

Report to/Rapport au :
Transportation Committee
Comité des transports
and Council / et au Conseil

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KANATA NORTH-NORD (4) WEST
CARLETON-MARCH (5)

Ref N°: ACS2012-PAI-PGM-0240

**SUBJECT: KANATA NORTH TRANSITWAY (HIGHWAY 417/MARCH-EAGLESON
INTERCHANGE TO NORTH OF MAXWELL BRIDGE ROAD) -
PLANNING STUDY: FUNCTIONAL DESIGN RECOMMENDATIONS**

**OBJET : TRANSITWAY DE KANATA NORD (ÉCHANGEUR DE L'AUTOROUTE
417/CHEMIN MARCH-EAGLESON AU NORD DU CHEMIN MAXWELL
BRIDGE) - ÉTUDE DE PLANIFICATION : RECOMMANDATIONS
ENTOURANT LA CONCEPTION FONCTIONNELLE**

REPORT RECOMMENDATIONS

That the Transportation Committee recommend Council approve initiating the Transit Project Assessment Process in accordance with *Ontario Environmental Assessment Act* (Regulation 231/08) for the Kanata North Bus Rapid Transit facility as described in this report and supporting documents including the preparation and filing of the Environmental Project Report for final public review and comment.

RECOMMANDATIONS DU RAPPORT

Que le Comité des transports recommande au Conseil d'approuver le déclenchement du processus d'évaluation du projet de transport en commun pour l'installation de transport en commun rapide par autobus de Kanata-Nord, conformément à la *Loi sur les évaluations environnementales de l'Ontario*

(Règlement 231/08), comme le décrit ce rapport et les documents à l'appui, y compris la préparation et le dépôt du rapport d'étude environnementale pour examen officiel et émission de commentaires par le public.

Executive Summary

The 2008 Transportation Master Plan (TMP) identifies two bus rapid transit (BRT) corridors in Kanata area:

- Kanata North along March Road
- Kanata West from Terry Fox Drive to Fernbank Road

The Kanata North Transitway traverses north along March Road from Highway 417/March-Eagleson Road to north of Maxwell Bridge Road and provides a connection to West Transitway near March-Eagleson interchange. This section previously was known as West Transitway Connections: Highway 417/Eagleson Road to Old Carp Road.

The Kanata West section extends west of Terry Fox Drive and has a southern extension that proceeds through development areas known as Kanata West and Stittsville to the urban boundary at Fernbank Road.

Initially the two segments were combined into one Environmental Assessment (EA) Study (West Transitway Connections) for efficiency and economies of scale. However, as the study developed, the joint schedule became incompatible. There was urgency to develop the Kanata West section quickly due to development issues, while the Kanata North section required more time to develop and evaluate a number of corridor options. The Kanata West assessment continued separately, with the functional design approved by Council in September 2010, and completion of the EA following.

This report focuses on the functional design for Kanata North section.

Assumption and Analysis

The Kanata North Transitway is part of the Council-approved rapid transit network in the 2008 TMP. The EA Study is undertaken to develop the functional design of the proposed transitway facility in Kanata North and protect the corridor to allow for future developments to proceed accordingly.

During the planning phase of this study, six alternative corridors were developed and evaluated based on City and National Capital Commission (NCC) policy directives. The NCC is referenced because of federal land requirements. Also, two design options which included Median and Shoulder/curb-side Transit Lanes were assessed for transit operation. The March Road corridor with Median Transit Lanes is recommended as it offers the best ridership catchment area. It also has potential for good connectivity for pedestrians and cyclists and will support transit-oriented development opportunities.

This study also included an examination of the Kanata North Transitway link to the West Transitway and provides connection to Moodie-March and March-Terry Fox sections of

the West Transitway. A new grade-separated Station at March Road (near the Highway 417/March-Eagleson interchange) will be provided to serve as a transfer point. A new pedestrian bridge is proposed, connecting to the existing Eagleson Park and Ride lot. Through the EA process of this planning exercise, the study team will continue to include a walk-in solution for transit users at Teron Station, as well as include the connections/transfers of local transit service to the Transitway, particularly at March Station.

The TMP and Official Plan both indicate the requirement for new Park and Ride facilities to serve communities outside the Greenbelt area. This study identifies two additional Park and Ride locations in Kanata North. The facility at Innovation Drive will provide space for approximately 1,000 parking stalls for which land has been acquired by the City. The second lot identified along March Road (north of Maxwell Bridge Road) to accommodate future demand could have approximately 500 parking spots. Its precise location will be confirmed through future planning exercises.

Bicycle lanes also have been provided along the corridor to encourage active mode of transportation within the area. A segregated bicycle facility will be designed during detailed design phase of the project.

Additional land is required beyond the existing road allowance. This is estimated to be approximately 4.66 hectares which affects properties owned by the Ministry of Transportation of Ontario (MTO), Ministry of Government Services, the National Capital Commission (NCC) and private land owners along the corridor.

Salient Features of the Project:

- Length of Transitway: Approx. 6.25 km
- Transitway stations: 8
(March, Corkstown, Herzberg, Teron, Carling, Solandt, Terry Fox and Klondike)
- Park and Ride Lots: 2
 - Terry Fox Drive/Innovation Drive
 - March Road (north of Maxwell Bridge Road)
- Grade-separated structures: 3
 - Future West Transitway/March Road
 - March Road/Campeau Drive
 - Pedestrian overpass between new March Station and Eagleson Park and Ride lot
- Bicycle lanes

Functional Design drawings of the facility are shown in Document 1.

Project Estimate

The preliminary project cost estimate to design and construct the transitway facility is \$350 million in 2012 dollars. This estimate will be refined after detailed design of the project, and the revised estimate will include inflation in accordance with the Construction Price Index.

This project can be implemented in stages, and components can be coordinated with other projects (such as the new March Station, its connection with future West Transitway and the below grade section from Corkstown to the new station with the construction of West Transitway (Moodie - March).

The upcoming Transportation Master Plan review will include an update to the affordability model and the establishment of project priorities. This project will be part of that review.

Public Consultation/Input

The Study benefitted from the review and feedback of participants from approval agencies, Aboriginal Communities (Algonquins of Ontario and Métis), stakeholder groups, community organizations, property owners, and businesses within the study area. In addition to the Agency, Business and Public Consultation Group meetings (three meetings each), three Public Open Houses were also conducted during the planning phase of the study.

A project bulletin and comment-questionnaire were developed and distributed at each of the open houses. A project website (<http://ottawa.ca/transitconnectstudy>) was established which provides information about the study progress.

