

City of Toronto

**Six Points Interchange
Reconfiguration Class
Environmental Assessment
Study**

Toronto, ON

October 2007

City of Toronto

**Six Points Interchange
Reconfiguration Class
Environmental Assessment
Study**

Toronto, ON

October 2007

iTRANS Consulting Inc.

100 York Blvd., Suite 300
Richmond Hill, ON L4B 1J8

Tel: (905) 882-4100

Fax: (905) 882-1557

Email: itrans@itransconsulting.com
www.itransconsulting.com

Project # 2598

Client Project Team

Project Manager

Uwe Mader, P.Eng.

iTRANS Project Team

Principal

Tyrone Gan, P.Eng.

Project Manager

Liza Sheppard, P.Eng.

Technical Team

Suzette Shiu, P.Eng.
Joseph Palmisano, P.Eng.
Perry Perera, C.E.T.

EXECUTIVE SUMMARY

A. Background

The City of Toronto initiated a Municipal Class Environmental Assessment (EA) for the Six Points Interchange in 2003 to examine options for reconfiguring the interchange and to recommend a preferred design that is consistent with the policy objectives of the new *Etobicoke Centre Secondary Plan*. The Etobicoke Centre is one of four designated centres in the City of Toronto Official Plan.

The primary study area, within which detailed transportation analyses were undertaken, is generally bounded by the Etobicoke Centre limits plus a portion of Kipling Avenue between Dundas Street and Burnhamthorpe Road. The Six Points Interchange is located where Dundas Street West, Kipling Avenue, and Bloor Street West converge, as illustrated in **Exhibit ES.1**. The Six Points Interchange in context to the adjacent lands is shown in **Exhibit ES.2**.

The existing interchange is a unique interchange, originally constructed by the Metropolitan Toronto Department of Roads in 1961. Reconfiguration of the Six Points Interchange has been a municipal objective for more than two decades. The former City of Etobicoke *City Centre Secondary Plan*, approved in 1987, included a policy calling for the reconfiguration of the Six Points Interchange.

B. Study Purpose and Objectives

The purpose and objectives of this study are to:

- examine options for reconfiguring the Six Points Interchange and associated ramps and service roads
- recommend a preferred design and property protection plan for a reconfigured Six Points road network, consistent with the policy objectives of the new *Etobicoke Centre Secondary Plan*

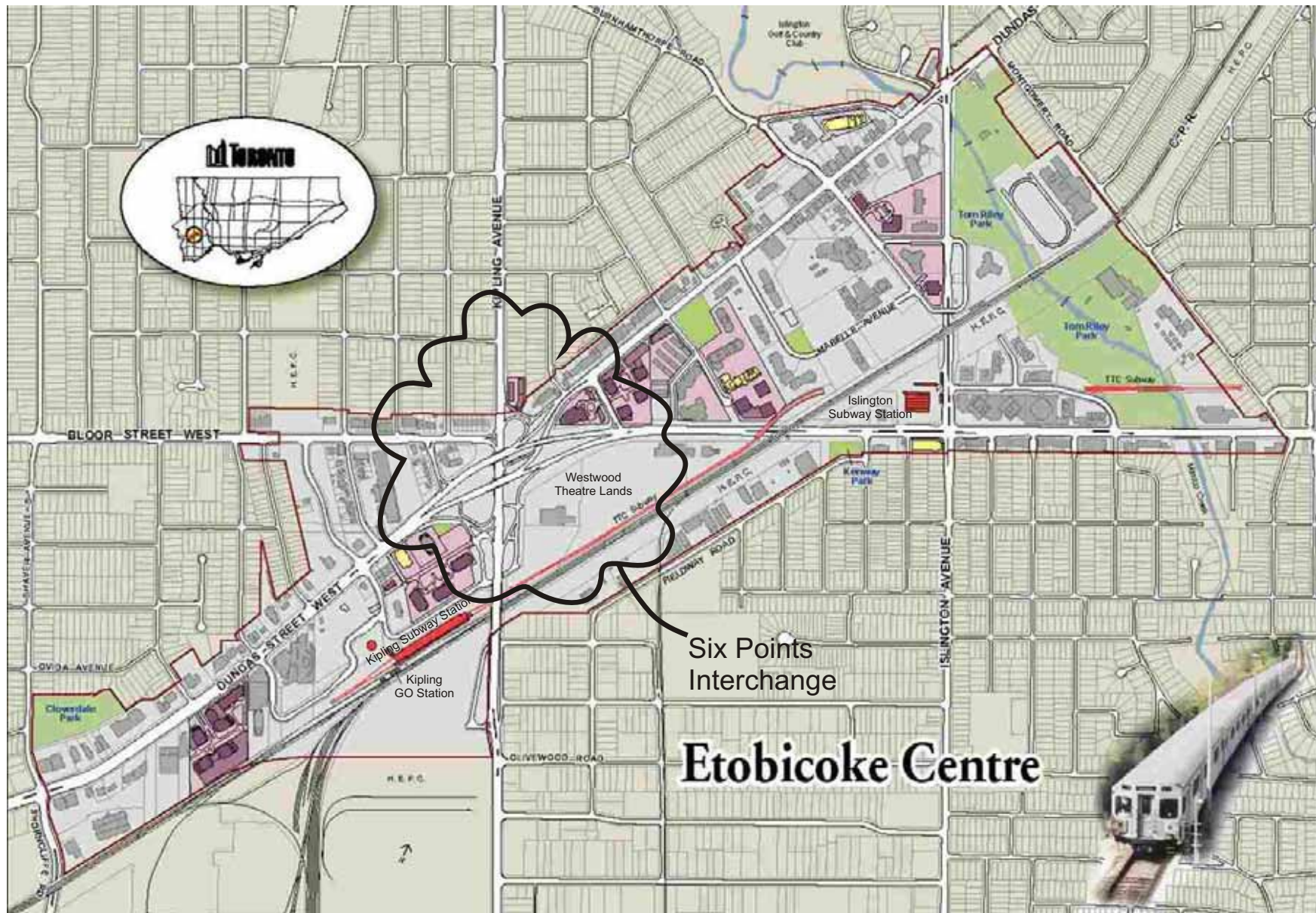
Key benefits to be achieved through any proposed redesign should include:

- simplifying the road network, potentially releasing surplus interchange lands for other uses
- an improved street and block pattern to facilitate new development and better integrate existing and future land uses on either side of Kipling Avenue
- creating a more desirable, attractive and safe environment for pedestrians and cyclists, including improved linkages to the Kipling Subway Station, adjacent neighbourhoods, employment areas and improved streetscaping
- improved vehicular access to lands adjacent to the Six Points Interchange, particularly the Westwood Theatre lands



Exhibit ES.1

Six Points Interchange and Study Area



Legend

— Etobicoke Centre Boundary

Not To Scale

October 2007

Exhibit ES.2

Etobicoke Centre

iTRANS

The preferred solution must maintain acceptable operating conditions for exiting and future surface transit services, particularly access to and from bus terminal facilities at Kipling Subway Station.

Acceptable future levels of service for traffic operations will be consistent with a highly urbanized pedestrian oriented environment.

C. Needs and Opportunities

A review of the existing conditions at the Six Points Interchange resulted in the identification of the following needs and opportunities to be addressed in this study:

City Building / Urban Design

- The Six Points Interchange occupies a significant amount of land, some of which could potentially be freed-up for alternative uses to support the development policies of the *Etobicoke Centre Secondary Plan*.
- The Six Points Interchange is a major physical and psychological barrier, particularly between development on either side of Kipling Avenue, interrupting the physical continuity and connectivity of the Etobicoke Centre.
- Existing vehicular access to the Westwood Theatre lands is poor due to the existing freeway-type ramp configurations and site grading, adversely affecting future development potential.
- The existing road network layout needs to be simplified.
- Grade separations should be eliminated or reduced to facilitate an urban environment and pedestrian and cyclist amenities.
- Interchange-style loop ramps should be eliminated or reduced.
- 'Typical' street intersections and frontages should be maximized.
- The urban design objectives of the *Etobicoke Centre Secondary Plan* should be met.

Transit

- The Kipling Station is a key inter-regional transit gateway for west-end residents, and for commuters living beyond the City boundaries. The importance of this gateway will further increase with the planned construction of a new inter-regional transit terminal to serve Mississauga Transit and GO Transit, and an expanded TTC passenger drop-off and pick-up facility.
- Providing high quality pedestrian access to the Westwood Theatre lands and throughout the Six Points area will enhance access to the subway and surface transit facilities to further the City building objectives of the *Etobicoke Centre Secondary Plan* and reduce auto dependency.
- The Westwood Theatre site located on the east side of Kipling Avenue is currently not well connected to the Kipling Station. This problem is expected to intensify in the future as the lands east of the station redevelop.

Pedestrians

- Pedestrian activity is limited through the Six Points Interchange. Though sidewalks are provided throughout the Six Points Interchange, the inhospitable anti-urban environment of the area does not promote a highly functioning pedestrian environment where walking is interesting, safe and pleasurable. This is also true, given the poor visual amenity of the pedestrian routes throughout the interchange.
- The pedestrian connections to a variety of points of interest are poor, and pedestrian connection improvements are required between the east and west sides of Kipling Avenue. In particular, there is a need for a good pedestrian network access to the Kipling Subway station from the Westwood Theatre site, and from Dundas Street.

Cyclists

- Currently, use of the Six Points interchange by cyclists is minimal. The interchange is without facilities for cyclists and the interchange-type geometry, and free-flow traffic environment of the area is not conducive to cycling and could present safety concerns for cyclists.
- Bloor Street West, east and west of Kipling Avenue, and a section of Dundas Street between Kipling Avenue and Dunbloor Road have been identified as part of the 1000 km network of east-west and north-south bike routes within the City of Toronto Bike Plan. In addition, wider curb lanes to better accommodate and encourage cyclists should be considered in any reconfiguration of the interchange.
- There is a general need to improve cyclist connections to adjacent land uses.

Capacity and Operations

- Some of the major signalized intersections on roads approaching the Six Points area namely, Dundas Street at Poplar Avenue and Dundas Street at Islington Avenue are operating at or near capacity during the AM and PM peak hours. These gateway intersections are the major road network constraints in the study area and not the Six Points Interchange itself. This means that there are opportunities to reconfigure the interchange to take advantage of spare capacity.
- Midblock traffic volumes on the arterial road network approaching the Six Points area (Dundas Street east and west of Kipling Avenue, and Bloor Street east of Kipling Avenue) are nearing or are at capacity in the peak directions during the weekday AM and PM peak hours. Again, this means that there are opportunities to reconfigure the interchange to take advantage of spare capacity.
- Within the Six Points interchange, the northbound Kipling Avenue to westbound Dundas Street ramp is operating at capacity during the weekday AM and PM peak hours. During the weekday AM peak hour, the eastbound Dundas Street to southbound Kipling Avenue ramp is operating at capacity.
- There is an opportunity to mitigate the high number of rear-end collisions at the stop / yield conditions on the loop and direct ramps from Kipling Avenue northbound to Dundas Street westbound, and from Dundas Street eastbound to Kipling Avenue southbound.

D. Problem Statement

Based on observed needs and opportunities, there are city building / urban design issues, capacity deficiencies, operational, and safety concerns within the Six Points interchange which require a combination of solutions to address these concerns and deficiencies within the interchange. Solutions are required to **reconfigure the Six Points Interchange** to allow for a well connected Etobicoke Centre, and to meet the objectives in the ***Etobicoke Centre Secondary Plan***. The problem statement entails finding solutions necessary to:

- Simplify the road network layout, freeing up and making surplus interchange lands available for other uses.
- Maximize 'typical' street intersections and potential development frontages.
- Improve the landscape and streetscape of the area.
- Provide good pedestrian network access to and from the Kipling Subway Station, the Westwood Theatre site, Bloor and Dundas Streets, and improve pedestrian connections between the east and west sides of Kipling Avenue.
- Improve cyclist connections through the area to connect to adjacent land uses.
- Maintain acceptable surface transit operations, particularly to and from the Kipling Subway Station, considering existing and future bus operations.
- Have acceptable levels of service for traffic operations on the area arterial road network that are consistent with a highly urbanized pedestrian-oriented environment such as downtown Toronto and North York Centre.

E. Public Consultation

A comprehensive public consultation program was conducted for the Study, with the following components:

- **Mailing List:** A mailing list was established for the Study, which included public agencies and utilities, residents and businesses within and adjacent to the Study Area, and others who wrote, telephoned, e-mailed, or filled in comment sheets, or registered at a Public Meeting and Open House. People on the mailing list were sent a Notice at least one week prior to each of the public meetings. Opportunities for public input were provided throughout the process, including public meetings, telephone inquiries, letters, email and faxes.
- **Public Meetings and Open Houses:** Two formal public meetings and open houses were held during the Study. The first was held on Tuesday, March 2nd, 2004 at the Royal Canadian Legion, Branch 210, 3326 Bloor Street West. The second was held on Tuesday, June 20th, 2006 at the Etobicoke Collegiate Institute - 86 Montgomery Road. The meetings consisted of a public open house with display panels, followed by a formal public meeting comprised of a short presentation by City staff, followed by a question and answer period. Attendees were asked to sign-in when they entered the public open house. They were given a handout consisting of key display panels, and a comment form

to provide them with another opportunity to provide input to the study. Members of the study project team were on hand to respond to questions and concerns.

In April and May of 2007, the Ward Councillor held three community consultation sessions regarding the potential future use of the Westwood Theatre lands and the reconfiguration of the Six Points Interchange. These sessions were not part of the Municipal Class EA public consultation requirements.

- **Newspaper Advertisements:** At least one week prior to each public meeting, a newspaper advertisement was placed in two separate editions of the *Etobicoke Guardian* (South Section) to announce the date, time, and location of the public meeting. The newspaper advertisements invited the public to attend the meetings and to provide input. The advertisements provided information on contact names, telephone numbers, and addresses. A copy of the advertisements can be found in **Appendix E.2**.
- **Additional Notification:** At least one week prior to each public meeting notice of the public meeting were mailed to area residences and businesses. Notification letters were also mailed to utility companies and external agencies. For Open House No.1, approximately 10,000 notices were delivered via Canada Post to residences and businesses in the study area. Notification was mailed to 120 people on the project mailing list. For Open House No.2, approximately 10,000 notices were delivered via Canada Post to residences and businesses in the study area. Notification was mailed to over 440 people on the project mailing list.
- **Telephone Numbers:** Three telephone numbers, including a Teletype Message (TTY) and a 24-hour number were listed in all sources of advertisement and notification. This enabled members of the public to contact the City's project manager at their convenience.
- **City's website and project email address:** Through the newspaper advertisements and notices, members of the public were invited to visit the City's website at www.toronto.ca/involved/projects and to send comments via an e-mail address provided.
- **Utility Companies:** A meeting was held with the utility companies with services within the corridor. These companies included Toronto Hydro, Bell Canada, Rogers Cable Communications, and Enbridge Gas Distribution. The meeting was held on Wednesday, September 1st, 2004 at iTRANS. The meeting was held to confirm utility information, and to identify and discuss potential impacts that alternative reconfiguration designs for the Six Points Interchange may have on existing and/or planned services.

Further details on the public consultation process are documented in other sections of this report. A Summary of the Public Meetings can be found in **Appendix E.3**.

Major events in the public consultation process are summarized below:

- | | |
|---|--|
| ▪ Study Initiation | November 2003 |
| ▪ Newspaper advertisement of Study Commencement | November 28 & December 3, 2003 |
| ▪ Notice of Study Commencement sent to external agencies / utilities | November 28, 2003 |
| ▪ Direct mailout to established mailing list of interested residents and businesses for Open House No. 1 | February 16, 2004 |
| ▪ Direct mailout of notices to all area residences and businesses for Open House No. 1 | Week of February 18, 2004 |
| ▪ Newspaper advertisement of Public Meeting and Open House No. 1 | February 18 & 25, 2004 |
| ▪ First Public Meeting and Open House | March 2, 2004 |
| ▪ Direct mailout of notices to all area residences and businesses for Open House No. 2 | Week of June 8, 2006 |
| ▪ Newspaper advertisement of Public Meeting and Open House No. 2 | June 7 & 9, 2006 |
| ▪ Second Public Meeting and Open House | June 20, 2006 |
| ▪ Community Consultation Sessions (Not part of the Municipal Class EA public consultation process) | April 28, May 15 & May 30, 2007 |

F. “Long List” of Alternative Solutions

The Municipal Class Environmental Assessment process requires the identification of all reasonable alternatives solutions and examination of alternative designs to address the problem. After the Problem Statement (i.e. need for the reconfiguration of the interchange) was established, Phases 2 and 3 of the study were addressed in an integrated fashion by including design concepts as alternative solutions in the evaluation of alternative designs.

This integration of Phases 2 and 3 was necessary to fully respond to, and address the need to reconfigure the interchange, and to demonstrate that all alternatives were being considered. In this regard, a “Long List” and a “Short List” of alternatives were identified. The “Short List” was derived from the remaining alternatives after analysis of the “Long List”.

The alternative solutions consist of a long list of 33 options including the ‘Do Nothing’ which comprised the “Long List”. The alternative methods include four of six “Short List” options, for which refined design concepts were developed for ‘major’ reconfiguration of the interchange.

To address the problem statement, a “long list” of 33 alternative solutions was developed from a number of sources, including three separate studies conducted between 1983 and 1989 to review redesign concepts for the interchange, an urban design charrette held in 1999 in conjunction with the ‘City Centre Secondary Plan’ review, and concepts developed by this project’s study team. In developing the concepts by this project’s study team, two visioning workshops were held with City staff representing the City Planning Division, Transportation

Services Division, Technical Services Division, Facilities and Real Estate Division and the Public Consultation Unit.

The resulting concepts and those from the previous studies were grouped into the following six families to facilitate analysis:

1. **Do Nothing** – This alternative represented continuation of the status quo and would involve no changes or improvements to the existing Six Points interchange. This alternative provides a baseline for comparison purposes.
2. **Fully At-Grade** – This alternative included options with all at-grade intersections. No grade separation of the road network would be involved.
3. **Bloor-Dundas Connected with Grade Separation** – This alternative included options with Bloor Street west of Kipling Avenue connected to Dundas Street east of Kipling Avenue, and Dundas Street west of Kipling Avenue connected to Bloor Street east of Kipling Avenue. The options would involve grade separation with Kipling Avenue.
4. **Bloor Connected with Grade Separation** – This alternative included options with Bloor Street east and west of Kipling Avenue directly connected. These options would involve grade separation with Kipling Avenue, and with Dundas Street.
5. **Bloor Not Connected with Grade Separation** – This alternative included options with Dundas Street east and west of Kipling Avenue directly connected, or modifications to existing conditions. All options involved no direct connection of Bloor Street east and west of Kipling Avenue, and grade separation with Kipling Avenue.
6. **Roundabout and Ring Road** – This alternative included options with a ring-road system, and no grade separation.

A set of criteria, referred to as “coarse criteria”, were developed by the project team, including the Technical Advisory Committee, to provide a first-step elimination of some of the 33 “long list” of alternative solutions. From this, a “short list” of alternative solutions for more detailed evaluation was defined. The criteria were developed to meet the objectives of the Problem Statement. The “coarse criteria” used to evaluate the 33 alternative solutions were as follows:

- Release interchange lands for other uses
- “Normalize” intersections (i.e. intersect at-grade, meet typical geometric design criteria, pedestrian and cyclist accessibility, etc.)
- Arterial road continuity / connectivity (i.e. Dundas-Dundas connection, Bloor-Bloor connection, and Kipling-Kipling connection)
- No “above grade” grade separations
- No significant impacts on active development sites

Illustrations of the 33 alternative solutions are provided in **Appendix B**.

G. “Short List” of Alternative Solutions

Initial “Short List” of Alternatives

The analysis of the 33 “long list” of alternative solutions resulted in an initial “short list” of six alternatives, including the ‘Do-Nothing’, that were carried forward for further comparison. The identified “short list” of alternative solutions was defined more specifically as follows:

1. **Do Nothing** – This alternative represents continuation of the status quo and would involve no changes or improvements to the existing Six Points Interchange. This alternative provides a baseline for comparison purposes.
2. **Fully At-Grade, Dundas Street Loop** – This alternative includes all at-grade intersections, with Dundas Street realigned to the south through the Westwood Theatre lands, and Bloor Street connected through the Kipling Avenue intersection.
3. **Fully At-Grade, Bloor Street Loop** – This alternative includes all at-grade intersections and connecting Bloor Street east and west of Kipling Avenue via a new alignment through the Westwood Theatre lands. Dundas Street West and Kipling Avenue would be connected at-grade on their current alignments, resulting in a skewed intersection.
4. **Fully At-Grade, Kipling Avenue Loop** – This alternative includes all at-grade intersections. To achieve right-angled intersections, Kipling Avenue would be realigned to the east, and Bloor Street east and west of Kipling Avenue connected via a new alignment through the Westwood Theatre lands. Dundas Street would connect on its current alignment.
5. **Dundas Street Underpass** – This alternative entails grade-separating Dundas Street in an underpass to Kipling Avenue and to Bloor Street. Bloor Street would connect through the Kipling Avenue intersection.
6. **Kipling Avenue Underpass** – This alternative entails grade-separating Kipling Avenue in an underpass to Dundas Street and to Bloor Street. Bloor Street would connect through the Kipling Avenue intersection and Dundas Street would be realigned to the south to account for appropriate intersection angles.

Illustrations of these “short list” of alternative solutions are provided in **Appendix B** and were presented at the March 2004 Public Meeting and Open House.

Final “Short List” of Alternatives

A pre-screening of the preliminary “short list” of alternatives was undertaken based upon the following criteria:

- Releasing developable interchange lands for other uses
- “Normalizing” intersections (i.e. meet typical geometric design criteria, pedestrian and cyclist accessibility, etc.)
- Avoiding significant adverse impacts on active development sites

After the preliminary review, three options – the Fully At-Grade Bloor Street Loop, the Fully At-Grade Kipling Avenue Loop, and the Kipling Avenue Underpass – were screened out from further evaluation for the following reasons:

Option	Reasons for Screening Out
Fully At-Grade Bloor Street Loop	<ul style="list-style-type: none"> ▪ Roadway geometry results in non-“typical/normal” intersection at Dundas Street and Kipling Avenue – limits available capacity in the road network with restricted left turn movements ▪ Resulting block shapes and sizes are not conducive to development and/or road network users
Fully At-Grade Kipling Avenue Loop	<ul style="list-style-type: none"> ▪ Significant impacts on existing homes and on active development site north of Bloor Street ▪ Resulting block shapes and sizes are not conducive to development and/or road network users ▪ Resulting roadway alignment geometry does not meet appropriate design criteria
Kipling Avenue Underpass	<ul style="list-style-type: none"> ▪ Significant impacts on several homes on Kipling Avenue north of Bloor Street ▪ Resulting block shapes and sizes are not conducive to development and/or road network users

The following four alternative solutions were therefore carried forward for further refined design and detailed evaluation:

1. Do Nothing
2. Modified Existing – Improved Westwood Lands Access
3. Fully At-Grade, Dundas Street Loop
4. Dundas Street Underpass

Evaluation of Alternative Designs

The evaluation of the alternative designs is summarized below:

Option 1: – Do Nothing is the third ranked alternative, for the following reasons:

- Does not meet the objectives of the Problem Statement, since no changes will occur to the existing conditions. Thus urbanizing the Six Points area of the Etobicoke Centre to a level comparable to other City centres such as the North York City Centre would not be achieved.
- Limited opportunity to create appropriate development blocks, and improved streetscape.
- Very limited opportunity for improvement to pedestrian access to and from Kipling Station, the Westwood Theatre site, Bloor and Dundas Streets, and pedestrian connections between the east and west sides of Kipling Avenue.
- No improvement to cyclist connections through the area.
- Will require maintenance costs for the existing structures over time, however there are no construction costs for a new road network.

Option 2: – Modified Existing – Improved Westwood Lands Access is the second ranked alternative for the following reasons:

- Meets some of the objectives of the Problem Statement, with improved access to the Westwood Theatre lands allowing for transportation service of these lands, and some accommodation made for pedestrians and cyclists. However, the proposed road network will not be simplified over existing conditions.
- Some surplus interchange lands will be freed up with removal of a few access ramps.
- Provides for some opportunity to create appropriate development blocks, on the Westwood Theatre site.
- Maintains acceptable traffic levels of service.
- Provides lower level of transit vehicular accessibility to Kipling Station than Option 3.
- New construction cost significantly less than Options 3 and 4.

Option 3: – Fully At-Grade, Dundas Street Loop is the preferred alternative. This option addresses the Problem Statement by:

- Providing a simplified road network layout.
- Freeing up surplus interchange lands for other uses.
- Maximizing the flexibility to have the best potential to serve adjacent urban land uses, and provides the most opportunities to create appropriate development blocks, with improvements to the landscape and streetscape of the area.
- Providing good pedestrian access to and from Kipling Station, the Westwood Theatre site, Bloor and Dundas Streets, and improving pedestrian connections between the east and west sides of Kipling Avenue.
- Improving cyclist connections through the area to connect to adjacent land uses.
- Providing for surface transit operations, to and from the Kipling Subway Station, and enhanced opportunity for transit service through the area, including the Westwood Theatre lands.

It is anticipated that Option 3 will provide the highest return on land value of all four options. This option can be accommodated almost entirely within City-owned lands, and at a significantly lower cost than Option 4. Utility relocations would be necessary and some property would be required.

Option 4: – Dundas Street Underpass is the least preferred short listed option for the following reasons:

- Partially meets the objectives of the Problem Statement with surplus interchange lands freed up for other uses, which will be an improvement over existing conditions.
- Does not provide for the best development blocks of a reasonable size that promotes flexibility in use and development pattern over time, though this option has attributes comparable to Option 3.
- Has access and connectivity constraints as a result of the underpass, and provides for less developable frontage than Option 3.
- Overall traffic operations are not appreciably different than Option 3.
- Implementation cost is approximately 30 % higher than Option 3.

Preferred Alternative Design

The preferred alternative design for the reconfiguration of the Six Points Interchange is the **Fully At-Grade, Dundas Street Loop** (Option 3). This option provides for all at-grade intersections with Dundas Street West, Kipling Avenue, and Bloor Street West, and removes the existing interchange structures. Bloor Street West is made continuous across Kipling Avenue. Dundas Street, east and west of Kipling Avenue, will be connected via a new roadway through the Westwood Theatre lands, and via Dunbloor Road. The new grid of public roads will create new development parcels with good linkages to the surrounding established urban fabric.

Overall, this option would provide a balance among city building / urban design objectives, traffic and transit operational requirements, accommodation for pedestrians and cyclists, protection of stable residential communities, impacts to the community and future developments, and cost, with minimal environmental impacts.

This option provides for:

- Street cross-sections that meet urban design objectives for the Etobicoke Centre, and arterial road design standards in terms of pavement widths, lane widths, sidewalks, and boulevards.
- Better accommodation for pedestrians by providing an appropriate network of pedestrian sidewalks and linkages, including improved direct linkages between the Westwood Theatre lands and Kipling Station.
- Improved accommodation for cyclists with a bicycle facility on Bloor Street West, and 4.0 m 'bike friendly' curb lanes on Dundas Street West, and potentially on Kipling Avenue.

- Good accommodation for transit vehicles with an accessible road network through the Westwood Theatre site, wider (4.0 m) curb lanes on Dundas Street West and on Kipling Avenue. The retention of the loop ramps on the west side of Kipling Avenue, and possibly the east side of Kipling Avenue (the latter being dependent on future bus routing and development opportunities on the adjacent Westwood Theatre lands) provides convenient bus access to / from Kipling Station.
- Adequate number of lanes and the appropriate auxiliary lanes at intersections. The proposed number of lanes would provide adequate capacity for the roadway to accommodate traffic projections in the area.
- Improved streetscapings

Adverse impacts include the need to acquire a relatively small amount of private property and the potential for traffic infiltration. A total of approximately 585 m² of property would be required from the east and west sides of Dunbloor Road and from the west triangular corner of 2 Dunbloor Road. Traffic infiltration in adjacent residential communities will be monitored and mitigating measures pursued should they be warranted.

H. Recommended Design Concept

This section describes the engineering features of the recommended design concept for the reconfiguration of the Six Points Interchange. The preliminary design profile and typical cross-sections are included in **Appendix A**.

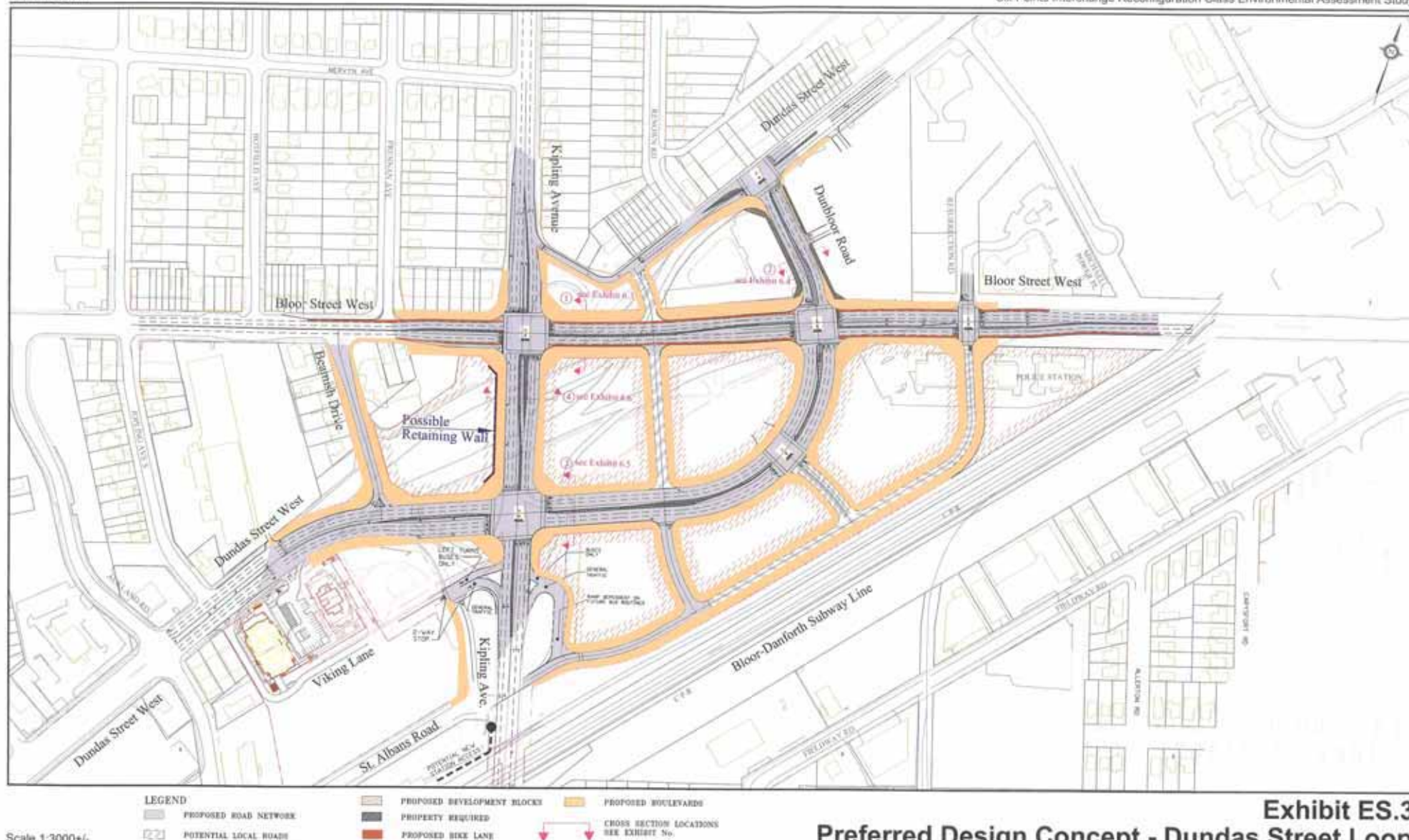
The preferred design for the reconfiguration of the Six Points Interchange, developed and refined considering public input, is described below:

- Dundas Street West, west of Kipling Avenue connected to Dundas Street West east of Kipling Avenue via a new roadway through the Westwood Theatre lands, and via Dunbloor Road.
- The extension of Bloor Street easterly, east of Kipling Avenue to connect to Bloor Street at Dunbloor Road.
- A widening of Kipling Avenue to 4/5 through lanes from just south of Viking Lane to approximately 165 m north of Bloor Street, within a 42 m right-of-way; 4.0 m curb lanes are proposed with exclusive turning lanes at the appropriate intersections.
- A 6-lane cross-section with exclusive left turn lanes at the appropriate intersections on Dundas Street through the Westwood Theatre lands matching the existing Dundas Street cross-section west of Kipling Avenue to Bloor Street, within a 42 m right-of-way; 4.0 m curb lanes are proposed as 'bike friendly' lanes and to accommodate transit vehicles.
- A 4-lane cross-section on Bloor Street, with a 1.8 m bike lane in each direction, and the potential for on-street parking, within a 42 m right-of-way.
- A 4-lane cross-section on Dunbloor Road, within a 26 m right-of-way.
- Retaining the existing loop ramps between St. Albans Road and Viking Road, with some movements potentially restricted to transit vehicles only.
- A new 2-lane roadway connection from St. Albans Road through the Westwood Theatre lands to Dundas Street.

- A potential east-west local road (paralleling the CP rail corridor) from approximately 130 m east of the service ramps on the east side of Kipling Avenue to the intersection of Bloor Street / Resurrection Road.
- A potential north-south local road connection from Dundas Street West continuing to north of Bloor Street to service the development blocks.
- A potential north-south local road between the potential local road (paralleling the CP rail corridor) to Dundas Street West. This potential north-south local road may be located approximately 240 m east of the Dundas Street / Kipling Avenue intersection.
- Overall improved streetscaping by providing trees on both sides of the roadways throughout the study corridors and opportunities for generous sidewalk and boulevard treatments. Other opportunities for additional streetscaping, such as median planting, could be explored during detailed design.

The preferred design concept is illustrated in **Exhibit ES.3**.

With reconfiguration of the Six Points interchange, approximately 15.5 acres of land will be readily available for development (assuming the redevelopment of the Police Station lands). Approximately 1.75 acres of additional remnant land would be available for potential uses such as, but not limited to, small parkettes, extensions to existing parks, public art installations, other amenities or public uses, or sale to adjacent property owners. Developable block sizes range in size from approximately 1.5 to 3.0 acres. Other remnant parcels range in size from approximately 0.2 to 0.5 acres.



Scale 1:3000+/-
October 2007

Exhibit ES.3 Preferred Design Concept - Dundas Street Loop

iTRANS

I. **Environmental Effects and Mitigation Measures**

A summary of the potential impacts to the natural, social and economic environments, together with recommended mitigation measures is provided in **Table ES.1**.

Table ES.1: Potential Impacts and Proposed Mitigation Measures

Factor	Potential Impact	Proposed Mitigation
Natural Environment		
Vegetation	<ul style="list-style-type: none"> Reduction of vegetation within the interchange area 	<ul style="list-style-type: none"> The right-of-way vegetation is primarily ornamental plantings and hedgerows. However, this urban vegetation provides habitat for birds and small mammals, shade, soil stabilization, and carbon cycling through respiration. Efforts should therefore be made to protect urban vegetation that does not need to be removed. Environmental protection measures designed to reduce vegetation removals, and to reduce potential impacts of road salt should be considered on a site-specific basis during detail design. Some of these measures are provided in Section 6.2.2.1. There are no rare, threatened or endangered vegetation or significant vegetation communities within the study limits. Therefore, this project will not affect any of these communities.
Wildlife	<ul style="list-style-type: none"> Displacement of wildlife 	<ul style="list-style-type: none"> The right-of-way consists primarily of previously modified / disturbed terrestrial wildlife habitat with low habitat structure and diversity, and limited habitat capability. As a result, a reconfiguration of the interchange will not have a significant effect on wildlife and wildlife habitat. However, numerous bird species located within the project limits are listed under the Migratory Birds Convention Act (MBCA). To meet the requirements of the MBCA, no vegetation removals should occur during the nesting season (April 1 to July 31). If vegetation clearing is required during this period, a nesting survey should be carried out by a qualified avian biologist prior to construction. If active nests are found, a site-specific mitigation plan should be prepared in consultation with the Canadian Wildlife Service. There are no rare, threatened or endangered wildlife or significant wildlife habitat within the study limits. Therefore, this project will not affect any of these habitats.

Factor	Potential Impact	Proposed Mitigation
Natural Environment		
Fisheries and Aquatic Habitat	<ul style="list-style-type: none"> ▪ Direct impact on fisheries and aquatic habitat 	<ul style="list-style-type: none"> ▪ There are no watercourses located within the study limits. Therefore, the proposed reconfiguration is not anticipated to affect any fisheries or aquatic habitat. ▪ During construction however, measures as described in Section 6.2.2.4 - erosion and sediment control, should be taken to minimize the potential for downstream impacts to fisheries and aquatic habitat.
Surface Water Quantity	<ul style="list-style-type: none"> ▪ Increase in runoff volume and peak flows 	<ul style="list-style-type: none"> ▪ Maximize runoff volume and peak flow controls on developable lands ▪ Provide additional storage through “Super Pipes” in each of the storm sewer systems prior to the downstream constrained sewer segment, in order to match with the downstream allowable rates in each subcatchment area. ▪ The sizing of sewers to be conducted during the detail design stage.
Surface Water Quality	<ul style="list-style-type: none"> ▪ Increase in Total Suspended Solids (TSS) 	<ul style="list-style-type: none"> ▪ Oil Grit Separators (OGSs) and storage tanks are potentially suitable for treating runoff from the road area. This is to be confirmed through more detailed water balance analysis with more site-specific hydrogeologic and soil data. ▪ “Super Pipes”, recommended for peak flow control in each of the subcatchment areas, can also provide water quality control. The Total Solids (TSS) removal within the “Super Pipes” can be equivalent to storage tanks. However, the water quality performance should be verified at the detail design phase of the study. ▪ Runoff from developable lands can be treated with various source and end-of-pipe control measures, such as underground storage tanks and off-line wet ponds. These would provide peak flow control, as well as water quality control. ▪ Applying clean water collector systems technology in future development areas should be explored. This new technology will enhance ground water infiltration, and would provide runoff quantity and quality control. ▪ Existing developed areas should be retrofitted with source control measures such as downspout disconnections in residential areas and porous pavements in commercial areas.
Surface Water Infiltration	<ul style="list-style-type: none"> ▪ Decrease in infiltration 	<ul style="list-style-type: none"> ▪ This decrease can be mitigated by implementing new technologies such as clean water collections systems and green roof systems. Rerouting parking lot runoff to grassed area in each of the developable areas can also enhance the infiltration volume under future conditions.

Factor	Potential Impact	Proposed Mitigation
Natural Environment		
Soil Removal, and Contaminants	<ul style="list-style-type: none"> Potential for removal of contaminated soils 	<ul style="list-style-type: none"> Any soils that are removed during construction should be tested for contaminants. If the soils are contaminated, the City is to notify the MOE and have a contingency plan for how and where the soils will be disposed of or remediated. The City is to develop a contingency plan for how any gas tanks or petroleum storage sites encountered during construction will be handled, to ensure groundwater and soil contamination does not occur.
Social and Economic Environment		
Socio-Economic	<ul style="list-style-type: none"> Impacts on businesses and residents 	<ul style="list-style-type: none"> Overall, a reconfiguration of the Six Points Interchange will provide for a vibrant mix of employment and housing which will present opportunities for residents to walk or use public transit to work. A reconfiguration will also allow for a hub of cultural, social, administrative and recreation uses, which will facilitate social interaction and foster a sense of community and identity for the area. In the short-term, the nature of the work required to reconfigure the interchange is such that traffic disruption and delays cannot be avoided. Existing businesses and residents will therefore be impacted while construction is taking place, mainly from traffic detours, restricted movements, etc. Timing of construction activities can be coordinated to minimize some of these impacts.
Noise and Road Construction	<ul style="list-style-type: none"> Increase in existing noise levels. 	<ul style="list-style-type: none"> A reconfiguration of the Six Points Interchange will have none to negligible noise impact on noise sensitive receptor locations. As per the MTO/MOE guidelines, noise mitigation is not required for the proposed works. Construction activities are to comply with the requirements of the municipal noise by-laws.
Air Quality	<ul style="list-style-type: none"> Degradation in ambient air quality conditions 	<ul style="list-style-type: none"> Local air quality impacts attributable to vehicular emissions from projected, future-build, peak-hour traffic volumes within the proposed new road network, are less than applicable government guidelines at the adjacent residences for all modeled scenarios. Air quality is therefore not a concern.
Property Requirements	<ul style="list-style-type: none"> Requirement for additional property 	<ul style="list-style-type: none"> Approximately 585 m² of property will be required from two property owners. Formal definition of property requirements will be determined during detail design.
Streetscaping	<ul style="list-style-type: none"> Reduced aesthetics 	<ul style="list-style-type: none"> Streetscaping is an important element in establishing an urban centre to help in increasing the enjoyment of area residents, businesses, and visitors, and to provide some definition and character of the area. As such, extensive streetscaping is proposed to be provided with a reconfiguration of the interchange. Streetscaping details will be determined during detail design, and will meet the City of Toronto (<i>Etoibicoke Centre Secondary Plan</i>) streetscaping and urban design guidelines.

Factor	Potential Impact	Proposed Mitigation
Social and Economic Environment		
Archaeology, and Cultural Resources	<ul style="list-style-type: none"> ▪ Identification of precontact and historic archaeological sites in undisturbed areas. 	<ul style="list-style-type: none"> ▪ In the event that deeply buried archaeological remains are encountered during construction, the Office of the Regulatory and Operations Group, Ministry of Tourism, Culture and Recreation should be contacted, and standard procedures should be adhered to during construction, in accordance with the Cemeteries Act.
Utilities	<ul style="list-style-type: none"> ▪ Relocation of existing utilities (above ground and underground) 	<ul style="list-style-type: none"> ▪ Relocation of existing utilities will be significant. Formal definition of impacts on utilities, specifically Toronto Hydro, Enbridge Gas, Bell Canada and Rogers Cable, will be determined during detail design.
Other Services	<ul style="list-style-type: none"> ▪ Relocation of existing water & wastewater services 	<ul style="list-style-type: none"> ▪ Relocation of existing water & wastewater services will be significant. Formal definition of impacts will be determined during detail design.
Illumination	<ul style="list-style-type: none"> ▪ Need for illumination 	<ul style="list-style-type: none"> ▪ The need for and type of illumination will be confirmed during detail design. Illumination is to be provided as appropriate.
Construction Detours	<ul style="list-style-type: none"> ▪ Inconvenience during construction. 	<ul style="list-style-type: none"> ▪ During detail design, a detailed construction staging and traffic management plan similar to that described in Section 6.1.7 should be developed to determine how traffic will be accommodated during construction and how access to properties will be maintained. ▪ The City will attempt to mitigate impacts as much as possible.

