

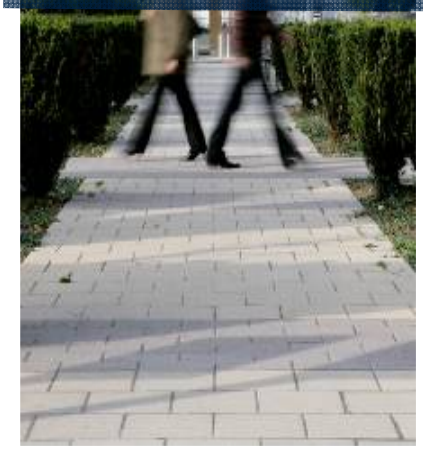


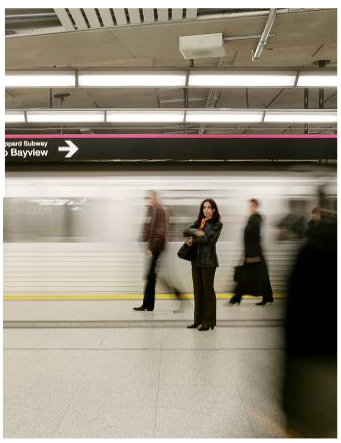
4050 Yonge Street

Urban Transportation Considerations

FEBRUARY 22, 2011






GROUP Transportation Consultants

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.0 Background & Scope

Build Toronto is the real estate and development corporation created by the City of Toronto with a vision for City Building that maximizes the value of city-owned, underutilized, surplus real estate. Build Toronto's mandate is to engage both private and public sector organizations to:

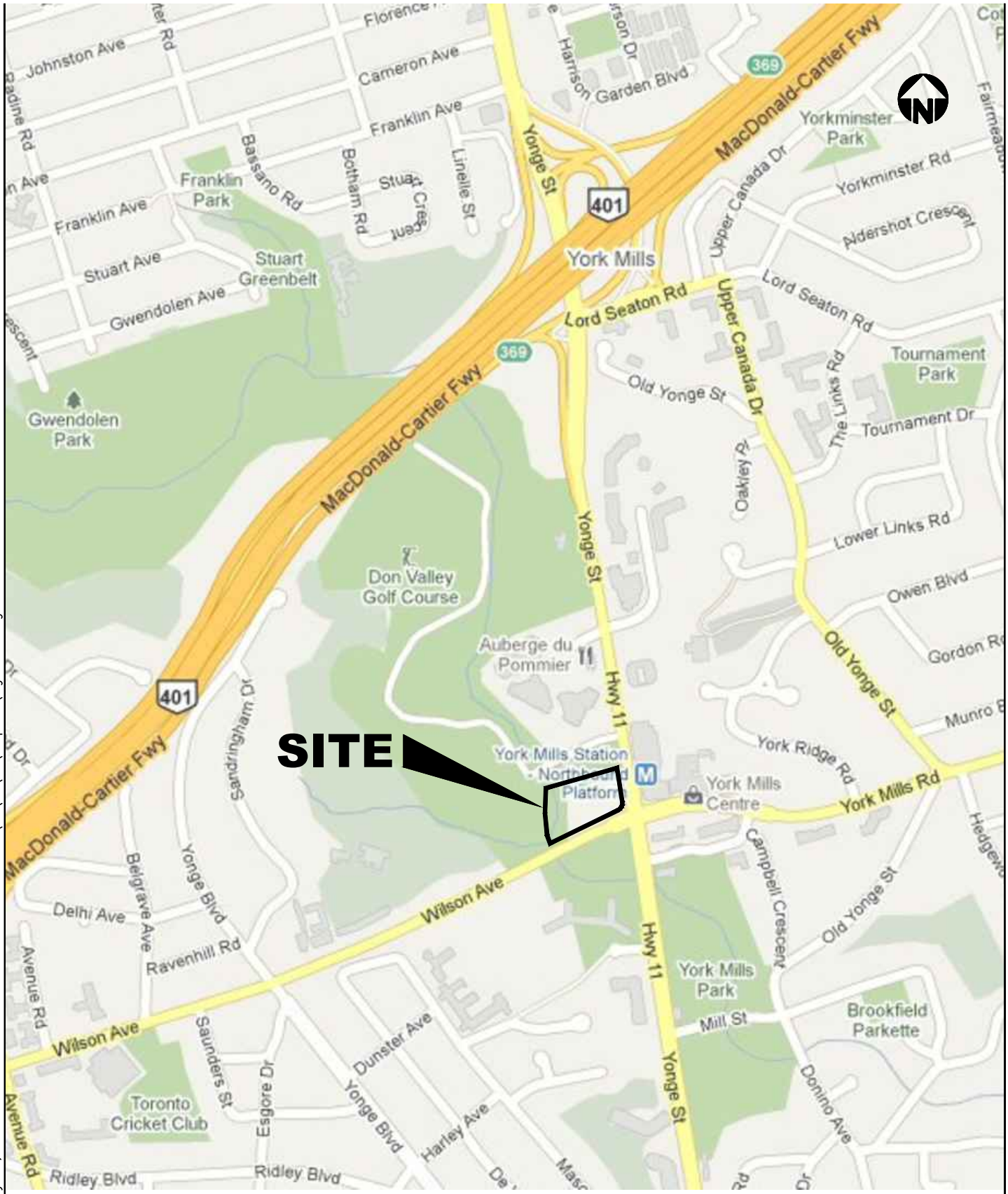
- create a financial dividend for the City;
- enhance employment opportunities;
- focus on quality, urban design and environmental stability;
- regenerate neighbourhoods responsibly; and
- act as a catalyst for further neighbourhood development.

The 4050 Yonge Street site is currently occupied by a Toronto Transit Commission (TTC) commuter parking facility containing approximately 260 spaces. The site location is illustrated in Figure 1 and Figure 2. The TTC, the landowners, in co-ordination with the City of Toronto have declared the site surplus for two reasons: it is not critical to TTC operations; and the existing parking use underutilizes a prime development site immediately adjacent to an inter-modal public transit hub. Build Toronto is now responsible for developing the property.

Build Toronto submitted an application to the City of Toronto for an Official Plan Amendment and a Zoning By-law Amendment in May, 2010, to permit the construction of an office building with ancillary retail on the site (the 'Project'). The application is consistent with the City of Toronto Official Plan which designates the site for mixed-use development and provides strong support for intensification at transit nodes. Build Toronto is proposing offices uses consistent with its mandate to encourage employment growth. The site is also appropriate for offices uses due to: the height limit applicable to the site; the current status of the area as an established employment node; market interest; and the site's location adjacent to the York Mills inter-modal Subway Station.

The TTC had considered adopting the new office building at 4050 Yonge Street, which would be constructed and managed by Build Toronto, as their new Corporate Headquarters. This initiative is no longer actively being considered.

As an alternative, Build Toronto has fielded expressions of interest in the new office building from other prospective single- and multi-tenant employers and are moving forward with other tenancies. Accordingly, for purposes of urban transportation analysis, the Project is evaluated as a general purpose office building in keeping with the City of Toronto's land use planning requirements.



SITE LOCATION

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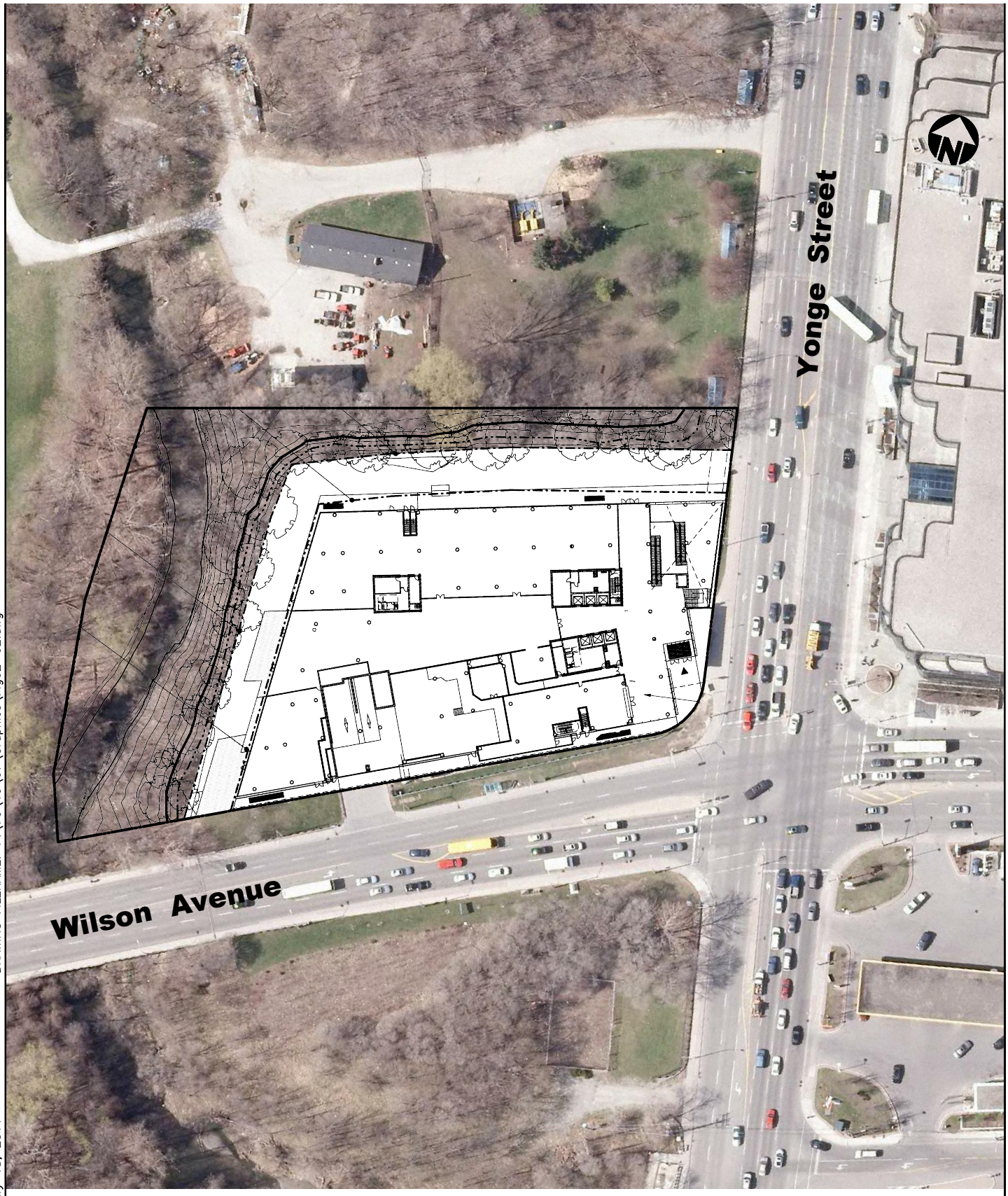

SITE CONTEXT

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Build Toronto's original May, 2010, application included concept building plans and supporting technical studies, including a Traffic Impact Study prepared by Cole Engineering, dated April, 2010.

This report complements and updates the Cole Engineering Transportation report. It responds to:

- comments received from City of Toronto Transportation Planning and Technical Services staff on the urban transportation elements of the original application;
- issues raised by concerned stakeholders during the course of the community consultation process undertaken to-date; and
- revisions made by Build Toronto to the design of the building.

The revisions to the building design are incorporated into drawings and plans prepared by KPMB Architects which accompanied a revised Official Plan Amendment, Zoning Bylaw Amendment and Site Plan Application made by Build Toronto in December, 2010.

Key changes to the building design made by Build Toronto include:

- a reduction in the height of the building from eight (8) stories to seven (7) stories together with a commensurate reduction in floor area;
- an increase in the parking supply from two (2) underground parking levels (227 spaces) to three underground parking levels (363 spaces);
- allowance for up to 10% of the parking to be designated for carshare, carpool and hybrid vehicles;
- consolidation of the parking garage and loading area driveways on Wilson Avenue;
- to the extent practical, relocation of the consolidated driveway on Wilson Avenue to the west;
- re-configuration of the loading area to provide four (4) formal loading spaces including two Type-B loading spaces and two Type-C loading spaces, as well as storage, refuse and recycling facilities;
- allocation of two (2) parking spaces in the underground for informal use by small delivery vehicles (e.g, couriers);
- provision of up to 134 bicycle parking spaces; and
- improved street level and underground level pedestrian access to the subway station, TTC Bus Station and GO Bus facilities.

The proposed new office building at 4050 Yonge Street now comprises 39,977 m^2 of gross floor area, and includes office uses, as well as ground floor retail and restaurant uses.

The following urban transportation matters are addressed in this report:

- Site Transportation Context;
- Parking and Transportation Demand Management;
- Loading Facilities;
- Site Plan Review;
- Implications of Eliminating the TTC Commuter Parking Lot; and
- Traffic Operations Update.

Small scale copies of the site plan drawings illustrating the revised building design are contained in Appendix A for reference purposes.

2.0 Urban Transportation Context

4050 Yonge Street (the "site") is located on the northwest corner of Yonge Street and Wilson Avenue within the City of Toronto. The site is currently occupied by the York Mills TTC commuter lot, which is owned by the Toronto Transit Commission (TTC) and maintained by the Toronto Parking Authority (TPA). Public street traffic control and transit service are illustrated in Figure 3.

2.1 Area Street System

A summary of the road network surrounding the site is set out below.

2.1.1 Provincial Expressway

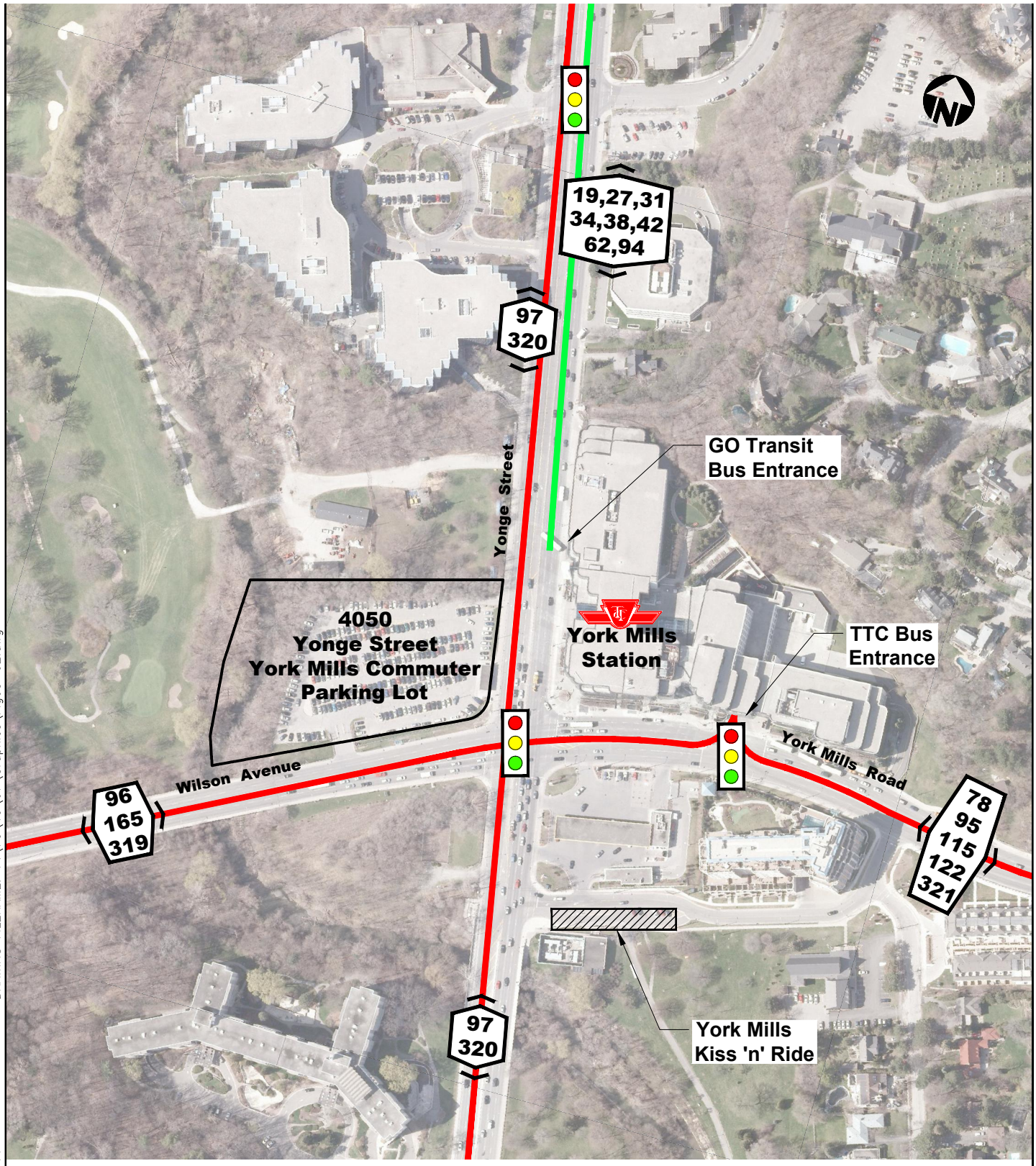
Highway 401, located north of the study area, is a fully controlled-access provincial highway, which runs east-west across Southern Ontario. Within the City of Toronto, the highway provides between six (6) to nine (9) lanes per direction though a core and collector system. From the study area, the highway is accessed via interchange ramps at Yonge Street. Motorists may also elect to travel via Wilson Avenue to access the Avenue Road Highway 401 on-ramps.

2.1.2 Arterial Roads

Yonge Street is a major north-south arterial road with a designated right-of-way of 36 metres southbound from Sheppard to just south of York Mills Road / Wilson Avenue. Yonge Street runs from the Town of East Gwillimbury in York Region, starting at Queensville Sideroad, and heads southbound towards Lake Ontario, terminating at Queens Quay East. It is six (6) lanes wide between Highway 401 and York Mills Road / Wilson Avenue, and expands to five-lanes wide south of York Mills Road / Wilson Avenue, and narrows again to four lanes south of Mill Street.

Wilson Avenue is a major east-west arterial road west of Yonge Street with a designated right-of-way of 36 metres to just east of Yonge Boulevard, before narrowing to a 27-metre right-of-way from there to Bathurst Street. Wilson Avenue is an extension of Albion Road (west of Weston Road) and extends easterly to Yonge Street, where it turns into York Mills Road. Wilson Avenue is four (4) lanes wide. As Wilson Avenue runs parallel to Highway 401 and is within close proximity to the highway, it often carries Highway 401 overflow volumes or by-pass traffic.

York Mills Road is a major east-west arterial road east of Yonge Street, with a designated right-of-way of 36 metres. York Mills Road is an extension of Wilson Avenue and extends towards the east until it ends at Victoria Park Avenue. York Mills Road is four (4) lanes wide from Yonge Street to Leslie Street, before widening to six (6) lanes.



TTC surface bus routes

GO Transit surface bus routes

000 Transit Routes

Traffic Signal

AREA PUBLIC ROAD & TRANSIT

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DATE PLOTTED: February 15, 2011

2.1.3 Collector Roads

Yonge Boulevard is a north-south collector, south of Wilson Avenue. Although this road is not within the study area, it is important to note that this collector road connects back to Yonge Street from Wilson Avenue. It is a two-lane road with a centre median, paralleling Yonge Street within the local neighbourhood.

2.1.4 Local Roads

Old York Mills Road is an east-west local road which is currently unsignalized at both York Mills Road and at Yonge Street. This local road serves a few small residential communities along York Mills Road and is two (2) lanes wide.

2.2 Area Transit Services

The study area is well served by transit, as there is a GO Transit and Toronto Transit Commission (TTC) bus terminal just east of the site and subway access is directly available from the site. The following is a description of the existing transit services provided within the study area.

2.2.1 TTC Subway

York Mills Subway Station on the Yonge / University / Spadina line is located right at the site. There is more than one entrance available to this station from the street: one entrance is on the northwest corner of Yonge Street and York Mills Road / Wilson Avenue; several entrances are accessed via the York Mills Centre; and one entrance is located on Old York Mills Boulevard, where a passenger loading facility is available. The designated passenger drop-off on Old York Mills Boulevard has seven (7) temporary (10–minute) parking spots for vehicles, as well as an informal lay-by on the south side of the road for vehicles.

2.2.2 TTC Surface Transit

On the ground floor of York Mills Centre, there is a TTC bus terminal which has access to York Mills Road at a signalized intersection exclusive to TTC vehicular accessibility in / out of the terminal. There are several TTC bus routes that run along the Wilson Avenue / York Mills Road and Yonge Street corridors, providing surface transit service and connections to the York Mills subway station on the Yonge / University / Spadina subway line.

97 Yonge runs north-south along Yonge Street and operates between Steeles Avenue and Davisville Station along the Yonge / University / Spadina subway line. During peak periods, it will run south to Union Station. This surface bus route runs parallel with the Yonge / University / Spadina subway line. During the morning and afternoon peak periods, the bus runs at a headway of approximately four (4) to five (5) minutes.

78 St. Andrews, which operates in a loop from York Mills Station to Bayview Avenue, runs primarily east-west along York Mills Road before travelling through the surrounding local residential community. During the morning and afternoon peak periods, bus headways are approximately 10 to 15 minutes.

95 York Mills operates between York Mills Station and the area of Ellesmere Road, Kingston Road and the University of Toronto Scarborough Campus. It runs primarily east-west along York Mills Road and Ellesmere Road. During the morning peak period, bus headways are approximately 3 minutes. In the afternoon peak period, bus headways are closer to 4 minutes.

96 Wilson runs east-west along Wilson Avenue and starts from York Mills Station and runs west towards Albion Road, with an intermediate stop at Wilson Subway Station (on the Spadina/University line). During the morning and afternoon peak periods, the bus headways are approximately 3 to 4 minutes.

115 Silver Hills runs east-west along York Mills Road from York Mills Station and heads east towards the area of Leslie Street and Highway 401. During the morning and afternoon peak periods, the buses run every 20 minutes.

122 Graydon Hall runs east-west along York Mills Road from York Mills Station before turning north on Lesmill Road and continuing on Duncan Mill Road and through the surrounding local residential area. Buses run approximately 12 to 13 minutes apart during the morning and afternoon peak periods.

165 Weston Road North operates between York Mills Station and the area of Weston Road and Steeles Avenue West, extending further north to the area of Major Mackenzie Drive and Highway 400 in the City of Vaughan. This bus route runs east-west along Wilson Avenue, then north-south on Weston Road. This route has an intermediate stop at Wilson Subway Station. An additional fare must be paid when riding past the City of Toronto boundary at Steeles Avenue. Bus headways during the morning and afternoon peak periods are approximately 7 to 8 minutes.

319 Wilson Blue Night starts at York Mills Station and heads west on Wilson Avenue towards the area of Martin Grove Boulevard and Steeles Avenue West. This bus operates during the overnight period, seven days a week.

320 Yonge Blue Night operates in a loop between Queens Quay West and Bay Street in the south before heading north on Yonge Street to Steeles Avenue. This bus parallels the Yonge / University / Spadina subway line and runs only during the overnight period, seven days a week.

321 York Mills Blue Night travels east west along York Mills Road between York Mills Station and the area of Neilson Road and Finch Avenue East, towards Centenary Hospital. This bus operates during the overnight period, seven days a week.

2.2.3 GO Surface Transit

There is currently a GO Transit bus terminal at York Mills Centre. GO buses that utilize this stop include:

- Route 19 – Oakville Highway 403;
- Route 27 – Milton Highway 401;
- Route 31 – Georgetown GO Train and bus;
- Route 34 – Brampton Local Highway 27 and Highway 427;
- Route 38 – Bolton; and
- Route 94 – Oshawa Highway 2.

3.0 Parking Supply Strategy

The amount of parking that should be supplied to support a new office building at 4050 Yonge Street depends upon a number of factors, including:

- site context including good public transit;
- Zoning By-law and City policy relating to sustainability;
- demand and the special characteristics of the building program;
- vehicular traffic impact;
- customer experience
- Transportation Demand Management (TDM); and
- economics and physical ability to provide parking.

The parking supply strategy for the new the Project recognizes each of these factors.

3.1 Site Context

The site occupies a central location in the City of Toronto and Greater Toronto Area with good regional vehicular access via Highway 401 and excellent intermodal public transit access.

The site is located in an established mixed-use employment area which is served by particularly good public transit accessibility, including GO Bus, TTC Bus and York Mills Subway Station on the Yonge / University / Spadina Line. It also enjoys a network of sidewalks, a direct weather protected pedestrian connection to all public transit facilities, and distributed shared public parking.

Relatively high volumes of traffic are evident on the nearby public street systems and access to, and travel along, Highway 401 is congested during weekday street peak periods of activity.

This environment promotes and facilitates non-auto travel and supports a strategy of minimizing the on-site parking supply.

3.2 Zoning By-law

Table 1 summarizes the number of parking spaces required for the Project based upon application of the former North York Bylaw, North York Centre standards and the new Zoning By-law recently approved by City Council (under appeal). Appendix B provides additional detail relating to the application of each of the standards.

TABLE 1: GENERAL ZONING BY-LAW PARKING REQUIREMENTS

Zoning By-law Standard (ZBL)	Parking Requirement	
	Min	Max
Former North York ZBL 7625	934	N/A
North York Centre Secondary Plan Area ZBL	335	372
New ZBL 1156-2010 – PA-1 Downtown Location	109	283
New ZBL 1156-2010 – PA-3 Avenues / Subway Location	306	660
New ZBL 1156-2010 – All Other Areas in the City	499	N/A

The site is technically governed by the former City of North York Zoning By-law 7625 because it is one of several sites throughout the City that is not part of the new By-law and because it is not otherwise the subject of a site specific By-law. The former City of North York Zoning By-law 7625, which applies to all sites across the City, regardless of location or public transit accessibility, prescribes that a minimum of 934 spaces be provided and maintained on-site. However, this number does not account for transit accessibility and urban context due to its proximity to the York Mills Subway and inter-modal GO/TTC bus stations. Therefore, the requirement overstates the minimum essential requirement for offices in the vicinity of Yonge and York Mills. As discussed in more detail in Section 3.3, this observation is supported by the parking supply and generation characteristics of nearby existing office uses, which are universally lower than would be required by the former North York Zoning By-law 7625.

The North York City Centre Secondary Plan area, located north of Highway 401 along the Yonge Street corridor, is a good comparative to the subject site in terms of parking supply and demand characteristics. North York City Centre is governed by specific parking standards and policies. The objective of these standards and policies is to support the use of non-auto travel resulting in an overall average target of approximately 35% of employees driving to work. Application of the North York City Centre Secondary Plan parking standards to the Project would require a minimum of 335 spaces and no more than 372 spaces.

The new Zoning By-law 1156-2010, approved for the Amalgamated City of Toronto, establishes parking standards recognizing the prevailing urban transportation context in different parts of the City. These differentiating contexts reflect generally reasonable

minimum essential parking needs including business visitors, persons who require a car for work and persons with disabilities. To promote non-auto travel and TDM initiatives, generally reasonable maximum parking thresholds are applicable in areas well served by public transit.

As previously noted, the 4050 Yonge Street site is excluded from the new Zoning By-law 1156-2010; however, understanding how these standards would apply is a useful exercise. Table 1 summarizes three representative standards from the new Zoning By-law 1156-2010 as they could be applied to the Project, including:

- standards applicable to downtown Toronto locations (Policy Area 1);
- standards applicable to Avenues and Subway locations (Policy Area 3); and
- standards applicable to all other areas of the City (Policy Area 4) for comparative purposes.

The site's location next to York Mills Subway Station and intermodal GO / TTC Bus terminals, and its location near the geographic centre of the City of Toronto, indicates that the most applicable standards are those designated for sites along Avenues and at Subway Stations. Application of these standards to the Project would require a minimum of 306 spaces and a maximum of 660 spaces.

The proposed parking supply of 363 spaces falls within the permitted range of the new Zoning By-law standards, as they apply to the Project, and is near the upper end of the range of permitted parking for office buildings based upon application of the North York Centre Secondary Plan standards. It is also in keeping with Provincial and City of Toronto Official Plan policies of minimizing parking supply in support of sustainable travel and cost-efficient land development and intensification.

3.3 Parking Demand

In locations with good transit, office parking demand is highly variable dependant upon specific employer characteristics, the cost of parking, shared parking potential and the availability of parking both on-site and in the site environs.

A review of parking generation at existing office buildings in the site environs offers some insight into the range of potential demand likely to be exhibited by employers leasing space at 4050 Yonge Street.

Based upon parking demand surveys recently undertaken by BA Group (as outlined in Appendix C), there is a range of parking demand generated by the office buildings in the site environs. At Yonge Corporate Centre and 90 Sheppard Avenue, prevailing demand is in the order of 1.66 to 1.82 spaces for every 100m^2 of gross floor area. At York Mills Centre and the

Proctor and Gamble Building, prevailing demand is in the order of 1.02 to 1.10 spaces for every 100m^2 of gross leasable area.

The proposed parking supply at 4050 Yonge Street translates into a ratio, based upon building floor area, of approximately 1.08 spaces for every 100m^2 of gross leasable floor area (BOMA). This value is comparable to the low end of the range of demand in the representative nearby office buildings noted above.

The different parking generation exhibited by the selected buildings in the area reflect different employer market parking needs and the available supply. The parking supply is significantly higher at Yonge Corporate Centre and 90 Sheppard than at the other two buildings. In this regard, employers, particularly large single tenant employers, who do not need significant amounts of parking by virtue of the site's location adjacent to York Mills Subway Station and their specific needs, are good candidates for the 4050 Yonge Street site.

3.4 Vehicular Traffic Impact

The amount of weekday street peak traffic generated by the new office building is directly related to the number of parking spaces provided on site. Providing only the minimum essential number of parking spaces minimizes vehicular traffic activity and makes best use of existing public transit infrastructure. It also minimizes traffic operational impacts at the site's driveway on Wilson Avenue and on the public street system generally.

3.5 Customer Experience

Not surprisingly, well located, easily-accessed and properly designed public parking facilities usually provide the highest customer satisfaction and economic return. Build Toronto is working with their architects to ensure that the garage is designed and operated to a high standard, with emphasis given to excellence in lighting, security, internal circulation, revenue control and pedestrian access. A parking information system providing customers with an understanding of space availability is also being considered.

3.6 Transportation Demand Management

Urban centres across Canada are implementing Transportation Demand Management (TDM) measures to reduce reliance on the automobile and make best use of existing transportation infrastructure. Transportation Demand Management (TDM) is a general term for strategies that result in more efficient use of transportation resources. It comprises various strategies that change travel behaviour – how, when and where people travel – in order to increase transport efficiency and achieve specific planning objectives. Some of these measures improve the transport options available; some provide incentives to change travel mode, time

or destination; others improve land use accessibility; and some involve transport reforms and new programs that provide a foundation for TDM.

The recommended strategic approach for 4050 Yonge Street is to adopt TDM measures which can be integrated into the physical design of the building rather than special employer operation plans or other approaches beyond the effective control of the developer. The emphasis is on properly sizing and managing the Project parking supply. The specific TDM and LEED® urban transportation measures Build Toronto are considering for the Project are set out below.

- Provide and maintain an underground parking supply which is within the range of permitted parking in the new Zoning Bylaw 1156-2010 for office buildings near subway stations.
- Allocate up to 10% of the parking supply for carpool, carshare and hybrid vehicle parking (including protection for electric charge stations) purposes.
- Provide bicycle parking in accordance with the minimum requirements of the new Zoning By-law 1156-2010 for office uses.
- Improve the street level pedestrian environment adjacent to the site and underground pedestrian connections to the public transit facilities.

In conjunction with good public transit access, properly sizing and managing parking is one of the most effective TDM measures which can be incorporated into the Project.

3.7 Ability to Provide Parking

Subsurface conditions and economics limit the amount of parking that can be provided on-site. A three-level underground parking structure would accommodate in the order of 363 spaces. The design investigations completed by Build Toronto indicate that a third level of parking is technically achievable at a reasonable economic return. Building a partial third level is not practical and there are no other uses proposed for the building that can be otherwise suitably accommodated in the basement.

The incremental cost of providing more than three parking levels will not generate sufficient economic return or utility to justify the costs.

3.8 Parking Supply Strategy

The planned Project supply of 363 spaces is within the range of the new recommended Zoning By-law 1156-2010 standard for office retail and restaurant uses. It is also within the range of permitted parking in North York Centre and is consistent with the low end of the range of parking generation exhibited by existing nearby office buildings.

The proposed supply is achievable from a construction and economic return perspective. It also supports Transportation Demand Management objectives, minimizes traffic impact, and can be accommodated by the proposed Project driveway location and design.

Taking into account all of the foregoing considerations, a parking supply target of approximately 363 spaces on three levels, as currently proposed, is reasonable from an urban transportation planning standpoint and will meet the minimum essential needs of the Project.

4.0 Service and Delivery

4.1 Zoning By-Law

Table C2, located in Appendix C, summarizes the number of loading parking spaces required for the Project based upon application of the former North York Bylaw and the new Zoning By-law recently approved by City Council (under appeal). The detailed calculations are outlined in Appendix C.

As previously noted, the site is technically governed by the former City of North York Zoning By-law 7625 because it is one of several sites throughout the City that is not part of the new By-law, and also because it is not otherwise yet the subject of a site specific By-law. The former City of North York loading standards, which apply to all sites across the City regardless of land use, prescribe a minimum of three (3) loading spaces be provided and maintained on-site.

TABLE 2 GENERAL ZONING BY-LAW LOADING REQUIREMENTS

Former North York By-law 7625	
Land Use	**Number of Loading Spaces Loading Space Type "Loading Space"[1]**
Building	3

New City of Toronto Zoning By-law 1156-2010 (Under Appeal)			
Land Use	**Number of Loading Spaces Loading Space Type[2]**		
	"A"	**"B"**	**"C"**
Retail	--	--	--
Restaurant	--	1	--
Office	--	2	3
With Sharing	--	2	3
--	--		

1. North York By-law "Loading Space" dimensions: 11.0m long x 3.6m wide x 4.2m high
2. City of Toronto Zoning By-law loading space dimensions:
   Type A - 17.0m long x 3.5m wide x 4.3m high
   Type B - 11.0m long x 3.5m wide x 4.0m high
   Type C - 6.0m long x 3.5m wide x 3.0m high

The new Zoning By-law 1156-2010 approved for the Amalgamated City of Toronto establishes loading standards recognizing different land uses and sharing characteristics. Application of this by-law results in the requirement for two (2) Type B and three (3) Type C loading spaces.

4.2 Loading Demand

In order to better understand the loading characteristics of the proposed site use, and to enhance the basis for determining an appropriate loading supply, BA Group, undertook detailed loading surveys at two separate, similarly sized office building sites in the vicinity of the Project. The two sites were Yonge Corporate Centre, located at 4100, 4110 and 4120 Yonge Street, and the Proctor and Gamble Building, located at 4711 Yonge Street.

Yonge Corporate Centre, an office campus located north of the Project, comprises three separate office buildings. 4100 and 4110 Yonge Street, two of the office buildings located within the Yonge Corporate Centre campus, have a total gross leasable area (similar to the new City of Toronto definition of Gross Floor Area, as it relates to loading) of approximately 43,092 m^2. These two buildings share a common loading area.

The Proctor and Gamble Building includes approximately 34,619 m² of gross leasable area (similar to the new City of Toronto definition of Gross Floor Area, as it relates to loading), and maintains a formal loading area.

The surveys were conducted during normal receiving hours from Monday, November 8th, to Thursday, November 11th, 2010, at the Proctor and Gamble building, and from Wednesday, November 17th, to Friday November 19th, 2010, at Yonge Corporate Centre. Data collected included: time of vehicle arrival; time of vehicle departure; type of vehicle; type of delivery; and vehicle accumulation.

The results of the loading surveys are summarized in Table 3.

TABLE 3: PROXY SITES LOADING STUDY SUMMARY

Proxy Site	Gross Leasable Area (m^2)	Loading Survey Results
Yonge Corporate Centre[1] 4100 and 4110 Yonge Street	43,092	• 65-70 vehicles per day (average 67 vehicles) • 80% courier, 15% delivery & 5% service • 75% small size vehicles[3], 15% medium size vehicles[4] and 10% large vehicles[5] • No semi-trailer or refuse removal vehicle activity was observed • 85th percentile vehicle accumulation (courier and delivery) was 2 to 3 vehicles[6] • 95th percentile vehicle accumulation (courier and delivery) was 3 to 4 vehicles[7]
4711 Yonge Street[2]	34,619	• 45-75 vehicles per day (avg. 60 vehicles) • 55% courier, 40% delivery & 5% service • 75% small size vehicles[3], 10% medium size vehicles[4], 15% large vehicles[5] • No refuse removal vehicle activity was observed • 85th percentile vehicle accumulation (courier and delivery) was 2 vehicles • 95th percentile vehicle accumulation (courier and delivery) was 3 vehicles

Notes:
1. Loading survey was undertaken by BA Group from Wednesday to Friday, November 17-29, 2010 between 8am to 4pm.
2. Loading survey was undertaken by BA Group from Monday to Friday, November 8 to 12, 2010 between 8am to 4pm.
3. Small size vehicles include cars, vans, pick-up trucks, etc.
4. Medium size vehicles include cube vans and step up trucks.
5. Large size vehicles include single-unit trucks
6. In other words, 85% of the time between 8am to 4pm (408 out of 480 minutes) there was never more than 2 to 3 vehicles present.
7. In other words, 95% of the time between 8am to 4pm (456 out of 480 minutes) there was never more than 3 to 4 vehicles present.

A key factor when sizing a loading facility is the vehicle accumulation: the number of vehicles expected to be at the facility at a particular time. The 85th to 95th percentile accumulation is often used as a reasonable and practical threshold for assessing transportation related demands such as loading. The provision of loading spaces using the 95th percentile accumulation criteria means that the demand for loading spaces will only exceed the supply of loading spaces approximately 5% of the time (less than 2 hours over an entire week). Similarly, the provision of loading spaces using the 85th percentile accumulation criteria means that the demand for loading spaces will only exceed the supply of loading spaces approximately 15% of the time (less than 6 hours over an entire week).

Based upon the foregoing criteria, the observed 85th and 95th percentile accumulations at the two sites were approximately three (3) vehicles (85th) and three (3) to four (4) vehicles (95th), respectively.

Not only do they provide a location for vehicles to make deliveries and collect building refuse, but another common characteristic of formal loading facilities is that they also

provide a location for building trades persons to park their vehicles while providing building maintenance services, such as electrical, HVAC, plumbing and fire alarm service/inspections. Vehicles parked in the loading area for these types of activity usually do not need to be parked in a loading space; they just need to be near the building so the trades person has reasonable access to their tools and equipment. As the duration of this type of activity can sometimes be relatively lengthy as compared to typical delivery durations, observed overall loading accumulation totals (85th and 95th percentiles) are often skewed to reflect the presence of this activity even though the vehicle was not actually engaged in loading or unloading. This activity can be informally accommodated in the parking garage.

Given that the proposed land use and building size of the Project is similar to the two surveyed buildings in the vicinity, it is reasonable to assume that the estimated loading demand/number of loading spaces for 4050 Yonge Street will be approximately 2 to 3 vehicles using the 85th percentile criteria and 3 to 4 vehicles using the 95th percentile criteria for only loading related activity (delivery vehicle/courier vehicle).

The surveyed data also indicates that approximately 75% of the vehicles using the loading facility can be expected to be small (i.e., cars, vans, pick-up trucks) and approximately 25% of the vehicles can be expected to be medium to large (i.e., cube vans, step vans, single-unit trucks). Small vehicles can typically be accommodated within a City of Toronto Type C loading spaces while the medium to large vehicles can be typically accommodated within a City of Toronto Type B loading space. The survey data suggests that of the total number of loading spaces provided, 75% should be Type C loading spaces and 25% should be Type B loading spaces.

4.3 Loading Supply

The current architectural ground floor plan illustrates the provision of two (2) Type B and two (2) Type C loading spaces within a formal loading facility. The provision of four (4) loading spaces in total exceeds estimated 85th percentile overall loading demand and meets the 95th percentile for actual loading/unloading activity (delivery vehicles/courier vehicles).

The relationship between the ground level formal loading facility and the underground parking garage provides an opportunity to designate a couple of parking spaces near the bottom of the parking ramp for use by courier or service vehicles (cars, mini-vans, vans, pick-up trucks), many of which can be accommodated within the vertical clearance typically provided in an underground parking garage. The provision of these overflow loading area parking spaces within the underground parking garage would serve to relieve occasional peaks in loading area activity and would well serve the longer term parking needs of trades persons without physically occupying formal loading spaces.

The provision of two (2) Type B and two (2) Type C loading spaces (four in total) within a formal loading facility – as illustrated on the current architectural plan – supplemented with an informal designation of two (2) overflow small delivery vehicle or service vehicle parking spaces on Parking Level P1, near the bottom of the parking ramp, will adequately meet the estimated recurring loading demand for the site, with the additional flexibility to accommodate occasional peaks in loading activity.

Drawings VMD-1 through VMD-11 in Appendix D illustrate the turning paths of typical delivery trucks, courier vans and refuse collection vehicles entering and exiting the site in a forward motion.

5.0 Site Plan Review

The proposed Site Plan, illustrated in the drawings and plans prepared by KPMB Architects which accompanied a revised Official Plan Amendment, Zoning By-law Amendment and Site Plan Application made by Build Toronto in December, 2010, incorporates well designed urban transportation elements.

The driveway location and design respect the site context, architectural and urban design requirements of the building while providing for motorist, cyclist, service and delivery activity levels and functional needs. Good sightlines and geometry are provided at the interface of the driveway with Wilson Avenue.

5.1 Bicycle Parking

As previously noted, the site is technically governed by the former City of North York Zoning By-law 7625 because it is one of several sites throughout the City that are not part of the new Zoning By-law 1156-2010. No bicycle parking is required by Zoning By-law 7625. The new Zoning By-law 1156-2010 would require 123 bicycle parking spaces while the Toronto Green Standards would require 117 bicycle parking spaces, as summarized in Table 4. Appendix B provides additional detail relating to the application of each of the standards.

TABLE 4: CITY OF TORONTO BICYCLE PARKING STANDARDS

Standards	Parking Requirement[1]		
	Short Term[2]	Long Term[3]	Total
Zoning By-law 1156-2010 (PA-3 / All Other Areas)	71	52	123
Toronto Green Standards (Rest of City)	65	52	117

Notes:
1. Bicycle parking requirements are based upon the total interior floor area (without exemptions) and is assumed to be similar to the total GFA for parking calculation purposes. All parking requirements are based upon office, retail and restaurant GFA. Office GFA is 38,797 m^2, retail GFA is 374 m^2 and restaurant GFA is 806 m^2.
2. Short term bicycle parking are for use by visitors to the building.
3. Long term bicycle parking are for use by the occupants or tenants of the building.
4. The variable discrepancies between the Toronto Green Standards and Zoning By-law 1156-2010 is based upon the requirement of 3 additional bicycle parking spaces plus the rate in Zoning By-law 1156-2010, while the Toronto Green Standards requires the greater of either 6 bicycle parking spaces or the bicycle parking rate requirements only.

The City of Toronto has also developed the Green Development Standards, which contain performance targets and guidelines related to sustainable site and building design for new development. All applications are required to meet Tier 1 of the Toronto Green Standards (TGS). The criteria for bicycle parking is to comply with Zoning By-law 1156-2010. The TGS bicycle parking rates apply to all areas including those that are not part of the Comprehensive Zoning By-law.

Up to 134 bicycle parking spaces will be provided. This supply is consistent with the range of 117 and 123 bicycle parking spaces required from both the Toronto Green Standards and Zoning By-law 1156-2010, respectively. Build Toronto proposes to provide the majority of bicycle parking spaces (126 spaces) on the first parking level and eight (8) spaces at street level. Access to the spaces at the first parking level is provided by way of the parking ramp with shared bicycle / motorists inbound access and a separate outbound bicycle lane. Complementary change room and shower facilities are also provided.

5.2 Other Considerations

Improved street level and underground level pedestrian access to the Subway Station, TTC Bus Station and GO Bus facilities are integrated into the Project. The sidewalks and boulevard surrounding the site are being upgraded and a ravine trail system along the north and west sides of the building is being provided.

The layout and design of parking spaces, internal circulation, interfloor ramping and pedestrian movement within the parking garage provides for clear wayfinding and satisfactory motorist movement. An allowance for up to 10% of the parking to be designated for carshare, carpool and hybrid vehicles is incorporated into the design.

The current architectural parking layout assumes that parking will be controlled through the use of an automated, non-gated parking and revenue control system, often referred to as "Pay and Display", for visitors, and vehicle mirror "hang-tags" for monthly parkers. This type of automated, non-gated "Pay and Display" system is currently used within the existing surface parking lot on this site, as well as at the nearby TPA surface parking lot.

However, for purposes of parking operation and control flexibility, it may make sense to operate the proposed underground parking garage using an automated, gated parking and revenue control system, often referred to as "Pay-On-Foot", for visitors, and proximity cards or transponders for monthly parkers. This type of parking system is more common in larger, multi-level parking facilities and provides a more secure type of parking and revenue control, without the need for enforcement.

While a non-gated "Pay and Display" parking and revenue control system can be introduced into a parking facility with little to no impact on the physical layout of the parking spaces (as formal parking control lanes are not required), a gated "Pay-On-Foot" parking and revenue control system does require formal parking control lanes and can sometimes impact the parking layout with respect to configuration and supply.

In this case , the introduction of an automated gated parking and revenue control system would result in the loss of approximately four (4) parking spaces as illustrated on Drawing SK-1 of Appendix D.

We also note that it is also necessary to delete the two (2) parking spaces at the north end of the western most parking row on Parking Level P1, as the drive-aisle serving these spaces has insufficient width. This is also necessary on Parking Levels P2 and P3, although only one (1) parking space on each level is affected. The loss of parking due to insufficient drive-aisle width is four (4) in total.

The total parking reduction resulting from the possible introduction of an automated, gated parking and revenue control system and insufficient drive-aisle width is eight (8) spaces, which would reduce the current overall parking supply indicated on the Site Plan prepared by KPMB Architects dated December, 2010, from 371 spaces to 363.

6.0 TTC Commuter Parking Lot

The York Mills Commuter Parking Lot (TPA Lot 812) currently occupies the 4050 Yonge Street site. The land is owned by the Toronto Transit Commission (TTC), but the lot is operated and maintained by the Toronto Parking Authority (TPA). The lot contains approximately 260 spaces. Whereas it has been historically regulated by both gated and non-gated parking control systems, it is currently controlled by a "Pay-and-Display" revenue control system.

The TTC, in co-ordination with the City of Toronto, has declared the site surplus because it is not critical to TTC operations and because the existing parking use underutilizes a prime development site immediately adjacent to an inter-modal public transit hub. The prospective loss of the commuter parking lot has been raised as a significant concern by neighbourhood community groups and residents in the area. Their primary concerns are listed below.

- The Commuter lot provides convenient parking for residents using the subway and GO/TTC bus service during the weekday daytime.
- It is particularly convenient and useful for residents in the evenings and on weekends.
- The cost of parking in the lot is lower than at other nearby public parking facilities.
- The lot is used for informal passenger drop off.
- Eliminating the lot will result in significantly more commuters driving downtown.
- Eliminating the lot will result in overflow parking on neighbourhood streets.

The TTC commuter parking lot was closed last year from June until just before Christmas to accommodate alternating TTC and GO Bus terminal staging while renovations and general repairs were being undertaken at York Mills Centre. Observations made before, during and after this initiative provide helpful insight into the implications of not replacing the lot. The findings of customer surveys undertaken by the TTC, surveys of public parking availability and cost in the area, and observations of on-street activity and drop off are summarized in the next sections.

6.1 TTC Customer Surveys

The TTC undertook an interview survey of customers at the York Mills TTC Commuter Lot (TPA Lot 812) over the course of several weekday mornings in May, 2010. The survey complemented similar surveys undertaken in 2004. A total of 261 responses were received. Table 5 presents selected survey responses. Notable findings from the surveys are summarized below.

- 30 of 260 customers originated from within the surrounding area.
- Overall, 70% of all customers are commuters whose primary destination is downtown Toronto by subway.
- Three-quarters of all customers indicated that they would find a suitable alternative if the York Mills Lot was closed – parking at another TTC lot, parking in another commercial lot or taking the bus to the subway station.
- Closing the York Mills Lot will not result in significantly more commuters driving downtown.

These findings indicate that the York Mills lot is not significantly used by local residents for weekday daytime purposes (30 spaces), that less than a quarter of the parking activity is used by people who work in the area (40 spaces) and that the majority of customers (200+/-) will find a suitable alternative when the lot is closed to permit development of an office building at 4050 Yonge Street.

In this regard, during the course of the Community Consultation process, several residents who live in the area confirmed that the availability of the lot was particularly important to the Community for evening and weekend travel by subway, and less important during the weekday daytime periods.