Consultation efforts will continue as the study progresses to the EA phase of this project.

Specific concerns include noise, vibration and environmental impacts of the transit facility, encouraging local transit service, park and ride locations, accessibility to existing and future park and ride lots and viability of a transit corridor along Teron Road. Comments also supported March Road as the best alternative.

Résumé

Le Plan directeur des transports (PDT) de 2008 indique deux couloirs de transport en commun rapide par autobus (TCRA) dans le secteur de Kanata :

- couloir Kanata-Nord le long du chemin March
- couloir Kanata-Ouest depuis la promenade Terry-Fox au chemin Fernbank.

Le Transitway Kanata-Nord passe au nord le long du chemin March, de l'autoroute 417 et le chemin March-Eagleson jusqu'au nord du chemin Maxwell Bridge et il fournit un raccordement vers le Transitway Ouest à proximité de l'échangeur March-Eagleson. Ce tronçon-ci était autrefois appelé le raccordement du Transitway Ouest : Autoroute 417/chemin Eagleson jusqu'au chemin Old Carp.

Le tronçon Kanata-Ouest se prolonge à l'ouest de la promenade Terry-Fox et vers le sud, traversant les secteurs d'aménagement connus sous les noms de Kanata-Ouest et de Stittsville pour atteindre la limite du secteur urbain à la hauteur du chemin Fernbank.

Initialement, ces deux tronçons ont été fusionnés dans une seule étude d'évaluation environnementale (sur les raccordements du Transitway Ouest) aux fins d'efficacité et d'économie d'échelle. Toutefois, à mesure que progressait l'étude, un calendrier conjoint pour les deux tronçons s'est avéré incompatible. Il y avait urgence de procéder rapidement pour le secteur de Kanata-Ouest à cause de problèmes d'aménagement, tandis que l'aménagement du secteur de Kanata-Nord et l'évaluation d'un certain nombre de choix de couloirs dans ce secteur demandaient plus de temps. L'évaluation de Kanata-Ouest s'est poursuivie séparément et la conception fonctionnelle a été approuvée par le Conseil en septembre 2010. L'achèvement de l'évaluation environnementale a suivi.

Ce rapport porte plus spécifiquement sur la conception fonctionnelle du tronçon de Kanata-Nord.

Hypothèses et analyses

Le Transitway de Kanata-Nord fait partie du réseau de transport en commun rapide approuvé par le Conseil dans le PDT 2008. L'étude d'évaluation environnementale est effectuée pour élaborer la conception fonctionnelle de l'installation du Transitway proposée pour Kanata-Nord et pour protéger le couloir afin que des projets d'aménagement puissent procéder en conséquence.

Durant la phase de planification de cette étude, six couloirs possibles ont été conçus et évalués en fonction des lignes directrices de la Ville et de la Commission de la capitale nationale (CCN). La CCN est impliquée à cause d'exigences liées aux terres fédérales. Aussi, deux projets de conception comportant des voies médianes et en bordure de route réservées au transport en commun ont été évalués. Le couloir du chemin March, qui est doté de voies médianes réservées au transport en commun, est recommandé, car il comporte les meilleurs taux d'achalandage et d'aires desservies. Son potentiel de connectivité pour les piétons et cyclistes est bon et il appuiera les projets d'aménagement axés sur le transport en commun.

Cette étude comprend aussi un examen du raccordement du Transitway Kanata-Nord au Transitway Ouest et fournit des raccordements aux sections Moodie-March et March-Terry-Fox du Transitway Ouest. Une nouvelle station étagée à la hauteur du chemin March (près de l'échangeur de l'autoroute 417 et du chemin March-Eagleson) sera construite pour servir de lieu de correspondances. La construction d'une nouvelle passerelle piétonnière est proposée pour rejoindre le parc-o-bus Eagleson existant. Tout au long du processus d'évaluation environnementale de cette planification, l'équipe continuera d'inclure une solution de plain-pied pour les usagers du transport en commun à la station Teron, ainsi que d'inclure les correspondances entre le service de transport en commun local et le Transitway, notamment à la station March.

Le PDT et le Plan officiel indiquent tous les deux la nécessité d'aménager d'autres parc-o-bus pour servir les collectivités situées à l'extérieur de la Ceinture de verdure. Cette étude détermine deux endroits dans Kanata-Nord où aménager deux autres parc-o-bus. Le parc-o-bus aménagé à la promenade Innovation pourra contenir environ 1 000 places de stationnement et le terrain a déjà été acheté par la Ville. Le deuxième parc-o-

bus, aménagé le long du chemin March (au nord du chemin Maxwell Bridge) pour satisfaire à la demande future, pourra contenir environ 500 places de stationnement. Son emplacement précis sera confirmé lors de prochains travaux de planification.

Des voies cyclables sont également prévues le long du couloir pour encourager un mode de transport actif dans ce secteur. Une piste cyclable séparée sera conçue durant la phase de conception détaillée du projet.

D'autres terrains seront requis au-delà de l'emprise routière existante. Il s'agit d'environ 4,66 hectares impliquant des terrains le long du couloir appartenant au ministère du Transport de l'Ontario, au ministère des Services gouvernementaux, à la Commission de la capitale nationale et à des particuliers.

Caractéristiques saillantes du projet :

- Longueur du Transitway : Environ 6,25 km
- Stations du Transitway : 8
(March, Corkstown, Herzberg, Teron, Carling, Solandt, Terry-Fox et Klondike)
- Parc-o-bus : 2
 - Promenade Terry-Fox et promenade Innovation
 - Chemin March (au nord du chemin Maxwell Bridge)
- structures dégradées : 3
 - Futur Transitway Ouest/chemin March
 - Chemin March/promenade Campeau
 - Passerelle piétonnière surélevée entre la nouvelle station March et le parc-o-bus Eagleson
- Voies cyclables

Les plans de conception fonctionnelle de cette installation sont présentés dans le document 1.

Estimations du projet

L'estimation préliminaire des coûts du projet visant la conception et la construction des installations du Transitway s'élève à 350 millions de dollars, en dollars de 2012. Cette estimation sera affinée une fois que les détails de la conception du projet seront connus et que l'inflation aura été ajoutée, conformément à l'Indice des prix de la construction.

Ce projet pourra être exécuté par étapes, et certains éléments pourront être coordonnés avec d'autres projets (comme la nouvelle station March, son raccordement au futur Transitway ouest ainsi que la section souterraine entre le chemin Corkstown et la nouvelle station avec la construction du Transitway ouest (Moodie – March).

Le prochain examen du PDT, dont il fera partie, contiendra une mise à jour du modèle d'abordabilité et l'établissement des priorités du projet.