TABLE OF CONTENTS

Executive Summary	i
Table of Contents	xxi
1. Introduction and Background.....	1
1.1 Project Location and Study Area	1
1.2 Study Background	4
1.3 Overall City-Wide and Provincial Context.....	6
1.4 Etobicoke Centre Secondary Plan	9
1.5 The West District Study.....	14
1.6 Study Purpose and Objectives	14
1.7 Municipal Class Environmental Assessment Process	15
1.8 Project Team	18
1.9 Agency Consultation	19
1.10 Summary of Public Consultation Process.....	20
2. Existing Study Area Conditions.....	22
2.1 Socio-Economic Conditions	22
2.1.1 Existing Land Uses	22
2.1.2 Archaeological and Cultural Heritage Features	24
2.1.3 Noise	24
2.1.4 Air Quality	24
2.2 Natural Environment	25
2.2.1 Surface Water.....	25
2.2.2 Physiography and Soils	26
2.2.3 Fisheries and Aquatic Habitat	26
2.2.4 Vegetation and Vegetation Communities	26
2.2.5 Wildlife and Wildlife Habitat.....	28
2.2.6 Designated Natural Areas	29
2.3 Existing Transportation Facilities.....	31
2.3.1 Road Network	31
2.3.2 Transit Service	32
2.4 Pedestrians and Cyclists	36
2.4.1 Pedestrian Activity.....	36
2.4.2 Bicycle Activity	36
2.5 Utilities	38
2.5.1 Other Services	40
3. Needs and Opportunities	41
3.1 City Building / Urban Design	41
3.2 Transit, Pedestrians and Cyclists	43
3.2.1 Transit Service	43
3.2.2 Pedestrian and Bicycle Network	44
3.3 Existing Traffic Operations	45
3.3.1 Existing Traffic Volumes.....	45
3.3.2 Existing Origin–Destination (O-D) Patterns	46
3.3.3 Existing Intersection Operations	46

3.3.4	Existing Link Operations	47
3.3.5	Summary of Existing Traffic Conditions	50
3.4	Road Safety Considerations	50
3.5	Summary of Needs and Opportunities	53
3.6	Problem Statement	57
4.	Identification and Analysis of the “Long List” of Alternative Solutions	58
4.1	Identification of “Long List” of Alternatives	58
4.2	Development of “Coarse” Criteria and Analysis of “Long List” of Alternative Solutions	61
4.3	Identification of Preliminary “Short List” of Alternative Solutions	62
4.4	Public Consultation	63
4.4.1	Public Consultation Process	63
4.4.2	Public Concerns and Project Team Responses	64
4.4.3	Agencies Consultation	66
5.	Identification and Evaluation of the “Short List” of Alternative Solutions and Alternative Designs	67
5.1	Identification of Final “Short List” of Alternatives	67
5.2	Alternative Designs Assessment Criteria	73
5.3	Evaluation of Alternative Designs	74
5.4	Summary of Preferred Alternative Design	84
5.5	Future Traffic Operations	85
5.5.1	Future Intersection Operations	85
5.5.2	Future Queuing Analyses	86
5.5.3	Traffic on Bloor Street	90
5.5.4	Summary of Future Traffic Conditions	91
5.6	Public Consultation	92
5.6.1	Public Consultation Process	92
5.6.2	Public Concerns and Project Team Responses	94
5.6.3	Agencies Consultation	97
5.6.4	Community Consultation Sessions	97
5.6.5	Community Consultation Process	97
6.	Selected Design Concept, Environmental Effect and Mitigation Measures	98
6.1	Recommended Design Concept	98
6.1.1	Roadway Function / Urban Design Characteristics	99
6.1.2	Geometric Design	101
6.1.2.1	Horizontal Alignments	101
6.1.2.2	Vertical Alignments	102
6.1.2.3	Typical Cross-Sections	103
6.1.2.4	Pavement Structure Design	104
6.1.2.5	Design Criteria	105
6.1.2.6	Access Considerations	105
6.1.3	Proposed Streetscaping Plan	107
6.1.4	Proposed Development Blocks	107
6.1.5	Property Requirements	114
6.1.6	Illumination and Traffic Signals	114

6.1.7 Construction Staging and Detours	115
6.1.8 Utilities.....	118
6.1.9 Cost Estimate	119
6.2 Environmental Effects and Mitigation Measures	120
6.2.1 Drainage and Stormwater Management.....	120
6.2.1.1 Stormwater Management Plan.....	120
6.2.1.2 Conclusions and Recommendations	125
6.2.2 Natural Environment.....	126
6.2.2.1 Vegetation and Vegetation Communities	126
6.2.2.2 Wildlife and Wildlife Habitat	128
6.2.2.3 Fisheries and Aquatic Habitat.....	128
6.2.2.4 Erosion and Sediment Control Measures.....	128
6.2.3 Social and Economic Environment.....	129
6.2.3.1 Impacts on Businesses and Residents	129
6.2.3.2 Noise Impact Assessment and Road Construction Noise	130
6.2.3.3 Air Quality Impact Assessment	131
6.2.4 Summary of Identified Concerns and Proposed Mitigation Measures	134

List of Tables

Table 1: Transit Routes within Study Area.....	34
Table 2: Collision Summary for Six Points Interchange	51
Table 3: Evaluation of the Alternative Designs.....	75
Table 4: Future Traffic on Bloor Street (at Poplar Avenue).....	90
Table 5: Design Criteria.....	105
Table 6: Storage Requirements for Future Drainage Conditions.....	121
Table 7: Predicted Sound Exposure and Noise Impact.....	131
Table 8: Potential Impacts and Proposed Mitigation Measures.....	134

List of Exhibits

Exhibit 1-1: Etobicoke Centre	2
Exhibit 1-2: Six Points Interchange and Study Area	3
Exhibit 1-3: Six Points Interchange – 1960's	5
Exhibit 1-4: City Wide Context	7
Exhibit 1-5: Provincial Places to Grow – Urban Growth Centres	8
Exhibit 1-6: Six Points "Focus Area"	10
Exhibit 1-7: Linkages and Connections Opportunities	12
Exhibit 1-8: Potential Road Infrastructure Improvements	13
Exhibit 1-9: Class Environmental Assessment Process	17
Exhibit 2-1: Existing Land Uses and Study Area Constraints	23
Exhibit 2-2: Existing Drainage Conditions	27
Exhibit 2-3: Existing Natural Environment	30
Exhibit 2-4: Kipling Subway Station	33
Exhibit 2-5: Existing TTC Bus Routings and AM Peak Hour Bus Volumes	35
Exhibit 2-6: Proposed Bikeway Network in Study Area	37
Exhibit 3-1: Existing Area Road Network	42
Exhibit 3-2: Existing Intersection and Link Operations – AM Peak Hour	48
Exhibit 3-3: Existing Intersection and Link Operations – PM Peak Hour	49
Exhibit 3-4: Top Four Collision Locations within the Six Points Interchange	52
Exhibit 3-5: Collision Summaries for Top Four Locations	54
Exhibit 5-1: Do Nothing (Existing Conditions)	69
Exhibit 5-2: Modified Existing – Improved Westwood Lands Access	70
Exhibit 5-3: Fully At-Grade, Dundas Street Loop	71
Exhibit 5-4: Dundas Street Underpass	72
Exhibit 5-5: Future Total Traffic Volumes – Dundas Street Loop	87
Exhibit 5-6: Future Intersection Operations (Key Movements) – AM Peak Hour	88
Exhibit 5-7: Future Intersection Operations (Key Movements) – PM Peak Hour	89
Exhibit 6-1: Preferred Design Concept – Dundas Street Loop	100
Exhibit 6-2: Conceptual Streetscaping Plan	108
Exhibit 6-3: Artistic Concept – Bloor Street at Kipling Avenue Intersection	109
Exhibit 6-4: Artistic Concept – Dunbloor Road at Bloor Street Intersection	110
Exhibit 6-5: Artistic Concept – Dundas Street at Kipling Avenue Intersection	111
Exhibit 6-6: Artistic Concept – Kipling Avenue at Bloor Street Intersection	112
Exhibit 6-7: Proposed Development Blocks, Surplus Lands and Property Requirements ...	113
Exhibit 6-8: Proposed Construction Staging	117
Exhibit 6-9: Proposed Storm Sewer System	124

Appendices

A. Recommended Preliminary Design

- A.1 Plans and Profiles
- A.2 Typical Sections

B. Alternative Options

C. Utilities Plan

D. Traffic and Transportation Related

- D.1 O-D Summary
- D.2 Analysis Parameters
- D.3 Existing Conditions Intersection Operations
- D.4 Collision Summary
- D.5 Future Conditions Intersection Operations
- D.6 Future Traffic Volumes Modified Existing – Improved Westwood Lands Access

E. Agency and Public Consultation

- E.1 Correspondences with Agencies
- E.2 Advertisements
- E.3 Summary of Public Meetings / Community Consultation Sessions
- E.4 Public Comments

F. Study Reports

- | | |
|-----------------------------------|--------------------|
| F.1 Noise Assessment | Valcoustics Canada |
| F.2 Air Quality Impact Assessment | RWDI |
| F.3 Stormwater Management | Clarifica |
| F.4 Natural Environment | LGL Limited |

G. Cost Estimates

1. INTRODUCTION AND BACKGROUND

In 2003, the City of Toronto initiated a Municipal Class Environmental Assessment (EA) for the Six Points Interchange to examine options for reconfiguring the interchange and to recommend a preferred design that is consistent with the policy objectives of the new *Etobicoke Centre Secondary Plan*. The Six Points Interchange is located at the junction of Dundas Street West, Kipling Avenue, and Bloor Street West.

The Municipal Class Environmental Assessment (EA) study included noise, air quality, natural environment, socio-economic environment, and drainage and stormwater management assessments. The study assessed the future capacity, operations, and city building / urban design opportunities within the interchange area. A comprehensive assessment of the potential impacts of alternative solutions was undertaken as part of the study.

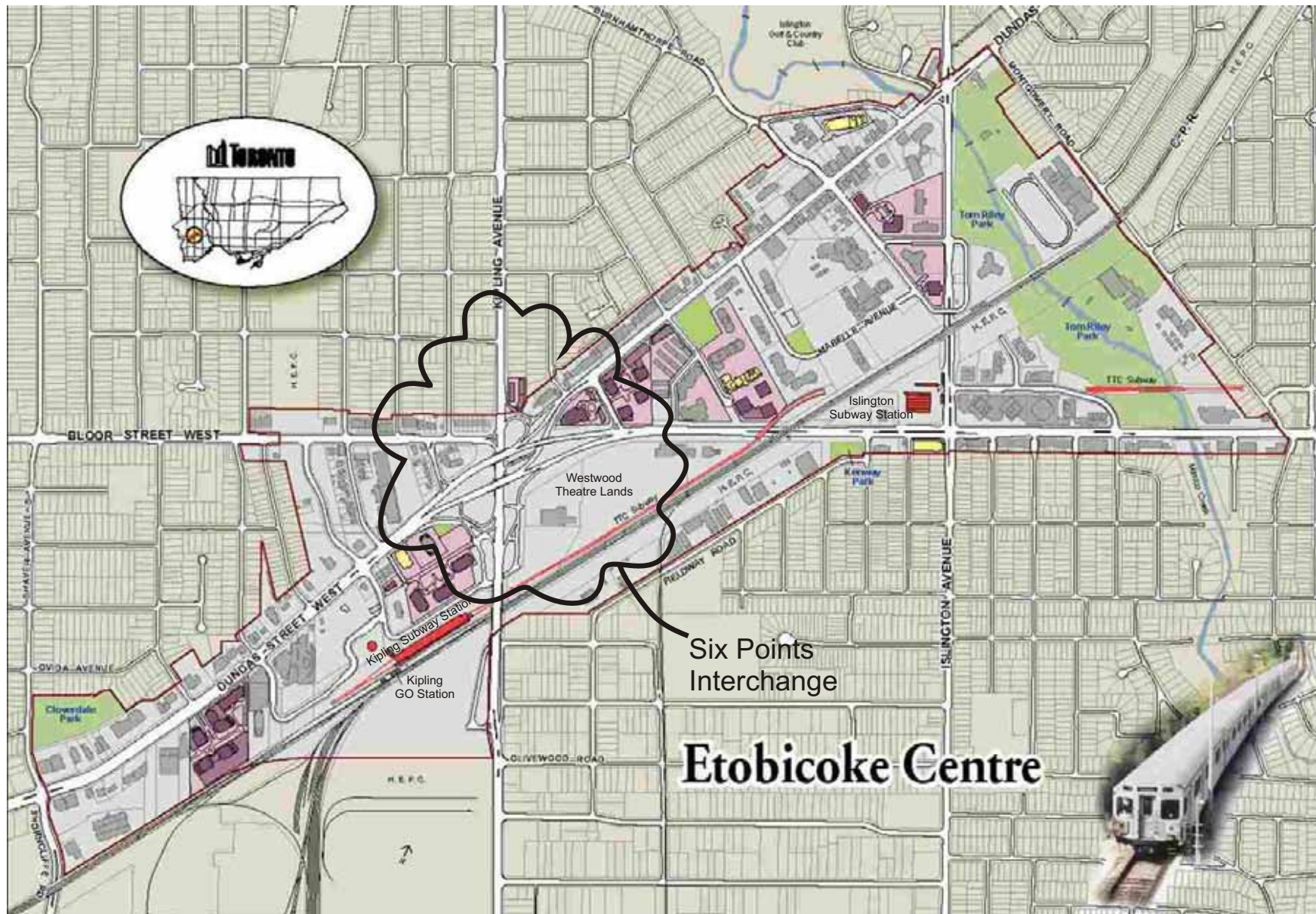
Completion of this Municipal Class Environmental Assessment is part of the process to enable the City to address City-building goals, objectives and policies for the Etobicoke Centre, shown in **Exhibit 1-1**, while considering the short-term and the long-term transportation needs for the Six Points Interchange Area.

This report describes the background to the study, problem statement, alternatives that were developed, the evaluation of alternatives, and recommendation for the preferred alternative.

1.1 Project Location and Study Area

The primary study area, within which detailed transportation analyses were undertaken, is generally bounded by the Etobicoke Centre limits plus a portion of Kipling Avenue between Dundas Street and Burnhamthorpe Road. The primary study area, known as the Six Points Interchange where Dundas Street West, Kipling Avenue, and Bloor Street West converge, is illustrated in **Exhibit 1-2**.

The secondary study area, centred around the Six Points Interchange, is bounded by Shorncliffe Road-Shaver Road to the west, Royal York Road to the east, Burnhamthorpe Road to the north and North Queen Street and Norseman Street to the south. The Secondary Study area will be used for the analyses of broader network impacts to the Six Points Interchange.



Legend

— Etobicoke Centre Boundary

Not To Scale

October 2007

Exhibit 1-1 Etobicoke Centre

iTRANS

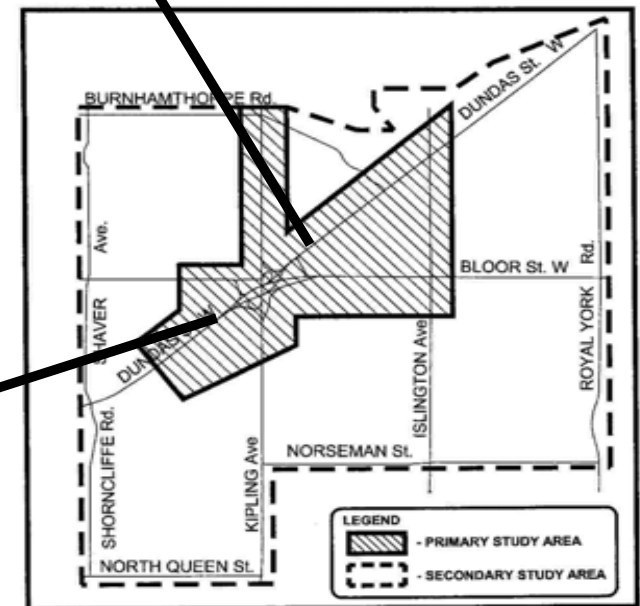


Exhibit 1-2

Six Points Interchange and Study Area

1.2 Study Background

Prior to the Six Points Interchange being built, Dundas Street, Kipling Avenue and Bloor Street all crossed at-grade, as shown in **Exhibit 1-3**. The existing interchange is a unique interchange, originally constructed by the Metropolitan Toronto Department of Roads in 1961. Reconfiguration of the Six Points Interchange has been a municipal objective for more than two decades. The former City of Etobicoke *City Centre Secondary Plan*, approved in 1987, included a policy calling for the reconfiguration of the Six Points Interchange. The long history of the Six Points Interchange is well documented through various studies. Specifically, alternative interchange designs were investigated through the *Kipling / Islington Transportation Study* (1983), the *Six Points Interchange Redesign Study* (1989), and the *Review of Redesign Proposals for Six Points Interchange Study* (1989), which resulted in an alternative design accepted by Metro Staff and endorsed by the former Etobicoke City Council in 1990.

Further study was suspended in the mid 1990's as a result of discussions between the City of Etobicoke and Metropolitan Toronto concerning the use of the then Metro-owned Westwood Theatre lands for a new Etobicoke Civic Centre, and funding issues associated with the Six Points Interchange reconfiguration.

Given the age and condition of the structures within the interchange, a program to rehabilitate the interchange was initiated in 1996 and all existing bridges were subsequently rehabilitated between 1998 and 2000. Notwithstanding this recent investment, the reconfiguration of the interchange remains a municipal objective.

A review of the former Etobicoke *City Centre Secondary Plan* was initiated after the City of Toronto amalgamation, in the context of a program to develop an Official Plan for the new City of Toronto. The new *Etobicoke Centre Secondary Plan* and associated zoning by-law, approved by City Council in November 2002, continues to identify the reconfiguration of this interchange as a significant component of the development of the Centre.

The City is also considering the future development potential of two significant City owned properties within Etobicoke Centre, namely the Westwood Theatre lands (south of Bloor Street and east of Kipling Avenue) and the Islington Subway Station lands (at the northwest corner of Bloor Street and Islington Avenue). Both are candidate sites for a new civic centre complex to serve Etobicoke York District and would replace the former Etobicoke Civic Centre currently located at the southeast corner of The West Mall and Burnhamthorpe Road. This initiative, known as the *West District Study*, is being undertaken by the City's Facilities and Real Estate Division. Planning for the Westwood Theatre lands will be guided, in part, by the preferred solution for the proposed reconfiguration of the Six Points Interchange. **Exhibit 1-1** highlights the location of the Westwood Theatre Lands.



Exhibit 1-3
Six Points Interchange - 1960's

1.3 **Overall City-Wide and Provincial Context**

The City of Toronto Official Plan identifies the Etobicoke Centre as the City's western urban focal point, and one of four designated centres in the City of Toronto Official Plan. The Etobicoke Centre in relation to the City-wide context is shown in **Exhibit 1-4**. The Etobicoke Centre is strategically located at the western gateway to the City between Toronto's downtown and Lester B. Pearson Airport, and is well positioned to assist in the implementation of urban structure and growth management objectives of the City of Toronto. It is served by two subway stations on the Bloor-Danforth subway line, namely Islington and Kipling Stations. Kipling Station is the western terminus of the Bloor-Danforth subway line. A GO Transit rail station is also located at Kipling Station. **Exhibit 1-1** identifies these significant transit facilities. The vision for Etobicoke Centre is for an integrated, mixed-use community with the feel and function of an urban core.

The City's policies are intended to enhance the concentration of employment and housing in the Etobicoke Centre to better utilize the substantial past investment in public transit and other urban infrastructure that currently exists. The envisioned vibrant mix of employment and housing will present opportunities for residents to walk or use public transit to get to work. A hub of cultural, social, administrative and recreational uses will facilitate social interaction and foster a sense of community and identity for the area. Infrastructure improvements including reconfiguration of the Six Points Interchange have been recommended to provide new and improved development opportunities in the vicinity of the existing interchange, which lies immediately east of the Kipling Subway and GO Stations.

Since the initiation of this study, the Provincial Places to Grow Plan – ***Growth Plan for the Greater Golden Horseshoe 2006 Ministry of Public Infrastructure Renewal***, designated the Etobicoke Centre as an Urban Growth Centre, as shown in **Exhibit 1-5**. The document states that choices about where and how growth occurs in the Greater Golden Horseshoe (GGH) need to be carefully made to ensure the development of healthy, safe and balanced communities.

Better use of land and infrastructure can be made by directing growth to existing urban areas. The Plan "envisages increasing intensification of the existing built-up areas, with a focus on urban growth centres, intensification corridors, major transit station areas, brownfield sites and greyfields. Concentrating new development in these areas also provides a focus for transit and infrastructure investments to support future growth."

The Plan further states that "the revitalization of urban growth centres is particularly important, not only because they can accommodate additional people and jobs, but because they will increasingly be regional focal points. They are meeting places, locations for cultural facilities, public institutions, major services, and transit hubs. These centres are not all at the same stage of development: some are the downtowns of older cities, while others are newly planned suburban centres. They all have potential to become more vibrant, mixed-use, transit-supportive communities."

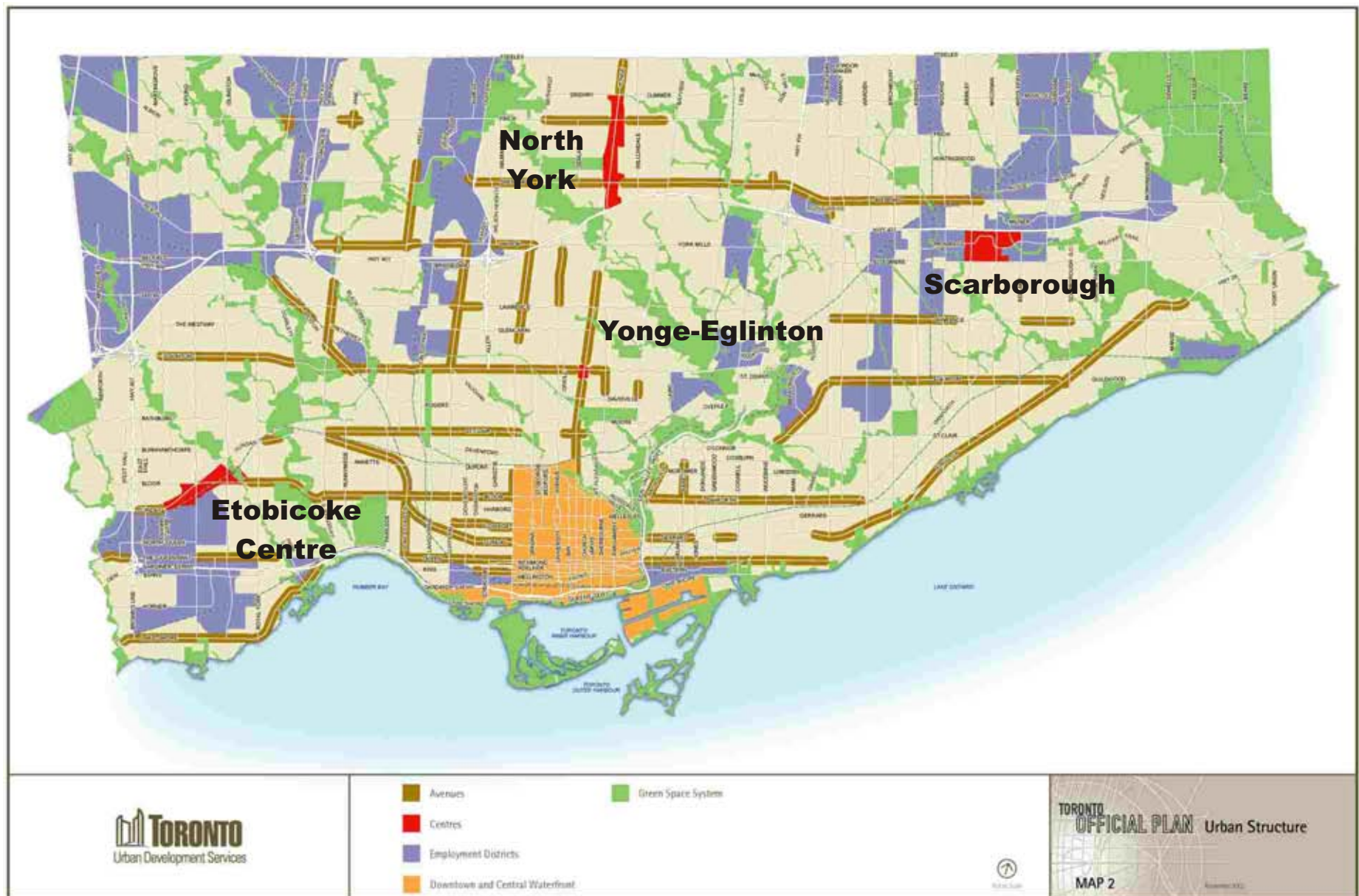


Exhibit 1-4 City Wide Context

Not To Scale

October 2007

iTRANS

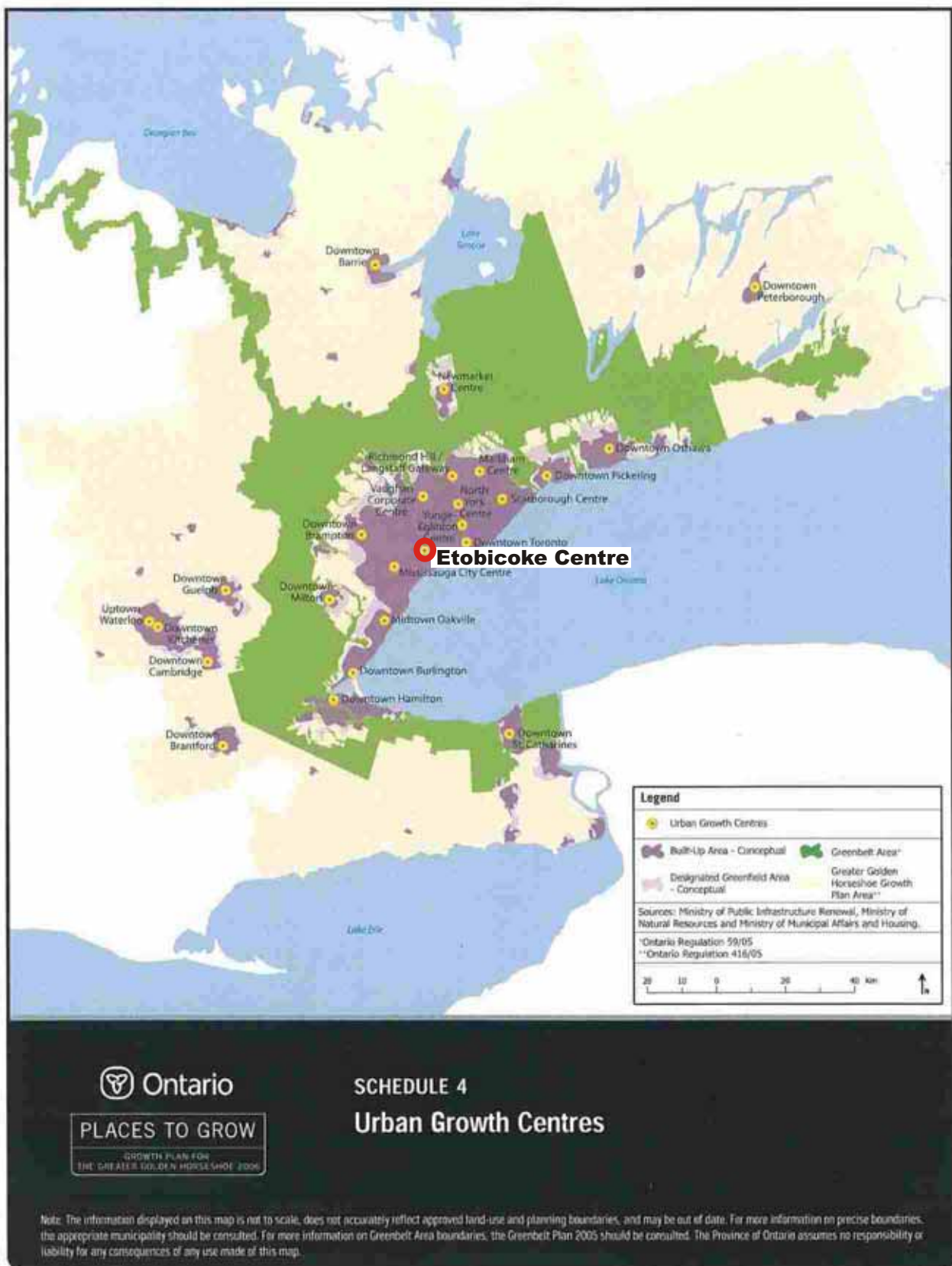


Exhibit 1-5 Provincial Places to Grow - Urban Growth Centres

Not To Scale

October 2007

iTRANS

According to the Growth Plan, urban growth centres will be planned:

- a) as focal areas for investment in institutional and region-wide public services, as well as commercial, recreational, cultural and entertainment uses
- b) to accommodate and support major transit infrastructure
- c) to serve as high density major employment centres that will attract provincially, nationally or internationally significant employment uses
- d) to accommodate a significant share of population and employment growth

The policies of the Province's **Growth Plan** and the City of Toronto's **Etobicoke Centre Secondary Plan** are complementary, articulating a shared vision for the area.

1.4 Etobicoke Centre Secondary Plan

As stipulated in the **Etobicoke Centre Secondary Plan**, the vision for Etobicoke Centre is for an integrated, mixed-use community with the feel and function of an urban core (**Exhibit 1-1**), which is consistent with the Provincial Places to Grow Plan. Through a series of public sidewalk and walkways, Etobicoke Centre will be pedestrian-oriented with a people-oriented streetscape. Within Etobicoke Centre, seven "focuses" or areas are defined within the Secondary Plan area. For the Six Points "Focus Area", identified in **Exhibit 1-6**, the City has envisioned a high-density, mixed-use neighbourhood around the Kipling Subway Station, large development blocks served by new public roads, and a new community hub at the Westwood Theatre site. Reconfiguration of the Six Points Interchange is a significant component of this vision.

Relevant Secondary Plan policies include:

- 4.2.5.7 *The reconfiguration of the Six Points Interchange is a long term municipal objective. The City [is to] investigate alternative designs of the interchange so that the future implementation of changes to the interchange are not compromised through the approval of development proposals or the design of other public capital projects in the vicinity of the interchange. Benefits to be accrued by any proposed redesign should include:*
- a) *improved connectivity and amenity of pedestrian and bicycle infrastructure through and around the interchange and to adjacent neighbourhoods and employment areas;*
 - b) *improved vehicular access to adjacent development sites, particularly the Westwood Theatre lands;*
 - c) *the creation of new development opportunities on surplus interchange lands; and*
 - d) *improving the cohesiveness and unity of the streetscape.*

Etobicoke Centre Areas

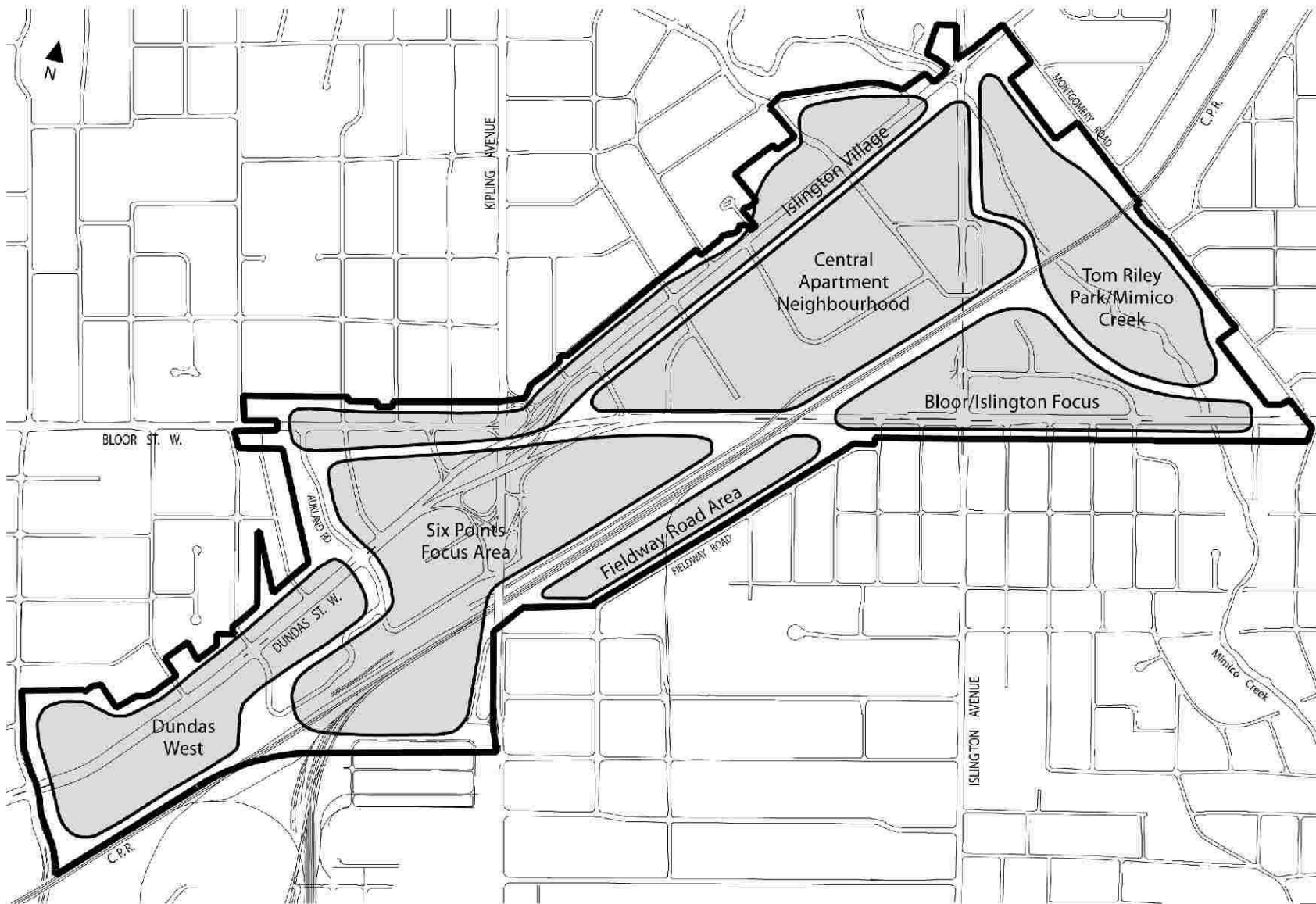


Exhibit 1-6

Six Points “Focus Area”

- 4.2.3.4 *Greater connectivity of the pedestrian system [is to be] provided through:*
- a) *the creation of new streets, blocks and linkages on large redevelopment sites (see Linkages and Connections Opportunities, Schedule “B” [shown in **Exhibit 1-7** below]);*
 - b) *improved pedestrian connections between the east and west sides of Kipling Avenue.*
- 4.1.2.2.1 *City streets [are to] serve pedestrians and vehicles, provide space for trees, public utilities and services, building address, amenities such as view corridors, sky view and sunlight, and are public gathering places. They [are to] be designed to perform their diverse roles, balancing the spatial needs of existing and future users within the right-of-way, including pedestrians, people with mobility aids, transit, bicycles, automobiles, utilities, and landscaping. City streets [are to] be designed to promote a distinctive image that is predominantly urban in character.*
- 4.1.2.2.4 *New streets [are to] be designed to:*
- a) *extend existing streets to connect with adjacent neighbourhoods, and promote a connected grid of streets that offers travel options and extends sight lines;*
 - b) *divide larger sites into smaller development blocks.*
- 4.2.5.5 *The efficient operation of the arterial road network [is to] be maintained so that “through” traffic does not spill over into adjacent residential neighbourhoods, and to facilitate the efficient operation of surface transit routes feeding the Kipling and Islington subway stations.*
- 4.2.5.8 *Implementing zoning bylaws [to] restrict major new development on the Westwood Theatre lands until the potential for a new road pattern has been established [as shown on Schedule “C” - **Exhibit 1-8**] to improve vehicular access to the lands and to ensure that access to new development from adjacent arterial roads will be compatible with any future reconfiguration of the Six Points Interchange, and improve connectivity with the local road pattern.*

In addition, the plan states that:

*The City-owned Westwood Theatre lands can form a focus for the area becoming a hub of community activity. A variety of building heights, open space areas, an internal road structure, and a pedestrian connection under Kipling Avenue to the Subway Station [shown in **Exhibit 1-7**], are primary objectives.*

Linkages and Connections Opportunities

SCHEDULE B

Etobicoke Centre
Secondary Plan

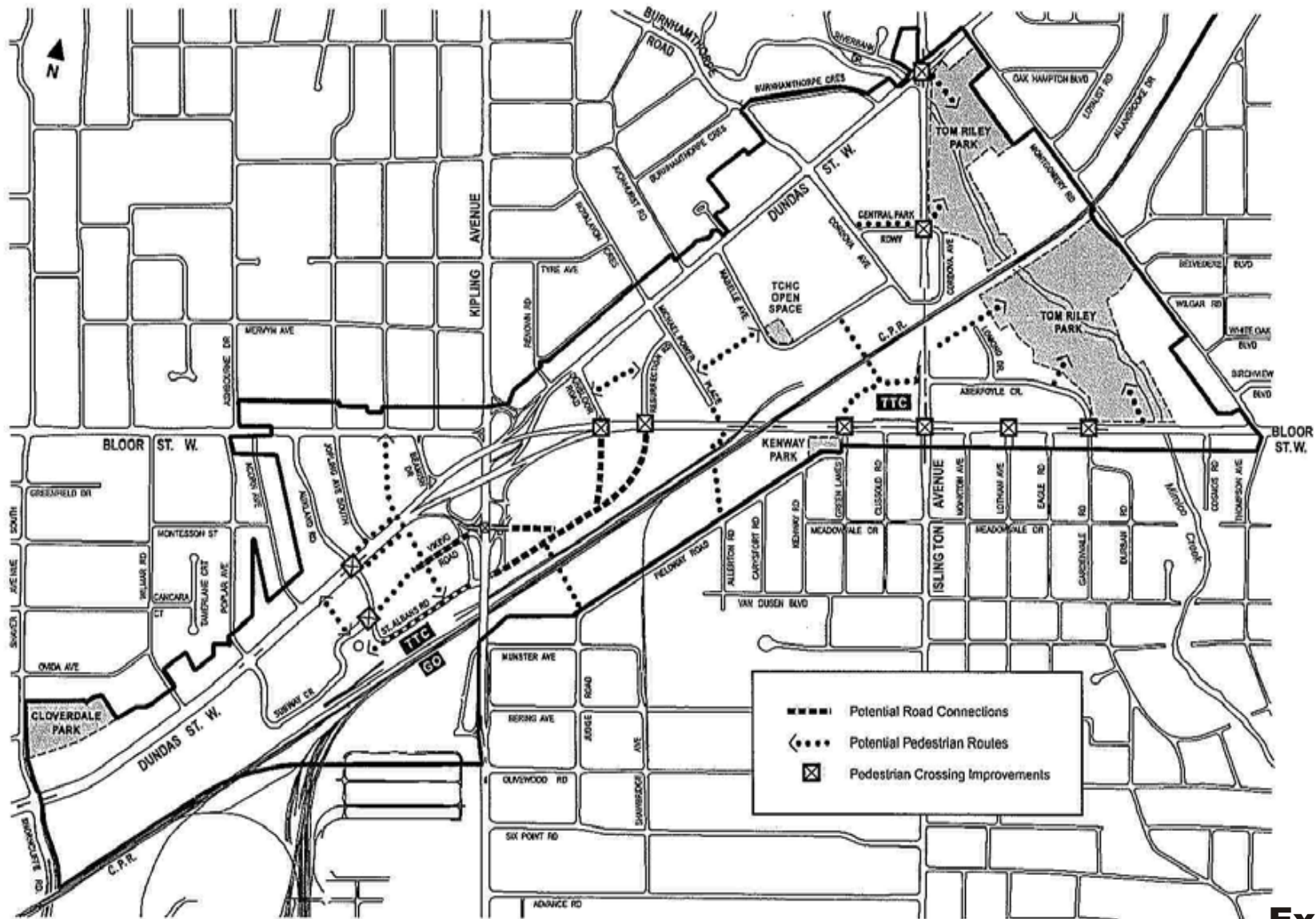


Exhibit 1-7

Linkages and Connections Opportunities

Not To Scale

October 2007

iTRANS

Potential Road Infrastructure Improvements

SCHEDULE C

Etobicoke Centre
Secondary Plan

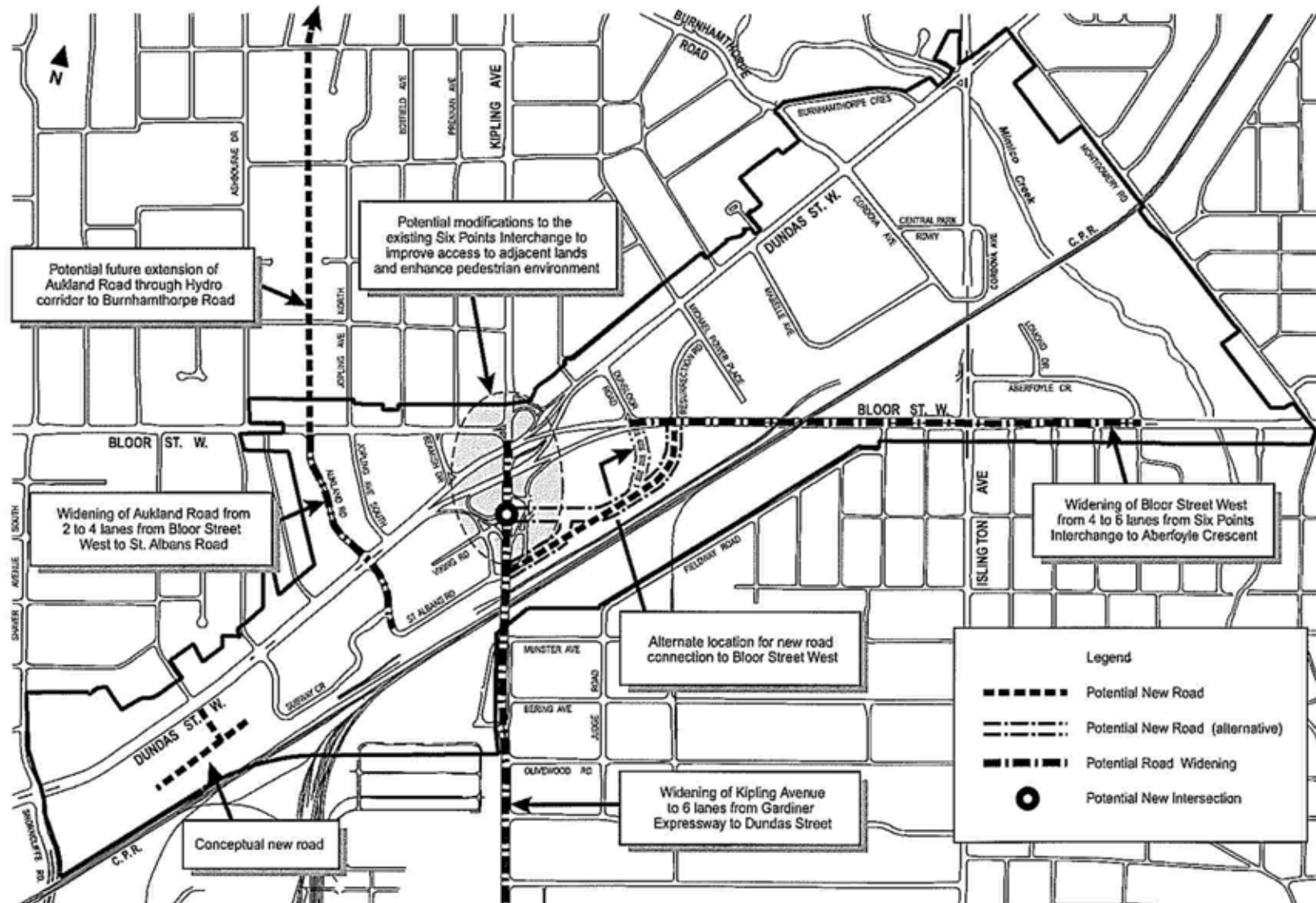


Exhibit 1-8

Potential Road Infrastructure Improvements

1.5 The West District Study

In February 2003, council approved “in principle, the concept of a new West District Service Centre that is optimally located with respect to the Bloor-Danforth Subway Line,” and directed “the Commissioner of Corporate Services, in consultation with the relevant City Departments, [to] commence the process to develop the new West District Service Centre and the disposal of certain West District lands...”

The ongoing work to evaluate alternative locations for a new Civic Centre in the western part of the City is referred to as the ***West District Study***. Since 2003, this Study has focused on three City-owned properties: the Etobicoke Civic Complex on the West Mall; the northwest corner of Bloor Street and Islington Avenue; and, the Westwood Theatre lands.

The Westwood Theatre lands abut the Six Points Interchange. Reconfiguration of the interchange has the potential to improve vehicular and pedestrian access to the Westwood Theatre lands, thereby broadening development opportunities. Furthermore, surplus interchange lands associated with the recommended interchange reconfiguration could potentially be consolidated with the existing Westwood Theatre lands. Consequently, the West District Study has been paced to await the outcome of this Six Points Interchange Reconfiguration Class Environmental Assessment.

1.6 Study Purpose and Objectives

The purpose and objectives of this study are to:

- examine options for reconfiguring the Six Points Interchange and associated ramps and service roads
- recommend a preferred design and property protection plan for a reconfigured Six Points road network, consistent with the policy objectives of the new ***Etobicoke Centre Secondary Plan***

Key benefits to be achieved through any proposed redesign should include:

- simplifying the road network, potentially releasing surplus interchange lands for other uses
- an improved street and block pattern to facilitate new development and better integrate existing and future land uses on either side of Kipling Avenue
- creating a more desirable, attractive and safe environment for pedestrians and cyclists, including improved linkages to the Kipling Station, adjacent neighbourhoods and employment areas and improved streetscaping
- improved vehicular access to lands adjacent to the Six Points Interchange, particularly the Westwood Theatre lands

The preferred solution must maintain acceptable operating conditions for exiting and future surface transit services, particularly access to and from bus terminal facilities at the Kipling Subway Station.

Acceptable future levels of service for traffic operations will be consistent with a highly urbanized pedestrian oriented environment.

Although the Etobicoke Centre Secondary Plan does not identify a preferred option for the reconfiguration of the Six Points Interchange, a background report to the Secondary Plan, adopted by Etobicoke York Community Council (*City Centre West Secondary Plan Directions Report-Appendix*), identified some specific design criteria that should be reflected in any proposed reconfiguration. This design criteria are as follows:

- A configuration that is as simple and regular in plan as will function like other “normal” urban intersections while meeting reasonable service standards
- Eliminate or minimize on / off ramps separate from the primary road bed
- Eliminate or minimize grade separations
- Re-establish the continuity of Bloor Street
- Maximize the amenity and directness of routes for public sidewalks
- Maximize safety for all users including bicyclists, pedestrians, and operators of vehicles

1.7 Municipal Class Environmental Assessment Process

This Municipal Class Environmental Assessment (EA) is being undertaken in accordance with the guidelines of the Municipal Engineers Association *Municipal Class Environmental Assessment*, June 2000. The reconfiguration of the Six Points Interchange will involve the construction of new roads along with other transportation infrastructure components. The cost of constructing new roads alone will be in excess of \$1.5 million and thus the project is subject to a Schedule ‘C’ level of assessment under the Municipal Class EA process. Schedule ‘C’ projects have the potential for significant environmental impact.

Exhibit 1-9 illustrates the sequence of activities within the approved Municipal Class Environmental Assessment process leading to project implementation.

The Study has completed the first four phases of the five-phase Class Environmental Assessment Process:

- Phase 1 – Identify the problem or opportunity.
- Phase 2 – Identify alternative solutions to address the problem or opportunity by taking into consideration the existing environment, and establish the preferred solution taking into account public and review agency input.
- Phase 3 – Examine alternative methods of implementing the preferred solution, based upon the existing environment, public and review agency input, anticipated environmental effects and methods of minimizing negative effects and maximizing positive effects.
- Phase 4 – Document in an Environmental Study Report a summary of the rationale, and the planning, design, and consultation process of the project.

Phase 5, which involves detailed design, preparation of contract drawings and tender documents, construction and operation, and monitoring, is not part of this study.