TABLE 5: 2010 TTC CUSTOMER SURVEY DATA – YORK MILLS TTC COMMUTER LOT (TPA 812)

Question	Respondents	Percentage
Question #4: *Are you commuting from this parking lot or do you work in the immediate area?*		
Commuting	189	72%
Work in Area	68	26%
Other	4	2%
TOTAL	**261**	**100%**
Question #5: *After you have parked your car here, how will you be continuing your trip?*		
On foot to my destination	73	28%
Car ride with someone	1	0%
Bicycle	0	0%
TTC (Bus)	8	3%
TTC (Subway)	177	68%
GO Transit or other transit	1	0%
Other	0	0%
Refused / Don't Know	1	0%
TOTAL	**261**	**100%**
Question #7: *What is the general location of your final destination?*		
Immediate area near this lot	41	16%
Downtown Toronto	174	67%
North York	36	14%
Scarborough	2	1%
Etobicoke	0	0%
Other	8	3%
TOTAL	**261**	**100%**
Question #8: *If commuter parking is no longer available at this location, what would you most likely do?*		
Park at another TTC lot and get on TTC	82	31%
Park on the street and walk to the TTC	8	3%
Take a bus to the subway station	21	8%
Drive all the way to your destination and not use TTC for these trips	64	25%
Stop making this trip	2	1%
Park in a commercial parking lot	67	26%
Park at GO station and take GO Transit	9	3%
Other	7	3%
Refused	1	0%
TOTAL	**261**	**100%**

Notes:

1. Toronto Transit Commission (TTC) undertook an OD survey at the York Mills Lot between 6:00 am to 9:30 am on the following days: May 10, May 12 and May 19, 2010 and in total received 261 responses.
2. Question #2 of the TTC OD survey asked respondents for "the postal code of the place where you started the trip that brought you to the parking lot today" or for the "nearest intersection to where you started this trip". In order to determine if respondents where coming from within the area, postal codes beginning with M2P and M5M were tabulated and intersections indicated that are encompassed within these postal areas was also included. In total, there were 30 respondents who started their trip from these areas.

6.2 TPA Lot Surveys

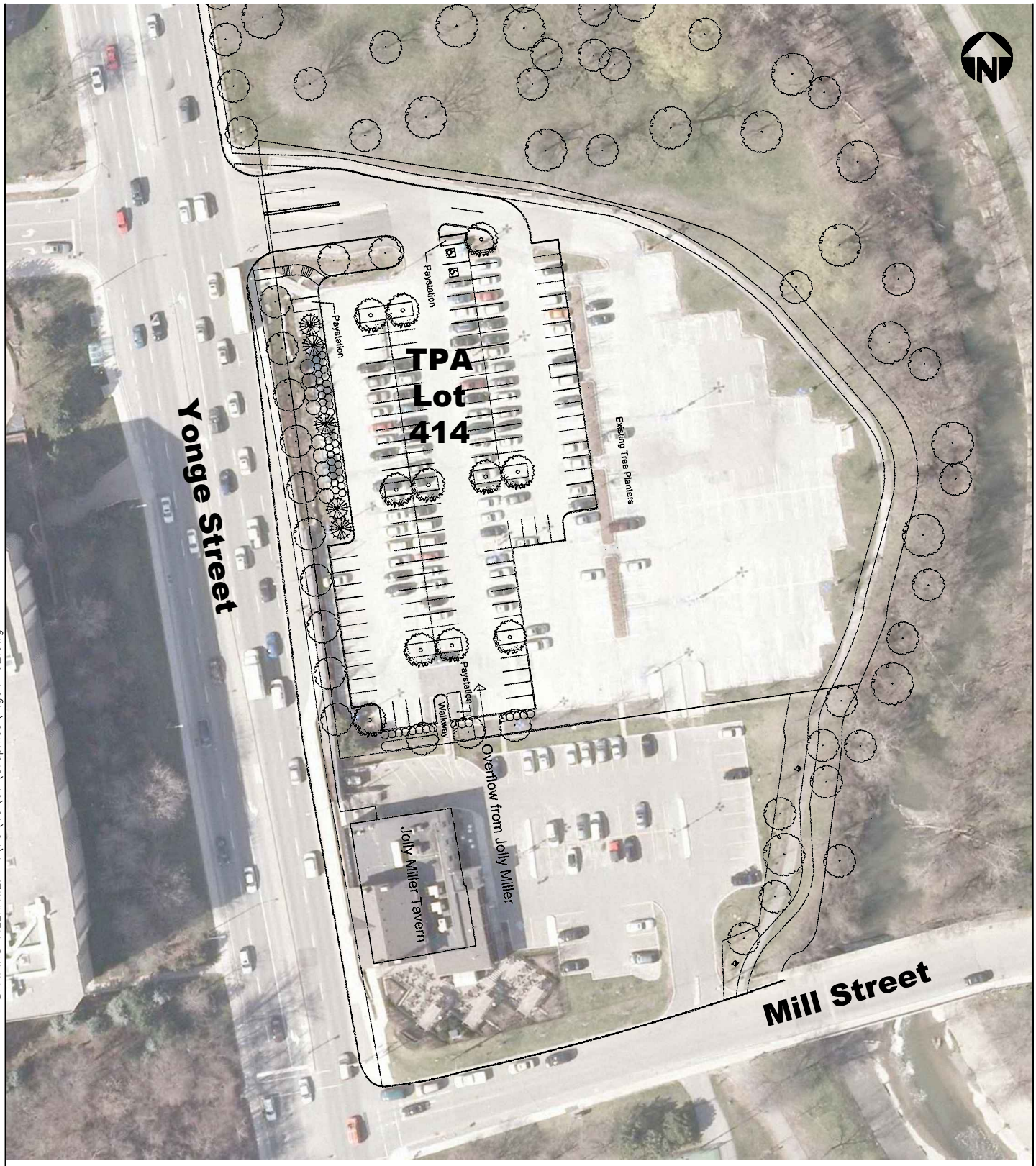
The Toronto Parking Authority (TPA) has operated public parking Lot TPA 414 – the so-called "Jolly Miller Lot" south of Yonge and York Mills – for several years. A separate, adjacent, private lot serves the Jolly Miller Restaurant. Several years ago, the City of Toronto, in co-ordination with local neighbourhood resident organizations, approved a plan to eliminate the parking lot entirely and expand the park space. In response, the TPA undertook to pay for the park expansion through on-going revenues generated by the lot, providing that approximately 130 of the 260 spaces were retained once the park was expanded. This arrangement was ratified and the park expansion and parking lot re-configuration will proceed when sufficient funds have been generated by the TPA. Figure 4 illustrates the current and future lot configuration.

BA Group undertook parking lot occupancy counts at TPA Lot 414 (Jolly Miller Lot) during the weekday daytime periods in October, 2010 (when the York Mills Commuter Lot was closed) and compared the results with surveys undertaken by the TPA of:

- Lot 414 (Jolly Miller Lot) in
  - April and September, 2009, and
  - June and September, 2010; and
- Lot 812 (York Mills Lot) in
  - April and September, 2009, and
  - April 2010.

Graphical representation of the TPA parking demand data in April 2010 (while TPA Lot 812 was open) and June 2010 (while TPA Lot 812 was closed) is illustrated in Figure 5 during the weekday and Figure 6 during the weekend. Notable findings from the surveys are noted below.

- When the lot was closed from early summer to December, 160 of the 260 customers using the York Mills lot left the area entirely.
- Approximately 100 customers continued to find parking in surplus parking in TPA Lot 414 (Jolly Miller Lot).
- Taking into account the findings of the TTC customer interview surveys, many of the remaining customers will also leave the area when the TPA is reconfigured to permit an expansion of the park – when the total supply of approximately 260 spaces is reduced to approximately 130 spaces.
- While TPA Lot 414 (Jolly Miller) will likely be well used during the weekday daytime, between 75 and 100 spaces will typically be available in the re-configured 130 space lot during evenings and weekends.



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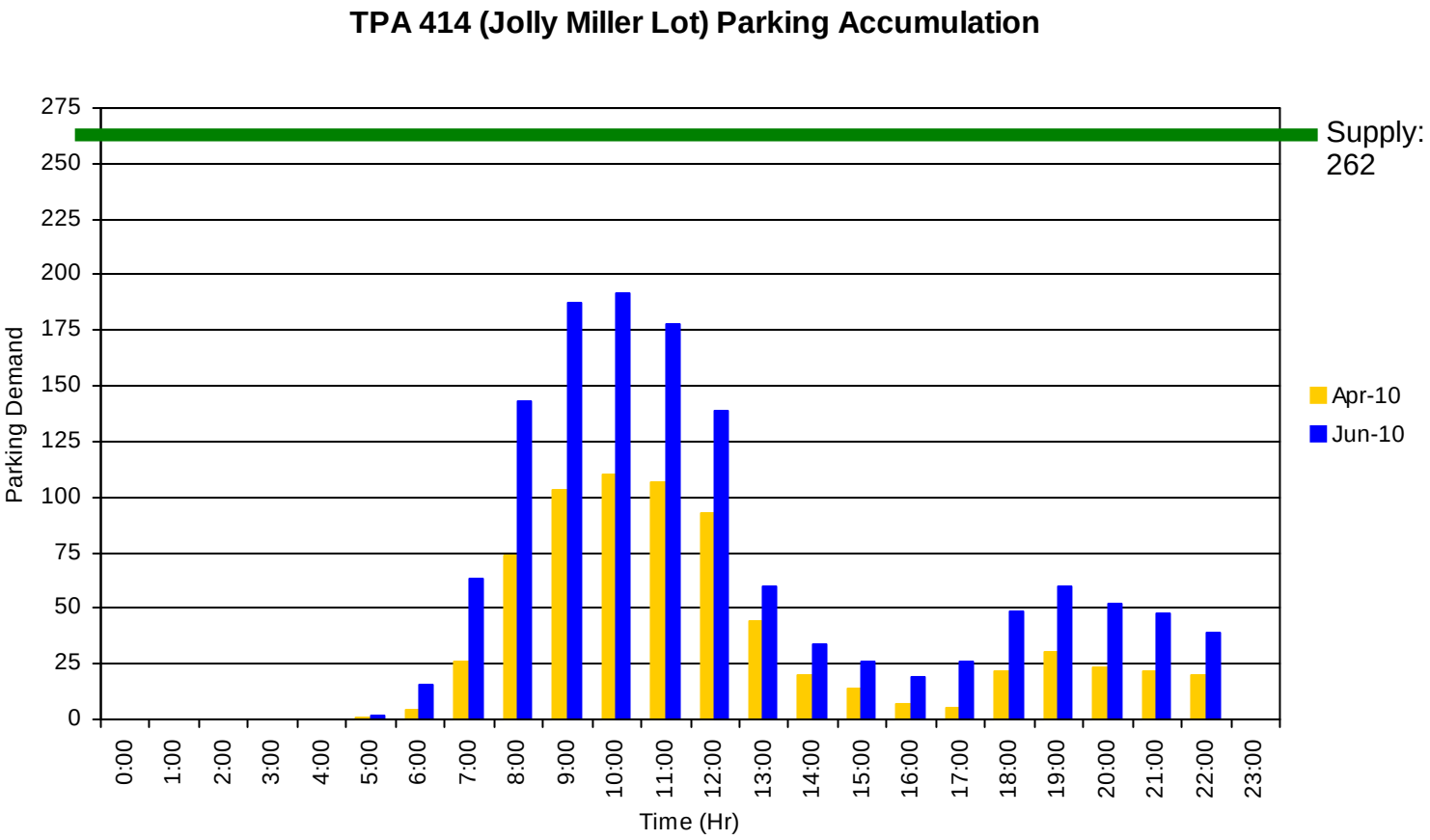
EXISTING & FUTURE TPA LOT 414
RECONFIGURATION

FIGURE 5 — TPA PARKING LOT SURVEYS – AVERAGE WEEKDAY



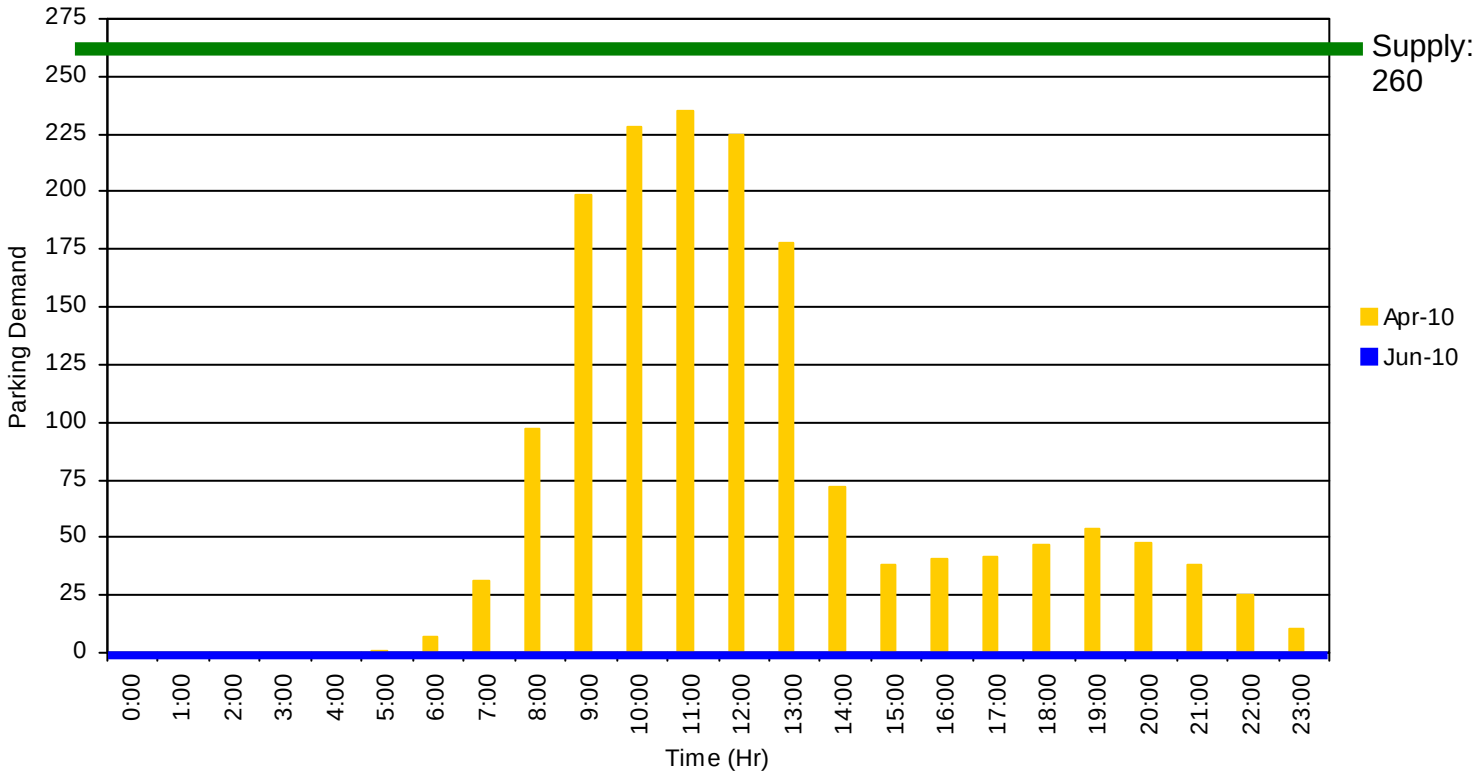
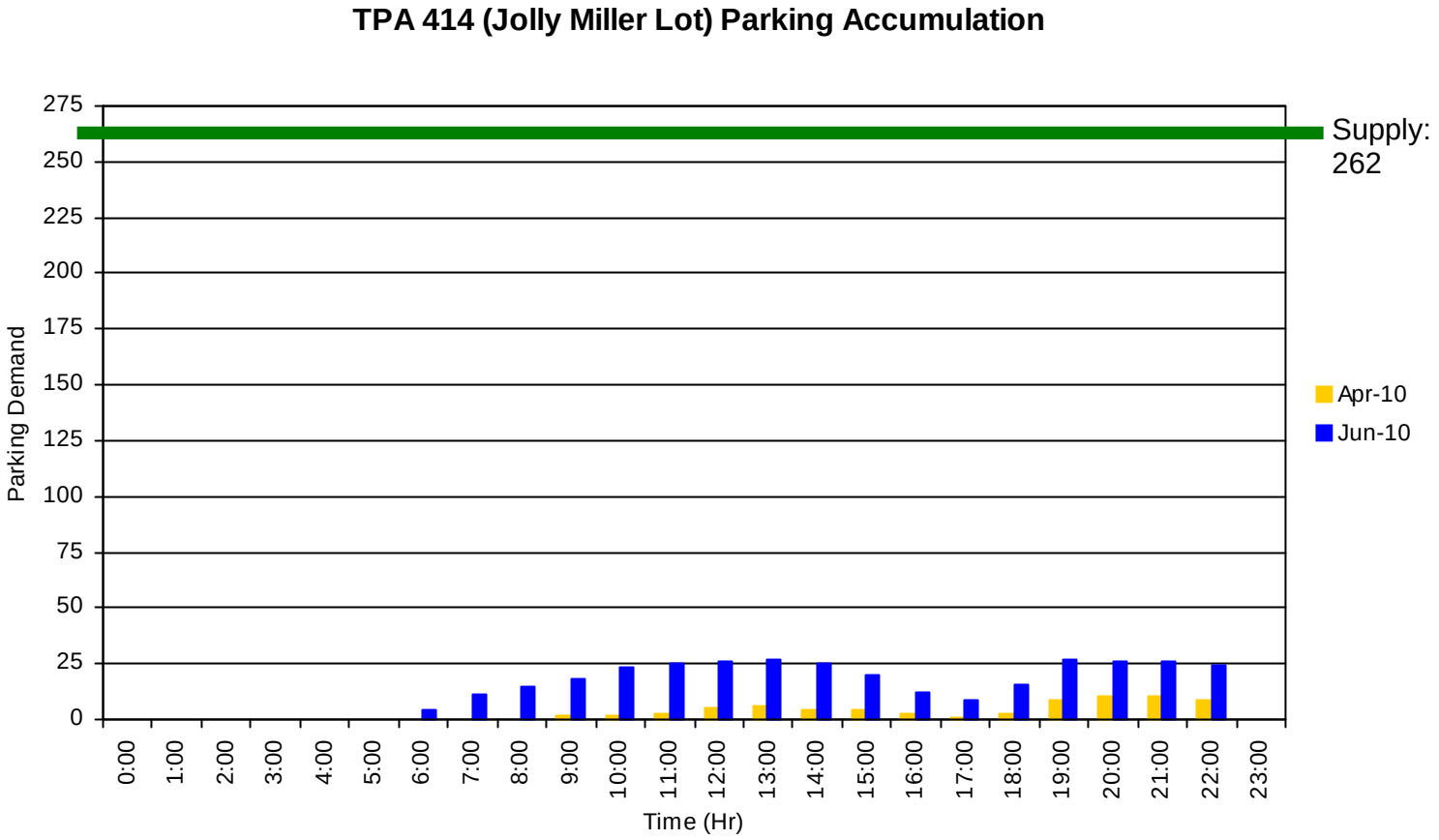
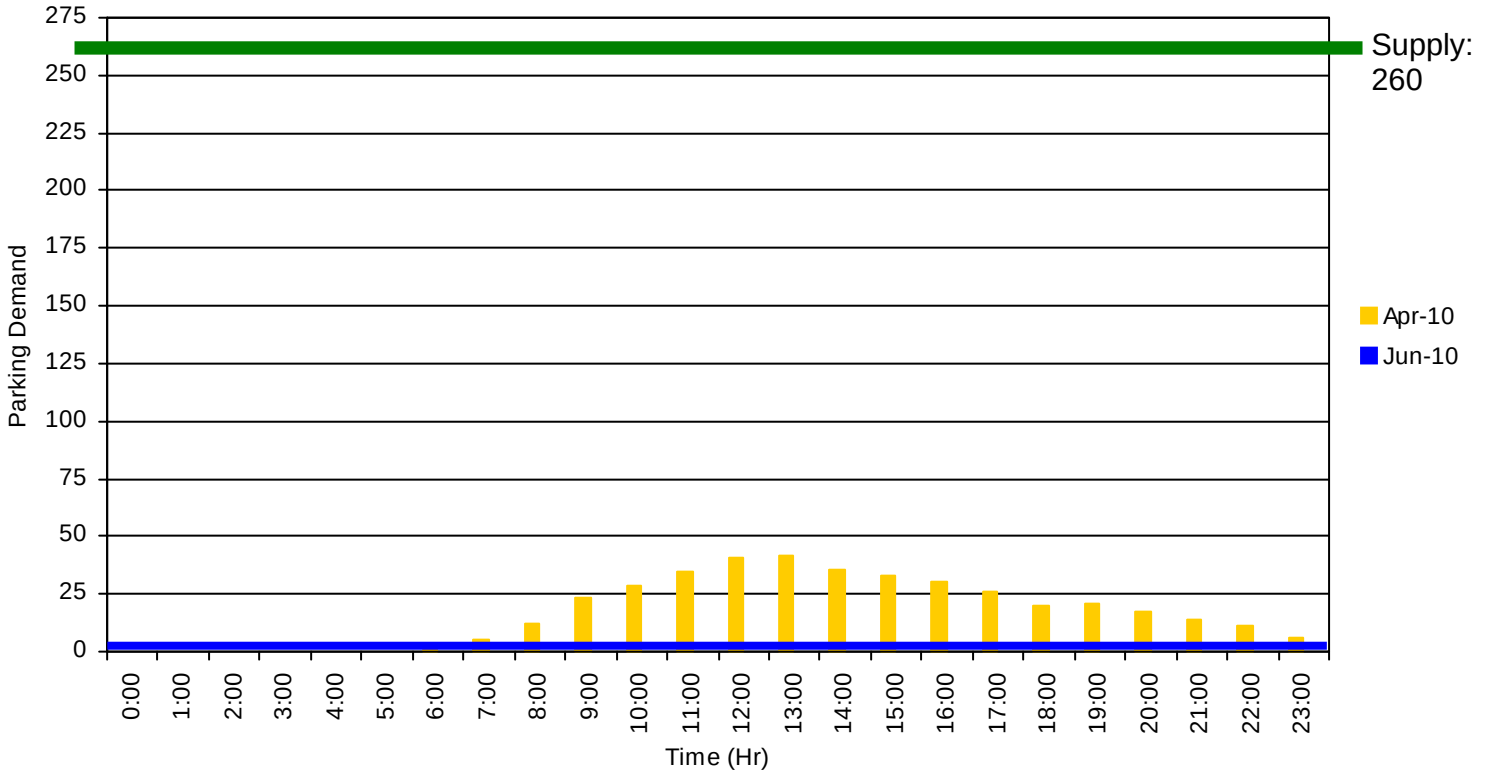


FIGURE 6 — TPA PARKING LOT SURVEYS - AVERAGE WEEKEND





- Upon re-configuration to a 130 space lot, TPA Lot 414 (Jolly Miller) will be able to substantially accommodate the average evening and weekend demand of 50 motorists which typically uses TPA Lot 812 (York Mills Lot).

These findings indicate that the majority of customers using TPA Lot 812 (York Mills Lot) will find a suitable alternative when the lot is closed to permit development of an office building at 4050 Yonge Street. It also indicates that motorists previously using the TPA Lot 812 (York Mills Lot) evenings and weekends will typically be able to find parking available in TPA Lot 414 (Jolly Miller).

6.3 Available Public Parking in the Area

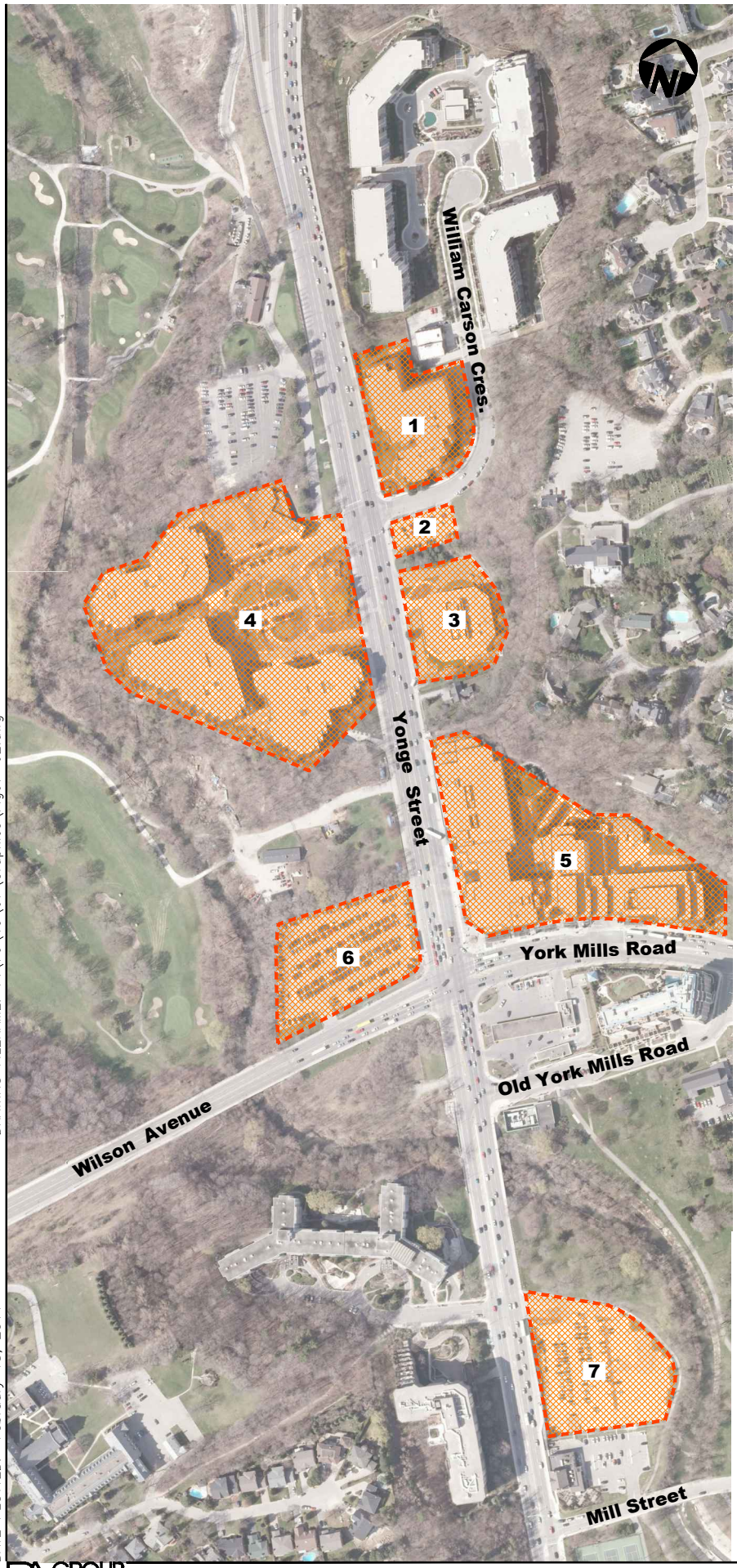
BA Group conducted a comprehensive set of parking occupancy counts in October and November, 2010, during both weekday daytime and evening periods. TPA Lot 812 (York Mills) was closed at the time of the counts. Figure 7 indicates the location of public parking in the environs. Table 6 summarizes the results of our observations in terms of available parking in the area.

Figure 8 illustrates daytime, evenings and weekend percentage occupancy of the surrounding area public parking, excluding the 4050 Yonge Street site.

TABLE 6: AVAILABLE PUBLIC PARKING AFTER CONSTRUCTION OF 4050 YONGE STREET

Location	Supply[1]	Available Daytime	Evenings & Weekends[2]
TPA Lot 414 (Jolly Miller)	130	–	85
York Mills Centre[3]	646	180	520
Yonge Corporate Centre[4]	1162	175	945
Other[5, 6, 7]	473	65	200
TOTAL	**2,411**	**420**	**1,750**

Notes:
1. Parking supply is based upon public parking available only, which does not include reserved parking spaces.
2. Evenings and weekend public parking demand is as observed to determine available public parking supply.
3. York Mills Centre is currently 75% leased – available parking has been reduced accordingly.
4. Yonge Corporate Centre is currently 95% leased.
5. 4141 Yonge Street is 98% leased and 4211 Yonge Street is 97% occupied leased
6. Evening data was not collected at 4141 Yonge Street.
7. Surface parking lot at 4155 Yonge Street is not included in the table



PUBLIC PARKING LOTS WITHIN SITE ENVIRONS

1. 4211 Yonge Street
2. 4155 Surface Lot
3. 4141 Yonge Street
4. Yonge Corporate Centre (4100, 4110, 4120 Yonge Street)
5. York Mills Centre (10, 20, 36 York Mills & 4101 Yonge Street)
6. TPA Lot #812 (Site)
7. TPA Lot #414 (Jolly Miller)

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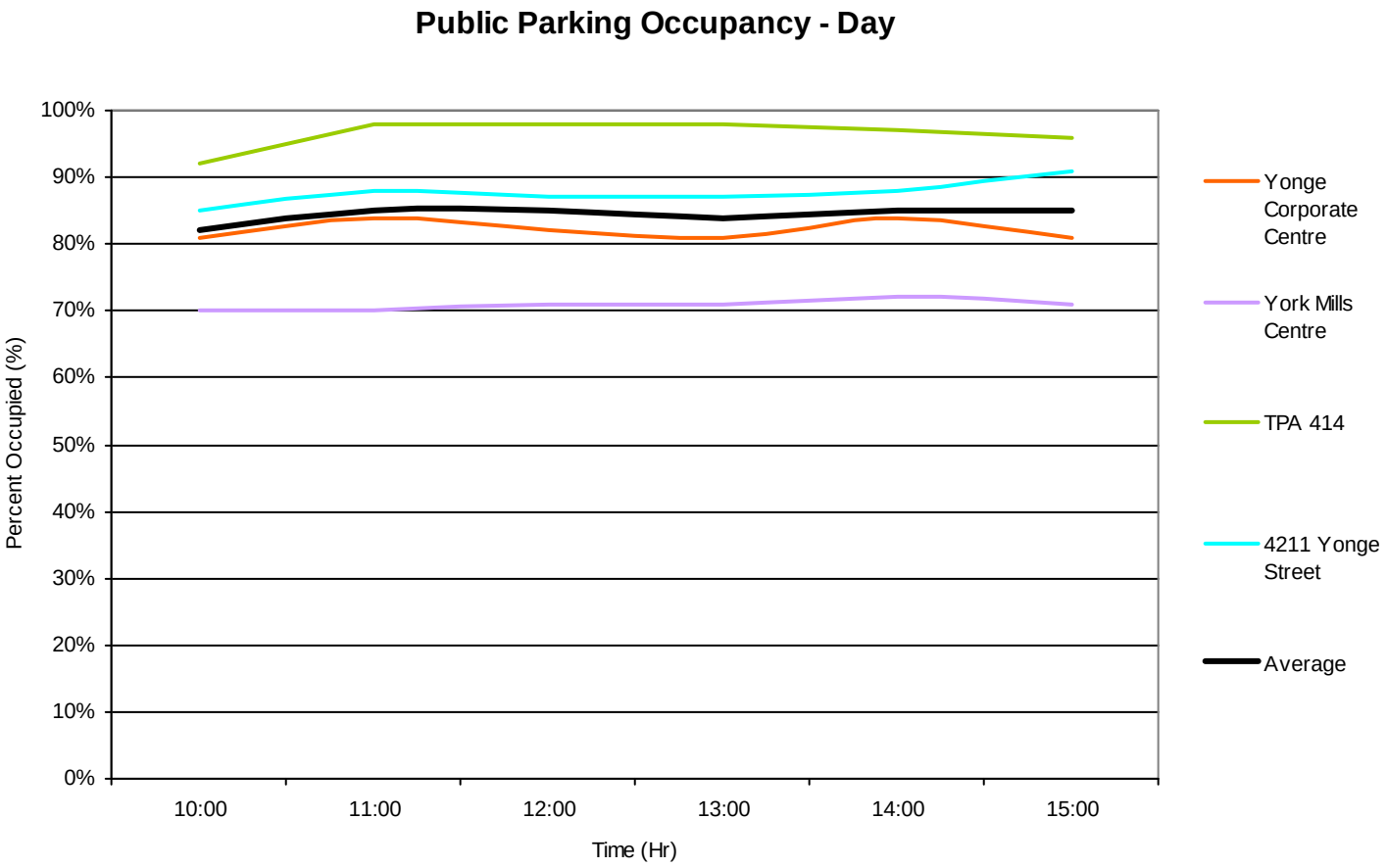
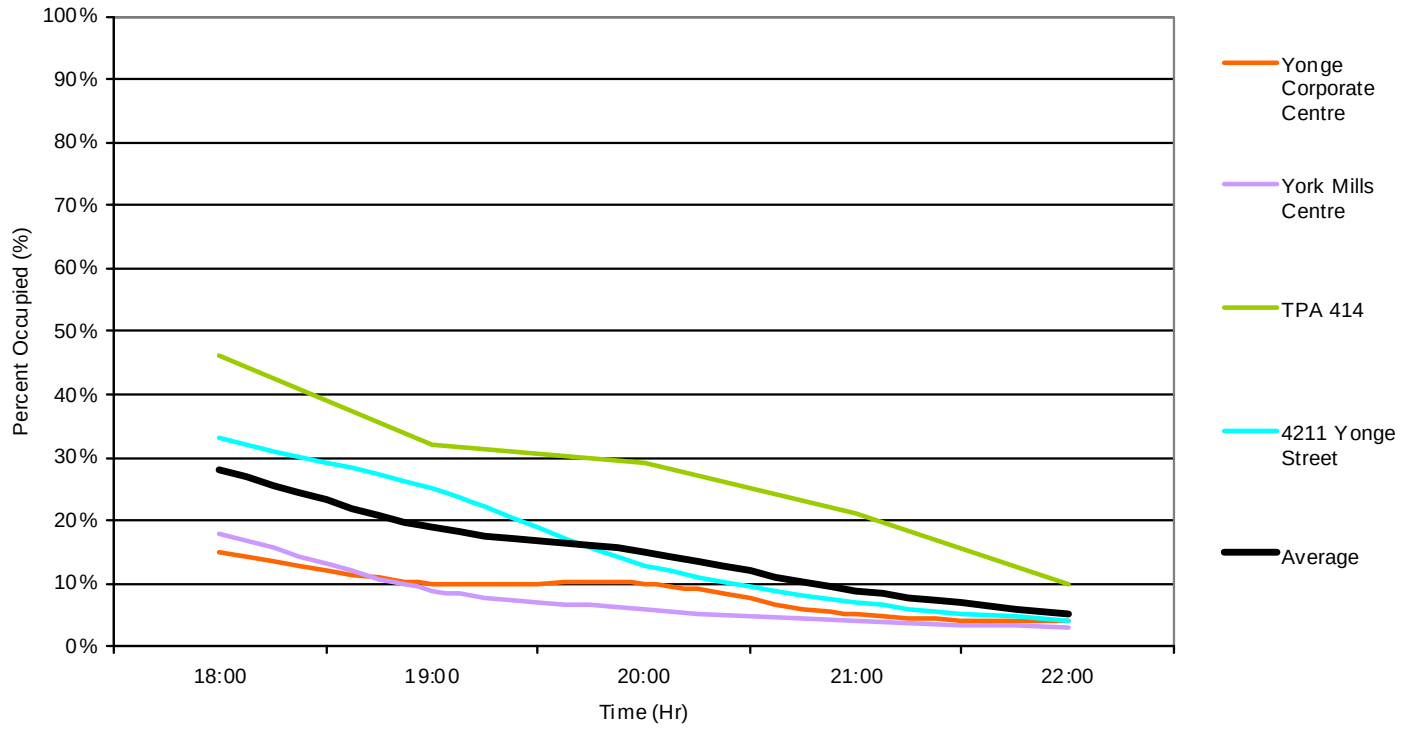
Figure 7

FIGURE 8 — AREA PUBLIC PARKING DEMAND





Notable findings are summarized below.

- Excluding the 4050 Yonge Street site, there will be approximately 2,410 parking spaces in the site environs.
- Allowing for infill of currently vacant office space and stable office parking characteristics, approximately 420 spaces will be available during the weekday daytime and 1,750 spaces will be available weekday evenings and weekends.

Additional parking will be available at the new 4050 Yonge Street building weekday evenings and weekends (a supply of 363 spaces), when the parking demand generated the proposed office uses is negligible.

These findings indicate that the majority of weekday daytime customers using TPA Lot 812 (York Mills Lot) who elect to stay in the area (less than 100 spaces) will be able to find available public parking in the area when the lot is closed to permit development of an office building at 4050 Yonge Street. They also indicate that residents and other motorists who wish to park and ride the subway during weekday evenings and on weekends will be able to find available public parking when the lot is closed to permit development of an office building at 4050 Yonge Street.

6.4 Cost of Public Parking in the Area

Parking rate charges at public parking facilities in the area vary by facility and are summarized in Table 7.

The parking rates at TPA Lot 812 (York Mills) are based upon a flat rate of $7.00 for weekday daytime and $4.00 for evenings (after 3:00 pm) and weekends. Parking rates at TPA Lot 414 (Jolly Miller Lot) are $1.00 per half hour to a maximum of $5.00 before 7:00 pm, and a maximum of $4.00 after 7:00 pm and before 5:00 am, evenings and weekends.

By way of comparison, parking charges at other public parking facilities in the site environs are higher during the weekday daytime – generally $3.00 to $5.00 per hour with a daily maximum of $10.00 to $14.00. Weekday evening and weekend rates are comparable to, but modestly higher than, the TPA lot charges – $3.00 to $6.00 maximum.

These findings indicate that residents and other motorists who make use of TPA Lot 812 (York Mills Lot) during the weekday daytime would need to pay a higher daily parking charge – $3.00 to $7.00 higher – to park in available public parking facilities other than TPA 414 (Jolly Miller) if they wish to continue to park in the area when the lot is closed to permit development of an office building at 4050 Yonge Street.

Parking charges during weekday evenings and weekends would be comparable to those currently experienced at TPA Lot 812 (York Mills) – flat rates of $0.00 to $2.00 higher.

TABLE 7: PUBLIC PARKING RATES

Proxy Site	Parking Supply Total (Public)[1,2]	Parking Cost
Yonge Corporate Centre[1] (includes Temple & Restaurant) 4100, 4110, 4120 Yonge Street	1,250 (1,162)	$3.75 per 1 hour or less $5.75 per 1 1/2 hour or less $7.25 per 2 hours or less $8.25 per 2 1/2 hours or less $10.25 per 3 hours or less $12.00 over 3 hours exiting before 6:00 pm $15.00 over 3 hours exiting after 6:00 pm $5.00 night rate entering after 6:00 pm and exiting before 7:00 am $15.00 max daily rate $120.91 monthly pass
York Mills Centre 10, 20, 36 York Mills Road 4101 Yonge Street	723 (646)	$5.00 first 1/2 hour $2.50 each additional 1/2 hour $14.00 daily between 7:00 am and 6:00 pm $6.00 nightly rate $12.00 early bird before 7:00 am $140 monthly pass
4141 Yonge Street	169 (160)	$1.50 per 1/2 hour $12.00 Max $3.00 flat rate after 4:30 pm
4211 Yonge Street	313 (313)	$2.50 per 1/2 hour $10.00 daily max $5.00 flat fee after 3:00pm Closes at 11pm $150 monthly
4155 Yonge Street Surface Lot	39 (-)	$2.50 per 1/2 hour, $9.00 max - in by 9am out by 6pm $2.50 per 1/2 hour, $10.00 max - between 9am to 6pm $2.50 per 1/2 hour, $6.00 max - between 6pm to 7am, weekends
TPA Lot #414	262 (130)[3]	$1.00 per 1/2 hour $5.00 daily max $4.00 evening max Monthly - $75
TPA Lot #812 (Site)	0 (-)	$7.00 until 4pm $4.00 after 4pm $4.00 weekends and holidays
Overall Total	**2,816 (2,411)**	

Notes:
1. Total parking includes public parking and reserved parking.
2. Public parking is shown in brackets.
3. Future public parking at TPA Lot #414 is planned to be 130 spaces.

6.5 On-Street Parking

BA Group undertook surveys of on-street parking on selected neighbourhood streets on Tuesday, November 16, 2010, from approximately 12:00 pm until 4:00 pm, at a time when the lot was closed. We also undertook early morning counts in the same area in January, 2010, to determine baseline parking activity. TPA Lot 812 (York Mills) was open, but not fully occupied, at the time of the January counts. Notable findings are summarized below.

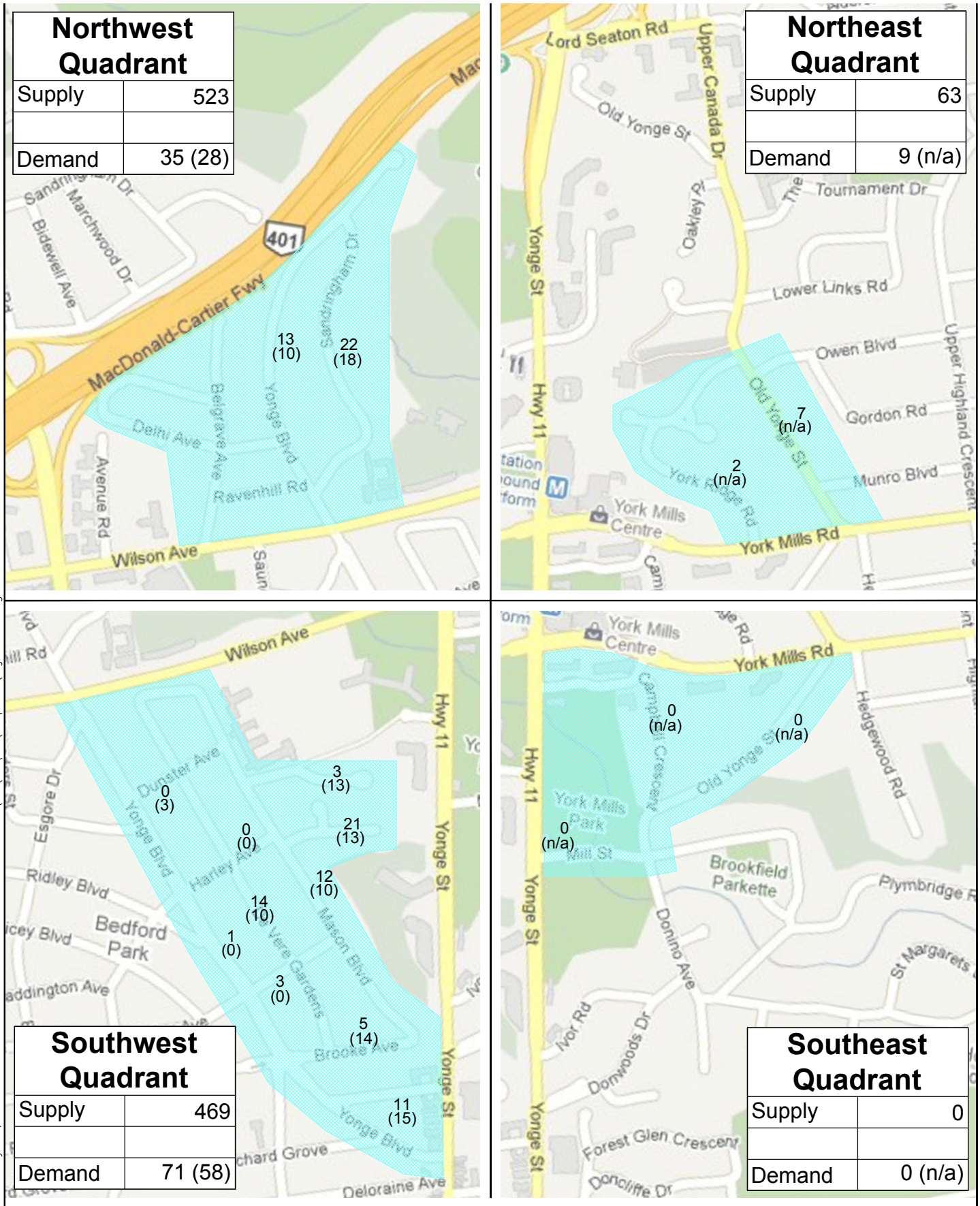
- There are almost 1,000 on-street parking spaces in the site environs, virtually all of which are located over 500m from York Mills Subway Station.
- Fewer than 20% of these spaces are occupied during the weekday daytime, and on-street parking is generally well distributed throughout the area consistent with normally expected patterns.
- Some modest incremental on-street parking may have been occurring on Sandringham Drive when the lot was closed. A local resident attributed this to TTC bus drivers.

These findings indicate that, in general, none of the neighbourhood streets in the Yonge/York Mills area appears to have experienced excessive or unusual on-street parking activity when TPA Lot 414 was closed last year. Figure 9 illustrates the on-street parking demand counts undertaken by BA Group.

6.6 Passenger Drop-off

BA Group undertook observations of passenger drop-off on Yonge Street at York Mills Road, as well as in the general area, while TPA Lot 812 (York Mills Lot) was closed, and again early this year when it re-opened. Table 8 summarizes the results of these observations. These observations indicate that the displacement of passenger drop activity, and in particular, weekday afternoon pick-up activity, during the lot closure was reasonably accommodated. Yonge Street and York Mills Road / Wilson Avenue traffic operations were not unduly disrupted, and no noticeable difference in operation at the passenger pick-up and drop-off was observed on York Mills Road near the York Mills Subway Station secondary entrance.

These findings notwithstanding, during the course of the community consultation process, Build Toronto undertook to generate, evaluate and review alternative passenger drop solutions with the City and concerned stakeholders. Towards this end, BA Group has identified three generic approaches to improving passenger drop-off opportunities as noted in the following subsections.



ON-STREET PARKING DEMAND

00 Before York Mills Commuter Lot Open

(00) After York Mills Commuter Lot Open

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DATE PLOTTED: February 15, 2011

GROUP

4050 Yonge Street
7019-07, February 2011

Figure 9

TABLE 8: PASSENGER DROP-OFF ACTIVITY ON YONGE AND WILSON

Date Time Period	On-Street Pick Up / Drop Off					On-Site Pick Up / Drop Off	Pick Up / Drop Off Total
	Yonge		Wilson		Total	York Mills Commuter Lot (TPA 812)	
	N-W	S-W	N-W	S-W			
AM PERIOD: 7:30 TO 9:30							
BEFORE Thursday, November 18, 2010	146	0	39	8	193	0	193
AFTER Wednesday, January 19, 2011	49	0	1	1	51	N/A	N/A
AM PEAK HOUR							
BEFORE Thursday, November 18, 2010	71	0	21	7	99	0	99
AFTER Wednesday, January 19, 2011	30	0	1	1	32	61	93
PM PERIOD: 16:00 TO 17:30							
BEFORE Thursday, November 18, 2010	139	0	21	3	163	0	163
AFTER Tuesday, January 18, 2011	8	0	5	0	13	56	69
PM PEAK HOUR							
BEFORE Thursday, November 18, 2010	75	0	12	0	87	0	87
AFTER Tuesday, January 18, 2011	5	0	4	0	9	33	42

Notes:
1. Values in the table are the number of motorists arriving during the indicated period at the indicated location.

6.6.1 Lay-by on Wilson Avenue

Figure 10 illustrates an approximately 45 m long lay-by located on the north side of Wilson Avenue between Yonge Street and the Project's parking and loading driveway. This facility would accommodate approximately six (6) passenger vehicles. The sidewalk, a light standard and a bus shelter would need to be relocated, and the lay-by would need to be appropriately and sensitively integrated with the landscaping treatment within the boulevard. This alternative is attractive because it is adjacent to the subway station entrance. Conversely, the City of Toronto typically prefers not to introduce on-street lay-bys for urban design reasons and because they sometimes result in maintenance and operational issues (i.e., promote U-turning traffic).

6.6.2 Cell Phone Parking in TPA Lot 414 (Jolly Miller Lot)

As noted in Figure 11, the cell phone parking alternative envisages designating ten (10) spaces as a cell-phone waiting zone between 3:00pm and 6:00pm weekdays, the time during which peak passenger loading activity (in terms of vehicle accumulation) occurs. Motorists would collect their passengers on Old York Mills Road or another designated location. This alternative is attractive because it makes better use of existing infrastructure – cell phone customers can take advantage of parking in TPA Lot 414 (Jolly Miller Lot) made available by daytime customers leaving for the day. It will, however, require clear signage and a significant period of acclimatization before its effectiveness can be confirmed.