Consultations publiques/commentaires

L'Étude a fait l'objet d'un examen et de commentaires de la part des organismes d'approbation, des communautés autochtones (Algonquins de l'Ontario et Métis), des groupes d'intervenants, des organismes communautaires, des propriétaires et des commerces du secteur à l'étude. De plus, il y a eu des rencontres de consultation d'organismes, de commerces et du public (3 rencontres pour chaque groupe) et trois séances portes ouvertes se sont déroulées durant la phase de planification de l'étude.

Un bulletin sur le projet et un questionnaire pour recueillir les commentaires ont été produits et distribués à chacune des séances portes ouvertes. Un site Web pour le projet (<http://ottawa.ca/transitconnectstudy>) a été créé dans lequel on trouve de l'information sur le déroulement de l'étude.

Les consultations se poursuivront pendant le déroulement de l'étude jusqu'à la phase de l'évaluation environnementale.

Les enjeux particuliers sont le bruit, la vibration et l'impact sur l'environnement de cette installation de transport en commun, comment encourager les services de transport en commun locaux, l'emplacement des parc-o-bus, l'accès aux actuels et futurs parc-o-bus et la viabilité d'un couloir de transport en commun le long du chemin Teron. Parmi les commentaires reçus, un certain nombre soutenait le chemin March comme meilleur choix.

BACKGROUND

The 2008 Transportation Master Plan (TMP) identifies two bus rapid transit (BRT) corridors in Kanata area (Figure 1):

- Kanata North along March Road
- Kanata West from Terry Fox Drive to Fernbank Road

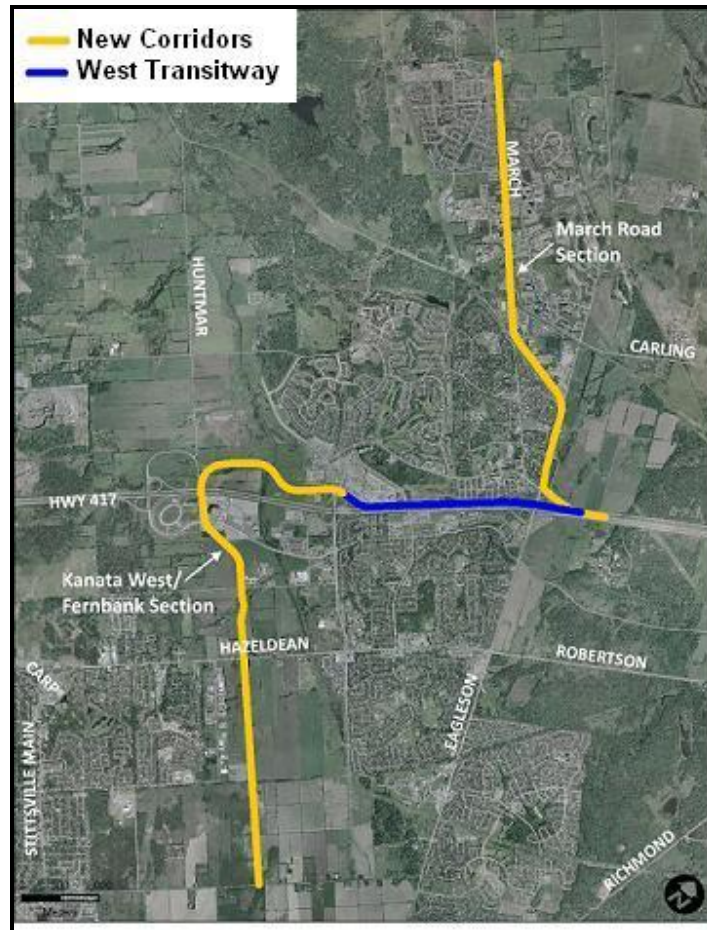


Figure 1: Extension of BRT in Kanata (2008 TMP)

Initially the two segments were combined into one Environmental Assessment (EA) Study for efficiency and economies of scale. However, as the study developed, the joint schedule became incompatible. There was urgency to develop the Kanata West section quickly due to development issues, while the Kanata North section required more time to develop and evaluate a number of corridor options. The Kanata West assessment continued separately, with the functional design approved by Council in September 2010, and completion of the EA followed.

This report focuses on the functional design of the remaining segment, the Kanata North Transitway, and its connection to the rapid transit network (West Transitway) at March Station. It should be noted that this section was previously known as West Transitway Connections: Highway 417/Eagleson Road to Old Carp Road.

DISCUSSION

As depicted in the TMP, the Kanata North Transitway extends north from the Highway 417/March-Eagleson interchange along March Road to north of Maxwell Bridge Road (see Figure 2). The study area includes the lands adjacent to the March Road corridor.

