancements concerning improved lighting have already been approved by City Council for pedestrian crossovers on major arterial roadways, and are recommended in this report for approval for pedestrian crossovers on minor arterial roadways. These include changing lamps from incandescent to LED lamp modules, increasing the size of the flashing beacons from 20 cm to 30 cm diameter lenses, reviewing the placement and increasing the separation between beacons and overhead signs, and adding additional side-mounted beacons on poles. The effectiveness of these enhancements should be given the opportunity to be measured before considering other options at this time.

(e) Pinch points

Pinch points, or roadway narrowings, have been used as a traffic calming measure on local and collector streets, generally at intersections regulated by “Stop” control. Their use on 2-lane minor arterial roadways, or 4-lane roadways with on-street parking could also be considered. However, their use on 4-lane roadways where peak period parking and stopping restrictions are in place would not be an option due to the unexpected reductions in roadway capacity and the resultant traffic congestion.

(f) Reviewing the minimum distance of 200 metres from signals to a shorter distance

This matter would apply in cases where a new installation is requested. The spacing between existing traffic control devices is considered as part of many other criteria when deciding whether a pedestrian crossover or traffic control signals is warranted at a specific location. Depending on the characteristics of a particular location, it may be possible to consider a lesser spacing if the requirement for pedestrian crossing assistance outweighs the concerns with close spacing between devices. However, the focus of this report is to improve safety and motorist compliance at existing pedestrian crossover locations.

(h) Pole placement

Transportation Services uses existing poles where possible at new pedestrian crossover locations to reduce the number of poles and as a cost-saving measure. However, when new poles are required for an installation, we locate the poles on the far side of the crosswalk in each direction wherever possible. This allows pedestrians standing on the curb to be visible to oncoming traffic on their side of the street.

(i) Visibility of the early warning light to the Pedestrian

At many of our pedestrian crossovers, the button for activating the overhead beacons contains a light that is illuminated once the button is pushed, and that flashes with the beacons. This type of button is also installed at any new pedestrian crossovers. Any further modifications to the flashing beacons for visibility by pedestrians is not recommended at this time. Pedestrians’ attention is better focused on approaching traffic, and using the “point & cross” procedure to indicate their desire to cross the street. This information could be addressed in the public education and awareness program that has been approved by City Council.

The enhancements recommended in this report, including modifications to the flashing beacons, improved pavement markings and additional parking regulations, are expected to improve visibility of the pedestrian crossover. Transportation Services staff will continue reviewing other methods to improve safety, some of which have been discussed above.

Pedestrian Crossover at Greenwood Avenue and Felstead Avenue

The existing pedestrian crossover at this location is recommended for enhancements to the flashing beacons, pavement markings, and parking regulations, as listed in Appendix 4. This location met all the environmental criteria as discussed above. Therefore replacement of the existing pedestrian crossover with traffic signals is not warranted at this location.

Implementation Strategy:

With the recommendations in this review, and those in our initial review of pedestrian crossovers on major arterial roadways, it is proposed to replace a total of 37 pedestrian crossovers with traffic control signals and to provide enhancements to the existing pedestrian crossovers at a total of 216 locations. The volume of work required to implement this entire project could not be completed in one year. Therefore, an implementation strategy has been developed to ensure that the project is on schedule. This implementation strategy and associated funding requirements are illustrated in Appendix 5.

In May 2006, City Council approved the implementation program for traffic signals and pedestrian crossover enhancements on major arterial roadways to take place in 2007. Therefore, the implementation of traffic signals and pedestrian crossover enhancements on minor arterial roadways is proposed to begin in 2008, and be implemented over a further four-year timeframe.

Conclusion:

The relative safety of a pedestrian crossover can be measured by its compliance to the environmental criteria. Any pedestrian crossover which fails the critical speed, volume or road width elements should be replaced by traffic control signals regardless of the road classification it operates on. Based on the results of our review, using the same criteria that was developed for the review of pedestrian crossovers on major arterial roadways, a total of 37 pedestrian crossovers on minor arterial roadways should be replaced with traffic control signals.

The remaining 216 pedestrian crossovers on minor arterials should undergo visibility enhancements to flashing beacons, signs and pavement markings. The priority for improvements at these locations has been determined by the five secondary elements of the environmental criteria and the pedestrian collision history at the pedestrian crossovers.

Transportation Services will continue to work with the Toronto Pedestrian Committee to explore further improvements to the design of pedestrian crossovers in the City of Toronto.

Contact:

Jacqueline White, P. Eng. Manager
Traffic Operations, Toronto and East York District, East Area
Phone: 416-397-5021/Fax: 416-392-1920
Email: jwhite@toronto.ca

Gary H. Welsh, P. Eng.
General Manager, Transportation Services

BM/

List of Attachments:

- (1) Appendix 1: Pedestrian Crossovers to be Replaced
- (2) Appendix 2: Pedestrian Crossovers to be Upgraded
- (3) Appendix 3: All Pedestrian Crossovers on Minor Arterial Roadways
- (4) Appendix 4: Pedestrian Crossover Enhancements
- (5) Appendix 5: Implementation Strategy
- (6) Drawing No. 421F-8286 dated April 2006, Pedestrian Crossover – Existing Standard Conditions
- (7) Drawing No. 421F-8287 dated April 2006, Pedestrian Crossover – Proposed Standard Conditions