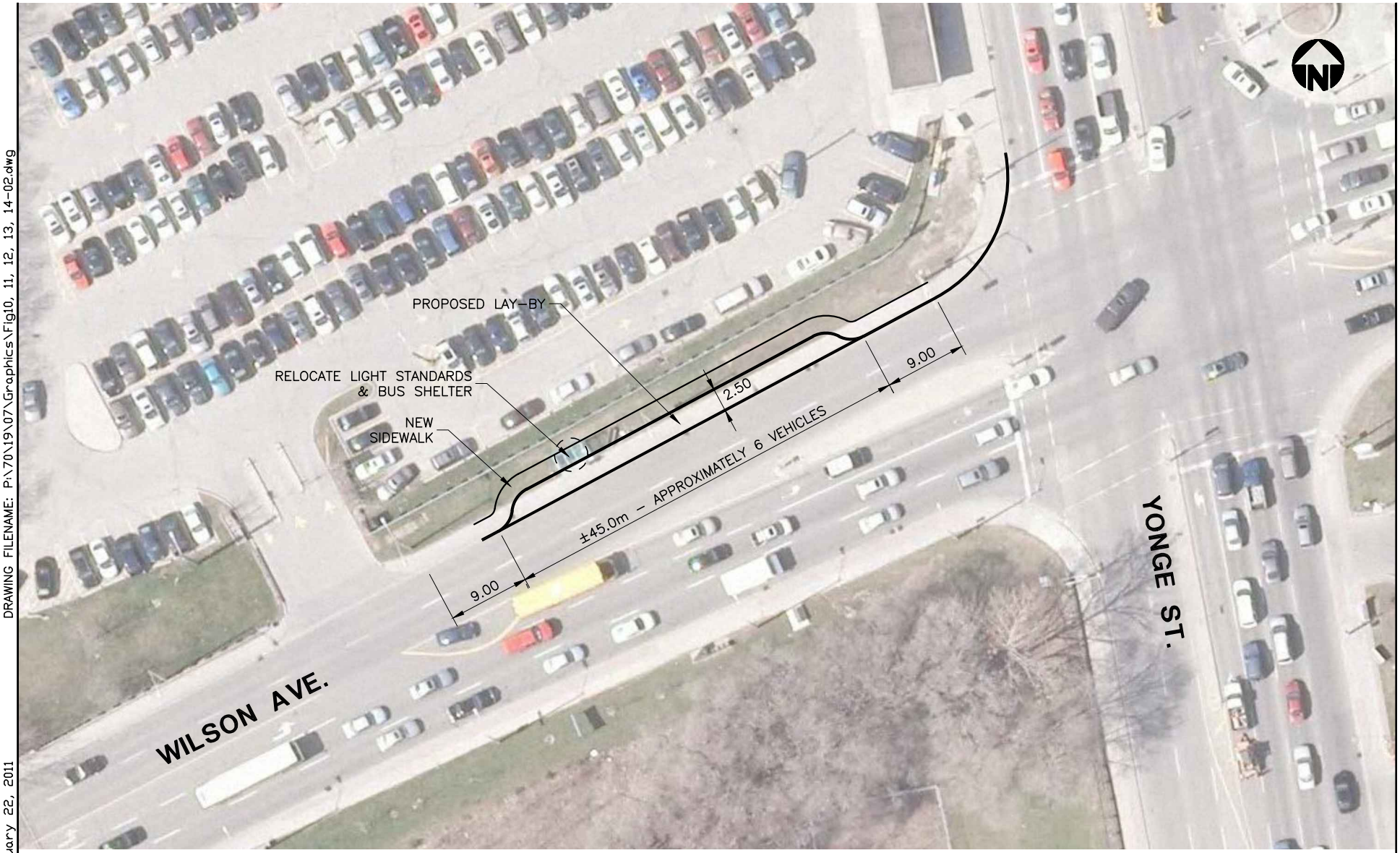
6.6.3 Improve the Configuration of the Old York Mills Road Drop-off Facility

Figure 12, Figure 13 and Figure 14 illustrate three ways in which the capacity and operational efficiency of the Old York Mills Road passenger drop-off facility may be improved.

One option – Figure 12 – is to modestly widen the pavement along the both sides of the street to permit angled parking spaces and a modest increase in the pavement width of the two way section of the street adjacent to the angled parking spaces. This alternative provides for an additional 10 spaces in which motorists can wait.

A second option – Figure 13 – is to modestly widen the pavement along both sides to permit angled parking on the south side and a lay-by on the north side. This alternative provides for an additional 10 to 12 spaces in which motorists can wait.

A third option – Figure 14 – is to introduce a modest widening on both sides of the street and make other minor modifications to provide a lay-by on the north side of the street. This alternative provides space for five (5) new passenger vehicles to wait temporarily (6 spaces gained in the lay-by and one space lost angled parking space) and a clear two-way circulation route.



PASSENGER PICK-UP/DROP-OFF
INTRODUCE LAY-BY ON WILSON AVENUE

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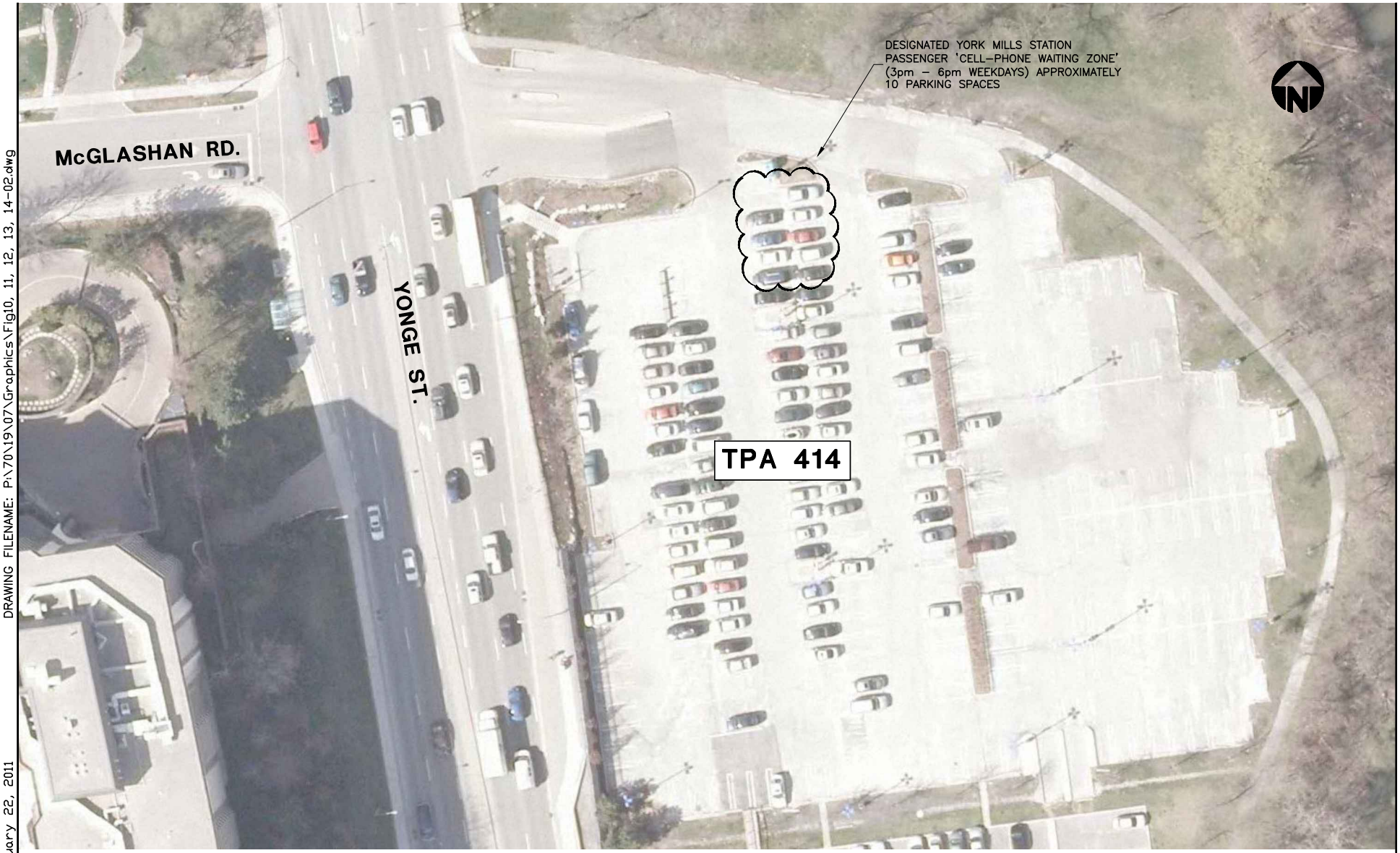
DATE PLOTTED: February 22, 2011



PASSENGER PICK-UP/DROP-OFF
INTRODUCE PASSENGER PICK-UP BY 'CELL PHONE' WAITING AREA

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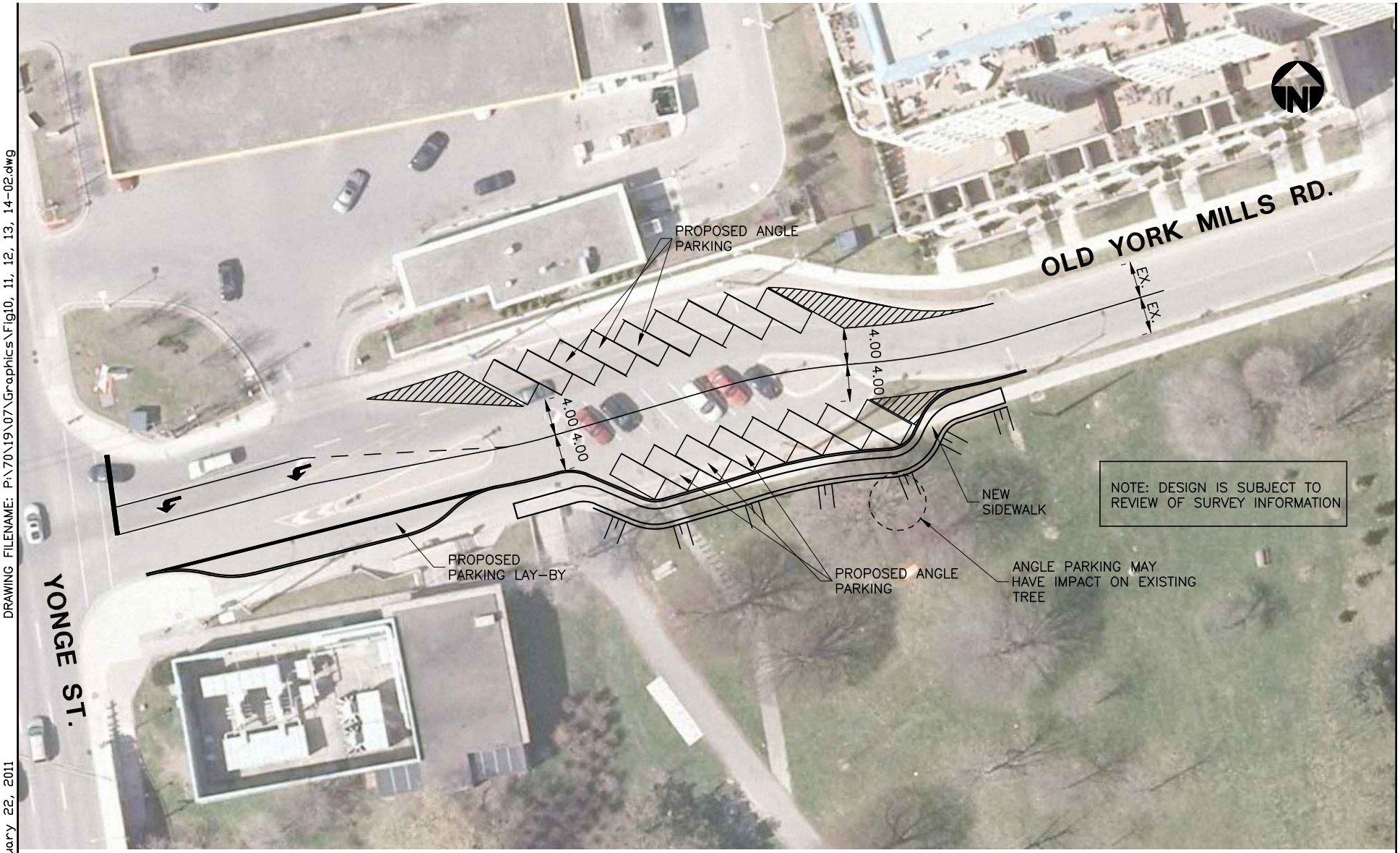
DATE PLOTTED: February 22, 2011



PASSENGER PICK-UP/DROP-OFF
INTRODUCE ANGLE PARKING ON OLD YORK MILLS ROAD

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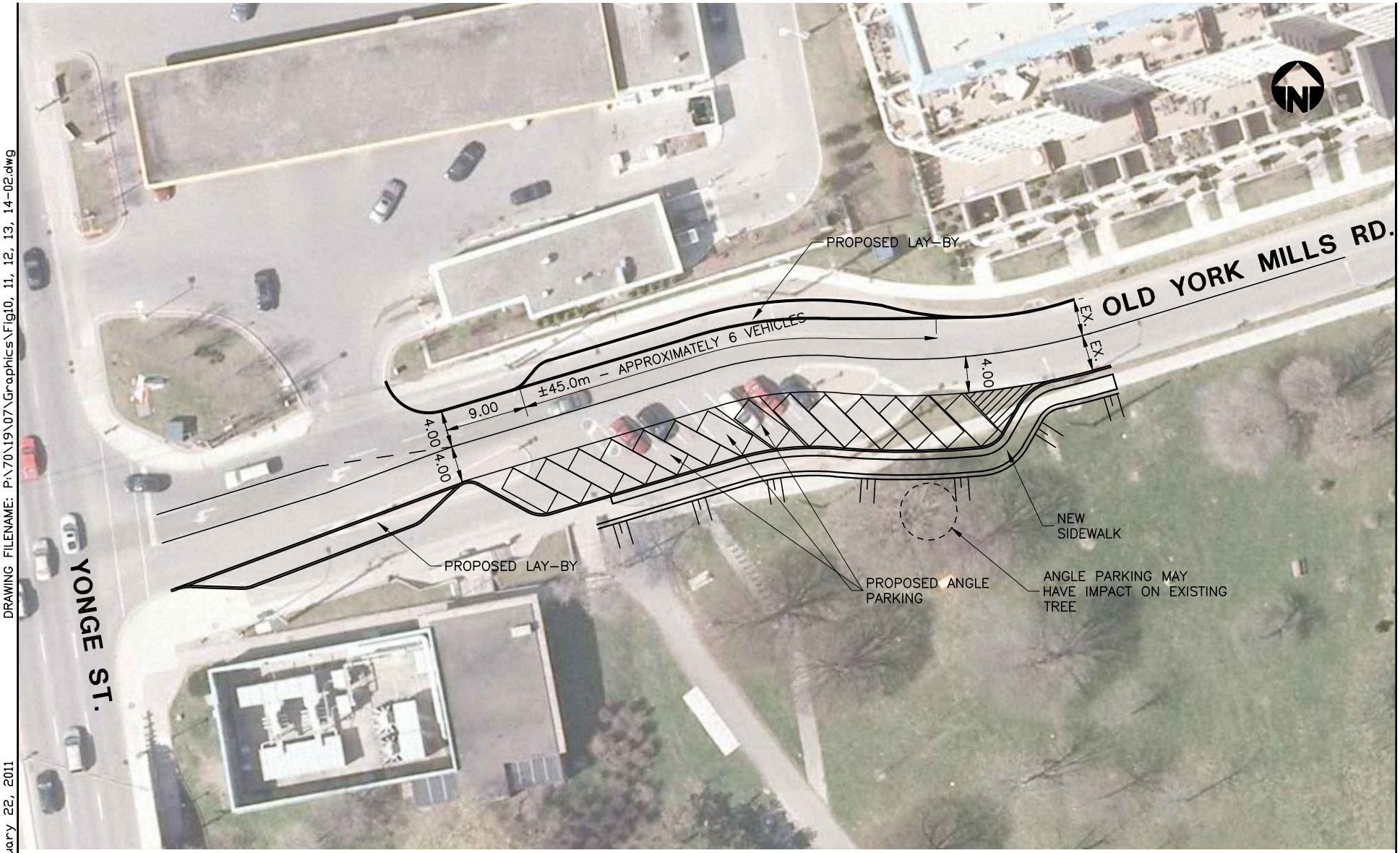
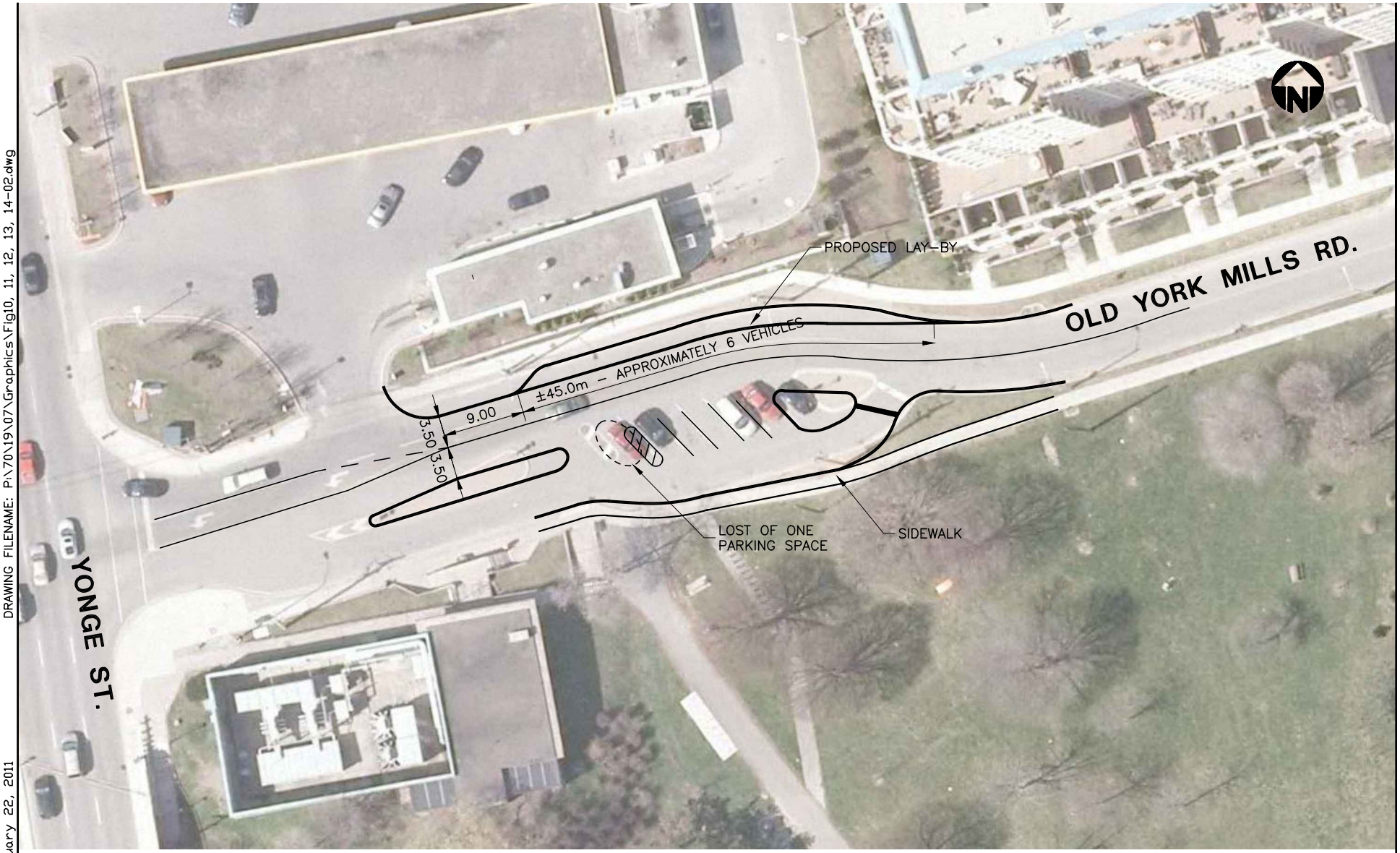
DATE PLOTTED: February 22, 2011



PASSENGER PICK-UP/DROP-OFF
INTRODUCE ANGLE PARKING AND LAY-BY ON OLD YORK MILLS ROAD



PASSENGER PICK-UP/DROP-OFF
INTRODUCE LAY-BY ON OLD YORK MILLS ROAD

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DATE PLOTTED: February 22, 2011

Both of these alternatives may be attractive in that they both provide additional capacity and improve an existing operational problem: motorists waiting along the north curb reducing the street to one-way operation near the existing angled parking spaces.

Implementation of any change on York Mills Road will require both City and TTC approvals. City approvals involve a number of Departments, including Technical Services, Parks and Planning.

6.7 Summary

In summary, our findings indicate that the essential functions of TPA Lot 812 (York Mills Commuter Lot) can be effectively and reasonably accommodated in other existing public parking facilities and passenger drop-off facilities in the site environs.

7.0 Vehicular Traffic Volumes

7.1 Intersection Analysis

The following public intersections were considered as part of this study:

- Yonge Street and York Mills Road / Wilson Avenue;
- Yonge Street and Old York Mills Road;
- York Mills Road and Old York Mills Road; and
- York Mills Road and TTC Signalized Driveway.

7.2 Existing Traffic Volumes

BA Group undertook the following intersection counts in order to establish baseline traffic volumes for the area surrounding the site.

- Turning movements at the intersections of Yonge Street and York Mills Road / Wilson Avenue, Yonge Street and Old York Mills Road and York Mills Road and Old York Mills Road were counted during the weekday morning and afternoon peak periods on Wednesday, January 19, 2011.

- Turning movements at the site driveway of the York Mills Commuter Parking Lot and Wilson Avenue were counted during the weekday afternoon peak period on Tuesday, January 18, 2011, and the weekday morning peak period on Wednesday, January 19, 2011. It should be noted that after the closure of this parking lot in June, 2010, and its conversion to a temporary TTC/GO bus terminal, the commuter parking lot was fully re-opened in the first week of January, 2011.

- A southbound vehicular delay and gap study was undertaken at the site driveway and Wilson Avenue on Tuesday, January 18, and Wednesday, January 19, 2011, during the weekday afternoon and morning peak periods, respectively, in order to properly calibrate the operational modelling of the intersection. This data was also used in conjunction with the calibration of the micro-simulation analysis that was undertaken in VISSIM to reflect existing conditions.

- An eastbound vehicular queue study was undertaken at the intersection of Yonge Street and York Mills Road / Wilson Avenue on Wednesday, November 3, 2010, during the weekday afternoon peak period in order to understand the queuing issues at this intersection and to determine if this queue would extend back to the proposed site access. This data was also used in conjunction with the calibration of the micro-simulation analysis that was undertaken in VISSIM and to reflect existing conditions.

- A travel time survey was undertaken during the afternoon peak periods at the site access to Highway 401 using two routes:
    1. eastbound onto Wilson Avenue, left onto Yonge Street to Highway 401, versus
    2. westbound onto Wilson Avenue, right onto Avenue Road to Highway 401.

This survey was used to better understand motorist travel patterns.

The City of Toronto undertook the following intersection count that was used to establish baseline bus traffic volumes:

- TTC turning movements at the intersection of York Mills Road and the TTC Signalized Access during the morning and afternoon peak periods on Wednesday, January 17, 2007.

Existing morning and afternoon peak hour traffic volumes are illustrated in Figure 15.

7.3 Background Traffic Growth

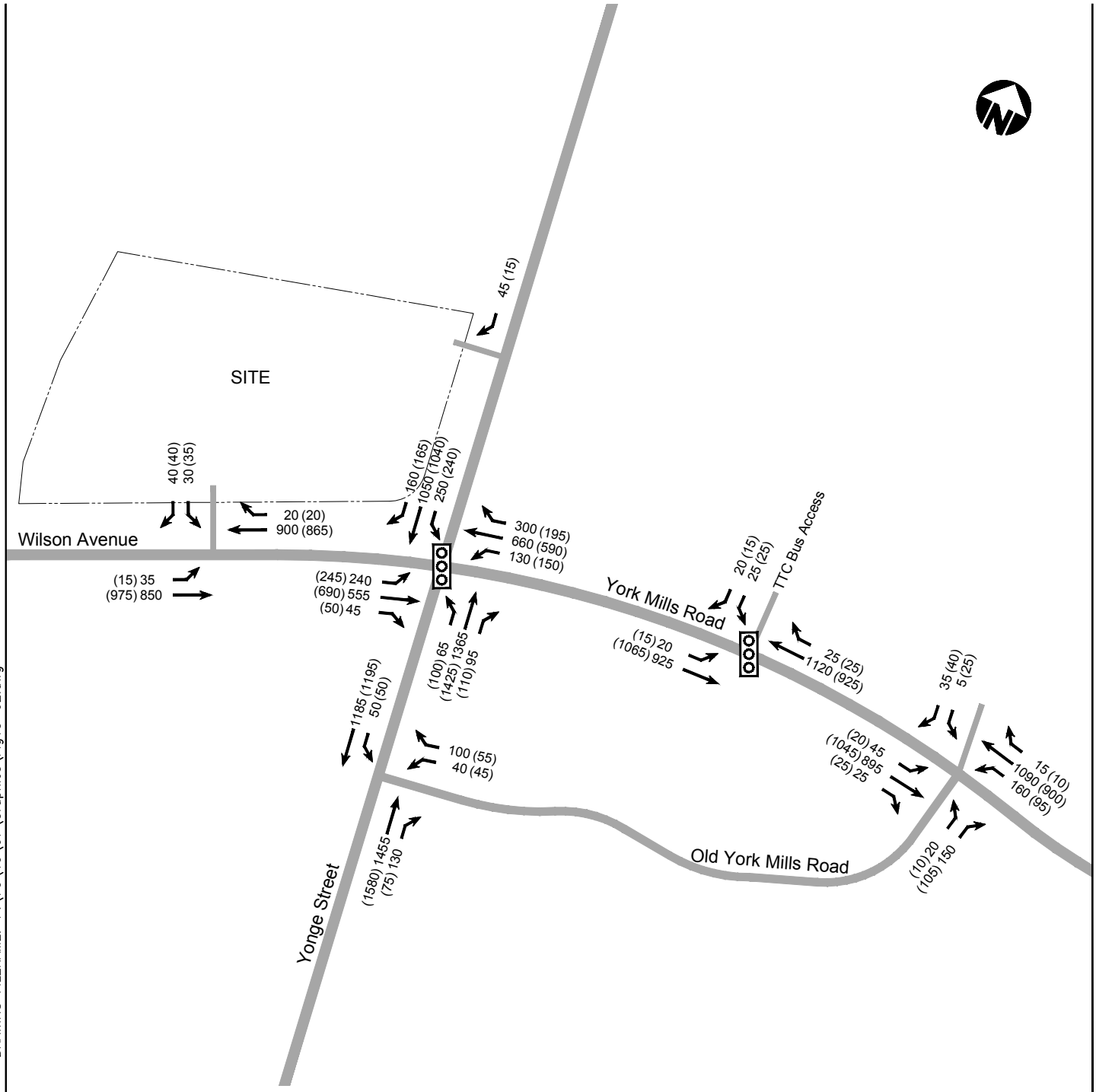
7.3.1 General Corridor Growth

BA Group reviewed historic peak hour traffic volume trends at the junction of Yonge Street and Wilson Avenue / York Mills Road over the past 10 years (since 2000) to better understand the changes in traffic volumes along these two corridors over time. Growth trends vary by approach and by movement, but in general they are either very low (almost flat; i.e. no growth) or negative.

A growth rate of 1% growth rate per annum was applied to all traffic movements within the study area. The application of this corridor growth allowance accounts for growth in general traffic and approved or under-construction developments beyond the study area considered herein.

A five-year planning horizon (i.e., 2016) has been adopted herein for analysis purposes. This assumption has been discussed with, and agreed upon by, staff of the City of Toronto.

Figure 16 illustrates future background traffic volumes, which is existing traffic, plus corridor growth.



EXISTING TRAFFIC VOLUMES

00 AM Peak Hour

(00) PM Peak Hour

Existing Traffic Signal

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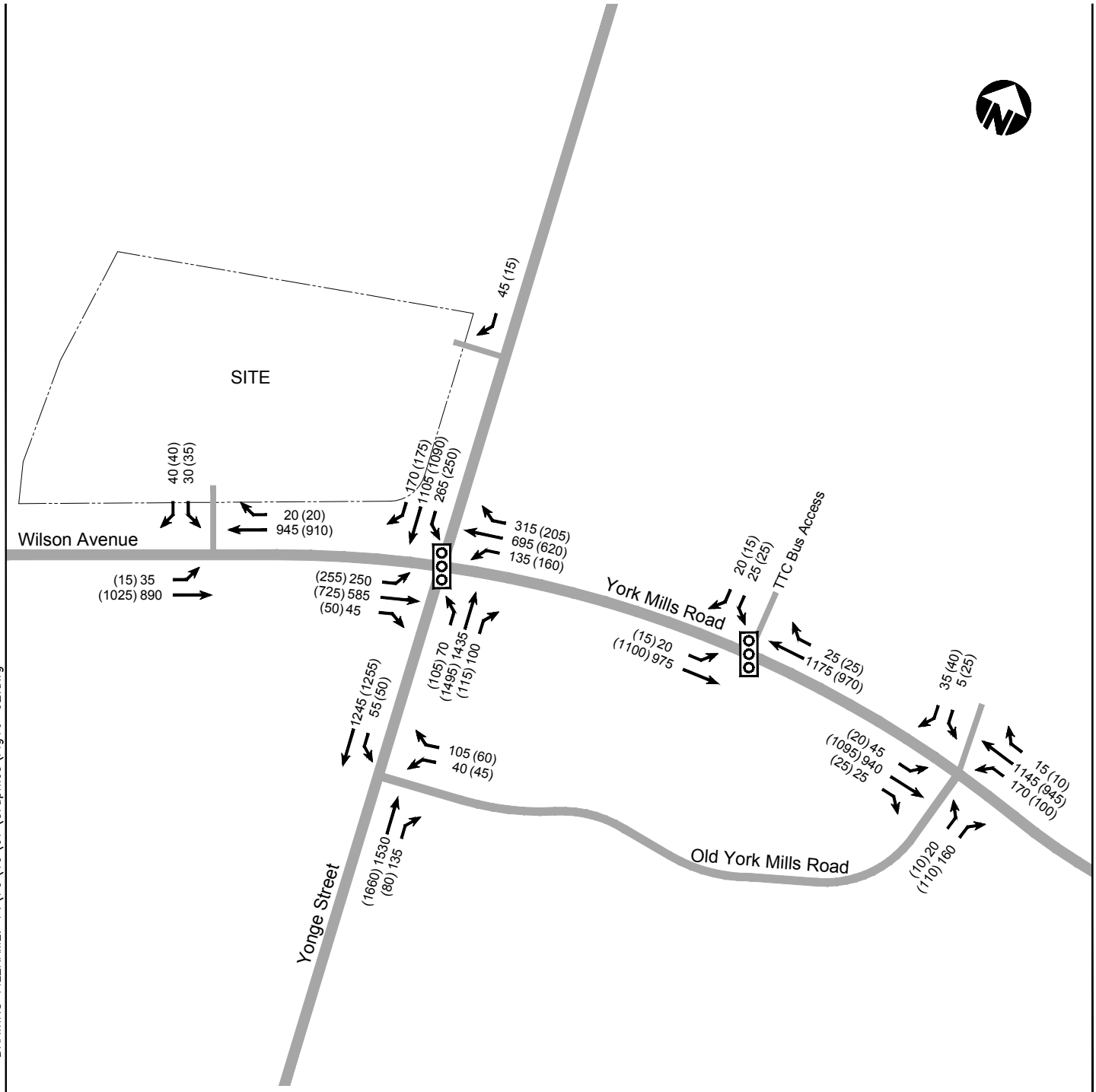
DATE PLOTTED: February 22, 2011



FUTURE BACKGROUND TRAFFIC VOLUMES

00 AM Peak Hour

(00) PM Peak Hour

Existing Traffic Signal

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DATE PLOTTED: February 22, 2011

7.4 Forecast Traffic Volumes

BA Group forecasted site traffic volumes by reviewing trip generation parameters consistent with the range of office land uses within the surrounding area, as well as the ITE Trip Generation, 8th Edition for office use (Land Use 710). The directional orientation of new development traffic was estimated based upon:

a) representative data of the surrounding office developments;

b) the Transportation Tomorrow Survey (TTS) data; and

c) an existing trace of traffic volumes based upon the York Mills Commuter Parking Lot.

Lastly, new development traffic was assigned to the area road network based upon reasonable alternative routing choices.

7.4.1 Trip Generation Estimates

Vehicular trip generation rates are based upon surveys conducted by BA Group for similar office developments within a close proximity to the study area. Trip generation rates are based upon the parking supply of each proxy site and the observed in / out traffic volumes from each development.

Table 9 summarizes the trip generation characteristics (trips rates and number of motorists) for each proxy site and the proposed trip generation rates to be applied to the proposed development at 4050 Yonge Street.

Site traffic volumes are shown in Table 10 based upon the weighted trip rate average. An estimated 190 and 160 two-way vehicle trips during the weekday morning and afternoon street peak hour, respectively, are forecast to be generated by the proposed office development at 4050 Yonge Street.

TABLE 9: TRIP GENERATION – DISCHARGE RATES BASED UPON SUPPLY

Proxy Site	Total Parking Supply	Morning Peak Hour			Afternoon Peak Hour		
		In	Out	2-way	In	Out	2-way
BMO – Scarborough Campus (Main Lot)[1]	1466	665 0.45	95 0.06	760 0.52	80 0.05	525 0.36	605 0.41
Yonge Corporate Centre[2] (4100, 4110 and 4120 Yonge Street, includes Temple and Restaurant)	1250	555 0.44	80 0.06	635 0.51	69 0.06	442 0.35	511 0.41
York Mills Centre[3,4] (10, 20, 36 York Mills Road and 4101 Yonge Street)	723	318 0.44	83 0.11	401 0.55	83 0.11	346 0.48	429 0.59
4141 Yonge Street[4,5]	169	89 0.53	21 0.12	110 0.65	12 0.07	67 0.40	79 0.47
4711 Yonge Street[6]	394	140 0.36	12 0.03	152 0.39	15 0.04	91 0.23	106 0.27
Weighted Trip Rate Average		**0.44**	**0.07**	**0.51**	**0.06**	**0.37**	**0.43**
ITE Land Use 710 – General Office[7]	1120[8]	0.45	0.06	0.51	0.08	0.40	0.48

Notes:
(1) Counted in December 2005 and January 2006 by BA Group.
(2) Counted on Wednesday, November 10, 2010 by BA Group.
(3) Counted on Wednesday, November 17, 2010 by BA Group.
(4) Traffic volumes were increased to reflect an 85th percent occupancy rate within the office building.
(5) Counted on Thursday, October 28, 2010 by BA Group.
(6) Counted on Tuesday, November 2, 2010 by BA Group.
(7) Trip generation rates are based upon land use 710 8th Edition of the ITE Trip Generation and a gross floor area of 39,977 m^2.
(8) Parking supply based upon the Land use 701 ITE Parking Rate 3rd Edition at a rate of 2.8 parking spaces for 100 m^2 of gross floor area.

TABLE 10: SITE TRAFFIC GENERATION

	Parking Supply	Morning Peak Hour			Afternoon Peak Hour		
		In	Out	2-way	In	Out	2-way
4050 Yonge Street	363	0.44 165	0.07 25	0.51 190	0.06 25	0.37 135	0.43 160

In the future, the York Mills Commuter Parking Lot will be removed and replaced with the proposed office development at 4050 Yonge Street. As a result, traffic volumes currently generated by the site will be largely eliminated.

Counts that were undertaken in January, 2011, at the site driveway indicates that there are 125 and 110 two-way vehicular trips currently generated by the use of the commuter parking lot itself. It should be noted that the counts reflect a 35% usage of the commuter parking lot. As the lot has only reopened since the beginning of January, 2011, it was not functioning at capacity, as was observed in previous years by the Toronto Parking Authority.

Figure 17 illustrates the existing site traffic volumes (as a negative volume indicating that these existing volumes will be removed in the future with the proposed office development of 4050 Yonge Street) of the York Mills Commuter Parking Lot.

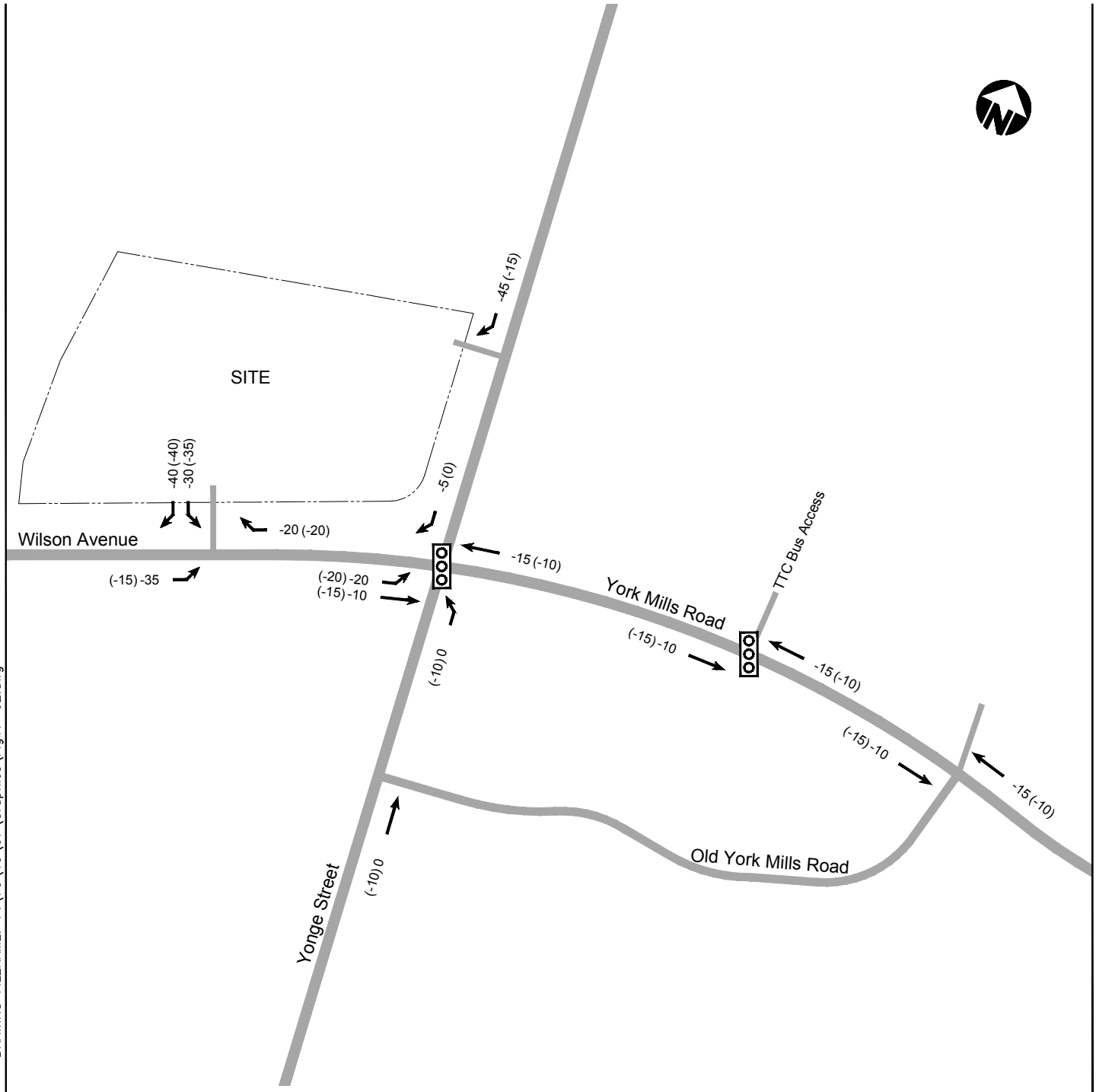
Application of the forecasted site vehicular volumes and the removal of existing site traffic volumes results in a net number of trips, as illustrated in Table 11:

TABLE 11: NET SITE TRAFFIC VOLUMES

	Parking Supply	Morning Peak Hour			Afternoon Peak Hour		
		In	Out	2-way	In	Out	2-way
York Mills Commuter Parking Lot	260	55	70	125	35	75	110
4050 Yonge Street Office Development[1]	363	165	25	190	25	135	160
Net New Trips	**-**	**110**	**-45**	**65**	**-10**	**60**	**50**

Notes:
(1) Trip volumes based upon Table 10.

In total, net new trips to be assigned on the network are 65 and 50 two-way vehicular trips during the morning and afternoon peak hour. It should be noted that the predominant direction of vehicular trip volumes is inbound in the morning and outbound in the afternoon.



EXISTING SITE TRAFFIC VOLUMES

00 AM Peak Hour

(00) PM Peak Hour

Existing Traffic Signal

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DATE PLOTTED: February 22, 2011

7.4.2 Trip Distribution Estimates

BA Group reviewed the 2006 Transportation Tomorrow Survey (TTS) database for specific GTA zones, which exhibited office development within the immediate vicinity of the site. The results of the TTS data review were tempered by considering the existing traffic flow volumes and impedances (i.e., EB left turn and through queues that would block the site access) that will likely modestly influence future travel weightings. Furthermore, operation conditions on the study area road network were also considered when developing appropriate direction of orientation patterns for site traffic.

In this regard, the travel time for using Highway 401 by way of Yonge Street or by way of Avenue Road is comparable. That is, motorists have the option of turning left out of the site to Yonge Street and Highway 401, or right out of the site to Avenue Road and Highway 401.

Based upon these reviews, a representative vehicular travel distribution was established for the office development at 4050 Yonge. This is summarized in Table 12.

TABLE 12: TRIP DISTRIBUTION

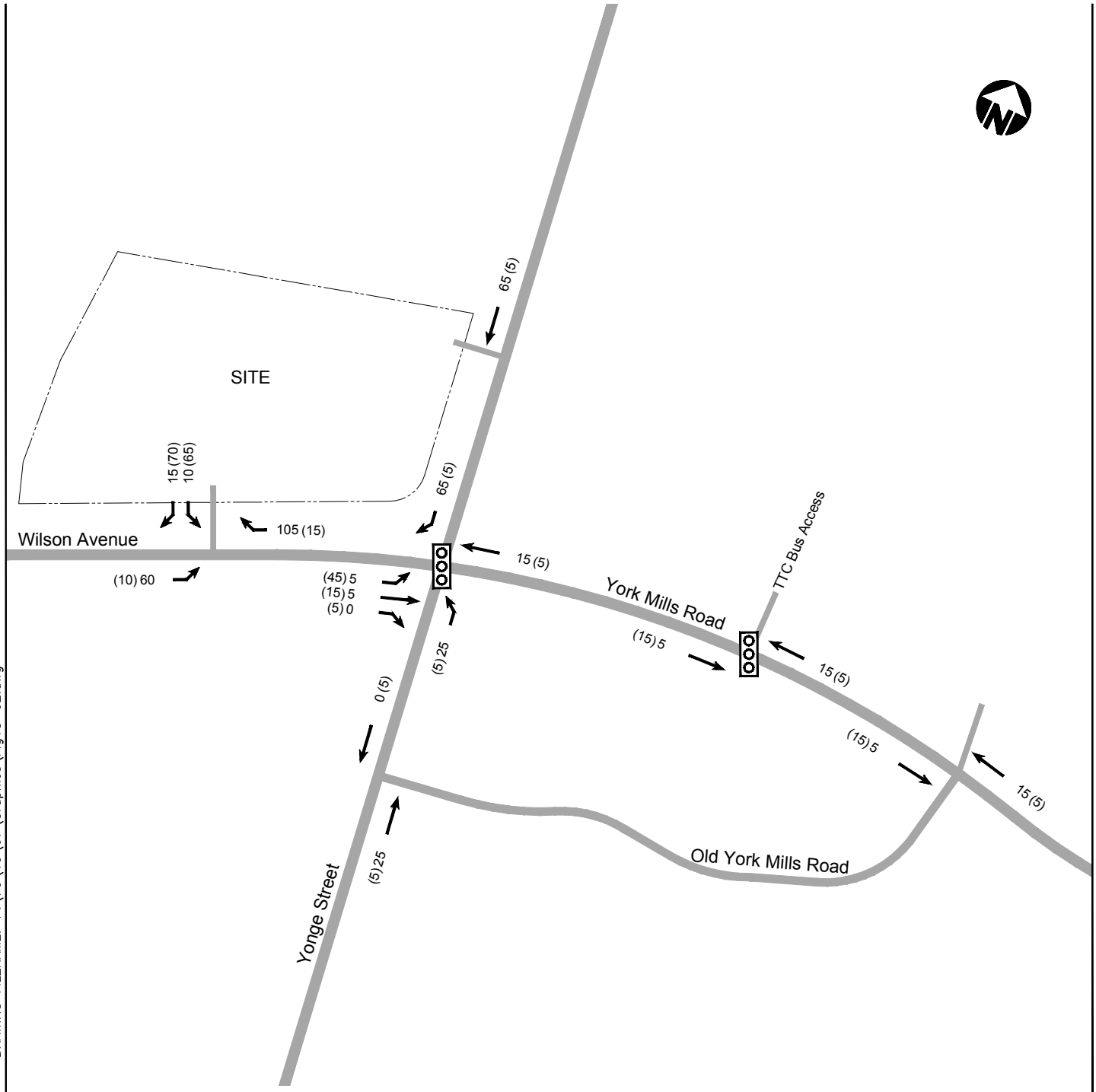
Direction (to / from)	Inbound	Outbound
Yonge Street North of Highway 401	10%	10%
Yonge Street via Highway 401 Eastbound	25%	25%
Yonge Street via Highway 401 Westbound	5%	0%
Yonge Street South of Wilson Avenue / York Mills Road	15%	5%
York Mills Road East of Yonge Street	10%	10%
Wilson Avenue West of Yonge Street[1]	35%	50%

Notes:
(1) Based upon existing York Mills Commuter Parking Lot trace, vehicular trips that originate from / to the west via Highway 401 and trips heading south via Yonge Street have been allocated to head westbound towards their destination as a more convenient way to travel from the site driveway towards their destination.

Figure 18 illustrates future site traffic volumes that are assigned to the area road network.

7.4.3 Future Total Traffic Volumes

The summation of existing, future background growth, existing site traffic volumes and forecast future site traffic volumes constitutes the Future Total traffic volumes adopted for analysis herein. Figure 19 illustrates the composite Future Total Traffic Volumes associated with the proposed development at 4050 Yonge.



FUTURE SITE TRAFFIC VOLUMES

00 AM Peak Hour

(00) PM Peak Hour

Existing Traffic Signal

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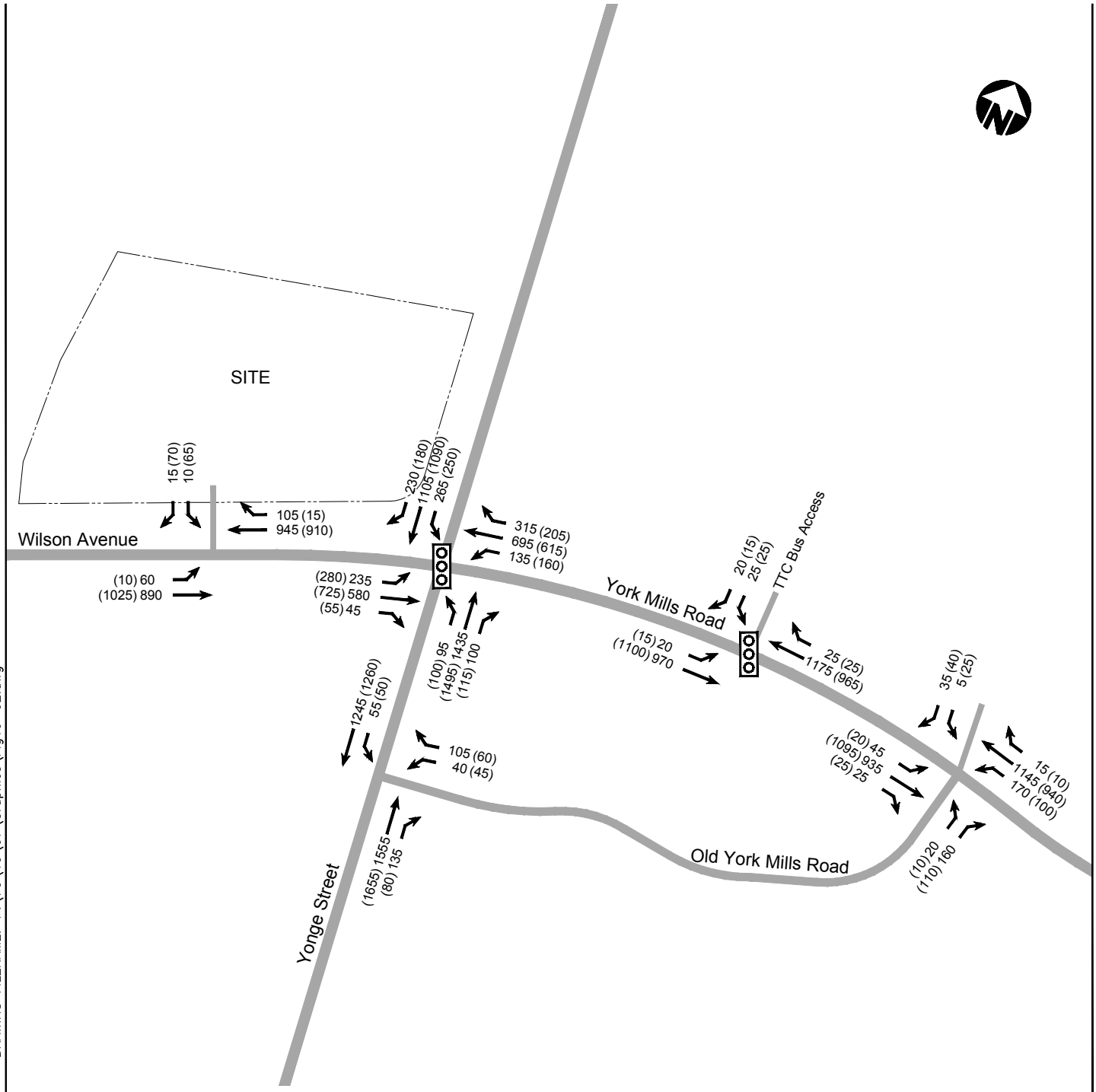
DATE PLOTTED: February 22, 2011



FUTURE TOTAL TRAFFIC VOLUMES

00 AM Peak Hour

(00) PM Peak Hour

Existing Traffic Signal

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DATE PLOTTED: February 22, 2011

7.5 Public Street Intersection Analysis

7.5.1 General Operational Analysis Assumptions

Signalized and unsignalized intersection traffic operations analysis has been undertaken using the Synchro (version 7.0) capacity analysis software in accordance with the City of Toronto's *Guidelines for Using Synchro Software, January 2004*. Capacity analyses were undertaken during both the morning and afternoon peak hours under existing, future background and future total conditions.