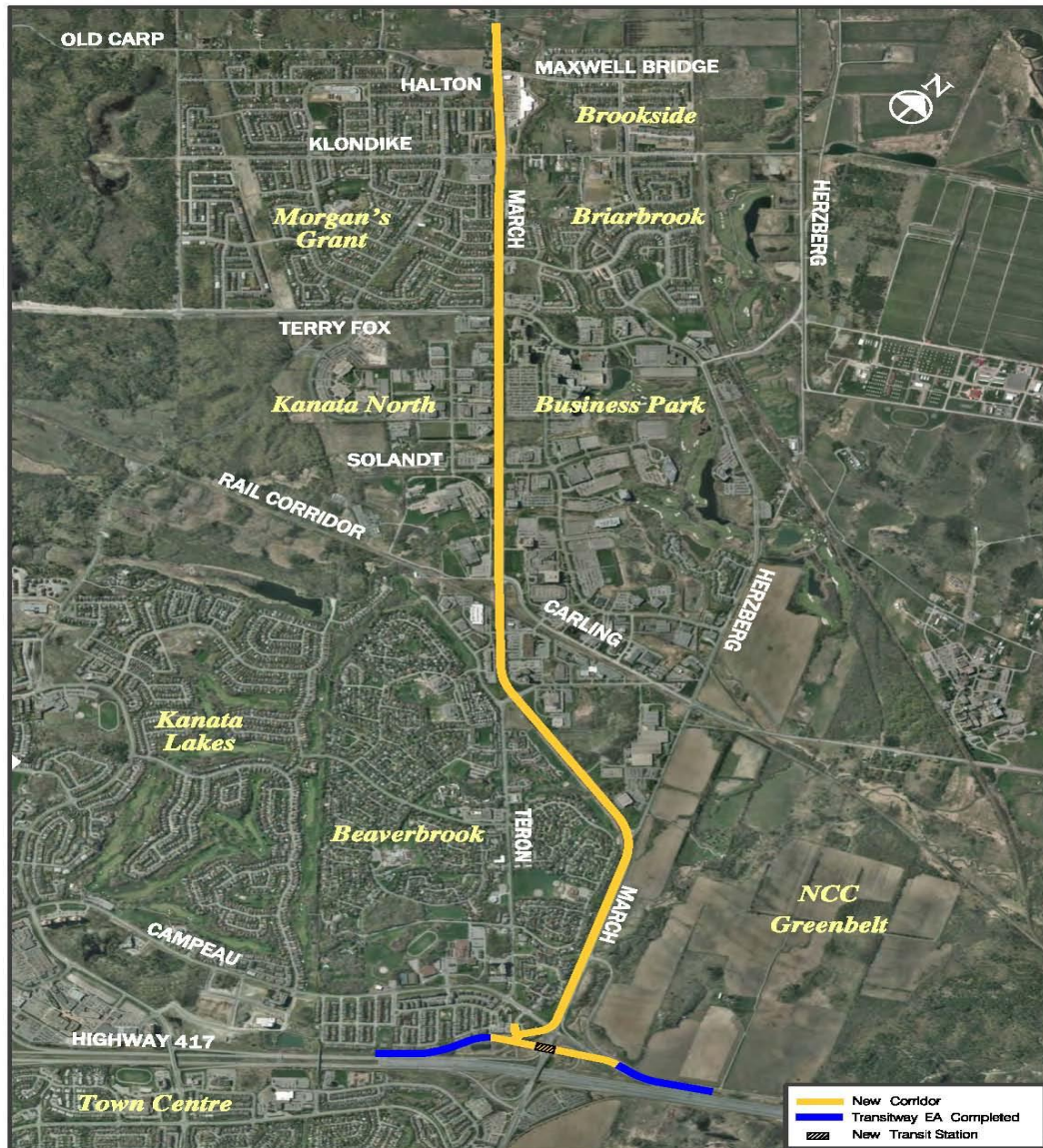


Figure 2: Kanata North Transitway

Project Need

The TMP noted that population and employment for the West Urban Centre are expected to grow about 73,800 (28%) and 33,400 (18%) respectively by 2031, which will place additional demand on existing transportation infrastructure in the area.

The Kanata North segment is part of the Council-approved rapid transit network in the 2008 TMP. The new Transitway facility will:

- Respond to growth pressures by providing improved transportation in the study area;
- Increase person carrying capacity of the corridor;
- Contribute to keeping Ottawa a liveable and economically viable City by providing a valuable transportation facility and achieving land use, environmental, and social objectives; and
- Expand the City's rapid transit network to accommodate existing and future travel demand in Kanata North and to key regional centres.

The Kanata North Transitway offers significant opportunities for compact, mixed-use development in the vicinity of stations. Defining and protecting the Transitway corridor and station locations allows for transit-oriented development in the appropriate forms at the right locations. Furthermore, an efficient, reliable and safe transit system will encourage greater transit use, particularly in Mixed-Use Centres, Employment Areas and Enterprise Areas.

Evaluation of Alternative Corridors

Corridor options were developed based on City and NCC policy directives, which included the following:

- Utilize existing transportation or utility corridors to preserve natural features and provide services efficiently (Ottawa Official Plan);
- Develop a interconnected system of rapid transit corridors (Ottawa TMP); and
- Bundle infrastructure within the Greenbelt to protect the integrity of the Greenbelt (NCC).

Six alternative corridors were identified (see Figure 3). Their evaluation was based on a number of factors including:

- Compatibility with Existing and Future Road System
- Ridership and Transit Operations
- Geometrics
- Compatibility with Existing and Future Communities
- Effects on Noise, Air Quality and Vibration
- Soil and Groundwater Considerations
- Effects on Natural Features
- Constructability
- Capital Cost
- Land Acquisition Requirements

The evaluation of alternatives is summarized in Document 2 (Table 1) and includes the criteria and indicators used.