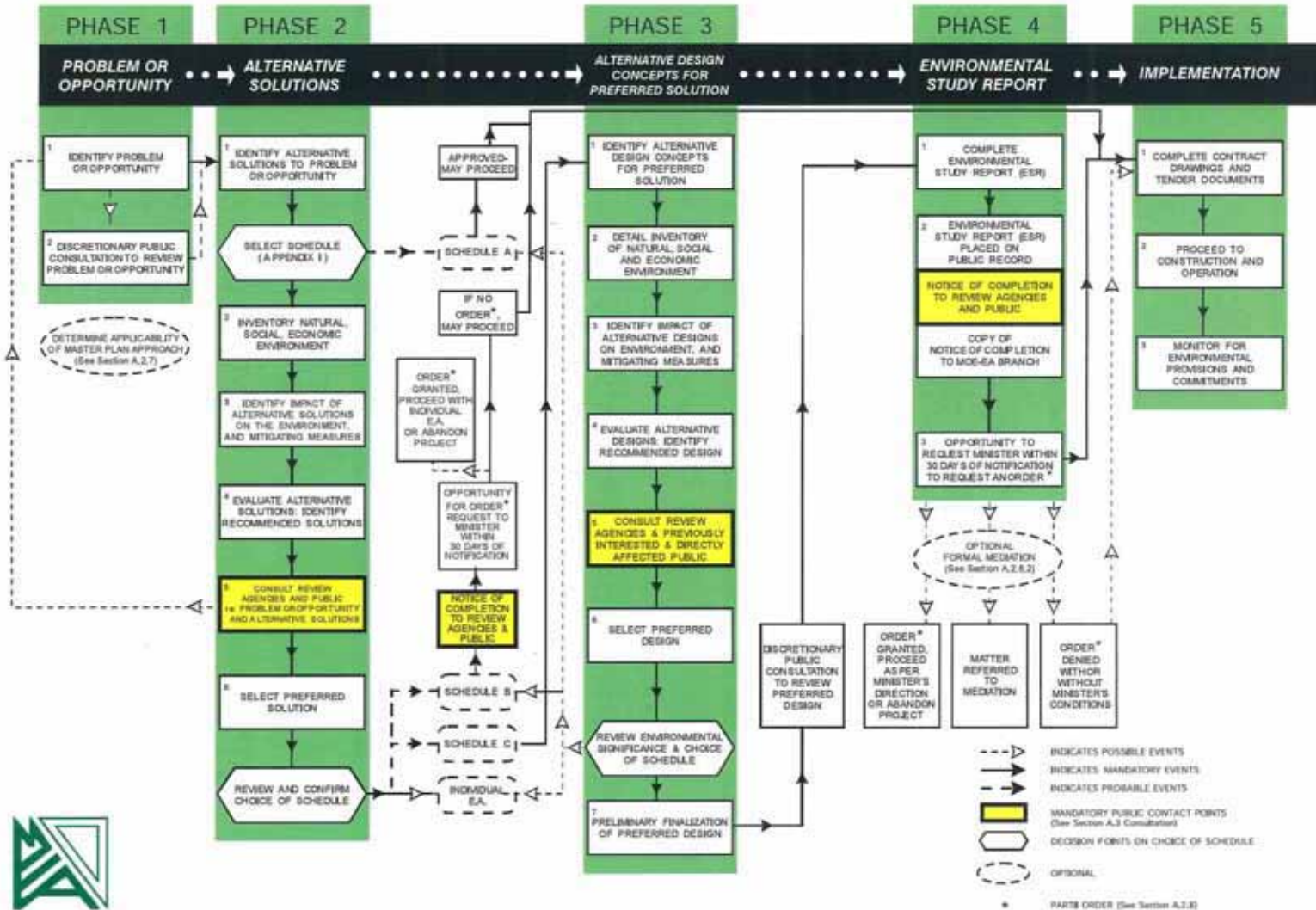
After the Problem Statement was established, Phases 2 and 3 of this study were addressed in an integrated fashion by including design concepts as alternative solutions in the evaluation of alternative designs. This integration of Phases 2 and 3 was necessary to fully respond to, and address the need to reconfigure the interchange, and to demonstrate that all alternatives were being considered. In this regard, a “Long List” and a “Short List” of alternatives were identified. The “Short List” was derived from the remaining alternatives after analysis of the “Long List”.

This Environmental Study Report (ESR) summarizes the work completed for this study including: 1) background to the study; 2) the problem statement; 3) description of alternative solutions; 4) description of alternative methods; 5) evaluation of the alternative methods and a description of the preferred design concept and rationale for how it was identified; and 6) the public consultation process.

Upon completion, the ESR will be submitted to Toronto City Council for endorsement of the study recommendations. Should Council approve the recommendations then a Notice of Study Completion will be advertised, to advise the public and other stakeholders where the ESR may be reviewed. The public and interested agencies have 30 calendar days to review the ESR and comment upon it. During this 30-day period, any stakeholder who has concerns with the study that cannot be resolved with the City of Toronto may write to the Ontario Minister of the Environment to request that a Part II Order be issued for the project. A Part II Order would require the City of Toronto to complete an Individual Environmental Assessment and obtain approval from the Minister before proceeding with the project. In the event that there are no Part II Orders, the City could proceed to undertake the reconfiguration of the interchange.

EXHIBIT A.2**MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS**

NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA

**Exhibit 1-9****Class Environmental Assessment Process**

1.8 **Project Team**

A consulting team led by iTRANS Consulting Inc. carried out the Six Points Interchange Reconfiguration Class Environmental Assessment Study, on behalf of the City of Toronto. The study team is outlined below:

City of Toronto Project Team:

- Penelope Palmer /
Uwe Mader Transportation Services, Infrastructure Planning
- John Kelly Transportation Services, Infrastructure Planning
- Mike Wehkind City Planning, Transportation Planning
- Richard Beck City Planning, Transportation Planning

City of Toronto Technical Advisory Committee:

- Lorna Day City Planning, Urban Design
- Emelia Floro City Planning, Urban Design
- Greg Rich City Planning, Urban Design
- Bill Kiru City Planning, Community Planning
- Jim Schaffner Technical Services, Structures and Expressways
- Peter de Groot Transportation Services, Pedestrian & Cycling Infrastructure
- Tom Ellerbusch Technical Services, Design & Construction
- Anne Milchberg Facilities & Real Estate
- Al Smithies Transportation Services, Traffic Planning / Right-of-Way Management
- Dominic Gulli Transportation Services, Traffic Operations
- Nancy Martins /
David Nagler Policy, Planning, Finance & Administration, Communication and Consultation
- Domenic Garisto, Toronto Transit Commission (TTC), Property Development
- Mary-Anne George Toronto Transit Commission (TTC), Service Planning

Consulting Team:

- Tyrone Gan (Project Director) – iTRANS Consulting
- Liza Sheppard (Project Manager) – iTRANS Consulting
- Suzette Shiu / Joseph Palmisano (Transportation Planning) – iTRANS Consulting
- Perry Perera (Road Design) – iTRANS Consulting
- Grant Kauffman (Natural Environment) – LGL Limited
- Edward Graham (Stormwater Management) – Clarifica
- Scott Shayko (Air Quality) – RWDI
- Ron Palmer / Donna Hinde (Urban Design) – Planning Partnership
- John Emeljanow (Noise) – Valcoustics Canada Limited

1.9 Agency Consultation

Agencies and utilities that were contacted during the Study are listed below:

- Federal Ministry of Citizenship, Culture and Recreation
- Environment Canada
- Ministry of Agriculture and Food
- Ministry of Culture
- Ministry of Education
- Ministry of Environment
- Ministry of Municipal Affairs & Housing
- Ministry of Natural Resources
- Ministry of Public Safety & Security
- Ministry of Tourism and Recreation
- Toronto District School Board
- Toronto Catholic District School Board
- Conseil Scolaire de district du Centre Sud-Ouest
- Conseil Scolaire de district Catholique Centre-Sud
- Toronto and Region Conservation Authority
- Toronto Emergency Medical Services
- Toronto Fire Services
- Toronto Police Services
- Enbridge Gas Distribution
- Enbridge Pipeline Inc.
- Trans-Northern Pipeline Inc.
- Sarnia Products Pipe Line
- Sun-Canadian Pipe Line Company
- Bell Canada
- Hydro One Networks Inc.
- Rogers Cable Systems
- Toronto Hydro
- CN Rail
- CP Rail
- GO Transit
- Toronto Transit Commission
- Toronto Pedestrian Committee
- Toronto Cycling Committee

Correspondences with agencies are provided in **Appendix E.1**.

1.10 Summary of Public Consultation Process

A comprehensive public consultation program was conducted for the Study, with the following components:

- **Mailing List:** A mailing list was established for the Study, which included public agencies and utilities listed above, residents and businesses within and adjacent to the Study Area, and others who wrote, telephoned, e-mailed, or filled in comment sheets, or registered at a Public Meeting and Open House. People on the mailing list were sent a Notice at least one week prior to each of the public meetings. Opportunities for public input were provided throughout the process, including public meetings, telephone inquiries, letters, email and faxes.
- **Public Meetings and Open Houses:** Two formal public meetings and open houses were held during the Study. The first was held on Tuesday, March 2nd, 2004 at the Royal Canadian Legion, Branch 210, 3326 Bloor Street West. The second was held on Tuesday, June 20th, 2006 at the Etobicoke Collegiate Institute - 86 Montgomery Road. The meetings consisted of a public open house with display panels, followed by a formal public meeting comprised of a short presentation by City staff, followed by a question and answer period. Attendees were asked to sign-in when they entered the public open house. They were given a handout consisting of key display panels, and a comment form to provide them with another opportunity to provide input to the study. Members of the study project team were on hand to respond to questions and concerns.

In April and May of 2007, the Ward Councillor held three community consultation sessions regarding the potential future use of the Westwood Theatre lands and the reconfiguration of the Six Points Interchange. These meetings were not part of the Municipal Class EA public consultation requirements.

- **Newspaper Advertisements:** At least one week prior to each public meeting, a newspaper advertisement was placed in two separate editions of the ***Etobicoke Guardian*** (South Section) to announce the date, time, and location of the public meeting. The newspaper advertisements invited the public to attend the meetings and to provide input. The advertisements provided information on contact names, telephone numbers, and addresses. A copy of the advertisements can be found in **Appendix E.2**.
- **Additional Notification:** At least one week prior to each public meeting notice of the public meeting were mailed to area residences and businesses. Notification letters were also mailed to utility companies and external agencies. For Open House No.1, approximately 10,000 notices were delivered via Canada Post to residences and businesses in the study area. Notification was mailed to 120 people on the project mailing list. For Open House No.2, approximately 10,000 notices were delivered via Canada Post to residences and businesses in the study area. Notification was mailed to over 440 people on the project mailing list.

- **Telephone Numbers:** Three telephone numbers, including a Teletype Message (TTY) and a 24-hour number were listed in all sources of advertisement and notification. This enabled members of the public to contact the City's project manager at their convenience.
- **City's website and project email address:** Through the newspaper advertisements and notices, members of the public were invited to visit the City's website at www.toronto.ca/involved/projects and to send comments via an e-mail address provided.
- **Utility Companies:** A meeting was held with the utility companies with services within the corridor. These companies included Toronto Hydro, Bell Canada, Rogers Cable Communications, and Enbridge Gas Distribution. The meeting was held on Wednesday, September 1st, 2004 at iTRANS. The meeting was held to confirm utility information, and to identify and discuss potential impacts that alternative reconfiguration designs for the Six Points Interchange may have on existing and/or planned services.

Further details on the public consultation process are documented in other sections of this report. A Summary of the Public Meetings can be found in **Appendix E.3**.

Major events in the public consultation process are summarized below:

- | | |
|---|--|
| ▪ Study Initiation | November 2003 |
| ▪ Newspaper advertisement of Study Commencement | November 28 & December 3, 2003 |
| ▪ Notice of Study Commencement sent to external agencies / utilities | November 28, 2003 |
| ▪ Direct mailout to established mailing list of interested residents and businesses for Open House No. 1 | February 16, 2004 |
| ▪ Direct mailout of notices to all area residences and businesses for Open House No. 1 | Week of February 18, 2004 |
| ▪ Newspaper advertisement of Public Meeting and Open House No. 1 | February 18 & 25, 2004 |
| ▪ First Public Meeting and Open House | March 2, 2004 |
| ▪ Direct mailout of notices to all area residences and businesses for Open House No. 2 | Week of June 8, 2006 |
| ▪ Newspaper advertisement of Public Meeting and Open House No. 2 | June 7 & 9, 2006 |
| ▪ Second Public Meeting and Open House | June 20, 2006 |
| ▪ Community Consultation Sessions (Not part of the Municipal Class EA public consultation process) | April 28, May 15 & May 30, 2007 |

2. EXISTING STUDY AREA CONDITIONS

The features of the existing socio-economic, natural environments and road network characteristics in the study area are described in this section.

2.1 Socio-Economic Conditions

2.1.1 Existing Land Uses

The study area consists of a mix of residential, commercial, institutional and industrial uses. Low density resident uses are located mainly north of Bloor Street (west of Kipling Avenue) and Dundas Street, and to the east and west of Kipling Avenue. Commercial retail strip development and / or plazas are located on both side of Bloor Street, west of Kipling Avenue to Aukland Road, and on only the north side of Dundas Street, east of Kipling Avenue to Mabelle Avenue. Small scale industrial / commercial and warehouse uses are mainly located south of the Six Points Interchange east of Kipling Avenue and south of the CP rail corridor.

Exhibit 2-1 illustrates the general existing land uses, and constraints in the Study Area.

Notable land uses in the area include:

- The City-owned former Westwood Theatre lands (some 19.7 acres, or 8 hectares, including the Bloor-Danforth Subway line rail right-of-way), located east of Kipling Avenue and south of Bloor Street
- City of Toronto - 22 Division Police Services Station (Headquarters), located at the east end of the Westwood Theatre lands
- A Presbyterian Church located west of Kipling Avenue at the southeast corner of Bloor Street and Beamish Drive
- The Six Points Plaza, located between Bloor Street and Dundas Street, and west of Kipling Avenue
- A new Tridel residential development located just west of Kipling Avenue and south of Dundas Street – this development is partially built-out
- The CP rail corridor (east-west) located south of the interchange
- The Toronto Transit Commission (TTC) Bloor-Danforth subway line parallel and immediately to the north of the CP rail corridor
- The Kipling Station with bus terminal and passenger pick-up / drop-off facilities located west of Kipling Avenue and south of St. Alban's Road and west of Aukland Road, and commuter parking facilities located north and south of the CP rail corridor
- The Kipling GO Transit Rail Station with limited peak-period, peak-direction services, located immediately west of the Kipling Subway Station
- The Richview-Manby Hydro corridor (north-south) located west of the Six Points Interchange



Existing Land Uses & Study Area Constraints

2.1.2 Archaeological and Cultural Heritage Features

Given the disturbed and built-up nature of the area, there are no anticipated archaeological or cultural heritage features of potential impact within the Six Points Interchange area.

2.1.3 Noise

Valcoustics Canada Limited undertook a noise analysis to determine the impact on noise sensitive areas adjacent to the project area.

Land uses designated as noise sensitive by the Ministry of Environment (MOE) include buildings that have outdoor recreational / living areas associated with residential units. This includes residential developments, hospitals, nursing / retirement homes, schools, daycare centres, etc. The definition excludes buildings such as vacant residential buildings, commercial, offices and light industrial establishments.

Noise sensitive areas adjacent to the Six Point Interchange corridor consist of residential dwellings, and a place of worship (Presbyterian Church).

The MOE does not have noise guidelines specifically relating to the construction or widening of roadways, and neither does the City of Toronto. However, the MOE does have a protocol with the Ministry of Transportation (MTO) relating to Provincial Highway Expansions. The protocol states that the primary objective is to achieve sound exposures not exceeding 55 dBA or the preconstruction ambient sound exposure, whichever is higher at outdoor receptor locations.

The noise analysis shows that the existing noise levels at the various receptors within the Six Points Interchange range from 54 to 64 dBA. The results of the analysis of future sound levels are provided in **Section 6.2.3.2**. Further details can be found in the report, provided in **Appendix F.1**.

2.1.4 Air Quality

RWDI West Inc. undertook review of historic ambient air quality conditions in the study area. The Ministry of the Environment (MOE) has developed Ambient Air Quality Criteria (AAQCs) for numerous contaminants, including those that are typically emitted from vehicular traffic.

The review of historical ambient air quality at MOE's Etobicoke monitoring station (Stn#35033) at 184 Judson Street indicated that levels of CO and NO₂ are well below their respective guidelines. However, it is evident that occasionally there are measured levels above the guidelines for particulate matter and ground level ozone, which are not uncommon to cities in Southern Ontario. It was also noted that the Etobicoke monitoring station is located relatively close to the Gardiner Expressway and Mimico GO Train Station and the

ambient levels at this location may be higher than in the area closer to the Six Points Interchange.

The results of the analysis of future air quality levels are provided in **Section 6.2.3.3**. Further details can be found in the report, provided in **Appendix F.2**.

2.2 Natural Environment

Clarifica Inc. undertook a stormwater management assessment for the Six Points Interchange which is documented in **Appendix F.3**.

The Natural Sciences Report, including physiography and soils, aquatic habitat, vegetation, wildlife and designated natural areas, for the Six Points Interchange was prepared by LGL Limited. The full report is provided in **Appendix F.4**.

The following sections summarize the findings of the above reports.

2.2.1 Surface Water

Within the larger project area, the City of Toronto has jurisdiction with respect to stormwater management in the Mimico Creek Watershed through its ***Wet Weather Flow Master Plan***. The Toronto and Region Conservation Authority regulates activities within the Mimico Creek stream corridor. The drainage area delineation within the study area reveals that stormwater runoff generated from the study area is distributed within three subcatchments areas, and conveyed through the drainage system of associated subcatchments. **Exhibit 2-2** shows the existing drainage areas of the three subcatchments and the associated drainage paths. The existing storm sewer system in each of the subcatchment areas is also shown in **Exhibit 2-2**. The three drainage systems include:

1. Dundas Street: The Dundas Street storm sewer system drainage area is bounded by Beamish Drive in the west and Renown Road in the east, with a portion of the interchange in the north and south. The sewers are located under Beamish Drive, Bloor Street, Kipling Avenue, and Dundas Street. The flow direction is from the southwest to the northeast. The size of the storm sewer downstream of the interchange is 1050 mm for a few sections along Dundas Street.
2. Bloor Street: The Bloor Street storm sewer drainage area is bounded by Kipling Avenue in the west, Resurrection Road in the east, Dundas Street in the north, and just south of Bloor Street in the south. The sewers are located under Bloor Street and flow direction is from the west to the east. The size of the storm sewer downstream of the interchange is 750 mm.

3. Westwood Theatre (WWT) Lands: The Westwood drainage area is bounded by Kipling Avenue in the west, Bloor Street in the northeast, and the CP tracks in the southeast. This area is mostly paved. No storm sewer system exists within the Westwood Theatre lands. Runoff is directed southward and captured by a storm sewer at the CP tracks that eventually meets with the Fieldway Road storm sewer system.

2.2.2 Physiography and Soils

The study area is located within the Iroquois Plain physiographic region, a well-drained sloping sand plain that extends around the western part of Lake Ontario, from the Niagara River to the Trent River (Chapman and Putnam 1984). The soil in the study area is classified as Chinguacousy clay loam. Chinguacousy clay loam soils are imperfectly drained and consist of limestone and shale parent materials. The topography for this soil is smooth to gently sloping and erosion is slight as a result of low run-off (Hoffman and Richards 1955).

2.2.3 Fisheries and Aquatic Habitat

The study area falls within the Mimico Creek watershed. No watercourses that directly support fish habitat are located within the immediate areas adjacent to the Six Points Interchange.

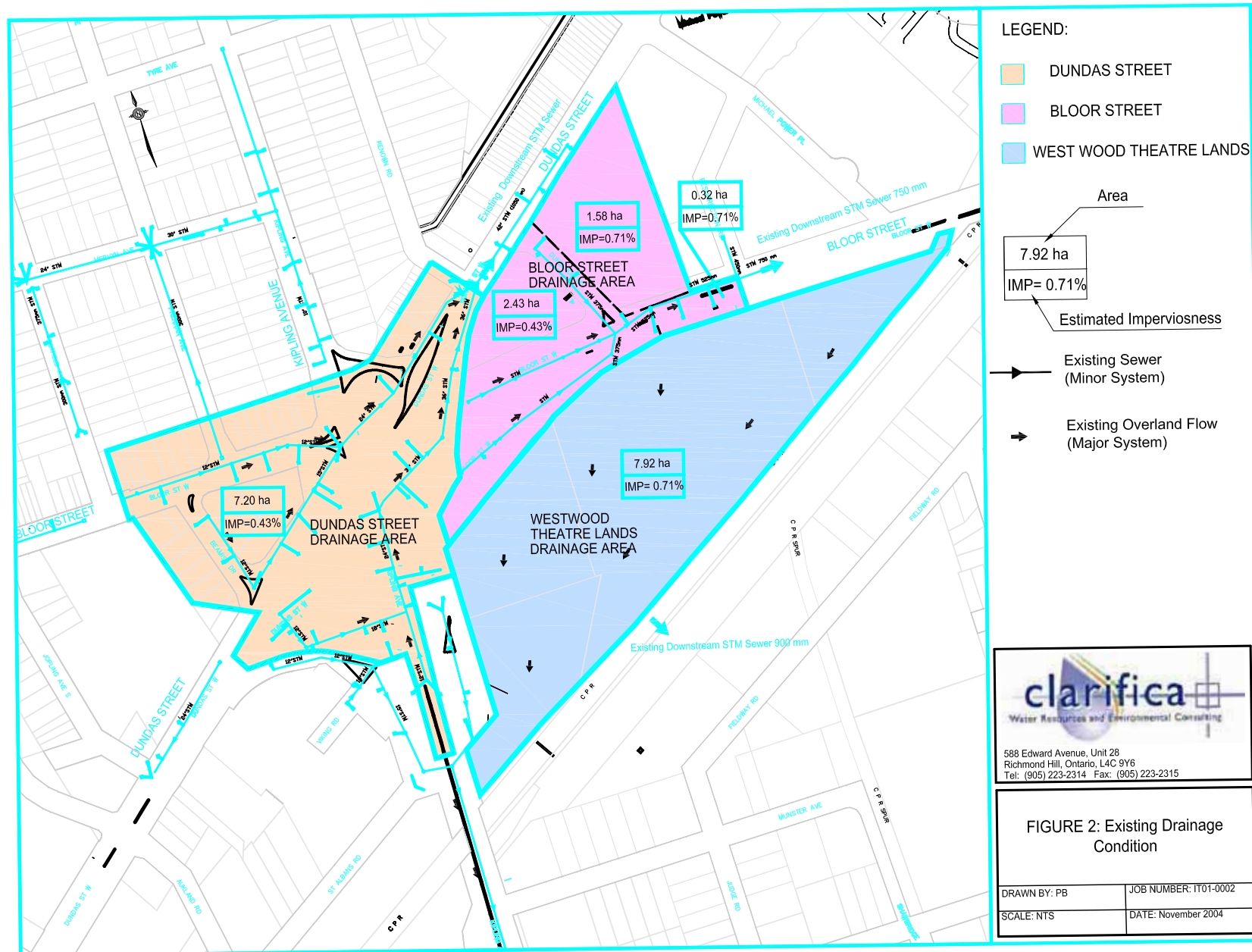
2.2.4 Vegetation and Vegetation Communities

Virtually all vegetation within the study area is of anthropogenic origin, resulting from past / present urban and commercial land use. The remaining vegetation within the study area is highly disturbed, comprising scattered ornamental and hedgerow trees and manicured grassland. No natural vegetation communities were observed during field investigations and few semi-natural (cultural) vegetation communities are present within the study area.

One ELC vegetation community, a Dry-Moist Old Field Cultural Meadow (CUM1-1), was identified north of the CP rail, east of Kipling Avenue, during field investigations. This community is riddled with refuse, such as piles of old asphalt, but has been colonized by plant species typical of a Dry-Moist Old Field Cultural Meadow (CUM1-1).

A sparse hedgerow surrounds a large parking lot to the southeast of the Interchange. Young trees of species such as Siberian elm (*Ulmus pumila*), green ash (*Fraxinus pennsylvanica*) and Manitoba maple (*Acer negundo*) dominate this hedgerow. Ground cover species are typical of those in the Dry-Moist Old Field Cultural Meadow (CUM1-1) community, especially in locations where the hedgerow is adjacent to this community.

A total of 60 trees or tree clusters are located within close proximity to the Six Points Interchange. These trees are predominantly non-native ornamental tree species.

**Exhibit 2-2****Existing Drainage Conditions**

To date, a total of 94 vascular plant taxa have been recorded within the study area. Fifty-eight (58) taxa, 62 percent of the recorded flora, are considered introduced and non-native to Ontario.

Plant species status was reviewed for the Greater Toronto Area and the City of Toronto (Varga et al. 2000) and Ontario (Oldham 1999). No plant species considered rare, threatened or endangered (R,T,E) in Ontario or regionally or locally rare or uncommon were noted during field investigations.

Vegetation community status was reviewed for Ontario (NHIC 1997). The vegetation communities identified within the study area are considered widespread and common in Ontario and secure globally (NHIC 1997) and locally (City of Toronto & TRCA 2001).

Exhibit 2-3 shows the existing natural conditions within the Six Points Interchange area. Further details on specie types are provided in the LGL report presented in **Appendix F.4**.

2.2.5 Wildlife and Wildlife Habitat

The majority of the study area is open habitat of anthropogenic origin with few natural heritage features. Wildlife habitat is typical of an urban setting with species that are very tolerant of human disturbance. The most significant habitat constitutes the Dry-Moist Old Field Cultural Meadow (CUM1-1) community located to the southeast of the Six Points Interchange, as well as mature landscape / ornamental trees and hedgerows in the study area.

To date, 15 species of birds and 11 species of mammals have been documented in the study area either through field investigations or from secondary source information. No herpetofauna were observed during field investigations.

No terrestrial wildlife species of management concern beyond the local (upper tier municipal jurisdiction) level were recorded during field investigations in the study area. One bird species, Savannah Sparrow (*Passerculus sandwichensis*), has been identified by Bird Studies Canada (BSC) as a species of conservation priority (Couturier 1999). No bird species documented within the study area have been identified by TRCA as species of concern within TRCA's jurisdiction (TRCA 2001).

No species documented in the study area are protected under the Fish and Wildlife Conservation Act. Twelve species of birds documented in the study area are protected under the Migratory Birds Convention Act. No terrestrial wildlife listed under the Species at Risk Act or the Endangered Species Act was recorded in the study area.

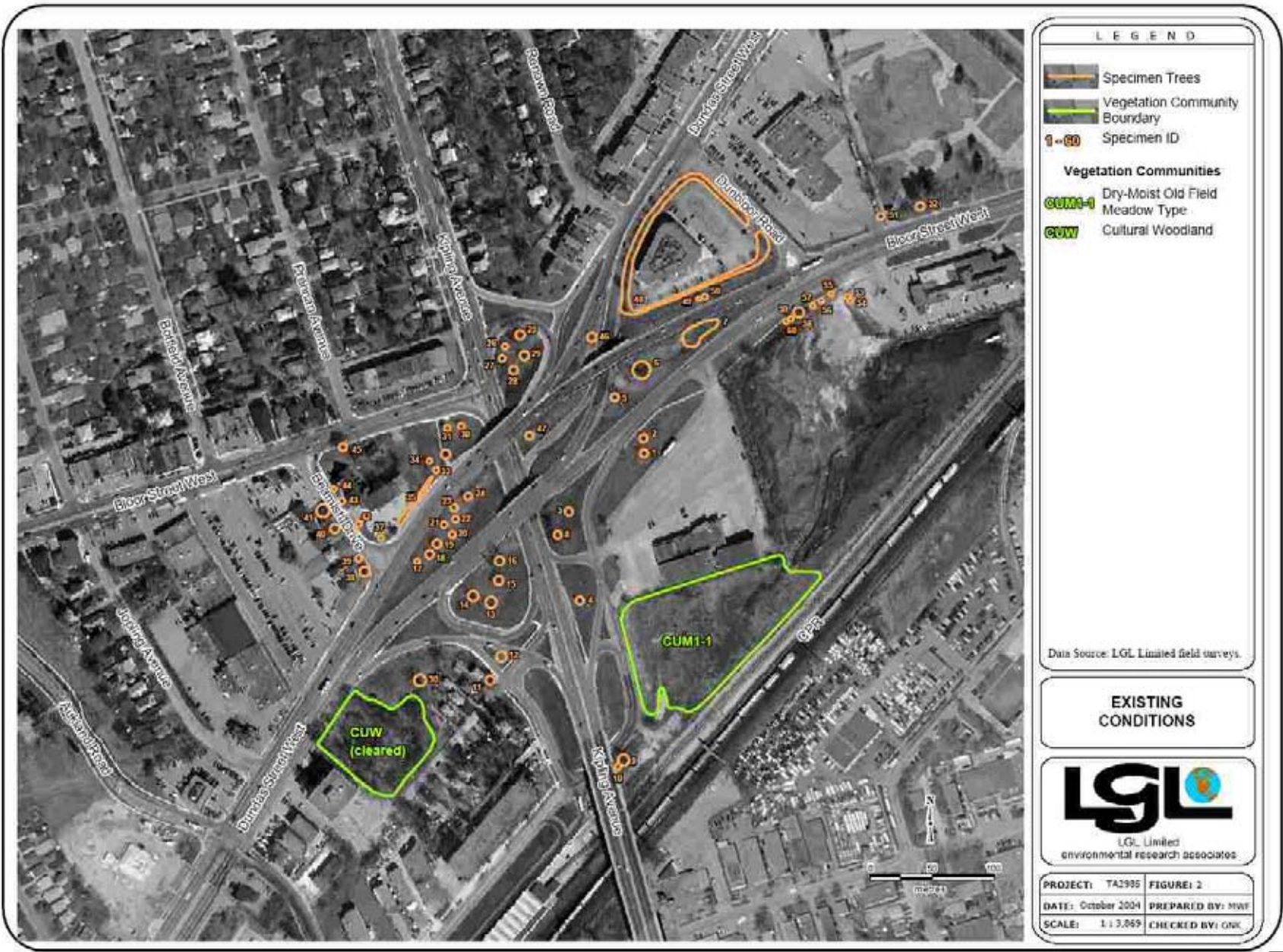
Further details on wildlife habitat are provided in the LGL report presented in **Appendix F.4**.

2.2.6 Designated Natural Areas

Designated natural areas include areas identified for protection by the OMNR, TRCA and upper and lower tier municipalities. There are no Environmentally Significant / Sensitive Areas (ESAs), Significant Wetlands or Areas of Natural and Scientific Interest (ANSIs) within or adjacent to the study area.

The CP railway line and a hydro corridor to the northwest of the study area act as corridors / wildlife pathways for wildlife tolerant of an urban environment and may serve to link locally important habitat units for wildlife occupants. These areas allow for wildlife movement to and from more protected areas associated with Mimico Creek to the northeast of the study area. The study area is highly urbanized and very few natural areas are linked together.

According to the *City of Toronto Official Plan*, and the *Etobicoke Centre Secondary Plan*, there are no designated Natural Areas in the immediate vicinity of the study area.



2.3 **Existing Transportation Facilities**

2.3.1 Road Network

Unlike most interchanges that serve two crossing roads (i.e. roads approaching from four directions), the Six Points Interchange serves three crossing roads (i.e. roads approaching from six directions), hence the name of the interchange. A complex system of ramps connects Dundas Street West, Kipling Avenue, and Bloor Street West, as illustrated in **Exhibit 1-2**. The design of the interchange provides for continuity of Kipling Avenue in the north-south direction, and of Dundas Street in the east-west direction. Bloor Street, although an important east-west arterial road, is not continuous through the interchange at Kipling Avenue. The interchange has three major structures, all of which were rehabilitated between 1998 and 2000 at a cost of approximately \$4.1 million.

A brief description of other elements of the existing road network is provided below:

Bloor Street West (West of Kipling Avenue)	<ul style="list-style-type: none"> ▪ A minor east-west arterial west of Kipling Avenue but a major east-west arterial east of Kipling Avenue ▪ Has a 4-lane cross-section and a speed limit of 50 km/h within the study area ▪ Is not continuous across Kipling Avenue ▪ Signalized intersection with Kipling Avenue
Bloor Street West (East of Kipling Avenue)	<ul style="list-style-type: none"> ▪ A major east-west arterial east of Kipling Avenue, with a 4-lane cross-section, and a speed limit of 60 km/h within the study area ▪ No continuity of Bloor Street to west of Kipling Avenue ▪ Signalized intersection with Resurrection Road
Kipling Avenue	<ul style="list-style-type: none"> ▪ A major north-south arterial with a 5-lane cross-section north of Viking Lane and a 4-lane cross-section south of Viking Road through the remainder of the study area ▪ Speed limit of 50 km/h within the study area
Dundas Street West (East of Kipling Avenue)	<ul style="list-style-type: none"> ▪ Dundas Street is a major east-west arterial through the Study Area ▪ Has a 6-lane cross-section west of Kipling Avenue, and a 4-lane cross-section east of Kipling Avenue ▪ Speed limit of 60 km/h within the study area ▪ Dundas Street has an interchange with Highway 427 to the west of the study area
Burnhamthorpe Road	<ul style="list-style-type: none"> ▪ A major east-west arterial with a 4-lane cross-section and a speed limit of 60 km/h ▪ At Kipling Avenue, it continues in the southeast direction to Dundas Street West ▪ Burnhamthorpe Road has an interchange with Highway 427

Islington Avenue	<ul style="list-style-type: none"> ▪ A major north-south arterial with 4-lane cross-section and a speed limit of 50 km/h
Dunbloor Road	<ul style="list-style-type: none"> ▪ A 2-lane collector road with a speed of 50 km/h ▪ Extends from Dundas Street West to Bloor Street West
Beamish Road	<ul style="list-style-type: none"> ▪ A 2-lane collector road with a speed of 50 km/h ▪ Extends from Bloor Street West to Dundas Street West
Jopling Avenue	<ul style="list-style-type: none"> ▪ A 2-lane local road with a speed of 50 km/h ▪ Extends from Bloor Street West to Dundas Street West
Aukland Road-St. Albans Road	<ul style="list-style-type: none"> ▪ A continuous 2-lane road with a speed of 50 km/h ▪ Designated as a collector road for the Auckland Road portion and as a local road for the St. Albans Road portion ▪ Extends from Bloor Street West to south of Dundas Street West, then continues easterly to Kipling Avenue ▪ Signalized intersection with Dundas Street West
Poplar Avenue- Subway Crescent	<ul style="list-style-type: none"> ▪ A 2-lane local road with a speed of 50 km/h ▪ Extends from Bloor Street West to Dundas Street West, into the Kipling Subway Station ▪ Signalized intersection with Dundas Street West

Parallel east-west major roads south of Dundas Street include The Queensway, and The Gardiner Expressway. To the north, Rathburn Road is north of Burnhamthorpe Road and discontinuous at Centennial Parkway in the west, and at Islington Avenue in the east. As previously mentioned a Canadian Pacific Rail corridor passes through the study area. The railway crosses Bloor Street West, approximately 370 m east of Dunbloor Road.

2.3.2 Transit Service

The Kipling Subway Station, and associated TTC bus terminal is located adjacent to the Six Points Interchange. Mississauga Transit buses pass through the interchange on route to and from Islington Subway Station. The Six Points Interchange is therefore a major transit corridor, and this transit service must be maintained. Currently, buses travel through the Six Points Interchange using Dundas Street West in both directions, Kipling Avenue in both directions, Aukland Road, and St. Albans Road. **Exhibit 2-4** illustrates the existing Kipling Station with eight saw-tooth bus bays plus an additional lane to accommodate up to three buses for layover purposes. There is an existing Passenger Pick-up and Drop-Off facility at the Kipling Station that is located on Subway Crescent with access via Aukland Road from the east and via Dundas Street from the west. Parking facilities are located to the south and northwest of the Station.

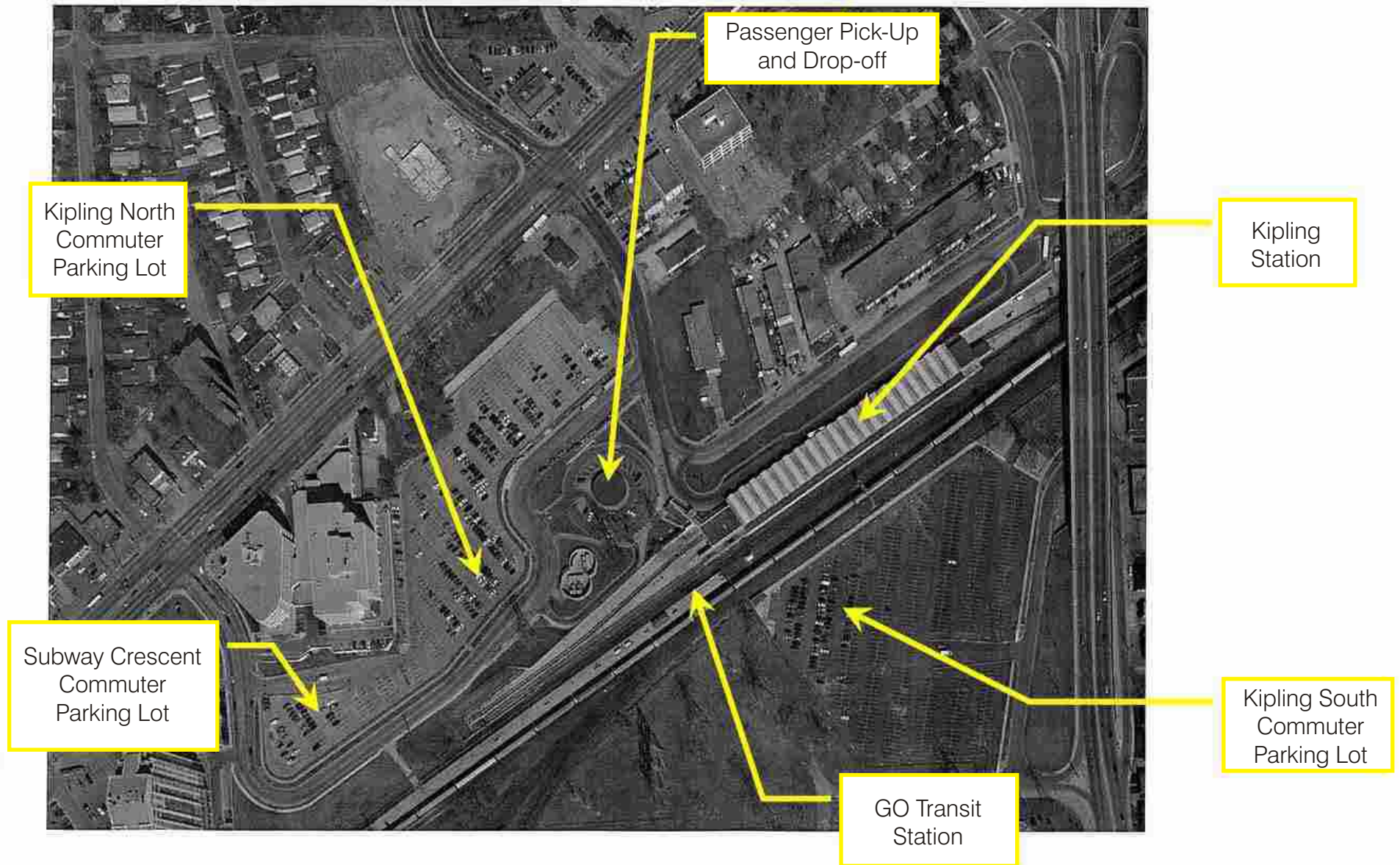


Exhibit 2-4
Kipling Subway Station

The TTC currently operates 17 bus routes out of the Kipling Subway Station. Six of these routes are operated through the Six Points Interchange, with routings to access and egress the Kipling Subway Station as described in **Table 1** below:

Table 1: Transit Routes within Study Area

Route Name	Route
#30 – Lambton	<ul style="list-style-type: none"> Inbound buses travel west on Dundas Street then south on Auckland Road to the Kipling Station. Outbound buses exit via Auckland Road and proceed east on Dundas Street. The buses continue east on Dundas Street to the High Park Station.
#44 – Kipling South	<ul style="list-style-type: none"> Inbound buses start at the Colonel Samuel Smith Park Drive loop and travel north on Kipling Avenue to the northbound off-ramp within the Interchange, to enter the Kipling Station. Outbound buses exit to southbound Kipling Avenue via St. Albans Road and the southbound on-ramp within the Interchange.
#45, #45A, & #45E – Kipling; and #46 – Martin Grove	<ul style="list-style-type: none"> Inbound buses travel south on Kipling Avenue, exiting at the southbound off-ramp within the Interchange, to enter the Kipling Station. Outbound buses exit to northbound Kipling Avenue via the St. Albans Road underpass to Kipling Avenue, then north to Kipling Avenue via the northbound on-ramp within the Interchange.

Other routes that operate out of the Kipling Subway Station, but west of the Six Points Interchange are:

- #49 and #49A – Bloor West
- #111 – East Mall
- #112, #112A, and #112D – West Mall
- #123, #123A, and #123B – Shorncliffe;
- #191 – Highway 27 Rocket
- #192 – the Airport Rocket

All of these routes provide service along Bloor Street or Dundas Street.

Exhibit 2-5 shows existing routings and AM Peak Hour bus volumes for TTC buses in the Kipling Subway Station area.

Transit stops are located throughout the study area. There are stops along Dundas Street, Kipling Avenue, and Bloor Street to serve the area residents and businesses.

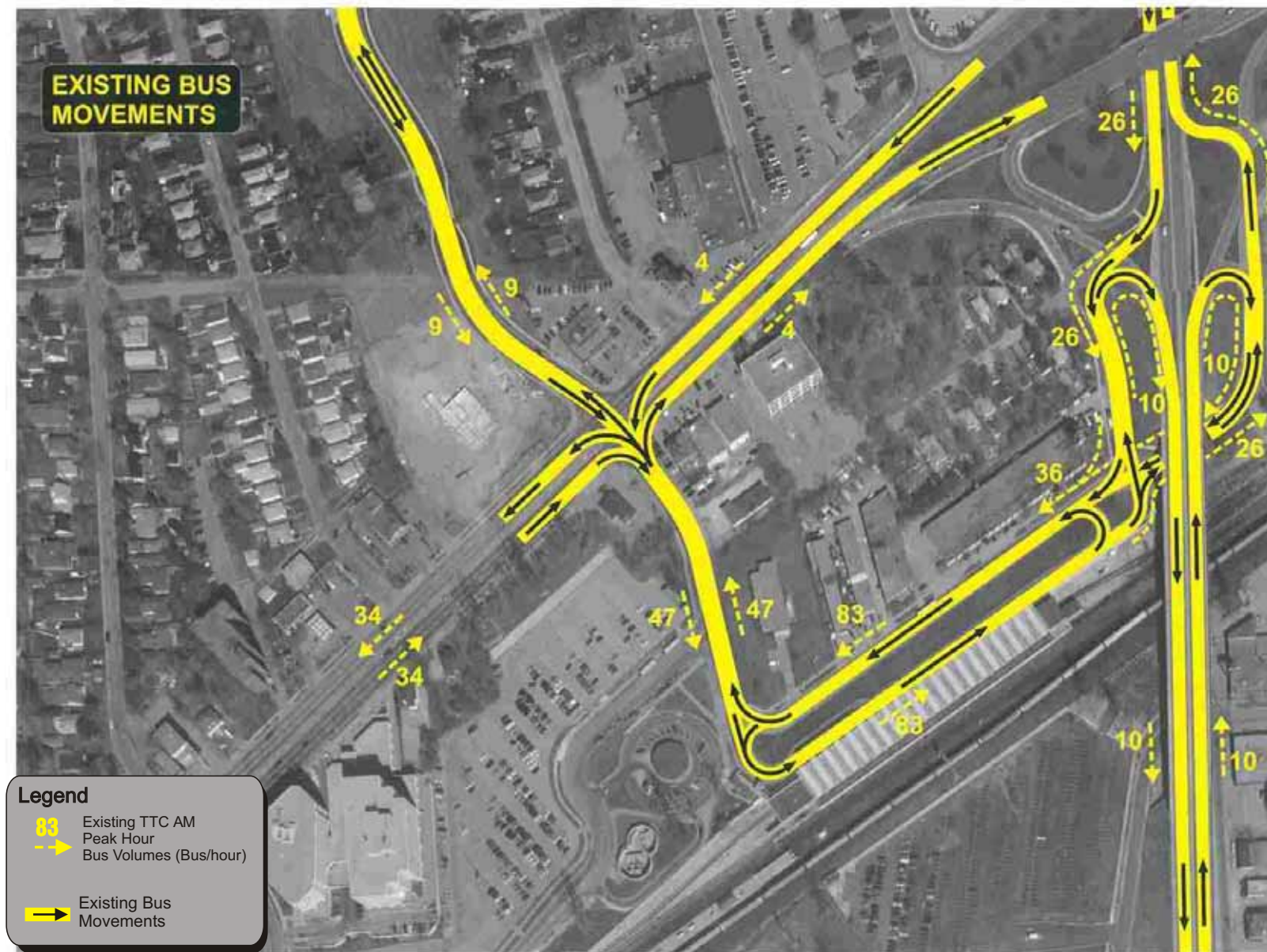


Exhibit 2-5
Existing TTC Bus Routings and AM Peak Hour Bus Volumes

In order to free-up City-owned lands for potential development at the Islington Subway Station, the City of Toronto, TTC, Mississauga Transit, and GO Transit have been working together to develop a new inter-regional bus terminal at the Kipling Station. This will involve the relocation of the existing Mississauga Transit bus terminal facilities from Islington Station to Kipling Station. A new TTC only bus terminal will be constructed north of the existing bus terminal at Islington Station. The existing Islington bus terminal will be demolished to make room for future development. The construction of the new inter-regional terminal at Kipling Station will also include the relocation and expansion of the passenger pick-up and drop-off facility, and the partial closure of Subway Crescent. Bus access to the new inter-regional terminal will be from Dundas Street West, via a new signalized driveway located approximately mid-block between Aukland Road and Subway Crescent.

2.4 Pedestrians and Cyclists

2.4.1 Pedestrian Activity

One of the general transportation system objectives identified in the *Etobicoke Centre Secondary Plan*, is as follows:

- Walking [is to] be an interesting and pleasurable experience in Etobicoke Centre. A successful and highly functioning pedestrian environment will make walking an attractive and effective means of movement through the area. The walking experience will be visually interesting, safe and will connect the pedestrian to a variety of points of desire. (Section 4.2.3)

The existing Six Points Interchange is not conducive to safe, efficient, and attractive pedestrian movements. Sidewalks are provided in the Six Points Interchange along Dundas Street West, Kipling Avenue, and Bloor Street West, including on the overpass structures. However, there are numerous locations where pedestrians need to cross ramps with free flow traffic to get from one location to another. Also, crossing from one area to the east of Kipling Avenue to an area to the west and vice-versa, requires circuitous routing for pedestrians.