Analyses have been undertaken in accordance with the methodologies outlined in the Highway Capacity Manual (HCM), which provides a 'level of service' (LOS) indicator for each turning movement / approach at the intersection. The LOS provides a measure of the average delay that a motorist may experience when travelling through an intersection and ranges from **LOS A** (little delay) to **LOS F** (extended delay). A complementary measurement also provided is a 'Volume-to-Capacity' ratio (V/C) for each movement, which provides a relative measure of the demand volume to capacity available to process that demand. A V/C ratio of 1.0 reflects 'at-capacity' conditions. The HCM methodology also provides an indication of the extent of any queuing on a particular movement or approach.

Existing signal cycle lengths and timings were provided by the City of Toronto based upon a SCOOT system and were used as a basis for analysis. Beginning with future background traffic volume scenarios, optimization of the signal phasing and timing parameters is adopted.

For the purpose of intersection analysis, the following network assumptions were adopted herein to reflect existing conditions based upon field observations conducted by BA Group. Notable calibrations are noted below.

- Existing peak hour factors based upon individual intersection movements are adopted based upon turning movement counts undertaken by BA Group.
- A saturation flow rate of 1,900 vehicles per hour of green per lane is maintained throughout the entire network.
- Based upon existing land configurations at Yonge Street and Old York Mills Road, and at York Mills Road and Old York Mills Road, there is a centre median at both intersections that acts as a two-way left turn lane (TWLTL) which facilitates two-stage gaps for the outbound left turns from the minor streets.
- The site access driveway on Wilson Avenue has been calibrated to the delay study undertaken in the southbound direction (left and right turns).

The following sections discuss the results of the operational analyses by key intersections within the study area. Detailed intersection capacity analyses worksheets are provided in Appendix E.

7.5.2 Yonge Street and York Mills Road / Wilson Avenue Signalized Intersection

The intersection of Yonge Street and York Mills Road / Wilson Avenue has:

- a four-lane approach on Yonge Street (left, two through and a right for the north approach and a left, two through and a through-right for the south approach);
- a three-lane approach on Wilson Avenue (left, through and through-right); and
- a four-lane approach on York Mills Road (left, two through and right).

Overall morning and afternoon peak hour analysis results can be found in Table 13.

Under existing conditions, the intersection has a V/C ratio of 0.92 and 0.89 during the morning and afternoon peak hour, respectively.

With the addition of background traffic, signal timings have been optimized. In the morning peak hour, a northbound left turn advance green phase has been implemented and additional green time has been provided to the north-south main phase as well as the eastbound left turn advanced green phase. As a result, there is a reduction of green time from the east-west main phase, allowing for better utilization of all green time and the intersection V/C ratio decreases to 0.89. During the afternoon peak hour, additional green time is provided to the southbound and eastbound left turn green phase, which alternatively is reduced from the east-west main phase. This results in a slight reduction of the intersection V/C ratio to 0.88.

In future total conditions, signal timings remain the same as the future background scenario, and the intersection V/C ratio and reduces slightly to 0.87 during the morning peak hour and remains at 0.88 during the afternoon peak hour.

The addition of new 4050 Yonge Street traffic will not produce any noticeable change in either the overall volume-to-capacity ratio of this intersection, or upon overall intersection operations.

TABLE 13: YONGE / WILSON / YORK MILLS PEAK HOUR ANALYSIS

Intersection Movement	Existing Traffic			Future Background Traffic			Future Total Traffic		
	V/C	Delay(s)	LOS	V/C	Delay(s)	LOS	V/C	Delay(s)	LOS
EBL	0.95 (0.89)	67.7 (54.8)	E (D)	0.95 (0.92)	69.6 (61.8)	E (E)	0.90 (0.92)	57.2 (62.4)	E (E)
EBTR	0.66 (0.83)	38.4 (46.8)	D (D)	0.66 (0.97)	37.6 (67.2)	D (E)	0.65 (0.95)	37.4 (61.9)	D (E)
NBTR	0.96 (0.93)	56.0 (47.9)	E (D)	0.96 (0.94)	53.9 (47.7)	D (D)	0.96 (0.95)	53.9 (49.8)	D (D)
SBL	0.89 (0.95)	60.3 (76.4)	E (E)	0.94 (0.93)	72.5 (69.9)	E (E)	0.94 (0.93)	72.5 (70.5)	E (E)
WBL	0.56 (0.91)	31.2 (67.1)	C (E)	0.71 (0.93)	44.7 (73.3)	D (E)	0.71 (0.93)	44.1 (73.8)	D (E)
WBT	0.79 (0.67)	46.9 (41.3)	D (D)	0.96 (0.87)	70.5 (56.7)	E (E)	0.96 (0.90)	69.7 (60.8)	E (E)
OVERALL	**0.92 (0.89)**	**43.9 (45.4)**	**D (D)**	**0.89 (0.88)**	**49.7 (49.7)**	**D (D)**	**0.87 (0.88)**	**48.9 (50.4)**	**D (D)**

Notes:

1. Level of Service criteria for signalized intersections based upon the Highway Capacity Manual (HCM 2000):

Level of Service (LOS)	Control Delay per Vehicle (secs / veh)
A	≤ 10.0
B	> 10.0 and ≤ 20.0
C	> 20.0 and ≤ 35.0
D	> 35.0 and ≤ 55.0
E	> 55.0 and ≤ 80.0
F	> 80.0

2. xx (xx) – AM (PM)

7.5.3 Yonge Street and Old York Mills Road

The "T"-intersection of Yonge Street and Old York Mills Road is two-way STOP controlled. Old York Mills Road is a two-lane approach (left and right) while Yonge Street is a three-lane approach (left, two through for the southbound direction and two through and a through / right for the northbound direction). A passenger drop off location is provided on Old York Mills Road, which has a total of seven (7) parking spots for temporary parking (duration of 10 minutes or less) and an informal lay-by on the south side of the road. It is to be noted that during peak periods, many vehicles will use the north side of the road to wait for passengers.

Based upon existing lane configurations at this intersection, a centre median on the north approach and a continuous lane on the south approach facilitates two-stage gaps for the westbound (outbound) left turn. This condition has been reflected in the analysis of this intersection as a two-way left turn lane (TWLTL).

Under existing conditions, all traffic movements function at LOS D or better, with a westbound left turn delay of 29 seconds and 34 seconds in the morning and afternoon peak hour, respectively. With the addition of future background, all traffic movements function at LOS E or better with a slight increase in the westbound left turn delay of approximately 3 to

4 seconds in the morning and afternoon peak hour. Under future total conditions, the intersection LOS remains the same. These results are summarized in Table 14.

With the addition of site traffic, the impact is reasonable and acceptable and will not be noticeable to motorists using this intersection.

TABLE 14: YONGE / OLD YORK MILLS PEAK HOUR ANALYSIS

Intersection Movement	Existing Traffic			Future Background Traffic			Future Total Traffic		
	V/C	Delay(s)	LOS	V/C	Delay(s)	LOS	V/C	Delay(s)	LOS
NBT	0.37 (0.40)	0.0 (0.0)	A (A)	0.39 (0.42)	0.0 (0.0)	A (A)	0.40 (0.42)	0.0 (0.0)	A (A)
NBR	0.27 (0.25)	0.0 (0.0)	A (A)	0.28 (0.26)	0.0 (0.0)	A (A)	0.29 (0.26)	0.0 (0.0)	A (A)
SBL	0.15 (0.16)	16.7 (17.6)	C (C)	0.18 (0.17)	18.0 (19.0)	C (C)	0.18 (0.17)	18.4 (18.9)	C (C)
SBT	0.38 (0.38)	0.0 (0.0)	A (A)	0.40 (0.40)	0.0 (0.0)	A (A)	0.40 (0.40)	0.0 (0.0)	A (A)
WBL	0.22 (0.28)	28.9 (33.5)	D (D)	0.25 (0.31)	31.8 (37.4)	D (E)	0.25 (0.31)	32.7 (37.1)	D (E)
WBR	0.21 (0.12)	13.7 (13.0)	B (B)	0.23 (0.13)	14.3 (13.5)	B (B)	0.23 (0.13)	14.4 (13.4)	B (B)

Notes:

1. Level of Service criteria for unsignalized intersections under two-way / four-way stop control based upon the Highway Capacity Manual (HCM 2000):

Level of Service (LOS)	Control Delay per Vehicle (secs / veh)
A	≤ 10.0
B	> 10.0 and ≤ 15.0
C	> 15.0 and ≤ 25.0
D	> 25.0 and ≤ 35.0
E	> 35.0 and ≤ 50.0
F	> 50.0

2. xx (xx) – AM (PM)

7.5.4 York Mills Road and Old York Mills Road

The intersection of York Mills Road and Old York Mills Road is two-way STOP controlled. Old York Mills Road and York Mills Centre access is a one-lane approach (left / through / right) while on York Mills Road, it is a three-lane approach (left, through and through / right).

Based upon existing lane configurations, a two way left turn lane (TWLTL) is available in the centre lane to facilitate two-stage gaps for the northbound and southbound (outbound) left turn. This condition has been reflected in the analysis of this intersection.

Under existing conditions, all traffic movements function at LOS C or better, with left turn delays from the minor streets no more than 20 seconds during the morning and afternoon peak periods. With the addition of background traffic and future site volumes, the LOS of the intersection remains the same. Results are summarized in Table 15.

With the addition of site traffic, the overall delay at this intersection is minimal and will not affect the operation of this intersection.

TABLE 15: YORK MILLS / OLD YORK MILLS PEAK HOUR ANALYSIS

Intersection Movement	Existing Traffic			Future Background Traffic			Future Total Traffic		
	V/C	Delay(s)	LOS	V/C	Delay(s)	LOS	V/C	Delay(s)	LOS
EBL	0.08 (0.03)	11.8 (10.4)	B (B)	0.09 (0.03)	12.2 (10.6)	B (B)	0.09 (0.03)	12.2 (10.6)	B (B)
EBT	0.38 (0.45)	0.0 (0.0)	A (A)	0.40 (0.47)	0.0 (0.0)	A (A)	0.40 (0.47)	0.0 (0.0)	A (A)
EBR	0.21 (0.24)	0.0 (0.0)	A (A)	0.22 (0.25)	0.0 (0.0)	A (A)	0.22 (0.25)	0.0 (0.0)	A (A)
WBL	0.25 (0.17)	12.0 (12.3)	B (B)	0.28 (0.19)	12.6 (12.8)	B (B)	0.28 (0.19)	12.5 (12.8)	B (B)
WBT	0.46 (0.38)	0.0 (0.0)	A (A)	0.49 (0.40)	0.0 (0.0)	A (A)	0.49 (0.40)	0.0 (0.0)	A (A)
WBR	0.24 (0.20)	0.0 (0.0)	A (A)	0.25 (0.21)	0.0 (0.0)	A (A)	0.25 (0.21)	0.0 (0.0)	A (A)
NBLTR	0.39 (0.26)	17.4 (15.1)	C (C)	0.43 (0.28)	18.7 (15.7)	C (C)	0.43 (0.28)	18.6 (15.7)	C (C)
SBLTR	0.12 (0.21)	16.1 (18.2)	C (C)	0.13 (0.22)	17.5 (19.5)	C (C)	0.13 (0.22)	17.5 (19.4)	C (C)

Notes:

1. Level of Service criteria for unsignalized intersections under two-way / four-way stop control based upon the Highway Capacity Manual (HCM 2000):

Level of Service (LOS)	Control Delay per Vehicle (secs / veh)
A	≤ 10.0
B	> 10.0 and ≤ 15.0
C	> 15.0 and ≤ 25.0
D	> 25.0 and ≤ 35.0
E	> 35.0 and ≤ 50.0
F	> 50.0

2. xx (xx) – AM (PM)

7.5.5 York Mills Road and TTC Bus Access

The "T"-intersection of York Mills Road and the TTC Bus Driveway is approximately 95 metres east from the intersection of Yonge Street and York Mills Road / Wilson Avenue and is signalized. This signal is called by TTC vehicles exiting and entering the York Mills bus terminal. York Mills Road is an eastbound three lane approach (two through, right) in which the right lane serves buses only and a westbound three lane approach (left, two through) in which the left lane serves buses only as well. The TTC bus access is a one-lane approach (left / right) for buses exiting the terminal.

Under existing conditions, the southbound green phase and the eastbound left turn arrow is called when vehicles are detected in the eastbound left turn lane or at the TTC bus terminal entrance. If the detectors are not activated, the signal continues to provide green time to the east / west main phase. Priority is, therefore, given to TTC bus access.

Acceptable traffic operations are now and will continue to be experienced at this intersection.

7.5.6 Site Access and Wilson Avenue

The "T"-intersection of the site access and Wilson Avenue is two-way STOP controlled. The site access is a two-lane approach (left and right) and Wilson Avenue is an eastbound three-lane approach (left, two through) and a westbound two-lane approach (through and through / right).

In order to effectively model existing conditions, BA Group conducted a southbound delay study on Tuesday, January 18, 2011 and Wednesday, January 19, 2011, which measured overall stopped delay at the site access.

Average measured delays for southbound left turn motorists was 22 seconds during the morning and afternoon peak hour. These results are moderate and acceptable operating conditions in a suburban environment.

For the purposes of this analysis, a calibration has been undertaken in order to effectively model existing operating conditions and to account for deficiencies in the Synchro software package by reducing gap times to reflect existing delay conditions. Average delays measured during the field studies were adjusted by adding five seconds. (Synchro adds five seconds to calculated delays to account for acceleration and deceleration while field studies do not.)

Under existing conditions, all intersection movements function at LOS C or better with southbound left turn delays less than 28 seconds. With the addition of background traffic all intersection movements function at LOS D or better with southbound left turn delays increasing slightly by 3 to 4 seconds. With the addition of site traffic, intersection LOS increases to E or better, with the southbound left turn delay increasing 5 to 6 seconds but not greater than 37 seconds. Table 16 summarizes the analysis results.

With the addition of site traffic, the delay to motorists increases by 5.0 to 6.0 seconds. This is reasonable and acceptable and can be accommodated on the existing street network.

TABLE 16: SITE ACCESS / WILSON PEAK HOUR ANALYSIS

Intersection Movement	Existing Traffic			Future Background Traffic			Future Total Traffic		
	V/C	Delay(s)	LOS	V/C	Delay(s)	LOS	V/C	Delay(s)	LOS
EBL	0.05 (0.02)	9.5 (9.4)	A (A)	0.05 (0.02)	9.7 (9.5)	A (A)	0.09 (0.01)	10.4 (9.5)	B (A)
EBT	0.27 (0.31)	0.0 (0.0)	A (A)	0.28 (0.33)	0.0 (0.0)	A (A)	0.28 (0.33)	0.0 (0.0)	A (A)
WBT	0.38 (0.37)	0.0 (0.0)	A (A)	0.40 (0.39)	0.0 (0.0)	A (A)	0.40 (0.39)	0.0 (0.0)	A (A)
WBR	0.20 (0.20)	0.0 (0.0)	A (A)	0.21 (0.21)	0.0 (0.0)	A (A)	0.27 (0.20)	0.0 (0.0)	A (A)
SBL	0.17 (0.19)	26.9 (27.5)	C (C)	0.18 (0.21)	29.1 (29.9)	D (D)	0.11 (0.41)	32.1 (36.9)	D (E)
SBR	0.05 (0.05)	9.3 (9.2)	A (A)	0.05 (0.05)	9.4 (9.2)	A (A)	0.03 (0.09)	9.3 (9.4)	A (A)

Notes:

1. Level of Service criteria for unsignalized intersections under two-way / four-way stop control based upon the Highway Capacity Manual (HCM 2000):

Level of Service (LOS)	Control Delay per Vehicle (secs / veh)
A	≤ 10.0
B	> 10.0 and ≤ 15.0
C	> 15.0 and ≤ 25.0
D	> 25.0 and ≤ 35.0
E	> 35.0 and ≤ 50.0
F	> 50.0

2. xx (xx) – AM (PM)

7.5.7 Companion VISSIM Operational Analyses

For the purposes of analysis, BA Group conducted a companion VISSIM operational analysis of the study area network.

VISSIM is a microscopic, behaviour-based, multi-purpose traffic simulation program which is utilized for traffic analysis. Vehicular input into VISSIM is based upon turning movement data / intersection counts or alternative route assignments, in which routing decisions can be based upon static routes or free-route choice.

Output from VISSIM includes details such as the number of vehicles through an intersection, the average speed, density, emissions, etc. Also, VISSIM provides measures of effectiveness such as travel time, delay time and length of traffic queues, which are measured from simulation runs rather than calculated from an equation.

Simulations are completed using VISSIM to include the level of detail in geometry, input values permitted, and the manipulation of a variety of driving behaviour. Demand modelling in VISSIM is used to reflect a highly realistic traffic model given various parameters.

To measure the full impact of queuing and blocking issues, micro-simulation software programs (or dynamic models) are utilized to simulate a variety of signalized and unsignalized intersections in which each vehicle in the system is individually tracked through the model and comprehensive Measures of Effectiveness (MOE) are collected for each vehicle. Micro-simulation models are based upon driver behaviour characteristics and random events to reflect real-world operations and reactions.

In order to reflect existing conditions and motorist behaviour as observed in the field, a queue and delay study was undertaken at this intersection to calibrate the VISSIM model under STOP controlled conditions. These characteristics were brought forward to the future scenario.

The VISSIM analysis utilizes the same base traffic volume data, background traffic volume assumptions and future site forecast volumes adopted for purposes of the Synchro traffic operations analysis. Operational assessments were carried out for Existing and Future Total traffic volume scenarios to determine the impact 4050 Yonge site traffic volumes would have upon the study area road network. Furthermore, the assessment was used to confirm findings and recommendations that are based upon the Synchro analyses.

The traffic model confirms that the eastbound left turn and through lane queues at the signalized intersection of Yonge Street and Wilson Avenue / York Mills Road would block the site access only 25% of the time within the peak hour (based upon the overall eastbound approach, including the left and through lanes), and that, overall, the 4050 site driveway on Wilson will operate acceptably. Southbound left turn motorists (at the site driveway) are able to clear the intersection, mainly to exit into the left turn lane and through lane on Wilson Avenue.

Table 17 is a comparison table of queue lengths of the eastbound left and through lanes from Synchro and VISSIM.

TABLE 17: FUTURE TOTAL – YONGE STREET & YORK MILLS ROAD/ WILSON AVENUE QUEUE ANALYSIS

Intersection Movement	Synchro		VISSIM[2]		
	50th (m)	95th (m)	50th (m)	95th (m)	Max (m)
Morning Peak Hour					
EBL	55.9	#75.9[3]	37	92	336
EBTR	79.2	97.8			
Afternoon Peak Hour					
EBL	57.6	#110.9[3]	47	96	184
EBTR	109.3	#150.4[3]			

Notes:
1. Distance from the site access to the signal is 72 metres.
2. VISSIM queues do not distinguish between lanes as it is based upon the length of the link rather than the turning movement. Therefore, the eastbound left turn is captured in the same queue as the through and through / right lanes.
3. The # footnote indicates that the volume modeled exceeds capacity.

Detailed VISSIM analysis was undertaken to further understand the on-site loading operations and the interaction with site traffic during the morning and afternoon peak hours. VISSIM analysis indicates that during the morning peak hour and afternoon street peak hours, the loading driveway is not unduly blocked by exiting / entering vehicles that are destined to the loading area. Loading activity during these time periods is, in any event, very low – five (5) arrivals in a one hour period. This analysis indicates that the proposed loading area arrangement will operate acceptably. All vehicular queuing in the afternoon peak hour is appropriately accommodated on-site.

7.6 Traffic Operations Analysis Summary

The key findings of the traffic operations analysis are set out below

- Acceptable traffic operations will be experienced at the unsignalized full movements site driveway onto Wilson Avenue.
- Motorists forming a queue while waiting on the eastbound approach to the Yonge and York Mills intersection will not unduly impede motorists entering and exiting the driveway from 4050 Yonge Street onto Wilson Avenue.
- The driveway design, which includes one inbound lane and two outbound lanes, and its location as far west as is practical, will appropriately accommodate motorists and loading activity without undue conflict or delay. While motorists making a left turn out during the weekday afternoon street peak period will experience noticeable delay,

average motorist delay is within the range normally expected at unsignalized intersections in urban environments.

- The marginal impact of new traffic generated by the Project is relatively modest at nearby public street intersections. No significant change to the function, character or operations of nearby public streets is anticipated.

On this basis, we conclude that the vehicular traffic generated by the new office building at 4050 Yonge Street can be reasonably accommodated by the existing public street system based upon the proposed driveway location and design and providing that traffic signal timing adjustments are made as required once the building is constructed and occupied.

8.0 Summary and Conclusions

8.1 Background

The 4050 Yonge Street site is currently occupied by a Toronto Transit Commission commuter parking facility containing approximately 260 spaces. The TTC, landowners, in co-ordination with the City of Toronto, have declared the site surplus because it is not critical to TTC operations and because the existing parking use underutilizes a prime development site immediately adjacent to an inter-modal public transit hub.

Build Toronto is now responsible for developing the property. Build Toronto submitted an application to the City of Toronto for an Official Plan Amendment and a Zoning Bylaw Amendment in May, 2010 to permit the construction of an office building with ancillary retail and restaurant uses on the site (the 'Project'). The application is consistent with the City of Toronto Official Plan, which designates the site for mixed-use development and provides strong support for intensification at transit nodes. The site is otherwise appropriate for office uses due to: the height limit applicable to the site; the established status of the area as an employment node; market interest; and its location adjacent to York Mills inter-modal Subway Station.

Build Toronto's original May 2010 application included concept building plans and supporting technical studies including a Traffic Impact Study prepared by Cole Engineering dated April 2010.

This report complements and updates the Cole Engineering Transportation report. It responds to comments received from City of Toronto Transportation Planning and Technical Services staff on the urban transportation elements of the original application, issues raised by concerned stakeholders during the course of the community consultation process undertaken to-date and revisions made by Build Toronto to the design of the building. The revisions to the building design are incorporated into the drawings and plans prepared by KPMB Architects which accompanied a revised Official Plan Amendment, Zoning By-law Amendment and Site Plan Application made by Build Toronto in December, 2010.

8.2 Scope of the Report

Key changes to the building design made by Build Toronto since the original application was made in May, 2010, include:

- a reduction in the height of the building from eight (8) stories to seven (7) stories together with a commensurate reduction in floor area;

- an increase in the parking supply from two (2) underground parking levels (227 spaces) to three underground parking levels (363 spaces);
- allowance for up to 10% of the parking to be designated for carshare, carpool and hybrid vehicles;
- consolidation of the parking garage and loading area driveways on Wilson Avenue;
- to the extent practical, relocation of the consolidated driveway on Wilson Avenue to the west;
- re-configuration of the loading to provide four (4) formal loading spaces including two Type-B loading spaces and two Type-C loading spaces, as well as storage, refuse and recycling facilities;
- allocation of two (2) parking spaces in the underground for informal use by small delivery vehicles (e.g., couriers);
- provision of up to 134 bicycle parking spaces; and
- improved street level and underground level pedestrian access to the subway station, TTC Bus Station and GO Bus facilities.

The proposed new office building at 4050 Yonge Street now comprises 39,977 m^2 of gross floor area, and includes office uses, as well as ground floor retail and restaurant uses.

The following urban transportation matters are addressed in this report:

- Site Transportation Context;
- Parking and Transportation Demand Management;
- Loading Facilities;
- Site Plan Review;
- Implications of Eliminating the TTC Commuter Parking Lot; and
- Traffic Operations Update.

8.3 Transportation Context

The site occupies a central location in the City of Toronto and Greater Toronto Area with good regional vehicular access via Highway 401 and excellent intermodal public transit access.

The site is located in an established mixed-use employment area, served by particularly good public transit service including GO Bus, TTC Bus and the York Mills Subway Station on the Yonge–University Line. It also enjoys a network of sidewalks, a direct weather protected pedestrian connection to all public transit facilities, and distributed shared public parking.

Relatively high volumes of traffic are evident on the nearby public street system and access to and travel along Highway 401 is congested during weekday street peak periods of activity.

This environment promotes and facilitates non-auto travel and supports a strategy of minimizing the on-site parking supply in order to take best advantage of existing public transit infrastructure.

8.4 Parking Supply

The planned Project parking supply of 363 spaces is within the range of the new recommended Zoning By-law 1156-2010 standards for office, retail and restaurant uses. It is also within the range of permitted parking in North York Centre and is consistent with the low end of the range of parking generation exhibited by existing nearby office buildings.

The proposed supply:

- is achievable from a construction and economic return perspective;
- supports Transportation Demand Management objectives;
- minimizes traffic impact; and
- can be accommodated by the proposed site driveway location and design.

Taking into account all of the foregoing considerations, a parking supply target of approximately 363 spaces on three levels, as currently proposed, is reasonable from an urban transportation planning standpoint and will meet the needs of the Project.

8.5 Service and Deliveries

The planned loading supply of four (4) loading spaces including two (2) Type-B loading spaces and two (2) Type-C loading spaces is consistent with the requirements of the former North York By-law 7625 and with the requirements of the new Zoning By-law 1156-2010 for the amalgamated City of Toronto recently adopted by City Council. It is also consistent with loading activity levels at other similar office buildings in the site environs.

For operational flexibility, space is also allocated for formal recycling, refuse collection and storage, and an additional two (2) parking spaces in the underground garage are proposed to be designated, informally, for short term service vehicle parking purposes.

On this basis, the proposed number and composition of loading spaces are satisfactory and will meet the needs of the Project.

8.6 Site Plan Review

The proposed Site Plan, illustrated in the drawings and plans prepared by KPMB Architects which accompanied the revised Official Plan Amendment, Zoning By-law Amendment and Site Plan Application made by Build Toronto in December, 2010, incorporates well designed urban transportation elements.

The driveway location and design respect the site context, architectural and urban design requirements of the building, as well as motorist, cyclist and service and delivery activity levels and functional needs. Good sightlines and geometry are provided at the interface of the driveway with Wilson Avenue.

Up to 134 bicycle parking spaces will be provided, consistent with the new Zoning By-law 1156-2010 and Toronto Green Standards. Access to the spaces is provided by way of the parking ramp with shared bicycle/motorists inbound access and a separate outbound bicycle lane. Complementary change room and shower facilities are also provided.

Improved street level and underground level pedestrian access to the Subway Station, TTC Bus Station and GO Bus facilities are integrated into the Project. The sidewalks and boulevard surrounding the site are being upgraded, and a ravine trail system along the north and west sides of the building is being provided.

The layout and design of parking spaces, internal circulation, interfloor ramping and pedestrian movement within the parking garage provides for clear way finding and satisfactory motorist movement. Allowance for up to 10% of the parking to be designated for carshare, carpool and hybrid vehicles is incorporated into the design.

The loading facility is designed to accommodate typical service and delivery design vehicles, provides for all manoeuvring to occur on-site and is well integrated with the building and parking access.

8.7 TTC Commuter Parking Lot

The York Mills Commuter Parking Lot (TPA Lot 812) currently occupies the 4050 Yonge Street site. The land is owned by the Toronto Transit Commission (TTC), but the lot is operated and maintained by the Toronto Parking Authority (TPA). The lot contains approximately 260 spaces. The TTC, in co-ordination with the City of Toronto, have declared the site surplus because it is not critical to TTC operations and because the existing parking use underutilizes a prime development site immediately adjacent to an inter-modal public transit hub. The prospective loss of the commuter parking lot has been raised as a significant concern by neighbourhood community groups and residents in the area.

The TTC commuter parking was closed last year from June until late December to accommodate alternating TTC and GO Bus terminal staging while renovations and general repairs were being undertaken at York Mills Centre. Observations made before, during and after this initiative, together with the findings of customer surveys undertaken by the TTC, surveys of public parking availability and cost in the area and observations of on-street activity and drop-off provide helpful insight into the implications of not replacing the lot.

Key findings from our review of the implications of closing TPA Lot 812 (York Mills Lot) to permit construction of a new office building are set out below.

Alternative Public Parking Opportunities - Weekday Daytime

- Only 100 of the 260 motorists who park in the 260 space York Mills Commuter Lot continued to park in the area when the lot was recently closed.

- The 160 motorists who left the area found a suitable alternative including parking in another TTC Commuter lot, parking in another commercial lot or taking the bus to the subway when the lot was recently temporarily closed.

- The York Mills Commuter Lot is not significantly used by local residents during the weekday daytime – only 30 of the 260 spaces were occupied by residents who live in the area.

- There will be approximately 400 public parking spaces available in the area once the lot is closed and the office building at 4050 Yonge Street is constructed – enough to meet the needs of motorists who use the lot and elect to continue to park in the area.

- Weekday all day parking charges are $3.00 - $7.00 higher at other public parking facilities in the area.

Alternative Public Parking Opportunities - Weekday Evenings and Weekends

- An average of 50 motorists use the York Mills Commuter Lot on weekday evenings and weekends on peak days.

- The availability of the lot is particularly important to the community residents for evening and weekend travel by subway and less important during the weekday daytime periods.

- There will be approximately 1,750 public parking spaces available in the area once the lot is closed and the office building at 4050 Yonge Street is constructed – more than enough to meet the needs of motorists who use the lot and elect to continue to park in the area.

- Weekday evening and weekend public parking charges are comparable: $0.00 to $2.00 higher at other public parking facilities in the area.

On-Street Parking

- In general, none of the neighbourhood streets in the Yonge/York Mills area appear to have experienced excessive or unusual on-street parking activity when TPA Lot 414 was closed last year.

- Some modest incremental on-street parking may have been occurring on Sandringham Drive. A local resident attributed this to TTC bus drivers.

Passenger Drop Off

- During the lot closure, passenger drop-off activity was reasonably accommodated in ways which did not unduly disrupt Yonge Street and York Mills/Wilson Avenue traffic operations and did not produce any noticeable difference in operation at the passenger pick-up and drop-off facility on York Mills Road near the York Mills Subway Station secondary entrance.

- Alternative solutions for improving passenger pick-up and drop-off facilities in the area are identified for review and comment by the City of Toronto and concerned stakeholders.

- Three generic alternatives for improving passenger drop-off opportunities include:

  a) a lay-by on Wilson Avenue;

  b) a cell phone lot in TPA Lot 414 (Jolly Miller Lot); and

c) reconfiguration of the passenger drop-off facility on Old York Mills Road.

All three of these alternatives should be considered by the City of Toronto in consultation with other stakeholders.

In summary, our findings indicate that the function of the York Mills Commuter Lot can be effectively and reasonably accommodated in existing public parking facilities and passenger drop-off facilities in the site environs when the lot is closed.

8.8 Traffic Operations Update

The busiest hour during the weekday morning (7:00 am to 9:00 am) and afternoon (4:00 pm to 6:00 pm) street peak periods is adopted for purposes of traffic operations analysis. It is during these time periods that the highest recurring levels of traffic activity are typically experienced on the municipal public street system. The traffic characteristics of the new office building at 4050 Yonge Street are derived based upon representative traffic generation and routings to the public street network during weekday street peak periods. The selected values take into account the site's parking supply and related employee and visitor characteristics in keeping with City of Toronto guidelines, industry standards and surveys of other existing representative office buildings.

Traffic operations are analyzed in accordance with City guidelines with appropriate adjustments based upon field observations. Signalized and unsignalized intersection traffic operations analysis has been undertaken using the Synchro (Version 7.0) capacity analysis software. To better understand traffic operations at the site driveway and nearby public street intersections upon development of 4050 Yonge Street, BA Group also conducted a companion VISSIM operational analysis. VISSIM is a microscopic behaviour-based multi-purpose traffic simulation program which is used to simulate traffic movement at signalized and unsignalized intersections. It provides a more comprehensive visual and technical evaluation of motorist queuing and delay. VISSIM is a widely used simulation tool currently being employed by the Ministry of Transportation.

The key findings of the traffic operations analysis are set out below.

- Acceptable traffic operations will be experienced at the unsignalized site driveway onto Wilson Avenue, assuming full movements are permitted.
- Motorists forming a queue while waiting on the eastbound approach to the Yonge and York Mills intersection will not unduly impede motorists entering and exiting the driveway form 4050 Yonge Street onto Wilson Avenue.

- The driveway design, which includes one inbound lane and two outbound lanes, and its location as far west as is practical, will appropriately accommodate motorists and loading activity without undue conflict or delay. While motorists making a left turn out during the weekday afternoon street peak period will experience noticeable delay, average motorist delay is within the range normally expected at unsignalized intersections in urban environments.
- The marginal impact of new traffic generated by the Project is relatively modest at nearby public street intersections. No significant change to the function, character or operations of nearby public street intersection is anticipated.

On this basis, we conclude that the vehicular traffic generated by the new office building at 4050 Yonge Street can be reasonably accommodated by the existing public street system based upon the proposed driveway location and design and traffic signal timing adjustments are made, as required, once the building is constructed and occupied.

APPENDIX A:
Site Plan Drawings

4050 YONGE STREET

TORONTO, ON

SITE PLAN APPROVAL SUBMISSION

DECEMBER 9, 2010

DRAWING LIST

SHEET NUMBER	SHEET NAME
A0.00	Title Page
A0.01	Contact List and Project Statistics
A0.02	Site Survey
A1.01	Context Plan
A1.02	Site Plan
A1.03	Ground Floor Grading Plan
A2.01	P3 Parking Plan
A2.02	P2 Parking Plan
A2.03	P1 Parking Plan
A2.04	Ground Floor Plan
A2.04.1	Ground Floor Mezzanine Plan
A2.05	Second Floor Plan
A2.06	Third Floor Plan
A2.07	Fourth Floor Plan
A2.08	Fifth Floor Plan
A2.09	Sixth Floor Plan
A2.10	Seventh Floor Plan
A2.11	Clerestorey Plan
A2.12	Roof Plan
A4.01	East Elevation
A4.02	South Elevation
A4.03	West Elevation
A4.04	North Elevation
A4.05	Partial East Elevation 1.1
A4.06	Partial East Elevation 1.2
A4.07	Partial South Elevation 1.1
A4.08	Partial South Elevation 1.2
A4.09	Partial South Elevation 1.3
A4.10	Partial South Elevation 1.4
A5.01	Building Section - Facing East
A5.02	Building Section - Facing West
A5.03	Building Section - Facing South
A5.04	Sectional Perspective
A5.05	Sectional Facade Details
A6.01	Axonometric View
A6.02	Building Street Views
DD-01	Drawing Details
RM-01	Removals Plan
SG-01	Site Grading and Servicing Plan
SN-01	Sections and Notes
E-102	Public Utilities Plan
L1	Landscape Plan
L2	Misc. Details
L3	Green Roof Plan
L4	Composite Landscape / Utility Plan
L5	West Slope Sections

Rev	Date	Description
2	09 DEC 2010	Issued for SPA
1	30 APR 2010	Issued for SPA, ZBA

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Project

4050 Yonge Street

Toronto, Ontario

Drawing Title

Title Page

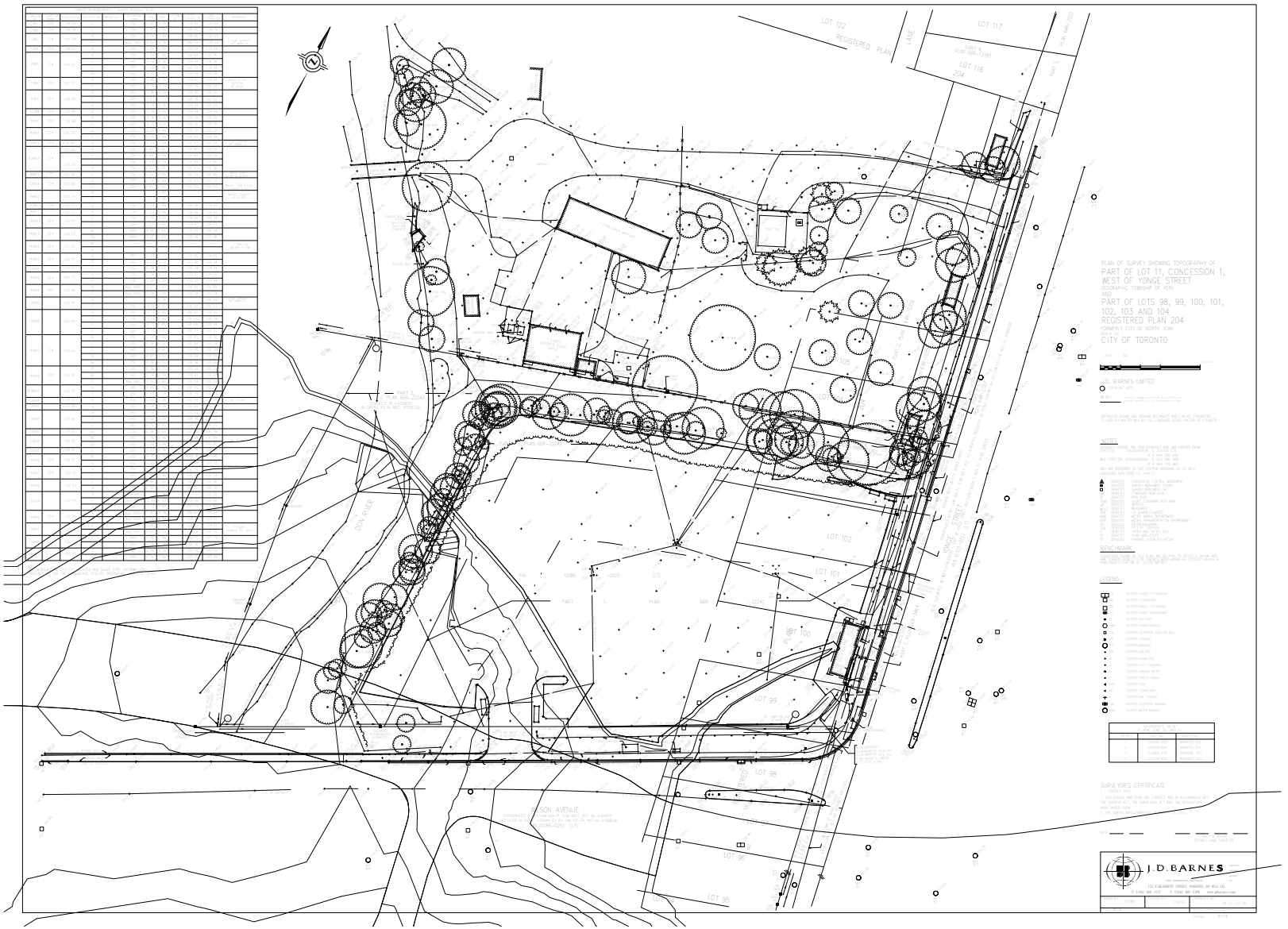
Scale

Project Number 0921

Plot Date December 9, 2010

Drawing Number

A0.00



Rev	Date	Description
3	29 DEC 2010	Issued For SPA
2	30 APR 2010	Issued For SPA, ZBA

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TRUE NORTH PROJECT NORTH

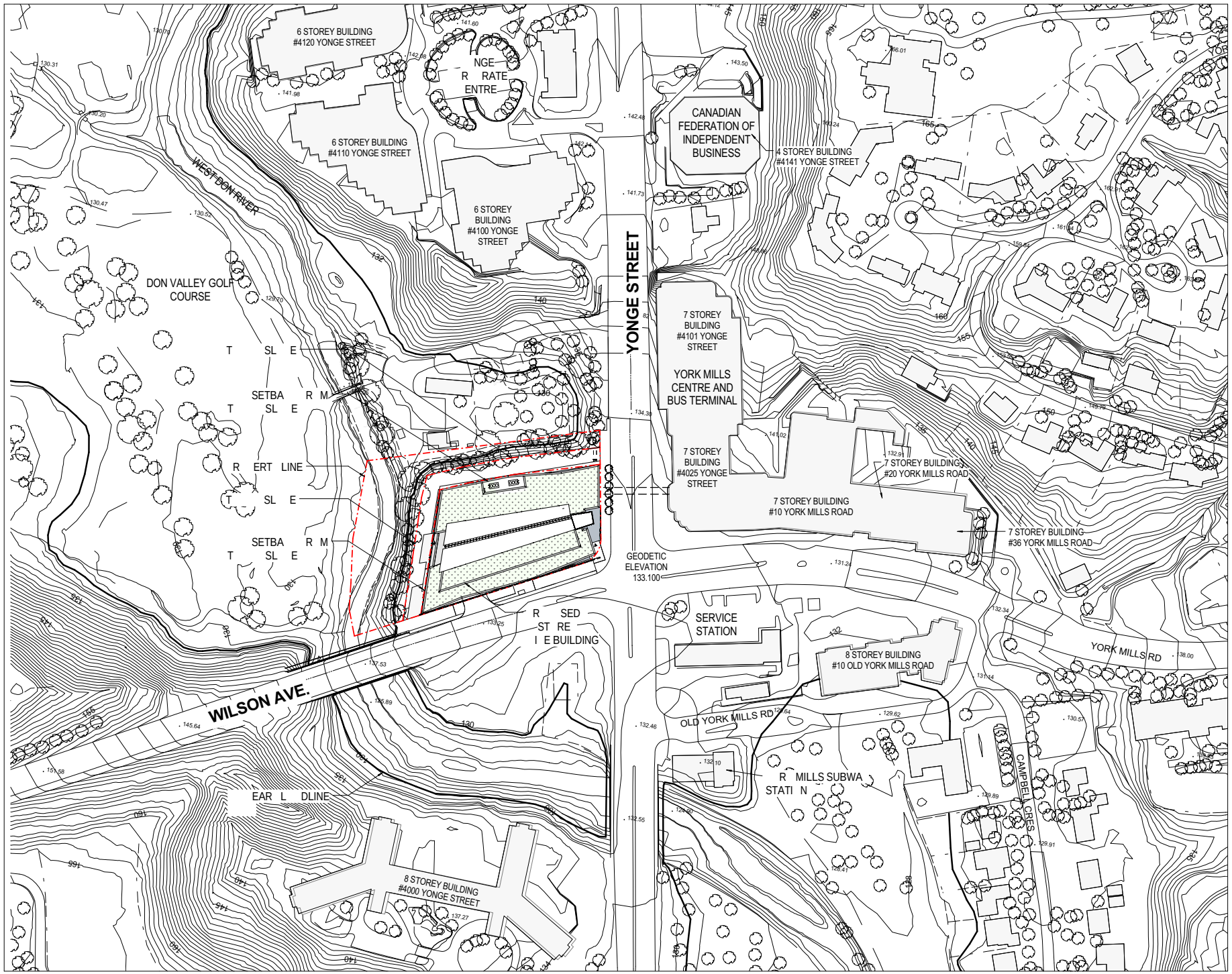
Drawing Title

Site Survey

Scale 1: 500
Project Number 0921
Plot Date December 9, 2010

Drawing Number

A0.02



Rev	Date	Description
1	09.07.2010	Issued for SPA
2	09.APR.2010	Issued for SPA - ZBA

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Project

4050 Yonge Street

Toronto, Ontario

TRUE NORTH PROJECT NORTH

Drawing Title

Context Plan

0 5 10 20 50 m

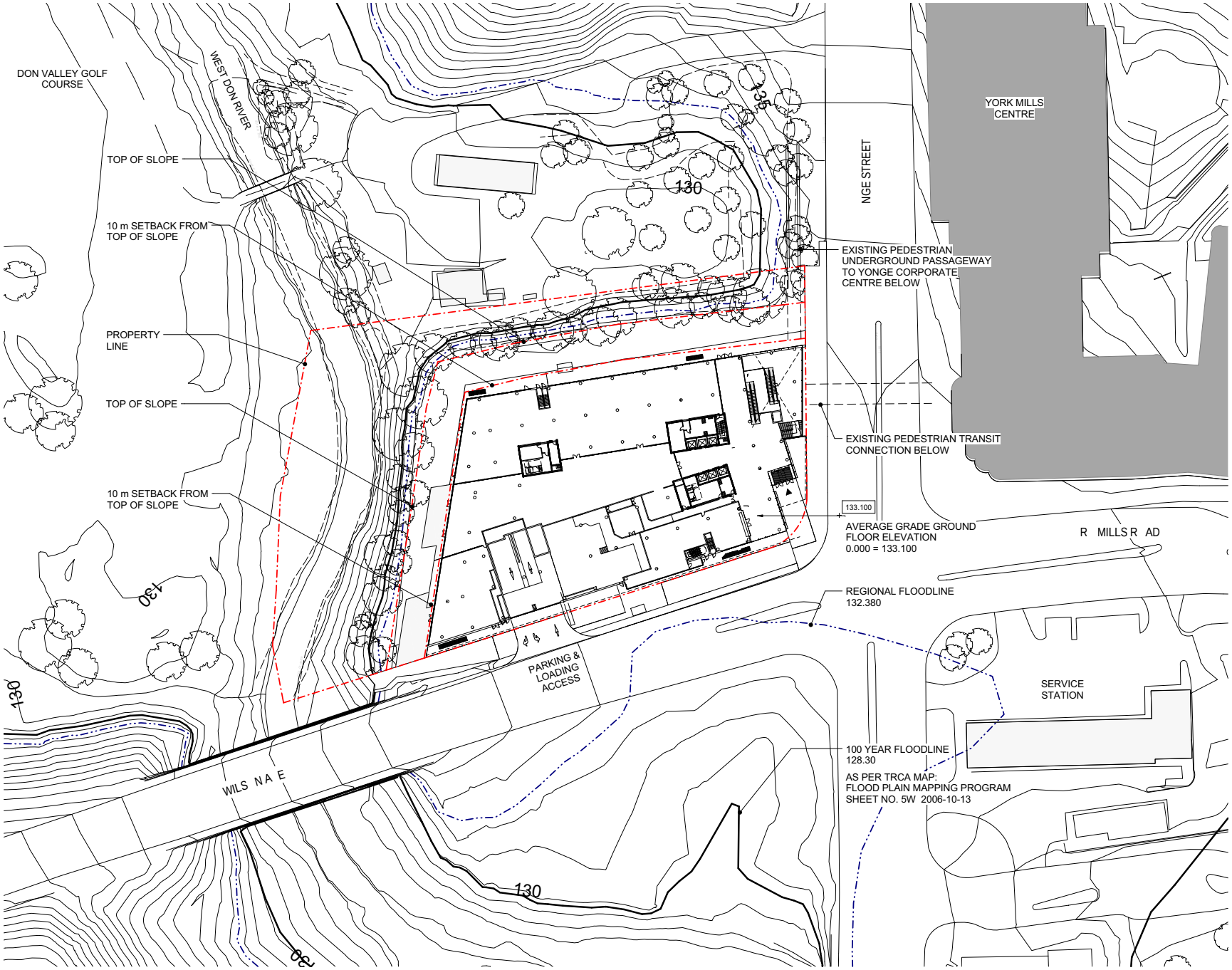
Scale 1 : 1000

Project Number 0921

Plot Date December 9, 2010

Drawing Number

A1.01



Rev	Date	Description
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Project