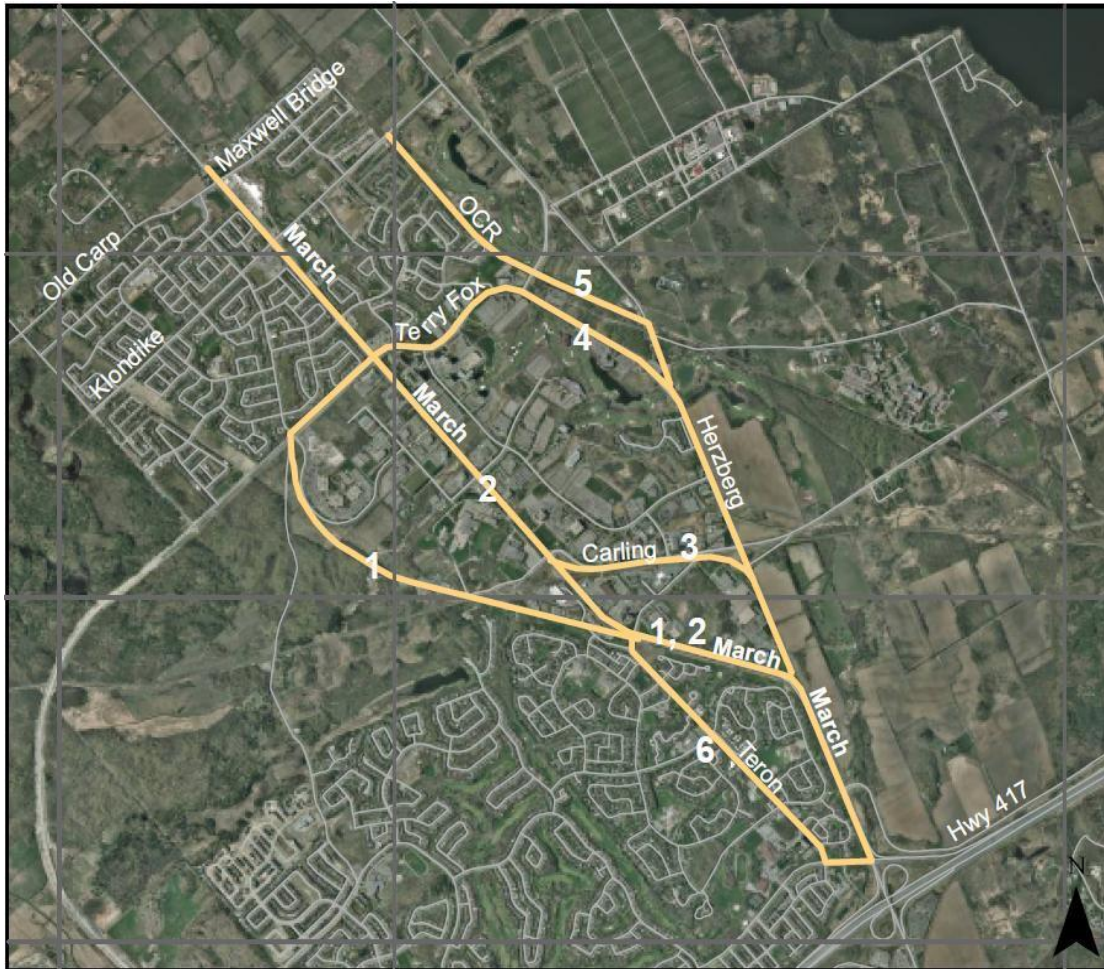


Figure 3: Alternative Corridors

Recommended Corridor – March Road (Alternative 2)

March Road is deemed to be the best transit corridor for a number of reasons. It is an existing transportation corridor that is centrally located to residential and commercial areas, thus providing the best ridership catchment area. It also has potential for good connectivity for pedestrians and cyclists, supports transit-oriented development opportunities, and offers the most direct route with limited land acquisition requirements. Public feedback generally supports this corridor. Figure 4 illustrates the recommended corridor and transitway station locations.

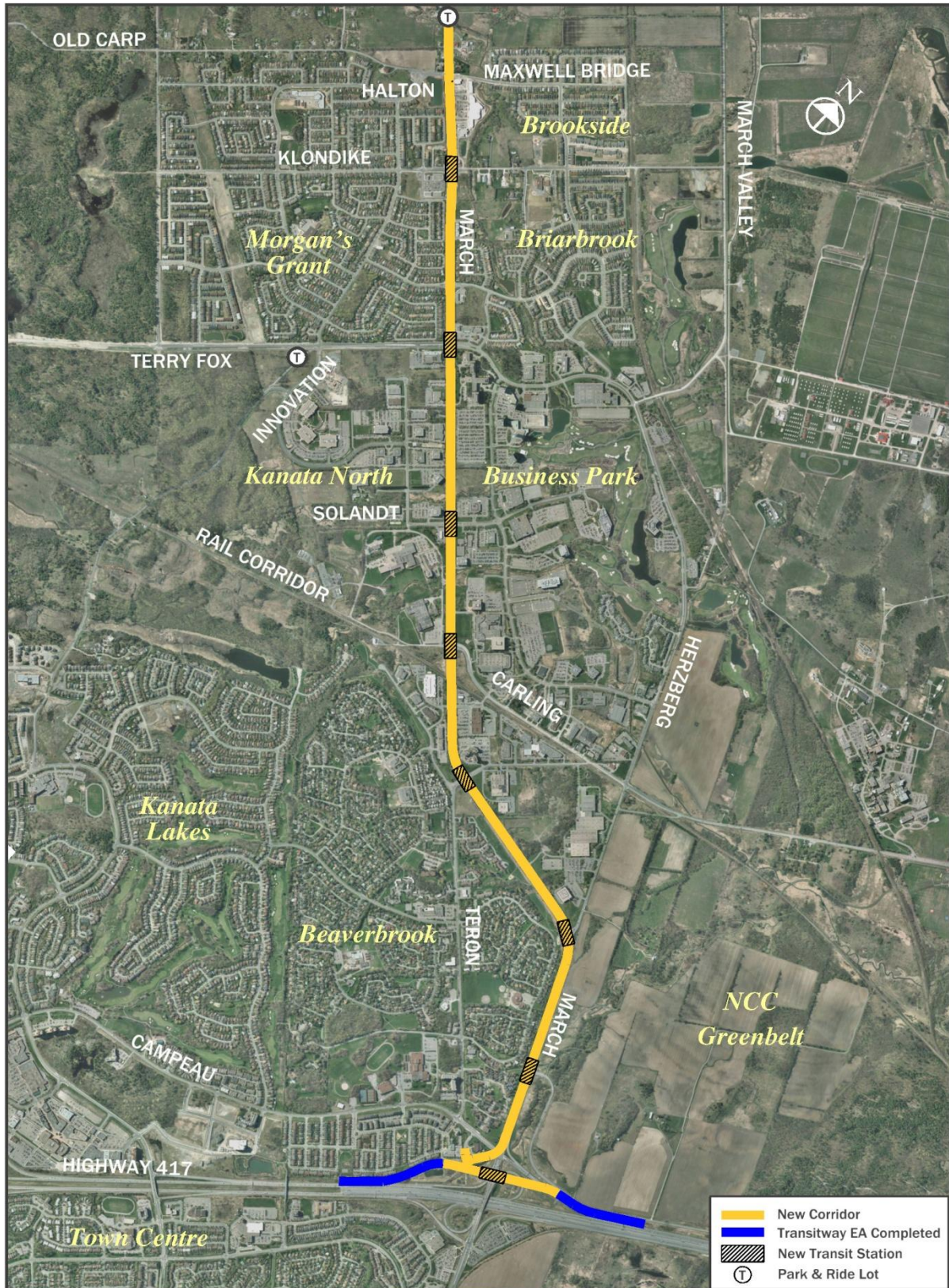


Figure 4: Recommended Corridor

Alternative 6 is similar to Alternative 2 for the section north of Teron Road (thus offering similar opportunities in that segment). However, for the segment directly on Teron Road, it had more negative effects on the adjacent residential community, thereby making it less desirable in comparison to the March Road corridor.

Design Options for March Road Corridor

Two design options were assessed for transit operations along the March Road Corridor which includes Median, and Shoulder/curb-side Transit Lanes (Figure 5). The options are similar in many respects, however the March Road Median option is recommended as it:

- Provides reliability and the highest quality transit service;
- Provides the best multimodal and TOD opportunities; and
- Results in minimal impacts on utilities and existing communities.

The evaluation of the two design options is summarized in Document 2 (Table 2).