Appendix 1

Pedestrian Crossovers to be Replaced

Location	Ward	Critical Criteria Not Satisfied				Secondary Criteria	Pedestrian Collisions/ 5 years
		Speed	Width	Volume	Total		
Willowdale Avenue immediately south of Abitibi Avenue	24	Yes	no	no	1	5	0
Birchmount Road at Staley Terrace	39	Yes	no	no	1	4	2
Birchmount Road at Chelwood Road	35	Yes	no	no	1	3	4
Port Union Road at Adenmore Road/Clappison Boulevard	44	Yes	no	no	1	3	2
Birchmount Road at Bonniewood Road	35	Yes	no	no	1	3	0
Brimley Road at Anson Avenue/Comrie Terrace	36	Yes	no	no	1	3	0
Pharmacy Avenue at Bolster Avenue	35	Yes	no	no	1	3	0
Morningside Avenue 183m south of Lawrence Avenue	43/44	Yes	no	no	1	2	2
Scarborough Golf Club Road at Par Avenue	38/43	Yes	no	no	1	2	2
Morningside Avenue at Danzig Street	43/44	Yes	no	no	1	2	1
Royal York Road at Allanhurst Drive	4	Yes	no	no	1	2	1
Scarborough Golf Club Road at Slan Avenue	38/43	Yes	no	no	1	2	1
Bellamy Road North at Amarillo Drive	38	Yes	no	no	1	2	0
Birchmount Road at Anaconda Avenue	35	Yes	no	no	1	2	0
Danforth Road immediately east of North Woodrow Boulevard	35	Yes	no	no	1	2	0
Martin Grove Road at Agatha Road	3	Yes	no	no	1	2	0
McCowan Road 92m north of Anson Avenue	36	Yes	no	no	1	2	0
Orton Park Road at Brimorton Drive	43	Yes	no	no	1	2	0

Location	Ward	Critical Criteria Not Satisfied				Secondary Criteria	Pedestrian Collisions/ 5 years
		Speed	Width	Volume	Total		
Pharmacy Avenue at Innisdale Drive	37	Yes	no	no	1	2	0
Scarborough Golf Club Road at Marcella Street	43	Yes	no	no	1	2	0
Martin Grove Road a point 228 metres north of Garfella Drive	1	yes	no	no	1	1	3
Pharmacy Avenue at Singleton Road	37	yes	no	no	1	1	3
The West Mall at Holiday Drive	3	yes	no	no	1	1	2
Martin Grove Road a point 65.0 metres south of Vulcan Street	2	yes	no	no	1	1	1
Martin Grove Road at Lavington Drive	4	yes	no	no	1	1	1
McNicol Avenue at Bramblebrook Avenue	41	yes	no	no	1	1	1
McNicol Avenue at Hutchcroft Avenue	41	yes	no	no	1	1	1
Meadowvale Road at Euclid Avenue	44	yes	no	no	1	1	1
Middlefield Road at Orator Gate	41	yes	no	no	1	1	1
Bloor Street West immediately west Neilson Drive	5	yes	no	no	1	1	0
Pharmacy Avenue 305m north of Chester Le Boulevard/Huntingdale Boulevard	39	yes	no	no	1	1	0
The Westway at Benbow Road	4	yes	no	no	1	1	0
The East Mall a point 164 metres north of Valhalla Inn Road	5	yes	no	no	1	0	2
Bloor Street West immediately east of Wilmar Road	5	yes	no	no	1	0	1
Martin Grove Road at Betteridge Lane	1	yes	no	no	1	0	1
Martin Grove Road at Dewitt Road	3	yes	no	no	1	0	0

Location	Ward	Critical Criteria Not Satisfied				Secondary Criteria	Pedestrian Collisions/ 5 years
		Speed	Width	Volume	Total		
The Westway a point 92 metres west of Saskatoon Drive	4	yes	no	no	1	0	0

Appendix 2

Pedestrian Crossovers to be Enhanced

Location	Ward	Secondary Criteria	Pedestrian Collisions/ 5 years
Scarlett Road immediately north of Bernice Crescent	11	4	2
Gateway Boulevard 8.5m east of the easterly limit of Sunny Glenway (West Leg)	26	4	1
Caledonia Road immediately south limit of Bowie Avenue	15	4	0
Huntingwood Drive at Dunmurray Boulevard	40	4	0
Donway East (The) immediately south of Mallow Road	34	4	0
The Westway at Celestine Drive	4	4	0
Willowdale Avenue at Elmwood Avenue	23	4	0
Wynford Drive west of the Don Valley Parkway (Opp. 100 Wynford Drive)	26	4	0
Donlands Avenue at its intersection with the production westerly of the northerly limit of Plains Road	29	3	4
Weston Road immediately south of Coulter Avenue	11	3	4
Trethewey Drive at Brookhaven Road	12	3	3
Weston Road immediately north of Oxford Drive	11	3	3
Gerrard Street at Blantyre Avenue	36	3	2
Sentinel Road immediately north of Fountainhead Road	8	3	2
Weston Road immediately north of Clouston Avenue	11	3	2
Bridletowne Circle at Echo Point	39	3	1
Caledonia Road immediately north limit of Corby Avenue	17	3	1
Marlee Avenue at Viewmount Avenue	15	3	1
Annette Street east side of Gilmour Avenue	13	3	0
Annette Street east side of Indian Road Crescent	13	3	0
Caledonia Road at Glengrove Avenue	15	3	0
Caledonia Road at the south side of Playfair Avenue	15	3	0
Clonmore Drive at Queensbury Avenue	36	3	0
Consumers Road approximately 340 metres west of Hallcrown Place	34	3	0
Cummer Avenue immediately east of Conacher Drive	24	3	0
Donlands Avenue at its intersection with the north limit of Memorial Park Avenue	29	3	0
Guildwood Parkway at Chancery Lane	43	3	0
Guildwood Parkway 35m east of Forsythia Drive	43	3	0
88 Humber College Boulevard a point 62 metres east of Westmore Drive	1	3	0