2.4.2 Bicycle Activity

Currently, none of the major roads within the Six Points Interchange area have dedicated bicycle lanes nor are they signed as bicycle routes. Bicycle volumes are low through this area, given the free-flow traffic environment, the complexity of the road network, and no facilities for cyclists.

However, the City of Toronto Bike Plan has identified a future bicycle route or bicycle lanes along sections of Bloor Street West, east and west of Kipling Avenue, a section of Dundas Street between Kipling Avenue and Dunbloor Road, and a connection between Dundas Street and Bloor Street via Dunbloor Road. This routing would provide an east-west connection through the existing Six Points Interchange. Proposed future bicycle facilities throughout the study area are shown in **Exhibit 2-6**. These facilities should be taken into consideration in any reconfiguration of the interchange.



Legend

Existing Bike Lane

Proposed Bike Lane

Existing Signed Route

Proposed Signed Route

Existing Off-Road

Proposed Off-Road

2.5 Utilities

A number of utilities are located within the immediate study area, including Enbridge Gas, Bell Canada, Rogers Cable, and Toronto Hydro. The information below was provided by the utility companies at a meeting held on September 1, 2004, with representatives of the utility companies. The following summarizes the utility information within the corridor. Further details are provided on a utility location plan found in **Appendix C**.

Enbridge Gas

Several Enbridge Gas natural gas pipelines are located within the Six Points interchange. They include: NPS 6 ST IP (Nominal Pipe Size 6" Steel, Intermediate Pressure), NPS 4 ST IP, NPS 2 PE IP (Nominal Pipe Size 2" Polyethylene, Intermediate Pressure), and NPS 11/4 PE IP. A description of the general location of each follows:

- The NPS 6 ST IP natural gas pipeline is located along the south side of St. Albans Road, parallels Kipling Avenue on the east side, then Bloor Street on the south side, through the former Westwood Theatre lands. The natural gas pipeline then parallels Dunbloor Road on the west side, then east along Dundas Street on the south side.
- The NPS 4 ST IP natural gas pipeline connects to the NPS 6 ST IP line on the south side of Bloor Street in the vicinity of Dunbloor Road and traverses easterly through the Bloor Street / Resurrection Road intersection.
- The NPS 2 PE IP natural gas pipeline connects to the NPS 6 ST IP line on the south side of Dundas Street in the vicinity of Dunbloor Road, traverses westerly then northerly on the west side of Renown Road. There is also a section of NPS 2 PE IP natural gas pipeline that connects to the NPS
- 4 ST IP natural gas pipeline along Bloor Street, at Resurrection Road. It traverses northerly on the east side of Resurrection Road.
- The NPS 11/4 PE IP natural gas pipeline is generally located to the west of Kipling Avenue traversing on the west side of Beamish Drive and crosses Bloor Street to the west side of Prennan Avenue. There is also a section of this pipeline on the east side of Kipling Avenue north of Bloor Street.

Bell Canada

- Bell Canada has services throughout the interchange. There are major buried fibre optic lines along Bloor Street east of Dunbloor Road, and between the Dundas Street eastbound and the Bloor Street eastbound ramps, east of Kipling Avenue. This facility services all of West Etobicoke.
- Buried cables are also located on the east side of Beamish Drive, on the south side of Dundas Street, west of Kipling Avenue, west of Kipling Avenue south of Dundas Street, east and west sides of Kipling Avenue north of Bloor Street, north side of Bloor Street west of Kipling Avenue, and on the north side of Dundas Street east of Kipling Avenue.

Rogers Cable

- Rogers buried co-axial cables are located on the north side of Dundas Street east of Kipling Avenue, on the south side of Bloor Street west of Kipling Avenue, and on the west side of Beamish Drive where the line crosses Dundas Street to the south side west of Kipling Avenue, and travels westerly towards Aukland Road.
- Underground fibre optic lines are located on the south side of Bloor Street west of Kipling Avenue, and east of Resurrection Road.
- Aerial fibre optic lines are also located on the east side of Renown Road, where it crosses Dundas Street to the south side to Dunbloor Road, then travels on the east side of Dunbloor Road crossing Bloor Street to the south side , and easterly beyond Resurrection Road.
- There are also overhead Rogers Cable lines on Hydro poles on the south side of Bloor Street west of Kipling Avenue, and on the west side of Beamish Drive where it crosses Dundas Street to the south side of Viking Lane.

Toronto Hydro

The majority of Toronto Hydro facilities are overhead cables, located throughout the interchange. Underground structures exist along Bloor Street west of Kipling Avenue. An underground transformer is located on Beamish Drive.

2.5.1 Other Services

Other services in the Six Points Interchange area include stormwater sewers, sanitary sewers and watermains.

Three key services include a 450 mm diameter sanitary sewer, and a 300 mm and 900 mm diameter watermain that traverse through the Westwood Theatre lands. The 450 mm diameter sanitary sewer travels from the south side of St. Albans Road east of Kipling Avenue, through the Westwood Theatre lands along the same alignment as the Enbridge Gas NPS 6 ST IP gas line, where it splits at Dunbloor Road / Bloor Street. From this point, a 375 mm diameter sanitary sewer runs along the east side of Dunbloor Road, and a 200 mm diameter sanitary sewer runs along the south side of Bloor Street.

The 300 mm diameter watermain travels through the Westwood Theatre site crossing Bloor Street at Dunbloor Road to the north side of Bloor Street. The 900 mm diameter watermain travels along the south side of Dundas Street west of Kipling Avenue, crosses Kipling Avenue north of Viking Lane through the Westwood Theatre lands, then easterly along the centre of Bloor Street.

3. NEEDS AND OPPORTUNITIES

As noted previously, the need for a reconfiguration of the Six Points Interchange has been identified by previous studies. There are planning, capacity and operational needs and opportunities within the study area. The identified needs form the Problem Statement, and are described in more detail in the following sections.

3.1 City Building / Urban Design

The existing Six Points Interchange is a physical barrier that separates existing and future neighbourhoods east and west of Kipling Avenue. It prevents pedestrians from safely and comfortably crossing from one side of the interchange to the other, making schools, shops and local services inaccessible. This area is intended to become an urban focus for the western part of the City, attracting new development, as well as a range of cultural, institutional and service uses. Policy 3.3 of the Secondary Plan encourages: *a compact, high density, transit-oriented development pattern in order to provide a tight urban fabric and pedestrian oriented core area*. The Policy calls for City streets that are designed to promote a distinctive image that is predominantly urban in character.

The area road network is characterized by discontinuous, and few, major east-west roads, as shown in **Exhibit 3-1**. The Six Points Interchange reflects highway design (shown below), which are not conducive to the desired urban form of a City Centre.





Exhibit 3-1
Existing Area Road Network
iTRANS

From a planning perspective, the Six Points Interchange consumes a significant amount of land occupying approximately 25 acres (10 hectares). Freeing up lands from the interchange could potentially provide improved opportunities for intensification and redevelopment.

It is also the intention of the *Etobicoke Centre Secondary Plan* that the City-owned Westwood Theatre lands are utilized in a strategic manner to further the objectives of the Plan, and is envisioned to have a campus of institutional and office uses. The ongoing West District Study (described in **Section 1.5**) identifies the Westwood Theatre lands as a candidate site for a new West District Centre to serve the Etobicoke-York Community Council Area. However, the Westwood Theatre lands cannot be adequately developed from a City building and urban design perspective given the existing road network, which limits access to the site by cars, pedestrians, cyclists and transit services.

Etobicoke Centre is one of the areas in Toronto that will be subject to a Design Review Panel Process. City Council has directed City Planning to establish a Design Review Panel in order to improve the design quality of buildings and public spaces. The Design Review Panel will consist of design professionals who will provide professional, objective advice on matters of design that affect the public realm in order to help achieve and uphold standards of design excellence. The Design Review Panel will review the preferred interchange reconfiguration recommended in this report as part of the detailed design approvals process.

3.2 Transit, Pedestrians and Cyclists

3.2.1 Transit Service

Kipling Station, which is the terminus of the Bloor-Danforth Subway, is a key transit gateway for west-end residents, and for commuters living beyond the City boundaries.

The City recognizes the importance of transit service in the Six Points area and beyond, through several of the policies for the *Etobicoke Centre Secondary Plan*, such as the following:

Policy 3.8 states that:

- *the function of subway, GO and surface transit facilities will be protected and enhanced to further the City building objectives of the Etobicoke Centre, and*

Policy 3.9 states that:

- *new development [should] be undertaken in the context of reducing auto dependency*

The ***Etobicoke Centre Secondary Plan*** also identifies the following:

- (a) *Particular attention be focused on improving access to subway stations for surface transit vehicles – Policy 4.2.5.1*
- (b) *Existing pedestrian linkages to rapid transit station will be improved to further encourage transit use by existing and future residents and employees – Policy 4.2.5.2*
- (c) *Where appropriate, new pedestrian linkages be created between new development and rapid transit station – Policy 4.2.5.3, and*
- (d) *Investigation of the feasibility of providing a new pedestrian access to the east end of the Kipling bus terminal in conjunction with any plans to develop the Westwood Theatre lands – Policy 4.2.5.4.*

Providing good pedestrian access to the Westwood Theatre lands and throughout the Six Points area will enhance access to the subway and surface transit facilities to further the development objectives of the Etobicoke Centre and reduce auto dependency.

The planned construction of a new inter-regional bus terminal at the Kipling Station to serve Mississauga Transit and GO Transit will further enhance the importance of the Kipling Station as the major transit gateway in west Toronto.

Also, the Westwood Theatre site located on the east side of Kipling Avenue is currently not well connected to the Kipling Station from a pedestrian perspective. It is expected that, in the future, there will be a new pedestrian entrance to the station at the east end of the Kipling Station, in the immediate vicinity of Kipling Avenue, to facilitate pedestrian access from the redeveloped Westwood Theatre lands.

3.2.2 Pedestrian and Bicycle Network

The City of Toronto recognizes the importance of walking and cycling through several of the policies for the ***Etobicoke Centre Secondary Plan***, such as:

- 4.2.3.1 *Pedestrian movement in the Etobicoke Centre will be improved by:*
 - a) *increasing the level of safety in walking along, and crossing the area's arterial roads*
 - b) *improving the visual amenity of pedestrian routes; and*
 - c) *further integrating the system walkways and public sidewalks in the area.*
- 4.2.3.4 *Greater connectivity of the pedestrian system will be provided through:*
 - a) *the creation of new streets, blocks and linkages on large redevelopment sites [please see **Exhibit 1-7**]*
 - b) *improvements in connections between the area's subway stations and bus stops and the public sidewalk and private developments; and*
 - c) *improved pedestrian connections between the east and west sides of Kipling Avenue.*

4.2.5.7 *...Benefits to be accrued by any proposed redesign [of the Six Points Interchange] should include:*

- a) *improved connectivity and amenity of pedestrian and bicycle infrastructure through and around the interchange and to adjacent neighbourhoods and employment areas*

Though sidewalks are provided throughout the Six Points Interchange study area, the inhospitable freeway-like nature of the area does not allow for a pedestrian-friendly environment where walking is interesting and pleasurable. This is reinforced by the poor visual amenity of the pedestrian routes through the interchange.

It is recognized that the existing network of pedestrian and bicycle infrastructure through the Six Points area should be improved and expanded. With a reconstruction of the Six Points Interchange, and new local roads, there is an opportunity for implementing pedestrian and cyclist facilities that will provide linkages and opportunities for improved connectivity within the Six Points Interchange area as illustrated in **Exhibit 1-7** and **Exhibit 2-6**. The City's Bike Plan recommends that in order to better accommodate and encourage cyclists on all roadways, a wider curb lane should be considered with all reconstruction projects.

3.3 Existing Traffic Operations

From a capacity and operations perspective, the Six Points area is a major transit corridor, and reasonable traffic operations should be maintained to minimize delays to transit vehicles. In addition, acceptable roadway traffic levels of service must be maintained to reduce the potential for traffic diversion into adjacent neighbourhoods.

To assess the planning and capacity needs under current and future traffic conditions, the secondary study area (bounded by Shorncliffe Road-Shaver Road to the west, Royal York Road to the east, Burnhamthorpe Road to the north and North Queen Street and Norseman Street to the south) was assessed. This ensured examination of the wider impacts of the project.

The planning and capacity needs assessment involved a review of existing traffic conditions at all of the major intersections within the broader study area. The analysis also reviewed midblock operations along the major roads, specifically, Dundas Street West, Bloor Street West, and Kipling Avenue.

3.3.1 Existing Traffic Volumes

To determine the current traffic conditions for the area, existing traffic data was obtained from the City of Toronto. Current and historic traffic volumes were obtained for each of the north-south and east-west corridors within the secondary study area. The eight-hour intersection turning movement counts used in the assessment were conducted between June 2002 and September 2003. These counts were also the basis for midblock link volumes. The City conducted additional ramp volume counts on September 9th, 10th and 11th, 2003.

3.3.2 Existing Origin–Destination (O-D) Patterns

To obtain the paths of trips traveling in / out of the Six Points Interchange, an origin and destination (O-D) survey was carried out on October 23, 2003. The surveys involved recording license plates of all vehicles travelling into and out of the Six Points Interchange. Staff undertaking the surveys were positioned on the major approach / departure roads, namely Dundas Street West (east and west of the interchange), Kipling Avenue (north and south), and Bloor Street West (east and west of the interchange). The O-D surveys were conducted for a two-hour AM peak and a two-hour PM peak periods during a typical weekday. The survey recorded all vehicles traveling in both directions. Based upon the survey information, O-D summary matrices were prepared to document the weekday O-D patterns for the AM and PM peak periods.

The resulting O-D summary matrices, and exhibits of the major O-D patterns for the weekday AM and PM peak hours, can be found in **Appendix D.1**. The survey indicated that the major vehicular movements through the interchange are between:

- Dundas Street west and east of the interchange
- Dundas Street west of the interchange and Bloor Street east of the interchange
- Kipling Avenue north and south of the interchange

3.3.3 Existing Intersection Operations

Intersection analysis provides a more detailed account of traffic operational conditions. The level of service analyses for signalized and unsignalized intersections were conducted using Synchro 5 Traffic Progression Software, which employs the 2000 Highway Capacity methodology. Synchro can analyze both signalized and unsignalized intersections in a road corridor or network taking into account the spacing, interaction, queues, and operations between intersections. All parameters, such as peak hour factor (PHF), lane utilization factors, and saturation flow rates, were based on the City of Toronto's *Guidelines for Using Synchro Software v5.0* document, and through discussions with the City's Traffic Management Centre. Details on these parameters are provided in **Appendix D.2**.

The operations of intersections were measured in two ways:

- the volume to capacity ratio (v/c ratio) which is represented numerically
- the average control delay per vehicle measured in seconds

Both measures indicate how an intersection is operating. For signalized intersections, the overall intersection volume to capacity (v/c) ratio, as defined by the Highway Capacity Manual, is based on the sum of the critical flow ratios for each signal phase. It reflects the amount of residual capacity available to accommodate variations in traffic flow. For unsignalized intersections, v/c ratios are measured by movement or approach only (i.e. not for overall intersection).

Delay is the average control delay for all vehicles approaching the intersection. Control delay is the portion of the total delay attributed to traffic signal or stop sign control. For signalized

intersections, the delay is calculated for the intersection as a whole as well as by movement and approach. For unsignalized intersections, the delay is calculated by lane or approach only.

The City of Toronto provided the existing signal timings and phasings used in the analysis, and also reviewed the analyses. Adjustments to account for left-turn sneakers, lane utilization and peak hour factors were made to the Synchro analyses after a review of the preliminary results with City of Toronto staff. Detailed results of the analyses of existing conditions are provided in **Appendix D.3. Exhibit 3-2** and **Exhibit 3-3** present the existing intersection summary results for the weekday AM and PM peak hours, respectively.

The analysis indicates that one of the signalized intersections operate with v/c ratios greater than 1.0. Theoretically, a maximum v/c ratio for existing conditions cannot be greater than 1.0 since the observed volumes used in the analysis represent volumes that were served at the intersection and therefore must be at or below the capacity of the intersection. This high v/c ratio is a result of the conservative parameters used in the Synchro analysis. Although we believe the results of the analysis are conservative (e.g. Synchro overstates the v/c ratios and delays), the results are still useful for comparing the relative impacts of alternative options against existing conditions.

The analysis indicates that the gateway intersections to the Six Points area – Dundas Street at Poplar Avenue and Dundas Street at Islington Avenue are the major network constraints in the Study Area. The Six Points Interchange itself is not a traffic constraint. This shows that the capacity of the Study Area road network is limited by the gateway intersections, and not by the Six Points Interchange.

3.3.4 Existing Link Operations

The existing midblock levels of service were also determined based on the Synchro 5 Traffic Progression Software. **Exhibit 3-2** and **Exhibit 3-3** present the existing link operations for the AM and PM peak hour, respectively. In the AM and PM peak hours, roadway links approaching the Six Points Interchange are close to capacity, which indicates that the network is constrained by the approaches.



Not To Scale

LegendSignalized Intersections
Volume to Capacity Ratio

- > 0.99
- 0.85 to 0.98
- < 0.85

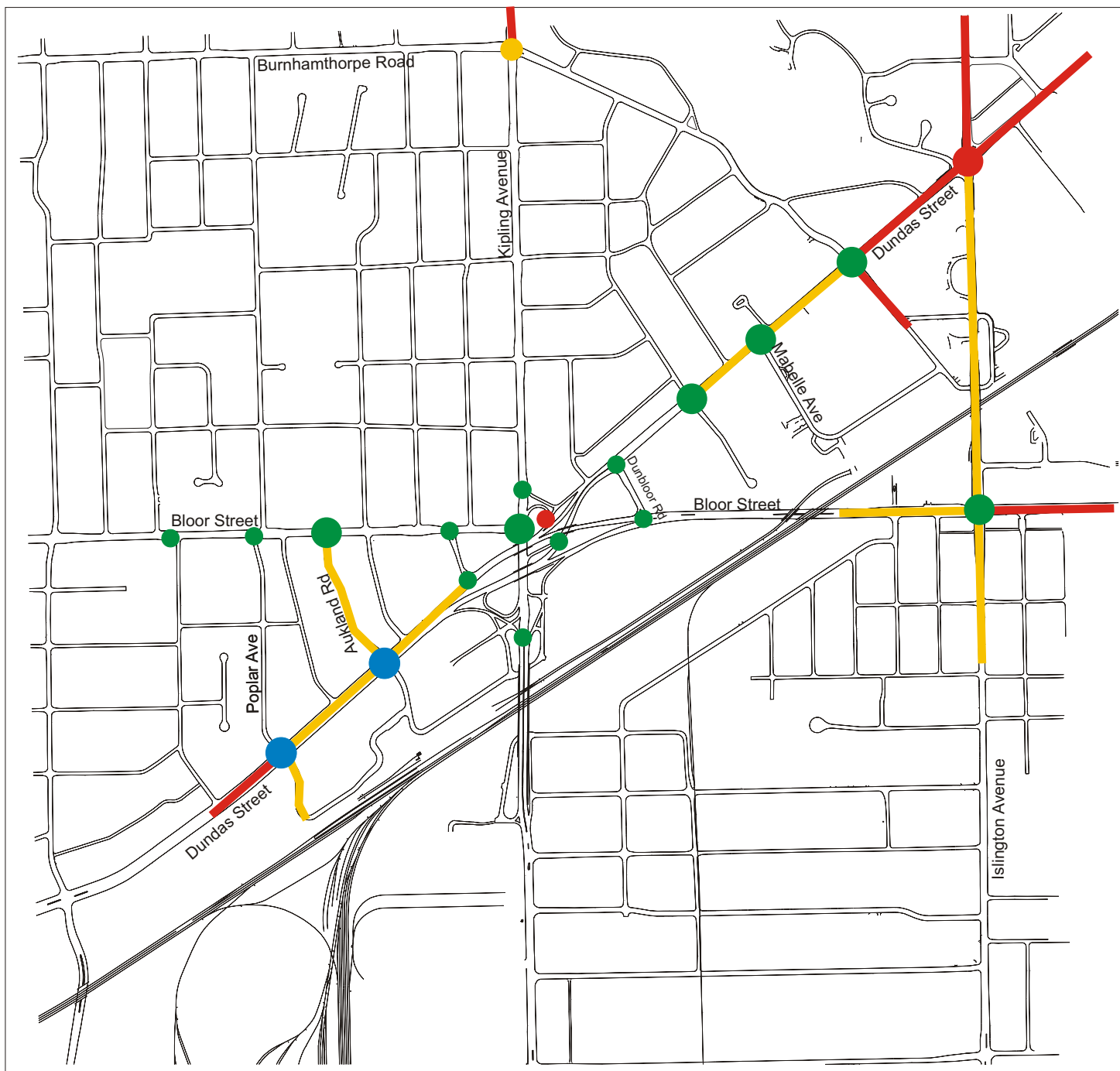
Unsignalized Intersections
Volume to Capacity Ratio

- > 0.99
- 0.85 to 0.98
- < 0.85

Arterial Segment
Level of Service

- LOS E - F
- LOS C - D

Exhibit 3-2**Existing Intersection and Link Operations - AM Peak Hour**



Not To Scale

LegendSignalized Intersections
Volume to Capacity Ratio

- > 0.99
- 0.85 to 0.98
- < 0.85

Unsignalized Intersections
Volume to Capacity Ratio

- > 0.99
- 0.85 to 0.98
- < 0.85

Arterial Segment
Level of Service

- LOS E - F
- LOS C - D

Exhibit 3-3**Existing Intersection and Link Operations - PM Peak Hour**

3.3.5 Summary of Existing Traffic Conditions

Based on a review of the existing traffic volumes and operations throughout the primary study area, the following observations can be made:

- Some of the major signalized intersections are operating at capacity during the weekday AM and PM peak hours. These are the major network constraints in the Study Area and not the Six Points Interchange itself. These tend to be the gateway intersections to the Six Points Interchange area, namely, Dundas Street at Poplar Avenue and Dundas Street at Islington Avenue.
- Within the Six Points Interchange, the northbound Kipling Avenue to westbound Dundas Street ramp is operating at capacity during the AM and PM peak hours. During the AM peak hour, the eastbound Dundas Street to southbound Kipling Avenue ramp is operating at capacity.
- Midblock traffic volumes on the arterial road network approaching the Six Points area (Dundas Street east and west of Kipling Avenue, and Bloor Street east of Kipling Avenue) are approaching or at capacity in the peak directions during the weekday AM and PM peak hours.

3.4 Road Safety Considerations

To assess the vehicular road safety of the Six Points Interchange, the individual Motor Vehicle Accident reports for all collisions, both midblock and intersection related, within the primary study area were reviewed for the period from 2000 to 2002, inclusive. This involved reviewing 266 collision reports.

The Six Points Interchange was divided into 13 sections and these section locations are provided in **Appendix D.4**. The collision history of each section was established by determining where each collision occurred. **Table 2** summarizes the total number of collisions based on locations within the Six Points interchange.

Table 2: Collision Summary for Six Points Interchange

Section	Total Collisions			
	2000	2001	2002	Total
1 – Dundas / Dunbloor / Bloor area	9	7	8	24
2 – Bloor EB / Bloor WB, just west of Dunbloor	0	2	0	2
3 – Bloor EB / Dundas EB, west of Dunbloor	3	2	2	7
4 – Dundas WB, west of Dunbloor	7	7	13	27
5 – Kipling between Bloor and Viking Road	4	0	3	7
6 – Dundas EB over Kipling	1	2	2	5
7 – St. Albans / NB Kipling ramps to EB Bloor	0	0	0	0
8 – EB Dundas to SB Kipling/Viking Road/Kipling area	16	14	20	50
9 – Aukland / Dundas area	21	20	24	65
10 – Dundas WB in Beamish Dr. area	11	13	8	32
11 – Bloor west of Kipling	6	0	3	9
12 – Kipling north of Bloor	6	1	5	12
13 – Kipling / Bloor intersection area	11	8	5	24
Total	95	76	93	264

From this information, the four locations (4, 8, 9 and 10) with the highest number of collisions were identified. These locations are shown in **Exhibit 3-4**. Collision reports from 2002 were reviewed in detail for the four locations, which aided in identifying specific problems within these locations.

From each collision report, the following information was obtained:

- severity
- time of day
- manner of collision
- illumination
- road surface condition
- environment

Of the 174 reported collisions that occurred in 2000 to 2002 at the top four locations, 142 were property damage only collisions, and 32 involved injury. No fatalities were recorded.

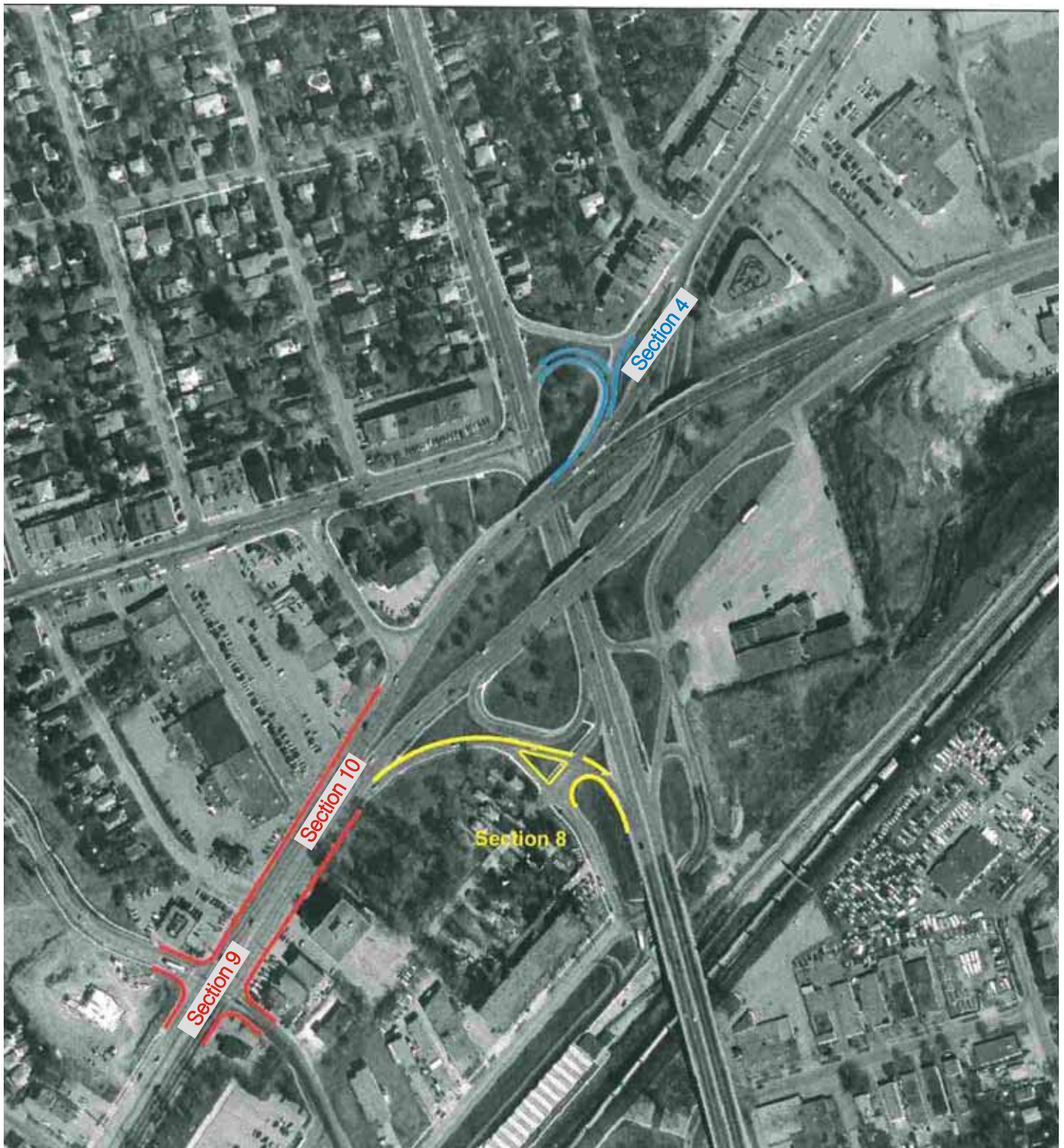


Exhibit 3-4
Top Four Collision Locations
within the Six Points Interchange

Exhibit 3-5 provides a summary of the collision types for the top four locations for 2002. Detailed summaries and other graphs for the top four locations are provided in **Appendix D.4**.

Of the 65 reported collisions that occurred in 2002 at the top four locations, 59 were property damage only collisions, and 6 involved injury. Approximately 57% of the 65 collisions occurred between noon and 6:00 PM, 48 % were rear-ends, 75% occurred during daylight and on dry road surface, and 82% on a clear or cloudy day.

Of particular note are the following:

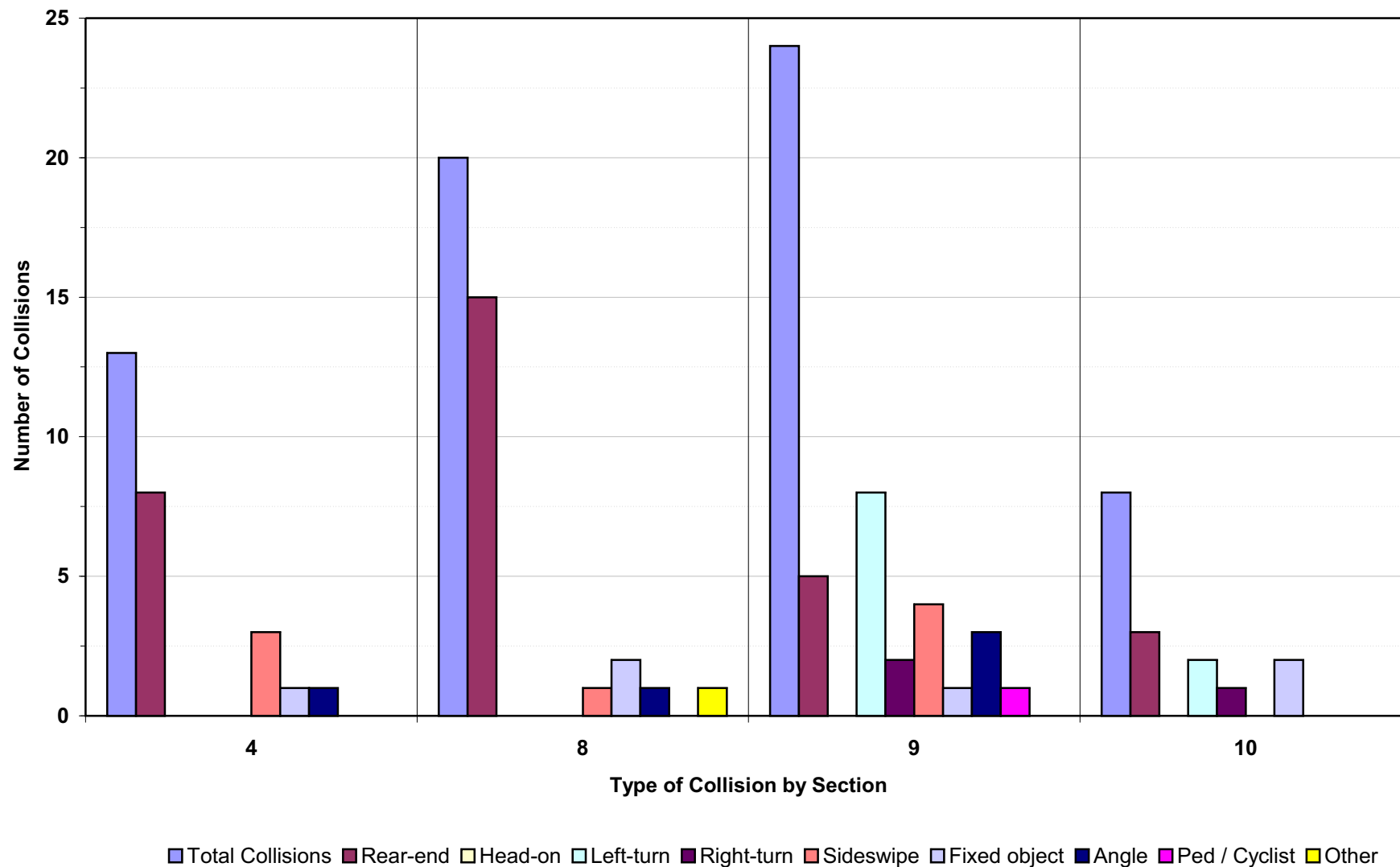
- The number of rear-end collisions that have occurred at the merge from eastbound Dundas Street to southbound Kipling Avenue – Section 8 (50% of the total number of rear-end collisions that occurred over the 3-year period);
- The number of rear-end collisions that have occurred at the merge from northbound Kipling Avenue to westbound Dundas Street – Section 4 (21% of the total number of rear-end collisions that occurred in the 3-year period), and
- The number of left-turn collisions that have occurred at the Dundas Street / Aukland Road intersection – Section 9 (74% of the total number of left-turn collisions that occurred in the 3-year period). Of note however, is that this is the only signalized intersection in the top four locations, and this is also a primary access point to the Kipling Subway Station.

3.5 Summary of Needs and Opportunities

Based on a review of the existing traffic conditions at the Six Points Interchange, a number of observations are noted. Often, different types of needs lead to different solutions, and frequently a combination of solutions is required to address all of the needs. The observations are as follows:

City Building / Urban Design

- The Six Points Interchange occupies a significant amount of land, some of which could potentially be freed up for alternative uses to support the development policies of the **Etobicoke Centre Secondary Plan**.
- The Six Points Interchange is a major physical and psychological barrier, particularly between development on either side of Kipling Avenue, interrupting the physical continuity and connectivity of Etobicoke Centre.
- Existing vehicular access to the Westwood Theatre lands is poor due to the existing freeway-type ramp configurations and site grading, adversely affecting future development potential.
- The existing road network layout needs to be simplified.

Six Points Collision Summary for 2002**Exhibit 3-5****Collision Summaries for Top Four Locations**

- Grade separations should be eliminated or reduced to facilitate an urban environment and pedestrian and cyclist amenities.
- Interchange-style loop ramps should be eliminated or reduced.
- ‘Typical’ street intersections and frontages should be maximized.
- Provide for more Open Space Areas.
- Meet the urban design objectives of the *Etobicoke Centre Secondary Plan*.

Transit

- The Kipling Station is a key inter-regional transit gateway for west-end residents, and for commuters living beyond the City boundaries. The importance of this gateway will further increase with the planned construction of a new inter-regional transit terminal to serve Mississauga Transit and GO Transit, and an expanded TTC passenger drop-off and pick-up facility.
- Providing high quality pedestrian access to the Westwood Theatre lands and throughout the Six Points area will enhance access to the subway and surface transit facilities to further the City building objectives of the *Etobicoke Centre Secondary Plan* and reduce auto dependency.
- The Westwood Theatre site located on the east side of Kipling Avenue is currently not well connected to the Kipling Station. This problem is expected to intensify in the future as the lands east of the station redevelop.

Pedestrians

- Pedestrian activity is limited through the Six Points Interchange. Though sidewalks are provided throughout the Six Points Interchange, the inhospitable anti-urban environment of the area does not promote a highly functioning pedestrian environment where walking is interesting, pleasurable and safe. This is also true, given the poor visual amenity of the pedestrian routes throughout the interchange.
- The pedestrian connections to a variety of points of interest are poor, and pedestrian connection improvements are required between the east and west sides of Kipling Avenue. In particular, there is a need for a good pedestrian network access to the Kipling Station from the Westwood Theatre site, and from Dundas Street.

Cyclists

- Currently, use of the Six Points interchange by cyclists is minimal. The interchange is without facilities for cyclists and the interchange-type geometry, and free-flow traffic environment of the area is not conducive to cycling and could present safety concerns for cyclists.
- Bloor Street West, east and west of Kipling Avenue, and a section of Dundas Street between Kipling Avenue and Dunbloor Road have been identified as part of the 1000 km network of east-west and north-south bike routes within the City of Toronto Bike Plan. In addition, wider curb lanes to better accommodate and encourage cyclists should be considered in any reconfiguration of the interchange.
- There is a general need to improve cyclist connections to adjacent land uses.

Capacity

- Some of the major signalized intersections on roads approaching the Six Points area namely, Dundas Street at Poplar Avenue and Dundas Street at Islington Avenue are operating at or near capacity during the AM and PM peak hours. These gateway intersections are the major road network constraints in the study area and not the Six Points Interchange itself. This means that there are opportunities to reconfigure the interchange to take advantage of spare capacity.
- Midblock traffic volumes on the arterial road network approaching the Six Points area (Dundas Street east and west of Kipling Avenue, and Bloor Street east of Kipling Avenue) are nearing or are at capacity in the peak directions during the weekday AM and PM peak hours. Again, this means that there are opportunities to reconfigure the interchange to take advantage of spare capacity.
- Within the Six Points Interchange, the northbound Kipling Avenue to westbound Dundas Street ramp is operating at capacity during the weekday AM and PM peak hours. During the weekday AM peak hour, the eastbound Dundas Street to southbound Kipling Avenue ramp is operating at capacity.

Operations

- There is an opportunity to mitigate the high number of rear-end collisions at the stop / yield conditions on the loop and direct ramps from Kipling Avenue northbound to Dundas Street westbound, and from Dundas Street eastbound to Kipling Avenue southbound.

3.6 Problem Statement

Based on the findings, there are city building / urban design issues, capacity deficiencies, operational, and safety concerns within the Six Points Interchange which require a combination of solutions to address these concerns and deficiencies within the interchange. Solutions are required to **reconfigure the Six Points Interchange** to allow for a well connected Etobicoke Centre, and to meet the objectives in the *Etobicoke Centre Secondary Plan*. The problem statement entails finding solutions necessary to:

- Simplify the road network layout, freeing up and making surplus interchange lands available for other uses.
- Maximize ‘typical’ street intersections and potential development frontages.
- Improve the landscape and streetscape of the area.
- Provide good pedestrian network access to and from Kipling Subway Station, the Westwood Theatre site, Bloor Street and Dundas Street, and improve pedestrian connections between the east and west sides of Kipling Avenue.
- Improve cyclist connections through the area to connect to adjacent land uses.
- Maintain acceptable surface transit operations, particularly to and from the Kipling Subway Station, considering existing and future bus operations.
- Have acceptable levels of service for traffic operations on the area arterial road network that are consistent with a highly urbanized pedestrian-oriented environment such as downtown Toronto and North York Centre.

4. IDENTIFICATION AND ANALYSIS OF THE “LONG LIST” OF ALTERNATIVE SOLUTIONS

The Municipal Class Environmental Assessment process requires the identification of all reasonable alternative solutions and examination of alternative designs to address the problem. After the Problem Statement (i.e. need for reconfiguration of the interchange) was established, Phases 2 and 3 of the study were addressed in an integrated fashion by including design concepts as alternative solutions in the evaluation of alternative designs.

This integration of Phases 2 and 3 was necessary to fully respond to, and address the need to reconfigure the interchange, and to demonstrate that all alternatives were being considered. In this regard, a “Long List” and a “Short List” of alternatives were identified. The “Short List” was derived from the remaining alternatives after analysis of the “Long List”.

The alternative solutions consist of a long list of 33 options including the ‘Do Nothing’ which comprised the “Long List”. The alternative methods include four of six “Short List” options, for which refined design concepts were developed for ‘major’ reconfiguration of the interchange.

This section of the report provides a discussion of the identification and analysis of the “Long List” of alternative solutions.

4.1 Identification of “Long List” of Alternatives

To address the problem statement, a “long list” of 33 alternative solutions was developed from a number of sources, including three separate studies conducted between 1983 and 1989 to review redesign concepts for the interchange, an urban design charrette held in 1999 in conjunction with the ‘City Centre Secondary Plan’ review, and concepts developed by this project’s study team. In developing the concepts by this project’s study team, two visioning workshops were held with City staff representing the City Planning Division, Transportation Services Division, Technical Services Division, Facilities and Real Estate Division and the Public Consultation Unit. The first workshop was held on Wednesday, December 17, 2003, and the second on Tuesday, February 10, 2004.

The following are the guiding principles used in developing concepts for reconfiguring the interchange, based on Official Plan goals and policies, and considering environmental impacts.

Planning

- Satisfying goals and policies of the Secondary Plan
- Maximizing developable lands / reduce land area occupied by road infrastructure
- Providing a local road network to support new development
- Providing a network of streets that divide larger sites into smaller development blocks
- Promoting a connected grid of streets that offers travel options
- Enhancing the coherence of the street and block patterns
- Providing pedestrian-oriented core areas
- Maximizing leverage of City land holding to facilitate key improvements

City Building

- Meeting the urban design objectives of the Secondary Plan
- Simplifying the road network layout
- Eliminating / reducing grade separations
- Eliminating / reducing interchange-style loop ramps
- Maximizing 'typical' street intersections and frontages
- Providing for Open Space Areas
- Integration into the Urban fabric

Transportation***General Traffic:***

- Providing continuity for the major arterial roads – Dundas, Bloor, and Kipling
- Serving the primary traffic movements –
 - to and from the North and South on Kipling Avenue
 - to and from the East and West on Dundas Street
 - to and from the East and West of Bloor Street (east of Kipling Avenue)
- Improving vehicular access to adjacent sites and the Westwood Theatre lands

Transit:

- Providing good access for TTC buses to Kipling Station
- Providing good access for Mississauga Transit / GO Transit buses to a new terminal at Kipling Station
- Providing good vehicular access for commuter parkers and passenger drop-off and pick-up at Kipling Station

Pedestrians:

- Maximizing pedestrian activity and linkages
- Providing good pedestrian network access to Kipling Station, from the Westwood Theatre site, and from Dundas Street
- Improving pedestrian connections between the east and west sides of Kipling Avenue
- Integrating systems of walkways and sidewalks

Cyclists:

- Improving cyclists connections through the area to connect to adjacent land uses
- Accommodating a bicycle facility along Bloor Street (west of Kipling Avenue) and along Dundas Street from Kipling Avenue to Dunbloor Road

Socio-Economic Impacts

- Minimizing adverse impacts on the surrounding community
- Minimizing adverse impacts on local businesses
- Minimizing adverse impacts on institutions

The resulting concepts and those from the previous studies were grouped into the following six families to facilitate analysis:

- Do Nothing
- Fully At-Grade
- Bloor-Dundas Connected with Grade Separation
- Bloor Connected with Grade Separation
- Bloor Not Connected with Grade Separation
- Roundabout and Ring Road

Each family of alternative solutions is described in further detail below:

1. **Do Nothing** – This alternative represented continuation of the status quo and would involve no changes or improvements to the existing Six Points Interchange. This alternative provides a baseline for comparison purposes.
2. **Fully At-Grade** – This alternative included options with all at-grade intersections. No grade separation of the road network would be involved.
3. **Bloor-Dundas Connected with Grade Separation** – This alternative included options with Bloor Street west of Kipling Avenue connected to Dundas Street east of Kipling Avenue, and Dundas Street west of Kipling Avenue connected to Bloor Street east of Kipling Avenue. The options would involve grade separation with Kipling Avenue.
4. **Bloor Connected with Grade Separation** – This alternative included options with Bloor Street east and west of Kipling Avenue directly connected. These options would involve grade separation with Kipling Avenue, and with Dundas Street.
5. **Bloor Not Connected with Grade Separation** – This alternative included options with Dundas Street east and west of Kipling Avenue directly connected, or modifications to existing conditions. All options involved no direct connection of Bloor Street east and west of Kipling Avenue, and grade separation with Kipling Avenue.
6. **Roundabout and Ring Road** – This alternative included options with a ring-road system, and no grade separation.

Illustrations of the 33 alternative solutions are provided in **Appendix B**.

4.2 Development of “Coarse” Criteria and Analysis of “Long List” of Alternative Solutions

A set of criteria, referred to as “coarse criteria”, were developed by the project team, including the Technical Advisory Committee, to provide a first-step elimination of some of the 33 “long list” of alternative solutions. From this, a “short list” of alternative solutions for more detailed evaluation was defined. The criteria were developed to meet the objectives of the Problem Statement. The “coarse criteria” used to evaluate the 33 alternative solutions were as follows:

- Release interchange lands for other uses
- “Normalize” intersections (i.e. intersect at-grade, meet typical geometric design criteria, pedestrian and cyclist accessibility, etc.)
- Arterial road continuity / connectivity (i.e. Dundas-Dundas connection, Bloor-Bloor connection, and Kipling-Kipling connection)
- No “above grade” grade separations
- No significant impacts on active development sites

The “long list” of alternative solutions was analysed based on the ability of each option to address the criteria. A summary with the reasons for screening out or retaining an alternative is provided in **Appendix B**.