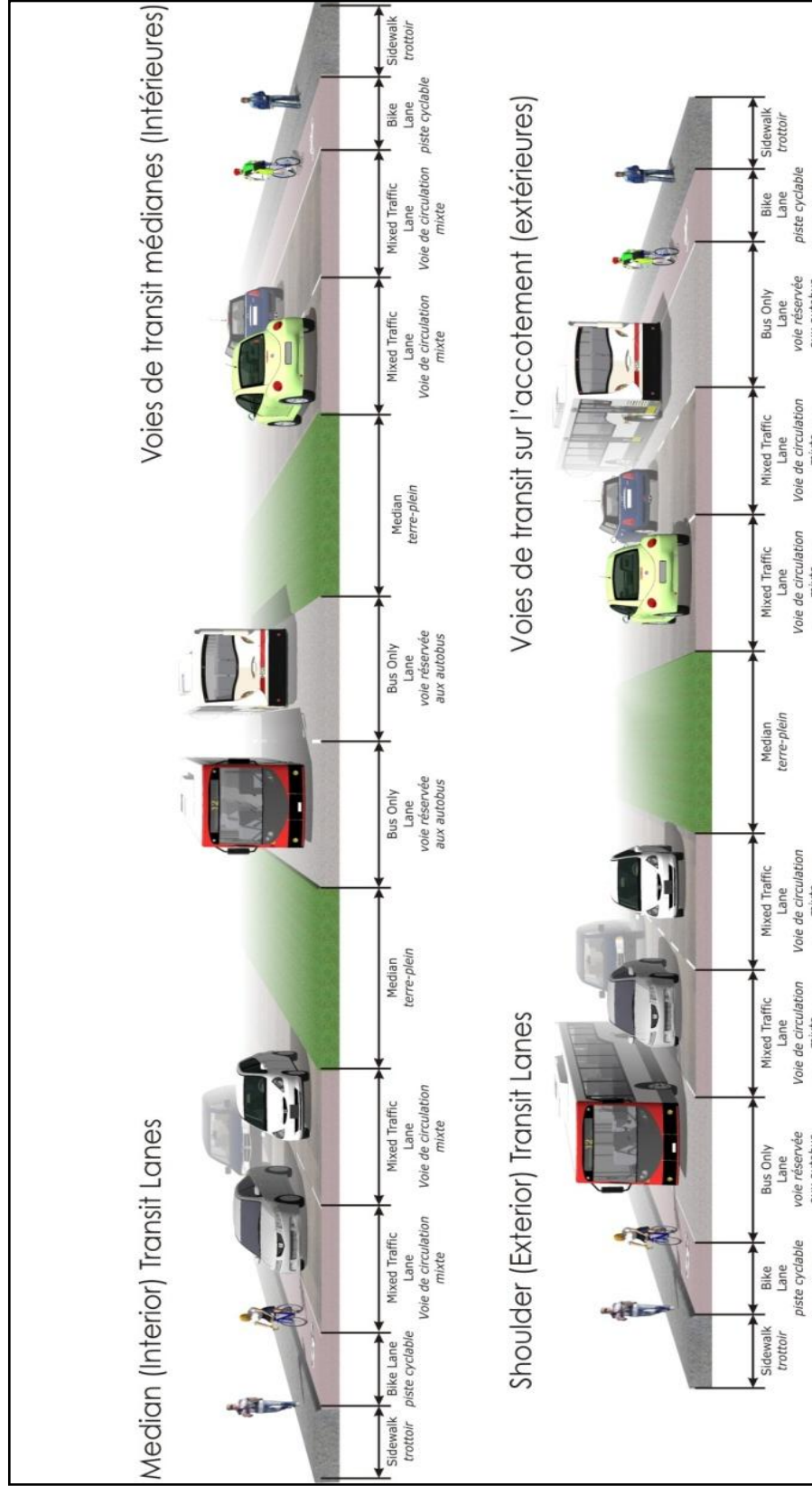


Figure 5: Designs options

Connection with West Transitway Extension and Location of March Station

This study included an examination of the Kanata North Transitway connection to the West Transitway (Moodie to March and March to Terry Fox), which entails the development of a transfer station near the Highway 417/March-Eagleson interchange area. The study examined connection solutions for the interim and final stages of development of the West Transitway.

The evaluation of alternatives for the connection was largely dictated by the location of the March Station and its effects on the existing social and environmental conditions. Evaluation criteria included:

- March Station Location
- Compatibility with Existing and Future Road System
- Ridership and Transit Operations
- Integration with Local Transit Routes and Transfers
- Geometrics
- Compatibility with Existing and Future Communities
- Effects on Noise, Air Quality and Vibration
- Soil and Groundwater Considerations
- Geotechnical Conditions
- Effects on Natural Features
- Constructability
- Capital Cost
- Land Acquisition Requirements
- Access to Eagleson Park and Ride Facility
- Existing Infrastructure

Of the four options (see Figure 6) that were developed and analyzed, Option 1a is recommended as it provides a grade-separated structure at March Road just north of Highway 417. The proposed March Station will be connected to the existing Eagleson Park and Ride facility through a pedestrian bridge. The evaluation of alternatives is summarized in Document 2 (Table 3).