Huntingwood Drive at Colinayre Crescent	39	3	0
Huntingwood Drive at Harfleur Road	39	3	0
Huntingwood Drive 167m west of Mollard Road	41	3	0
Morningside Avenue at Cumber Avenue/Fordover Gate	43	3	0
Oakwood Avenue immediately south of Clovelly Avenue	15/21	3	0
Rogers Road immediately east of Bronoco Avenue	17	3	0
Scarborough Golf Club Road at Gatesview Avenue	36	3	0
Senlac Road a point 30m south of the southerly limit of Burnett Avenue	23	3	0
Victoria Park Avenue at Swanwick Avenue	32/36	3	0
Warden Avenue at Freeman Street	36	3	0
Weston Road immediately south of Dennis Avenue	11	3	0
Willowdale Avenue immediately north of Otonabee Avenue	24	3	0
Willowdale Avenue immediately south of Parkview Avenue	24	3	0
Wilmington Avenue south of Purdon Drive	10	3	0
Bridletowne Circle 188m north of Finch Avenue	39	2	3
Caledonia Road south side of Innes Avenue	17	2	2
Jane Street approximately 43 metres south of Page Street	13	2	2
Pharmacy Avenue at Kellyvale Road	37	2	2
Queen Street East east side of Silverbirch Avenue	32	2	2
Runnymede Road north side of Colbeck Street	13	2	2
Wellesley Street East a point 146.3 metres east of Yonge Street	27	2	2
Annette Street east side of Evelyn Avenue	13	2	1
Caledonia Road south side of Norman Avenue	17	2	1
Donlands Avenue north side of Fielding Avenue	29	2	1
Drewry Avenue immediately east of Norwin Street (which is opposite the driveway to the R. J. Lang School site)	23	2	1
Gerrard Street East a point 18 metres east of the south branch of Golfview Avenue	32	2	1
Huntingwood Drive at Belgreen Avenue	39	2	1
Huntingwood Drive at Dibgate Boulevard	41	2	1
Jane Street immediately south of Folkes Street	13	2	1
Lansdowne Avenue north side of Brandon Avenue	17	2	1
Queen Street East west side of Ashdale Avenue	32	2	1
Renforth Drive a point 91.5 metres south of Gentian Drive	3	2	1
Runnymede Road south side of Kennedy Avenue	13	2	1
Donway West (The) immediately south of Duncairn Road	25	2	1
Yorkland Boulevard approximately 45m south of Salehurst Road/Yorkland Boulevard	34	2	1
Annette Street east side of Durie Street (north roadway)	13	2	0

Beverley Street south side of Phoebe Street	20	2	0
Birchmount Road at Hollis Avenue	36	2	0
Broadview Avenue immediately north of Langley Avenue	30	2	0
Davenport Road east side of Greenlaw Avenue	17	2	0
Davenport Road east side of Salem Avenue North	17	2	0
Dawes Road at its intersection with the production easterly of the northerly limit of Park Vista	31	2	0
Eastern Avenue east side of Connaught Avenue	32	2	0
Fenmar Drive a point 150m east of Ormont Drive	7	2	0
Gerrard Street East east side of Berkeley Street	28	2	0
Huntingwood Drive at Fairglen Avenue	40	2	0
Huntingwood Drive at Kilkenny Drive	40	2	0
Jones Avenue south side of Hazelwood Avenue	30	2	0
Main Street north side of Benlamond Avenue	32	2	0
Main Street north side of Swanwick Avenue	32	2	0
Marlee Avenue immediately north of Elway Court	15	2	0
Oakwood Avenue south side of Rosemount Avenue	17	2	0
Orton Park Road 185m south of Ellesmere Road	44	2	0
Pharmacy Avenue at Knightsbridge Road	35	2	0
Progress Avenue at Rosebank Drive	42	2	0
Queen Street East east side of Larchmount Avenue	30	2	0
Shuter Street west side of Ontario Street	28	2	0
South Kingsway approximately 17 metres north of Ormskirk Avenue	13	2	0
The East Mall at Redcar Avenue	5	2	0
Willowdale Avenue immediately north of McKee Avenue	23	2	0
Roncesvalles Avenue a point 9 metres south of Neepawa Avenue	14	1	6
Dundas Street West immediately east of Lisgar Street/Rusholme Road	18	1	4
Pape Avenue north side of Harcourt Avenue	30	1	4
Dufferin Street south side of Florence Street	18	1	3
Gerrard Street East west side of Leslie Street	30	1	3
Lansdowne Avenue north side of Lappin Avenue	18	1	3
Midland Avenue at Aylesworth Avenue	36	1	3
Queen Street East west side of Boulton Avenue	30	1	3
College Street west side of Sheridan Avenue	18	1	2
Cosburn Avenue at its intersection with the east limit of Logan Avenue	29	1	2
Dundas Street West immediately west of Gladstone Avenue	18	1	2
Gerrard Street East west side of Ashdale Avenue	30/32	1	2