Key reasons for screening out an alternative were as follows:

- No arterial road continuity / connectivity
- Impacts on active development sites
- Will result in, or require use of ‘above grade’, grade separations
- Intersection not “normalized”
- Does not make the best use of surplus interchange lands

Key reasons for retaining an alternative were as follows:

- Arterial road continuity / connectivity
- No impacts on active development sites
- No ‘above grade’, grade separations
- Intersections “normalized”

4.3 Identification of Preliminary “Short List” of Alternative Solutions

The analysis of the 33 “long list” of alternative solutions resulted in an initial “short list” of six alternatives, including the ‘Do-Nothing’, that were carried forward for further comparison. The identified “short list” of alternative solutions was defined more specifically as follows:

1. Do Nothing
2. Fully At-Grade, Dundas Street Loop
3. Fully At-Grade, Bloor Street Loop
4. Fully At-Grade, Kipling Avenue Loop
5. Dundas Street Underpass
6. Kipling Avenue Underpass

Each of the preliminary “short list” of alternative solutions is described in further detail below:

1. **Do Nothing** – This alternative represents continuation of the status quo and would involve no changes or improvements to the existing Six Points Interchange. This alternative provides a baseline for comparison purposes.
2. **Fully At-Grade, Dundas Street Loop** – This alternative includes all at-grade intersections, with Dundas Street realigned to the south through the Westwood Theatre lands, and Bloor Street connected through the Kipling Avenue intersection.
3. **Fully At-Grade, Bloor Street Loop** – This alternative includes all at-grade intersections and connecting Bloor Street east and west of Kipling Avenue via a new alignment through the Westwood Theatre lands. Dundas Street West and Kipling Avenue would be connected at-grade on their current alignments, resulting in a skewed intersection.
4. **Fully At-Grade, Kipling Avenue Loop** – This alternative includes all at-grade intersections. To achieve right-angled intersections, Kipling Avenue would be realigned to the east, and Bloor Street east and west of Kipling Avenue connected via a new alignment through the Westwood Theatre lands. Dundas Street would connect on its current alignment.
5. **Dundas Street Underpass** – This alternative entails grade-separating Dundas Street in an underpass to Kipling Avenue and to Bloor Street. Bloor Street would connect through the Kipling Avenue intersection.
6. **Kipling Avenue Underpass** – This alternative entails grade-separating Kipling Avenue in an underpass to Dundas Street and to Bloor Street. Bloor Street would connect through the Kipling Avenue intersection and Dundas Street would be realigned to the south to account for appropriate intersection angles.

Illustrations of these “short list” of alternative solutions are provided in **Appendix B** and were presented at the March 2004 Public Meeting and Open House.

4.4 Public Consultation

The public consultation process and public response during Phases 1 and 2 of the study process (Problem or Opportunity and Alternative Solutions) are summarized in this section of the report. Additional details on the consultation process, as well as a summary of the Public meeting, are contained in **Appendix E.3**.

4.4.1 Public Consultation Process

During Phases 1 and 2, the public consultation process involved the following activities:

- | | |
|---|---------------------------|
| ▪ Notification letters to contact list | February 16, 2004 |
| ▪ Direct mailout of notices to area residences and businesses | Week of February 18, 2004 |
| ▪ Newspaper advertisement (Etobicoke Guardian) of Public Meeting and Open House No. 1 | February 18 & 25, 2004 |
| ▪ First Public Meeting and Open House | March 2, 2004 |

Public Meeting and Open House No. 1 – March 2, 2004

The purpose of the first Public Meeting and Open House was to (1) present an overview of the Six Points Reconfiguration study, (2) present the selected “short list” of proposed alternative solutions, (3) present the preliminary criteria to be used to evaluate the solutions, and (4) outline the next steps for the project.

The public had the opportunity to review and provide comments on:

- purpose of the meeting
- the study area
- description of the study background and study purpose
- chart of the EA process
- description of the study consultation plan and schedule
- applicable City of Toronto Official Plan and Etobicoke Secondary Plan policies
- description of the needs and opportunities, and of the problem statement
- description of the “Long List” of Alternative Solutions
- “coarse screening” criteria for evaluation of the “Long List” of Alternative Solutions
- description of the “Short List” of Alternative Solutions
- criteria for evaluation of the “Short List” of Alternative Solutions, and
- next steps and contact information

The display panels that were part of the package the public received, and for which comments were sought, included the following:

- the long list of alternative solutions grouped in families and with reasons why they were screened out; the families included (1) 'Do Nothing', (2) Fully At-Grade, (3) Bloor-Dundas Connected with Grade Separation, (4) Bloor Connected with Grade Separation, (5) Bloor Not Connected with Grade Separation, and (6) Roundabout and Ring Road
- the short list of alternative solutions included (1) 'Do Nothing', (2) Fully At-Grade, Dundas Street Loop, (3) Fully At-Grade, Bloor Street Loop, (4) Fully At-Grade, Kipling Avenue Loop, (5) Dundas Street Underpass, and (6) Kipling Avenue Underpass

Handouts were provided to attendees who signed in. The handout material consisted of duplicates of most of the text panels, and the "Short List" of alternative solutions. A comment sheet was also provided to attendees to comment on the project and on the "Short List" of options. Attendees had a two-week period in which they could provide their comments to the City.

The meeting consisted of an open house where displays were available for review by the public, interest groups and agencies from 6:00 PM to 9:00 PM. Attendees were asked to sign-in and were invited to fill in comment forms that could be returned at the meeting or mailed to the City (addressed and stamped envelopes were available at the meeting). At 7:00 PM, a formal presentation was given, followed by a question and answer period where members of the public were invited to ask questions of the City and the consultant team.

Approximately 230 area residents attended. Representatives from the City, and iTRANS Consulting attended the Open House to discuss the details of the project and answer questions from the public. Councillor Milczyn, Ward 5, Etobicoke Lakeshore, was also in attendance. A summary of issues and questions is provided below in **Section 4.4.2**.

4.4.2 Public Concerns and Project Team Responses

The project team compiled comments and questions received from the public via comment sheets, verbal questions, letters, e-mail, telephone calls, or faxes. A summary of key comments is provided here with the project team's response.

Why were the interchange bridge structures rebuilt three years ago?

- At that time, there were no firm plans, environmental approvals or funding commitments to reconfigure the interchange.
- In the absence of such plans, approvals and funding commitments, a program to rehabilitate the existing bridge structures was initiated in 1996 in response to serious concerns regarding the physical condition of the bridges.
- All existing bridge structures were subsequently rehabilitated between 1998 and 2000.
- Notwithstanding this recent investment, the reconfiguration of the interchange remains a municipal objective.

Why can't we work with what we have and build a pedestrian walkway?

- The study will consider the “do-nothing” option (i.e. leave the existing structures in place).
- City will look at pedestrian issues including access to Kipling Subway Station.

How intense will the land use be when the interchange is reconfigured?

- The Etobicoke Centre Secondary Plan and associated Zoning By-law (No. 1088-2002) were approved by City Council in 2002. These instruments regulate land use within Etobicoke Centre, including the Westwood Theatre lands.
- The Westwood Theatre lands are zoned EC2 which permits mixed use development at a Floor Space Index (density) of 3.5 (e.g. the maximum permitted floor space is generally 3.5 times the lot area). Building heights range from 60 m to 72 m. The permitted land use and density apply to the Westwood Theatre today.

Will the EA recognize pollution from vehicles with proposed at-grade intersections?

- Environmental impacts will be reviewed, including air quality.

Why are we going back to at-grade intersections?

- At-grade intersections meet the objectives of the Secondary Plan; reconfiguring the Six Points intersection will remove a substantial barrier between lands east and west of Kipling Avenue, and a major obstacle to pedestrians and cyclists.
- Impacts to traffic flow is one of the criteria that is being examined; the “do nothing” option is an alternative that is being considered.
- Modeling will be done to assess potential traffic impacts on the whole area.

How much extra surplus land can you get out of this area?

- The amount of surplus land would depend on the option being considered.

Will the reconfiguration of the interchange have an impact on whether or not Mississauga Transit moves to Kipling Station from Islington Station?

- No, the relocation of Mississauga Transit bus operations from Islington Station to a new bus terminal at Kipling Station is a separate project that is not linked to the reconfiguration of the interchange.

Previous estimates for reconfiguring the interchange were in the range of \$20 to \$30 million. What is the ball-park figure now?

- Cost estimates have not been prepared for any of the conceptual alternatives. Cost estimates will be developed through the next phase of the study and will be available for the next public meeting.

Seventy-one comment forms were received from interested stakeholders. The following table summarizes the majority “likes and dislikes” indicated for each of the “Short List” of Alternatives.

Option	Likes	Dislikes
1. Do Nothing	Cost savings/least expensive Easy traffic flow	Confusing for drivers –overpasses act as barriers for connection to Islington Village west of Kipling Not pedestrian friendly/dangerous for pedestrians Inefficient use of land
2. Fully At-Grade, Dundas Street Loop	Best Option	Significant traffic flow concerns
3. Fully At-Grade, Bloor Street Loop	-	Significant traffic flow concerns/slower traffic
4. Fully At-Grade, Kipling Avenue Loop	-	Significant traffic flow concerns
5. Dundas Street Underpass	-	Too costly and complicated Significant traffic flow concerns/slower traffic
6. Kipling Avenue Underpass	Traffic could run more smoothly	Significant traffic flow concerns/lights will cause more traffic and pollution Too costly

Comments sheets, e-mails etc. received from the public are provided in **Appendix E.4**.

4.4.3 Agencies Consultation

As part of the consultation process, 32 agencies were contact by letter at the start of the study to apprise them of the project and its purpose. The letter also requested the agencies to provide the City with any information relevant to the study, identify any concerns and/or comments regarding the project, and identify whether they wished to provide further input to the study. A fax-back form was provided for the agency response.

Prior to the first Public Meeting and Open House, the 32 agencies were contacted by mail and provided with additional information pertaining to the project that would be presented at the Public Meeting. Comments on the project were again requested from the agencies. Only two agencies – Rogers Cable and the Toronto District School Board – indicated that they wished to be contacted in the future about the project. The Toronto and Region Conservation Authority indicated that they had no further interests in the study and that permits in accordance with Ontario Regulation 158 would not be required at the detailed design phase.

5. IDENTIFICATION AND EVALUATION OF THE “SHORT LIST” OF ALTERNATIVE SOLUTIONS AND ALTERNATIVE DESIGNS

This section of the report provides a discussion of the identification and detailed evaluation of the “short list” of alternative solutions and alternative designs.

5.1 Identification of Final “Short List” of Alternatives

As noted in **Section 4.3**, the analysis of the 33 “long list” of alternative solutions resulted in an initial “short list” of six alternative solutions, including the “do-nothing” for further comparison purposes.

In consideration of the cost of removing the existing interchange structures, the City also developed an option to maintain the existing structures and provide access improvements through the Westwood Theatre lands. This option was added to the “Short List”, and is referred to as the Modified Existing – Improved Westwood Lands Access.

A pre-screening of the preliminary “short list” was undertaken based upon the following criteria:

- Releasing developable interchange lands for other uses
- “Normalizing” intersections (i.e. meet typical geometric design criteria, pedestrian and cyclist accessibility, etc.)
- Avoiding significant adverse impacts on active development sites

After the preliminary review, three options – the Fully At-Grade Bloor Street Loop, the Fully At-Grade Kipling Avenue Loop, and the Kipling Avenue Underpass – were screened out from further evaluation for the following reasons:

Option	Reasons for Screening Out
Fully At-Grade Bloor Street Loop	<ul style="list-style-type: none"> ▪ Roadway geometry results in non-“typical/normal” intersection at Dundas and Kipling – limits available capacity in the road network with restricted left turn movements ▪ Resulting block shapes and sizes are not conducive to development and/or road network users
Fully At-Grade Kipling Avenue Loop	<ul style="list-style-type: none"> ▪ Significant impacts on existing homes and on active development site north of Bloor Street ▪ Resulting block shapes and sizes are not conducive to development and/or road network users ▪ Resulting roadway alignment geometry does not meet appropriate design criteria

- | | |
|--------------------------|--|
| Kipling Avenue Underpass | <ul style="list-style-type: none">▪ Significant impacts on several homes on Kipling Avenue north of Bloor Street▪ Resulting block shapes and sizes are not conducive to development and/or road network users |
|--------------------------|--|

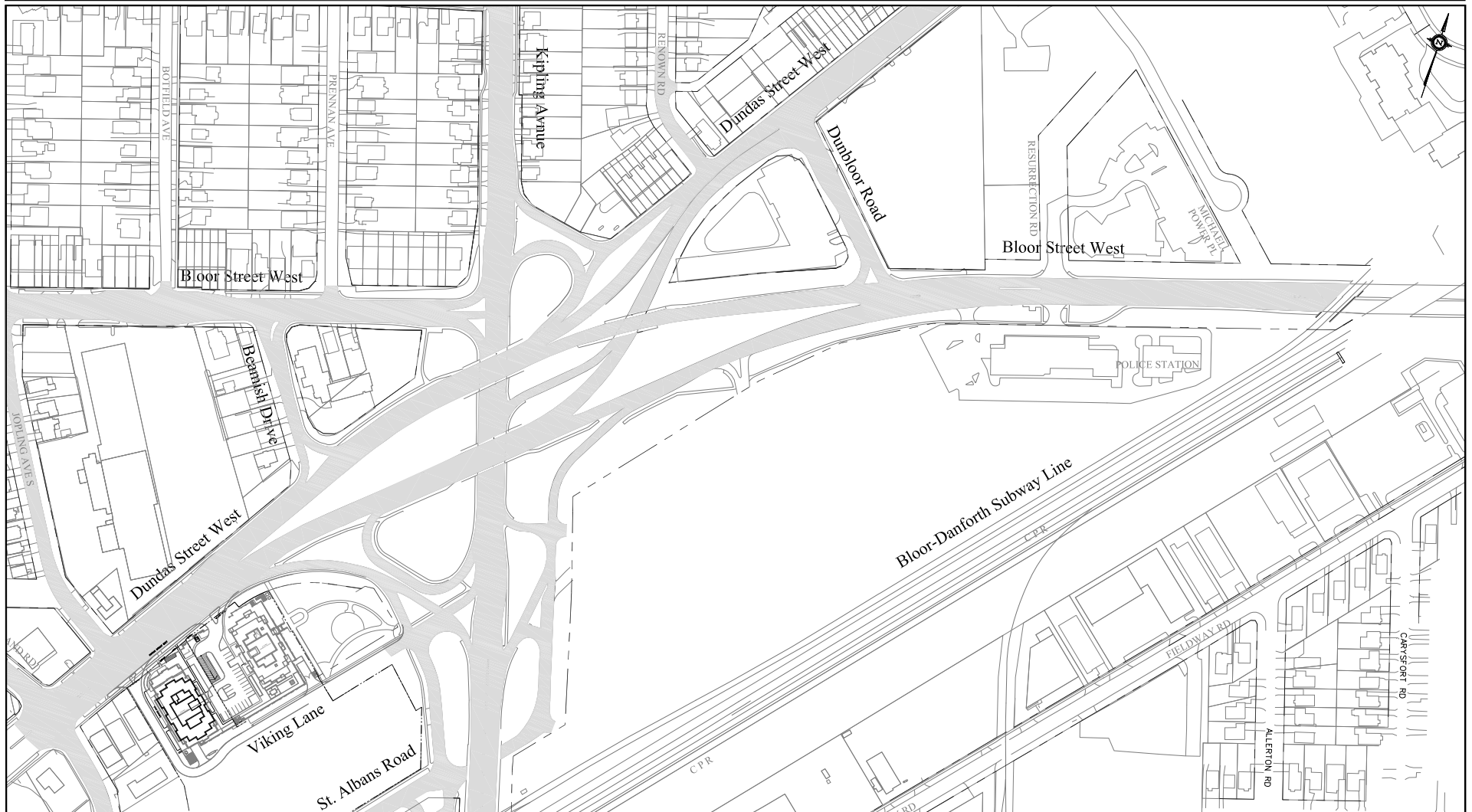
The following four alternative solutions were therefore carried forward for further refined design and detailed evaluation:

1. Do Nothing
2. Modified Existing – Improved Westwood Lands Access
3. Fully At-Grade, Dundas Street Loop
4. Dundas Street Underpass

Refined design concepts were developed for the four alternative solutions and these are described in further detail below:

1. **Do Nothing** – This alternative design concept represented continuation of the status quo and would involve no changes or improvements to the existing Six Points Interchange. This option provides a baseline for comparison purposes.
2. **Modified Existing – Improved Westwood Lands Access** – This alternative design concept represents continuation of existing conditions and would involve no significant changes to the existing Six Points Interchange, but would involve improved access to the Westwood Theatre lands.
3. **Fully At-Grade, Dundas Street Loop** – This alternative design concept includes all at-grade intersections, with Dundas Street realigned to the south through the Westwood Theatre lands, and Bloor Street connected through the Kipling Avenue intersection.
4. **Dundas Street Underpass** – This alternative design concept entails grade separating Dundas Street in an underpass to Kipling Avenue and to Bloor Street. Bloor Street would connect through the Kipling Avenue intersection at-grade.

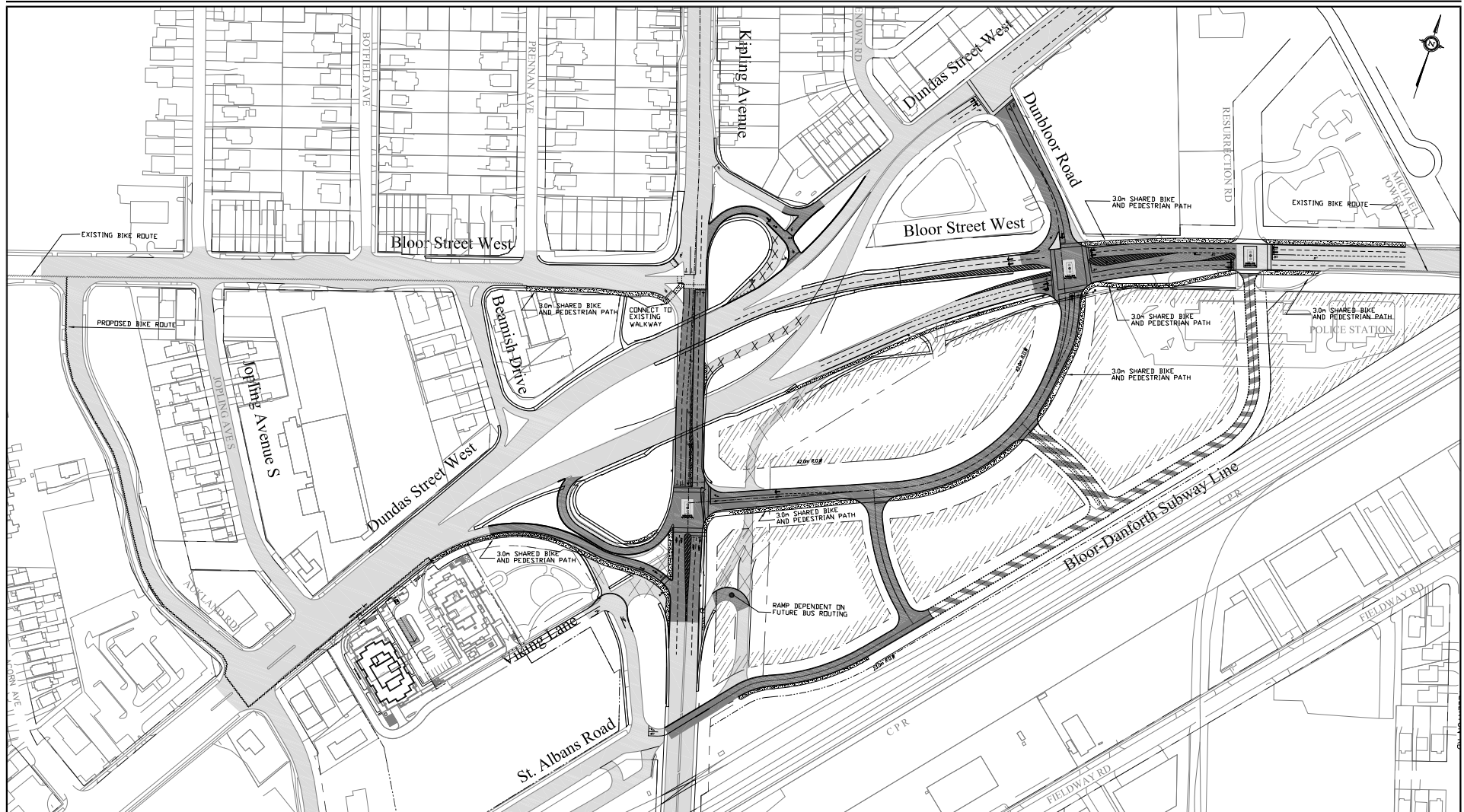
These design concepts are shown in **Exhibit 5-1, Exhibit 5-2, Exhibit 5-3, and Exhibit 5-4**, respectively.



Scale 1:2500
October 2007

Exhibit 5-1 Do Nothing (Existing Conditions)

iTRANS



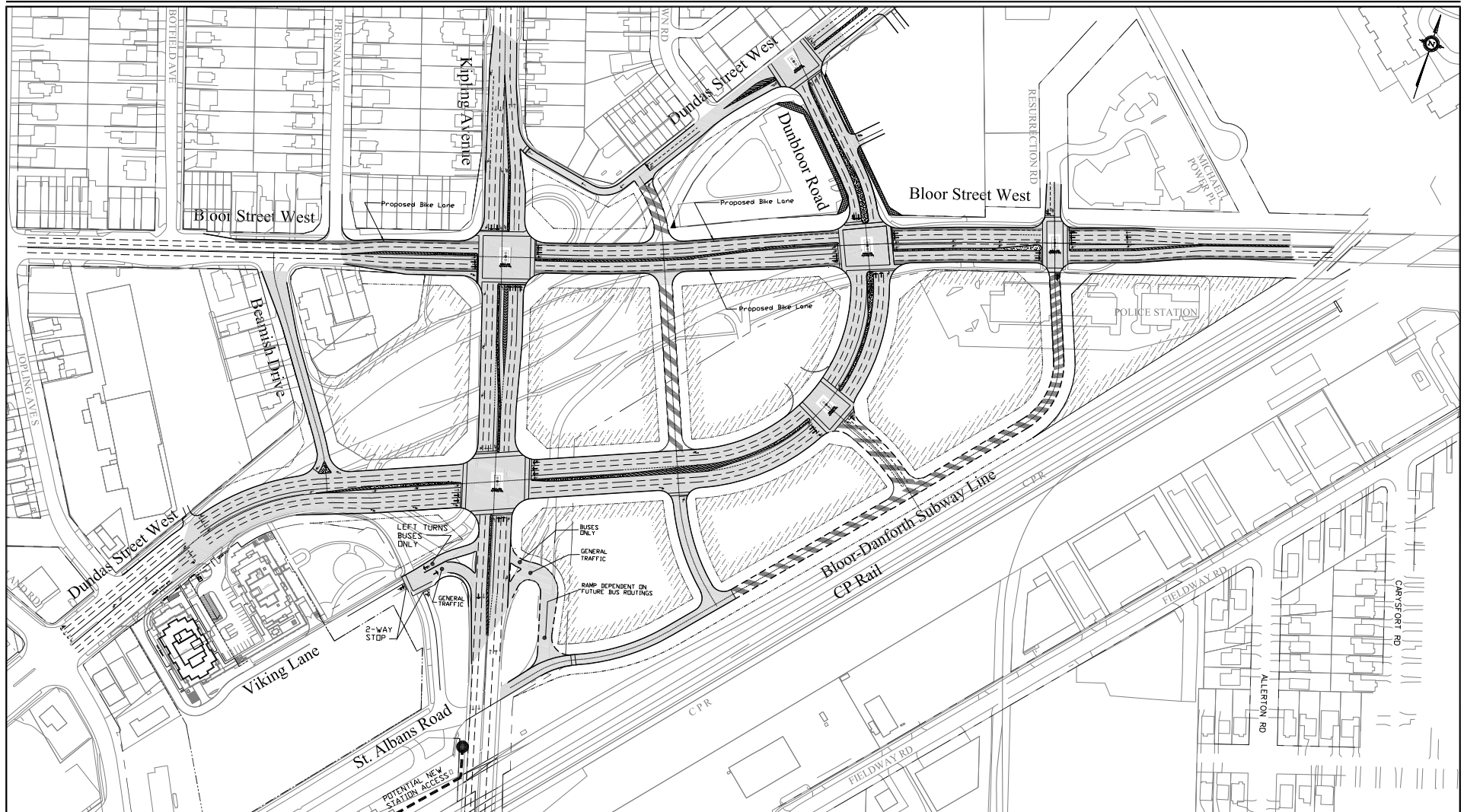
LEGEND

	PROPOSED ROAD NETWORK		SHARED BIKE AND PEDESTRIAN PATH
	EXISTING ROAD NETWORK		POTENTIAL LOCAL ROADS
	PROPOSED DEVELOPMENT BLOCKS		

Scale 1:2500
October 2007

Exhibit 5-2 Modified Existing - Improved Westwood Lands Access

iTRANS



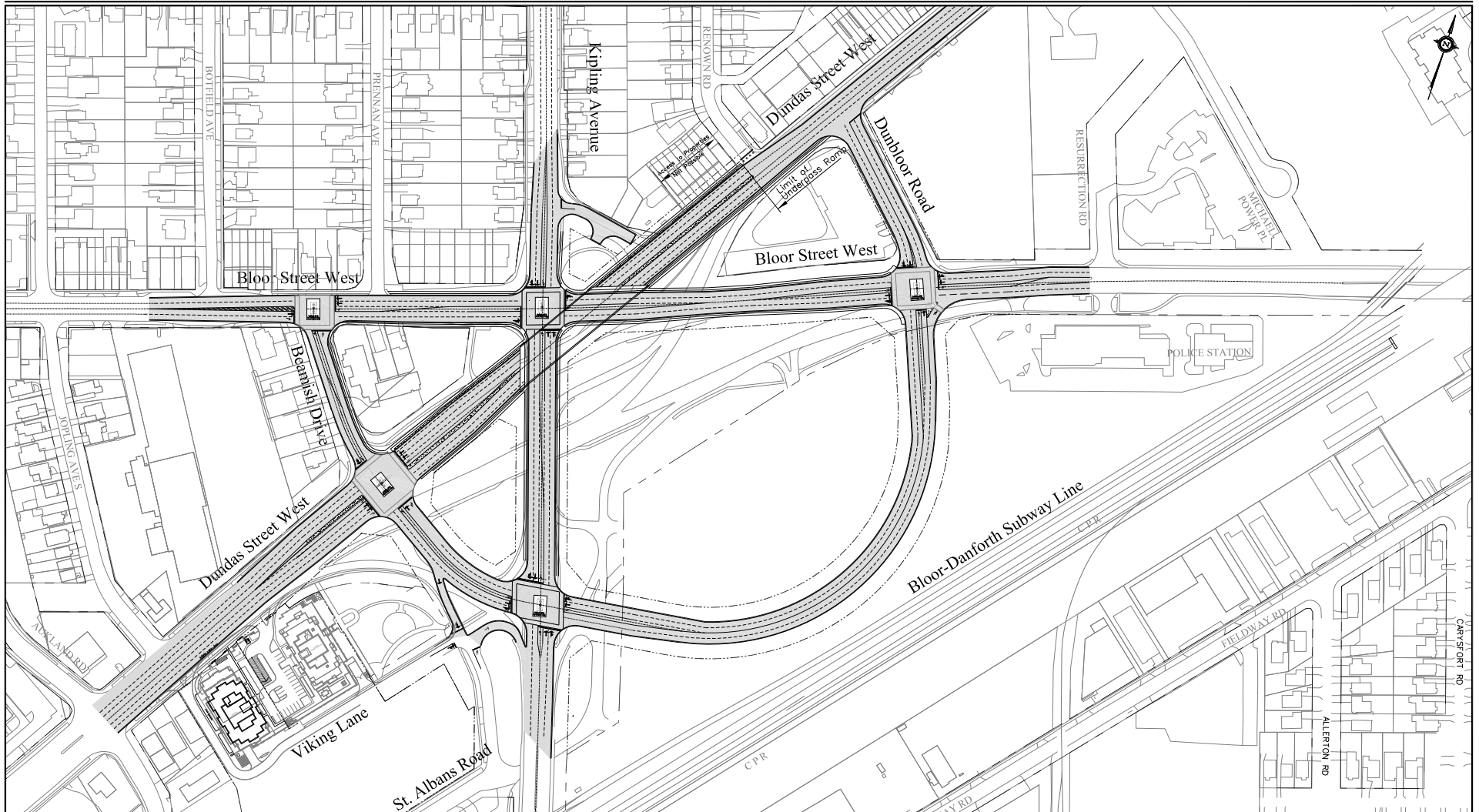
LEGEND

	PROPOSED ROAD NETWORK		PROPERTY REQUIRED
	POTENTIAL LOCAL ROADS		PROPOSED DEVELOPMENT BLOCKS

Scale 1:2500
October 2007

Exhibit 5-3 Fully At-Grade, Dundas Street Loop

iTRANS



LEGEND
 PROPOSED ROAD NETWORK

Scale 1:2500
 October 2007

Exhibit 5-4 **Dundas Street Underpass** ITRANS

5.2 Alternative Designs Assessment Criteria

Similar to the evaluation of the “long list” of alternative solutions, criteria for evaluating the alternative design options were also developed. The criteria were predominantly based on the study objectives outlined in **Section 1.6**, and the problem statement outlined in **Section 3.6**.

The criteria included impacts on the social and economic environments, transportation network, the natural environment, implementation, costs, and land value, as follows:

Land Use and Socio-Economic Impact

- Impacts on the surrounding residential community
- Impacts on surrounding businesses
- Six Points footprint size (road network area)
- Utilization of all lands adjacent to the Six Points
- Property impacts on active development sites
- Property acquisition needs
- Impacts on existing utilities / services

City Building

- Provide for a network of streets that divide larger sites into smaller blocks, and promotes a compact transit oriented street and block pattern
- Provide for the integration of surplus interchange lands into the existing urban fabric
- Achieve “typical / normal” street intersections
- Promote street-oriented buildings
- Promote pedestrian scale building-to-street relationships
- Eliminate / minimize grade separations
- Avoid “above grade” street grade separations
- Provide for a Centre with common infrastructure elements

Transportation - Transit

- Delay to surface transit operations
- Opportunity for enhanced transit service in the area, including the Westwood Theatre lands and adjacent sites
- Access to Kipling Station for surface transit vehicles
- Vehicular access to ancillary subway station facilities (i.e., passenger pick-up and drop-off and commuter parking)

Transportation - Traffic

- Achieve arterial road continuity/connectivity
- Traffic levels of service
- Vehicular access to the Westwood Theatre lands, and adjacent sites

Transportation - Pedestrians

- Connect / integrate new pedestrian facilities with the surrounding community and employment areas
- Pedestrian connections across arterial roads
- Pedestrian access to the Kipling Station, particularly to / from the Westwood Theatre lands
- Overall pedestrian environment / experience

Transportation - Cyclists

- Bicycle access to / from the Kipling Station
- Provides bicycle friendly streets
- Implements the City's Bikeway Network (i.e., connect / integrate new biking facilities with the surrounding community and employment areas, in the context of the Toronto Bike Plan)

Environmental Impacts

- Natural environment
- Air quality

Implementation

- Construction feasibility
- Staging opportunities

Costs

- Construction costs
- Maintenance costs





















Land Value

- Land Value

5.3 Evaluation of Alternative Designs

An evaluation of the four alternative design options was completed based on the criteria provided above and the ability of the alternative to address the problem statement, taking into account environmental impacts. **Table 3** below provides the evaluation of the alternative designs.





















Table 3: Evaluation of the Alternative Designs

FACTOR	Option 1	Indicator	Option 2	Indicator	Option 3	Indicator	Option 4	Indicator
	DO NOTHING (Existing) Represents continuation of existing conditions and would involve no changes to the existing Six Points interchange		MODIFIED EXISTING – IMPROVED WESTWOOD LANDS ACCESS Represents continuation of existing conditions and would involve no significant changes to the existing Six Points interchange, but would involve improved access to the Westwood Theatre lands		FULLY AT-GRADE DUNDAS STREET LOOP All intersections at-grade with Dundas Street realigned to the south		DUNDAS STREET UNDERPASS Intersection of Kipling Avenue and Bloor Street at-grade, with Dundas Street grade-separated (an underpass)	
LAND USE AND SOCIO-ECONOMIC:								
Impacts on the surrounding residential community	No impact to residential community		No direct impact to residential community (e.g. no homes displaced); however, potential minor inconvenience during construction		No direct impact to residential community (e.g. no homes displaced); however, potential significant inconvenience during construction		No direct impact to residential community (e.g. no homes displaced); however, access restrictions with the closure of Renown Road at Dundas Street, and potential significant inconvenience during construction	
Impacts on surrounding businesses	No impact to existing businesses		No direct impact to existing businesses or employment; no businesses displaced, however potential minor impacts during construction		No direct impact to existing businesses or employment; no businesses displaced, however potential impacts during construction		Impacts (severe access restrictions) to 9 businesses on the north side of Dundas Street just west of Dunbloor Road.	
Six Points footprint size (road network area)	The existing road network occupies approximately 25 acres of land.		The proposed road network will occupy approximately 27 acres of land.		The proposed road network will occupy approximately 23 acres of land.		The proposed road network will occupy approximately 23 acres of land.	
Utilization of all lands adjacent to the Six Points	Allows for approximately 14 acres of developable lands not including the Police Station lands, and approximately 17 acres of developable lands including the Police Station lands; however with very poor access to these lands. Potentially subject to future public roads requirement which would result in a reduction in the estimated areas.		Allows for approximately 10 acres of developable lands not including the Police Station lands, and approximately 13 acres of developable lands including the Police Station lands, with access roads through Westwood, but with some access restrictions to and from the existing area road network.		Allows for approximately 14 acres of developable lands not including the Police Station lands, and for approximately 15.5 acres of developable lands including the Police Station lands, with good access to and from the proposed area road network. Also yields approximately 1.75 acres of additional surplus land. The developability of these lands is enhanced by the grid road network, good vehicular accessibility to the arterial road network, and good pedestrian access to transit.		Allows for approximately 12.5 acres of developable lands, not including the Police Station lands, and for approximately 15.5 acres of developable lands including the Police Station lands. Access to and from Dundas to/from Kipling and Bloor will require circuitous routing as a result of grade separating Dundas Street. Also results in 'odd-shaped and sized' parcels of land that are not developable, approximately 1 acre.	
Property impacts on active development sites	No property impacts to active development sites		No property impacts to active development sites		Minor property impact on the east side of 2 Dunbloor, and on the west side of 5145 Dundas Street West.		Minor property impact on the east side of 2 Dunbloor, and severe property impact on the north side of 2 Dunbloor with retaining wall for underpass ramp.	

Legend



Table 3: Evaluation of the Alternative Designs

FACTOR	Option 1	Indicator	Option 2	Indicator	Option 3	Indicator	Option 4	Indicator
	DO NOTHING (Existing) Represents continuation of existing conditions and would involve no changes to the existing Six Points interchange		MODIFIED EXISTING – IMPROVED WESTWOOD LANDS ACCESS Represents continuation of existing conditions and would involve no significant changes to the existing Six Points interchange, but would involve improved access to the Westwood Theatre lands		FULLY AT-GRADE DUNDAS STREET LOOP All intersections at-grade with Dundas Street realigned to the south		DUNDAS STREET UNDERPASS Intersection of Kipling Avenue and Bloor Street at-grade, with Dundas Street grade-separated (an underpass)	
Property acquisition needs	No property required		No property required		1.5 m of property will be required on the east side, and 3.0 m of property will be required on the west side of Dunbloor. Property protected for a 26 m ROW on Dunbloor.		Property impacts to 9 businesses on the north side of Dundas Street just west of Dunbloor. Severe property impact on the north side of 2 Dunbloor. 1.5 m of property will be required on the east side, and 3.0 m of property will be required on the west side of Dunbloor. Property protected for a 26 m ROW on Dunbloor.	
Impacts on existing utilities/services	To accommodate development of the Westwood lands, major underground utility relocations are required, including Bell east of Kipling, and Enbridge east of Kipling through Westwood Theatre lands.		Above ground and underground utility relocations required. Above ground utility relocations required on Bloor and on Kipling. Major underground utility relocations required, including Bell east of Kipling, and Enbridge east of Kipling through Westwood Theatre lands.		Above ground and underground utility relocations required. Above ground utility relocations required on Bloor, Dundas and Kipling. Major underground utility relocations required, including Bell east of Kipling, and west of Dunbloor, and Enbridge east of Kipling through Westwood Theatre lands.		Above ground utility relocations will be required on Bloor, Dundas and Kipling. Major underground utility relocations required, including Bell facility across Dundas east of Beamish, east of Kipling and west of Dunbloor, underground Enbridge facility through Westwood Theatre lands, and underground stormwater facilities through interchange.	
CITY BUILDING:								
Provide for a network of streets that divide larger sites into smaller blocks, and promotes a compact transit oriented street and block pattern	The existing road pattern negates a normalized street and block pattern due to the grade separations and high-speed characteristics of the road network.		Does not provide for a significant network of streets that divide the larger site into more appropriately sized development blocks. The existing road pattern negates a normalized street and block pattern due to the grade separations and high-speed characteristics of the road network.		Provides significant flexibility and the ability to subdivide the large development blocks into blocks appropriate for an urban center.		Provides some flexibility and ability to subdivide the large development blocks into blocks appropriate for an urban center (not as flexible as Option 3).	
Provide for the integration of surplus interchange lands into the existing urban fabric	No surplus interchange lands, since there would be no change to existing conditions.		Since there would be no significant change to existing conditions, and no surplus interchange lands, this option does not create any opportunities to integrate surplus interchange lands into the existing urban fabric.		Provides for maximum flexibility in integrating available lands into the existing urban fabric, with all 'at-grade' intersections.		Provides some of the attributes of Option 3, but the underpass and the associated retaining walls reduce development block accessibility and access to the existing urban fabric.	
Achieve "typical/normal" street intersections	Existing Six Points interchange is not of a typical/normal street intersection configuration.		Existing Six Points interchange is not of a typical/normal street intersection configuration; however, normal street intersections created through Westwood Theatre lands.		Maximizes the ability to achieve typical/normal street intersections with all 'at-grade' intersections.		An improvement over Option 2, but does not maximize the ability to achieve typical/normal street intersections as well as Option 3.	

Legend



Table 3: Evaluation of the Alternative Designs

FACTOR	Option 1	Indicator	Option 2	Indicator	Option 3	Indicator	Option 4	Indicator
	DO NOTHING (Existing) Represents continuation of existing conditions and would involve no changes to the existing Six Points interchange		MODIFIED EXISTING – IMPROVED WESTWOOD LANDS ACCESS Represents continuation of existing conditions and would involve no significant changes to the existing Six Points interchange, but would involve improved access to the Westwood Theatre lands		FULLY AT-GRADE DUNDAS STREET LOOP All intersections at-grade with Dundas Street realigned to the south		DUNDAS STREET UNDERPASS Intersection of Kipling Avenue and Bloor Street at-grade, with Dundas Street grade-separated (an underpass)	
Promote street-oriented buildings	Existing road network configuration does not provide good opportunity for street-oriented buildings, and more so makes street-oriented buildings impossible in many locations.		Existing road network configuration does not provide good opportunity for street-oriented buildings; however, some opportunity for street-oriented buildings through Westwood Theatre lands.		Maximizes the opportunities for street-oriented buildings with all 'at-grade' intersections.		This option constrains opportunities to achieve street oriented buildings in the area of the underpass structure, but in other respects, is similar to Option 3.	
Promote pedestrian scale building-to-street relationships	Does not enhance pedestrian scale building-to-street relationships. These relationships are difficult to achieve with non-at-grade related road profiles.		Does not enhance pedestrian scale building-to-street relationships with non-at-grade related road profiles; however, some opportunity for pedestrian scale building-to-street relationships through Westwood Theatre lands.		Maximizes the potential to achieve pedestrian scaled building-to-street relationships with all 'at-grade' intersections.		An improvement over Option 2, but does not maximize the potential to achieve pedestrian scaled building-to-street relationships as well as Option 3.	
Eliminate/minimize grade separations	Three structures exist within the existing interchange, with Dundas Street / Bloor Street grade-separated.		Three structures exist within the existing interchange, which will remain with this option, with Dundas Street / Bloor Street grade-separated.		No grade separations with this option.		One grade separation (one structure) for Dundas Street	
Avoid "above grade" street grade separations	Option maintains 'above-grade' separations – Dundas over Kipling; Bloor over Dundas		Option maintains 'above-grade' separations – Dundas over Kipling; Bloor over Dundas		No grade separations with this option.		No above-grade grade separation with this option	
Provide for a Centre with common infrastructure elements	Can be enhanced with common infrastructure elements; is problematic however, given the non-at-grade related character of the road network.		Can be enhanced with common infrastructure elements; is problematic however, given the non-at-grade related character of the road network.		A flexible plan and the most urban of the 4 Options, with a road network of common elements that creates an Urban Centre environment.		Provides similar benefits to Option 3, but not to the same degree, given the not fully at-grade related character of the road network. Provides an enhancement to Option 2.	
TRANSPORTATION:								
Transit								
Delay to surface transit operations (Overall travel time delay)	Expected to have the least travel time delay for surface transit operations compared to all options, given the direct access to/from the north and south on Kipling Avenue - the highest percentage of buses use this route.		Travel time delays are expected to be higher than Option 1, given that there will be no direct access to/from the north and to the south on Kipling Avenue, and with delays experienced at at-grade intersections.		Travel time delays are expected to be higher than Option 1, given the potential for no direct access to the north and from the south on Kipling Avenue for buses, and with delays experienced at additional at-grade intersections. The travel times are expected to less than compared to Option 2 given direct access from the north and to south on Kipling Avenue is maintained.		Travel time delays are expected to be higher than Option 3, given the potential for no direct access to/from the north and south on Kipling Avenue for buses, and given the added circuitous routes with Option 4.	

Legend



















Table 3: Evaluation of the Alternative Designs

FACTOR	Option 1	Indicator	Option 2	Indicator	Option 3	Indicator	Option 4	Indicator
	DO NOTHING (Existing) Represents continuation of existing conditions and would involve no changes to the existing Six Points interchange		MODIFIED EXISTING – IMPROVED WESTWOOD LANDS ACCESS Represents continuation of existing conditions and would involve no significant changes to the existing Six Points interchange, but would involve improved access to the Westwood Theatre lands		FULLY AT-GRADE DUNDAS STREET LOOP All intersections at-grade with Dundas Street realigned to the south		DUKDAS STREET UNDERPASS Intersection of Kipling Avenue and Bloor Street at-grade, with Dundas Street grade-separated (an underpass)	
Opportunity for enhanced transit service in the area, including the Westwood Theatre lands and adjacent sites	Does not provide an opportunity for transit to service the Westwood Theatre lands, or provide for route continuity (e.g. across Bloor and Dundas Streets) through the area to provide direct service to adjacent land uses.		Provide an opportunity for transit to service the Westwood Theatre lands, however does not provide an opportunity for route continuity (e.g. across Bloor and Dundas Streets) through the area to provide direct service to adjacent land uses.		Provide an opportunity for transit to service the Westwood Theatre lands, and for route continuity (e.g. across Bloor and Dundas Streets) through the area to provide direct service to adjacent land uses.		Provide an opportunity for transit to service the Westwood Theatre lands, and for route continuity (e.g. across Bloor and Dundas Streets) through the area to provide direct service to adjacent land uses, however routes would be circuitous for transit	
Access to Kipling Subway Station for surface transit vehicles	Provides direct access to/from the north and south on Kipling Avenue, which provides good surface transit access to Kipling Subway Station.		Provides less direct access to Kipling Subway Station for surface transit vehicles, than Option 1.		Potentially provides less direct access to Kipling Subway Station for surface transit vehicles, than Option 1, but better than Option 2.		Potentially provides less direct access to Kipling Subway Station for surface transit vehicles, than Option 1, and similar to Option 2.	
Vehicular access to ancillary subway station facilities (i.e. passenger pick-up and drop-off and commuter parking)	Provide acceptable vehicular access to ancillary subway station facilities		Provide acceptable vehicular access to ancillary subway station facilities		Provide acceptable vehicular access to ancillary subway station facilities		Provide acceptable vehicular access to ancillary subway station facilities	
Traffic								
Achieve arterial road continuity/connectivity	Road network is connected, but discontinuity of Bloor Street and partial discontinuity of Dundas Street can cause driver confusion.		Road network is connected, but discontinuity of Bloor Street and partial discontinuity of Dundas Street can cause driver confusion.		Provides a 'normal' road network with 'at-grade' intersections, with arterial road continuity and connectivity – Bloor connected to Bloor; Dundas connected to Dundas, and Kipling connected to Kipling		Dundas Street grade separation disconnects Dundas and Kipling, and Dundas and Bloor, resulting in circuitous routing for key movements, and can cause driver confusion.	
Traffic levels of service	Maintains acceptable levels of service, since traffic is mainly free flow and is not frequently stopped through the interchange.		Provides for acceptable levels of service, since traffic is mainly free flow, however some traffic delay may be experienced at 'at-grade' intersections. This can be expected in an urban centre.		Provides for acceptable levels of service; however, traffic delays will be experienced with 'at-grade' intersections. This can be expected in an urban centre		Provides for acceptable levels of service; however, traffic delays will be experienced with 'at-grade' intersections. This Option is slightly worse than Option 3 with more closely spaced intersections in the Kipling, Bloor, Beamish road network area.	
Vehicular access to the Westwood Theatre lands, and adjacent sites	Poor access to Westwood Theatre lands with grade separations. No improvements over existing conditions.		Improved access to Westwood Theatre lands and adjacent sites compared to Option 1.		Significantly improved access to Westwood Theatre lands over existing conditions.		Improved access to Westwood Theatre lands over existing conditions, but not as well as Option 3, with no direct road network connections to Dundas Street	

Legend

















Table 3: Evaluation of the Alternative Designs

FACTOR	Option 1	Indicator	Option 2	Indicator	Option 3	Indicator	Option 4	Indicator
	DO NOTHING (Existing) Represents continuation of existing conditions and would involve no changes to the existing Six Points interchange		MODIFIED EXISTING – IMPROVED WESTWOOD LANDS ACCESS Represents continuation of existing conditions and would involve no significant changes to the existing Six Points interchange, but would involve improved access to the Westwood Theatre lands		FULLY AT-GRADE DUNDAS STREET LOOP All intersections at-grade with Dundas Street realigned to the south		DUNDAS STREET UNDERPASS Intersection of Kipling Avenue and Bloor Street at-grade, with Dundas Street grade-separated (an underpass)	
Pedestrians								
Connect/integrate new pedestrian facilities with the surrounding community and employment areas	Does not adequately provide for good pedestrian movements/connectivity, and does not provide for any significant opportunities for connecting new pedestrian facilities with the surrounding community and employment areas.		Does not adequately provide for good pedestrian movements/connectivity, but does provide some opportunities for connecting new pedestrian facilities with the surrounding community and employment areas.		Provides significant flexibility for connecting new pedestrian facilities with the surrounding community and employment areas.		Provides opportunity for connecting new pedestrian facilities with the surrounding community and employment areas, but not as well as Option 3, due to Dundas Street grade separation.	
Pedestrian connections across arterial roads	Existing road network is not conducive to pedestrian activities; poor opportunity for pedestrian movements across and between arterial roads.		Existing road network is not conducive to pedestrian activities; minor improvement for pedestrian movements across and between arterial roads, compared to Option 1.		Provides many opportunities for pedestrian movements across Bloor, Kipling and Dundas, with crossings at signalized intersections. Significantly improved over existing conditions, although some wide crossings may be encountered, which would not be ideal for pedestrians.		Provides for good pedestrian movements across Bloor and Kipling, and a limited section of Dundas, with crossings at signalized intersections. Significantly improved over existing conditions, but worse than Option 3 since the underpass is a barrier for direct pedestrian access to/from Dundas to/from Kipling and Bloor.	
Pedestrian access to the Kipling Subway Station, particularly to/from the Westwood Theatre lands	Existing road network configuration provides limited pedestrian routing to the Kipling subway station.		Proposed Westwood lands road network (new east-west access road north of the CPR tracks that would connect to St. Albans Road east of Kipling Avenue), provides some opportunity for pedestrian routing to the Kipling subway station, an improvement over Option 1.		Provides for good pedestrian access to the Kipling subway station, particularly to/from the Westwood lands, with signalized at-grade intersections, and new east-west access road north of the CPR tracks that would connect to St. Albans Road east of Kipling Avenue. Significantly improved over existing conditions – Option 1.		Provides for good pedestrian access to the Kipling subway station, particularly to/from the Westwood lands, with the signalized at-grade intersections, and new east-west access road north of the CPR tracks that would connect to St. Albans Road east of Kipling Avenue. Significantly improved over existing conditions – Option 1.	
Overall pedestrian environment / experience	Does not provide for an overall positive environment / experience for pedestrians, given the lack of continuous sidewalks, streetscaping, pedestrian scaled building-to-street relationships, etc.		The overall environment / experience for pedestrians may be improved over Option 1, with an additional at-grade crossing on Kipling Avenue, and additional access routes through Westwood Theatre lands. Provides an opportunity for continuous sidewalks, streetscaping, boulevards, etc.		Provides for an overall positive environment / experience for pedestrians with the opportunity to provide continuous sidewalks, streetscaping, boulevards, pedestrian scaled building-to-street relationships, lower travel speeds, etc.		Provides for an improved pedestrian environment / experience over Option 2, but not as well as Option 3, with the grade separation of Dundas Street.	