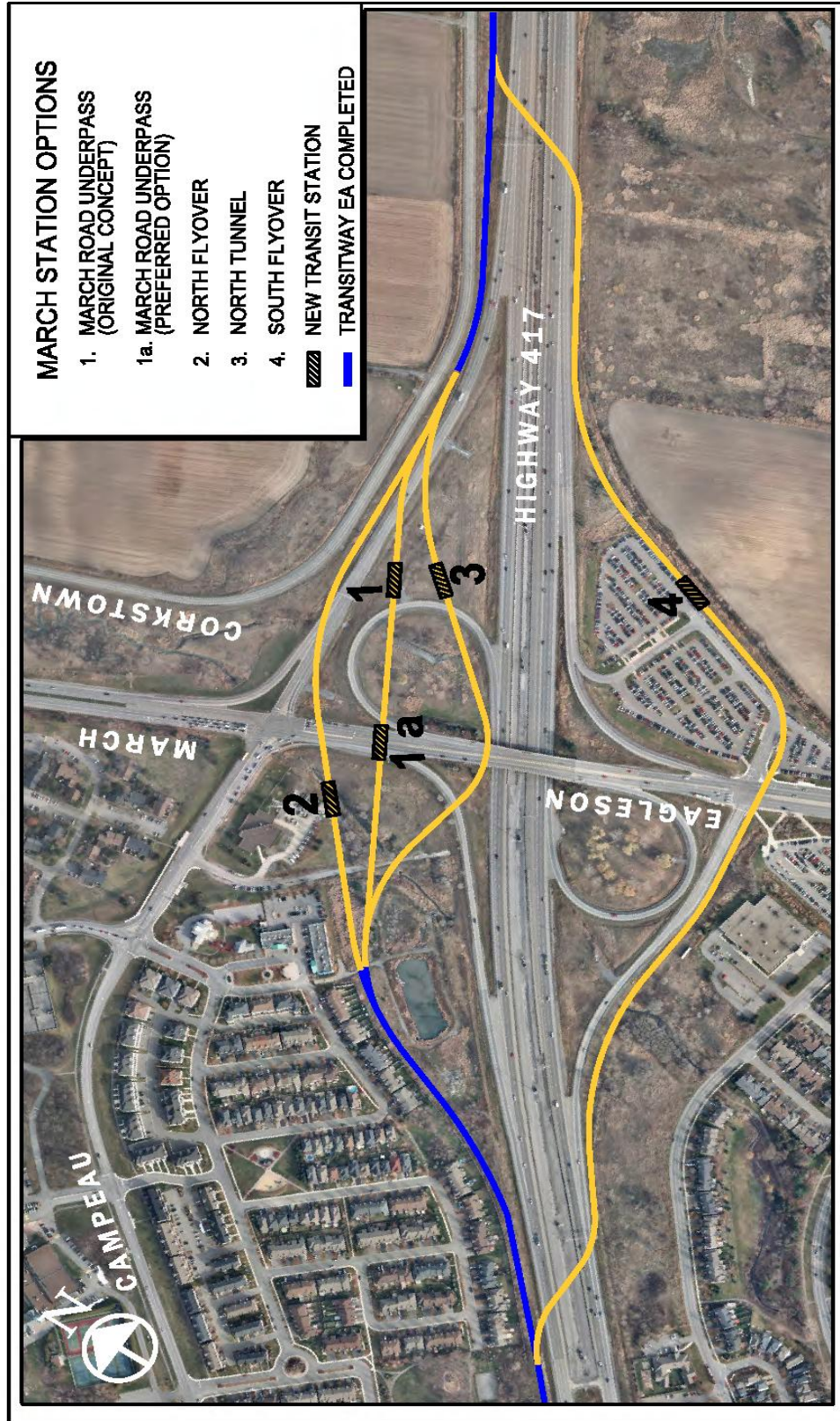


Figure 6: March Station Options

Park and Ride Lots

The TMP and Official Plan both indicate the requirement for new Park and Ride facilities to serve communities outside the Greenbelt area. As part of the TMP update a background study was undertaken producing the policy document *“Park and Ride Facilities for Ottawa - Part 2: Identification of Need, Evaluation and Implementation of Lots”*. The study identified two general site areas for Kanata north area. This EA Study identified the following two sites for Park and Ride locations (see Figure 7):

- Innovation Drive/Terry Fox Drive
- Along March Road north of Maxwell Bridge Road

The facility at Innovation Drive will provide space for approximately 1,000 parking stalls. The general site of the second Park and Ride lot on March Road (north of Maxwell Bridge Road), is to address future demand as a result of the approved Official Plan Amendment # 76 (expansion lands along March Road). The lot could have approximately 500 parking spots. Its precise location will be confirmed through future planning exercises.



Figure 7: Park and Ride locations

Property Requirements

Additional land is required for this project, beyond the existing road allowance. This is estimated to be approximately 4.66 hectares which affects properties owned by the Ministry of Transportation of Ontario (MTO), Ministry of Government Services (the land where the Ontario Provincial Police station is located), the National Capital Commission (NCC) and private land owners along the corridor.

Ownership	Area (square meters)	Percentage (%)
City	3,450	7.4
Ministry of Transportation Ontario (MTO)	15,350	33
Ministry of Government Services (MGS)	2,400	5
National Capital Commission	2,000	4.3
Private	23,400	50.3
Total	46,600	100

The land requirement represents the minimum footprint needed to construct the Transitway facility. Private land is required where existing right-of-way is insufficient to accommodate transitway elements and the associated widening at intersections. There may be opportunities during detail design to further minimize land acquisition and impact on residential properties. Private land may also be acquired through the land development process.

Land for Innovation Park and Ride site has been acquired whereas, for the second lot (north of Maxwell Bridge Road), it will be acquired through future planning exercises. Therefore, these are not included in the project cost and property estimates.

Description of Recommended Plan

Kanata North Transitway is a 6.5 km long dedicated facility which will link to the West Transitway in the vicinity of Highway 417/March-Eagleson interchange. The Transitway will approach the interchange on the north side of the Highway, within the right-of-way owned by the MTO, MGS and the City. The West Transitway will pass beneath the interchange ramps and March Road where a new Station will be provided. East of the Station, a connection will be provided to the Moodie - March section of the West Transitway; whereas, on the west side it will connect with the March - Terry Fox section to complete the rapid transit network. Environmental Assessments for both of these sections of the West Transitway have already been completed.

The new March Station will serve as a transfer point for transit customers between Kanata north-south and West Transitway lines. Pedestrian access to the Station will be primarily from the west. Access from the existing Eagleson Park and Ride Lot (in the southeast quadrant of the interchange) will be via a new pedestrian bridge which will connect to both eastbound and westbound platforms of the March Station. Through the EA process of this planning exercise, the study team will continue to include a walk-in solution for transit users at Teron Station, as well as include the connections/transfers of local transit service to the Transitway, particularly at March Station.

At the west end of the Station, Kanata North Transitway will branch off from the West Transitway via an access road which will provide a grade separated route through the south-eastern portion of the OPP station site to pass under the Campeau/March intersection. The Transitway will rise in the centre of March Road and come to grade just south of the Corkstown/March intersection, which will be signalized to support road users.

From Corkstown/March intersection, the Transitway will become an at-grade facility to operate in dedicated, segregated lanes in the centre of March Road. The Transitway will cross through 10 at-grade intersections using transit priority traffic signals. Stations will be provided at major intersections along March Road to provide access to adjacent residential and business developments as well as retail and other uses along the corridor. The following eight station locations are recommended:

- March (Grade separated)
- Corkstown
- Herzberg
- Richardson/Teron
- Carling
- Solandt
- Terry Fox, and
- Klondike

With the exception of Corkstown, where both platforms are north of the intersection, all at-grade stations consist of far-side stops, allowing buses to cross the intersection before stopping for boarding and alighting passengers. Owing to the nature of the corridor and relatively low estimated bus volumes, by-pass lanes at stations are not recommended.

Bicycle lanes will be provided along the corridor to encourage active mode of transportation within the area. Bicycle lanes will be designed as a segregated facility during detail design stage of the project.

The Recommended Plan identifies two additional Park and Ride locations in Kanata North. Terry Fox/Innovation Drive (west of March Road) lot will require buses to exit the Transitway when travelling northbound and entering the Transitway when travelling southbound. The second Park and Ride site is identified at the north end of the urban community which will be integrated into new community plans.