4050 Yonge Street

Toronto, Ontario

TRUE NORTH PROJECT NORTH

Drawing Title

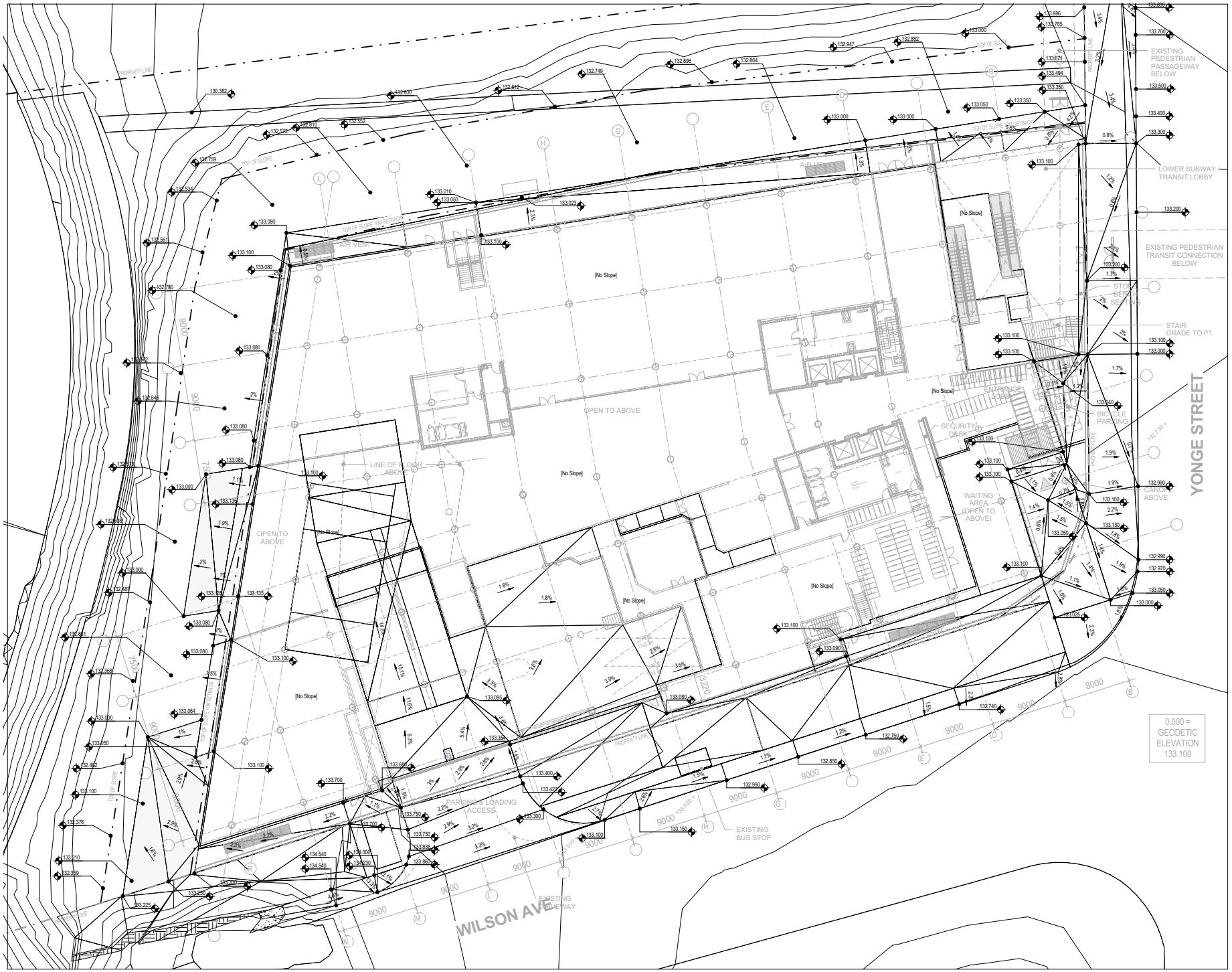
Site Plan

0 25 50 100 250mm

Scale 1 : 500
Project Number 0921
Plot Date December 9, 2010

Drawing Number

A1.02



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Project

4050 Yonge Street

Toronto, Ontario

Drawing Title

Ground Floor Grading Plan

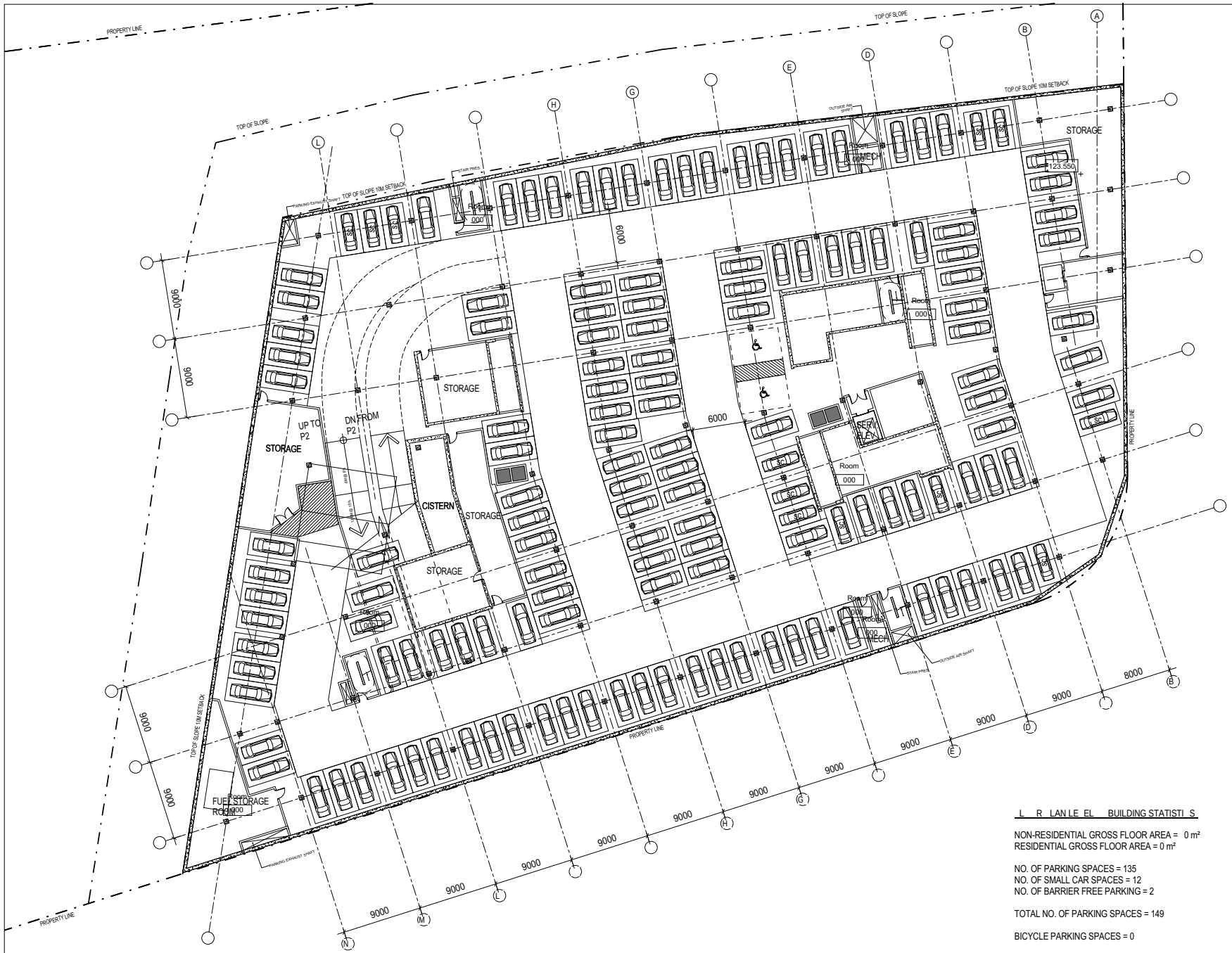
0 25 50 100 250 mm

Scale 1 : 200

Project Number 0921

Plot Date December 9, 2010

Drawing Number **A1.03**



L R LAN LE EL BUILDING STATISTI S

NON-RESIDENTIAL GROSS FLOOR AREA = 0 m²
RESIDENTIAL GROSS FLOOR AREA = 0 m²

NO. OF PARKING SPACES = 135
NO. OF SMALL CAR SPACES = 12
NO. OF BARRIER FREE PARKING = 2

TOTAL NO. OF PARKING SPACES = 149

BICYCLE PARKING SPACES = 0

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Project

4050 Yonge Street

Toronto, Ontario

Drawing Title

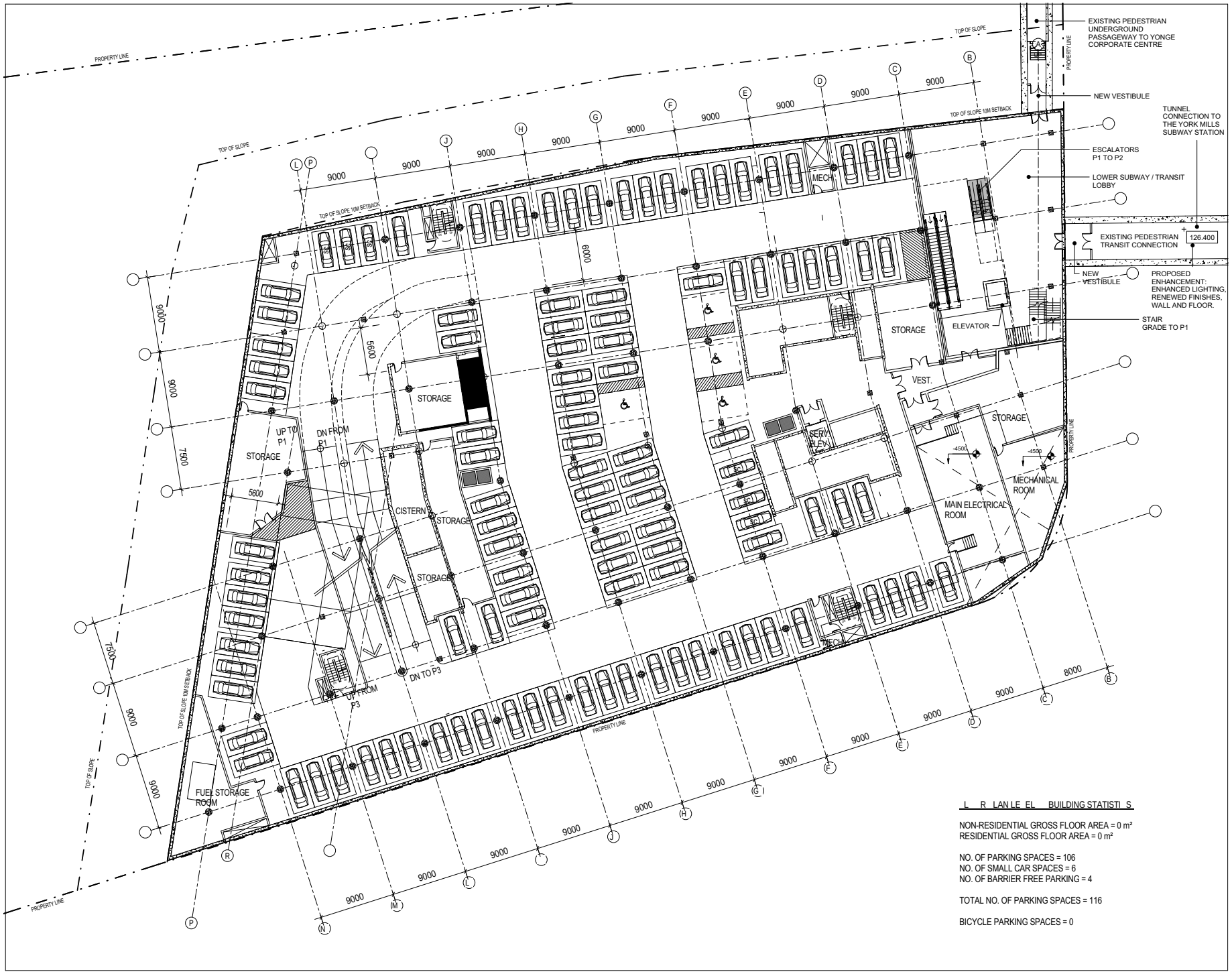
P3 Parking Plan

0 1 2 4 10 m

Scale 1 : 200
Project Number 0921
Plot Date December 9, 2010

Drawing Number

A2.01



LEGEND

- TYP. HORIZONTAL BICYCLE STORAGE SPACE
- TYP. VERTICAL BICYCLE STORAGE SPACE
- TYP. PARKING SPACE
- TYP. SMALL CAR PARKING SPACE
- TYP. HCP PARKING SPACE

L R LAN LE EL BUILDING STATISTI S

NON-RESIDENTIAL GROSS FLOOR AREA = 0 m²
RESIDENTIAL GROSS FLOOR AREA = 0 m²

NO. OF PARKING SPACES = 106
NO. OF SMALL CAR SPACES = 6
NO. OF BARRIER FREE PARKING = 4

TOTAL NO. OF PARKING SPACES = 116

BICYCLE PARKING SPACES = 0

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Project

4050 Yonge Street

Toronto, Ontario

Drawing Title

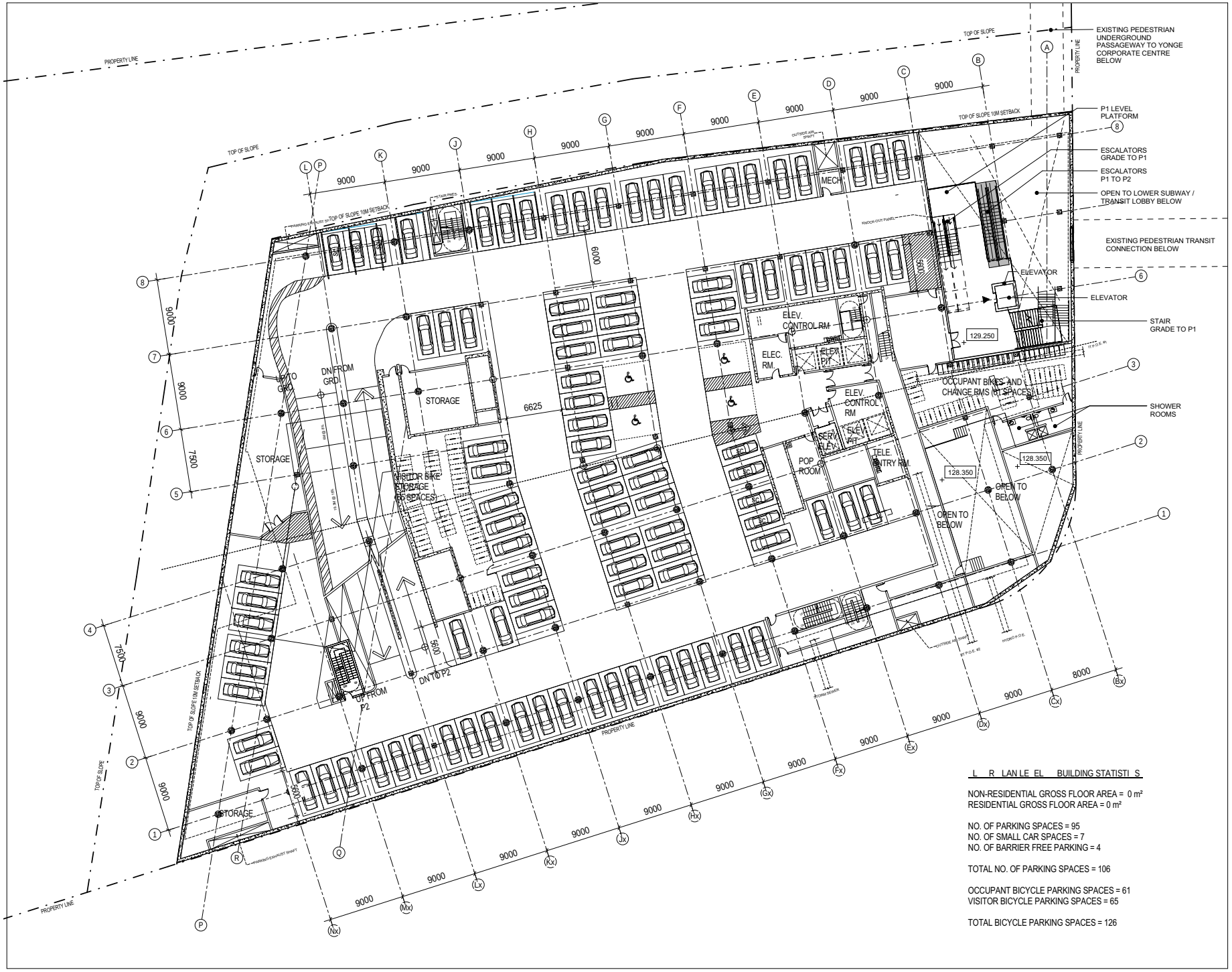
P2 Parking Plan

0 5 10 20 50 cm

Scale 1 : 200
Project Number 0921
Plot Date December 9, 2010

Drawing Number

A2.02



LEGEND

- TYP. HORIZONTAL BICYCLE STORAGE SPACE
- TYP. VERTICAL BICYCLE STORAGE SPACE
- TYP. PARKING SPACE
- TYP. SMALL CAR PARKING SPACE
- TYP. HCP PARKING SPACE

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Project

4050 Yonge Street

Toronto, Ontario

L R LAN LE EL BUILDING STATISTI S

NON-RESIDENTIAL GROSS FLOOR AREA = 0 m²
RESIDENTIAL GROSS FLOOR AREA = 0 m²

NO. OF PARKING SPACES = 95
NO. OF SMALL CAR SPACES = 7
NO. OF BARRIER FREE PARKING = 4

TOTAL NO. OF PARKING SPACES = 106

OCCUPANT BICYCLE PARKING SPACES = 61
VISITOR BICYCLE PARKING SPACES = 65

TOTAL BICYCLE PARKING SPACES = 126

Drawing Title

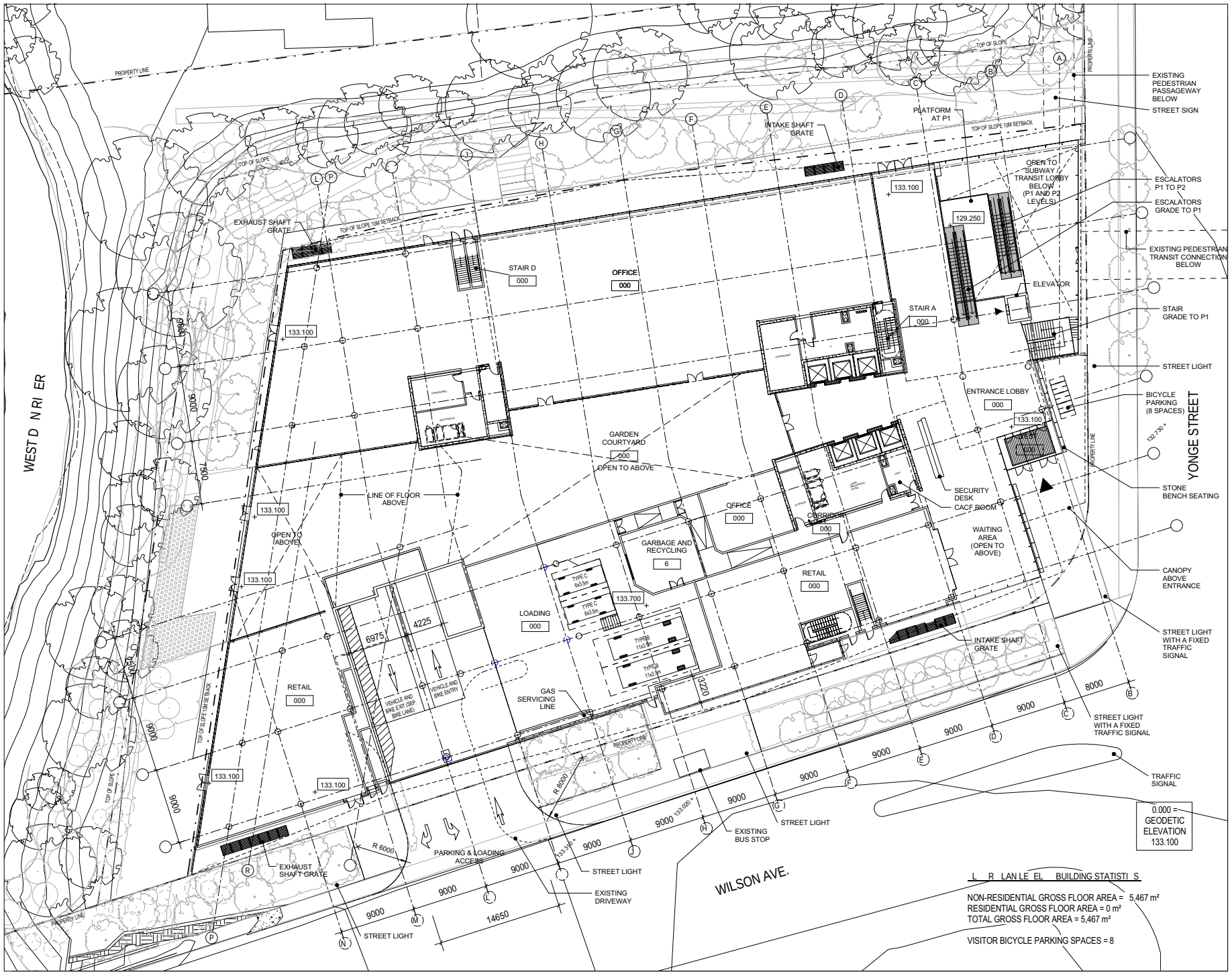
P1 Parking Plan

0 1 2 4 10 m

Scale 1 : 200
Project Number 0921
Plot Date December 9, 2010

Drawing Number

A2.03



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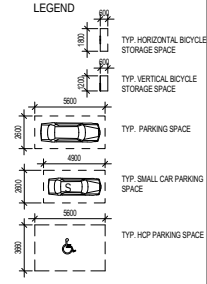

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Seals		

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Project

4050 Yonge Street

Toronto, Ontario

TRUE NORTH PROJECT NORTH

Drawing Title

Ground Floor Plan

0 1 2 4 10 m

Scale 1 : 200

Project Number 0921

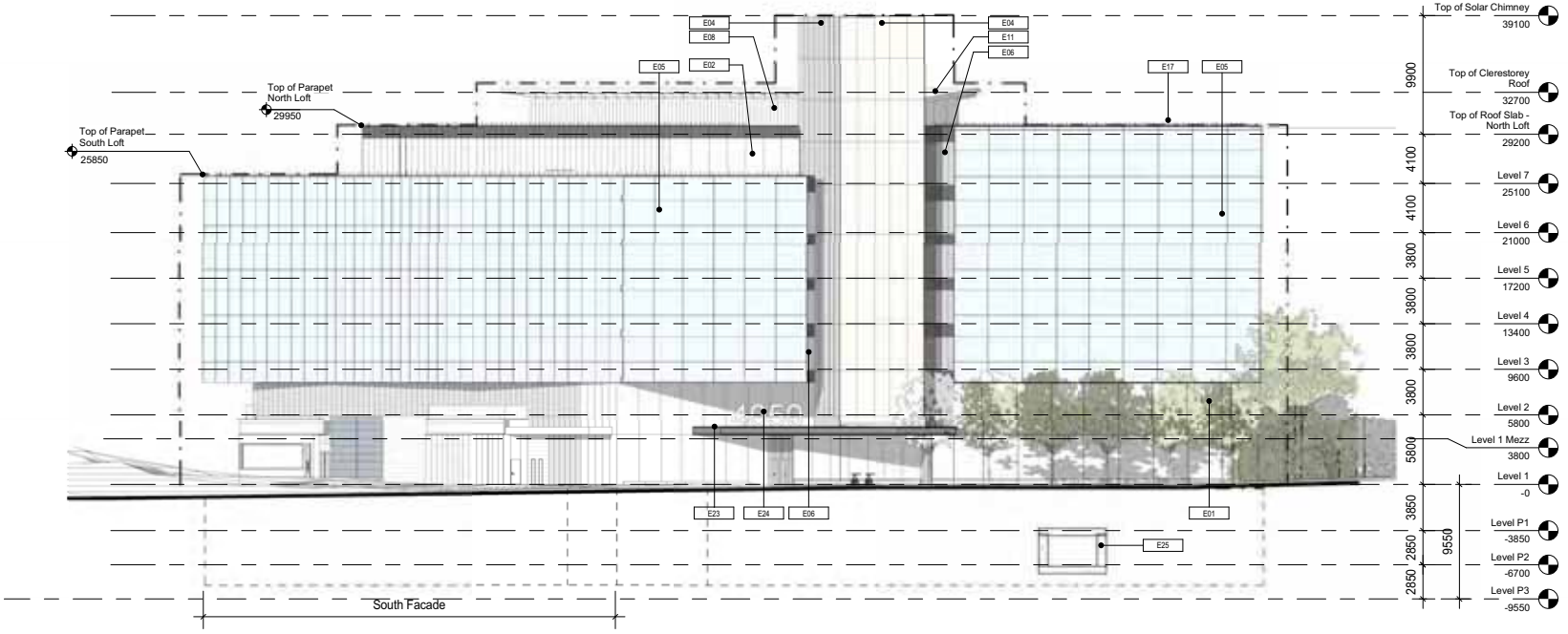
Plot Date December 9, 2010

Drawing Number **A2.04**

LAND USE BUILDING STATISTICS

NON-RESIDENTIAL GROSS FLOOR AREA = 5,467 m²
RESIDENTIAL GROSS FLOOR AREA = 0 m²
TOTAL GROSS FLOOR AREA = 5,467 m²

VISITOR BICYCLE PARKING SPACES = 8



AB E GRADE
GE DETI ELE ATI N

E01	Glazing System 1
E02	Glazing System 2
E04	Glazing System 4
E05	Glazing System 5
E06	Glazing System 6
E07	Glazing System 7
E08	Glazing System 8
E11	Reflective Atrium Roof Canopy
E12	Laminated Clear Glass Guard
E13	Stone Veneer Wall
E17	Green Roof with Accessible Deck
E18	Prefinished Aluminum Flat Panel Cladding
E19	Stainless Steel Panel Cladding
E20	Coiling Overhead Door C/W Insulated Stainless Steel Panel
E21	Stone Bench
E23	Entrance Canopy Aluminum Fascia and Soffit
E24	Stainless Steel Building Identity Signage
E25	Existing Pedestrian Transit Connection

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Project

4050 Yonge Street

Toronto, Ontario

Drawing Title

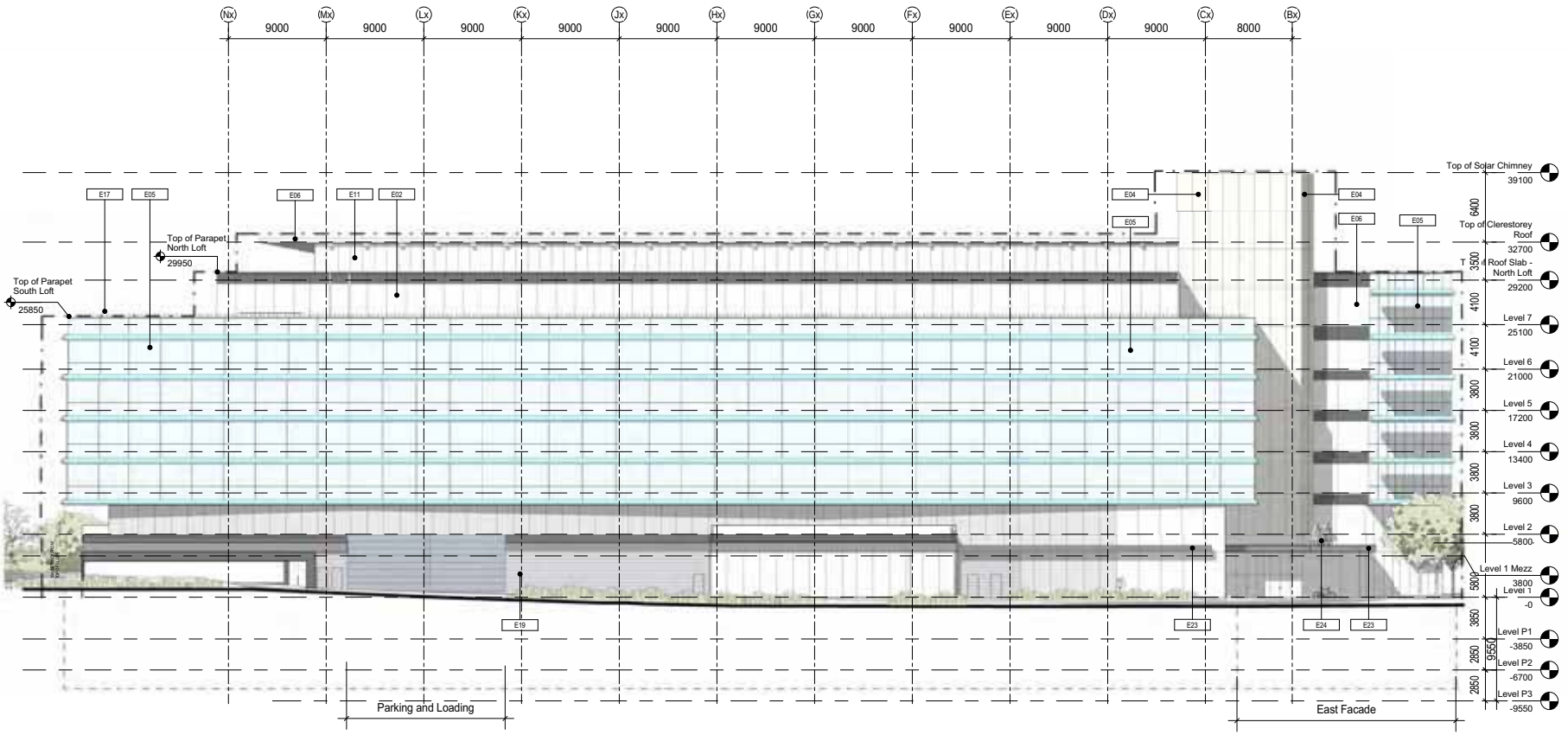
East Elevation

0 1 2 4 10 m

Scale 1 : 200
Project Number 0921
Plot Date December 9, 2010

Drawing Number

A4.01



AB E GRADE
GE DETI ELE ATI N

L	
E01	Glazing System 1
E02	Glazing System 2
E04	Glazing System 4
E05	Glazing System 5
E06	Glazing System 6
E07	Glazing System 7
E08	Glazing System 8
E11	Reflective Atrium Roof Canopy
E12	Laminated Clear Glass Guard
E13	Stone Veneer Wall
E17	Green Roof with Accessible Deck
E18	Prefinished Aluminum Flat Panel Cladding
E19	Stainless Steel Panel Cladding
E20	Coiling Overhead Door C/W Insulated Stainless Steel Panel
E21	Stone Bench
E23	Entrance Canopy Aluminum Fascia and Soffit
E24	Stainless Steel Building Identity Signage
E25	Existing Pedestrian Transit Connection

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Project

4050 Yonge Street

Toronto, Ontario

Drawing Title

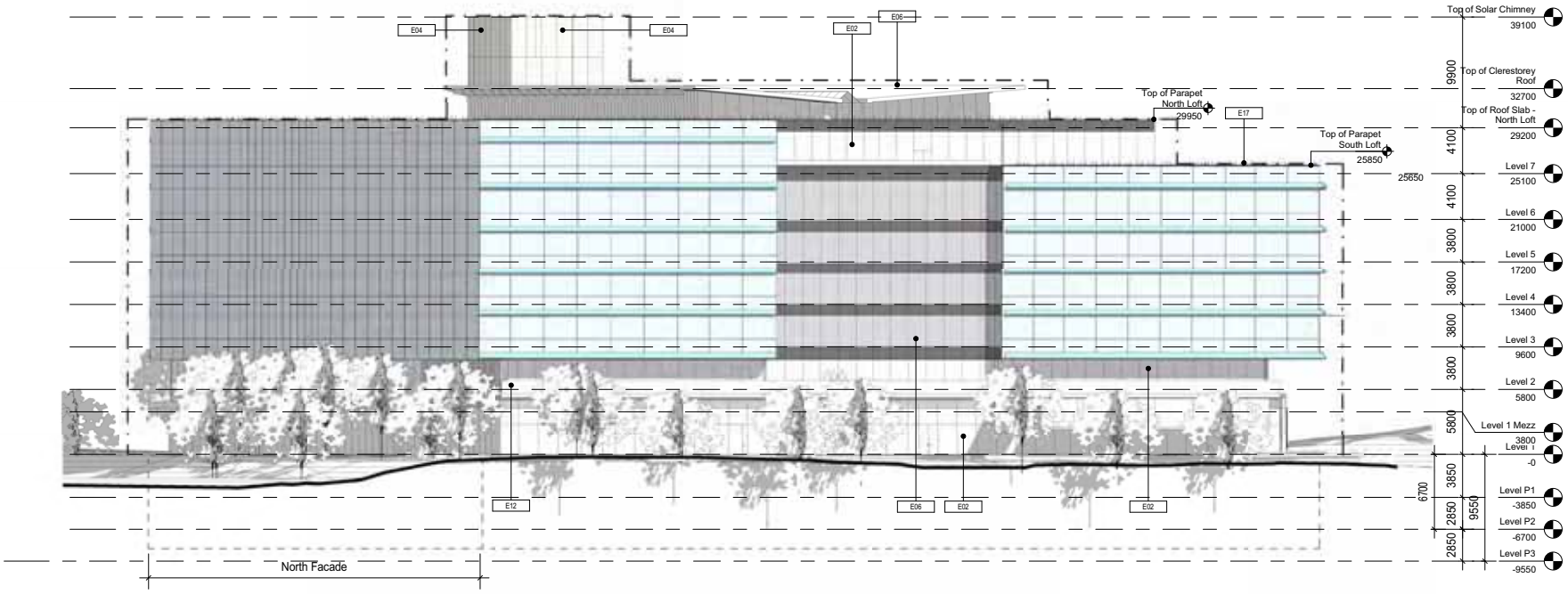
South Elevation

0 1 2 4 10 m

Scale 1 : 200
Project Number 0921
Plot Date December 9, 2010

Drawing Number

A4.02



AB E GRADE
GE DETI ELE ATI N

E01	Glazing System 1
E02	Glazing System 2
E04	Glazing System 4
E05	Glazing System 5
E06	Glazing System 6
E07	Glazing System 7
E08	Glazing System 8
E11	Reflective Atrium Roof Canopy
E12	Laminated Clear Glass Guard
E13	Stone Veneer Wall
E17	Green Roof with Accessible Deck
E18	Prefinished Aluminum Flat Panel Cladding
E19	Stainless Steel Panel Cladding
E20	Coiling Overhead Door C/W Insulated Stainless Steel Panel
E21	Stone Bench
E23	Entrance Canopy Aluminum Fascia and Soffit
E24	Stainless Steel Building Identity Signage
E25	Existing Pedestrian Transit Connection

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Project

4050 Yonge Street

Toronto, Ontario

TRUE NORTH PROJECT NORTH

Drawing Title

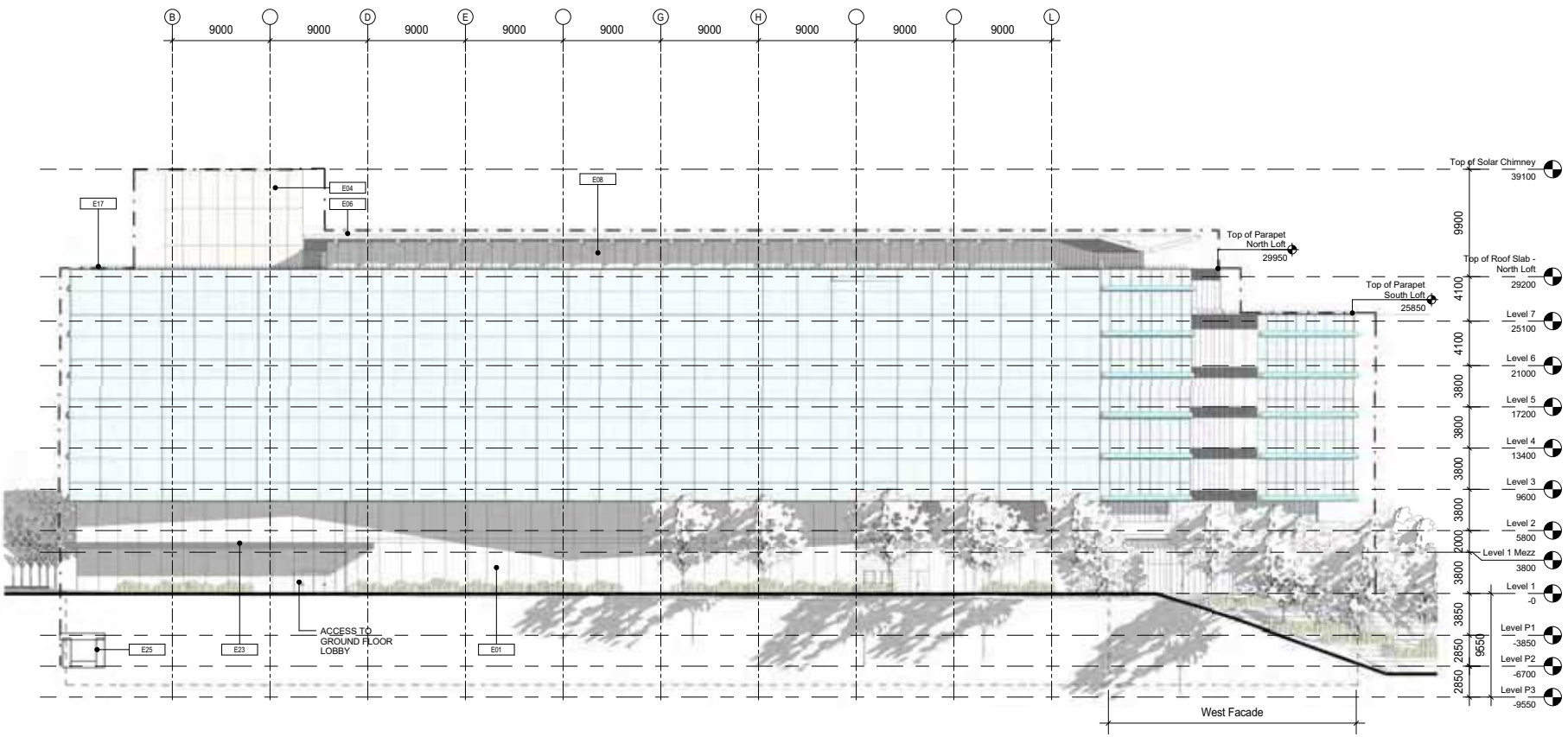
West Elevation

0 1 2 4 10 m

Scale 1 : 200
Project Number 0921
Plot Date December 9, 2010

Drawing Number

A4.03



AB E GRADE
GE DETI ELE ATI N

L	
E01	Glazing System 1
E02	Glazing System 2
E04	Glazing System 4
E05	Glazing System 5
E06	Glazing System 6
E07	Glazing System 7
E08	Glazing System 8
E11	Reflective Atrium Roof Canopy
E12	Laminated Clear Glass Guard
E13	Stone Veneer Wall
E17	Green Roof with Accessible Deck
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E19	Stainless Steel Panel Cladding
E20	Coiling Overhead Door C/W Insulated Stainless Steel Panel
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E25	Existing Pedestrian Transit Connection

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Project

4050 Yonge Street

Toronto, Ontario

TRUE NORTH PROJECT NORTH

Drawing Title

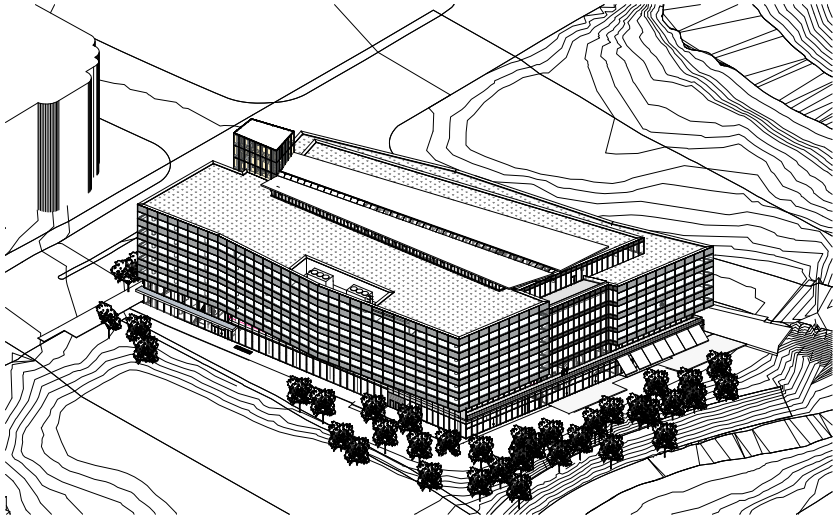
North Elevation

0 1 2 4 10 m

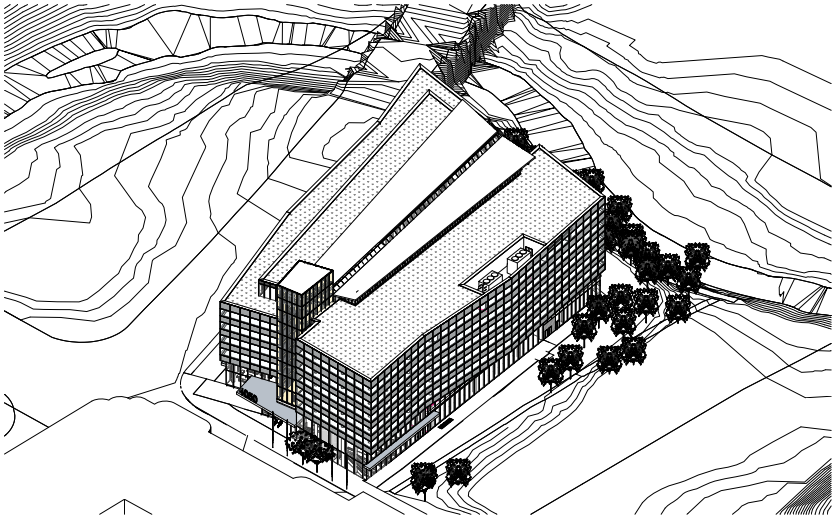
Scale 1 : 200
Project Number 0921
Plot Date December 9, 2010

Drawing Number

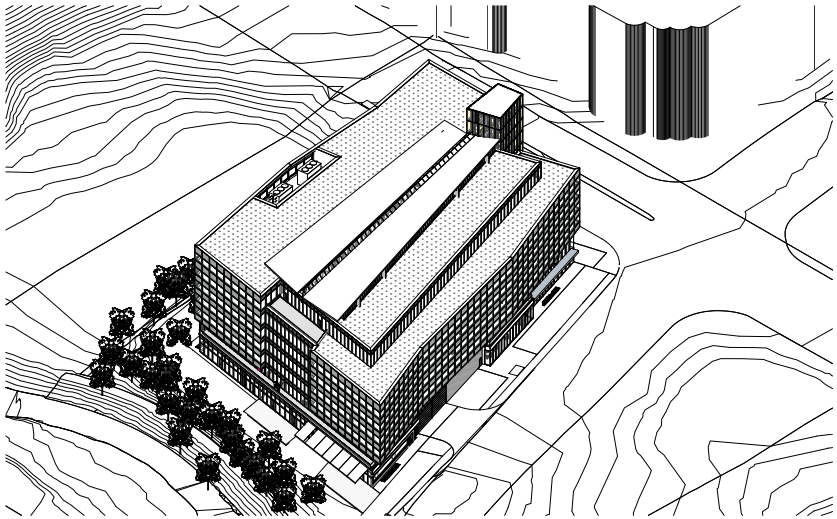
A4.04



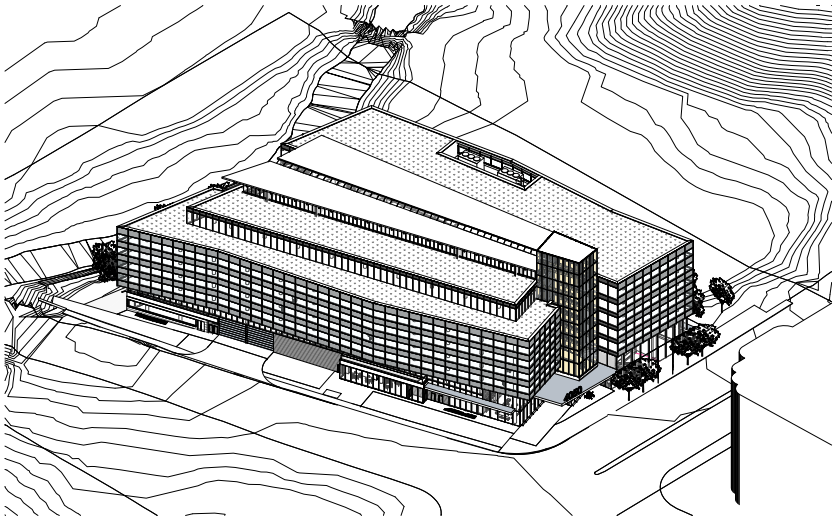
Axonometric View
A6.01 N W A



Axonometric View
A6.01 N E A



Axonometric View
A6.01 S W A



Axonometric View
A6.01 S E A

Rev	Date	Description
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Project

4050 Yonge Street

Toronto, Ontario

Drawing Title

Axonometric View

Scale

Project Number 0921

Plot Date December 9, 2010

Drawing Number

A6.01

APPENDIX B:
Zoning By-law
Parking & Loading Calculations

TABLE B1: COMPARISON OF DIFFERENT ZONING BY-LAW VEHICLE PARKING REQUIREMENTS

Zoning By-law 7625 GFA Statistics
Office GFA: 38,267 m^2 (411,916 ft^2)
Retail: 374 m^2 (4,026 ft^2)
Restaurant: 806 m^2 (8,676 ft^2)
Total: 39,447 m^2 (424,618 ft^2)

North York Centre Secondary Plan GFA Statistics
Office GFA: 35,958 m^2 (387,061 ft^2)
Retail: 374 m^2 (4,026 ft^2)
Restaurant: 806 m^2 (8,676 ft^2)
Total: 37,138 m^2 (399,763 ft^2)

Zoning By-law 1156-2010 GFA (interior floor area) with Exclusions
Office GFA: 30,246 m^2 (325,576 ft^2)
Retail: 374 m^2 (4,026 ft^2)
Restaurant: 806 m^2 (8,676 ft^2)
Total: 31,426 m^2 (338,278 ft^2)

Category	ZBL 7625[1]	North York Centre Secondary Plan[2,3]	ZBL 1156-2010[4]		
			PA-1 – Downtown / Waterfront	PA-3 – Avenues on Subway	All Other Areas
Office Parking Requirements					
Rate Min	1 per 48 m^2	0.9 per 100 m^2	0.35 per 100 m^2	1 per 100 m^2	1.5 per 100 m^2
Parking Min	797.23	323.62	105.86	302.46	453.69
Rate Max	-	1.0 per 100 m^2	0.8 per 100 m^2	2 per 100 m^2	-
Parking Max	-	359.58	241.97	604.92	-
Retail Parking Requirements					
Rate Min	1 per 28 m^2	0.9 per 100 m^2	1 per 100 m^2	1 per 100 m^2	1.5 per 100 m^2
Parking Min	13.36	3.37	3.74	3.74	5.61
Rate Max	-	1.0 per 100 m^2	3.5 per 100 m^2	4 per 100 m^2	-
Parking Max	-	3.74	13.09	14.96	-
Restaurant Parking Requirements					
Rate Min	1 per 6.55 m^2 [5]	0.9 per 100 m^2	0	0	5 per 100 m^2
Parking Min	123.05	7.25	0	0	40.30
Rate Max	-	1.0 per 100 m^2	3.5 per 100 m^2	5.0 per 100 m^2	-
Parking Max	-	8.06	28.21	40.30	-
Total Parking Requirements					
Parking Min	934	335	109	306	499
Parking Max	-	372	283	660	-

Notes:

1. Definition of GFA – Section 2 Definitions 2.39.1
   Floor Area, Gross shall mean the total area of all the floors in a building above or below grade measured from the outside of the exterior walls but excluding car parking areas within the building
2. Definition of GFA – Section 3 Definitions 3.1 (b)
   Gross Floor Area means the aggregate of the areas for each floor, measured between the exterior faces of the exterior walls of the building or structure at the level of each floor, including any areas used as balconies but excluding:
   (i) any part of the building used for mechanical purpose
   (ii) any space sued for motor vehicle parking, including that contained in an above-grade parking structure provided that the structure does not exceed three storeys in height above-grade and provided that its roof deck exclusive of any mechanical area is fully landscaped and made directly accessible to adjacent redevelopment projects; and,
   (iii) the floor area of unenclosed residential balconies
3. North York Centre Secondary Plan rate is based upon the following:
   - distance from York Mills (D) = 0 metres
   - parking equation = 1 + 0.008 * D
   - distance (D) must be 0 < D < 500 metres
4. Definition of GFA – Section 200.5.1.10 (13)
   Parking Space Calculation – Gross Floor Area exclusion – The interior floor area of a portion of a building that is used exclusively for heating, cooling, ventilation, electrical, fire emergency stairwells, elevator shafts, atriums, utility areas, storage areas in the basement, parking space, loading space, or a drive aisle used to access a parking space or loading space, is not included as gross floor area for the purpose of calculating parking space requirements
5. ZBL 7625 restaurant between 250 m^2 to 1,500 m^2 is based upon the formula: 1 space per 100 m^2 / [(GFA*0.005)+9.8] m^2 of GFA

TABLE B2: COMPARISON OF DIFFERENT ZONING BY-LAW BICYCLE PARKING REQUIREMENTS

Interior Floor Area Statistics (without exclusions)
Office GFA: 38,797 m^2 (417,621 ft^2)
Retail: 374 m^2 (4,026 ft^2)
Restaurant: 806 m^2 (8,676 ft^2)
Total: 39,977 m^2 (430,323 ft^2)

Category	ZBL 1156-2010[1]			Toronto Green Standards[2,3]	
	PA-1 – Downtown / Waterfront	PA-3 – Avenues on Subway	All Other Areas	Downtown, Centres and Central Waterfront	Rest of the City
Office Bike Requirements					
Short Term Rate	3+0.2 per 100 m^2	3+0.2 per 100 m^2	3+0.2 per 100 m^2	The greater of the following: 0.2 per 100 m^2 or 6 spaces	The greater of the following: 0.15 per 100 m^2 or 6 spaces
Short Term	80.59	61.20	61.20	77.59	58.20
Long Term Rate	0.2 per 100 m^2	0.13 per 100 m^2	0.13 per 100 m^2	0.2 per 100 m^2	0.13 per 100 m^2
Long Term	77.59	50.44	50.44	77.59	50.44
Retail Bike Requirements					
Short Term Rate	3+0.3 per 100 m^2	3+0.25 per 100 m^2	3+0.25 per 100 m^2	The greater of the following: 0.3 per 100 m^2 or 6 spaces	The greater of the following: 0.25 per 100 m^2 or 6 spaces
Short Term	4.12	3.94	3.94	6.00	6.00
Long Term Rate	0.2 per 100 m^2	0.13 per 100 m^2	0.13 per 100 m^2	0.2 per 100 m^2	0.13 per 100 m^2
Long Term	0.75	0.49	0.49	2.36	1.53
Restaurant Bike Requirements					
Short Term Rate	3+0.3 per 100 m^2	3+0.25 per 100 m^2	3+0.25 per 100 m^2	-	-
Short Term	5.42	5.02	5.02	-	-
Long Term Rate	0.2 per 100 m^2	0.13 per 100 m^2	0.13 per 100 m^2	-	-
Long Term	1.61	1.05	1.05	-	-
Total Bike Requirements					
Short Term	91	71	71	84	65
Long Term	81	52	52	80	52
Total	**171**	**123**	**123**	**164**	**117**

Notes:
1. ZBL 1156-2010 requires that 3 showers and change facilities must be provided for each gender
2. TGS requires that 4 to 5 showers and change facilities must be provided for each gender
3. TGS standards include retail and restaurant together for a GFA of 1,180 m^2

APPENDIX C:
Parking Supply & Demand Rates At Office Buildings in the Site Environs

TABLE C1: OFFICE BUILDING PARKING SUPPLY / DEMAND RATES WITHIN SITE ENVIRONS

Proxy Site	Supply			Demand		
	Gross Leasable Area (m^2)[1]	Parking Supply[2]	Parking Supply Rate (per 100 m^2)	Occupied Gross Leasable Area (m^2)[1]	Peak Parking Demand[2]	Parking Demand Rate (per 100 m^2)[3]
York Mills Centre 10, 20 and 36 York Mills Road & 4101 Yonge Street	50,062[4]	723	1.44	38,566	394	1.02
Yonge Corporate Centre 4100, 4110 and 4120 Yonge Street	64,461[5]	1250	1.94	60,312	999	1.66
Proctor and Gamble 4711 Yonge Street	34,619	382	1.10	33,163	364	1.10
90 Sheppard Avenue	30,029	548	1.82	30,029	548	1.82
4141 Yonge Street	8,593	169	1.97	8,433	118	1.40
4211 Yonge Street	15,505	313	2.02	14,806	280	1.89
4050 Yonge Street (Proposed)	33,750[6]	363	1.08	n/a	n/a	n/a

Notes:

1. Gross leasable area (GLA) and occupied GLA is based upon data provided by Altusinsite.com in square metres.
2. Parking demand is based upon BA Group parking demand surveys between 10am to 4pm.
3. Parking demand rates are calculated based upon peak parking demand / GLA provided.
4. Includes an office area of 45,942 m^2 and retail with an area of 4,120 m^2.
5. Includes an office area of 59,426 m^2 and temple and restaurant with an area of 5,035 m^2.
6. Includes office, retail and restaurant uses – floor areas are based upon BOMA Rentable Area.