Legend



























Table 3: Evaluation of the Alternative Designs

FACTOR	Option 1	Indicator	Option 2	Indicator	Option 3	Indicator	Option 4	Indicator
	DO NOTHING (Existing) Represents continuation of existing conditions and would involve no changes to the existing Six Points interchange		MODIFIED EXISTING – IMPROVED WESTWOOD LANDS ACCESS Represents continuation of existing conditions and would involve no significant changes to the existing Six Points interchange, but would involve improved access to the Westwood Theatre lands		FULLY AT-GRADE DUNDAS STREET LOOP All intersections at-grade with Dundas Street realigned to the south		DUNDAS STREET UNDERPASS Intersection of Kipling Avenue and Bloor Street at-grade, with Dundas Street grade-separated (an underpass)	
Cyclists								
Bicycle access to/from the Kipling Subway Station	Existing road network configuration provides poor opportunity for cyclists for access to/from the Kipling subway station.		A new east-west access road through the Westwood lands that would connect to St. Albans Road will provide a connection across Kipling Avenue for access to/from the Kipling subway station. A signalized at-grade intersection on Kipling Avenue at the Westwood land access will also provide a connection across Kipling for cyclists. Both an improvement over existing conditions (Option 1).		Provides for good cyclist access to the Kipling subway station with the signalized at-grade intersections. Also, a new east-west access road through the Westwood lands that would connect to St. Albans Road will provide a connection across Kipling Avenue for access to/from the Kipling subway station. Significantly improved over existing conditions.		Provides for good cyclist access to the Kipling subway station with the signalized at-grade intersections. Also, a new east-west access road through the Westwood lands that would connect to St. Albans Road will provide a connection across Kipling Avenue for access to/from the Kipling subway station. Significantly improved over existing conditions.	
Provides bicycle friendly streets	Existing road network is not conducive to cyclist activities; poor opportunity for cyclist movements across and between arterial roads.		Existing road network is not conducive to cyclist activities; however some opportunity for cyclist movements across and between arterial roads with 2 new signalized intersections.		Provides for good cyclist movements on and across Bloor and Dundas, and across Kipling, with potential bicycle lanes/wider curb lanes and crossings at signalized intersections. Significantly improved over existing conditions.		Provides for cyclist movements on and across Bloor, and across Kipling and Dundas, with potential bicycle lanes, and crossings at signalized intersections.	
Implements the City's Bikeway Network (i.e. connect / integrate new biking facilities with the surrounding community and employment areas, in the context of the Toronto Bike Plan)	No opportunities for integrating 'new' bike facilities with the surrounding community and employment areas without changes to the road network, or without roadway widening which will not occur under a 'status quo' condition.		Provides some opportunity for integrating 'new' bike facilities through the interchange with a new road network through the Westwood lands; however no provision of bike lanes on Bloor through the interchange, as per the Toronto Bike Plan.		Provides the opportunity to integrate bicycle lanes on Bloor, as per the Toronto Bike Plan, and provides for bicycle friendly curb lanes on Dundas through the Westwood lands, and on Kipling.		Provides the opportunity to integrate bicycle lanes on Bloor, as per the Toronto Bike Plan, and could provide for bicycle friendly curb lanes on Kipling and on the road network through the Westwood lands. Dundas Street as an underpass is not a facility amenable to cycling.	
NATURAL ENVIRONMENT:								
Natural environment	No environmental impacts, since no changes to existing conditions; however minimal opportunity for enhanced green space		No anticipated environmental impacts, since no significant changes to existing conditions; some opportunity for enhanced green space.		Minimal environmental impacts, with loss of existing vegetation and potential stormwater quantity increase; however, these can be mitigated, and significant opportunities will be provided to enhance the urban streetscape of the Six Points area.		Minimal environmental impacts, with loss of existing vegetation and potential stormwater quantity increase; however, these can be mitigated, and significant opportunities will be provided to enhance the urban streetscape of the Six Points area.	

Legend

Table 3: Evaluation of the Alternative Designs

FACTOR	Option 1	Indicator	Option 2	Indicator	Option 3	Indicator	Option 4	Indicator
	DO NOTHING (Existing) Represents continuation of existing conditions and would involve no changes to the existing Six Points interchange		MODIFIED EXISTING – IMPROVED WESTWOOD LANDS ACCESS Represents continuation of existing conditions and would involve no significant changes to the existing Six Points interchange, but would involve improved access to the Westwood Theatre lands		FULLY AT-GRADE DUNDAS STREET LOOP All intersections at-grade with Dundas Street realigned to the south		DUNDAS STREET UNDERPASS Intersection of Kipling Avenue and Bloor Street at-grade, with Dundas Street grade-separated (an underpass)	
Air Quality	No anticipated improvement in existing air quality, given an anticipated increase in traffic volumes through the area.		Air quality anticipated to be comparable to Option 1.		Air quality anticipated to be comparable to Option 1.		Air quality anticipated to be comparable to Option 1.	
IMPLEMENTATION:								
Construction feasibility	No changes to the existing interchange.		No significant changes to the existing interchange. Feasible to construct		Feasible to construct with the appropriate phasing plan, and with full consideration of the differences in elevations/grades through the Six Points area.		Feasible to construct with the appropriate phasing plan, and with full consideration of the differences in elevations/grades through the Six Points area.	
Staging opportunities	No changes to the existing interchange.		No significant changes to the existing interchange. No significant construction staging required.		Provides for several feasible staging opportunities.		Provides for several feasible staging opportunities.	
COSTS:								
Construction costs	No construction cost		Estimated new construction capital cost of \$7.6 million for road works		Estimated new construction capital cost of \$36.1 million. Does not include minor property costs.		Estimated new construction capital costs of \$44.7 million. Does not include property costs.	
Maintenance costs	Maintenance costs of bridge rehabilitation, and general road works.		Maintenance costs of bridge rehabilitation, and general road works; expected to be higher than Option 1 due to the additional road network through Westwood lands		General road maintenance costs, expected to be less than Options 1 and 2.		General road maintenance costs, expected to be less than Options 1 and 2.	
LAND VALUE:								
Land Value	Lowest land value with very limited access.		Higher land value compared to Option 1, with some improvement to access of developable lands.		Best land value compared to all Options, with great opportunity for complete access to developable lands		Better land value than Options 1 and 2, with opportunity for access to developable lands, but less land value compared to Option 3, since the Dundas underpass presents a barrier for direct access to Dundas for these lands.	

Legend



Table 3: Evaluation of the Alternative Designs

FACTOR	Option 1	Indicator	Option 2	Indicator	Option 3	Indicator	Option 4	Indicator
	DO NOTHING (Existing) Represents continuation of existing conditions and would involve no changes to the existing Six Points interchange		MODIFIED EXISTING – IMPROVED WESTWOOD LANDS ACCESS Represents continuation of existing conditions and would involve no significant changes to the existing Six Points interchange, but would involve improved access to the Westwood Theatre lands		FULLY AT-GRADE DUNDAS STREET LOOP All intersections at-grade with Dundas Street realigned to the south		DUNDAS STREET UNDERPASS Intersection of Kipling Avenue and Bloor Street at-grade, with Dundas Street grade-separated (an underpass)	
RECOMMENDATION	NOT RECOMMENDED Does not meet the objectives of the Problem Statement, since no changes will occur to the existing conditions. Provision will not be made to serve adjacent urban land uses, or provide an opportunity to create appropriate development blocks, with improvement to the landscape and streetscape of the area. No improvement to pedestrian access to and from Kipling Station, the Westwood Theatre site, Bloor and Dundas Streets, and pedestrian connections between the east and west sides of Kipling Avenue. Also no improvement to cyclist connections through the area to connect to adjacent land uses. Maintains acceptable traffic levels of service. No impact to the residential community or existing businesses No construction costs for a new road network, but requires maintenance costs of the structures over time.		NOT RECOMMENDED Meets some of the objectives of the Problem Statement, with improved access to the Westwood Theatre site allowing for transportation service of these lands, and some accommodation made for pedestrians and cyclists. However, the proposed road network will not be simplified over existing conditions. Some surplus interchange lands will be freed up with removal of a few access ramps. Overall land development area comparable to all options. Provides for some opportunity to create appropriate development blocks, on the Westwood Theatre site. Maintains acceptable traffic levels of service. New construction cost significantly less than Options 3 and 4.		RECOMMENDED Meets the objectives of the Problem Statement with a simplified road network layout, and surplus interchange lands freed up for other uses. Maximizes the flexibility to have the best potential to serve adjacent urban land uses, and provides the most opportunities to create appropriate development blocks, with improvement to the landscape and streetscape of the area. Provides good pedestrian access to and from Kipling Station, the Westwood Theatre site, Bloor and Dundas Streets, and improve pedestrian connections between the east and west sides of Kipling Avenue. Improves cyclist connections through the area to connect to adjacent land uses. Provides for surface transit operations, to and from the Kipling Subway Station, and enhanced opportunity for transit service through the area, including the Westwood Theatre lands. It is anticipated that this option will provide the highest return on land value of all four options.		NOT RECOMMENDED Partially meets objectives of the Problem Statement with surplus interchange lands freed up for other uses, which will be an improvement over existing conditions. Though this option has attributes comparable to Option 3, it does not provide for the best grain of development blocks of a reasonable size that promotes flexibility in use and development pattern over time. The option also has access and connectivity constraints as a result of the underpass, and provides for less developable frontage. Overall traffic operations are not appreciably different than Option 3, but the implementation cost is significantly higher.	

Legend



A brief discussion of the results of the evaluation of the alternative designs is provided below:

Option 1: Do Nothing is the third ranked alternative, for the following reasons:

- Does not meet the objectives of the Problem Statement, since no changes will occur to the existing conditions. Thus urbanizing the Six Points area of the Etobicoke Centre to a level comparable to other City centres such as the North York City Centre would not be achieved.
- Limited opportunity to create appropriate development blocks, and improved streetscape.
- Very limited opportunity for improvement to pedestrian access to and from Kipling Station, the Westwood Theatre site, Bloor and Dundas Streets, and pedestrian connections between the east and west sides of Kipling Avenue.
- No improvement to cyclist connections through the area.
- Will require maintenance costs for the existing structures over time, however there are no construction costs for a new road network.

Option 2: Modified Existing – Improved Westwood Lands Access is the second ranked alternative for the following reasons:

- Meets some of the objectives of the Problem Statement, with improved access to the Westwood Theatre lands allowing for transportation service of these lands, and some accommodation made for pedestrians and cyclists. However, the proposed road network will not be simplified over existing conditions.
- Some surplus interchange lands will be freed up with removal of a few access ramps.
- Provides for some opportunity to create appropriate development blocks, on the Westwood Theatre site.
- Maintains acceptable traffic levels of service.
- Provides lower level of transit vehicular accessibility to Kipling Station than Option 3.
- New construction cost significantly less than Options 3 and 4.

Option 3: Fully At-Grade, Dundas Street Loop is the preferred alternative. This option addresses the Problem Statement by:

- Providing a simplified road network layout.
- Freeing up surplus interchange lands for other uses.
- Maximizing the flexibility to have the best potential to serve adjacent urban land uses, and provides the most opportunities to create appropriate development blocks, with improvements to the landscape and streetscape of the area.
- Providing good pedestrian access to and from Kipling Station, the Westwood Theatre site, Bloor and Dundas Streets, and improving pedestrian connections between the east and west sides of Kipling Avenue.
- Improving cyclist connections through the area to connect to adjacent land uses.
- Providing for surface transit operations, to and from the Kipling Subway Station, and enhanced opportunity for transit service through the area, including the Westwood Theatre lands.

It is anticipated that Option 3 will provide the highest return on land value of all four options. This option can be accommodated almost entirely within City-owned lands, and at a

significantly lower cost than Option 4. Utility relocations would be necessary and some property would be required.

Option 4: Dundas Street Underpass is the least preferred option for the following reasons:

- Partially meets the objectives of the Problem Statement with surplus interchange lands freed up for other uses, which will be an improvement over existing conditions.
- Does not provide for the best development blocks of a reasonable size that promotes flexibility in use and development pattern over time, though this option has attributes comparable to Option 3.
- Has access and connectivity constraints as a result of the underpass, and provides for less developable frontage than Option 3.
- Overall traffic operations are not appreciably different than Option 3.
- Implementation cost is approximately 30 % higher than Option 3.

5.4 Summary of Preferred Alternative Design

The preferred alternative design for the reconfiguration of the Six Points Interchange is **Option 3 – Fully At-Grade, Dundas Street Loop**. This option provides for all at-grade intersections with Dundas Street West, Kipling Avenue, and Bloor Street West, and removes the existing interchange structures. Bloor Street West is made continuous across Kipling Avenue. Dundas Street, east and west of Kipling Avenue will be connected via a new roadway through the Westwood Theatre lands, and via Dunbloor Road. The new grid of public roads will create new development parcels with good linkages to the surrounding established urban fabrics.

Overall, Option 3 would provide a balance amongst city building / urban design objectives traffic and transit operational requirements, accommodation for pedestrians and cyclists, protection of stable residential communities, impacts to the community and future developments, and cost, with minimal environmental impacts.

This option provides for:

- Street cross-sections that meet urban design objectives for the Etobicoke Centre and arterial road design standards in terms of pavement widths, lane widths, sidewalks, and boulevards.
- Better accommodation for pedestrians by providing an appropriate network of pedestrian sidewalks and linkages, including improved direct linkages between the Westwood Theatre lands and the Kipling Station.
- Improved accommodation for cyclists with a bicycle facility on Bloor Street West, and 4.0 m 'bike friendly' curb lanes on Dundas Street West, and potentially on Kipling Avenue.
- Good accommodation for transit vehicles with an accessible road network through the Westwood Theatre site, wider (4.0 m) curb lanes on Dundas Street West and on Kipling Avenue. The retention of the loop ramps on the west side of Kipling Avenue, and possibly the east side of Kipling Avenue (the latter being dependent on future bus routing

and development opportunities on the adjacent Westwood Theatre lands) provides convenient bus access to / from Kipling Station.

- Adequate number of lanes and the appropriate auxiliary lanes at intersections. The proposed number of lanes would provide adequate capacity for the roadway to accommodate traffic projections in the area.
- Improved streetscaping.

Adverse impacts include the need to acquire a relatively small amount of private property and the potential for traffic infiltration. A total of approximately 585 m² of property would be required from the east and west sides of Dunbloor Road and from the west triangular corner of 2 Dunbloor Road. Property impact details are provided in **Section 0**. Traffic infiltration in adjacent residential communities will be monitored and mitigating measures pursued should they be warranted.

5.5 Future Traffic Operations

Over time, local traffic generated by existing and future development in the Etobicoke Centre and surrounding area will gradually displace some existing through traffic in the Six Points area. The roads in the Six Points area will gradually change in function from a car-oriented design serving high speed, long distance commuter traffic, to an increasingly important role as a local multi-modal street network serving local traffic, transit, pedestrians, and cyclists.

The preferred alternative creates an urban street network that is more compatible with pedestrians and cyclists. For pedestrians, the grid network of the preferred alternative also provides for a grid of sidewalks, separating pedestrians from vehicular traffic, and the grid pattern also slows vehicular traffic to speeds more compatible with a pedestrian environment. The multiple signalized intersections will give pedestrians more opportunities to cross Dundas Street, Kipling Avenue, and Bloor Street. For cyclists, motorized vehicles will travel at speeds more compatible with cyclists, while the urban street network will provide more opportunities for cycling facilities.

5.5.1 Future Intersection Operations

With a preliminary preferred option identified, detailed traffic analyses were carried out to assess future operations of the proposed road network. A summary of the proposed development details, and trip generation and distribution assumptions are provided in **Appendix D.5**. The traffic forecast volumes are shown in **Exhibit 5-5** for the weekday AM and PM peak hours, for the preliminary preferred option. Future traffic volumes for the Modified Existing – Improved Westwood Lands Access option are provided in **Appendix D.6** for the weekday AM and PM peak hours.

Level of service, capacity, and queuing analysis were carried out for the key intersections within the reconfigured road network. The analyses were conducted using Synchro 6 Traffic Progression Software, which employs the 2000 Highway Capacity methodology for intersection analysis.

The analyses were carried out for both 4/5 through lanes and 6 through lanes on Kipling Avenue to determine the relative trade-off between capacity, the pedestrian environment (less pavement width to cross), and overall urban environment (less pavement area). The analyses indicated that 6 through lanes for Kipling Avenue would not provide enough additional roadway capacity to offset its disadvantages related to it being less pedestrian friendly and less desirable aesthetics. It was determined by the project team and the TAC that less pavement area which does not result in any significant trade-offs in roadway capacity is more desirable.

However, one of the goals of this study is to provide a reasonable balance between City building objectives, benefits for pedestrians and cyclists, good capacity for the road network and minimal impact on communities. The aim was to create an efficient road network that allows for major movements and as much capacity as possible for cars, transit and pedestrians.

The results of the intersection analysis are documented in **Appendix D.5. Exhibit 5-6** and **Exhibit 5-7** show the intersection summary results for the key movements for the weekday AM and PM peak hours, respectively. The results of the analyses of future conditions were used to refine the recommended road network, including the intersection configurations.

5.5.2 Future Queuing Analyses

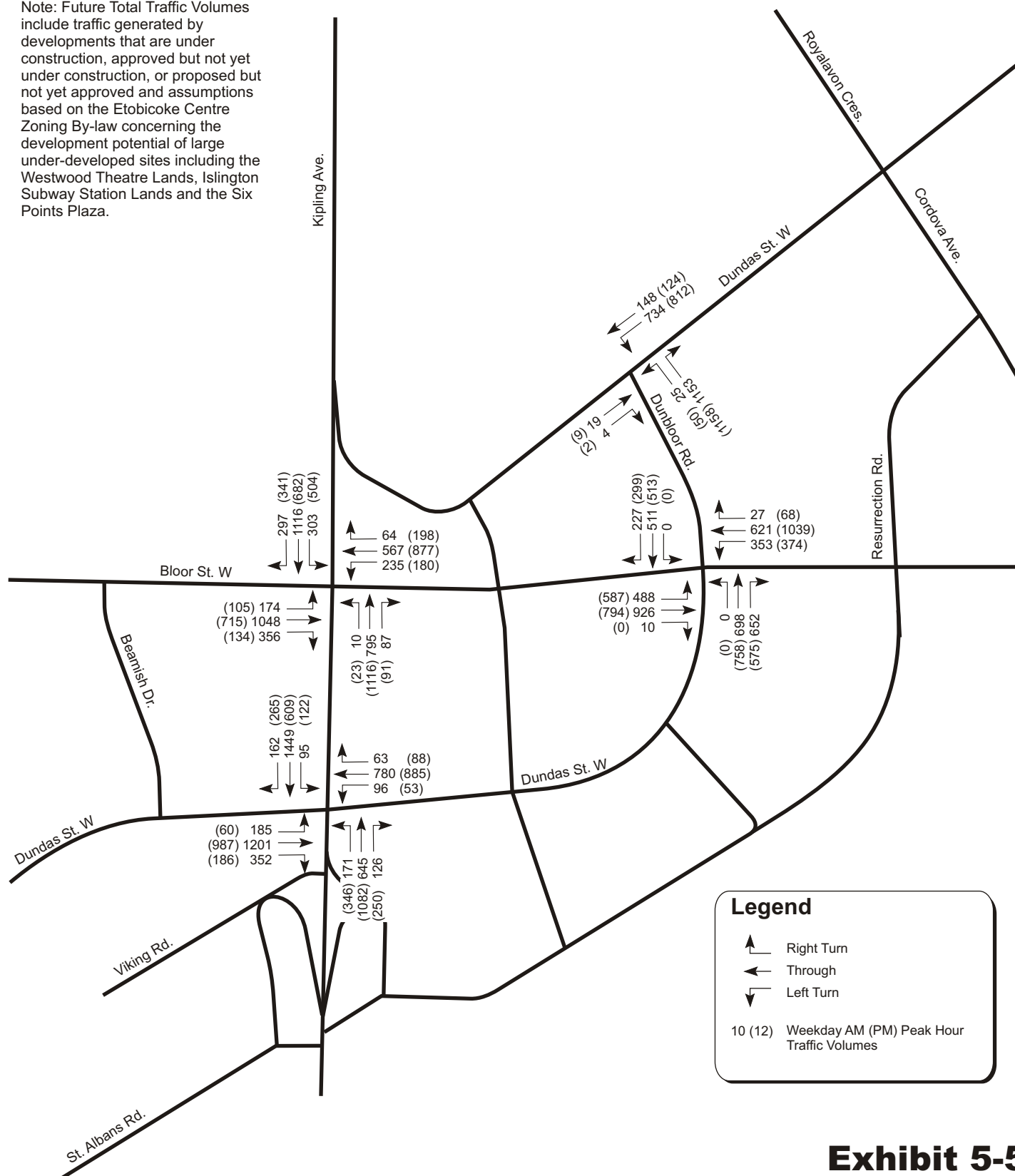
Queuing analysis was also undertaken for all movements of the signalized intersections within the preliminary preferred road network, using the Synchro 6 Software. The results of the queuing analysis are documented in **Appendix D.5**.

The queue analysis results indicate that the majority of the movements will have sufficient storage to accommodate the projected queue lengths. For the few movements where the 95th percentile queue length will exceed the available storage, the storage will be adequate to accommodate the 50th percentile queue length (i.e. the queue for a typical cycle).

Queue lengths longer than the available storage are a contributing factor to delays at an intersection, since a shortfall in available storage has the result of increasing the delay for vehicles. In practice, however, the 95th percentile queue length will rarely be exceeded, and the 50th percentile queue length will generally be satisfied, whereby traffic will wait about one signal cycle to get through the intersection. This will, for example, generally avoid having left turn queues spilling into the through lanes and affecting through lane capacity.

For the westbound left turn movement on Dundas Street West at Dunbloor Road, the resulting 95th percentile and 50th percentile queue are expected to exceed the available distance between the proposed 5145 Dundas Street West development driveway, which would be located on Dundas Street West approximately 75 m east of Dunbloor Road. However, should drivers choose to queue beyond the driveway, adequate storage would be available given the centre left turn lane on Dundas Street West, east of Dunbloor Road.

Note: Future Total Traffic Volumes include traffic generated by developments that are under construction, approved but not yet under construction, or proposed but not yet approved and assumptions based on the Etobicoke Centre Zoning By-law concerning the development potential of large under-developed sites including the Westwood Theatre Lands, Islington Subway Station Lands and the Six Points Plaza.



Not To Scale

October 2007

Exhibit 5-5

Future Total Traffic Volumes

Dundas Street Loop

iTRANS

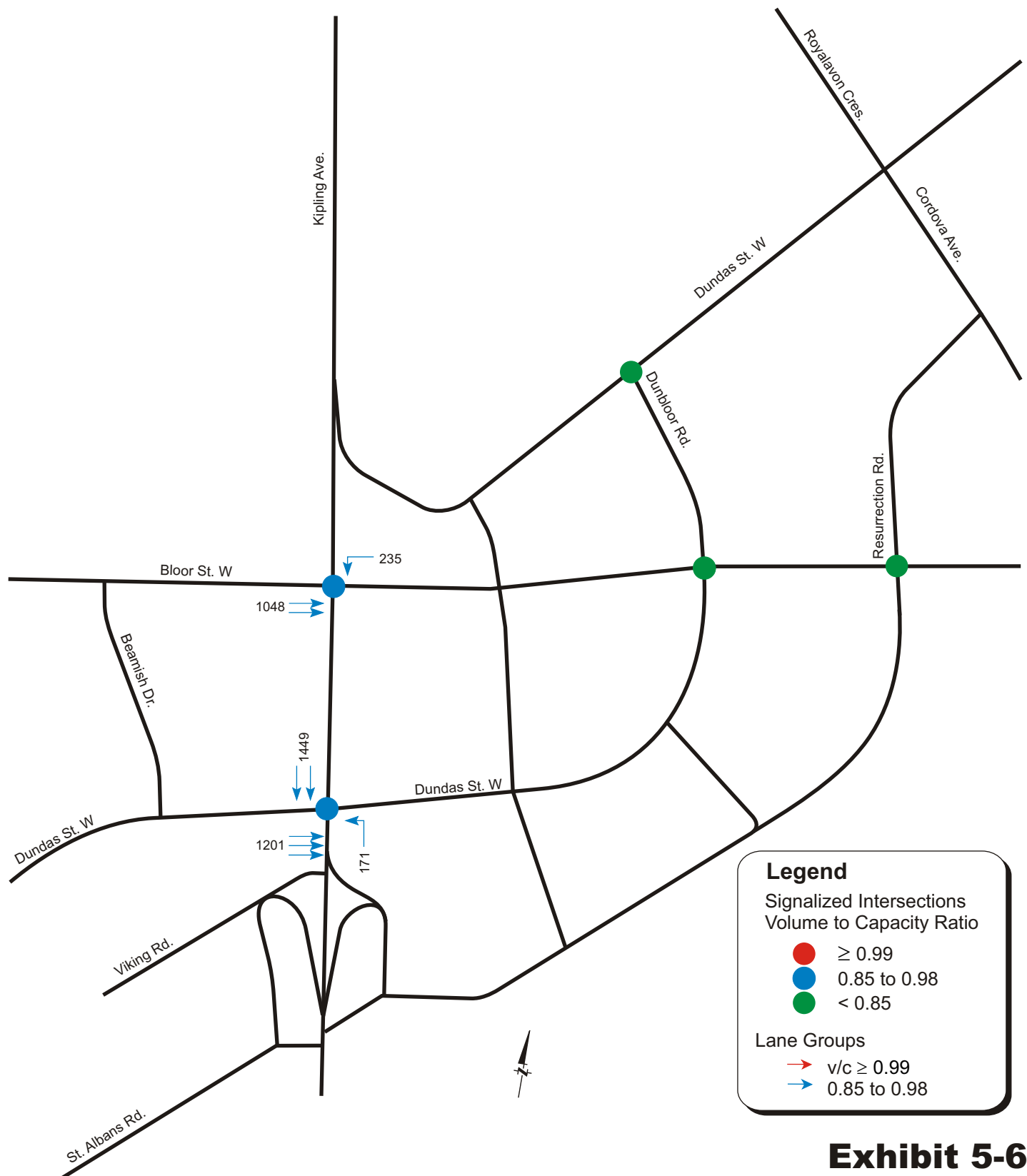


Exhibit 5-6

Future Intersection Operations (Key Movements)

AM Peak Hour

Not To Scale

October 2007

iTRANS

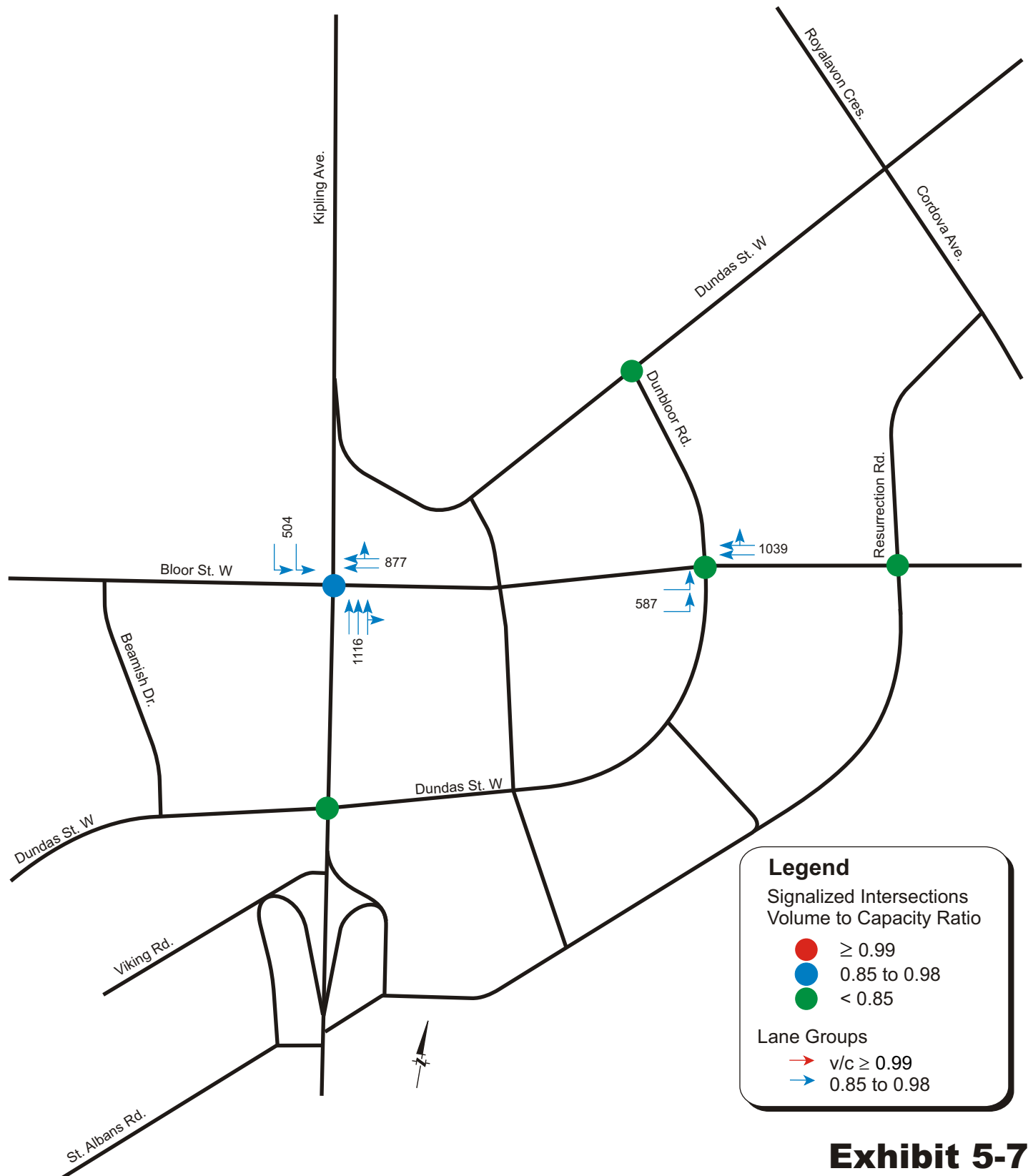


Exhibit 5-7

Future Intersection Operations (Key Movements)

PM Peak Hour

Not To Scale

October 2007

iTRANS

5.5.3 Traffic on Bloor Street

The public has expressed concern over traffic on Bloor Street west of the Six Points area.

With the Dundas Loop alternative, local traffic on Bloor Street between Jopling Avenue and Kipling Avenue is anticipated to increase. This increase in traffic is due to the redistribution of local traffic due to the connection of Bloor Street through Kipling Avenue. It is anticipated that the Bloor Street connection will not draw new through traffic to the Bloor Street corridor. Instead, the Bloor Street connection will provide an alternative route for traffic currently using the Bloor Street corridor and the Six Points Interchange. The change in future volumes on Bloor Street in the vicinity of Poplar Avenue and Auckland Road is not significant as summarized in **Table 4**.

Table 4: Future Traffic on Bloor Street (at Poplar Avenue)

Option	Segment	Link Volume	
		AM Peak Hour	PM Peak Hour
Option 1 – Do-Nothing	Bloor Street: West of Poplar Avenue	1,680	1,770
Option 3 – Dundas Loop	Bloor Street: West of Poplar Avenue	1,795	1,850

With the preferred alternative, traffic on Bloor Street in the vicinity of Poplar Avenue is estimated to increase by approximately 5% to 7% during the weekday AM and weekday PM peak hour, which is not significantly different than the Do Nothing option.

The analysis undertaken for the preferred alternative indicates that the travel times for traffic, both transit and vehicular, will increase compared to the Do-nothing option. While it is not anticipated that this increase will result in infiltration into residential neighbourhoods, it is not possible to predict the changes in travel patterns with absolute certainty, for this reason Transportation Services will commit to develop a monitoring program for traffic infiltration into residential neighbourhoods. The program would monitor infiltration prior to the reconfiguration, during the construction period, and post construction. In the event that infiltration is encountered, Transportation Services staff would work with area residents to develop appropriate mitigation measures. Potential mitigation measures could include changing signal timing to encourage traffic to use the appropriate roads, introduction of turn prohibitions into residential neighbourhoods, and traffic calming measures.

5.5.4 Summary of Future Traffic Conditions

Based on a review of the future traffic volumes, and future levels of service and queuing analyses, we conclude that:

- The preferred Dundas Street Loop option road network will provide adequate capacity to accommodate the projected traffic volumes. It is acknowledged that an at-grade solution would tend to increase traffic delays compared to the existing freeway style network. However, one of the goals of this study is to provide a reasonable balance between City building objectives, benefits for pedestrians and cyclists, good capacity for the road network and minimal impact on communities. The aim was to create an efficient road network that allows for major movements and as much capacity as possible for cars, transit and pedestrians. The preliminary preferred Dundas Street Loop option meets these goals.
- The majority of the movements will have sufficient storage to accommodate the projected queue lengths. A few movements will however have a longer 95th percentile queue length than the available storage, but the storage will be adequate to accommodate the 50th percentile queue length. In practice, the 95th percentile queue length will rarely be exceeded, and the 50th percentile queue length will generally be satisfied whereby traffic will wait about one signal cycle to get through the intersection. This will prevent capacity problems from compounding by having insufficient storage lengths.
- The 95th and 50th percentile queue lengths for the westbound left turn movement on Dundas Street West at Dunbloor Road is expected to exceed the available storage length, given the proposed driveway location for the 5145 Dundas Street West development. However, should drivers choose to queue beyond the driveway, adequate storage would be available given the centre left turn lane on Dundas Street West, east of Dunbloor Road.
- Based on the traffic forecast, the slower speeds and therefore less of a convenient route to travel through for commuters compared to today, road network constraints at the gateway intersections that will limit the volume of traffic that can enter the Six Points area, and the locations of the major attractions, it is not expected that there will be an adverse impact to traffic on Bloor Street West, west of Kipling Avenue, or on any of the other local roads within the surrounding area.
- Over time, local traffic generated by existing and future development in the Etobicoke Centre and surrounding area will gradually displace existing through traffic in the Six Points area.

5.6 Public Consultation

The public consultation process and public response during Phase 3 of the study process (Alternative Design Concepts and Preferred Solution) are summarized in this section of the report. Additional details on the consultation process, as well as a summary of the Public meeting, are contained in **Appendix E.3**.

5.6.1 Public Consultation Process

During Phase 3, the public consultation process involved the following activities:

- | | |
|---|----------------------|
| ▪ Notification letters to established contact list | June 6, 2006 |
| ▪ Direct mailout of notices to all area residences and businesses | Week of June 8, 2006 |
| ▪ Newspaper advertisement (Etobicoke Guardian) of Public Meeting and Open House No. 2 | June 7 & 9, 2006 |
| ▪ Second Public Meeting and Open House | June 20, 2006 |

Public Meeting and Open House No. 2 – June 20, 2006

The purpose of the second Public Meeting and Open House was to (1) provide an update of work completed since the first Public Meeting and Open House, (2) present the short list of proposed options for reconfiguring the interchange, (3) present the evaluation of these options, (4) present the preliminary preferred option, and (5) outline the next steps for the project.

The public had the opportunity to review and provide comments on the following text panels:

- Study area
- Study update and purpose of the meeting
- Description of the study background and study purpose
- Chart of the EA process
- Description of the study consultation plan and schedule
- Applicable City of Toronto Official Plan and Etobicoke Secondary Plan policies
- Summary of the needs and opportunities, and of the problem statement
- Description of the “Long List” and “Short List” of options
- Detailed criteria for evaluation of the alternative designs,
- Evaluation tables of the alternative designs, and identification of a preliminary preferred option
- General comments and responses from Public Meeting and Open House #1
- Description of the Preliminary preferred option
- Next steps and contact information

The graphics panels also available for comments included the following:

- The 4 Alternative Design options, namely (1) “Do Nothing”, (2) Modified Existing – Improved Westwood Lands Access, (3) Fully At-Grade – Dundas Street Loop, and (4) Dundas Street Underpass
- Functional design plan of the preliminary preferred Dundas Street Loop option, with proposed streetscaping
- Typical cross-sections for the preferred alternative

Handouts were provided to those who signed in. The handout material consisted of duplicates of most of the text panels, and a summarized version of the evaluation of the “Short List” of options. A comment sheet was also provided to attendees to comment on the project and on the preliminary preferred option. Attendees had a two-week period in which they could provide their comments to the City.

The meeting consisted of an open house where displays were available for review by the public, interest groups and agencies from 6:30 PM to 9:00 PM. Attendees were asked to sign-in and were invited to fill in comment forms that could be returned at the meeting or mailed to the City (addressed and stamped envelopes were available at the meeting). At 7:00 PM, a formal presentation was given, followed by a question and answer period where members of the public were invited to ask questions of the City and the consultant team.

Approximately 155 area residents signed the optional sign-in sheets and approximately 180 people attended. Representatives from the City, and iTRANS Consulting attended the Open House to discuss the details of the project and answer questions of the public. Councillor Milczyn – Ward 5, Etobicoke Lakeshore, was also in attendance. A summary of issues and questions is provided in **Section 5.6.2**.

5.6.2 Public Concerns and Project Team Responses

The project team compiled comments and questions received from the public via comment sheets, verbal questions, letters, e-mail, telephone calls, or faxes. A summary of key comments is provided here with the project team's responses.

I am concerned about traffic. What is your objective with the Dundas Street Loop option?

- The objective is to: eliminate the existing configuration of the Six Points interchange which acts as a physical and psychological barrier between existing and planned communities east and west of Kipling Avenue; improve conditions for both pedestrians and cyclists through the interchange and its environs; improve pedestrian and vehicular access to lands adjacent to the interchange, particularly the Westwood Theatre lands; improve pedestrian connections to Kipling Subway Station thereby maximizing the benefit of the substantial past investment in public transit infrastructure thereby reducing auto dependence; and to generally improve the quality of the streetscape and public realm.

What kind of consideration has been given to the area north of Bloor along Kipling Avenue? It is primarily residential. The proposal affects commercial, industrial and community traffic. Kipling is already busy, has there been any consideration to address that?

- We have given consideration to traffic coming through this area since that was a major concern of the City. We studied a broader area and found that the existing configuration with no signals and a freeway style ramp encouraged traffic from outside to travel through this area. The Dundas Street Loop option would discourage through traffic since it has slower speeds and will not be as convenient for through traffic in the future.

Bloor Street is commercial until it hits Six Points and then it becomes a residential street. Your proposal forces westbound traffic to make an awkward left hand turn on Bloor in order to get onto Dundas Street. This may force more traffic onto Bloor Street.

- It is true that the discontinuity today does discourage traffic. West of Kipling Avenue, Bloor Street is generally lined with commercial and institutional uses between Kipling Avenue and Auckland Road. Bloor does not take on a residential character until you are a block west of Auckland Road. Westbound traffic on Bloor Street wishing to turn left onto Dundas Street can do so at Dundas Street (where the new alignment of Dundas Street through the Westwood Theatre lands intersects with Bloor Street at Dunbloor Road), at Kipling Avenue, and at Auckland Road.
- In the end, based on the traffic forecast, the City does not expect any significant change of traffic on Bloor Street.

Traffic will not reduce magically; it will reroute onto adjacent streets and be a disaster for people in the neighbourhood.

- The City recognized going into the study that traffic in surrounding neighbourhoods was a major concern of residents. It is for that reason that we tried to make both the intersections and the road network as efficient as possible. We cannot tell you that there won't be more delay or congestion, we agree that there will be. However, we want a

solution that provides a reasonable balance between City building objectives, benefits for pedestrians and cyclists, good capacity for road networks and minimal impact on communities.

How are you trying to minimize the impact?

- By creating an efficient road network that allows for major vehicular movements.

What is the plan for Beamish Avenue?

- Beamish Avenue would continue to connect Bloor Street with Dundas Street and would operate in the same manner as it does today.

Assuming the plan is accepted, there are 6 parcels of land; what is proposed for those parcels?

- The development parcels that are created through the reconfiguration of the interchange are comprised of the existing Westwood Theatre lands and certain lands associated with the existing interchange that would be surplus to the reconfigured road network.
- Council has not yet taken any position on the future use of the Westwood Theatre lands or any surplus interchange lands. Such decisions will be made outside of the scope of this study. Public uses for the lands will be evaluated.
- The Etobicoke Centre Secondary Plan and associated Zoning By-law (No. 1088-2002) were approved by City Council in 2002. These instruments regulate land use within Etobicoke Centre, including the Westwood Theatre lands.
- The Westwood Theatre lands are zoned EC2 which permits mixed use development at a Floor Space Index (density) of 3.5 (e.g. the maximum permitted floor space is generally 3.5 times the lot area). Building heights range from 60 m to 72 m. The permitted land use and density apply to the Westwood Theatre lands today.
- Permitted uses include residential, commercial, institutional and municipal uses including parks, community and recreational facilities, etc.

There has been mention that the Westwood Theatre lands may be used for City purposes.

Why build something now if the City has not permanently decided if they want to put the land up for sale for private use or to retain it?

- The Westwood theatre lands are underutilized and largely vacant today. The site is large and can accommodate a range of potential public and private uses.
- Whether the future use of the lands is for public or private purposes, the interchange requires reconfiguration to: improve both vehicular and pedestrian access to maximize future development opportunities; eliminating a barrier between existing and developing communities east and west of the Kipling Avenue; improving pedestrian connections through the interchange to adjacent lands, particularly linkages to the Kipling Subway Station so that the benefit of past investment in public transit can be maximized; and providing a safer environment for both pedestrians and cyclists.

Is there any intention to move the existing Etobicoke Civic Centre at 399 The West Mall to the Westwood Theatre lands?

- The City is considering two locations within Etobicoke Centre for relocating the existing Civic Centre. One is the Westwood Theatre lands and the other is at the northwest corner of Islington Avenue and Bloor Street. These options are being studied by the City's Facilities and Real Estate Division through an initiative known as the West District Project and associated West District Design Initiative.
- A preferred location has not yet been identified. The proposed reconfiguration of the Six Points Interchange does not preclude either option.

My concern is about the Mississauga buses. Right now, they're using Islington subway station and you're planning to put them at Kipling Station. How will we manage all these extra buses along with our own TTC fleet?

- The TTC is currently studying options to relocate Mississauga Transit to Kipling Station.
- The relocation will result in a reduction in the number of Mississauga Transit buses that would pass through the Six Points Interchange.
- The traffic impacts of the operation of the new Mississauga Transit terminal is being undertaken in a separate study by the TTC.
- The proposed reconfiguration of the Six Points Interchange will not preclude options that are being considered for the new Mississauga Transit bus terminal.
- With the proposed reconfiguration of the Six Points Interchange, TTC buses will continue to access Kipling Station in the same manner they do today.

On page 15 of the handout, the same score for natural environment is given to all four options. However, the Dundas Street Loop would cause increased idling thus generating carbon dioxide and hydrocarbon exhaust. Why was there no difference in the scoring?

- An at-grade separation with the Dundas option would tend to increase delays for traffic and we acknowledge that. On the other hand, part of the purpose of this option is City building and to create a more vibrant urban environment where people are encouraged to take transit. The proximity of Kipling Station also encourages non-auto travel. Therefore, these environmental positives balance out the disadvantages.

What is the estimated cost of the Dundas Loop option?

- The cost is estimated to be approximately \$35,000,000.

Should this project be made part of the 2008 capital budget, how long will construction take?

- Two to three years.

Comments sheets, e-mails etc. received from the public are provided in **Appendix E.4**.