Gerrard Street East east side of Woodfield Road	30/32	1	2
Pape Avenue south side of Bain Avenue	30	1	2
Pape Avenue north side of Strathcona Avenue	30	1	2
Queen Street East east side of Empire Avenue	30	1	2
Roncesvalles Avenue south side of Marion Street	14	1	2
Sherbourne Street 185.6 metres south of Wellesley Street East	27/28	1	2
Sherbourne Street immediately south of Earl Street	27/28	1	2
Broadview Avenue 66.1 metres north of Allen Avenue	30	1	1
Broadview Avenue immediately north of Torrens Avenue	29	1	1
Broadview Avenue north side of Wolfrey Avenue	30	1	1
Christie Street south side of Lambertlodge Avenue	21	1	1
Christie Street north side of Yarmouth Road	19/20	1	1
Coxwell Avenue south side of Earl Haig Avenue	30/32	1	1
Dundas Street East immediately east of Alton Avenue	30	1	1
Dundas Street West immediately east of Sterling Road	18	1	1
Gerrard Street East east side of Alton Avenue (Prust Avenue)	30	1	1
Gerrard Street East east side of St. Matthews Road	30	1	1
Gerrard Street East west side of Kingsmount Park Road	32	1	1
Greenwood Avenue north side of Athletic Avenue	30/32	1	1
Humber College Boulevard a point 160 metres north of Windwood Drive (south intersection)	1	1	1
Jane Street immediately north of Colbeck Street	13	1	1
Jones Avenue north side of Strathcona Avenue	30	1	1
Lansdowne Avenue north side of Paton Road	18	1	1
Oakwood Avenue immediately north of Conway Avenue	17/21	1	1
Parliament Street north side of Oak Street	28	1	1
Queen Street East west side of Curzon Street	30	1	1
River Street south side of Oak Street	28	1	1
Roncesvalles Avenue north side of Galley Avenue	14	1	1
Roncesvalles Avenue immediately north of Grenadier Road (south junction)	14	1	1
Annette Street west side of Willard Avenue	13	1	0
Avenue Road immediately south of Hillholm Road	22	1	0
Beverley Street south side of Grange Avenue	20	1	0
Broadview Avenue north side of Kintyre Avenue	30	1	0
Christie Street north side of Essex Street	19/20	1	0
Coxwell Avenue a point 85 metres north of Robbins Avenue	32	1	0
Davenport Road west side of Howland Avenue	21	1	0
Davenport Road east side of Shaw Street	21	1	0

Davisville Avenue at a point 126.5 metres west of the west curb line of Pailton Crescent	22	1	0
Davisville Avenue a point 187.5 metres east of Yonge Street	22	1	0
Dawes Road at its intersection with the south limit of Chapman Avenue	31	1	0
Dawes Road from the north side of Dentonia Park Avenue on the west to the south side of Dentonia Park Avenue on the east	31	1	0
Dovercourt Road north side of St. Annes Road	18/19	1	0
Drewry Avenue immediately east of Peckford Road	23	1	0
Dufferin Street south side of Bank Street	18	1	0
Dufferin Street south side of Melbourne Avenue	14	1	0
Dundas Street West approximately 18.5 metres north of Humberside Avenue	14	1	0
Dundas Street West a point approximately 48.0 metres north of the north curb line of Glenlake Avenue	14	1	0
Dundas Street East immediately west of Ashdale Avenue	30	1	0
Dundas Street East immediately west of Highfield Road	32	1	0
Dundas Street West immediately east of Indian Road Crescent	14	1	0
Dundas Street East immediately east of Maughan Crescent	32	1	0
Dundas Street West immediately east of Ritchie Avenue	14	1	0
Evans Avenue at Carnarvon Avenue	6	1	0
Gerrard Street East west side of Beaton Avenue	32	1	0
Gerrard Street East east side of Osborne Avenue	32	1	0
Gerrard Street East east side of Scarborough Road	32	1	0
Harbord Street west side of Borden Street	20	1	0
Harbord Street west side of Robert Street	20	1	0
Jones Avenue north side of Boulton Avenue	30	1	0
Lansdowne Avenue 170.6 metres north of Seaforth Avenue	14	1	0
Lansdowne Avenue a point approximately 125.0 metres south of Rideau Avenue	14	1	0
Lansdowne Avenue south side of Seaforth Avenue	14	1	0
Lawrence Avenue at Westona Street	2	1	0
Milner Avenue at Scunthorpe Road	42	1	0
Mortimer Avenue at its intersection with the west limit of Bonnie Brae Boulevard	29	1	0
Oakwood Avenue immediately south of Earlsdale Avenue	17/21	1	0
Ossington Avenue south side of Dewson Street	19	1	0
Ossington Avenue south side of Essex Street	19	1	0
Parliament Street a point 204.2 metres north of Wellesley Street East	28	1	0
Queen Street East east side of Balsam Avenue	32	1	0