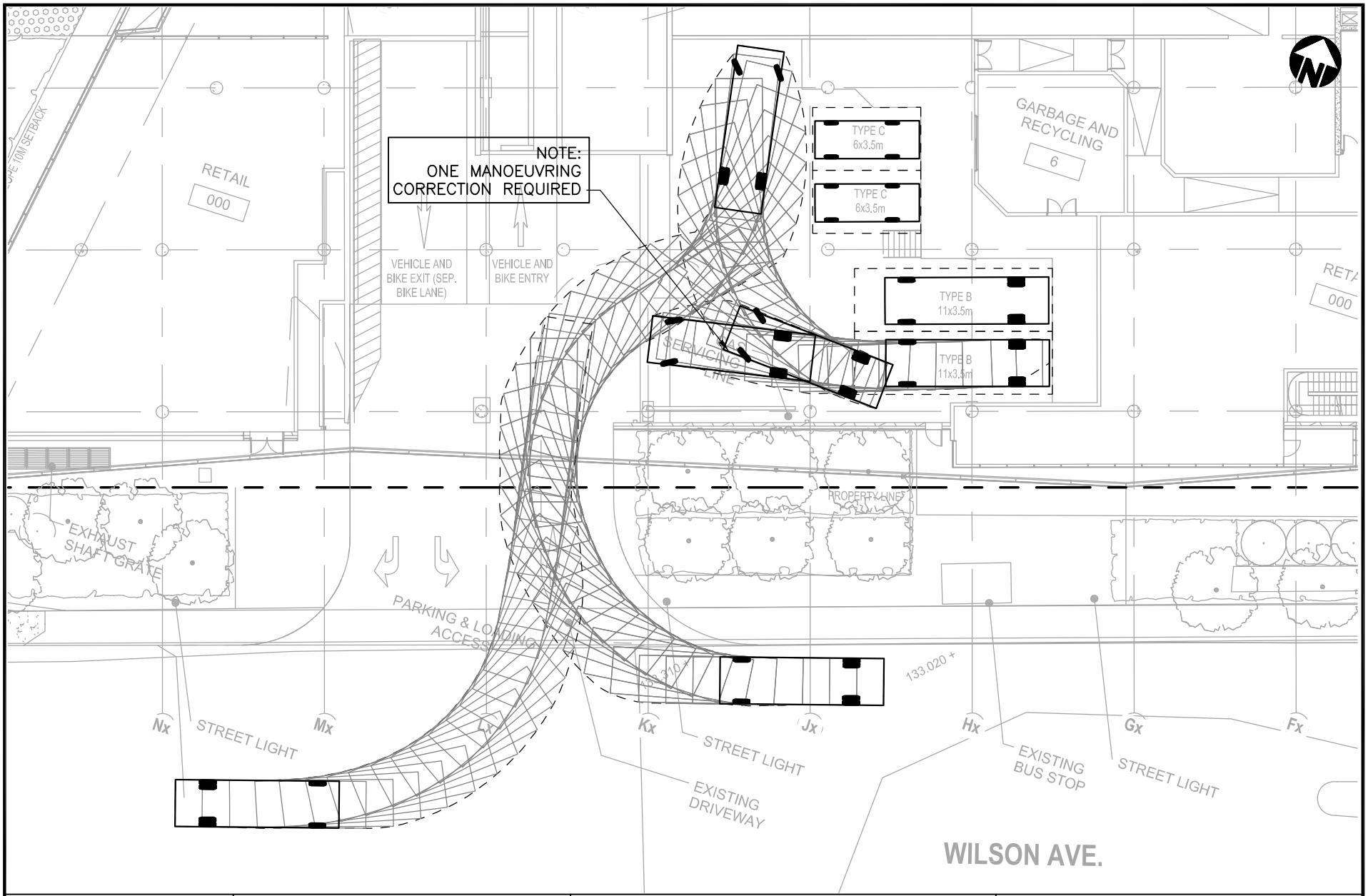
TABLE C2: GENERAL ZONING BY-LAW LOADING REQUIREMENTS

Former North York By-law 7625			
Land Use	Gross Floor Area[1] m^2	Number of Loading Spaces	
		Loading Requirement m^2	Loading Space Type "Loading Space"[2]
Building	39,447	Over 7,500	3

New City of Toronto Zoning By-law 1156-2010 (Under Appeal)					
Land Use	Gross Floor Area[1] m^2	Number of Loading Spaces			
		Loading Requirement m^2	Loading Space Type[3]		
			"A"	"B"	"C"
Retail	374	0 to 499	--	--	--
Restaurant	806	500 to 1,999	--	1	--
Office	30,246	28,000 to 51,999	--	2	3
With Sharing[4]	--	--	--	2	3

1. Refer to Appendix B for definitions of Gross Floor Area for former North York By-law 7625 and new City of Toronto Zoning By-law 1156-210.
2. North York By-law "Loading Space" dimensions: 11.0m long x 3.6m wide x 4.2m high
3. City of Toronto Zoning By-law loading space dimensions:
   Type A - 17.0m long x 3.5m wide x 4.3m high
   Type B - 11.0m long x 3.5m wide x 4.0m high
   Type C - 6.0m long x 3.5m wide x 3.0m high
4. For purposes of this assessment, sharing of loading spaces between land uses (retail, restaurant and office) has been considered as permitted in Policy Areas 1 and 2.

APPENDIX D:
Loading / Parking Vehicle Diagrams



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DATE PLOTTED: February 17, 2011

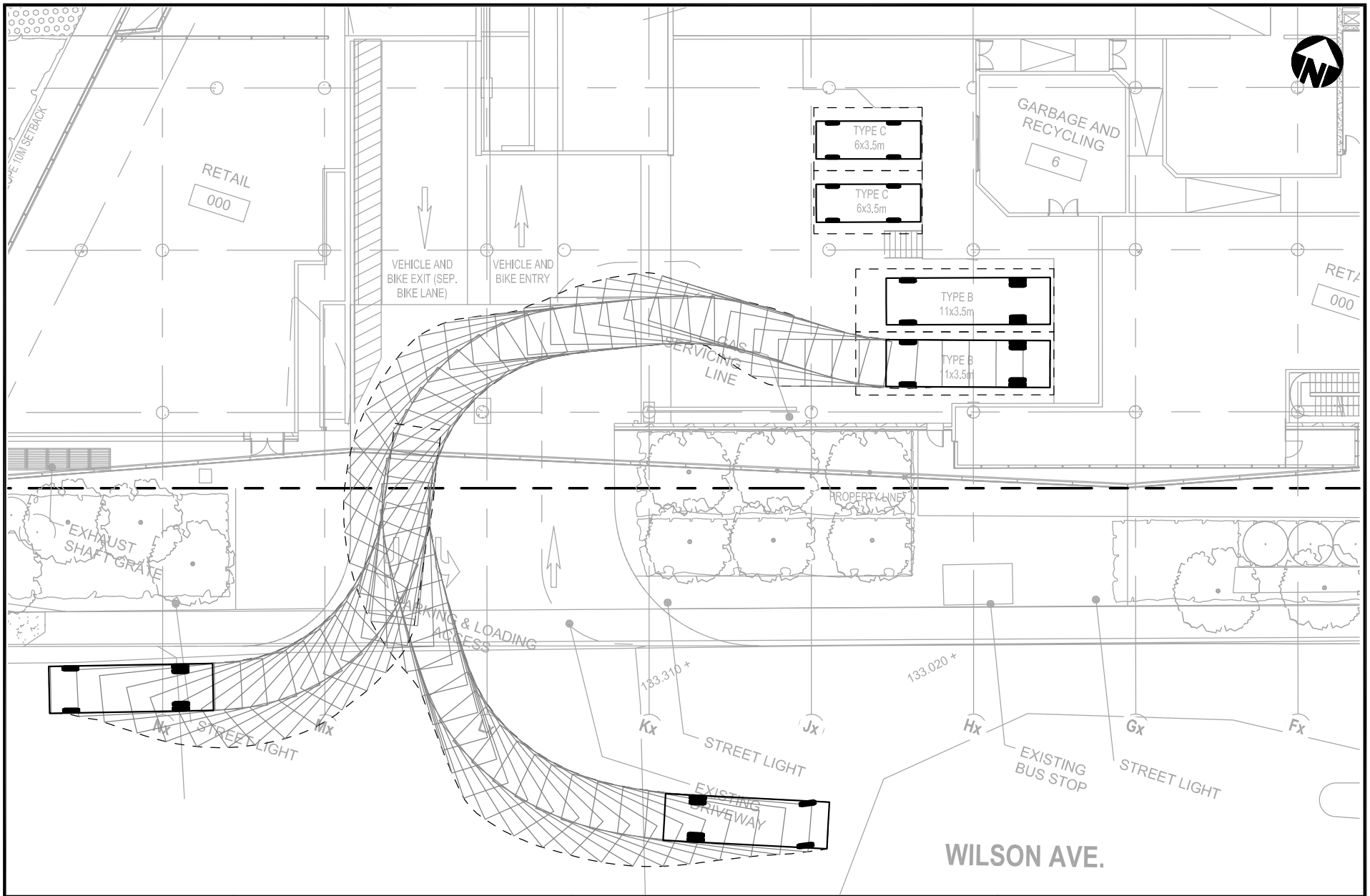
BA GROUP *Transportation Consultants*

PROJECT:	**4050 YONGE**
PROJECT NO.	**7019-07**
DATE:	**FEBRUARY 17, 2011**
REVISED:	**--**

VEHICLE MANOEUVRING DIAGRAM
SOUTH TYPE B LOADING SPACE
DELIVERY TRUCK (TAC SU)
INBOUND

SCALE 1:300 0 2 4 6 12m

DRAWING No. **VMD-1**



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PROJECT:	4050 YONGE
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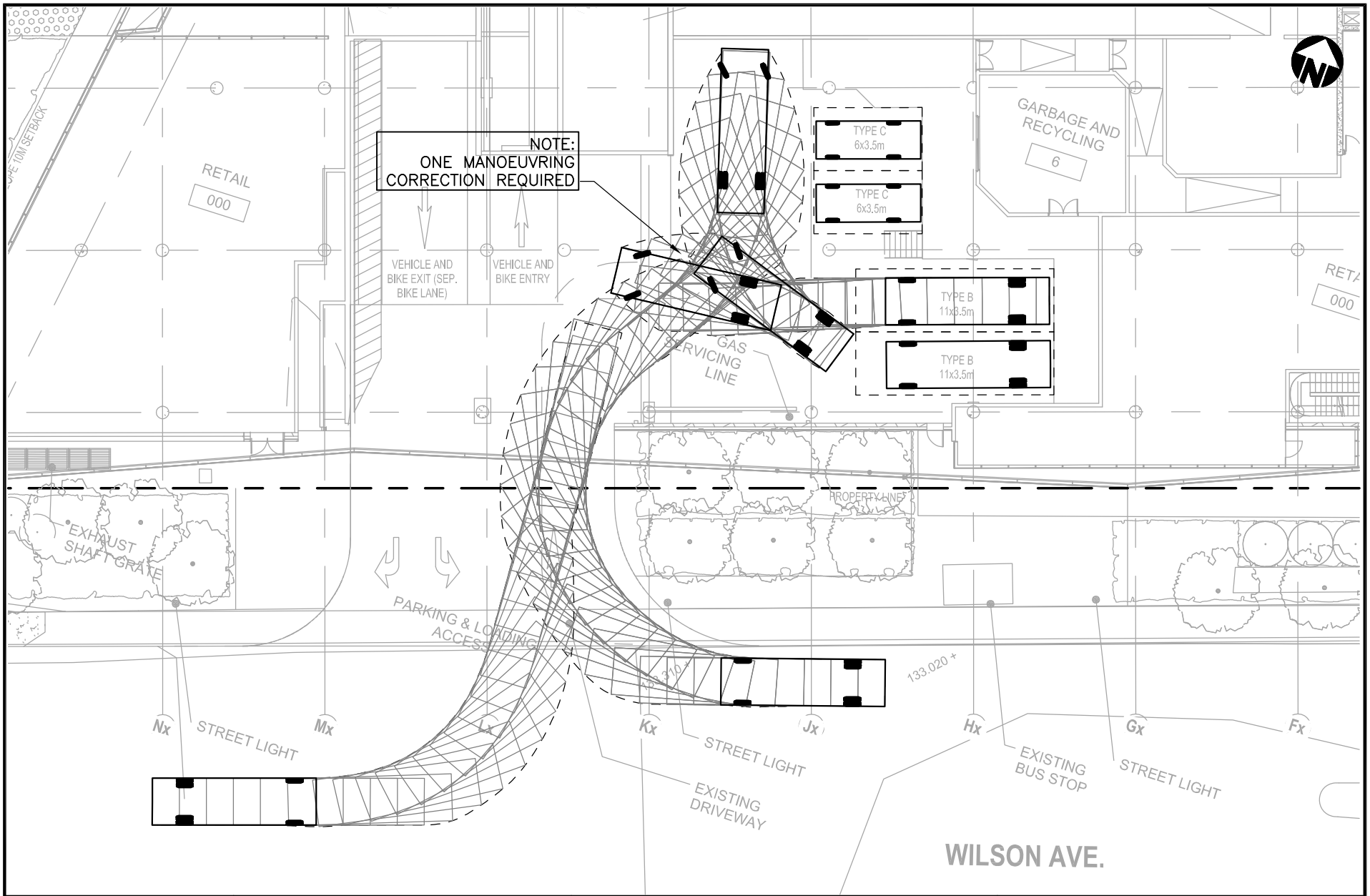
DATE:	FEBRUARY 17, 2011
REVISED:	--

VEHICLE MANOEUVRING DIAGRAM
SOUTH TYPE B LOADING SPACE
DELIVERY TRUCK (TAC SU)
OUTBOUND

SCALE 1:300 (0 2 4 6 12m)

DRAWING No. VMD-2



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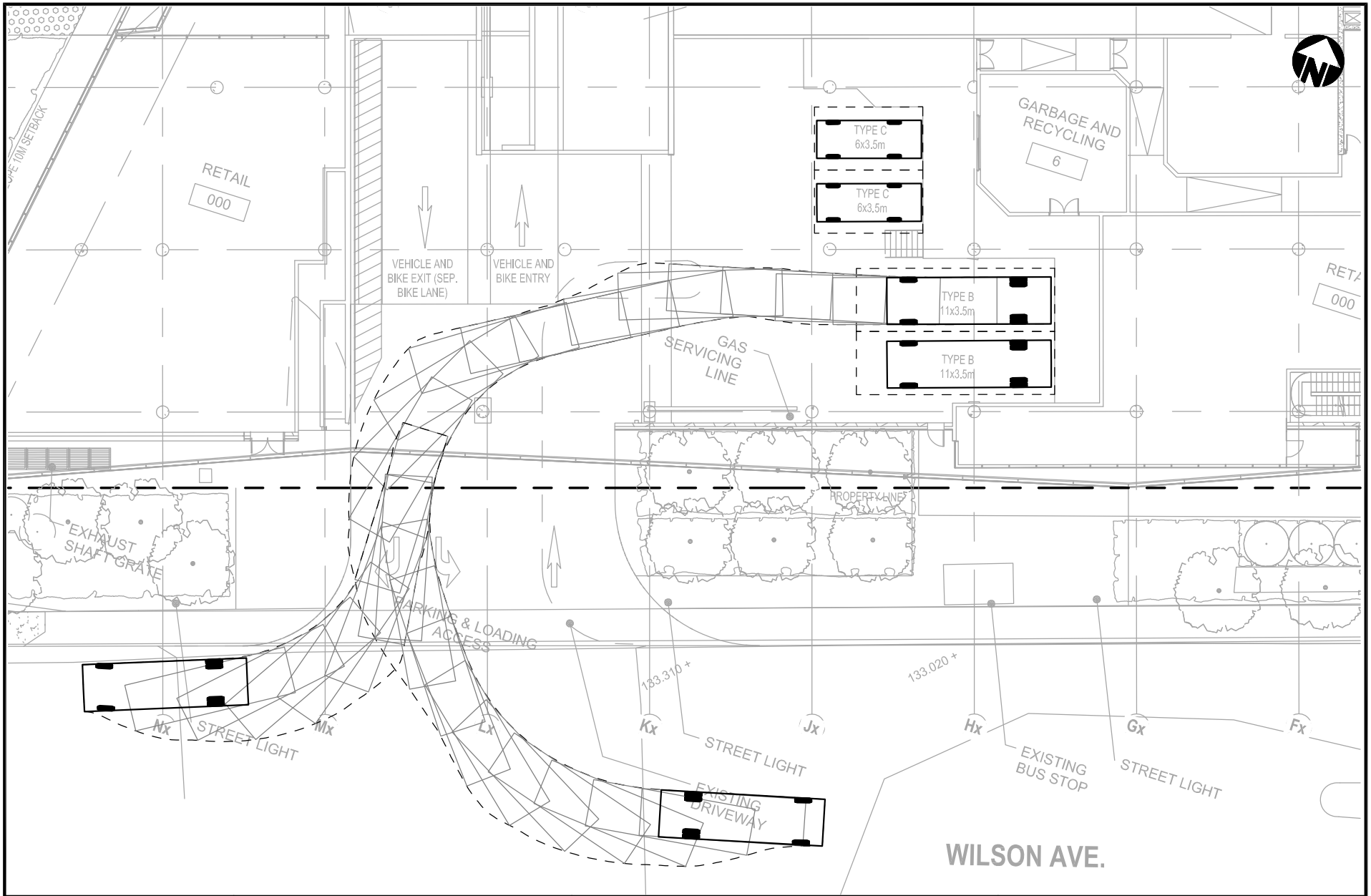
VEHICLE MANOEUVRING DIAGRAM
NORTH TYPE B LOADING SPACE
DELIVERY TRUCK (TAC SU)
INBOUND

SCALE 1:300 0 2 4 6 12m

DRAWING No. **VMD-3**



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PROJECT NO.	7019-07
DATE:	FEBRUARY 17, 2011
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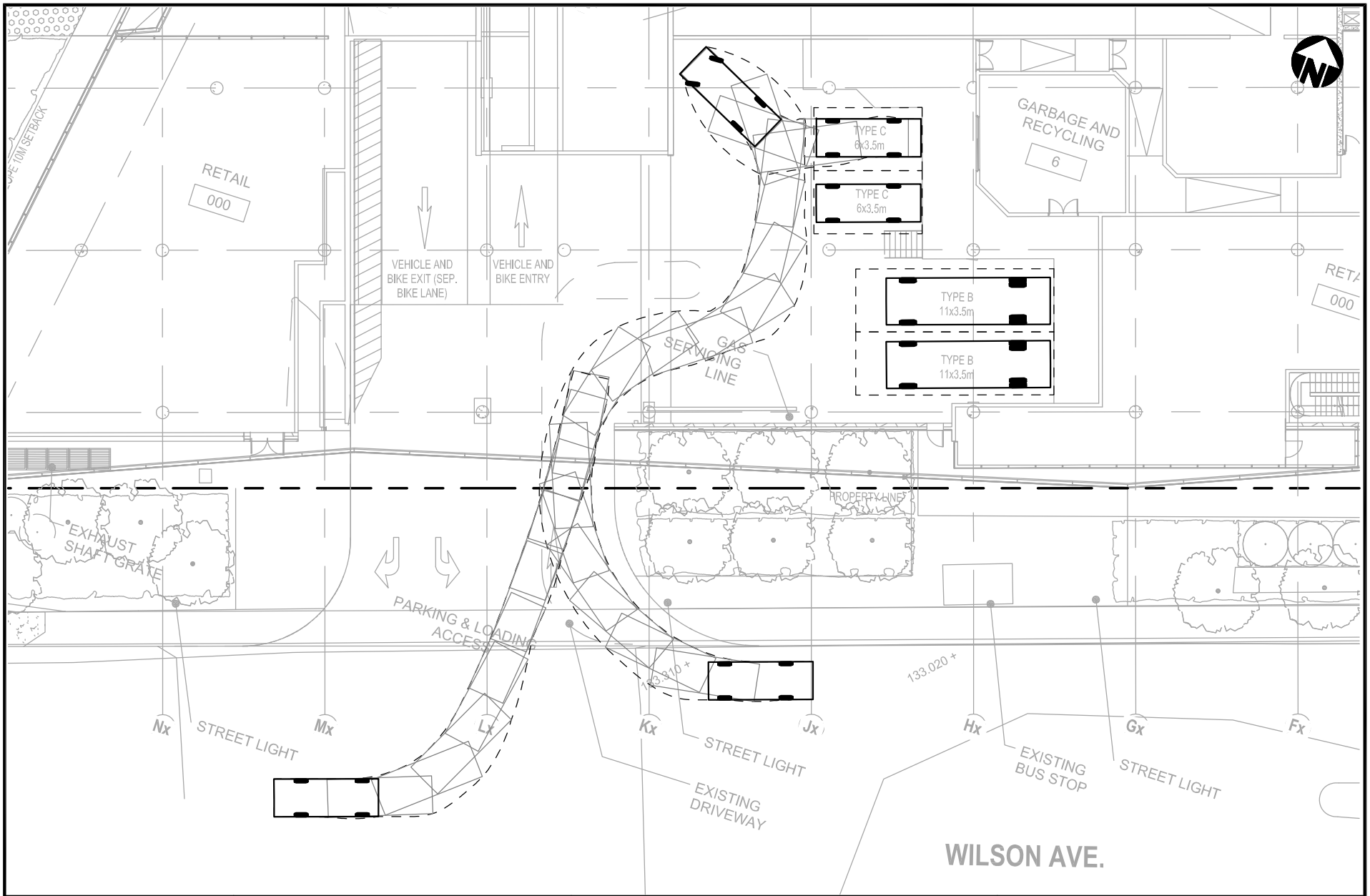
VEHICLE MANOEUVRING DIAGRAM
NORTH TYPE B LOADING SPACE
DELIVERY TRUCK (TAC SU)
OUTBOUND

SCALE 1:300 (0 2 4 6 12m)

DRAWING No. **VMD-4**



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PROJECT NO.	7019-07
DATE:	FEBRUARY 17, 2011
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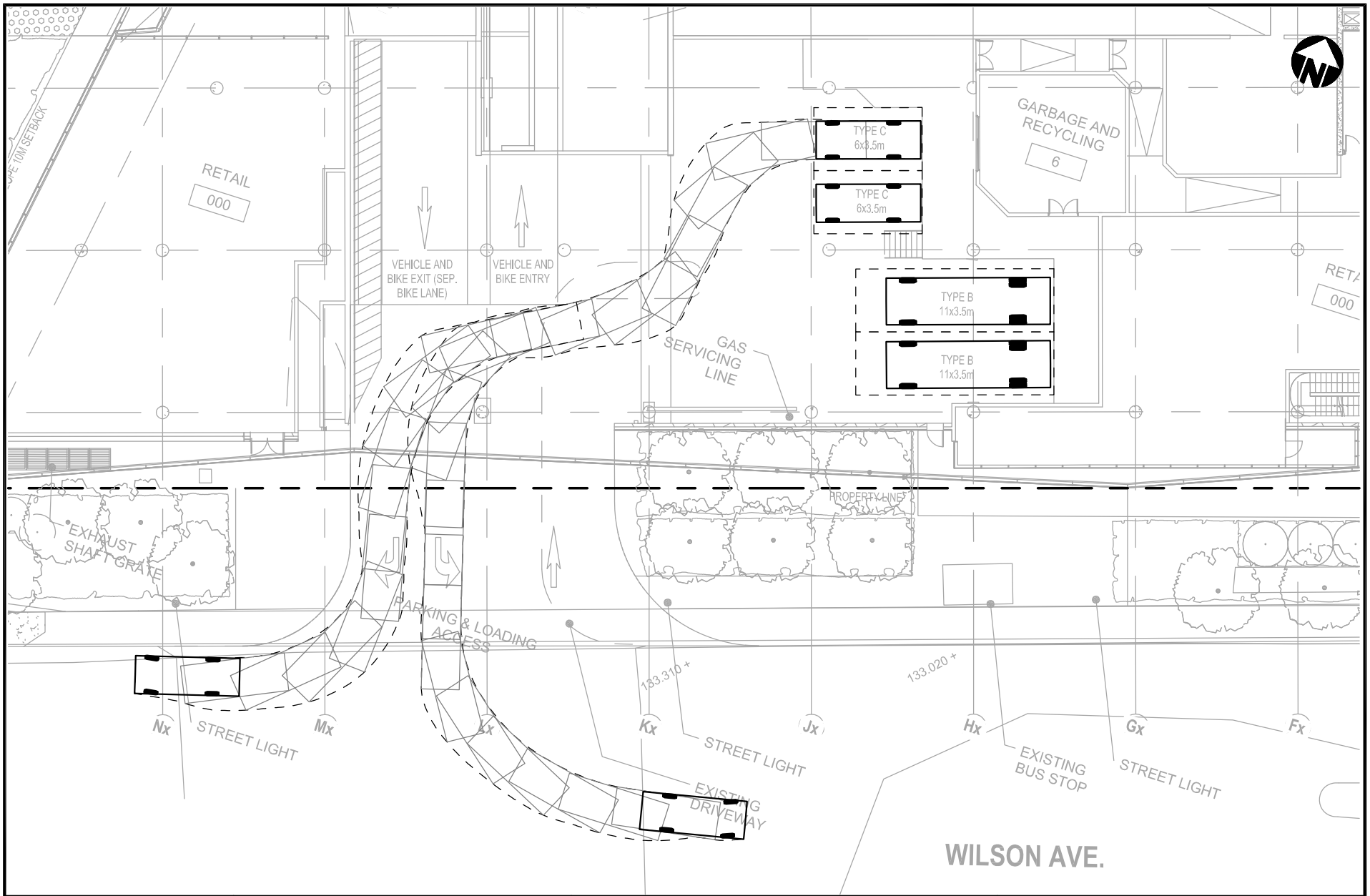
VEHICLE MANOEUVRING DIAGRAM
NORTH TYPE C LOADING SPACE
DELIVERY VAN (TAC CAR)
INBOUND

SCALE 1:300 (0 2 4 6 12m)

DRAWING No. VMD-5



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BA GROUP Transportation Consultants

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PROJECT NO.	7019-07
DATE:	FEBRUARY 17, 2011
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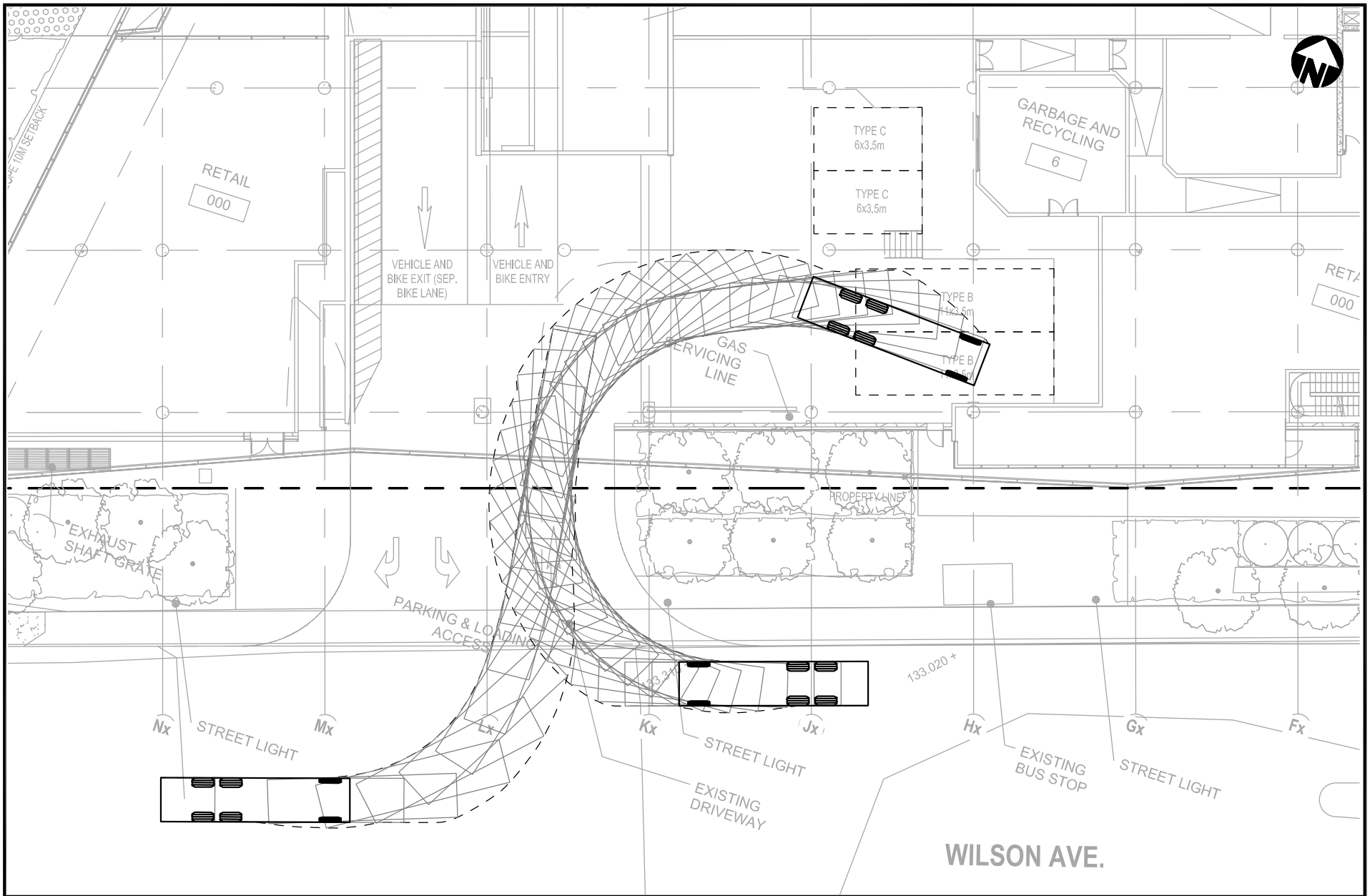
VEHICLE MANOEUVRING DIAGRAM
NORTH TYPE C LOADING SPACE
DELIVERY VAN (TAC CAR)
OUTBOUND

SCALE 1:300 (0 2 4 6 12m)

DRAWING No. VMD-6



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PROJECT NO.	7019-07
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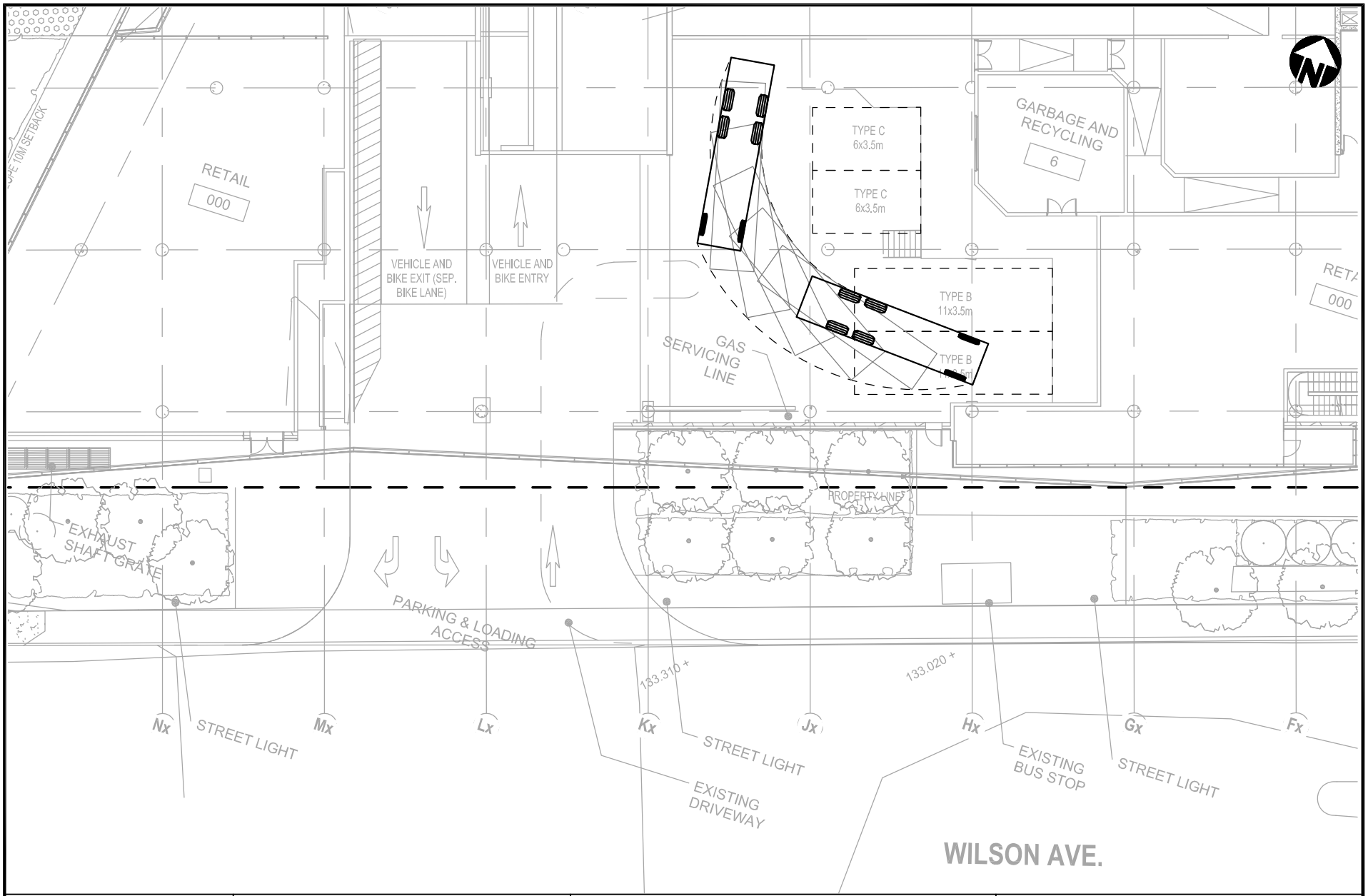
VEHICLE MANOEUVRING DIAGRAM
NORTH TYPE C LOADING SPACE
REFUSE COLLECTION VEHICLE
"AFTER HOURS" - INBOUND - 1 of 4

SCALE 1:300 0 2 4 6 12m

DRAWING No. VMD-7



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DATE PLOTTED: February 17, 2011

BA GROUP Transportation Consultants

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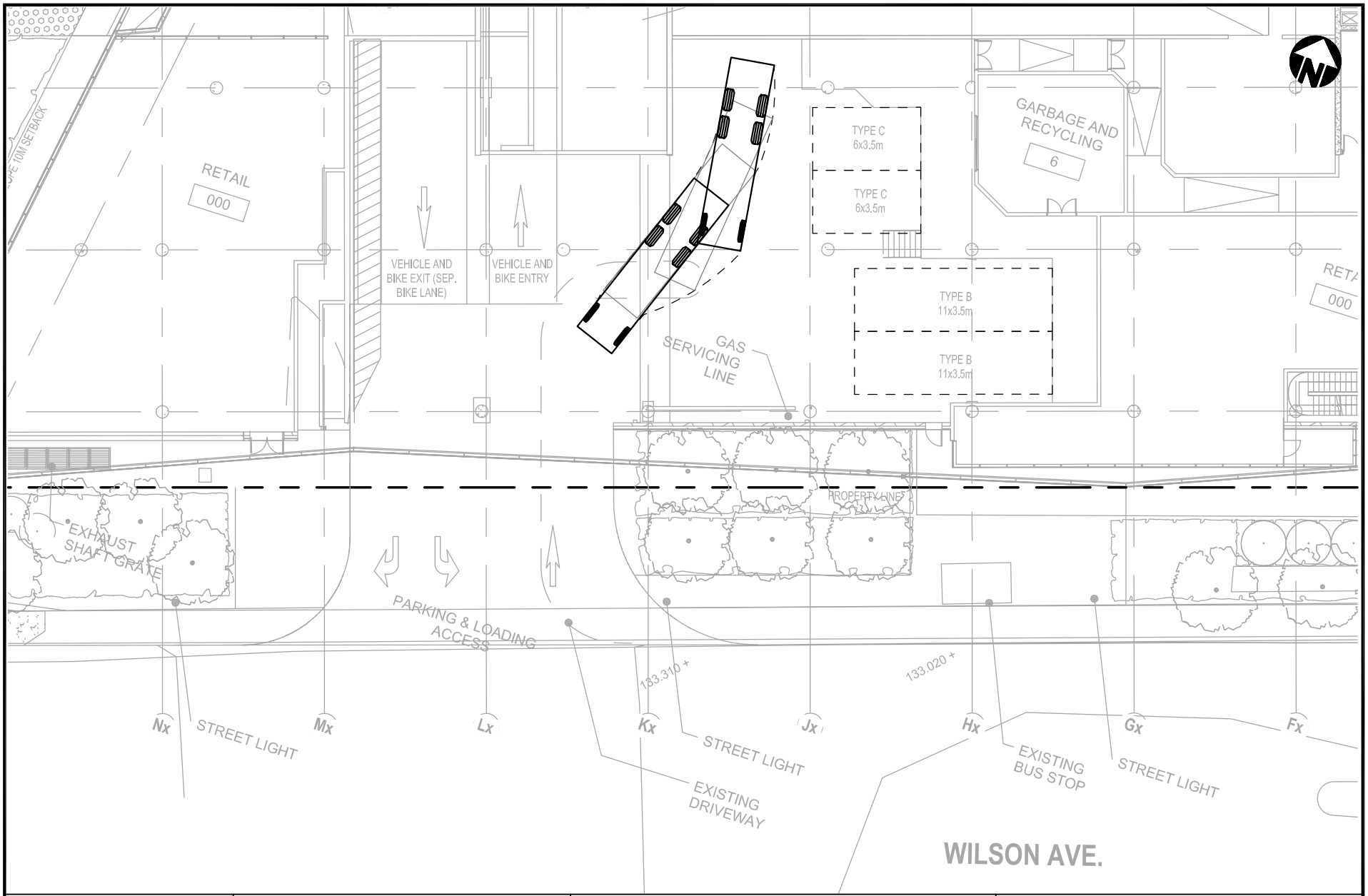
PROJECT NO.	7019-07
DATE:	FEBRUARY 17, 2011
REVISED:	--

VEHICLE MANOEUVRING DIAGRAM
NORTH TYPE C LOADING SPACE
REFUSE COLLECTION VEHICLE
"AFTER HOURS" - INBOUND - 2 of 4

SCALE 1:300 (0 2 4 6 12m)

DRAWING No. VMD-8



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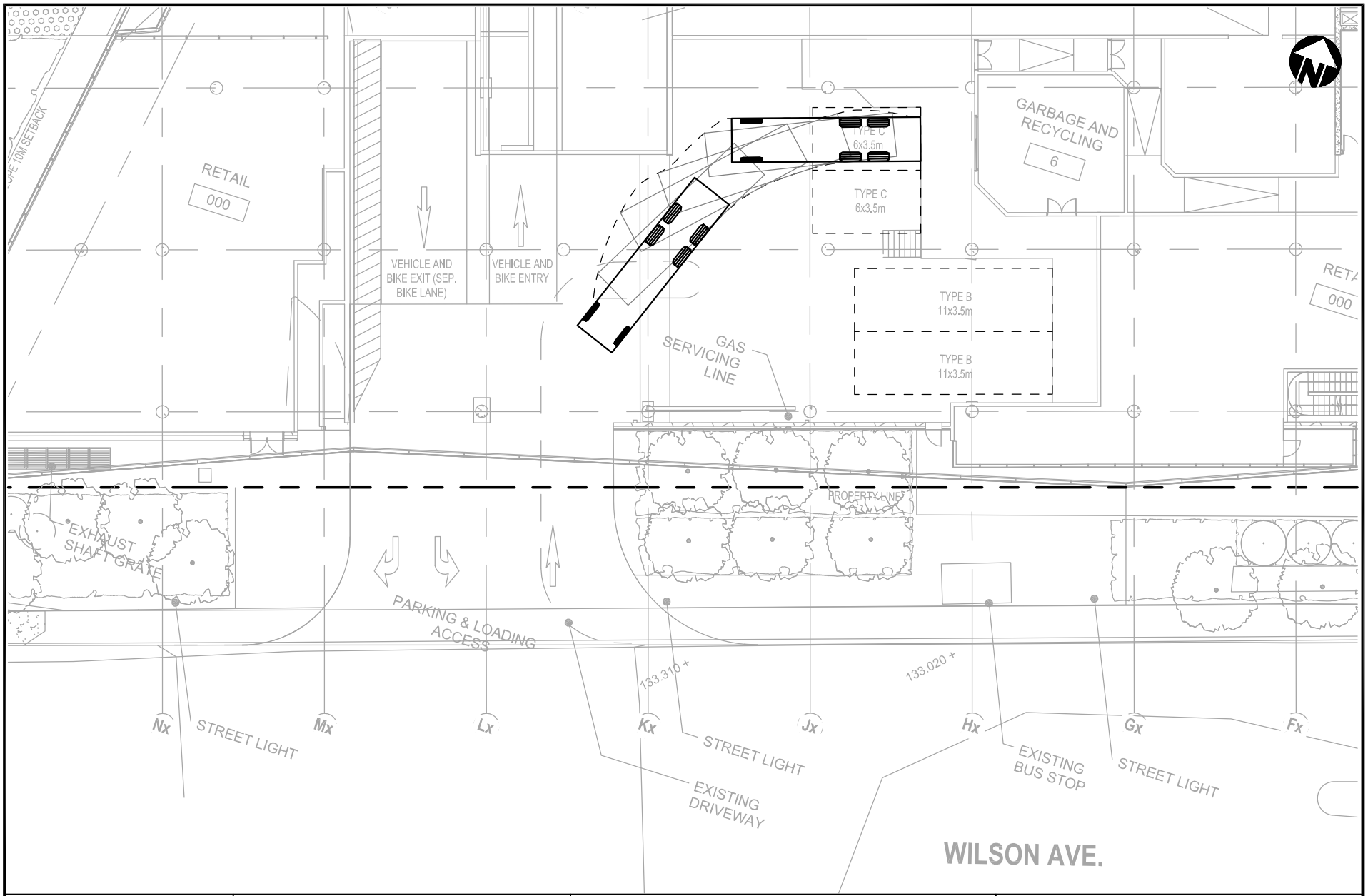
PROJECT:	4050 YONGE
PROJECT NO.	7019-07
DATE:	FEBRUARY 17, 2011
REVISED:	--

VEHICLE MANOEUVRING DIAGRAM
NORTH TYPE C LOADING SPACE
REFUSE COLLECTION VEHICLE
"AFTER HOURS" - INBOUND - 3 of 4

SCALE 1:300 (0 2 4 6 12m)

DRAWING No. VMD-9



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DATE PLOTTED: February 17, 2011