5.6.3 Agencies Consultation

Prior to the second Public Meeting, both Rogers Cable and the Toronto District School Board (TDSB), the two agencies that indicated they wished to continue to be informed of the study, were provided with additional project information that would be presented at the Public Meeting. As was done for the first Public Meeting, comments on the project were sought from the agencies. No additional comments were provided by Rogers Cable or TDSB.

5.6.4 Community Consultation Sessions

In April and May of 2007, the Ward Councillor held three community consultation sessions regarding the potential future use of the Westwood Theatre lands and the reconfiguration of the Six Points Interchange. These sessions were not part of the Municipal Class EA public consultation requirements.

The first session dealt with the Westwood Theatre lands and took place on April 28, 2007. The purpose of the session was to inform the community of the results of a design charrette held in conjunction with the West District Design Initiative in November, 2006, and to seek feedback. The second session was held on May 15, 2007 and dealt exclusively with questions concerning the proposed Six Points Interchange reconfiguration. The third session, held on May 30, 2007, provided an opportunity for the public to ask questions about both the proposed Six Points Interchange and the potential future use of the Westwood Theatre lands in one forum.

A summary of the May 15, 2007 and May 30, 2007 sessions are contained in **Appendix E.3**.

5.6.5 Community Consultation Process

The Councillor's community consultation process involved the following activities:

- | | |
|--|---------------------------|
| ▪ Newspaper Advertisement (Etobicoke Guardian) of the community consultation sessions | April 18 & April 20, 2007 |
| ▪ The Westwood Theatre Lands Meeting | April 28, 2007 |
| ▪ Six Points Interchange Reconfiguration meeting | May 15, 2007 |
| ▪ Potential Westwood Theatre lands land use and Six Points Interchange Reconfiguration meeting | May 30, 2007 |

6. SELECTED DESIGN CONCEPT, ENVIRONMENTAL EFFECT AND MITIGATION MEASURES

Inherent in the consideration of potential changes to existing conditions associated with the reconfiguration of the Six Points Interchange is the significance of any impacts and the extent to which these impacts may be mitigated. This section describes the engineering features and the anticipated environmental effects and mitigation measures for the relevant components of the natural, socio-economic and cultural environments for the preferred design concept identified in **Section 5**.

6.1 Recommended Design Concept

This section describes the engineering features of the recommended design concept for the reconfiguration of the Six Points Interchange. The preliminary design profile and typical cross-sections are included in **Appendix A**.

The preferred design for the reconfiguration of the Six Points Interchange, developed and refined considering public input, includes the following:

- Dundas Street West, west of Kipling Avenue connected to Dundas Street West east of Kipling Avenue via a new roadway through the Westwood Theatre lands, and via Dunbloor Road.
- The extension of Bloor Street easterly, east of Kipling Avenue to connect to Bloor Street at Dunbloor Road.
- A widening of Kipling Avenue to 4/5 through lanes from just south of Viking Lane to approximately 165 m north of Bloor Street, within a 42 m right-of-way; 4.0 m curb lanes are proposed with exclusive turning lanes at the appropriate intersections.
- A 6-lane cross-section with exclusive left turn lanes at the appropriate intersections on Dundas Street through the Westwood Theatre lands matching the existing Dundas Street cross-section west of Kipling Avenue to Bloor Street, within a 42 m right-of-way; 4.0 m curb lanes are proposed as 'bike friendly' lanes and to accommodate transit vehicles.
- A 4-lane cross-section on Bloor Street, with a 1.8 m bike lane in each direction, and the potential for on-street parking, within a 42 m right-of-way.
- A 4-lane cross-section on Dunbloor Road, within a 26 m right-of-way.
- Retaining the existing loop ramps between St. Albans Road and Viking Road, with some movements potentially restricted to transit vehicles only.
- A new 2-lane roadway connection from St. Albans Road through the Westwood Theatre lands to Dundas Street.
- A potential east-west local road (paralleling the CP rail corridor) from approximately 130 m east of the service ramps on the east side of Kipling Avenue to the intersection of Bloor Street / Resurrection Road.
- A potential north-south local road connection from Dundas Street West continuing to north of Bloor Street to service the development blocks.

- A potential north-south local road between the potential local road (paralleling the CP rail corridor) to Dundas Street West. This potential north-south local road may be located approximately 240 m east of the Dundas Street / Kipling Avenue intersection.
- Overall improved streetscaping by providing trees on both sides of the roadways throughout the study corridors and opportunities for generous sidewalk and boulevard treatments. Other opportunities for additional streetscaping, such as median planting, could be explored during detailed design.

The preferred design concept is illustrated in **Exhibit 6-1**. Details regarding the components of the recommended design concept are contained in the following sections.

6.1.1 Roadway Function / Urban Design Characteristics

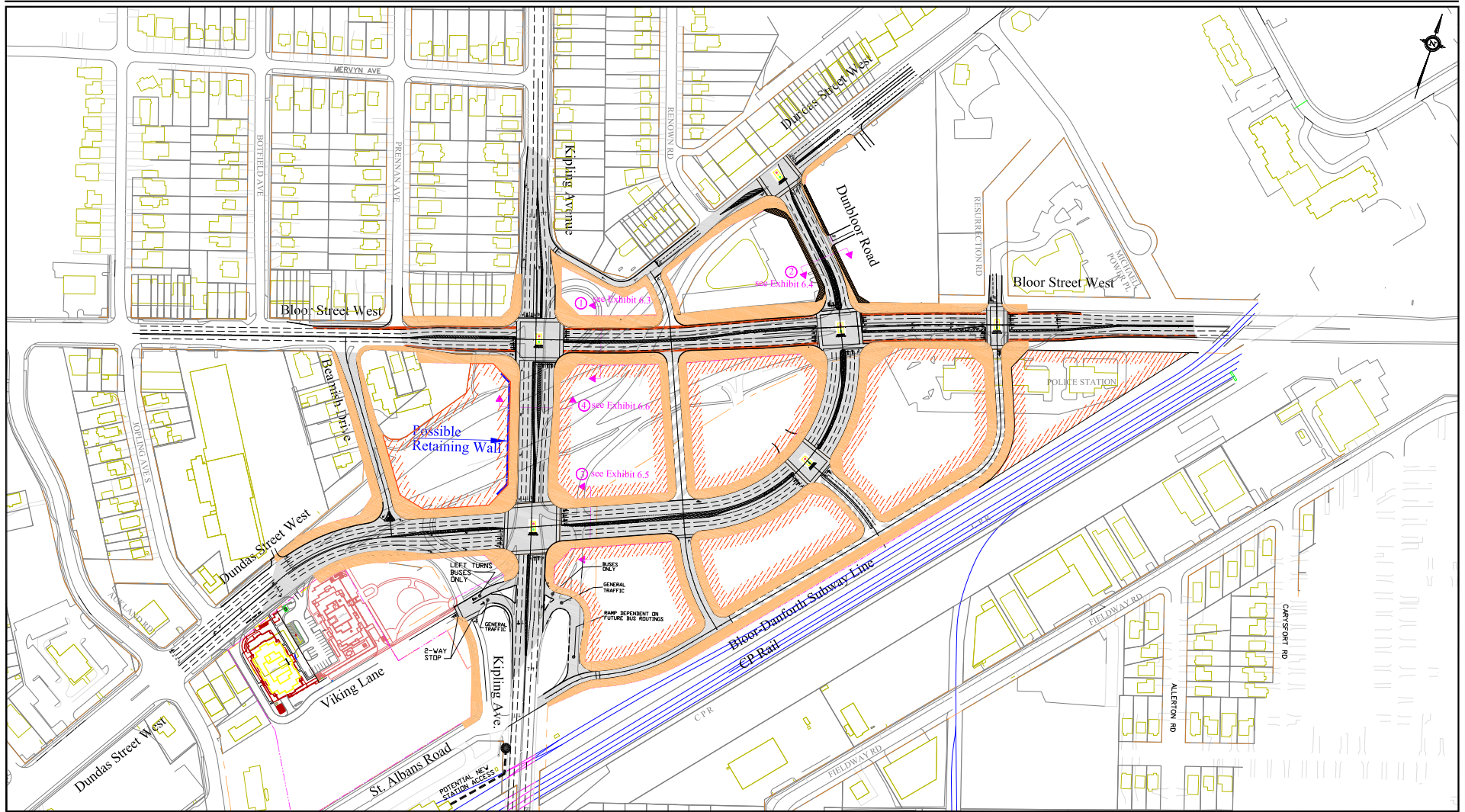
With a reconfiguration of the Six Points Interchange, the role and function of the affected roadways from an overall Etobicoke Centre context will change. Reconfiguration of the Six Points Interchange will encourage redevelopment which will lend itself to this area being more destination-driven than strictly a thoroughfare as is today's condition. It is therefore expected that the roadways, in particular Dundas Street West, Bloor Street West, and Kipling Avenue, will gradually change from an auto-oriented design serving high speed, long distance commuter traffic, to an increasingly important role as a multi-modal street network serving slower speeds local traffic, transit, pedestrians, and cyclists.

A brief description of other service roads follows:

Service Ramps at St. Alban's Road

It is proposed to retain the service ramps on the west side of Kipling Avenue at St. Alban's Road for access from the north and to the south on Kipling Avenue, to facilitate Toronto Transit Commission (TTC) bus and general traffic movements. However, the need for the ramps on the east side of Kipling Avenue, for access from the south and to the north on Kipling Avenue, is dependent on future TTC bus routings, and will be determined at a later stage.

Minimizing conflicts and operational problems is an objective in developing the new road network. As such, it is proposed to restrict the use of the service ramps to the north on Kipling Avenue to TTC buses only, to minimize the potential for operational problems between the proposed Dundas Street / Kipling Avenue intersection and the service ramps. The ramps to and from the south on Kipling Avenue would be used by all traffic.

**LEGEND**

- PROPOSED ROAD NETWORK
- POTENTIAL LOCAL ROADS

- PROPOSED DEVELOPMENT BLOCKS
- PROPERTY REQUIRED
- PROPOSED BIKE LANE

- PROPOSED BOULEVARDS
- CROSS SECTION LOCATIONS
SEE EXHIBIT No.

Scale 1:3000+/-
October 2007

Exhibit 6-1 Preferred Design Concept - Dundas Street Loop

iTRANS

Internal Local Roads

The internal local / service roads are intended to facilitate access to the development blocks. The internal local road network will consist of the following:

- A new 2-lane roadway connection from St. Albans Road through the Westwood Theatre lands to Dundas Street.
- A potential east-west local road (paralleling the CP rail corridor) from approximately 130 m east of the service ramps on the east side of Kipling Avenue to the intersection of Bloor Street / Resurrection Road.
- A potential north-south local road connection from Dundas Street West continuing to north of Bloor Street to service the development blocks.
- A potential north-south local road between the potential local road (paralleling the CP rail corridor) to Dundas Street West, located approximately 240 m east of the Dundas Street / Kipling Avenue intersection.

As development proceeds within the Westwood Theatre lands, the local roads may be available to facilitate movements to and from the north, and from the south on Kipling Avenue, for general traffic and for TTC buses, should the service ramps on the east side of Kipling Avenue not be provided. The road network for the preferred design plan is shown in **Exhibit 6-1**.

6.1.2 Geometric Design

6.1.2.1 Horizontal Alignments

Dundas Street West

The horizontal alignment of Dundas Street West from Auckland Road to just west of Beamish Drive will be consistent with the existing horizontal alignment. From this point easterly, the alignment will traverse a new path through the Westwood Theatre lands and curve northerly on a 130 m radius curve (with 2% superelevation) to meet Bloor Street at Dunbloor Road.

Bloor Street West

The horizontal alignment of Bloor Street West will be consistent with the existing horizontal alignment, with a new section between Kipling Avenue and Dunbloor Road.

Kipling Avenue

The horizontal alignment of Kipling Avenue will be consistent with the existing horizontal alignment.

Dunbloor Road

The horizontal alignment of Dunbloor Road will be consistent with the existing horizontal alignment.

The horizontal alignments are shown on design Plate 1 provided in **Appendix A.1**.

6.1.2.2 Vertical Alignments**Dundas Street West**

The vertical alignment of Dundas Street West will match the existing alignment from Auckland Road to just west of Beamish Drive. From this point easterly to Bloor Street (i.e. through the Westwood Theatre lands), the alignment is proposed to be on average approximately 1.5 m above the original ground. Bloor Street will be matched at its existing elevation at Dunbloor Road.

Bloor Street West

The vertical alignment of Bloor Street West is proposed to transition from its existing elevation approximately 70 m west of Kipling Avenue on a downward grade of approximately 1.25% and 4.5 % towards its existing elevation at Dunbloor Road. The intersection of Bloor Street and Kipling Avenue is proposed to be raised approximately 0.5 m.

Kipling Avenue

Kipling Avenue is proposed to be raised from just north of the existing loop ramps (which will be retained) to approximately 60 m north of Bloor Street, the location of the first driveway on Kipling Avenue north of Bloor Street. The proposed rise in elevation will range from approximately 0.5 m to 1.5 m.

Dunbloor Road

The vertical alignment of Dunbloor Road will be consistent with the existing vertical alignment.

The profiles are illustrated on design Plates 2 to 6 provided in **Appendix A.1**.

6.1.2.3 Typical Cross-Sections

As per the requirements of the *Etobicoke Secondary Plan*, urbanizing the Six Points area should take into consideration the following (Policy 4.1.2.2.1):

- designing streets to perform their diverse roles, balancing the spatial needs of existing and future users within the right-of-way including pedestrians, people with mobility aids, transit, bicycles, automobiles, utilities, and landscaping
- designing streets to promote a distinct image that is predominantly urban in character

Further, the Plan states that, “*the design of the public realm will influence the area’s function and convey an image to the broader City constituency. A higher quality public realm in Etobicoke Centre will develop a sense of pride amongst residents and assist in the on-going marketing efforts for the area.*”

The typical cross-sections were therefore developed with these objectives in mind. Typical cross-sections for the roadways are illustrated in **Appendix A.2**. Although various boulevard widths are proposed given the available right-of-way, it is the intention to provide a minimum unobstructed sidewalk width of 2.0 m for all streets in the study area.

Dundas Street West

The proposed cross-section for Dundas Street West includes the following:

- six through lanes (two lanes at 3.5 m plus third (curb) lane at 4.0 m in each direction)
- a 5.0 m centre lane, which accommodates left-turn lanes at the signalized intersections
- a boulevard width of approximately 7.5 m on both sides of the roadway

The 4.0 m curb lane is intended as a ‘bike friendly’ lane that cyclists can utilize and for transit usage. The 7.5 m boulevard is intended to include accommodation for street lighting, sidewalk, streetscaping, bus shelter, and boulevard amenities such as for café and vending.

Bloor Street West

The proposed cross-section for Bloor Street West includes the following:

- four through lanes (two in each direction at 3.3 m)
- a 4.5 m centre lane, which accommodates left-turn lanes at the signalized intersections
- a 1.8 m bike lane in both directions
- a boulevard width of approximately 10.35 m on both sides of the roadway

The proposed 1.8 m bike line is consistent with the City of Toronto Bicycle Plan and guidelines. The boulevard width is intended to include accommodation for street lighting, sidewalk, streetscaping, bus shelter, and boulevard amenities such as for café and vending.

Kipling Avenue

The proposed cross-section for Kipling Avenue includes the following:

- three through lanes northbound, two at 3.3 m plus a 4.0 m curb lane
- a continuous 3.0 m right turn lane southbound between Bloor Street and Dundas Street, in addition to 2 southbound through lanes
- a boulevard width of approximately 8.45 m on the west side of the roadway
- a boulevard width of approximately 5.15 m to 8.15 m on the east side of the roadway

The 4.0 m curb lane on Kipling Avenue is proposed for transit use. The boulevard width varies since the existing alignment of Kipling Avenue is maintained with the appropriate widening proposed on the east and west sides.

The boulevard width on the east side will accommodate, as appropriate, street lighting, sidewalk, streetscaping, bus shelter, and boulevard amenities such as for café and vending. The boulevard width on the west side will accommodate the same services and amenities. However, given the potential grade difference between the development block and Kipling Avenue, it is anticipated that street frontage onto Kipling Avenue on the west side will not be accommodated. Therefore, boulevard amenities such as for café and vending are not considered appropriate.

Dunbloor Road

The proposed cross-section for Dunbloor Road includes the following:

- four through lanes (two in each direction at 3.5 m)
- a 4.0 m centre median, which accommodates a northbound left-turn lane at the proposed signalized Dundas Street / Dunbloor Road intersection
- a 4.0 m wide raised median is proposed at the Bloor Street / Dunbloor Road intersection where left turns are proposed to be prohibited
- a boulevard width of approximately 3.75 m on both sides of the roadway closer to Dundas Street, widening to 4.0 m on both sides of the roadway closer to Bloor Street

The boulevard widths will accommodate, as appropriate, street lighting, sidewalk, and bus shelter. Given the anticipated land uses along Dunbloor Road (residential planned on the east side, and potentially on the west side), it is expected that boulevard amenities such as for café and vending would not be appropriate.

6.1.2.4 Pavement Structure Design

For this project the pavement structure design would be consistent with City of Toronto standards and would be determined at detailed design.

6.1.2.5 Design Criteria

The preliminary design criteria for the recommended design concept are summarized below in **Table 5**.

Table 5: Design Criteria

Dundas Street, Kipling Avenue, Bloor Street	
Right-of-Way	36 m to 42 m
Number of Lanes	4 to 6
Proposed Design Speed	60 km/h
Proposed Posted Speed	50 km/h
Minimum Radius	185 m (with 2% superelevation)
Maximum Grade	8% max
Minimum Grade	0.4% min
Vertical Curves	k = 10 to 13 crest k = 15 to 18 sag (headlight control)
Lane Widths <ul style="list-style-type: none"> • through • left turn • right turn • curb lane • centre median 	3.3 m to 3.50 m 3.0 m (adjacent to median) 3.0 to 3.5 m 4.0 m (Dundas, Kipling) 5.0 m
Median at Intersections	1.5 m (min)
Major Intersections Radius	15 m (min) (To be confirmed during detailed design.)
Intersection Angle	70 to 90 degrees (preferred)
Sight Triangles <ul style="list-style-type: none"> • arterial to arterial • arterial to collector 	15 m x 15 m 15 m x 15 m
Max. grade thru intersections	1% min. 3% max.
Boulevard Width	3.5 m to 10.35 m Minimum unobstructed sidewalk width of 2.0 m

6.1.2.6 Access Considerations

Access to the Six Points area is vital to redevelopment of the area. With a reconfiguration of the interchange, several specific access opportunities were reviewed. However, it is noted that the final access arrangements will be determined through processes under the Planning Act or other studies, as development occurs.

Westwood Theatre Lands

Access to the Westwood Theatre lands will be provided via the new Dundas Street alignment, at mid-block intersections between Kipling Avenue and Bloor Street. As

previously mentioned, a local road is proposed from St. Albans Road through the Westwood Theatre lands to Dundas Street. As the lands develop, the road network may include a potential east-west local road (paralleling the CP rail corridor) from approximately 130 m east of the service ramps on the east side of Kipling Avenue to the intersection of Bloor Street / Resurrection Road. These local roads will allow for access to/from the Westwood Theatre lands via Bloor Street. In addition, the road network may include a potential north-south local road between the potential local road (paralleling the CP rail corridor) to Dundas Street West, located approximately 240 m east of the Dundas Street / Kipling Avenue intersection.

However, it is noted that the final access arrangements and the need for the potential local roads will be determined through processes under the Planning Act or other studies, as development occurs.

Transit Access to / from Kipling Subway Station

Toronto Transit Commission (TTC) buses currently utilize the ramps on the east and west sides of Kipling Avenue that connect to St. Albans Road, for access to and from the Kipling Subway station. The ramps on the west side of Kipling Avenue are proposed to be retained to facilitate bus access from the north and to the south on Kipling Avenue. The ramps on the east side of Kipling Avenue for access from the south and to the north are proposed to be retained dependent on future bus routings. If these ramps are removed, TTC buses from the south and to the north on Kipling Avenue may access the subway station via the proposed road network on the Westwood Theatre lands or alternative routes (i.e. via Auckland Road).

The recommended design concept for the reconfiguration of the Six Points Interchange will not impact the new inter-regional bus terminal at Kipling Station.

Approved Developments

The Tridel residential development in the southwest quadrant of Kipling Avenue and Dundas Street West, currently has two right-in / right-out / left-in accesses on Dundas Street West, east of Auckland Road. These accesses and movements will be retained with the proposed reconfiguration of the Six Points interchange. However, traffic from this development currently using the service ramps to the north on Kipling Avenue would be provided future access via the Dundas Street driveways, or potentially via the road network on the Westwood Theatre lands.

The Concert development at 5145 Dundas Street West is another approved development for which access was taken into consideration. Upon initial operation of the site, a full movement access is proposed on Dunbloor Road, and a right-in / right-out / left-in on Dundas Street West. With the proposed new road network, a right-in / right-out access on Dunbloor Road, and a full-movement access on Dundas Street West were accounted for.

6.1.3 Proposed Streetscaping Plan

Streetscaping is an important element in establishing an urban centre, to help in increasing the enjoyment of area residents, businesses, and visitors, and to provide some definition and character of the area. According to the ***Etobicoke Centre Secondary Plan***, “*boulevards will be designed to provide safe, attractive, interesting and comfortable spaces by providing well-designed and coordinated tree-planting and landscaping...as part of street improvements.*” (Policy 4.1.2.2.2).

As such, streetscaping is proposed to be provided along both sides of the roadways within the boulevard area, with additional buffer proposed on the south side of the east-west local road adjacent to the Bloor-Danforth Subway line. Other opportunities for additional streetscaping, such as median planting, could be explored during detail design, along with the streetscaping details which will be confirmed at that time. The streets in the Six Points Interchange study area are classified as “Special Street” in the draft Streetscape Manual. Planting will meet the City of Toronto (Etobicoke Centre Secondary Plan) urban design and the draft Streetscape Manual guidelines. A conceptual streetscaping plan is illustrated in **Exhibit 6-2**.

Artistic concepts of the typical sections, which illustrate a graphical view of boulevard streetscaping, are illustrated in **Exhibit 6-3** to **Exhibit 6-6**. The section numbers correspond to the sections identified in **Exhibit 6-1**.

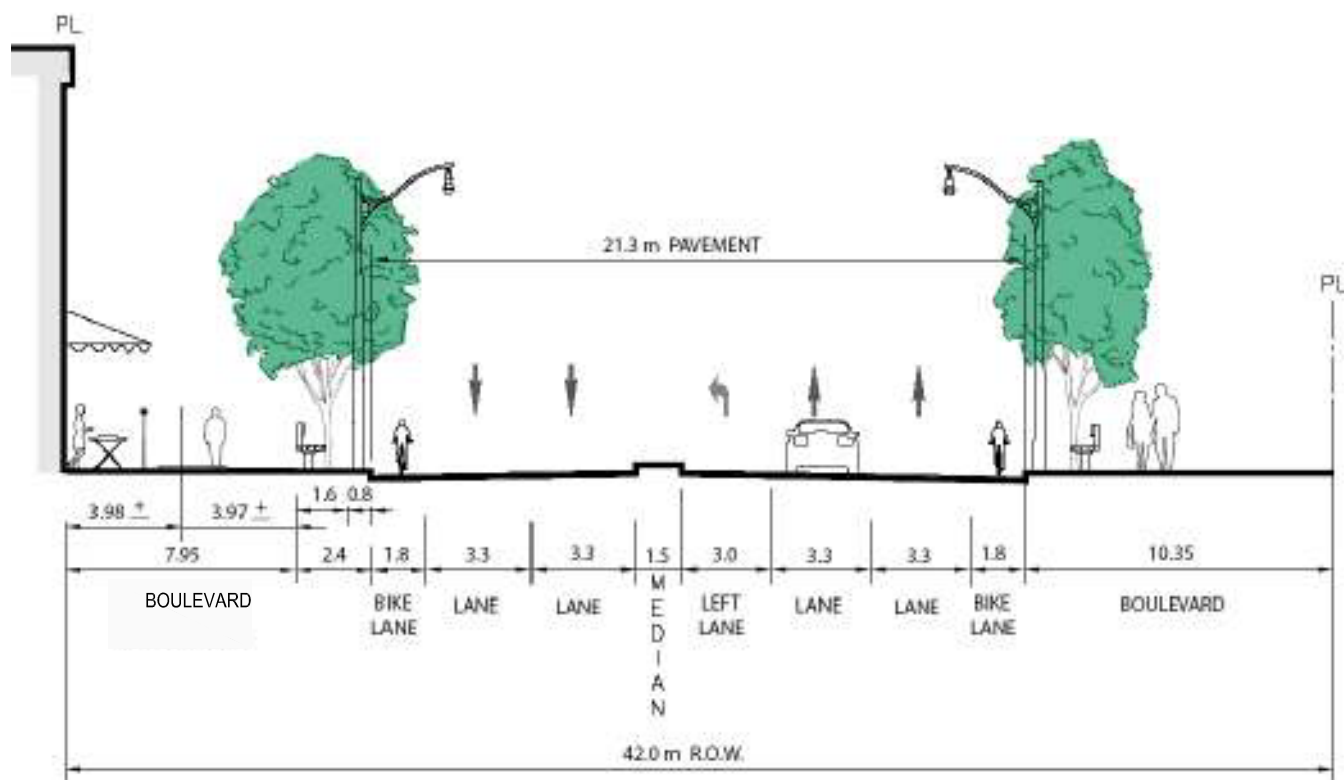
6.1.4 Proposed Development Blocks

With reconfiguration of the Six Points Interchange, approximately 15.5 acres of land will be readily available for development (assuming the redevelopment of the Police Station lands. Approximately 1.75 acres of additional remnant land would be available for potential uses such as, but not limited to, small parkettes, extensions to existing parks, public art installations, other amenities or public uses, or sale to adjacent property owners). Developable block sizes range in size from approximately 1.5 to 3.0 acres. Other remnant parcels range in size from approximately 0.2 to 0.5 acres. **Exhibit 6-7** illustrates the proposed development blocks and the location of surplus parcels.



Scale 1:2500
October 2007

Exhibit 6-2
Conceptual Streetscaping Plan
iTRANS



**BLOOR STREET AT KIPLING AVENUE
INTERSECTION - SECTION 1**

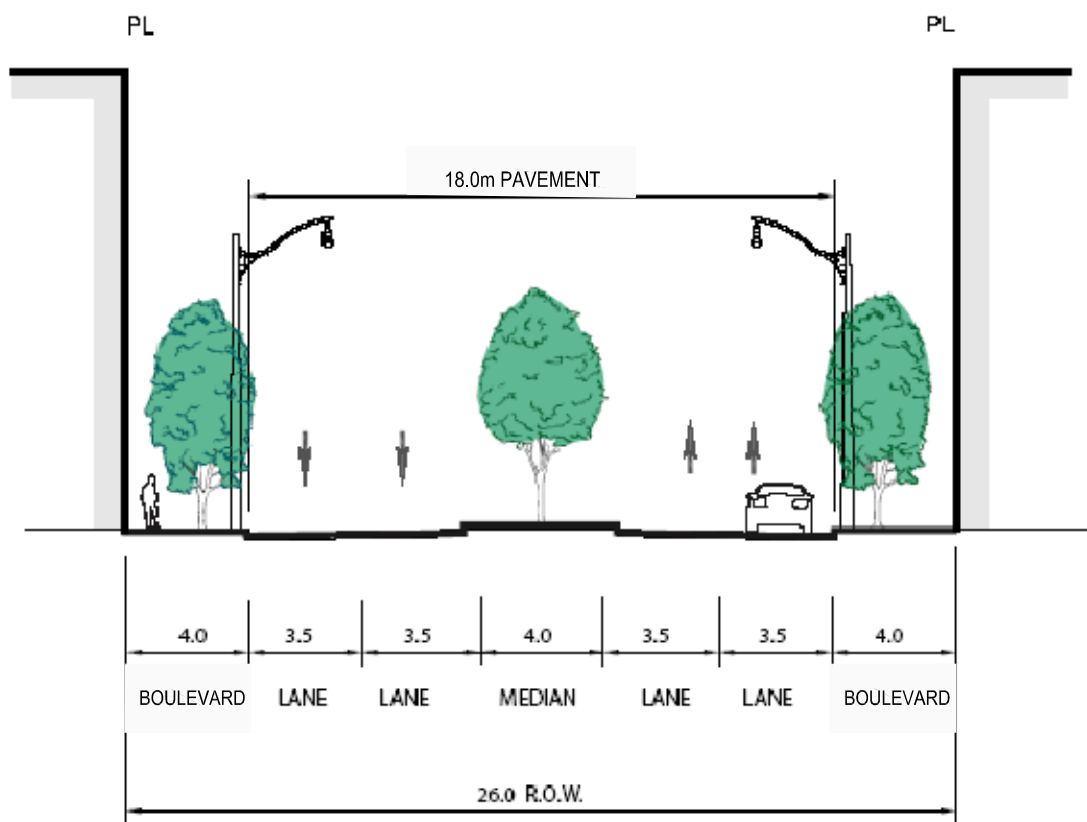
Exhibit 6-3 Artistic Concept

Bloor Street at Kipling Avenue Intersection

Scale 1:250

October 2007

iTRANS



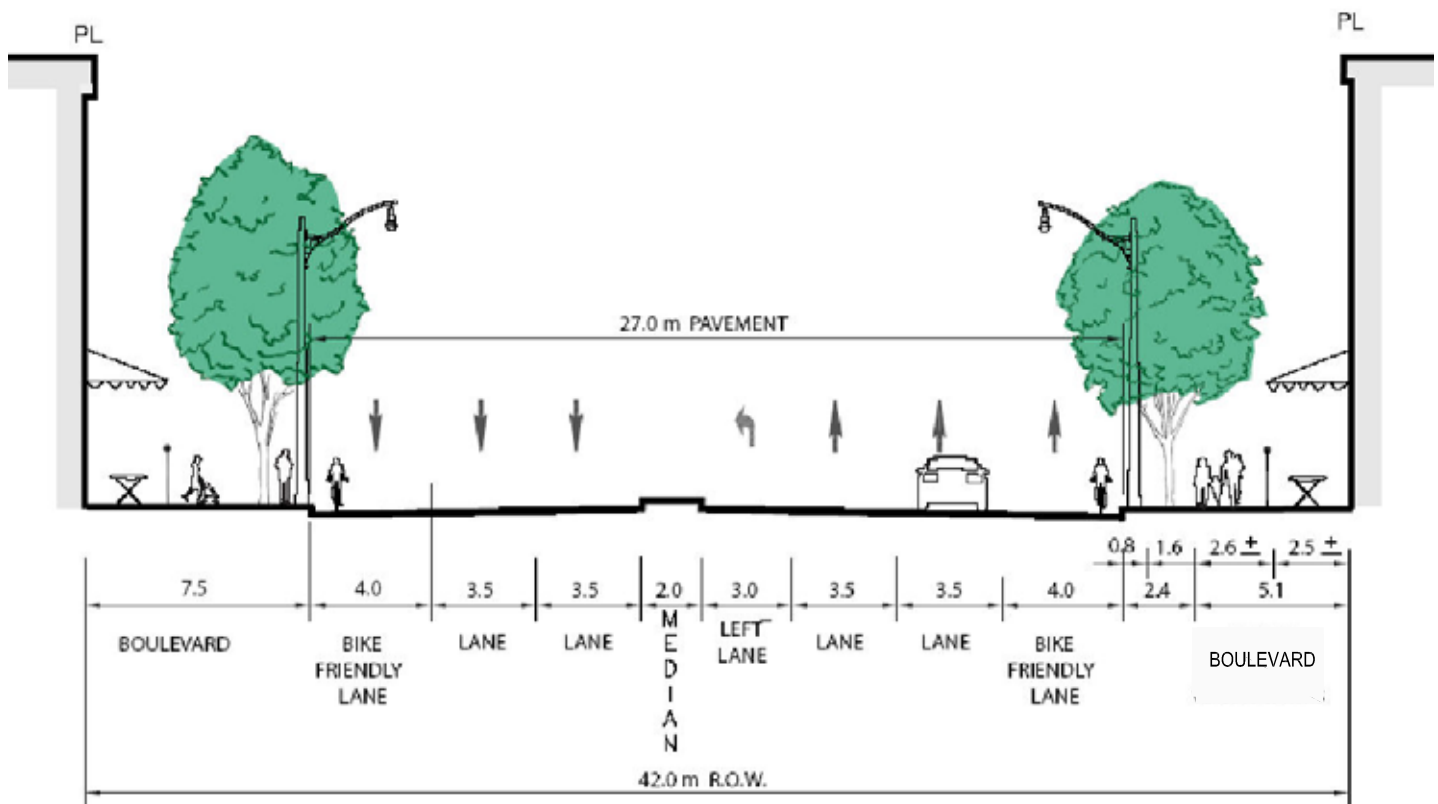
DUNBLOOR ROAD AT BLOOR STREET
INTERSECTION - SECTION 2

Exhibit 6-4
Artistic Concept
Dunbloor Road at Bloor Street Intersection

Scale 1:250

October 2007

iTRANS



**DUNDAS STREET AT KIPLING AVENUE
INTERSECTION - SECTION 3**

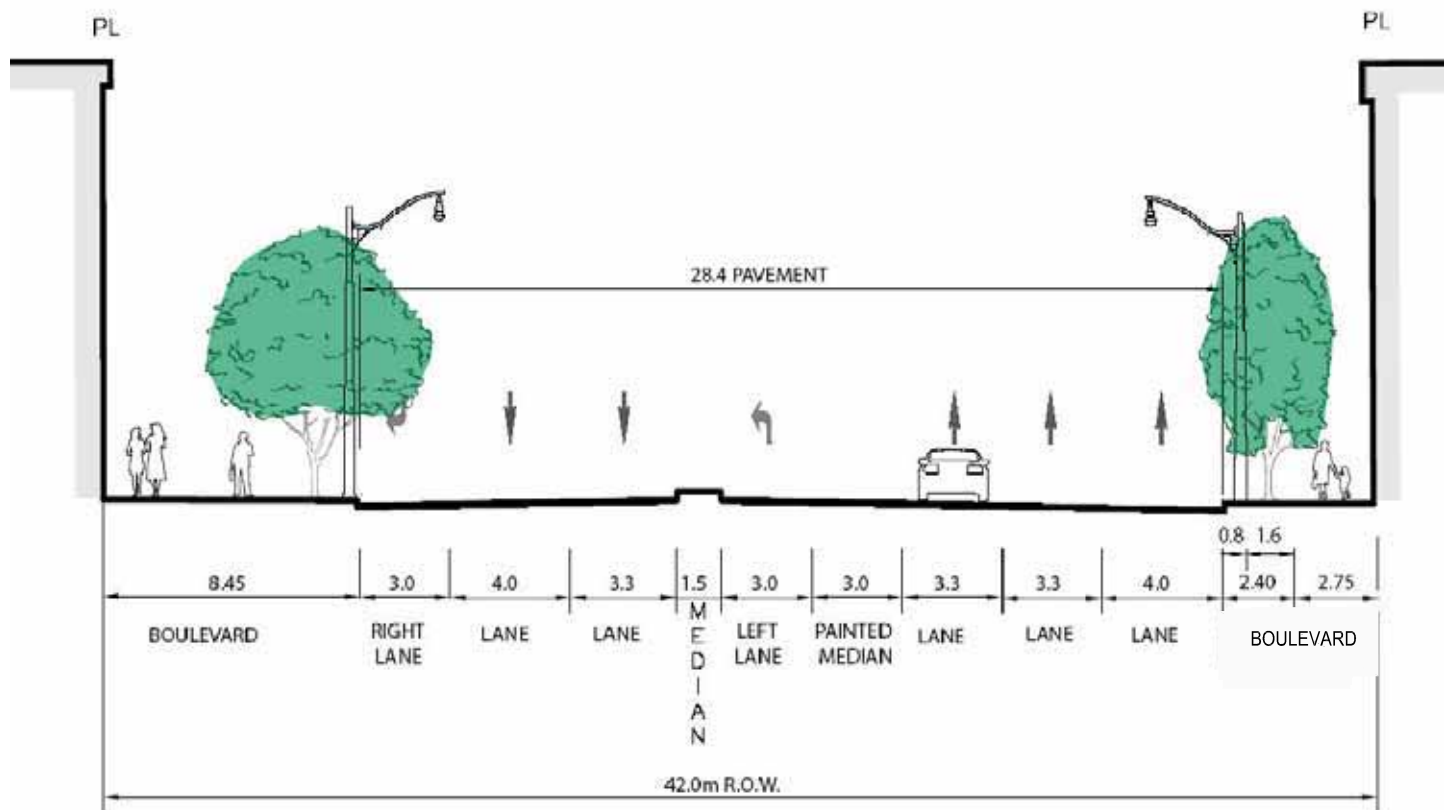
Exhibit 6-5 Artistic Concept

Dundas Street at Kipling Avenue Intersection

Scale 1:250

October 2007

iTRANS



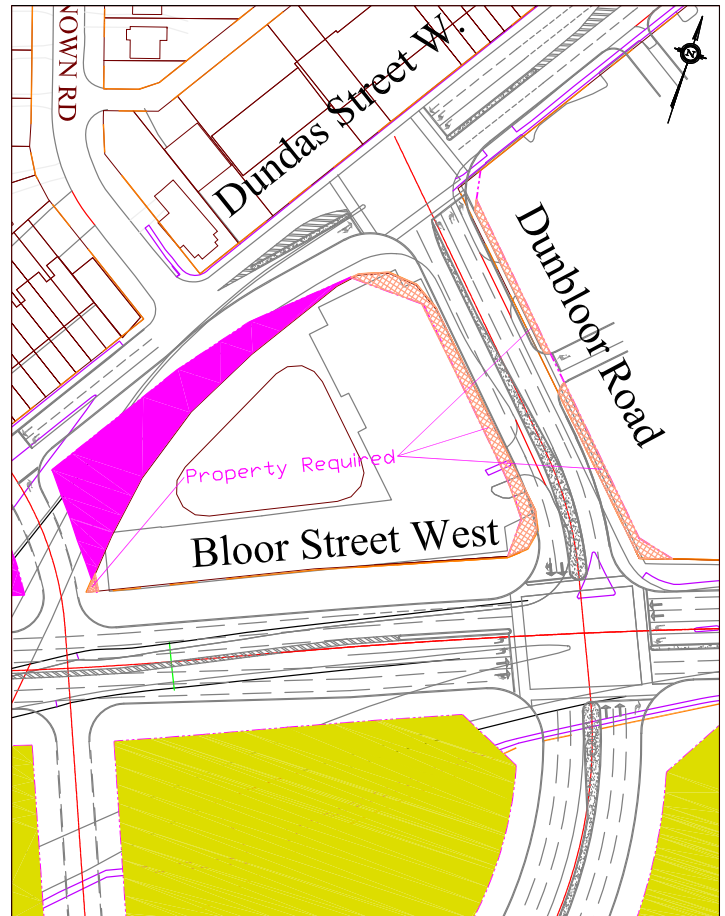
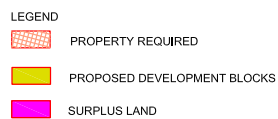
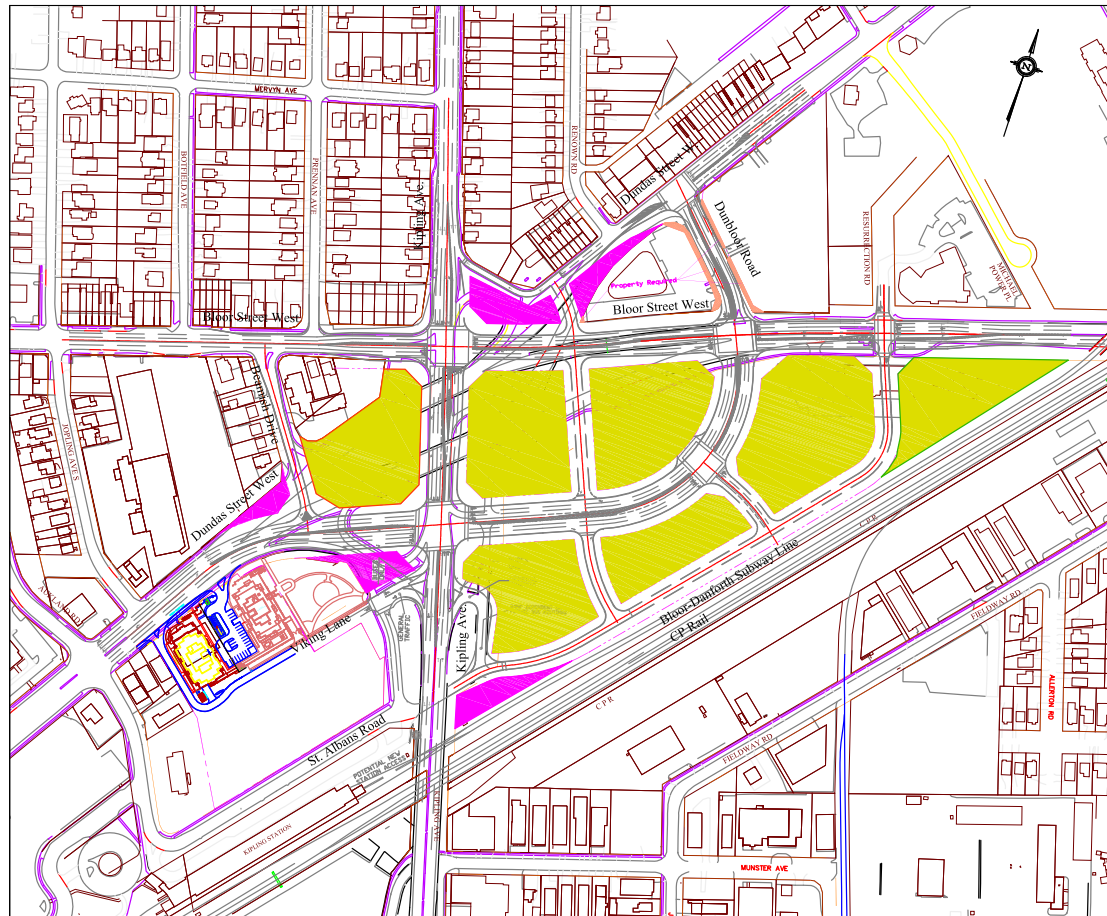
KIPLING AVENUE AT BLOOR STREET
INTERSECTION - SECTION 4

Exhibit 6-6 Artistic Concept Kipling Avenue at Bloor Street Intersection

Scale 1:250

October 2007

iTRANS



Scale 1:1250

Scale 1:5000
October 2007

Proposed Development Blocks, Surplus Land and Property Requirements

Exhibit 6-7

iTRANS

6.1.5 Property Requirements

The functional design plan was prepared with the goal of minimizing the need for acquiring additional property. However, new property requirements have been identified for this project. The existing right-of-way width of Dunbloor Road is 20 m, but a 26 m right-of-way is proposed and being protected for. Building setbacks have been secured for a 26 m right-of-way on Dunbloor Road for proposed developments on the east side of Dunbloor Road (5145 Dundas Street West) and on the west side of Dunbloor Road (2 Dunbloor Road). As such, 1.5 m of property will be required along the east side of Dunbloor Road and 3.0 m of property will be required along the west side. The need for a sliver of property is also identified at the westerly corner of the 2 Dunbloor Road site. The property requirement is estimated to be approximately 230 m² on the east side of Dunbloor Road and 355 m² on the west side, for a total of approximately 585 m².

The approximate new property requirements are illustrated on **Exhibit 6-7**. The exact property requirements will be determined at detail design.

6.1.6 Illumination and Traffic Signals

It is anticipated that illumination will be required on both sides of the main roadways (Dundas Street West, Bloor Street West and Kipling Avenue). This is particularly true for Dundas Street West, which will have a 6-lane cross-section with exclusive left turn lanes at the appropriate intersections. The type of illumination is to be confirmed at the detail design stage, along with the relocation of existing illumination. All existing illumination on Kipling Avenue within the impacted areas will need to be relocated.

Full conventional illumination to City of Toronto standards is recommended, where appropriate, within the study limits. Should any of the existing light standards not be salvageable for reinstallation, new light standards should be installed to City of Toronto standards. Illumination should be directed towards the roadway and sidewalks and away from any adjacent residences.

Traffic signals are recommended at the following locations:

- Dundas Street West / Kipling Avenue
- Dundas Street West-Dunbloor Road / Bloor Street
- Dundas Street West / Dunbloor Road
- Dundas Street West / Mid-block Local Road (Location of the signal to be determined as development proceeds)

The traffic signals are to be installed to the City of Toronto Traffic Signal standards.

6.1.7 Construction Staging and Detours

Given the role of the Six Points Interchange area as a main east-west and north-south road network in the western part of the City, the staging for reconfiguring the interchange which includes removal of three existing structures, must focus on retaining key traffic movements, and minimizing traffic congestion and disruption. The construction staging and detour plan presented in this section assumes a complete reconfiguration of the interchange as one project, rather than separate staged projects over a number of years. It is the objective to maintain existing traffic capacity on the roadways as feasible, minimize impacts on adjacent access roads, and minimize the duration of construction. Maintaining access to businesses and residents will also be an important requirement.

The proposed construction sequence is illustrated in **Exhibit 6-8** and summarized below. The staging and detour plan as shown does not require additional construction easements.

Stage 1

1. Relocate utilities prior to contract award to avoid constructor issues.
2. Construct Dundas Street from Kipling Avenue easterly through Westwood Lands.
3. Reconstruct Dunbloor Road to Dundas Street, Bloor Street east of Dunbloor Road, and the intersections of Dundas Street-Dunbloor Road / Bloor Street, and Dundas Street / Dunbloor Road.
4. Re-paint southbound Kipling Avenue from 2 through lanes and a right turn lane (southbound to eastbound loop ramp), to 2 through lanes and a left turn lane at the new Dundas Street intersection. Widen the west side of Kipling Avenue south of the new Dundas Street intersection to taper lanes back to existing.
5. Close the southbound Kipling Avenue to eastbound Dundas Street ramp, the northbound Kipling Avenue to eastbound Bloor Street ramp, and the northbound Kipling Avenue to eastbound Dundas Street ramp.
6. Reconstruct the Viking Lane / Kipling Avenue intersection.
7. Construct the proposed portion of the east-west local road (i.e. St. Albans Road extension, east of Kipling Avenue).