Queen Street East east side of Morse Street	30	1	0
Queen Street East west side of Woodfield Road	32	1	0
Rathburn Road a point 213.5 metres west of The West Mall	3	1	0
Roncesvalles Avenue north side of Fern Avenue	14	1	0
Roncesvalles Avenue south side of Westminster Avenue	14	1	0
Royal York Road at Yorkview Drive	5	1	0
Shuter Street east side of George Street	27	1	0
Shuter Street west side of Sackville Street	28	1	0
Shuter Street east side of Sumach Street	28	1	0
South Kingsway immediately south of Morningside Avenue	13	1	0
Spadina Road south side of Ardmore Road	21/22	1	0
Donway East (The) and Greenland Road immediately south of Greenland Road	34	1	0
Donway West (The) immediately south of Overland Drive	25	1	0
The West Mall a point 183.0 metres south of Eva Road	5	1	0
Queen Street East east side of Lockwood Road	32	0	6
Renforth Drive a point 15.0 metres south of Tabard Gate	3	0	3
Carlaw Avenue north side of Langley Avenue (southerly intersection)	30	0	2
Dovercourt Road north side of Shanly Street	18/19	0	2
Cosburn Avenue 10.0 metres east of the easterly extension of Roosevelt Road	29	0	1
Lumsden Avenue at its intersection with the east limit of Gledhill Avenue	31	0	1
Lumsden Avenue at its intersection with the production northerly of the westerly limit of Westlake Avenue	31	0	1
Ossington Avenue north side of Leeds Street	19	0	1
Queen Street East east side of the south branch of Neville Park Boulevard	32	0	1
Vaughan Road immediately east of Arlington Avenue	21	0	1
Broadview Avenue north side of Millbrook Crescent	30	0	0
Broadview Avenue north side of Withrow Avenue	30	0	0
Christie Street north side of Tyrrel Avenue	21	0	0
Cosburn Avenue at its intersection with the production southerly of the easterly limit of Linsmore Crescent	29	0	0
Gerrard Street East west side of De Grassi Street	30	0	0
Greenwood Avenue south side of Felstead Avenue	30	0	0
Greenwood Avenue north side of Glebeholme Boulevard	29	0	0
Greenwood Avenue south side of Ivy Avenue	30	0	0
Lansdowne Avenue south side of Whytock Avenue	18	0	0

Oriole Parkway north side of Collegeview Avenue	22	0	0
Ossington Avenue south side of Argyle Street	19	0	0
Rathburn Road a point 115.0 metres west of West Deane Park Drive	3	0	0
Royal York Road at Coney Road	5	0	0
Royal York Road at King George's Road	5	0	0
Royal York Road at Kingsgrove Boulevard	5	0	0
Royal York Road at Stanley Avenue	6	0	0
The East Mall a point 305.0 metres south of Capri Road	3	0	0
The East Mall a point 125.5 metres north of Robinglade Drive (south intersection)	3	0	0
The Westway at Callowhill Drive	4	0	0
Vaughan Road immediately west of Humewood Drive	21	0	0
Vaughan Road immediately south of Maplewood Avenue	21	0	0

Appendix 3

All Pedestrian Crossovers on Minor Arterial Roadways

Location	Ward
Annette Street east side of Durie Street (north roadway)	13
Annette Street east side of Evelyn Avenue	13
Annette Street east side of Gilmour Avenue	13
Annette Street east side of Indian Road Crescent	13
Annette Street west side of Willard Avenue	13
Avenue Road immediately south of Hillholm Road	22
Bellamy Road North at Amarillo Drive	38
Beverley Street south side of Grange Avenue	20
Beverley Street south side of Phoebe Street	20
Birchmount Road at Anaconda Avenue	35
Birchmount Road at Bonniewood Road	35
Birchmount Road at Chelwood Road	35
Birchmount Road at Hollis Avenue	36
Birchmount Road at Staley Terrace	39
Bloor Street West immediately west Neilson Drive	5
Bloor Street West immediately east of Wilmar Road	5
Bridletowne Circle at Echo Point	39
Bridletowne Circle 188m north of Finch Avenue	39
Brimley Road at Anson Avenue/Comrie Terrace	36
Broadview Avenue 66.1 metres north of Allen Avenue	30
Broadview Avenue north side of Kintyre Avenue	30
Broadview Avenue immediately north of Langley Avenue	30
Broadview Avenue north side of Millbrook Crescent	30
Broadview Avenue immediately north of Torrens Avenue	29
Broadview Avenue north side of Withrow Avenue	30
Broadview Avenue north side of Wolfrey Avenue	30
Caledonia Road immediately south limit of Bowie Avenue	15
Caledonia Road immediately north limit of Corby Avenue	17
Caledonia Road at Glengrove Avenue	15
Caledonia Road south side of Innes Avenue	17
Caledonia Road south side of Norman Avenue	17
Caledonia Road at the south side of Playfair Avenue	15
Carlaw Avenue north side of Langley Avenue (southerly intersection)	30
Christie Street north side of Essex Street	19/20
Christie Street south side of Lambertlodge Avenue	21