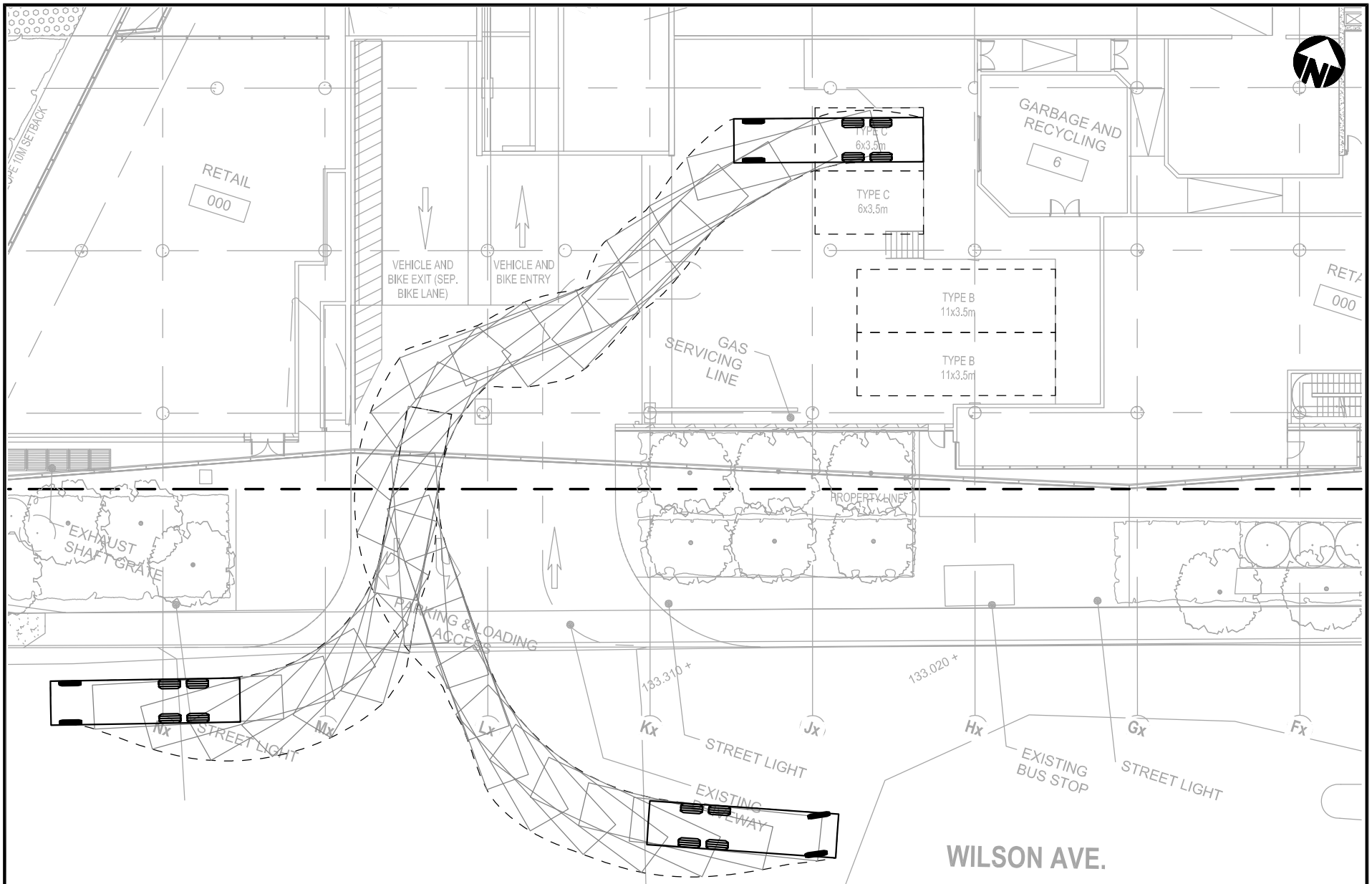
BA GROUP Transportation Consultants

PROJECT:	4050 YONGE
PROJECT NO.	7019-07
DATE:	FEBRUARY 17, 2011
REVISED:	--

VEHICLE MANOEUVRING DIAGRAM
NORTH TYPE C LOADING SPACE
REFUSE COLLECTION VEHICLE
"AFTER HOURS" - INBOUND - 4 of 4

SCALE 1:300 (0 2 4 6 12m)

DRAWING No. VMD-10



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DATE PLOTTED: February 17, 2011

BA GROUP Transportation Consultants

PROJECT:	4050 YONGE
PROJECT NO.	7019-07
DATE:	FEBRUARY 17, 2011
REVISED:	--

VEHICLE MANOEUVRING DIAGRAM
NORTH TYPE C LOADING SPACE
REFUSE COLLECTION VEHICLE
"AFTER HOURS" - OUTBOUND

SCALE 1:300 (0 2 4 6 12m)

DRAWING No. **VMD-11**

BA GROUP *Transportation Consultants*	**PROJECT:** 4050 YONGE **PROJECT NO.** 7019-07 **DATE:** FEBRUARY 11, 2011 **REVISED:** --	**INTRODUCTION OF GATED PARKING CONTROL AND PARKING MODIFICATIONS** **PARKING LEVEL P1**	**SCALE** 1:400 (0 2 4 6 8 10 20m) **DRAWING No.** PK-1

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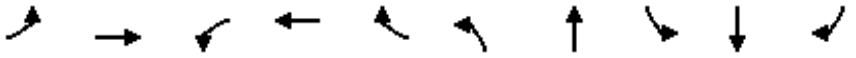
DATE PLOTTED: February 11, 2011

APPENDIX E:
Technical Analysis
Intersection Operations Worksheets

EXISTING CONDITIONS

Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	312	680	167	702	349	71	1536	275	1129	188
v/c Ratio	0.93	0.66	0.54	0.79	0.61	0.57	0.96	0.88	0.67	0.22
Control Delay	63.2	39.7	27.4	49.1	12.5	56.6	56.0	58.1	26.7	3.2
Queue Delay	0.0	0.0	0.0	3.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	39.7	27.4	52.2	12.6	56.6	56.0	58.1	26.7	3.2
Queue Length 50th (m)	53.5	75.9	24.4	84.6	11.3	15.1	~147.0	49.9	111.8	0.0
Queue Length 95th (m)	#75.3	92.2	32.6	105.5	35.3	#38.0	#178.5	#104.4	140.7	10.6
Internal Link Dist (m)		75.0		96.4			70.4		59.0	
Turn Bay Length (m)	60.0		45.0		74.0	44.0		63.0		
Base Capacity (vph)	334	1106	314	972	597	124	1595	315	1690	869
Starvation Cap Reductn	0	0	0	173	10	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.61	0.53	0.88	0.59	0.57	0.96	0.87	0.67	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

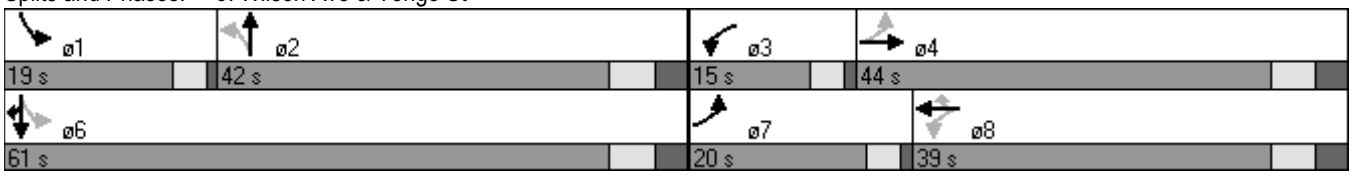
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	555	45	130	660	300	65	1365	95	250	1050	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0	6.0	6.0	6.0		3.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.89	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1767	3480		1766	3535	1405	1669	5002		1750	3500	1597
Flt Permitted	0.15	1.00		0.27	1.00	1.00	0.22	1.00		0.10	1.00	1.00
Satd. Flow (perm)	279	3480		498	3535	1405	388	5002		180	3500	1597
Peak-hour factor, PHF	0.77	0.88	0.92	0.78	0.94	0.86	0.92	0.96	0.83	0.91	0.93	0.85
Adj. Flow (vph)	312	631	49	167	702	349	71	1422	114	275	1129	188
RTOR Reduction (vph)	0	5	0	0	0	217	0	8	0	0	0	97
Lane Group Flow (vph)	312	675	0	167	702	132	71	1528	0	275	1129	91
Confl. Peds. (#/hr)	45		6	6		45	22		24	24		22
Heavy Vehicles (%)	1%	1%	5%	1%	1%	1%	6%	1%	0%	2%	2%	0%
Turn Type	pm+pt			pm+pt		Perm	Perm			pm+pt		Prot
Protected Phases	7	4		3	8			2		1	6	6
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	49.1	34.5		39.7	29.1	29.1	37.0	37.0		56.9	56.9	56.9
Effective Green, g (s)	50.1	35.5		41.7	30.1	30.1	38.0	38.0		57.9	57.9	57.9
Actuated g/C Ratio	0.42	0.30		0.35	0.25	0.25	0.32	0.32		0.48	0.48	0.48
Clearance Time (s)	4.0	7.0		4.0	7.0	7.0	7.0	7.0		4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	327	1030		296	887	352	123	1584		308	1689	771
v/s Ratio Prot	c0.14	0.19		0.05	0.20			c0.31		c0.13	0.32	0.06
v/s Ratio Perm	c0.26			0.14		0.09	0.18			0.31		
v/c Ratio	0.95	0.66		0.56	0.79	0.37	0.58	0.96		0.89	0.67	0.12
Uniform Delay, d1	30.2	36.9		28.7	42.0	37.2	34.3	40.3		34.2	23.7	17.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	37.4	1.5		2.5	4.9	0.7	18.2	15.7		26.1	2.1	0.3
Delay (s)	67.7	38.4		31.2	46.9	37.8	52.5	56.0		60.3	25.8	17.3
Level of Service	E	D		C	D	D	D	E		E	C	B
Approach Delay (s)		47.6			42.1			55.9			30.8	
Approach LOS		D			D			E			C	

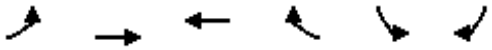
Intersection Summary			
HCM Average Control Delay	43.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	6	7	8
Movement	SBL	NBTL	WBL	EBTL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max	Min	None	C-Max	Min	None
Maximum Split (s)	19	42	15	44	61	20	39
Maximum Split (%)	15.8%	35.0%	12.5%	36.7%	50.8%	16.7%	32.5%
Minimum Split (s)	11	23	11	23	23	11	23
Yellow Time (s)	3	4	3	4	4	3	4
All-Red Time (s)	1	3	1	3	3	1	3
Minimum Initial (s)	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0
Walk Time (s)		5		5	5		5
Flash Dont Walk (s)		11		11	11		11
Dual Entry	No	Yes	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	101	0	42	57	101	42	62
End Time (s)	0	42	57	101	42	62	101
Yield/Force Off (s)	116	35	53	94	35	58	94
Yield/Force Off 170(s)	116	24	53	83	24	58	83
Local Start Time (s)	101	0	42	57	101	42	62
Local Yield (s)	116	35	53	94	35	58	94
Local Yield 170(s)	116	24	53	83	24	58	83

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	75
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Wilson Ave & Yonge St





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	35	850	900	20	30	40
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	924	978	22	33	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			99			
pX, platoon unblocked	0.82				0.82	0.82
vC, conflicting volume	1000				1527	500
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	547				1194	0
tC, single (s)	4.1				*5.8	*5.8
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				83	95
cM capacity (veh/h)	830				197	884

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	38	462	462	652	348	33	43
Volume Left	38	0	0	0	0	33	0
Volume Right	0	0	0	0	22	0	43
cSH	830	1700	1700	1700	1700	197	884
Volume to Capacity	0.05	0.27	0.27	0.38	0.20	0.17	0.05
Queue Length 95th (m)	1.2	0.0	0.0	0.0	0.0	4.6	1.2
Control Delay (s)	9.5	0.0	0.0	0.0	0.0	26.9	9.3
Lane LOS	A					D	A
Approach Delay (s)	0.4			0.0		16.8	
Approach LOS						C	

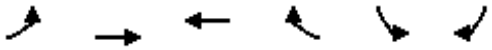
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Critical gap values have been adjusted to reflect existing southbound left turn delay based upon the existing delay of 22 seconds + 5 seconds (adjusted to account for acceleration and deceleration which field studies do not account for) for a total southbound left delay of 27 seconds.

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	22	1027	1239	27	49
v/c Ratio	0.29	0.35	0.47	0.04	0.47
Control Delay	46.8	4.0	9.9	7.3	38.1
Queue Delay	0.0	0.3	0.0	0.0	0.0
Total Delay	46.8	4.3	9.9	7.3	38.1
Queue Length 50th (m)	3.8	27.7	36.5	0.6	4.7
Queue Length 95th (m)	11.2	48.8	115.2	5.9	15.3
Internal Link Dist (m)		96.4	68.5		44.0
Turn Bay Length (m)	71.0			22.0	
Base Capacity (vph)	93	2915	2651	608	171
Starvation Cap Reductn	0	1091	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.24	0.56	0.47	0.04	0.29

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	20	945	1140	25	25	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.94	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	892	3500	3500	799	859	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	892	3500	3500	799	859	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	1027	1239	27	27	22
RTOR Reduction (vph)	0	0	0	4	20	0
Lane Group Flow (vph)	22	1027	1239	23	29	0
Heavy Vehicles (%)	100%	2%	2%	100%	100%	100%
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	4.0	69.4	58.4	58.4	6.6	
Effective Green, g (s)	4.0	69.4	58.4	58.4	6.6	
Actuated g/C Ratio	0.04	0.77	0.65	0.65	0.07	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	40	2699	2271	518	63	
v/s Ratio Prot	0.02	c0.29	c0.35		c0.03	
v/s Ratio Perm				0.03		
v/c Ratio	0.55	0.38	0.55	0.04	0.45	
Uniform Delay, d1	42.1	3.3	8.6	5.7	40.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.3	0.4	0.9	0.2	5.1	
Delay (s)	57.5	3.7	9.5	5.9	45.1	
Level of Service	E	A	A	A	D	
Approach Delay (s)		4.9	9.5		45.1	
Approach LOS		A	A		D	

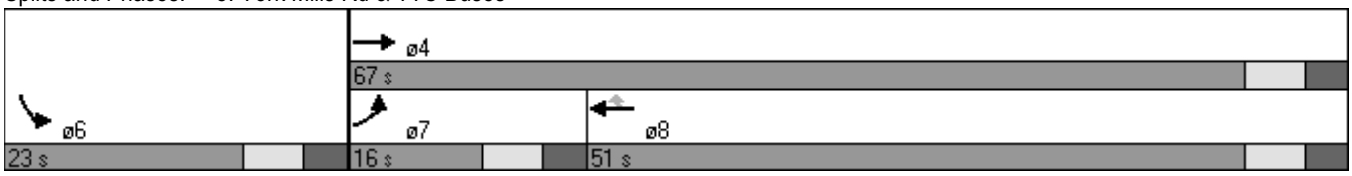
Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	4	6	7	8
Movement	EBT	SBL	EBL	WBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	67	23	16	51
Maximum Split (%)	74.4%	25.6%	17.8%	56.7%
Minimum Split (s)	23	23	11	23
Yellow Time (s)	4	4	4	4
All-Red Time (s)	3	3	3	3
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5		5
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	24	1	24	40
End Time (s)	1	24	40	1
Yield/Force Off (s)	84	17	33	84
Yield/Force Off 170(s)	73	6	33	73
Local Start Time (s)	74	51	74	0
Local Yield (s)	44	67	83	44
Local Yield 170(s)	33	56	83	33

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	65
Offset: 40 (44%), Referenced to phase 4:EBT and 8:WBT, Start of Green	

Splits and Phases: 8: York Mills Rd & TTC Buses



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	895	25	160	1090	15	20	0	150	5	0	35
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	973	27	174	1185	16	22	0	163	5	0	38
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (m)		92										
pX, platoon unblocked				0.91			0.91	0.91	0.91	0.91	0.91	
vC, conflicting volume	1201			1000			2062	2633	500	2288	2639	601
vC1, stage 1 conf vol							1084	1084		1541	1541	
vC2, stage 2 conf vol							978	1549		747	1098	
vCu, unblocked vol	1201			796			1967	2596	245	2215	2602	601
tC, single (s)	4.1			4.1			*6.0	6.5	*6.0	*6.0	6.5	*6.0
tC, 2 stage (s)							5.0	5.5		5.0	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			77			89	100	78	96	100	93
cM capacity (veh/h)	577			746			203	79	731	142	87	519

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	49	649	351	174	790	411	185	43
Volume Left	49	0	0	174	0	0	22	5
Volume Right	0	0	27	0	0	16	163	38
cSH	577	1700	1700	746	1700	1700	560	390
Volume to Capacity	0.08	0.38	0.21	0.23	0.46	0.24	0.33	0.11
Queue Length 95th (m)	2.2	0.0	0.0	7.2	0.0	0.0	11.5	3.0
Control Delay (s)	11.8	0.0	0.0	11.3	0.0	0.0	14.6	15.4
Lane LOS	B			B			B	C
Approach Delay (s)	0.6			1.4			14.6	15.4
Approach LOS							B	C

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	58.0%	ICU Level of Service	B	
Analysis Period (min)	15			

* User Entered Value

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	1895	1800	45
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	2060	1957	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				83		
pX, platoon unblocked	0.70					
vC, conflicting volume	2668	677	2005			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1896	677	2005			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	43	396	282			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	687	687	687	783	783	440
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	49
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.40	0.40	0.40	0.46	0.46	0.26
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						
Approach Delay (s)	0.0			0.0		
Approach LOS						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		
Description: m			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	40	100	1455	130	50	1185
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	109	1582	141	54	1288
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			TWLTL
Median storage veh)						2
Upstream signal (m)						95
pX, platoon unblocked	0.75					
vC, conflicting volume	2405	598			1723	
vC1, stage 1 conf vol	1652					
vC2, stage 2 conf vol	753					
vCu, unblocked vol	2210	598			1723	
tC, single (s)	*6.0	*6.0			4.1	
tC, 2 stage (s)	5.0					
tF (s)	3.5	3.3			2.2	
p0 queue free %	78	79			85	
cM capacity (veh/h)	194	521			363	

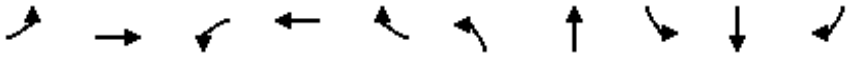
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	43	109	633	633	458	54	644	644
Volume Left	43	0	0	0	0	54	0	0
Volume Right	0	109	0	0	141	0	0	0
cSH	194	521	1700	1700	1700	363	1700	1700
Volume to Capacity	0.22	0.21	0.37	0.37	0.27	0.15	0.38	0.38
Queue Length 95th (m)	6.7	6.2	0.0	0.0	0.0	4.2	0.0	0.0
Control Delay (s)	28.9	13.7	0.0	0.0	0.0	16.7	0.0	0.0
Lane LOS	D	B				C		
Approach Delay (s)	18.1		0.0			0.7		
Approach LOS	C							

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

EXISTING CONDITIONS

Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	272	812	208	615	227	109	1615	273	1143	179
v/c Ratio	0.87	0.83	0.89	0.67	0.47	0.53	0.93	0.94	0.81	0.25
Control Delay	51.8	48.4	62.1	43.0	12.4	25.8	48.0	71.9	38.1	6.3
Queue Delay	0.0	0.0	0.0	1.2	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	48.4	62.1	44.2	12.5	25.8	48.0	71.9	38.1	6.3
Queue Length 50th (m)	44.6	97.6	32.7	70.9	9.6	13.4	139.6	51.0	134.9	3.4
Queue Length 95th (m)	#75.4	119.2	#39.8	88.8	28.0	25.2	#171.4	#113.0	167.5	18.7
Internal Link Dist (m)		75.0		96.4			70.4		59.0	
Turn Bay Length (m)	60.0		45.0		74.0	44.0		63.0		
Base Capacity (vph)	313	1071	234	1021	520	211	1737	290	1411	725
Starvation Cap Reductn	0	0	0	205	13	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.76	0.89	0.75	0.45	0.52	0.93	0.94	0.81	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	690	50	150	590	195	100	1425	110	240	1040	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.86	1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1741	3461		1750	3500	1354	1750	4943		1750	3500	1566
Flt Permitted	0.23	1.00		0.14	1.00	1.00	0.11	1.00		0.09	1.00	1.00
Satd. Flow (perm)	416	3461		256	3500	1354	201	4943		164	3500	1566
Peak-hour factor, PHF	0.90	0.91	0.92	0.72	0.96	0.86	0.92	0.95	0.96	0.88	0.91	0.92
Adj. Flow (vph)	272	758	54	208	615	227	109	1500	115	273	1143	179
RTOR Reduction (vph)	0	4	0	0	0	130	0	7	0	0	0	94
Lane Group Flow (vph)	272	808	0	208	615	97	109	1608	0	273	1143	85
Confl. Peds. (#/hr)	56		2	2		56	47		35	35		47
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		Prot
Protected Phases	7	4		3	8		5	2		1	6	6
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	44.6	32.6		40.6	30.6	30.6	49.0	41.0		59.4	47.4	47.4
Effective Green, g (s)	46.6	33.6		42.6	31.6	31.6	51.0	42.0		60.4	48.4	48.4
Actuated g/C Ratio	0.39	0.28		0.36	0.26	0.26	0.42	0.35		0.50	0.40	0.40
Clearance Time (s)	4.0	7.0		4.0	7.0	7.0	4.0	7.0		4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	305	969		228	922	357	202	1730		286	1412	632
v/s Ratio Prot	c0.10	0.23		0.08	0.18		0.04	0.33		c0.12	0.33	0.05
v/s Ratio Perm	c0.25			0.24		0.07	0.19			c0.36		
v/c Ratio	0.89	0.83		0.91	0.67	0.27	0.54	0.93		0.95	0.81	0.14
Uniform Delay, d1	28.8	40.6		30.5	39.5	35.1	24.2	37.6		35.7	31.7	22.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	26.1	6.2		36.5	1.8	0.4	2.8	10.3		40.7	5.1	0.4
Delay (s)	54.9	46.8		67.1	41.3	35.5	26.9	47.9		76.4	36.8	23.0
Level of Service	D	D		E	D	D	C	D		E	D	C
Approach Delay (s)		48.8			45.2			46.6			42.1	
Approach LOS		D			D			D			D	

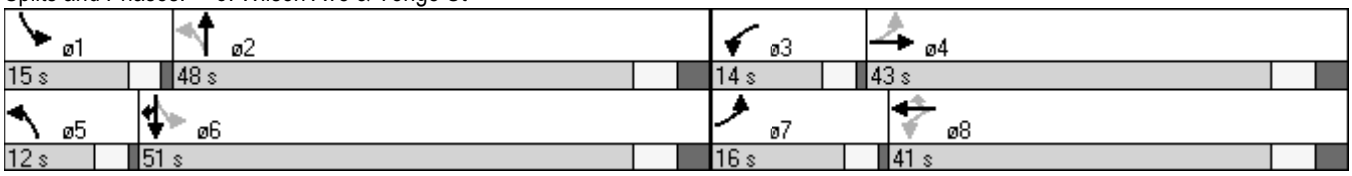
Intersection Summary			
HCM Average Control Delay	45.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

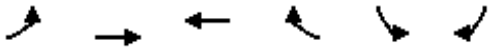
c Critical Lane Group

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	15	48	14	43	12	51	16	41
Maximum Split (%)	12.5%	40.0%	11.7%	35.8%	10.0%	42.5%	13.3%	34.2%
Minimum Split (s)	11	23	11	23	11	23	11	23
Yellow Time (s)	3	4	3	4	3	4	3	4
All-Red Time (s)	1	3	1	3	1	3	1	3
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	105	0	48	62	105	117	48	64
End Time (s)	0	48	62	105	117	48	64	105
Yield/Force Off (s)	116	41	58	98	113	41	60	98
Yield/Force Off 170(s)	116	30	58	87	113	30	60	87
Local Start Time (s)	105	0	48	62	105	117	48	64
Local Yield (s)	116	41	58	98	113	41	60	98
Local Yield 170(s)	116	30	58	87	113	30	60	87

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Wilson Ave & Yonge St





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	975	865	20	35	40
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	1060	940	22	38	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			99			
pX, platoon unblocked	0.85				0.85	0.85
vC, conflicting volume	962				1514	481
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	589				1242	20
tC, single (s)	4.1				*5.8	*5.8
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				81	95
cM capacity (veh/h)	830				198	896

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	16	530	530	627	335	38	43
Volume Left	16	0	0	0	0	38	0
Volume Right	0	0	0	0	22	0	43
cSH	830	1700	1700	1700	1700	198	896
Volume to Capacity	0.02	0.31	0.31	0.37	0.20	0.19	0.05
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0	5.5	1.2
Control Delay (s)	9.4	0.0	0.0	0.0	0.0	27.5	9.2
Lane LOS	A					D	A
Approach Delay (s)	0.1			0.0		17.7	
Approach LOS						C	

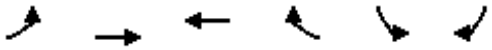
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Critical gap values have been adjusted to reflect existing southbound left turn delay based upon the existing delay of 22 seconds + 5 seconds (adjusted to account for acceleration and deceleration which field studies do not account for) for a total southbound left delay of 27 seconds.

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	16	1158	1033	27	43
v/c Ratio	0.22	0.40	0.37	0.04	0.43
Control Delay	44.9	4.2	6.7	5.4	39.6
Queue Delay	0.0	0.3	0.0	0.0	0.0
Total Delay	44.9	4.5	6.7	5.4	39.6
Queue Length 50th (m)	2.8	32.8	27.7	0.5	4.7
Queue Length 95th (m)	9.1	56.5	86.1	5.5	14.6
Internal Link Dist (m)		96.4	68.5		44.0
Turn Bay Length (m)	71.0			22.0	
Base Capacity (vph)	78	2921	2788	639	205
Starvation Cap Reductn	0	1035	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.21	0.61	0.37	0.04	0.21

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	15	1065	950	25	25	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.95	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	892	3500	3500	799	865	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	892	3500	3500	799	865	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	1158	1033	27	27	16
RTOR Reduction (vph)	0	0	0	5	15	0
Lane Group Flow (vph)	16	1158	1033	22	28	0
Heavy Vehicles (%)	100%	2%	2%	100%	100%	100%
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	2.0	69.5	60.5	60.5	6.5	
Effective Green, g (s)	2.0	69.5	60.5	60.5	6.5	
Actuated g/C Ratio	0.02	0.77	0.67	0.67	0.07	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	20	2703	2353	537	62	
v/s Ratio Prot	0.02	c0.33	0.30		c0.03	
v/s Ratio Perm				0.03		
v/c Ratio	0.80	0.43	0.44	0.04	0.45	
Uniform Delay, d1	43.8	3.5	6.9	5.0	40.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	110.1	0.5	0.6	0.1	5.2	
Delay (s)	153.9	4.0	7.5	5.1	45.3	
Level of Service	F	A	A	A	D	
Approach Delay (s)		6.0	7.4		45.3	
Approach LOS		A	A		D	

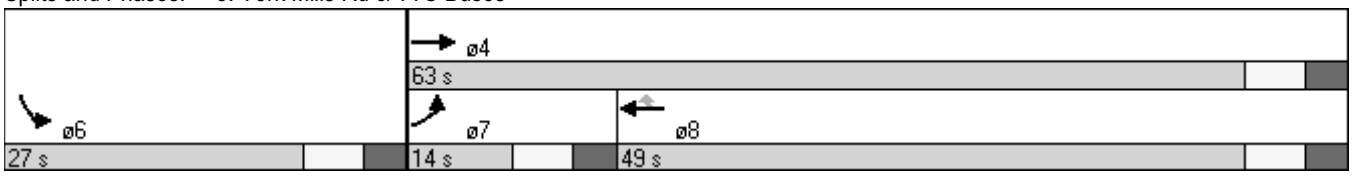
Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	4	6	7	8
Movement	EBT	SBL	EBL	WBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	63	27	14	49
Maximum Split (%)	70.0%	30.0%	15.6%	54.4%
Minimum Split (s)	23	23	11	23
Yellow Time (s)	4	4	4	4
All-Red Time (s)	3	3	3	3
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5		5
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	27	0	27	41
End Time (s)	0	27	41	0
Yield/Force Off (s)	83	20	34	83
Yield/Force Off 170(s)	72	9	34	72
Local Start Time (s)	76	49	76	0
Local Yield (s)	42	69	83	42
Local Yield 170(s)	31	58	83	31

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 41 (46%), Referenced to phase 4:EBT and 8:WBT, Start of Green	

Splits and Phases: 8: York Mills Rd & TTC Buses



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	1045	25	95	900	10	10	0	105	25	0	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	1136	27	103	978	11	11	0	114	27	0	43
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (m)		92										
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	989			1163			1932	2389	582	1916	2397	495
vC1, stage 1 conf vol							1193	1193		1190	1190	
vC2, stage 2 conf vol							739	1196		726	1207	
vCu, unblocked vol	989			925			1794	2309	268	1775	2319	495
tC, single (s)	4.1			4.1			*6.0	6.5	*6.0	*6.0	6.5	*6.0
tC, 2 stage (s)							5.0	5.5		5.0	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			84			96	100	84	88	100	93
cM capacity (veh/h)	695			650			264	157	693	231	136	592

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	22	757	406	103	652	337	125	71
Volume Left	22	0	0	103	0	0	11	27
Volume Right	0	0	27	0	0	11	114	43
cSH	695	1700	1700	650	1700	1700	607	369
Volume to Capacity	0.03	0.45	0.24	0.16	0.38	0.20	0.21	0.19
Queue Length 95th (m)	0.8	0.0	0.0	4.5	0.0	0.0	6.1	5.6
Control Delay (s)	10.4	0.0	0.0	11.6	0.0	0.0	12.5	17.0
Lane LOS	B			B			B	C
Approach Delay (s)	0.2			1.1			12.5	17.0
Approach LOS							B	C

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	55.5%	ICU Level of Service	B	
Analysis Period (min)	15			

* User Entered Value

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	1875	1475	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	2038	1603	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				83		
pX, platoon unblocked	0.69					
vC, conflicting volume	2291	543	1620			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1300	543	1620			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	105	484	398			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	679	679	679	641	641	337
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	16
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.40	0.40	0.40	0.38	0.38	0.20
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						
Approach Delay (s)	0.0			0.0		
Approach LOS						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		
Description: m			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	45	55	1580	75	50	1195
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	60	1717	82	54	1299
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			TWLTL
Median storage veh)						2
Upstream signal (m)						95
pX, platoon unblocked	0.71					
vC, conflicting volume	2516	613			1799	
vC1, stage 1 conf vol	1758					
vC2, stage 2 conf vol	758					
vCu, unblocked vol	2321	613			1799	
tC, single (s)	*6.0	*6.0			4.1	
tC, 2 stage (s)	5.0					
tF (s)	3.5	3.3			2.2	
p0 queue free %	72	88			84	
cM capacity (veh/h)	174	511			339	

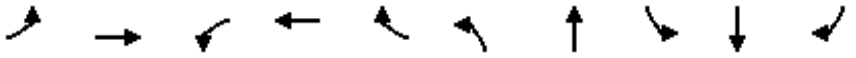
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	49	60	687	687	425	54	649	649
Volume Left	49	0	0	0	0	54	0	0
Volume Right	0	60	0	0	82	0	0	0
cSH	174	511	1700	1700	1700	339	1700	1700
Volume to Capacity	0.28	0.12	0.40	0.40	0.25	0.16	0.38	0.38
Queue Length 95th (m)	8.8	3.2	0.0	0.0	0.0	4.5	0.0	0.0
Control Delay (s)	33.6	13.0	0.0	0.0	0.0	17.6	0.0	0.0
Lane LOS	D	B				C		
Approach Delay (s)	22.3		0.0			0.7		
Approach LOS	C							

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

FUTURE BACKGROUND

Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	325	714	173	739	366	76	1615	291	1188	200
v/c Ratio	0.93	0.66	0.68	0.96	0.76	0.42	0.96	0.93	0.80	0.26
Control Delay	65.5	39.3	39.6	71.8	27.2	22.5	53.8	68.0	35.4	5.4
Queue Delay	0.0	0.0	0.0	10.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	39.3	39.6	81.9	27.2	22.5	53.8	68.0	35.4	5.4
Queue Length 50th (m)	61.7	80.2	26.9	96.1	32.1	9.0	142.6	54.3	136.7	3.2
Queue Length 95th (m)	#85.6	98.8	36.7	#136.5	63.8	17.3	#177.5	#109.3	167.0	15.4
Internal Link Dist (m)		75.0		96.4			70.4		59.0	
Turn Bay Length (m)	60.0		45.0		74.0	44.0		63.0		
Base Capacity (vph)	348	1078	256	766	484	185	1679	313	1493	783
Starvation Cap Reductn	0	0	0	36	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.66	0.68	1.01	0.76	0.41	0.96	0.93	0.80	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

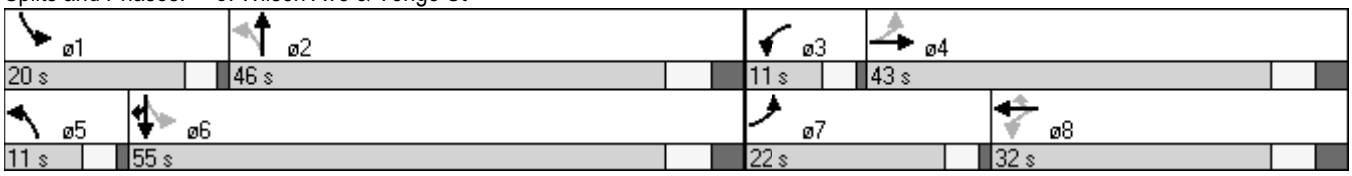
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	585	45	135	695	315	70	1435	100	265	1105	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.89	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1767	3483		1765	3535	1405	1684	5001		1750	3500	1597
Flt Permitted	0.14	1.00		0.31	1.00	1.00	0.11	1.00		0.09	1.00	1.00
Satd. Flow (perm)	257	3483		573	3535	1405	203	5001		171	3500	1597
Peak-hour factor, PHF	0.77	0.88	0.92	0.78	0.94	0.86	0.92	0.96	0.83	0.91	0.93	0.85
Adj. Flow (vph)	325	665	49	173	739	366	76	1495	120	291	1188	200
RTOR Reduction (vph)	0	4	0	0	0	179	0	7	0	0	0	103
Lane Group Flow (vph)	325	710	0	173	739	187	76	1608	0	291	1188	97
Confl. Peds. (#/hr)	45		6	6		45	22		24	24		22
Heavy Vehicles (%)	1%	1%	5%	1%	1%	1%	6%	1%	0%	2%	2%	0%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		Prot
Protected Phases	7	4		3	8		5	2		1	6	6
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	47.0	36.0		32.0	25.0	25.0	44.7	39.1		59.0	49.4	49.4
Effective Green, g (s)	48.0	37.0		34.0	26.0	26.0	46.7	40.1		60.0	50.4	50.4
Actuated g/C Ratio	0.40	0.31		0.28	0.22	0.22	0.39	0.33		0.50	0.42	0.42
Clearance Time (s)	4.0	7.0		4.0	7.0	7.0	4.0	7.0		4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	342	1074		242	766	304	160	1671		308	1470	671
v/s Ratio Prot	c0.15	0.20		0.05	0.21		0.03	0.32		c0.13	0.34	0.06
v/s Ratio Perm	c0.23			0.15		0.13	0.16			c0.34		
v/c Ratio	0.95	0.66		0.71	0.96	0.61	0.48	0.96		0.94	0.81	0.14
Uniform Delay, d1	33.9	36.1		35.1	46.5	42.5	25.6	39.2		35.9	30.6	21.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	35.7	1.5		9.6	24.0	3.7	2.2	14.7		36.6	4.9	0.5
Delay (s)	69.6	37.6		44.7	70.5	46.1	27.9	53.9		72.5	35.4	21.9
Level of Service	E	D		D	E	D	C	D		E	D	C
Approach Delay (s)		47.6			60.0			52.7			40.3	
Approach LOS		D			E			D			D	

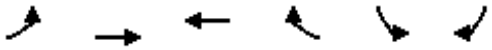
Intersection Summary			
HCM Average Control Delay	49.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	20	46	11	43	11	55	22	32
Maximum Split (%)	16.7%	38.3%	9.2%	35.8%	9.2%	45.8%	18.3%	26.7%
Minimum Split (s)	11	23	11	23	11	23	11	23
Yellow Time (s)	3	4	3	4	3	4	3	4
All-Red Time (s)	1	3	1	3	1	3	1	3
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	100	0	46	57	100	111	46	68
End Time (s)	0	46	57	100	111	46	68	100
Yield/Force Off (s)	116	39	53	93	107	39	64	93
Yield/Force Off 170(s)	116	28	53	82	107	28	64	82
Local Start Time (s)	100	0	46	57	100	111	46	68
Local Yield (s)	116	39	53	93	107	39	64	93
Local Yield 170(s)	116	28	53	82	107	28	64	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Wilson Ave & Yonge St





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	35	890	945	20	30	40
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	967	1027	22	33	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			99			
pX, platoon unblocked	0.80				0.80	0.80
vC, conflicting volume	1049				1598	524
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	549				1238	0
tC, single (s)	4.1				*5.8	*5.8
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				82	95
cM capacity (veh/h)	810				182	863

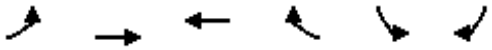
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	38	484	484	685	364	33	43
Volume Left	38	0	0	0	0	33	0
Volume Right	0	0	0	0	22	0	43
cSH	810	1700	1700	1700	1700	182	863
Volume to Capacity	0.05	0.28	0.28	0.40	0.21	0.18	0.05
Queue Length 95th (m)	1.2	0.0	0.0	0.0	0.0	5.1	1.3
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	29.1	9.4
Lane LOS	A					D	A
Approach Delay (s)	0.4			0.0		17.8	
Approach LOS						C	

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	22	1076	1299	27	49
v/c Ratio	0.29	0.37	0.49	0.04	0.47
Control Delay	46.8	4.1	10.2	7.3	38.1
Queue Delay	0.0	0.3	0.0	0.0	0.0
Total Delay	46.8	4.4	10.2	7.3	38.1
Queue Length 50th (m)	3.8	29.6	39.4	0.6	4.7
Queue Length 95th (m)	11.2	52.1	123.8	5.9	15.3
Internal Link Dist (m)		96.4	68.5		44.0
Turn Bay Length (m)	71.0			22.0	
Base Capacity (vph)	93	2915	2651	608	171
Starvation Cap Reductn	0	1068	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.24	0.58	0.49	0.04	0.29

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	20	990	1195	25	25	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.94	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	892	3500	3500	799	859	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	892	3500	3500	799	859	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	1076	1299	27	27	22
RTOR Reduction (vph)	0	0	0	4	20	0
Lane Group Flow (vph)	22	1076	1299	23	29	0
Heavy Vehicles (%)	100%	2%	2%	100%	100%	100%
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	4.0	69.4	58.4	58.4	6.6	
Effective Green, g (s)	4.0	69.4	58.4	58.4	6.6	
Actuated g/C Ratio	0.04	0.77	0.65	0.65	0.07	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	40	2699	2271	518	63	
v/s Ratio Prot	0.02	c0.31	c0.37		c0.03	
v/s Ratio Perm				0.03		
v/c Ratio	0.55	0.40	0.57	0.04	0.45	
Uniform Delay, d1	42.1	3.4	8.8	5.7	40.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.3	0.4	1.1	0.2	5.1	
Delay (s)	57.5	3.8	9.9	5.9	45.1	
Level of Service	E	A	A	A	D	
Approach Delay (s)		4.9	9.8		45.1	
Approach LOS		A	A		D	

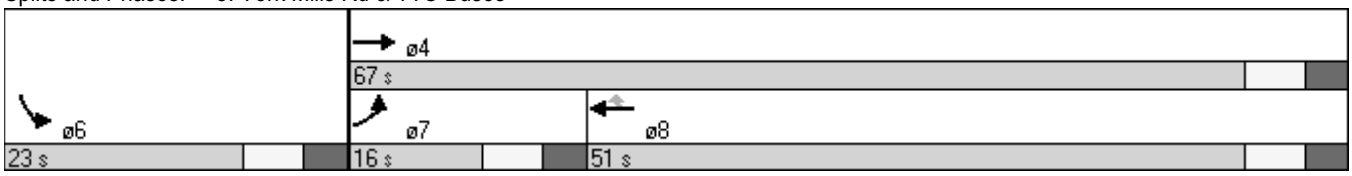
Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	4	6	7	8
Movement	EBT	SBL	EBL	WBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	67	23	16	51
Maximum Split (%)	74.4%	25.6%	17.8%	56.7%
Minimum Split (s)	23	23	11	23
Yellow Time (s)	4	4	4	4
All-Red Time (s)	3	3	3	3
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5		5
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	24	1	24	40
End Time (s)	1	24	40	1
Yield/Force Off (s)	84	17	33	84
Yield/Force Off 170(s)	73	6	33	73
Local Start Time (s)	74	51	74	0
Local Yield (s)	44	67	83	44
Local Yield 170(s)	33	56	83	33

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	65
Offset: 40 (44%), Referenced to phase 4:EBT and 8:WBT, Start of Green	

Splits and Phases: 8: York Mills Rd & TTC Buses



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	940	25	170	1145	15	20	0	160	5	0	35
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	1022	27	185	1245	16	22	0	174	5	0	38
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (m)		92										
pX, platoon unblocked				0.90			0.90	0.90	0.90	0.90	0.90	
vC, conflicting volume	1261			1049			2163	2764	524	2405	2769	630
vC1, stage 1 conf vol							1133	1133		1622	1622	
vC2, stage 2 conf vol							1030	1630		783	1147	
vCu, unblocked vol	1261			832			2070	2737	249	2339	2743	630
tC, single (s)	4.1			4.1			*6.0	6.5	*6.0	*6.0	6.5	*6.0
tC, 2 stage (s)							5.0	5.5		5.0	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			74			88	100	76	96	100	92
cM capacity (veh/h)	547			717			184	65	721	124	72	500

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	49	681	368	185	830	431	196	43
Volume Left	49	0	0	185	0	0	22	5
Volume Right	0	0	27	0	0	16	174	38
cSH	547	1700	1700	717	1700	1700	545	363
Volume to Capacity	0.09	0.40	0.22	0.26	0.49	0.25	0.36	0.12
Queue Length 95th (m)	2.3	0.0	0.0	8.2	0.0	0.0	13.0	3.2
Control Delay (s)	12.2	0.0	0.0	11.8	0.0	0.0	15.3	16.3
Lane LOS	B			B			C	C
Approach Delay (s)	0.5			1.5			15.3	16.3
Approach LOS							C	C

Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	60.4%	ICU Level of Service	B	
Analysis Period (min)	15			

* User Entered Value

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	40	105	1530	135	55	1245
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	114	1663	147	60	1353
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			TWLTL
Median storage veh)						2
Upstream signal (m)						95
pX, platoon unblocked	0.70					
vC, conflicting volume	2533	628			1810	
vC1, stage 1 conf vol	1736					
vC2, stage 2 conf vol	796					
vCu, unblocked vol	2334	628			1810	
tC, single (s)	*6.0	*6.0			4.1	
tC, 2 stage (s)	5.0					
tF (s)	3.5	3.3			2.2	
p0 queue free %	75	77			82	
cM capacity (veh/h)	177	502			336	

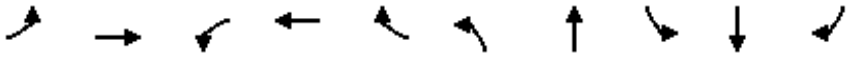
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	43	114	665	665	479	60	677	677
Volume Left	43	0	0	0	0	60	0	0
Volume Right	0	114	0	0	147	0	0	0
cSH	177	502	1700	1700	1700	336	1700	1700
Volume to Capacity	0.25	0.23	0.39	0.39	0.28	0.18	0.40	0.40
Queue Length 95th (m)	7.4	6.9	0.0	0.0	0.0	5.1	0.0	0.0
Control Delay (s)	31.9	14.3	0.0	0.0	0.0	18.0	0.0	0.0
Lane LOS	D	B				C		
Approach Delay (s)	19.1		0.0			0.8		
Approach LOS	C							

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

FUTURE BACKGROUND

Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	283	851	222	646	238	114	1694	284	1198	190
v/c Ratio	0.89	0.97	0.90	0.87	0.52	0.57	0.94	0.92	0.78	0.24
Control Delay	59.7	68.3	66.0	59.7	10.7	27.8	47.7	66.6	33.5	4.7
Queue Delay	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.7	68.3	66.0	60.5	10.7	27.8	47.7	66.6	33.5	4.7
Queue Length 50th (m)	51.0	109.7	37.3	82.3	2.6	13.0	147.3	52.6	131.3	2.1
Queue Length 95th (m)	#102.5	#153.1	#50.1	#113.9	21.8	24.9	#181.1	#100.9	160.1	16.0
Internal Link Dist (m)		75.0		96.4			70.4		59.0	
Turn Bay Length (m)	60.0		45.0		74.0	44.0		63.0		
Base Capacity (vph)	319	878	246	741	462	200	1810	312	1534	792
Starvation Cap Reductn	0	0	0	14	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.97	0.90	0.89	0.52	0.57	0.94	0.91	0.78	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

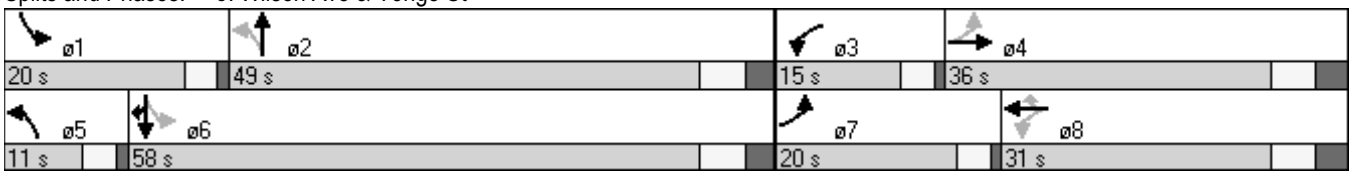
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	255	725	50	160	620	205	105	1495	115	250	1090	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.86	1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1767	3499		1767	3535	1354	1750	4993		1750	3535	1597
Flt Permitted	0.14	1.00		0.16	1.00	1.00	0.12	1.00		0.09	1.00	1.00
Satd. Flow (perm)	264	3499		295	3535	1354	215	4993		159	3535	1597
Peak-hour factor, PHF	0.90	0.91	0.92	0.72	0.96	0.86	0.92	0.95	0.96	0.88	0.91	0.92
Adj. Flow (vph)	283	797	54	222	646	238	114	1574	120	284	1198	190
RTOR Reduction (vph)	0	4	0	0	0	178	0	7	0	0	0	99
Lane Group Flow (vph)	283	847	0	222	646	60	114	1687	0	284	1198	91
Confl. Peds. (#/hr)	56		2	2		56	47		35	35		47
Heavy Vehicles (%)	1%	1%	0%	1%	1%	2%	2%	1%	1%	2%	1%	0%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		Prot
Protected Phases	7	4		3	8		5	2		1	6	6
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	44.0	29.0		35.2	24.2	24.2	49.2	42.3		62.0	51.1	51.1
Effective Green, g (s)	45.0	30.0		37.2	25.2	25.2	51.2	43.3		63.0	52.1	52.1
Actuated g/C Ratio	0.38	0.25		0.31	0.21	0.21	0.43	0.36		0.52	0.43	0.43
Clearance Time (s)	4.0	7.0		4.0	7.0	7.0	4.0	7.0		4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	309	875		239	742	284	193	1802		305	1535	693
v/s Ratio Prot	c0.13	c0.24		0.09	0.18		0.04	0.34		c0.13	0.34	0.06
v/s Ratio Perm	0.22			0.20		0.04	0.21			c0.36		
v/c Ratio	0.92	0.97		0.93	0.87	0.21	0.59	0.94		0.93	0.78	0.13
Uniform Delay, d1	31.6	44.5		34.5	45.8	39.2	23.8	37.0		36.0	29.1	20.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	30.2	22.7		38.8	10.9	0.4	4.8	10.7		33.9	4.0	0.4
Delay (s)	61.8	67.2		73.3	56.7	39.6	28.6	47.7		69.9	33.1	20.8
Level of Service	E	E		E	E	D	C	D		E	C	C
Approach Delay (s)		65.9			56.4			46.5			37.9	
Approach LOS		E			E			D			D	

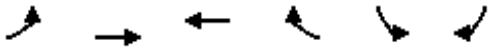
Intersection Summary			
HCM Average Control Delay	49.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	20	49	15	36	11	58	20	31
Maximum Split (%)	16.7%	40.8%	12.5%	30.0%	9.2%	48.3%	16.7%	25.8%
Minimum Split (s)	11	23	11	23	11	23	11	23
Yellow Time (s)	3	4	3	4	3	4	3	4
All-Red Time (s)	1	3	1	3	1	3	1	3
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	92	112	41	56	92	103	41	61
End Time (s)	112	41	56	92	103	41	61	92
Yield/Force Off (s)	108	34	52	85	99	34	57	85
Yield/Force Off 170(s)	108	23	52	74	99	23	57	74
Local Start Time (s)	100	0	49	64	100	111	49	69
Local Yield (s)	116	42	60	93	107	42	65	93
Local Yield 170(s)	116	31	60	82	107	31	65	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 112 (93%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Wilson Ave & Yonge St





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	1025	910	20	35	40
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	1114	989	22	38	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			99			
pX, platoon unblocked	0.82				0.82	0.82
vC, conflicting volume	1011				1590	505
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	589				1290	0
tC, single (s)	4.1				*5.8	*5.8
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				79	95
cM capacity (veh/h)	811				182	894