Stage 2

1. Construct Dundas Street from existing Dundas Street to Kipling Avenue, and intersection of Dundas Street / Kipling Avenue.
2. Close eastbound Dundas Street to southbound Kipling Avenue ramp.
3. Shift Dundas Street traffic onto new Dundas Street, and close the existing eastbound and westbound sections of Dundas Street through the interchange.
4. Close Bloor Street between Prentiss Avenue and Dunbloor Road, and divert westbound Bloor Street traffic onto the new Dundas Street. Divert eastbound Bloor Street traffic onto the new Dundas Street via Aukland Road.

Stage 3

1. Construct Kipling Avenue detour utilizing the proposed alignment for the new north-south local road.
2. Provide temporary signals at the Kipling Avenue Detour / New Dundas Street intersection, and remove the Bloor Street westbound bridge.
3. Construct Bloor Street between Dunbloor Road and Kipling Avenue, and reconstruct section from Kipling Avenue to Prentiss Avenue.

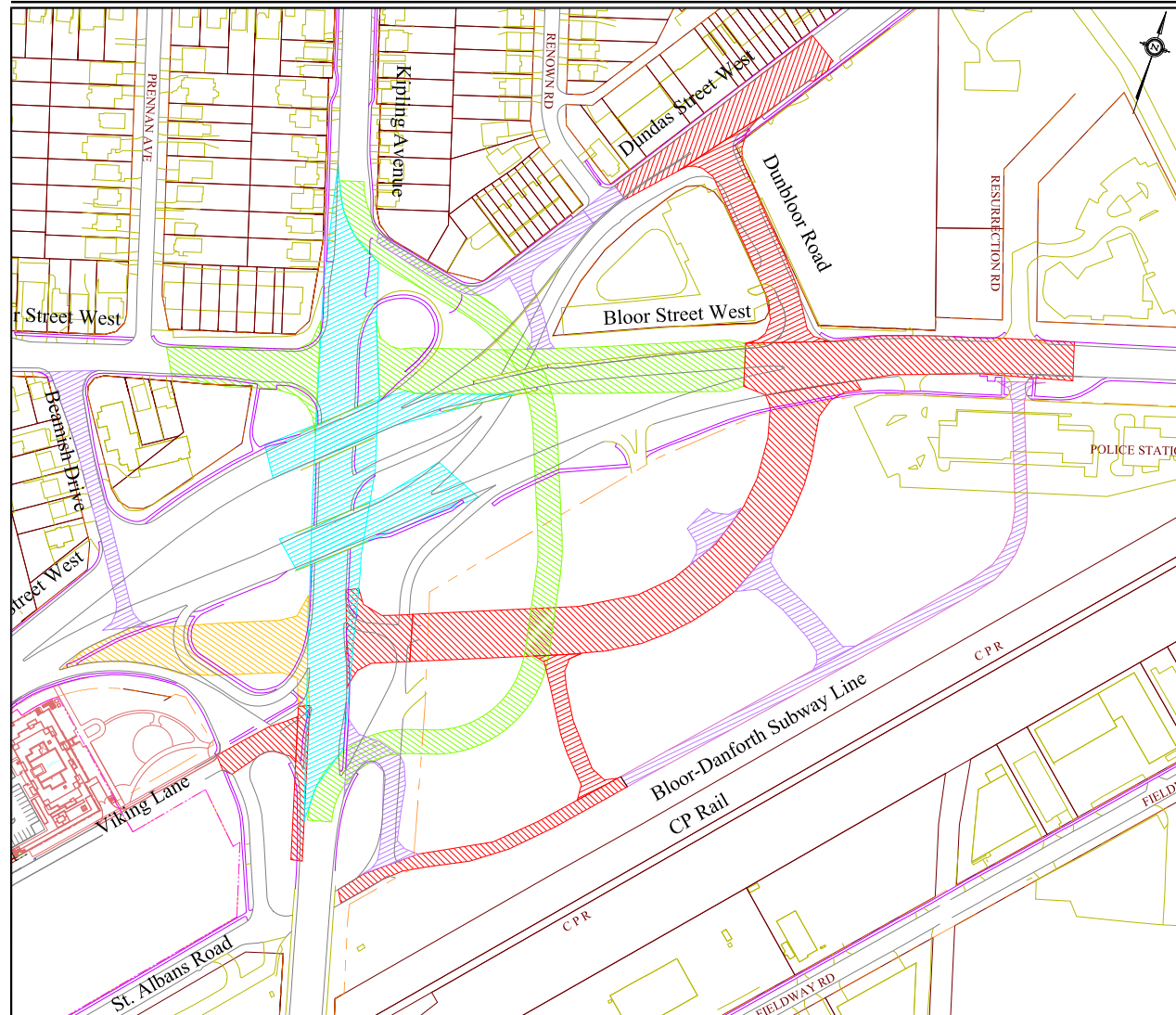
Stage 4

1. Shift traffic onto the Kipling Avenue detour.
2. Remove the eastbound and westbound Dundas Street bridges.
3. Reconstruct Kipling Avenue.

Stage 5

1. Shift traffic onto the Kipling Avenue, remove sections of detour not required, and open new section of Bloor Street.
2. Construct other connections, and other miscellaneous items.

The construction sequence may be modified during detail design to reflect refinements to the recommended preliminary design.

**STAGE 1**

1. Construct Dundas Loop from Kipling easterly through Westwood Lands
2. Reconstruct Dunbloor to Dundas, Bloor east of Dunbloor, and the intersections of Dundas/Bloor/Dunbloor, and Dundas/Dunbloor
3. Re-paint SB Kipling from 2 thru + Rt turn to 2 thru + Lt turn. Widen west side of Kipling south of the new Dundas Intersection to taper lanes back to existing (close SB Kipling to EB Dundas Ramp, NB Kipling to EB Bloor Ramp, and NB Kipling to EB Dundas Ramp)
4. Reconstruct Viking Lane/Kipling Intersection
5. Construct St. Albans Rd extension east of Kipling

STAGE 2

1. Construct Dundas Street from Existing Dundas to Kipling (Close EB Dundas to SB Kipling Ramp)
2. Shift Dundas Street traffic onto New Dundas Street (Close existing EB and WB Dundas through Interchange)
3. Close Bloor between Prennan Ave and Dunbloor. Divert WB Bloor traffic onto New Dundas Street & Divert EB Bloor Traffic onto new Dundas Street via Auckland Rd.

STAGE 3

1. Construct Kipling Detour, utilizing the ultimate New Road alignment, temporary signals at the Kipling Detour/New Dundas Intersection, and removing the Bloor Street WB Bridge
2. Construct Bloor St between Beamish and Dunbloor

STAGE 4

1. Shift Traffic onto Kipling detour
2. Remove the EB Dundas and WB Dundas Bridges
3. Reconstruct Kipling Ave

STAGE 5

1. Shift Traffic on to Kipling Ave, remove unused sections of detour, and open new section of Bloor
2. Construct other connections, and other miscellaneous items

LEGEND

- STAGE 1
- STAGE 2
- STAGE 3
- STAGE 4
- STAGE 5

Scale 1:2500
October 2007

Exhibit 6-8
Proposed Construction Staging
iTRANS

6.1.8 Utilities

As noted in the existing conditions, several utilities are located within the study area. These include Enbridge, Bell Canada, Rogers Cable, and Toronto Hydro. The plan of the existing utilities with the preliminary preferred design overlaid is provided in **Appendix C**. A summary of the potential impact on each utility is provided below.

Enbridge Gas

The Enbridge Gas line (NPS 6 ST IP) through the Westwood Theatre site would need to be capped and rerouted along Kipling Avenue and the new Dundas Street to connect to existing services, as a result of the proposed new road network and development blocks. According to discussions with Enbridge Gas, capping this gas line and construction of a new facility should not pose any problems, particularly since this is not a high pressure gas line. Enbridge Gas estimated construction cost is approximately \$50,000.

Sections of the gas line that are not currently underneath a roadway and would be with a reconfiguration of the interchange, such as on the west side of Dunbloor Road, would also not pose any particular concerns for Enbridge Gas, as long as the existing cover is not reduced. Enbridge Gas requires a minimum cover of 1.2 m for high pressure gas mains underneath roadways, which none of the impacted services are. Any valves that are impacted will need to be relocated. Test excavations, as required, should be completed during detail design to verify the existing depth of cover over the pipelines.

Bell Canada

The proposed new road network will have a significant impact on the Bell Canada services within the existing interchange, particularly to the fibre optic line that services west Etobicoke. This line would be located within the new section of Bloor Street West, west of Dunbloor Road. The impacts to this line as a result of profile / grade changes would require major relocation which would include rebuilding manholes, providing new manholes, new fibre and copper cables, and splicing and transferring the service. Bell Canada estimated construction cost ranges from \$3.2 million to \$4.5 million.

In other areas where buried cable may not be as significantly impacted, a minimum cover of 1.0 m must be maintained. Test excavations should be completed during detail design to verify the existing depth of cover over the cables, where significant profile changes will not occur.

Rogers Cable

Rogers Cable has not identified any significant impacts on their services with the proposed new road network. The buried coax cables located within the existing interchange would essentially be within sections of roadways where the proposed grades are not being lowered. This includes on the west side of Kipling Avenue at Bloor Street, on the south side of Bloor

Street at Kipling Avenue, and along the west side of Beamish Drive. The majority of the other Rogers facilities are outside of the major impact zones.

For any service relocation, Rogers prefer the services to be located in the boulevard or underneath the sidewalk. Any relocation of aerial fibre optic lines will require at least 6 months of notice to businesses, since the service would need to be disconnected to carry out line splicing.

Toronto Hydro

The majority of the existing Toronto Hydro poles within the interchange will need to be relocated. Toronto Hydro has not identified any significant impacts on their services with the proposed new road network. It is not anticipated that pole relocation will pose a problem. It should be noted however, that Toronto Hydro requires a minimum setback of 1.0 m from the roadway property line to the centerline of a pole, to avoid overhang of overhead conductors or automated switches onto private property. Toronto Hydro also requires 3.0 m to accommodate the horizontal length of any anchored guy-wires.

Given the presence of underground hydro plants along Bloor Street west of Kipling Avenue, and an underground transformer on Beamish Drive, potential impacts of these facilities will need to be investigated at the detail design stage. Minimum cover of 1.0 m will need to be maintained.

Other Services

Other services within the existing interchange that will be impacted as a result of the proposed new road network and development blocks include a 450 mm diameter sanitary sewer, and two watermain (a 300 mm and a 900 mm diameter) that traverse through the Westwood Theatre lands. These services may need to be relocated.

Formal definition of impacts on services will be determined during detail design. All utility information should be updated prior to construction to ensure that the data is accurate and to finalize relocation requirements as necessary.

6.1.9 Cost Estimate

The preliminary estimated construction cost for the recommended Dundas Street Loop option is \$36.1 million, including GST (6%), utility relocations, design fees and administrative costs. The fees do not include property costs which will be confirmed during negotiations with the two impacted properties. Detailed cost estimates are provided in **Appendix G**.

It is also anticipated that the City and the affected utility companies would enter into a cost sharing agreement for costs associated with the relocation of facilities.

6.2 Environmental Effects and Mitigation Measures

This section examines the anticipated environmental effects and mitigation measures for the proposed reconfiguration of the Six Points Interchange.

6.2.1 Drainage and Stormwater Management

This section provides a summarized discussion of the preliminary drainage and stormwater management associated with the proposed reconfiguration of the Six Points Interchange. Further details can be found in the *Storm Water Management Analysis Report* provide in **Appendix F.3**. The purpose of the analysis was to develop planning-level stormwater management concepts for the proposed reconfiguration of the interchange. Extensive discussions were held with the City's Toronto Water Division in developing the stormwater management analysis scope of work, which included taking into consideration the City's Wet Weather Flow Master Plan (WWFMP) criteria requirements.

The general scope of the analysis included the following:

1. Collect and review the Wet Weather Flow Master Plan (WWFMP) requirements for the study area.
2. Delineate the existing drainage boundary and estimate the existing capacity of sewers at the downstream.
3. Develop hydrologic models for existing and future conditions and estimate the peak flows for existing, future uncontrolled, and future controlled conditions for peak flow control analysis.
4. Estimate and compare water balance conditions for existing and future uncontrolled scenarios for water balance management analysis.
5. Identify a potentially feasible set of Best Management Practices (BMPs) for the study area, as per the WWFMP requirements for water quality management analysis.

6.2.1.1 Stormwater Management Plan

Storm drainage from the proposed new road network and developable lands will be managed using a storm water management plan that is based on the WWFMP criteria requirements. The plan will address the three issues of: (1) peak flow control, (2) water balance management, and (3) water quality management. The 'Hierarchical Principle' of the WWFMP will be followed starting with "source control", the "conveyance control", and "end-of-pipe control".

Under the existing condition, the runoff from the study area does not receive any water quality treatment within the study area. The runoff generated from the site is conveyed down stream. In the 1950's when the stormwater management was developed, the contemporary objective was to safely convey the runoff from the developed areas. This resulted in the implementation of a storm sewer system without any runoff quantity and quality control

measures. It is therefore expected that the implementation of a stormwater management plan for the study area will provide significant improvement over the existing conditions. The scope of the stormwater analysis was limited to the planning-level evaluation. The specific points addressed at this level included:

- Whether the existing drainage system can accommodate the proposed new road network and developable lands.
- If the existing system cannot accommodate future conditions, what kinds of control measures are necessary to meet WWFMP requirements (e.g., peak flow control, and water quality control).

Peak Flow Control

The peak flow control analysis for the study area included the following:

- Estimating peak flows for the existing condition;
- Estimating peak flows for future uncontrolled conditions; and
- Estimating peak flows for future controlled conditions, including storage requirements.

From the analysis, it was found that on-site storage within the proposed future developable lands is not sufficient to meet the downstream allowable peak flows rates. This is due to an increase in the imperviousness under future conditions. One possible solution is to supplement on-site control measures by providing ‘Super Pipe’ storage in order to match with the downstream allowable rates in each subcatchment. **Table 6** shows the storage requirements for the future conditions.

Table 6: Storage Requirements for Future Drainage Conditions

Storage Location	Dundas Street West		Bloor Street West		Westwood Theatre Lands	
	Total Storage (m ³)	Storage per unit area (m ³ /ha)	Total Storage (m ³)	Storage per unit area (m ³ /ha)	Total Storage (m ³)	Storage per unit area (m ³ /ha)
Developable Block Lands	280	125	80	83	210	41
Super Pipe Storage	340		280		250	

Under future conditions, peak flows from excess 5-year return period storms will be conveyed as overland flows through the road drainage system similar to the existing system. The preliminary analysis of the overland flow routes reveals that the overland flows from the Dundas Street West and Bloor Street West catchments follow the road pattern flows from west to east. The overland flows from Westwood Theatre lands move southwesterly. Overland flow paths are to be verified during detail design.

For the minor flow system, care was taken to minimize disturbance to the existing sewer system where possible. The alignment of the proposed sewers will follow the proposed road network, with storm sewers located under the roadways.

“Super Pipe” storage may be possible in each of the storm sewer systems prior to the downstream constrained sewer segment, subject to further detailed review of on-site storage constraints. The sizing of sewers will be conducted during the detail design level of analysis.

Exhibit 6-9 shows the proposed storm sewer system for the proposed new road network.

Water Balance Analysis

The objective of the water balance analysis for the study area is to evaluate the change in infiltration volume under existing and future development conditions. Urban developments traditionally result in reduced overall infiltration as land surfaces tend to be rendered impervious by buildings and paved surfaces. These impervious surfaces are connected directly to storm sewers. In this environment, the majority of runoff is in the form of stormwater and infiltration occurs only on any remaining small patches of grass and soil cover. However, modern stormwater technologies generally involve measures designed to retard or capture runoff encouraging infiltration and thereby improving water quality of runoff.

Based on the analysis, it was found that the future condition groundwater infiltration decreased compared to existing condition infiltration. The decrease in infiltration volume under future conditions is due to an increase in paved areas (i.e., conversion of open land into roads and higher imperviousness of future land use). This decrease can be mitigated by implementing new technologies such as clean water collections systems and green roof systems on new development or development that can be retrofitted. Rerouting parking lot runoff to grassed area in each of the developable areas can also enhance the infiltration volume under future conditions.

Water Quality Analysis

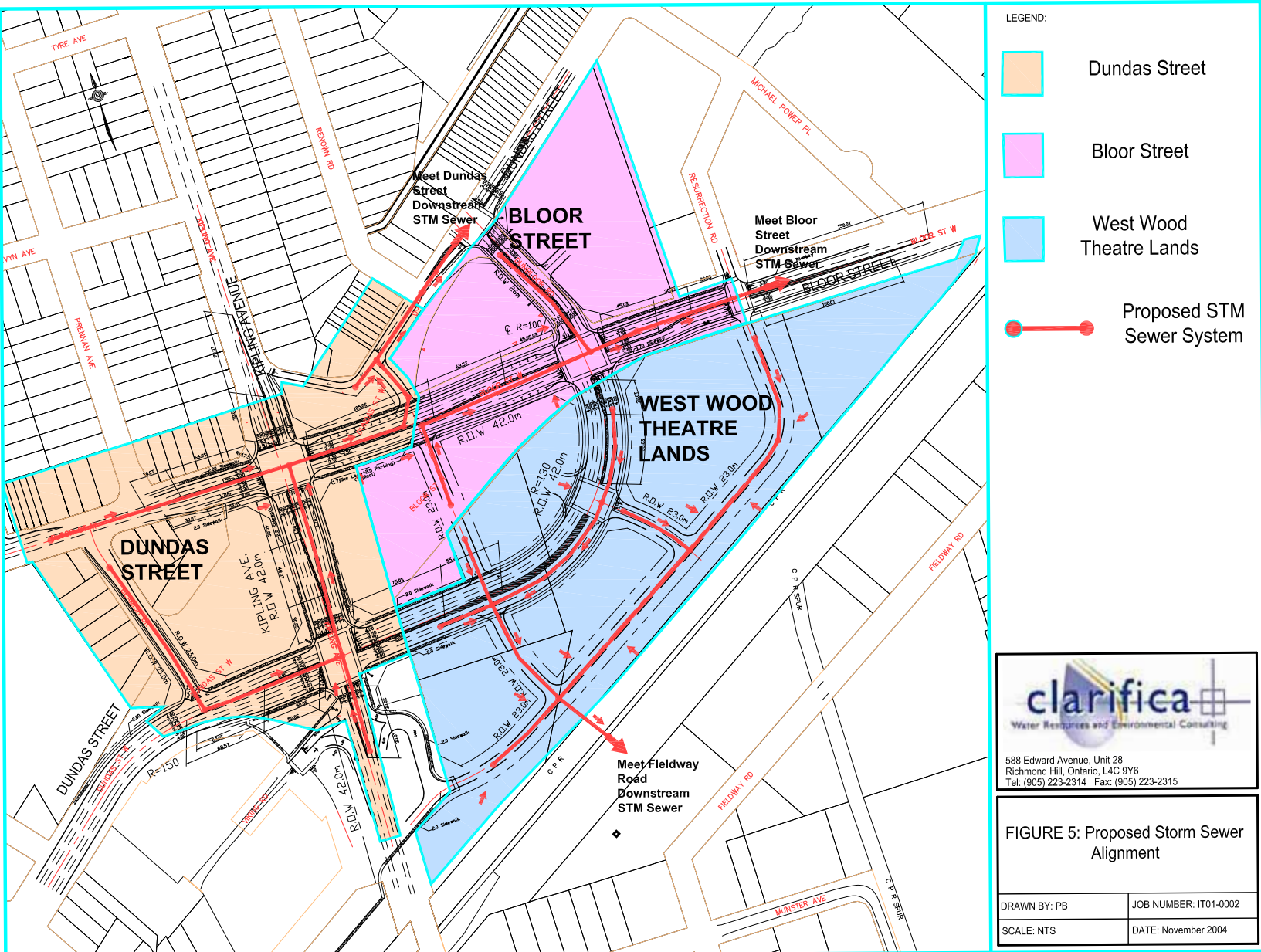
The objective of the water quality management analysis is to identify the appropriate Best Management Practices (BMPs) for the proposed new road network that would meet the WWFMP requirements. Water quality issues were addressed for the study area as a whole, rather than for each subcatchment area. The preliminary analysis shows that currently, road runoff does not receive any treatment. This should be verified during the detail design phase of the study.

The future road right-of-way areas will constitute approximately 37% of the total area. In order to identify suitable BMPs that can be applied to the study area, a screening table was developed and recommendations of the WWFMP considered. From this analysis, it appears that Oil Grit Separators (OGSS) and storage tanks are suitable for treating runoff from the road area. “Super Pipes” have been recommended for peak flow control in each of the subcatchment areas which would also provide water quality control. The Total Suspended

Solids (TSS) removal within the “Super Pipes” can be equivalent to storage tanks. A “Super Pipe”, is a length of pipe with an oversized diameter designed to store stormwater and control peak flows. This flow control is accomplished by restricting the flows with an orifice. The stormwater backs-up into the “Super Pipe” and is stored temporarily as the orifice discharges the flows at a lower rate than the incoming flow. The water quality performance should be verified at the detail design phase of the study.

Approximately 42% of the total area constitutes future developable lands. The runoff from these lands can be treated with various source and end-of-pipe control measures. The implementation of effective water quality measures such as wet ponds may not be suitable because of the smaller size of some developable blocks. However, underground storage tanks and off-line wet ponds can be implemented. These would provide peak flow control, as well as water quality control.

A number of new technologies have been developed in recent years. One is the concept of the clean water collector. The purpose of the clean water collector is to collect roof runoff through a specially designed sewer that would allow infiltration and attenuate peak flow. Applying this technology in future development areas should be explored. This technology will enhance ground water infiltration, which would minimize the impacts of imperviousness on water balance and would provide runoff quantity and quality control.



6.2.1.2 Conclusions and Recommendations

A planning-level stormwater management analysis was conducted to assess potential stormwater impacts with a reconfiguration of the Six Points Interchange. Notwithstanding, the results of the analysis undertaken herein are subject to review and confirmation through future detailed servicing studies and in accordance but not necessarily limited to the latest version of the *Wet Weather Flow Management Guidelines* and *Draft Guideline of Stormwater Management Options for Roadway Reconstruction Projects*. The following conclusions and recommendations have resulted from the analysis:

- The proposed interchange reconfiguration and future land uses will have effects on the Wet Weather Flows (WWFs) generating from the study area. The effects include increase in runoff volume and peak flows, decrease in infiltration, and an increase in Total Suspended Solids (TSS).
- The WWF impacts can be mitigated by implementing peak flow controls such as on-site detentions within the developable block lands and through “Super Pipe” storages within the storm sewer systems. Water quality control for the developable areas can be achieved through various on-site source and end-of-pipe control measures or equivalent measures such as underground storage tanks and off-line wet ponds, and with Oil Grit Separators (OGSSs) for the roadway runoff. The existing developed areas should be retrofitted with source control measures such as downspout disconnections in residential areas and porous pavements in commercial areas.
- The drainage area delineation and downstream sewer locations were based on available drainage maps. A detailed inventory of the major and minor storm sewer system should be carried out during the detailed design stage. This inventory should include, but not be limited to the following: collection of storm sewer and major system network from City databases, collection of plan and profile drawings, data gap analysis and database correction, physical verification of relevant storm sewer invert elevations, and major and minor system capacity analysis for design storm events.
- A detailed water balance analysis should be conducted with in-situ soil conditions and future controlled conditions. The feasibility for using infiltration Best Management Practices (BMPs) will require more site-specific hydrogeologic and soil data.
- A screening-level analysis was conducted to address water quality. A detailed water quality analysis should be undertaken to verify the applicability and performance of quality control measures in the study area.
- It is recommended that an assessment is conducted during detail design for a number of residential buildings and their associated downspout disconnection possibilities. Similarly, an assessment of existing water quality measures within commercial/institutional areas should be conducted.

- It is recommended that the feasibility of off-line Storm Water Management (SWM) facilities for large blocks be assessed. This assessment will need grading and detailed land-use information.
- The feasibility of implementing clean water collector systems within future development lands should be explored, since this new technology will enhance infiltration and control runoff quantity and quality.

6.2.2 Natural Environment

This section provides a summarized discussion of the potential impacts to the natural environment and mitigation measures associated with the proposed reconfiguration of the Six Points Interchange. Further details can be found in the *Natural Sciences Report*, provided in **Appendix F.4**.

6.2.2.1 Vegetation and Vegetation Communities

A reconfiguration of the Six Points Interchange has the potential to result in the displacement of and disturbance to vegetation and vegetation communities. Effects on vegetation related to the reconfiguration may include:

- displacement of vegetation and vegetation communities; and,
- drainage modifications and salt spray

Displacement of Vegetation

Effects would be most prominent in areas that have not been previously disturbed. Minor clearing will be required, primarily within the existing right-of-way, for a reconfiguration of the Six Points Interchange. The right-of-way vegetation is primarily ornamental plantings and hedgerows. However, this urban vegetation provides habitat for birds and small mammals, shade, soil stabilization, and carbon cycling through respiration. Efforts should therefore be made to protect urban vegetation that does not need to be removed.

Encroachment on existing vegetation communities located adjacent to the right-of-way will occur in one location – the Dry-Moist Old Field Cultural Meadow (CUM1-1) located just north of the CPR tracks, and east of Kipling Avenue. The proposed reconfiguration of the interchange will result in the removal of approximately 0.5 ha of this community. However, since this area will ultimately be redeveloped, this CUM1-1 will be lost regardless of whether the interchange is reconfigured or not.

A number of planted / ornamental trees will also be affected by a reconfiguration of the interchange. A list of trees that could potentially be affected by a reconfiguration of interchange is presented in Appendix B of the *Natural Sciences Report*, provided in **Appendix F.4**. Approximate locations are shown in **Exhibit 2-3**.

The following environmental protection measures designed to reduce vegetation removals should be considered on a site-specific basis during detail design:

- reduce the area of the footprint to the extent possible through the use of retaining walls, urban cross-sections, and other road design elements;
- reduce grading requirements to the extent possible to maintain existing drainage patterns;
- provide local tree protection including guiderails, retaining walls and ditches where warranted;
- identify and protect trees to be retained during construction using a temporary tree protection barrier in accordance with OPSS 565; and,
- plant new native vegetation to compensate for vegetation removals.

Drainage Modification and Salt Spray

Disturbance to vegetation as a result a reconfiguration of the interchange is considered negligible since the majority of the vegetation located adjacent to the right-of-way has been previously disturbed by urban development. Impacts on vegetation communities will likely be due to grading activities rather than the need to clear portions of or entire communities.

The effects of salt spray on vegetation are considered minor. However, measures to reduce potential impacts of road salt include:

- managing the application of road salt through judicious timing, improved spreader machinery, pre-wetting methods, pavement temperature monitoring, and other techniques; and,
- using alternative substances to de-icing salt including other chloride salts, and acetate-based substances, where appropriate.

These measures will keep vegetation dieback to a minimum.

Rare, Threatened and Endangered Vegetation

There are no rare, threatened or endangered vegetation or significant vegetation communities within the study limits. Therefore, this project will not affect any of these communities.

6.2.2.2 Wildlife and Wildlife Habitat

Displacement of Wildlife

Reconfiguration of the Six Points Interchange will be done primarily within the existing right-of-way. The right-of-way consists primarily of previously modified / disturbed terrestrial wildlife habitat with low habitat structure and diversity, and limited habitat capability. As a result, a reconfiguration of the interchange will not have a significant effect on wildlife and wildlife habitat.

However, numerous bird species located within the project limits are listed under the Migratory Birds Convention Act (MBCA). The MBCA prohibits the killing, capturing, injuring, taking or disturbing of migratory birds (including eggs) or damaging, destroying, removing or disturbing of nests. While migratory insectivorous and non-game birds are protected year-round (migratory game birds are only protected from March 10 to September 1), permits are seldom secured and the Act is seldom enforced for removal of wildlife habitat outside of the nesting season. To meet the requirements of the MBCA, no vegetation removals should occur during the nesting season. With several exceptions, this includes the period from April 1 to July 31. If vegetation clearing is required during this period, a nesting survey should be carried out by a qualified avian biologist prior to construction. If active nests are found, a site-specific mitigation plan should be prepared in consultation with the Canadian Wildlife Service.

Barrier Effect on Wildlife Passage

No new barriers to wildlife passage will be created as a result of a reconfiguration of the Six Points Interchange. Given the urban nature of the study area, the reconfiguration will not have any significant impact on wildlife passage.

Rare, Threatened or Endangered Wildlife, or Significant Wildlife Habitat

There are no rare, threatened or endangered wildlife or significant wildlife habitat within the study limits. Therefore, this project will not affect any of these habitats.

6.2.2.3 Fisheries and Aquatic Habitat

There are no watercourses located within the study limits. Therefore, this project is not anticipated to affect any fisheries or aquatic habitat.

6.2.2.4 Erosion and Sediment Control Measures

Clay loam soils within the project limits have slight susceptibility to erosion. However, soil disturbance associated with excavations, cut and fill, drainage alterations, etc., may result in erosion of, and sedimentation to sensitive receiving watercourses. Site-specific erosion and

sedimentation control measures to be implemented prior to construction should be identified during detail design. Erosion and sedimentation control measures should include:

- limiting the geographical extent and duration that soils are exposed to the elements;
- implementing standard erosion and sedimentation control measures in accordance with Ontario Provincial Standard Specification (OPSS) 577 including,
- straw bale and/or rock flow checks placed at regular intervals in ditches down gradient from areas of soil disturbance;
- silt fence placed within ditches and around catch basins in areas of soil disturbance;
- applying conventional seed and mulch, tackifiers and/or erosion control blanket in areas of soil disturbance to provide adequate slope protection and long-term slope stabilization; etc.
- managing surface water outside of work areas to prevent surface water from coming in contact with exposed soils.

Monitoring of erosion and sedimentation control measures during construction should be implemented to ensure their effectiveness. These environmental protection measures will greatly reduce the potential for soil erosion and impairment of water quality.

6.2.3 Social and Economic Environment

6.2.3.1 Impacts on Businesses and Residents

A reconfiguration of the Six Points Interchange is key to the redevelopment of the Etobicoke Centre. As previously mentioned, the City intends to enhance the concentration of employment and housing in the Etobicoke Centre to better utilize the substantial public transit and other urban infrastructure that currently exists, and to serve to further protect the area's many low density residential neighbourhoods by accommodating new growth. A vibrant mix of employment and housing will present opportunities for residents to walk or use public transit to work. A reconfiguration of the interchange will allow for a hub of cultural, social, administrative and recreation uses, which will facilitate social interaction and foster a sense of community and identity for the area.

The preferred design for reconfiguring the interchange does not significantly affect any existing accesses to the area road network, after construction. The design will improve access to the City-owned Westwood Theatre lands, and will provide accommodation for pedestrians, cyclists, and transit.

Approximately 585 m² of property will be required from two property owners, which is minimal, given the extent of the project. Property impacts are discussed in **Section 0**. Property impacts will be minimized during detail design.

The nature of the work required to reconfigure the interchange is such that traffic disruption and delays cannot be avoided. Existing businesses and residents will therefore be impacted while construction is taking place, mainly from traffic detours, restricted movements, etc. Timing of construction activities can be coordinated to minimize some of these impacts. It is

the objective to maintain existing traffic on the area road network, minimize impacts on accesses (access to existing properties should be maintained at all times), and minimize the duration of construction. Also to minimize impacts on residents and businesses within the immediate impact zone, notification should be provided prior to construction and in advance of any work related to property access.

6.2.3.2 Noise Impact Assessment and Road Construction Noise

Noise Impact Assessment

As noted in Section 2.1.2, the Ministry of the Environment (MOE) does not have noise guidelines specifically relating to the construction or roadway widening. However, the MOE does have a protocol with the Ministry of Transportation (MTO) relating to Provincial Highway Expansions. The protocol states that the primary objective is to achieve 55 dBA or the preconstruction ambient sound exposure, whichever is higher, at outdoor amenity areas. The MOE/MTO protocol indicates that for sound exposure increases greater than 5 dBA, an investigation into the administrative, economic, and technical feasibility of noise mitigation is required.

The results of the noise impact assessment indicate that a proposed reconfiguration of the interchange will result in lower sound exposures at most of the noise sensitive areas. This is essentially as a result of Dundas Street West being relocated further south away from most of the noise sensitive receptors. However, a minor increase of 1 decibel is predicted for the Tridel complex located south of Dundas Street West and west of Kipling Avenue.

Table 7 summarizes the resultant sound exposures through the corridor.

Table 7: Predicted Sound Exposure and Noise Impact

Receptor		Existing Leq 24- Hour (dBA)	Future Without Reconfiguration Leq 24-Hour (dBA)	Future With Reconfiguration Leq 24-Hour (dBA)	Noise Impact (dBA)
R1	northwest corner of Dundas and Beamish	61	62	56	-6
R2	southwest corner of Bloor and Beamish	57	59	57	-2
R3	north of Bloor, west of Prennan	54	55	55	0
R4	southeast corner of Bloor and Beamish	60	61	57	-4
R5	northwest corner of Kipling and Bloor	57	58	56	-2
R6	northeast corner of Kipling and Bloor	60	61	59	-2
R7	northwest corner of Dundas and Renown	64	64	61	-3
R8	Tridel Complex	61	63	64	1

Note: Receptor locations are shown on Figure 1 in the Noise Assessment Report found in **Appendix F.1**.

In summary, a reconfiguration of the Six Points Interchange will have none to negligible noise impact on noise sensitive receptor locations. As per the MTO/MOE guidelines, noise mitigation is not required for the proposed works.

Road Construction Noise

Construction of the proposed new road network has the potential to result in noise and dust. Construction noise is however temporary noise and depends on the type of work required. The impact of construction noise depends on the type of equipment used, number of pieces of equipment, time and duration of operation, and the proximity to noise sensitive receivers in question. Construction noise should be kept to a minimum through the use of well maintained equipment with appropriate noise controls and the application of dust suppressants as necessary. Construction activities are to comply with the requirements of the municipal noise by-laws.

Further details on the noise impact assessment can be found in the *Environmental Noise Assessment Report*, provided in **Appendix F.1**.

6.2.3.3 Air Quality Impact Assessment

A screening level assessment of the potential impacts on local air quality from a reconfiguration of the Six Points Interchange was undertaken. This section provides a summarized discussion of the results of the assessment. Further details can be found in the *Screening Level Air Quality Assessment Report* provide in **Appendix F.2**.

Carbon monoxide (CO), nitrogen dioxide (NO₂), and inhalable particulate matter (PM₁₀) were considered, using screening level modelling techniques with projected AM and PM peak hour traffic volumes.

The air quality assessment involved two primary tasks:

- A review of historical ambient air quality conditions in the study area; and
- An assessment of potential local air quality impacts, attributable to vehicular emissions from projected, future-build, peak-hour traffic volumes, relative to applicable government guidelines.

The screening level modelling results are presented graphically in the form of concentration contours in the Air Quality Assessment Report. Contour plots were generated for CO, NO₂, and PM₁₀, for the years 2015 and 2030. NO₂ was estimated from the predicted hourly NO_x results using the Ozone Limiting Method. The key modelling results are presented below:

- Future predicted concentrations (2015 and 2030) of CO and NO₂ are well below their respective 1-hour Ambient Air Quality Criteria (AAQCs) at the residences adjacent to the reconfigured Six Points Interchange;
- Future predicted concentrations (2015 and 2030) of PM₁₀ are below the 1-hour average “level of concern” (50 g/m³) at the residences adjacent to the reconfigured Six Points Interchange;
- For CO and NO₂, even if the highest 1-hour ambient measurement from the MOE’s Etobicoke Monitoring Station is added to the highest predicted concentration, the combined impacts remain below each of their respective AAQCs; and
- For PM₁₀, ambient measurements from the MOE’s Etobicoke Monitoring Station indicate that background levels occasionally exceed the interim 24-hour average AAQC (1-hour “level of concern” was also exceeded). However, since the MOE’s Etobicoke Monitoring Station is located relatively close to the Gardiner Expressway and the Mimico GO Train Station, it is likely that the measured ambient levels from this station are higher than ambient levels in the area near the reconfigured Six Points Interchange.

A comparison between the 2015 and the 2030 results indicate the following:

- Predicted CO impacts are lower for the year 2030. This is expected to occur as a result of continuing improvements in motor vehicle tailpipe emissions, due to stricter new vehicle emission regulations;
- Predicted NO₂ impacts are lower for the year 2030. The decrease in total NO_x emissions between 2015 and 2030 is greater than the decrease in NO₂ impacts because the level of ozone is assumed to limit the conversion of NO_x to NO₂; and
- Predicted PM₁₀ impacts are about the same in both scenarios. Although the tailpipe emissions of PM₁₀ are expected to decrease between 2015 and 2030, the re-entrained road dust emissions are not technology dependant. Re-entrained dust from the roadway surface accounted for about 90% of the total PM₁₀ emissions.

Regulations governing emissions from vehicles and the composition of gasoline and diesel fuels are important factors for roadway air quality assessments. Regulations are typically developed and adopted in the United States before they are adopted in Canada. The lag time

between these events is shrinking and is also becoming less significant because of the high level of integration of the automotive sector across North America. New regulations bring new requirements for fuel quality, contributing to significant emission reductions. Cleaner fuels will be required in addition to advanced emission control technology.

Conclusions

The review of historical ambient air quality levels indicates that levels of CO and NO₂ are well below their respective guidelines at the MOE's Etobicoke Monitoring Station. However, occasionally there are measured levels above the guidelines for particulate matter and ground level ozone, which are not uncommon to many points of Southern Ontario.

The dispersion modelling results (without background) indicate that local air quality impacts attributable to vehicular emissions from projected, future-build, peak-hour traffic volumes within the proposed new road network, are less than applicable government guidelines at the adjacent residences for all modeled scenarios.

6.2.4 Summary of Identified Concerns and Proposed Mitigation Measures

A summary of the potential impacts to the natural, social and economic environments, together with recommended mitigation measures is provided in **Table 8**.

Table 8: Potential Impacts and Proposed Mitigation Measures

Factor	Potential Impact	Proposed Mitigation
Natural Environment		
Vegetation	<ul style="list-style-type: none"> Reduction of vegetation within the interchange area 	<ul style="list-style-type: none"> The right-of-way vegetation is primarily ornamental plantings and hedgerows. However, this urban vegetation provides habitat for birds and small mammals, shade, soil stabilization, and carbon cycling through respiration. Efforts should therefore be made to protect urban vegetation that does not need to be removed. Environmental protection measures designed to reduce vegetation removals, and to reduce potential impacts of road salt should be considered on a site-specific basis during detail design. Some of these measures are provided in Section 6.2.2.1. There are no rare, threatened or endangered vegetation or significant vegetation communities within the study limits. Therefore, this project will not affect any of these communities.
Wildlife	<ul style="list-style-type: none"> Displacement of wildlife 	<ul style="list-style-type: none"> The right-of-way consists primarily of previously modified/disturbed terrestrial wildlife habitat with low habitat structure and diversity, and limited habitat capability. As a result, a reconfiguration of the interchange will not have a significant effect on wildlife and wildlife habitat. However, numerous bird species located within the project limits are listed under the Migratory Birds Convention Act (MBCA). To meet the requirements of the MBCA, no vegetation removals should occur during the nesting season (April 1 to July 31). If vegetation clearing is required during this period, a nesting survey should be carried out by a qualified avian biologist prior to construction. If active nests are found, a site-specific mitigation plan should be prepared in consultation with the Canadian Wildlife Service. There are no rare, threatened or endangered wildlife or significant wildlife habitat within the study limits. Therefore, this project will not affect any of these habitats.

Factor	Potential Impact	Proposed Mitigation
Natural Environment		
Fisheries and Aquatic Habitat	<ul style="list-style-type: none"> Direct impact on fisheries and aquatic habitat 	<ul style="list-style-type: none"> There are no watercourses located within the study limits. Therefore, the proposed reconfiguration is not anticipated to affect any fisheries or aquatic habitat. During construction however, measures as described in Section 6.2.2.4 - erosion and sediment control, should be taken to minimize the potential for downstream impacts to fisheries and aquatic habitat.
Surface Water Quantity	<ul style="list-style-type: none"> Increase in runoff volume and peak flows 	<ul style="list-style-type: none"> Maximize runoff volume and peak flow controls on developable lands Provide additional storage through “Super Pipes” in each of the storm sewer systems prior to the downstream constrained sewer segment, in order to match with the downstream allowable rates in each subcatchment area. The sizing of sewers to be conducted during the detail design stage.
Surface Water Quality	<ul style="list-style-type: none"> Increase in Total Suspended Solids (TSS) 	<ul style="list-style-type: none"> Oil Grit Separators (OGSs) and storage tanks are potentially suitable for treating runoff from the road area. This is to be confirmed through more detailed water balance analysis with more site-specific hydrogeologic and soil data. “Super Pipes”, recommended for peak flow control in each of the subcatchment areas, can also provide water quality control. The Total Solids (TSS) removal within the “Super Pipes” can be equivalent to storage tanks. However, the water quality performance should be verified at the detail design phase of the study. Runoff from developable lands can be treated with various source and end-of-pipe control measures, such as underground storage tanks and off-line wet ponds. These would provide peak flow control, as well as water quality control. Applying clean water collector systems technology in future development areas should be explored. This new technology will enhance ground water infiltration, and would provide runoff quantity and quality control. Existing developed areas should be retrofitted with source control measures such as downspout disconnections in residential areas and porous pavements in commercial areas.
Surface Water Infiltration	<ul style="list-style-type: none"> Decrease in infiltration 	<ul style="list-style-type: none"> This decrease can be mitigated by implementing new technologies such as clean water collections systems and green roof systems. Rerouting parking lot runoff to grassed area in each of the developable areas can also enhance the infiltration volume under future conditions.

Factor	Potential Impact	Proposed Mitigation
Natural Environment		
Soil Removal, and Contaminants	<ul style="list-style-type: none"> Potential for removal of contaminated soils 	<ul style="list-style-type: none"> Any soils that are removed during construction should be tested for contaminants. If the soils are contaminated, the City is to notify the MOE and have a contingency plan for how and where the soils will be disposed of or remediated. The City is to develop a contingency plan for how any gas tanks or petroleum storage sites encountered during construction will be handled, to ensure groundwater and soil contamination does not occur.
Social and Economic Environment		
Socio-Economic	<ul style="list-style-type: none"> Impacts on businesses and residents 	<ul style="list-style-type: none"> Overall, a reconfiguration of the Six Points Interchange will provide for a vibrant mix of employment and housing which will present opportunities for residents to walk or use public transit to work. A reconfiguration will also allow for a hub of cultural, social, administrative and recreation uses, which will facilitate social interaction and foster a sense of community and identity for the area. In the short-term, the nature of the work required to reconfigure the interchange is such that traffic disruption and delays cannot be avoided. Existing businesses and residents will therefore be impacted while construction is taking place, mainly from traffic detours, restricted movements, etc. Timing of construction activities can be coordinated to minimize some of these impacts.
Noise and Road Construction	<ul style="list-style-type: none"> Increase in existing noise levels. 	<ul style="list-style-type: none"> A reconfiguration of the Six Points Interchange will have none to negligible noise impact on noise sensitive receptor locations. As per the MTO/MOE guidelines, noise mitigation is not required for the proposed works. Construction activities are to comply with the requirements of the municipal noise by-laws.
Air Quality	<ul style="list-style-type: none"> Degradation in ambient air quality conditions 	<ul style="list-style-type: none"> Local air quality impacts attributable to vehicular emissions from projected, future-build, peak-hour traffic volumes within the proposed new road network, are less than applicable government guidelines at the adjacent residences for all modeled scenarios. Air quality is therefore not a concern.
Property Requirements	<ul style="list-style-type: none"> Requirement for additional property 	<ul style="list-style-type: none"> Approximately 585 m² of property will be required from two property owners. Formal definition of property requirements will be determined during detail design.
Streetscaping	<ul style="list-style-type: none"> Reduced aesthetics 	<ul style="list-style-type: none"> Streetscaping is an important element in establishing an urban centre to help in increasing the enjoyment of area residents, businesses, and visitors, and to provide some definition and character of the area. As such, extensive streetscaping is proposed to be provided with a reconfiguration of the interchange. Streetscaping details will be determined during detail design, and will meet the City of Toronto (<i>Etoibicoke Centre Secondary Plan</i>) streetscaping and urban design guidelines.

Factor	Potential Impact	Proposed Mitigation
Social and Economic Environment		
Archaeology, and Cultural Resources	<ul style="list-style-type: none"> ▪ Identification of precontact and historic archaeological sites in undisturbed areas. 	<ul style="list-style-type: none"> ▪ In the event that deeply buried archaeological remains are encountered during construction, the Office of the Regulatory and Operations Group, Ministry of Tourism, Culture and Recreation should be contacted, and standard procedures should be adhered to during construction, in accordance with the Cemeteries Act.
Utilities	<ul style="list-style-type: none"> ▪ Relocation of existing utilities (above ground and underground) 	<ul style="list-style-type: none"> ▪ Relocation of existing utilities will be significant. Formal definition of impacts on utilities, specifically Toronto Hydro, Enbridge Gas, Bell Canada and Rogers Cable, will be determined during detail design.
Other Services	<ul style="list-style-type: none"> ▪ Relocation of existing water & wastewater services 	<ul style="list-style-type: none"> ▪ Relocation of existing water & wastewater services will be significant. Formal definition of impacts will be determined during detail design.
Illumination	<ul style="list-style-type: none"> ▪ Need for illumination 	<ul style="list-style-type: none"> ▪ The need for and type of illumination will be confirmed during detail design. Illumination is to be provided as appropriate.
Construction Detours	<ul style="list-style-type: none"> ▪ Inconvenience during construction. 	<ul style="list-style-type: none"> ▪ During detail design, a detailed construction staging and traffic management plan similar to that described in Section 6.1.7 should be developed to determine how traffic will be accommodated during construction and how access to properties will be maintained. ▪ The City will attempt to mitigate impacts as much as possible.