Location	Ward
Christie Street north side of Tyrrel Avenue	21
Christie Street north side of Yarmouth Road	19/20
Clonmore Drive at Queensbury Avenue	36
College Street west side of Sheridan Avenue	18
Consumers Road approximately 340 metres west of Hallcrown Place	34
Cosburn Avenue at its intersection with the production southerly of the easterly limit of Linsmore Crescent	29
Cosburn Avenue at its intersection with the east limit of Logan Avenue	29
Cosburn Avenue 10.0 metres east of the easterly extension of Roosevelt Road	29
Coxwell Avenue south side of Earl Haig Avenue	30/32
Coxwell Avenue a point 85 metres north of Robbins Avenue	32
Cummer Avenue immediately east of Conacher Drive	24
Danforth Road immediately east of North Woodrow Boulevard	35
Davenport Road east side of Greenlaw Avenue	17
Davenport Road west side of Howland Avenue	21
Davenport Road east side of Salem Avenue North	17
Davenport Road east side of Shaw Street	21
Davisville Avenue at a point 126.5 metres west of the west curb line of Pailton Crescent	22
Davisville Avenue a point 187.5 metres east of Yonge Street	22
Dawes Road at its intersection with the south limit of Chapman Avenue	31
Dawes Road from the north side of Dentonia Park Avenue on the west to the south side of Dentonia Park Avenue on the east	31
Dawes Road at its intersection with the production easterly of the northerly limit of Park Vista	31
Donlands Avenue north side of Fielding Avenue	29
Donlands Avenue at its intersection with the north limit of Memorial Park Avenue	29
Donlands Avenue at its intersection with the production westerly of the northerly limit of Plains Road	29
Dovercourt Road north side of Shanly Street	18/19
Dovercourt Road north side of St. Annes Road	18/19
Drewry Avenue immediately east of Norwin Street (which is opposite the driveway to the R. J. Lang School site)	23
Drewry Avenue immediately east of Peckford Road	23
Dufferin Street south side of Bank Street	18
Dufferin Street south side of Florence Street	18
Dufferin Street south side of Melbourne Avenue	14
Dundas Street West approximately 18.5 metres north of Humber Avenue	14
Dundas Street West a point approximately 48.0 metres north of the north curb line of Glenlake Avenue	14

Location	Ward
Dundas Street East immediately east of Alton Avenue	30
Dundas Street East immediately west of Ashdale Avenue	30
Dundas Street West immediately west of Gladstone Avenue	18
Dundas Street East immediately west of Highfield Road	32
Dundas Street West immediately east of Indian Road Crescent	14
Dundas Street West immediately east of Lisgar Street/Rusholme Road	18
Dundas Street East immediately east of Maughan Crescent	32
Dundas Street West immediately east of Ritchie Avenue	14
Dundas Street West immediately east of Sterling Road	18
Eastern Avenue east side of Connaught Avenue	32
Evans Avenue at Carnarvon Avenue	6
Fenmar Drive a point 150m east of Ormont Drive	7
Gateway Boulevard 8.5m east of the easterly limit of Sunny Glenway (West Leg)	26
Gerrard Street East east side of Alton Avenue (Prust Avenue)	30
Gerrard Street East west side of Ashdale Avenue	30/32
Gerrard Street East west side of Beaton Avenue	32
Gerrard Street East east side of Berkeley Street	28
Gerrard Street East east side of St. Matthews Road	30
Gerrard Street at Blantyre Avenue	36
Gerrard Street East west side of De Grassi Street	30
Gerrard Street East a point 18 metres east of the south branch of Golfview Avenue	32
Gerrard Street East west side of Kingsmount Park Road	32
Gerrard Street East west side of Leslie Street	30
Gerrard Street East east side of Osborne Avenue	32
Gerrard Street East east side of Scarborough Road	32
Gerrard Street East east side of Woodfield Road	30/32
Greenwood Avenue north side of Athletic Avenue	30/32
Greenwood Avenue south side of Felstead Avenue	30
Greenwood Avenue north side of Glebeholme Boulevard	29
Greenwood Avenue south side of Ivy Avenue	30
Guildwood Parkway at Chancery Lane	43
Guildwood Parkway 35m east of Forsythia Drive	43
Harbord Street west side of Borden Street	20
Harbord Street west side of Robert Street	20
88 Humber College Boulevard a point 62 metres east of Westmore Drive	1
Humber College Boulevard a point 160 metres north of Windwood Drive (south intersection)	1
Huntingwood Drive at Belgreen Avenue	39
Huntingwood Drive at Colinayre Crescent	39