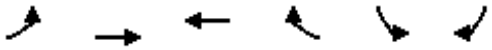
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	16	557	557	659	351	38	43
Volume Left	16	0	0	0	0	38	0
Volume Right	0	0	0	0	22	0	43
cSH	811	1700	1700	1700	1700	182	894
Volume to Capacity	0.02	0.33	0.33	0.39	0.21	0.21	0.05
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0	6.1	1.2
Control Delay (s)	9.5	0.0	0.0	0.0	0.0	29.9	9.2
Lane LOS	A					D	A
Approach Delay (s)	0.1			0.0		18.9	
Approach LOS						C	

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	16	1217	1082	27	43
v/c Ratio	0.22	0.42	0.39	0.04	0.43
Control Delay	44.9	4.3	6.8	5.4	39.6
Queue Delay	0.0	0.4	0.0	0.0	0.0
Total Delay	44.9	4.7	6.8	5.4	39.6
Queue Length 50th (m)	2.8	35.3	29.6	0.5	4.7
Queue Length 95th (m)	9.1	60.7	91.8	5.5	14.6
Internal Link Dist (m)		96.4	68.5		44.0
Turn Bay Length (m)	71.0			22.0	
Base Capacity (vph)	74	2921	2788	639	205
Starvation Cap Reductn	0	1007	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.22	0.64	0.39	0.04	0.21

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	15	1120	995	25	25	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.95	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	892	3500	3500	799	865	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	892	3500	3500	799	865	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	1217	1082	27	27	16
RTOR Reduction (vph)	0	0	0	5	15	0
Lane Group Flow (vph)	16	1217	1082	22	28	0
Heavy Vehicles (%)	100%	2%	2%	100%	100%	100%
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	2.0	69.5	60.5	60.5	6.5	
Effective Green, g (s)	2.0	69.5	60.5	60.5	6.5	
Actuated g/C Ratio	0.02	0.77	0.67	0.67	0.07	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	20	2703	2353	537	62	
v/s Ratio Prot	0.02	c0.35	0.31		c0.03	
v/s Ratio Perm				0.03		
v/c Ratio	0.80	0.45	0.46	0.04	0.45	
Uniform Delay, d1	43.8	3.6	7.0	5.0	40.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	110.1	0.5	0.6	0.1	5.2	
Delay (s)	153.9	4.1	7.6	5.1	45.3	
Level of Service	F	A	A	A	D	
Approach Delay (s)		6.1	7.6		45.3	
Approach LOS		A	A		D	

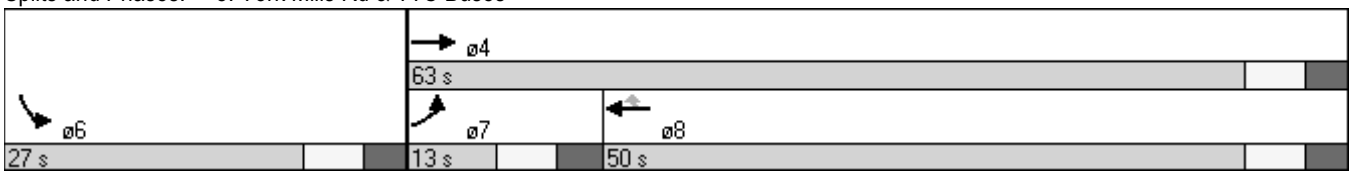
Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	4	6	7	8
Movement	EBT	SBL	EBL	WBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	63	27	13	50
Maximum Split (%)	70.0%	30.0%	14.4%	55.6%
Minimum Split (s)	23	23	11	23
Yellow Time (s)	4	4	4	4
All-Red Time (s)	3	3	3	3
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5		5
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	27	0	27	40
End Time (s)	0	27	40	0
Yield/Force Off (s)	83	20	33	83
Yield/Force Off 170(s)	72	9	33	72
Local Start Time (s)	77	50	77	0
Local Yield (s)	43	70	83	43
Local Yield 170(s)	32	59	83	32

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 40 (44%), Referenced to phase 4:EBT and 8:WBT, Start of Green	

Splits and Phases: 8: York Mills Rd & TTC Buses



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	1095	25	100	945	10	10	0	110	25	0	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	1190	27	109	1027	11	11	0	120	27	0	43
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (m)		92										
pX, platoon unblocked				0.88			0.88	0.88	0.88	0.88	0.88	
vC, conflicting volume	1038			1217			2022	2503	609	2008	2511	519
vC1, stage 1 conf vol							1247	1247		1250	1250	
vC2, stage 2 conf vol							774	1255		758	1261	
vCu, unblocked vol	1038			965			1883	2432	269	1867	2441	519
tC, single (s)	4.1			4.1			*6.0	6.5	*6.0	*6.0	6.5	*6.0
tC, 2 stage (s)							5.0	5.5		5.0	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			83			96	100	83	87	100	92
cM capacity (veh/h)	665			621			248	144	684	213	121	574

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	22	793	424	109	685	353	130	71
Volume Left	22	0	0	109	0	0	11	27
Volume Right	0	0	27	0	0	11	120	43
cSH	665	1700	1700	621	1700	1700	597	348
Volume to Capacity	0.03	0.47	0.25	0.17	0.40	0.21	0.22	0.20
Queue Length 95th (m)	0.8	0.0	0.0	5.0	0.0	0.0	6.6	6.0
Control Delay (s)	10.6	0.0	0.0	12.0	0.0	0.0	12.7	18.0
Lane LOS	B			B			B	C
Approach Delay (s)	0.2			1.1			12.7	18.0
Approach LOS							B	C

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	57.1%	ICU Level of Service		B
Analysis Period (min)	15			

* User Entered Value

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	45	60	1660	80	50	1255
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	65	1804	87	54	1364
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			TWLTL
Median storage veh)						2
Upstream signal (m)						95
pX, platoon unblocked	0.71					
vC, conflicting volume	2639	645			1891	
vC1, stage 1 conf vol	1848					
vC2, stage 2 conf vol	791					
vCu, unblocked vol	2492	645			1891	
tC, single (s)	*6.0	*6.0			4.1	
tC, 2 stage (s)	5.0					
tF (s)	3.5	3.3			2.2	
p0 queue free %	69	87			83	
cM capacity (veh/h)	159	491			312	

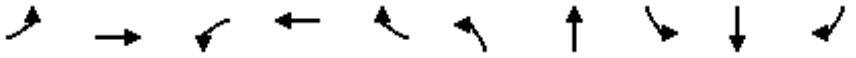
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	49	65	722	722	448	54	682	682
Volume Left	49	0	0	0	0	54	0	0
Volume Right	0	65	0	0	87	0	0	0
cSH	159	491	1700	1700	1700	312	1700	1700
Volume to Capacity	0.31	0.13	0.42	0.42	0.26	0.17	0.40	0.40
Queue Length 95th (m)	9.8	3.6	0.0	0.0	0.0	5.0	0.0	0.0
Control Delay (s)	37.4	13.5	0.0	0.0	0.0	19.0	0.0	0.0
Lane LOS	E	B				C		
Approach Delay (s)	23.7		0.0			0.7		
Approach LOS	C							

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

FUTURE TOTAL

Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	305	708	173	739	366	103	1615	291	1188	271
v/c Ratio	0.88	0.66	0.67	0.96	0.75	0.58	0.96	0.93	0.83	0.34
Control Delay	56.2	39.1	39.0	70.7	26.3	32.2	53.8	68.0	37.9	5.4
Queue Delay	0.0	0.0	0.0	9.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	39.1	39.0	80.0	26.3	32.2	53.8	68.0	37.9	5.4
Queue Length 50th (m)	55.9	79.2	26.9	96.1	31.0	12.4	142.6	54.3	136.7	4.3
Queue Length 95th (m)	#75.9	97.8	36.7	#136.5	62.5	26.0	#177.5	#109.3	167.0	17.8
Internal Link Dist (m)		75.0		96.4			70.4		59.0	
Turn Bay Length (m)	60.0		45.0		74.0	44.0		63.0		
Base Capacity (vph)	348	1079	259	770	488	178	1679	313	1431	796
Starvation Cap Reductn	0	0	0	36	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.66	0.67	1.01	0.75	0.58	0.96	0.93	0.83	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

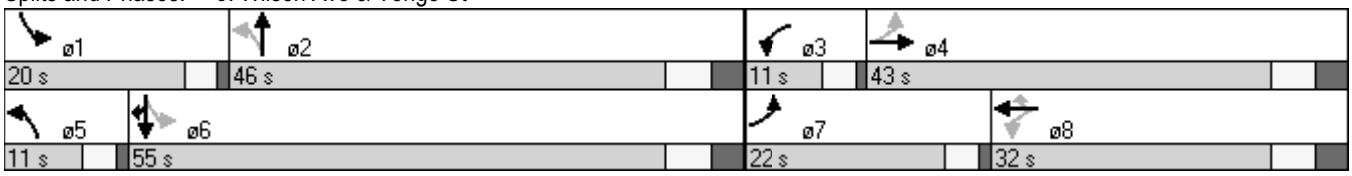
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	580	45	135	695	315	95	1435	100	265	1105	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.89	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1767	3482		1765	3535	1405	1684	5001		1750	3500	1597
Flt Permitted	0.14	1.00		0.31	1.00	1.00	0.10	1.00		0.09	1.00	1.00
Satd. Flow (perm)	256	3482		581	3535	1405	182	5001		171	3500	1597
Peak-hour factor, PHF	0.77	0.88	0.92	0.78	0.94	0.86	0.92	0.96	0.83	0.91	0.93	0.85
Adj. Flow (vph)	305	659	49	173	739	366	103	1495	120	291	1188	271
RTOR Reduction (vph)	0	5	0	0	0	182	0	7	0	0	0	143
Lane Group Flow (vph)	305	703	0	173	739	184	103	1608	0	291	1188	128
Confl. Peds. (#/hr)	45		6	6		45	22		24	24		22
Heavy Vehicles (%)	1%	1%	5%	1%	1%	1%	6%	1%	0%	2%	2%	0%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		Prot
Protected Phases	7	4		3	8		5	2		1	6	6
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	47.0	36.0		32.1	25.1	25.1	46.0	39.1		59.0	48.1	48.1
Effective Green, g (s)	48.0	37.0		34.1	26.1	26.1	48.0	40.1		60.0	49.1	49.1
Actuated g/C Ratio	0.40	0.31		0.28	0.22	0.22	0.40	0.33		0.50	0.41	0.41
Clearance Time (s)	4.0	7.0		4.0	7.0	7.0	4.0	7.0		4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	340	1074		244	769	306	172	1671		308	1432	653
v/s Ratio Prot	c0.14	0.20		0.05	0.21		0.04	0.32		c0.13	0.34	0.08
v/s Ratio Perm	c0.22			0.15		0.13	0.20			c0.34		
v/c Ratio	0.90	0.65		0.71	0.96	0.60	0.60	0.96		0.94	0.83	0.20
Uniform Delay, d1	32.4	36.0		35.0	46.4	42.3	25.9	39.2		35.9	31.7	22.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	24.8	1.4		9.1	23.2	3.3	5.5	14.7		36.6	5.7	0.7
Delay (s)	57.2	37.4		44.1	69.7	45.6	31.4	53.9		72.5	37.4	23.4
Level of Service	E	D		D	E	D	C	D		E	D	C
Approach Delay (s)		43.4			59.3			52.5			41.1	
Approach LOS		D			E			D			D	

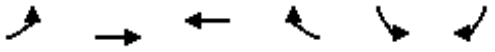
Intersection Summary			
HCM Average Control Delay	48.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	20	46	11	43	11	55	22	32
Maximum Split (%)	16.7%	38.3%	9.2%	35.8%	9.2%	45.8%	18.3%	26.7%
Minimum Split (s)	11	23	11	23	11	23	11	23
Yellow Time (s)	3	4	3	4	3	4	3	4
All-Red Time (s)	1	3	1	3	1	3	1	3
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	100	0	46	57	100	111	46	68
End Time (s)	0	46	57	100	111	46	68	100
Yield/Force Off (s)	116	39	53	93	107	39	64	93
Yield/Force Off 170(s)	116	28	53	82	107	28	64	82
Local Start Time (s)	100	0	46	57	100	111	46	68
Local Yield (s)	116	39	53	93	107	39	64	93
Local Yield 170(s)	116	28	53	82	107	28	64	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 3: Wilson Ave & Yonge St





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	60	890	945	105	15	20
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	967	1027	114	16	22
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			99			
pX, platoon unblocked	0.80				0.80	0.80
vC, conflicting volume	1141				1698	571
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	664				1364	0
tC, single (s)	4.1				*5.8	*5.8
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				89	97
cM capacity (veh/h)	733				149	863

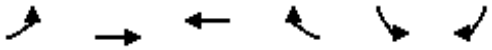
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	65	484	484	685	457	16	22
Volume Left	65	0	0	0	0	16	0
Volume Right	0	0	0	0	114	0	22
cSH	733	1700	1700	1700	1700	149	863
Volume to Capacity	0.09	0.28	0.28	0.40	0.27	0.11	0.03
Queue Length 95th (m)	2.3	0.0	0.0	0.0	0.0	2.9	0.6
Control Delay (s)	10.4	0.0	0.0	0.0	0.0	32.1	9.3
Lane LOS	B					D	A
Approach Delay (s)	0.7			0.0		19.1	
Approach LOS						C	

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	22	1071	1299	27	49
v/c Ratio	0.28	0.37	0.49	0.04	0.47
Control Delay	46.3	4.1	10.3	7.6	38.1
Queue Delay	0.0	0.3	0.0	0.0	0.0
Total Delay	46.3	4.4	10.3	7.6	38.1
Queue Length 50th (m)	3.8	29.5	39.4	0.6	4.7
Queue Length 95th (m)	11.1	51.7	125.4	6.1	15.3
Internal Link Dist (m)		96.4	68.5		44.0
Turn Bay Length (m)	71.0			22.0	
Base Capacity (vph)	94	2915	2647	607	180
Starvation Cap Reductn	0	1070	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.23	0.58	0.49	0.04	0.27

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	20	985	1195	25	25	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.94	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	892	3500	3500	799	859	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	892	3500	3500	799	859	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	1071	1299	27	27	22
RTOR Reduction (vph)	0	0	0	4	20	0
Lane Group Flow (vph)	22	1071	1299	23	29	0
Heavy Vehicles (%)	100%	2%	2%	100%	100%	100%
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	4.1	69.4	58.3	58.3	6.6	
Effective Green, g (s)	4.1	69.4	58.3	58.3	6.6	
Actuated g/C Ratio	0.05	0.77	0.65	0.65	0.07	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	41	2699	2267	518	63	
v/s Ratio Prot	0.02	c0.31	c0.37		c0.03	
v/s Ratio Perm				0.03		
v/c Ratio	0.54	0.40	0.57	0.04	0.45	
Uniform Delay, d1	42.0	3.4	8.9	5.7	40.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.8	0.4	1.1	0.2	5.1	
Delay (s)	54.9	3.8	9.9	5.9	45.1	
Level of Service	D	A	A	A	D	
Approach Delay (s)		4.9	9.9		45.1	
Approach LOS		A	A		D	

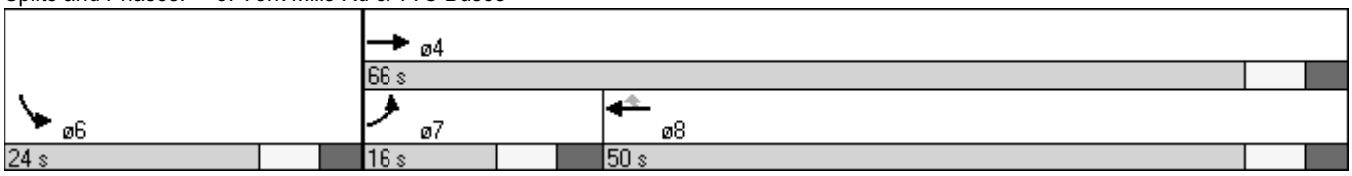
Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

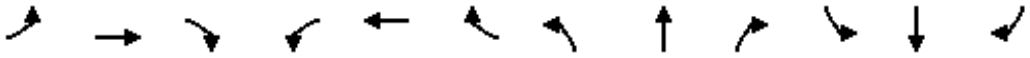
c Critical Lane Group

Phase Number	4	6	7	8
Movement	EBT	SBL	EBL	WBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	66	24	16	50
Maximum Split (%)	73.3%	26.7%	17.8%	55.6%
Minimum Split (s)	23	23	11	23
Yellow Time (s)	4	4	4	4
All-Red Time (s)	3	3	3	3
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5		5
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	24	0	24	40
End Time (s)	0	24	40	0
Yield/Force Off (s)	83	17	33	83
Yield/Force Off 170(s)	72	6	33	72
Local Start Time (s)	74	50	74	0
Local Yield (s)	43	67	83	43
Local Yield 170(s)	32	56	83	32

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	65
Offset: 40 (44%), Referenced to phase 4:EBT and 8:WBT, Start of Green	

Splits and Phases: 8: York Mills Rd & TTC Buses





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	935	25	170	1145	15	20	0	160	5	0	35
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	1016	27	185	1245	16	22	0	174	5	0	38
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (m)		92										
pX, platoon unblocked				0.90			0.90	0.90	0.90	0.90	0.90	
vC, conflicting volume	1261			1043			2158	2758	522	2402	2764	630
vC1, stage 1 conf vol							1128	1128		1622	1622	
vC2, stage 2 conf vol							1030	1630		780	1141	
vCu, unblocked vol	1261			828			2065	2732	249	2336	2738	630
tC, single (s)	4.1			4.1			*6.0	6.5	*6.0	*6.0	6.5	*6.0
tC, 2 stage (s)							5.0	5.5		5.0	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			74			88	100	76	96	100	92
cM capacity (veh/h)	547			720			185	65	722	124	72	500

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	49	678	366	185	830	431	196	43
Volume Left	49	0	0	185	0	0	22	5
Volume Right	0	0	27	0	0	16	174	38
cSH	547	1700	1700	720	1700	1700	546	363
Volume to Capacity	0.09	0.40	0.22	0.26	0.49	0.25	0.36	0.12
Queue Length 95th (m)	2.3	0.0	0.0	8.2	0.0	0.0	12.9	3.2
Control Delay (s)	12.2	0.0	0.0	11.7	0.0	0.0	15.2	16.3
Lane LOS	B			B			C	C
Approach Delay (s)	0.5			1.5			15.2	16.3
Approach LOS							C	C

Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	60.2%	ICU Level of Service		B
Analysis Period (min)	15			

* User Entered Value

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	40	105	1555	135	55	1245
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	114	1690	147	60	1353
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			TWLTL
Median storage veh)						2
Upstream signal (m)						95
pX, platoon unblocked	0.70					
vC, conflicting volume	2560	637			1837	
vC1, stage 1 conf vol	1764					
vC2, stage 2 conf vol	796					
vCu, unblocked vol	2367	637			1837	
tC, single (s)	*6.0	*6.0			4.1	
tC, 2 stage (s)	5.0					
tF (s)	3.5	3.3			2.2	
p0 queue free %	75	77			82	
cM capacity (veh/h)	172	496			328	

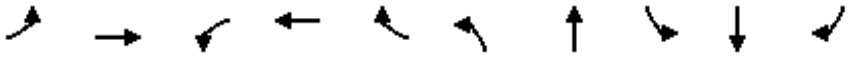
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	43	114	676	676	485	60	677	677
Volume Left	43	0	0	0	0	60	0	0
Volume Right	0	114	0	0	147	0	0	0
cSH	172	496	1700	1700	1700	328	1700	1700
Volume to Capacity	0.25	0.23	0.40	0.40	0.29	0.18	0.40	0.40
Queue Length 95th (m)	7.7	7.0	0.0	0.0	0.0	5.3	0.0	0.0
Control Delay (s)	32.9	14.4	0.0	0.0	0.0	18.4	0.0	0.0
Lane LOS	D	B				C		
Approach Delay (s)	19.5		0.0			0.8		
Approach LOS	C							

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

FUTURE TOTAL

Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	311	857	222	641	238	109	1694	284	1198	196
v/c Ratio	0.90	0.95	0.90	0.90	0.48	0.56	0.95	0.92	0.79	0.25
Control Delay	60.2	63.2	66.0	63.5	9.9	28.5	50.1	66.1	34.7	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.2	63.2	66.0	63.5	9.9	28.5	50.1	66.1	34.7	4.9
Queue Length 50th (m)	57.6	109.3	36.7	82.4	2.6	12.7	148.8	52.5	133.4	2.6
Queue Length 95th (m)	#110.9	#150.4	#50.1	#116.3	21.2	25.0	#184.0	#100.8	162.6	16.9
Internal Link Dist (m)		75.0		96.4			70.4		59.0	
Turn Bay Length (m)	60.0		45.0		74.0	44.0		63.0		
Base Capacity (vph)	348	908	247	713	495	194	1785	313	1507	783
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.94	0.90	0.90	0.48	0.56	0.95	0.91	0.79	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	725	55	160	615	205	100	1495	115	250	1090	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0	6.0	3.0	6.0		3.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1767	3500		1767	3535	1566	1750	5025		1750	3535	1597
Flt Permitted	0.15	1.00		0.17	1.00	1.00	0.11	1.00		0.09	1.00	1.00
Satd. Flow (perm)	274	3500		307	3535	1566	205	5025		162	3535	1597
Peak-hour factor, PHF	0.90	0.91	0.92	0.72	0.96	0.86	0.92	0.95	0.96	0.88	0.91	0.92
Adj. Flow (vph)	311	797	60	222	641	238	109	1574	120	284	1198	196
RTOR Reduction (vph)	0	4	0	0	0	180	0	7	0	0	0	102
Lane Group Flow (vph)	311	853	0	222	641	58	109	1687	0	284	1198	94
Heavy Vehicles (%)	1%	1%	0%	1%	1%	2%	2%	1%	1%	2%	1%	0%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		Prot
Protected Phases	7	4		3	8		5	2		1	6	6
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	44.9	29.9		34.2	23.2	23.2	48.4	41.5		61.1	50.2	50.2
Effective Green, g (s)	45.9	30.9		36.2	24.2	24.2	50.4	42.5		62.1	51.2	51.2
Actuated g/C Ratio	0.38	0.26		0.30	0.20	0.20	0.42	0.35		0.52	0.43	0.43
Clearance Time (s)	4.0	7.0		4.0	7.0	7.0	4.0	7.0		4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	337	901		239	713	316	188	1780		304	1508	681
v/s Ratio Prot	c0.14	c0.24		0.09	0.18		0.04	0.34		c0.13	0.34	0.06
v/s Ratio Perm	0.21			0.19		0.04	0.21			c0.35		
v/c Ratio	0.92	0.95		0.93	0.90	0.18	0.58	0.95		0.93	0.79	0.14
Uniform Delay, d1	32.5	43.7		35.1	46.7	39.7	24.3	37.7		36.0	29.8	21.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	29.9	18.2		38.8	14.1	0.3	4.3	12.1		34.5	4.4	0.4
Delay (s)	62.4	61.9		73.8	60.8	40.0	28.6	49.8		70.5	34.2	21.4
Level of Service	E	E		E	E	D	C	D		E	C	C
Approach Delay (s)		62.0			59.0			48.5			38.9	
Approach LOS		E			E			D			D	

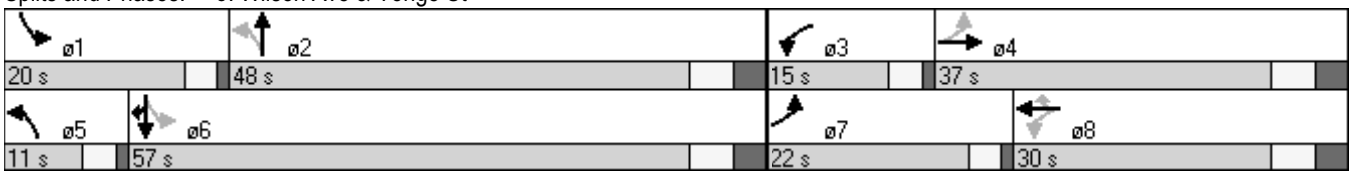
Intersection Summary			
HCM Average Control Delay	50.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

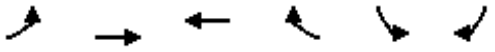
c Critical Lane Group

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	20	48	15	37	11	57	22	30
Maximum Split (%)	16.7%	40.0%	12.5%	30.8%	9.2%	47.5%	18.3%	25.0%
Minimum Split (s)	11	23	11	23	11	23	11	23
Yellow Time (s)	3	4	3	4	3	4	3	4
All-Red Time (s)	1	3	1	3	1	3	1	3
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	100	0	48	63	100	111	48	70
End Time (s)	0	48	63	100	111	48	70	100
Yield/Force Off (s)	116	41	59	93	107	41	66	93
Yield/Force Off 170(s)	116	30	59	82	107	30	66	82
Local Start Time (s)	100	0	48	63	100	111	48	70
Local Yield (s)	116	41	59	93	107	41	66	93
Local Yield 170(s)	116	30	59	82	107	30	66	82

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection	

Splits and Phases: 3: Wilson Ave & Yonge St





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	1025	910	15	70	75
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	1114	989	16	76	82
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			99			
pX, platoon unblocked	0.82				0.82	0.82
vC, conflicting volume	1005				1576	503
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	582				1274	0
tC, single (s)	4.1				*5.8	*5.8
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				59	91
cM capacity (veh/h)	815				187	894

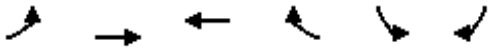
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	11	557	557	659	346	76	82
Volume Left	11	0	0	0	0	76	0
Volume Right	0	0	0	0	16	0	82
cSH	815	1700	1700	1700	1700	187	894
Volume to Capacity	0.01	0.33	0.33	0.39	0.20	0.41	0.09
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	14.6	2.4
Control Delay (s)	9.5	0.0	0.0	0.0	0.0	36.9	9.4
Lane LOS	A					E	A
Approach Delay (s)	0.1			0.0		22.7	
Approach LOS						C	

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	16	1217	1076	27	43
v/c Ratio	0.22	0.42	0.39	0.04	0.43
Control Delay	44.9	4.3	6.8	5.4	39.6
Queue Delay	0.0	0.4	0.0	0.0	0.0
Total Delay	44.9	4.7	6.8	5.4	39.6
Queue Length 50th (m)	2.8	35.3	29.5	0.5	4.7
Queue Length 95th (m)	9.1	60.7	91.0	5.5	14.6
Internal Link Dist (m)		96.4	68.5		44.0
Turn Bay Length (m)	71.0			22.0	
Base Capacity (vph)	74	2921	2788	639	205
Starvation Cap Reductn	0	1007	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.22	0.64	0.39	0.04	0.21

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	15	1120	990	25	25	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.95	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	892	3500	3500	799	865	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	892	3500	3500	799	865	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	1217	1076	27	27	16
RTOR Reduction (vph)	0	0	0	5	15	0
Lane Group Flow (vph)	16	1217	1076	22	28	0
Heavy Vehicles (%)	100%	2%	2%	100%	100%	100%
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	2.0	69.5	60.5	60.5	6.5	
Effective Green, g (s)	2.0	69.5	60.5	60.5	6.5	
Actuated g/C Ratio	0.02	0.77	0.67	0.67	0.07	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	20	2703	2353	537	62	
v/s Ratio Prot	0.02	c0.35	0.31		c0.03	
v/s Ratio Perm				0.03		
v/c Ratio	0.80	0.45	0.46	0.04	0.45	
Uniform Delay, d1	43.8	3.6	7.0	5.0	40.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	110.1	0.5	0.6	0.1	5.2	
Delay (s)	153.9	4.1	7.6	5.1	45.3	
Level of Service	F	A	A	A	D	
Approach Delay (s)		6.1	7.6		45.3	
Approach LOS		A	A		D	

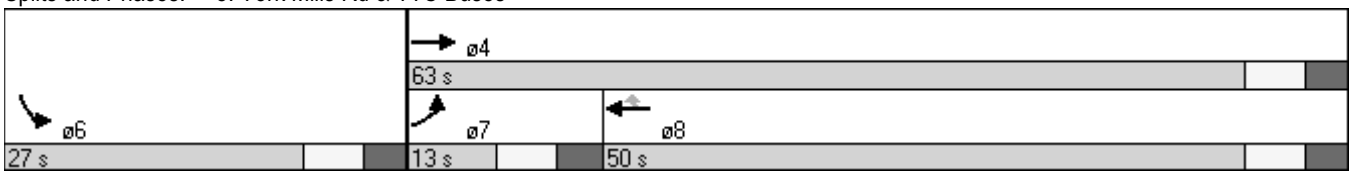
Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	4	6	7	8
Movement	EBT	SBL	EBL	WBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	63	27	13	50
Maximum Split (%)	70.0%	30.0%	14.4%	55.6%
Minimum Split (s)	23	23	11	23
Yellow Time (s)	4	4	4	4
All-Red Time (s)	3	3	3	3
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	5		5
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	27	0	27	40
End Time (s)	0	27	40	0
Yield/Force Off (s)	83	20	33	83
Yield/Force Off 170(s)	72	9	33	72
Local Start Time (s)	77	50	77	0
Local Yield (s)	43	70	83	43
Local Yield 170(s)	32	59	83	32

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 40 (44%), Referenced to phase 4:EBT and 8:WBT, Start of Green	

Splits and Phases: 8: York Mills Rd & TTC Buses



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	1095	25	100	940	10	10	0	110	25	0	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	1190	27	109	1022	11	11	0	120	27	0	43
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (m)		92										
pX, platoon unblocked				0.88			0.88	0.88	0.88	0.88	0.88	
vC, conflicting volume	1033			1217			2019	2497	609	2003	2505	516
vC1, stage 1 conf vol							1247	1247		1245	1245	
vC2, stage 2 conf vol							772	1250		758	1261	
vCu, unblocked vol	1033			965			1880	2426	269	1861	2435	516
tC, single (s)	4.1			4.1			*6.0	6.5	*6.0	*6.0	6.5	*6.0
tC, 2 stage (s)							5.0	5.5		5.0	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			83			96	100	83	87	100	92
cM capacity (veh/h)	669			621			248	144	684	214	121	576

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	22	793	424	109	681	351	130	71
Volume Left	22	0	0	109	0	0	11	27
Volume Right	0	0	27	0	0	11	120	43
cSH	669	1700	1700	621	1700	1700	597	349
Volume to Capacity	0.03	0.47	0.25	0.17	0.40	0.21	0.22	0.20
Queue Length 95th (m)	0.8	0.0	0.0	5.0	0.0	0.0	6.6	6.0
Control Delay (s)	10.6	0.0	0.0	12.0	0.0	0.0	12.7	17.9
Lane LOS	B			B			B	C
Approach Delay (s)	0.2			1.1			12.7	17.9
Approach LOS							B	C

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	57.1%	ICU Level of Service		B
Analysis Period (min)	15			

* User Entered Value

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	45	60	1655	80	50	1260
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	65	1799	87	54	1370
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			TWLTL
Median storage veh)						2
Upstream signal (m)						95
pX, platoon unblocked	0.71					
vC, conflicting volume	2636	643			1886	
vC1, stage 1 conf vol	1842					
vC2, stage 2 conf vol	793					
vCu, unblocked vol	2485	643			1886	
tC, single (s)	*6.0	*6.0			4.1	
tC, 2 stage (s)	5.0					
tF (s)	3.5	3.3			2.2	
p0 queue free %	69	87			83	
cM capacity (veh/h)	160	492			314	

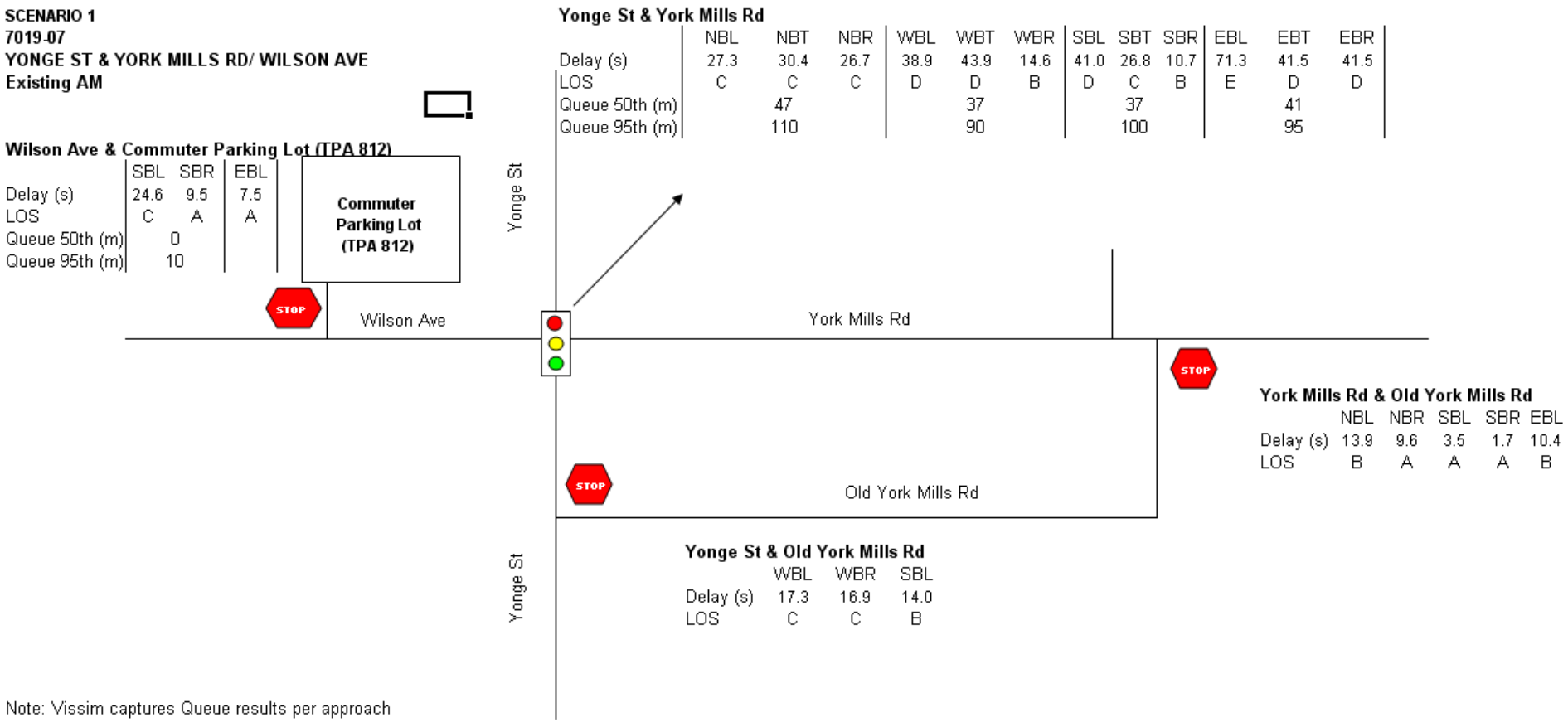
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	49	65	720	720	447	54	685	685
Volume Left	49	0	0	0	0	54	0	0
Volume Right	0	65	0	0	87	0	0	0
cSH	160	492	1700	1700	1700	314	1700	1700
Volume to Capacity	0.31	0.13	0.42	0.42	0.26	0.17	0.40	0.40
Queue Length 95th (m)	9.7	3.6	0.0	0.0	0.0	4.9	0.0	0.0
Control Delay (s)	37.2	13.4	0.0	0.0	0.0	18.9	0.0	0.0
Lane LOS	E	B				C		
Approach Delay (s)	23.6		0.0			0.7		
Approach LOS	C							

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

VISSIM Analysis Sheets

SCENARIO 1
7019-07
YONGE ST & YORK MILLS RD/ WILSON AVE
Existing AM



Note: Vissim captures Queue results per approach

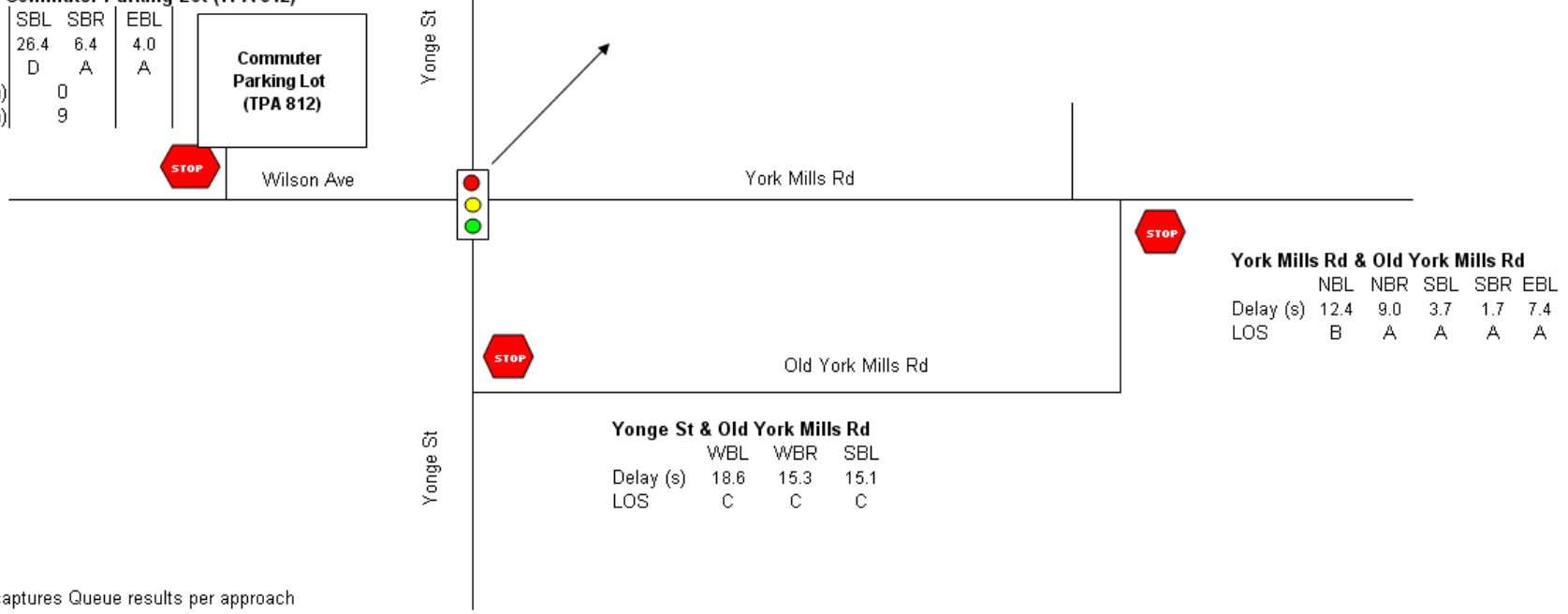
SCENARIO 2
7019-07
YONGE ST & YORK MILLS RD/ WILSON AVE
Existing PM

Yonge St & York Mills Rd

	NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR
Delay (s)	27.2	29.1	25.7	40.1	42.0	10.6	49.6	26.8	8.8	48.7	42.8	42.8
LOS	C	C	C	D	D	B	D	C	A	D	D	D
Queue 50th (m)		41			30			38			42	
Queue 95th (m)		109			71			100			91	

Wilson Ave & Commuter Parking Lot (TPA 812)

	SBL	SBR	EBL
Delay (s)	26.4	6.4	4.0
LOS	D	A	A
Queue 50th (m)	0		
Queue 95th (m)	9		



York Mills Rd & Old York Mills Rd

	NBL	NBR	SBL	SBR	EBL
Delay (s)	12.4	9.0	3.7	1.7	7.4
LOS	B	A	A	A	A

Yonge St & Old York Mills Rd

	WBL	WBR	SBL
Delay (s)	18.6	15.3	15.1
LOS	C	C	C

Note: Vissim captures Queue results per approach

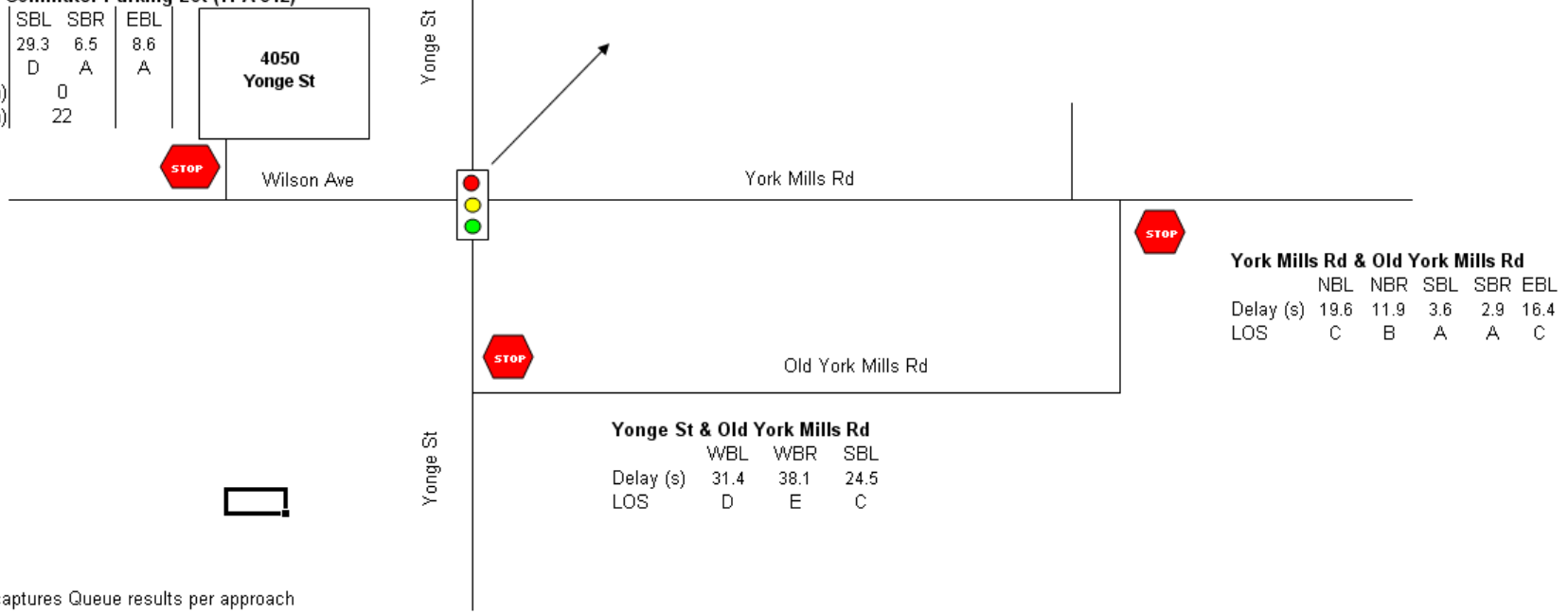
SCENARIO 3
7019-07
YONGE ST & YORK MILLS RD/ WILSON AVE
Future Total AM

Yonge St & York Mills Rd

	NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR
Delay (s)	39.8	41.6	50.5	44.1	45.6	25.4	61.9	34.7	31.7	59.3	40.4	40.4
LOS	D	D	D	D	D	C	E	C	C	E	D	D
Queue 50th (m)		85			44			57			37	
Queue 95th (m)		147			160			145			97	

Wilson Ave & Commuter Parking Lot (TPA 812)

	SBL	SBR	EBL
Delay (s)	29.3	6.5	8.6
LOS	D	A	A
Queue 50th (m)	0		
Queue 95th (m)	22		



York Mills Rd & Old York Mills Rd

	NBL	NBR	SBL	SBR	EBL
Delay (s)	19.6	11.9	3.6	2.9	16.4
LOS	C	B	A	A	C

Yonge St & Old York Mills Rd

	WBL	WBR	SBL
Delay (s)	31.4	38.1	24.5
LOS	D	E	C

Note: Vissim captures Queue results per approach

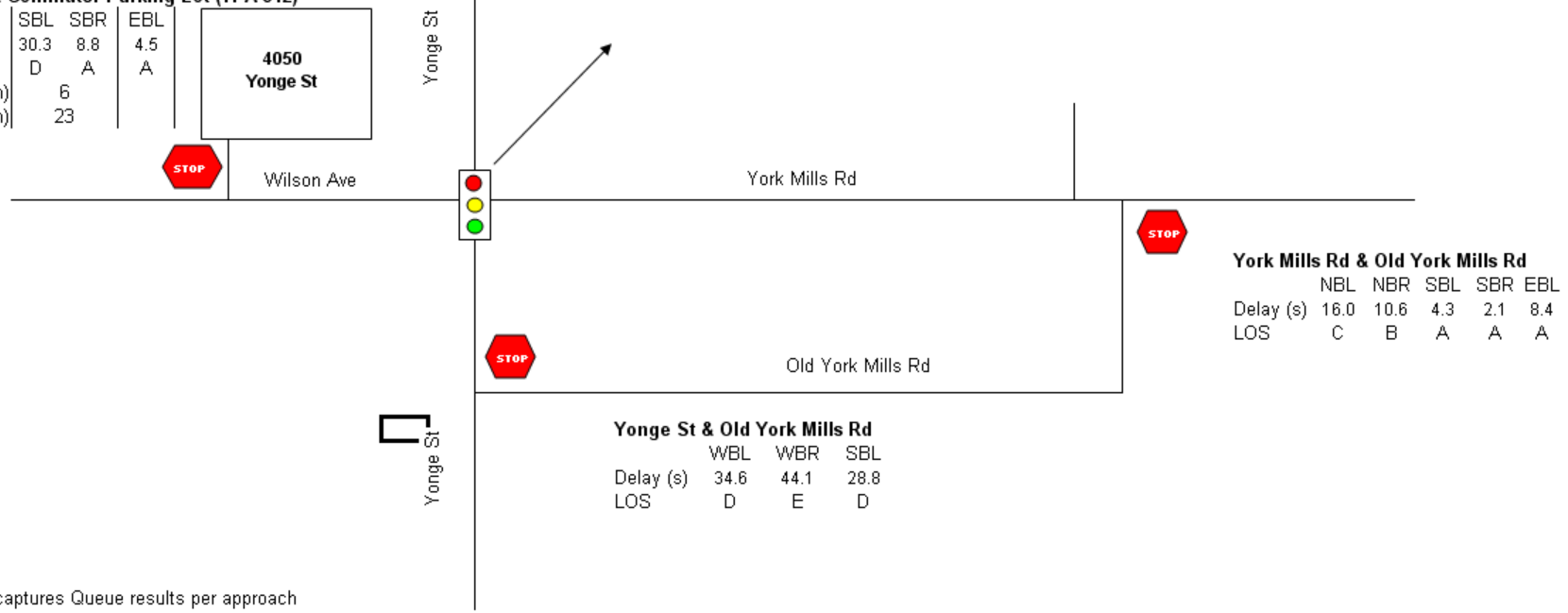
SCENARIO 4
7019-07
YONGE ST & YORK MILLS RD/ WILSON AVE
Future Total PM

Yonge St & York Mills Rd

	NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR
Delay (s)	44.7	48.6	58.3	46.8	41.0	18.1	62.7	33.5	30.1	49.0	40.8	40.8
LOS	D	D	E	D	D	B	E	C	C	D	D	D
Queue 50th (m)		89			32			52			44	
Queue 95th (m)		180			127			123			96	

Wilson Ave & Commuter Parking Lot (TPA 812)

	SBL	SBR	EBL
Delay (s)	30.3	8.8	4.5
LOS	D	A	A
Queue 50th (m)	6		
Queue 95th (m)	23		



York Mills Rd & Old York Mills Rd

	NBL	NBR	SBL	SBR	EBL
Delay (s)	16.0	10.6	4.3	2.1	8.4
LOS	C	B	A	A	A

Yonge St & Old York Mills Rd

	WBL	WBR	SBL
Delay (s)	34.6	44.1	28.8
LOS	D	E	D

Note: Vissim captures Queue results per approach

Project Name: 4050 Yonge St.
Project No: 7019.07
Location: York Mills Commuter Lot, Outbound to Wilson Ave
Date: AM Wed Jan 19, PM Tues Jan 18, 2011

Delay Summary

(seconds)	Total Delay	Left Turn Delay	Right Turn Delay	Courtesy Gap	2-Stage Gap	EB Queue Block Left Lane	EB Queue Block Thru Lane
2-HR Period 07:30-09:30				1	0	0	0
Minimum Delay	0	0	0				
Average Delay	14	18	11				
85th Percentile	30	33	21				
95th Percentile	43	46	34				
Maximum Delay	84	84	43				
Peak Hour 7:45-8:45				1	0	0	0
Minimum Delay	0	0	0				
Average Delay	17	22	13				
85th Percentile	32	44	28				
95th Percentile	44	56	36				
Maximum Delay	84	84	43				
2-HR Period 16:00-18:00				6	6	7	9
Minimum Delay	0	0	0				
Average Delay	13	18	8				
85th Percentile	23	40	18				
95th Percentile	42	52	23				
Maximum Delay	102	102	32				
Peak Hour 16:55-17:55				4	2	6	6
Minimum Delay	0	1	0				
Average Delay	14	22	7				
85th Percentile	23	41	14				
95th Percentile	42	50	20				
Maximum Delay	102	102	28				