Location	Ward
Huntingwood Drive at Dibgate Boulevard	41
Huntingwood Drive at Fairglen Avenue	40
Huntingwood Drive at Dunmurray Boulevard	40
Huntingwood Drive at Harfleur Road	39
Huntingwood Drive at Kilkenny Drive	40
Huntingwood Drive 167m west of Mollard Road	41
Jane Street approximately 43 metres south of Page Street	13
Jane Street immediately north of Colbeck Street	13
Jane Street immediately south of Folkes Street	13
Jones Avenue north side of Boulton Avenue	30
Jones Avenue south side of Hazelwood Avenue	30
Jones Avenue north side of Strathcona Avenue	30
Lansdowne Avenue 170.6 metres north of Seaforth Avenue	14
Lansdowne Avenue a point approximately 125.0 metres south of Rideau Avenue	14
Lansdowne Avenue north side of Brandon Avenue	17
Lansdowne Avenue north side of Lappin Avenue	18
Lansdowne Avenue north side of Paton Road	18
Lansdowne Avenue south side of Seaforth Avenue	14
Lansdowne Avenue south side of Whytock Avenue	18
Lawrence Avenue at Westona Street	2
Lumsden Avenue at its intersection with the east limit of Gledhill Avenue	31
Lumsden Avenue at its intersection with the production northerly of the westerly limit of Westlake Avenue	31
Main Street north side of Benlamond Avenue	32
Main Street north side of Swanwick Avenue	32
Marlee Avenue immediately north of Elway Court	15
Marlee Avenue at Viewmount Avenue	15
Martin Grove Road a point 228 metres north of Garfella Drive	1
Martin Grove Road a point 65.0 metres south of Vulcan Street	2
Martin Grove Road at Agatha Road	3
Martin Grove Road at Betteridge Lane	1
Martin Grove Road at Dewitt Road	3
Martin Grove Road at Lavington Drive	4
McCowan Road 92m north of Anson Avenue	36
McNicoll Avenue at Bramblebrook Avenue	41
McNicoll Avenue at Hutchcroft Avenue	41
Meadowvale Road at Euclid Avenue	44
Middlefield Road at Orator Gate	41
Midland Avenue at Aylesworth Avenue	36

Location	Ward
Milner Avenue at Scunthorpe Road	42
Morningside Avenue 183m south of Lawrence Avenue	43/44
Morningside Avenue at Cumber Avenue/Fordover Gate	43
Morningside Avenue at Danzig Street	43/44
Mortimer Avenue at its intersection with the west limit of Bonnie Brae Boulevard	29
Oakwood Avenue immediately south of Clovelly Avenue	15/21
Oakwood Avenue immediately north of Conway Avenue	17/21
Oakwood Avenue immediately south of Earlsdale Avenue	17/21
Oakwood Avenue south side of Rosemount Avenue	17
Oriole Parkway north side of Collegeview Avenue	22
Orton Park Road 185m south of Ellesmere Road	44
Orton Park Road at Brimorton Drive	43
Ossington Avenue south side of Argyle Street	19
Ossington Avenue south side of Dewson Street	19
Ossington Avenue south side of Essex Street	19
Ossington Avenue north side of Leeds Street	19
Pape Avenue south side of Bain Avenue	30
Pape Avenue north side of Harcourt Avenue	30
Pape Avenue north side of Strathcona Avenue	30
Parliament Street a point 204.2 metres north of Wellesley Street East	28
Parliament Street north side of Oak Street	28
Pharmacy Avenue 305m north of Chester Le Boulevard/Huntingdale Boulevard	39
Pharmacy Avenue at Bolster Avenue	35
Pharmacy Avenue at Innisdale Drive	37
Pharmacy Avenue at Kellyvale Road	37
Pharmacy Avenue at Knightsbridge Road	35
Pharmacy Avenue at Singleton Road	37
Port Union Road at Adenmore Road/Clappison Boulevard	44
Progress Avenue at Rosebank Drive	42
Queen Street East west side of Ashdale Avenue	32
Queen Street East east side of Balsam Avenue	32
Queen Street East west side of Boulton Avenue	30
Queen Street East west side of Curzon Street	30
Queen Street East east side of Empire Avenue	30
Queen Street East east side of Larchmount Avenue	30
Queen Street East east side of Lockwood Road	32
Queen Street East east side of Morse Street	30
Queen Street East east side of the south branch of Neville Park Boulevard	32
Queen Street East east side of Silverbirch Avenue	32

Location	Ward
Queen Street East west side of Woodfield Road	32
Rathburn Road a point 213.5 metres west of The West Mall	3
Rathburn Road a point 115.0 metres west of West Deane Park Drive	3
Renforth Drive a point 91.5 metres south of Gentian Drive	3
Renforth Drive a point 15.0 metres south of Tabard Gate	3
River Street south side of Oak Street	28
Rogers Road immediately east of Bronoco Avenue	17
Roncesvalles Avenue north side of Fern Avenue	14
Roncesvalles Avenue north side of Galley Avenue	14
Roncesvalles Avenue immediately north of Grenadier Road (south junction)	14
Roncesvalles Avenue south side of Marion Street	14
Roncesvalles Avenue a point 9 metres south of Neepawa Avenue	14
Roncesvalles Avenue south side of Westminster Avenue	14
Royal York Road at Allanhurst Drive	4
Royal York Road at Coney Road	5
Royal York Road at Kingsgrove Boulevard	5
Royal York Road at Stanley Avenue	6
Royal York Road at King George's Road	5
Royal York Road at Yorkview Drive	5
Runnymede Road north side of Colbeck Street	13
Runnymede Road south side of Kennedy Avenue	13
Scarborough Golf Club Road at Gatesview Avenue	36
Scarborough Golf Club Road at Marcella Street	43
Scarborough Golf Club Road at Par Avenue	38/43
Scarborough Golf Club Road at Slan Avenue	38/43
Scarlett Road immediately north of Bernice Crescent	11
Senlac Road a point 30m south of the southerly limit of Burnett Avenue	23
Sentinel Road immediately north of Fountainhead Road	8
Sherbourne Street 185.6 metres south of Wellesley Street East	27/28
Sherbourne Street immediately south of Earl Street	27/28
Shuter Street east side of George Street	27
Shuter Street west side of Ontario Street	28
Shuter Street west side of Sackville Street	28
Shuter Street east side of Sumach Street	28
South Kingsway immediately south of Morningside Avenue	13
South Kingsway approximately 17 metres north of Ormskirk Avenue	13
Spadina Road south side of Ardmore Road	21/22
Donway East (The) and Greenland Road immediately south of Greenland Road	34
Donway East (The) immediately south of Mallow Road	34

Location	Ward
Donway West (The) immediately south of Duncairn Road	25
Donway West (The) immediately south of Overland Drive	25
The East Mall a point 164 metres north of Valhalla Inn Road	5
The East Mall a point 125.5 metres north of Robinglade Drive (south intersection)	3
The East Mall a point 305.0 metres south of Capri Road	3
The East Mall at Redcar Avenue	5
The West Mall a point 183.0 metres south of Eva Road	5
The West Mall at Holiday Drive	3
The Westway at Benbow Road	4
The Westway at Callowhill Drive	4
The Westway at Celestine Drive	4
The Westway a point 92 metres west of Saskatoon Drive	4
Trethewey Drive at Brookhaven Road	12
Vaughan Road immediately east of Arlington Avenue	21
Vaughan Road immediately west of Humewood Drive	21
Vaughan Road immediately south of Maplewood Avenue	21
Victoria Park Avenue at Swanwick Avenue	32/36
Warden Avenue at Freeman Street	36
Wellesley Street East a point 146.3 metres east of Yonge Street	27
Weston Road immediately north of Clouston Avenue	11
Weston Road immediately south of Coulter Avenue	11
Weston Road immediately south of Dennis Avenue	11
Weston Road immediately north of Oxford Drive	11
Willowdale Avenue immediately south of Abitibi Avenue	24
Willowdale Avenue at Elmwood Avenue	23
Willowdale Avenue immediately north of McKee Avenue	23
Willowdale Avenue immediately north of Otonabee Avenue	24
Willowdale Avenue immediately south of Parkview Avenue	24
Wilmington Avenue south of Purdon Drive	10
Wynford Drive west of the Don Valley Parkway (Opp. 100 Wynford Drive)	26
Yorkland Boulevard approximately 45m south of Salehurst Road/Yorkland Boulevard	34

Appendix 4
Pedestrian Crossover Enhancements

Enhancement	Potential Benefit	Estimated Cost per pedestrian crossover
Flashing Beacons		
Change lamps from incandescent to LED lamp modules	Brighter, more visible when activated	\$2,500
Increase size from 20 cm to 30 cm diameter lens	More visible when activated	
Review placement, increasing separation between beacon and overhead sign	Address concern that beacon blends in with illuminated sign, increase field of vision for motorists	
Add additional side-mounted beacon on pole	Increase field of vision for motorists, draw motorists attention to roadside where pedestrian waiting to cross	\$3,000
Pavement Markings		
Add “zebra” striping between double white crosswalk lines	Emphasize location of crosswalk Encourage pedestrians to cross within the crosswalk lines	\$2,500
Parking Regulations		
Increase the length of the No Stopping zone from within 9 metres of the crosswalk to within 15 metres on the approach side of the crosswalk	Increase visibility of pedestrians entering the pedestrian crossover. Remove stopped vehicles from within close proximity to the pedestrian crossover	\$200-\$1,000
Pedestrian Lighting		
Investigate feasibility of adding pedestrian scale lighting to pedestrian crossover poles	Illuminate pedestrians standing at curb, waiting to cross the street	To be determined in consultation with Toronto Hydro
Street Furniture		
Review location of street furniture in close proximity to pedestrian crossovers	Ensure street furniture does not interfere with visibility of pedestrians or obstruct access to the pedestrian pushbutton	

Appendix 5
Implementation Strategy for pedestrian crossover replacements
and visibility enhancements on minor arterial roadways

Year	Funding	Strategy
Major Arterial Roadways		
2007	\$3,630,000.00 (previously approved in May 2006)	Complete replacement of pedestrian crossovers with traffic signals, and complete enhancement of visibility of pedestrian crossovers on major arterial roadways as directed by City Council in May 2006.
Minor Arterial Roadways		
2008	\$2,000,000.00	Begin replacement of pedestrian crossovers with traffic signals at locations listed in priority order in Appendix 1.
2009	\$2,000,000.00	Continue replacement of pedestrian crossovers with traffic signals at locations listed in priority order in Appendix 1.
2010	\$2,000,000.00	Complete replacement of pedestrian crossovers with traffic signals at locations listed in priority order in Appendix 1; begin enhancement of visibility of pedestrian crossovers at locations listed in priority order in Appendix 2.
2011	\$569,000.00	Complete enhancement of visibility of pedestrian crossovers at locations listed in priority order in Appendix 2.