Implementation/Staging Opportunity

This project can be implemented in stages, and components can be coordinated with other projects (such as the new March Station, its connection with future West Transitway and the below grade section from Corkstown to the new station with the construction of West Transitway (Moodie - March) to minimize disruption to road users. Staging opportunities will be investigated during detailed design stage.

Project Estimate

The preliminary project cost estimate to design and construct the transitway facility is \$350 million in 2012 dollars as follows:

• Construction (6.5 km) and Property Acquisition	\$220 M
• Design, Project Management, Construction Administration	\$ 65 M
• Project Contingency	<u>\$ 65 M</u>
	Total \$ 350 M

This estimate will be refined after detailed design of the project, and the revised estimate will include inflation in accordance with the Construction Price Index.

The upcoming Transportation Master Plan review will include an update to the affordability model and the establishment of project priorities. This project will be part of that review.

RURAL IMPLICATIONS

The proposed Park and Ride lot north of Maxwell Bridge Road would accommodate transit users both from urban Kanata North and rural West-Carleton-March Wards. It is in accordance with section 5.2 (Ease of Mobility) of the TMP which states that City will:

“Provide Park and Ride lots at the extremities of the rapid transit network for customers who live in areas without transit service or who prefer to drive their cars to the nearest major transit station, and provide smaller Park and Ride lots in rural villages served by transit routes to downtown”.

CONSULTATION

A key component of the EA process is to engage stakeholders during the course of the study to ensure that the objectives of the City, the community, other approval authorities and stakeholders are addressed.

Consultation and Public Notification

The Study benefitted from the review and feedback of participants from the following groups: Agency Consultation Group (ACG), Public Consultation Group (PCG), and Business Consultation Group (BCG). Three Public Open House (POH) meetings were also conducted which were advertised in local newspapers and information posted on project web site. A project bulletin and comment-questionnaire were developed and distributed at each of the open houses. A project website (<http://ottawa.ca/transitconnectstudy>) was established at the onset of the project. Consultation efforts will continue as the study progresses to the EA phase of this project:

Aboriginal Consultation

The Ministry of the Environment provided guidance regarding consultation with the Aboriginal communities. Contact was made with Aboriginal and Northern Affairs Canada and the Ontario Ministry of Aboriginal Affairs, Aboriginal Relations and Ministry Partnerships Division. Aboriginal Communities (Algonquins of Ontario and Métis) are engaged and will also be provided with an opportunity to review the Draft Environmental Project Report (EPR).

SUMMARY OF PUBLIC OPEN HOUSES

	Comments/Concerns
POH # 1: • 25 March 2010 • Earl of March High School, Kanata • Attendance (32)	• Noise, vibration and environmental impacts • Park and Ride Facility locations • Preference for median BRT operation • General design concerns with respect to facility design • Majority of comments received were related to the already approved West Transitway between March Road and Kanata Centrum
POH # 2: • 19 April 2011 • Earl of March High School, Kanata • Attendance (15)	• Noise and viability of a transit corridor along Teron Road • Support for March Road corridor
POH # 3: • 27 June 2012 • John Mlacak Centre, Kanata • Attendance (8)	• Construction timing and accessibility to Park and Ride lot • U-turn capabilities at certain locations • Validity of the Official Plan and TMP as the basis for moving forward with the project • Additional consultation opportunities

COMMENTS BY THE WARD COUNCILLORS

Councillor Marianne Wilkinson:

“The location of the station under March Road near the 417 where it will connect to the main transitway is of concern but I understand the difficulties with the terrain and will support it going forward to have the EA done provided that in the EA a safe, convenient way for pedestrians from the community to access the station is determined; that transfer locations from local routes to the station are provided at the station location; and that the EA determines the changes required to make a transfer from the March Road BRT to LRT when the conversion to rail occurs. Additionally the EA should determine if the station at Corkstown Road can be safely accessed from the community as it is a walk to station and there is no road access to March Road at that location and the pathway access is not lit.”

Councillor Eli El-Chantiry:

“I have reviewed the report and look forward to the results of the environmental assessment.”

LEGAL IMPLICATIONS

There are no legal impediments to implementing the recommendations in this report.

RISK MANAGEMENT IMPLICATIONS

There are no risk management implications associated with this report.

FINANCIAL IMPLICATIONS

The financial implications associated with this project are outlined in the body of this report and will be included in the Transportation Master Plan update, which will determine future transit priorities. Once determined, these priorities will be included in future Long-Range Financial Plan reviews and the next Development Charge By-law update. Funding for construction of the ultimate project will be considered in future years' capital budgets.

ACCESSIBILITY IMPACTS

The City of Ottawa supports Accessibility for *Ontarians with Disabilities Act* (AODA), through the City of Ottawa Municipal Accessibility Plan 2012 (COMAP). The design elements of the proposed facility will utilize accepted design standards and/or guidelines to ensure compliance with the *Act* and the Plan.

ENVIRONMENTAL IMPLICATIONS

The Kanata North Transitway will be designed and implemented with the benefit of contemporary planning, engineering, and environmental management practices. Regard shall be had for the legislation, policies, regulations, guidelines, and best practices of the day. Where possible, mitigation measures will be prescribed in the construction contracts and specifications. Localized, site specific impacts including recommended mitigation measures are summarized in Document 3.

TECHNOLOGY IMPLICATIONS

There are no technology implications associated with this report.

TERM OF COUNCIL PRIORITIES

The recommendation contained herein aims to support the following Term of Council Priorities approved by Council in July 2011:

- TM1 Ensure sustainable transit services
- TM2 Maximize density in and around transit stations
- TM3 Provide infrastructure to support mobility choices
- TM4 Promote alternative mobility choices

SUPPORTING DOCUMENTATION

Document 1 [Functional Design Plans for the Kanata North Transitway](#)

Document 2 Evaluation Summaries

Document 3 Environmental Implications and Recommended Mitigation Measures

DISPOSITION

Following Committee and Council approval of the functional design, Planning and Growth Management will undertake the following:

- Initiate and complete the formal 6-month Transit EA Process using the functional design to define the undertaking and file the Environmental Project Report (EPR) with the Ministry of the Environment in accordance with Ontario EA Regulation 231/08 for transit project.

KANATA NORTH TRANSITWAY (EVALUATION SUMMARIES)

TABLE 1: EVALUATION OF ALTERNATIVE CORRIDORS

Option1 – March to Terry Fox	Option 2 – March	Option 3 – Carling to March	Option 4 – Hertzberg to Terry Fox	Option 5 – Hertzberg to OGR	Option 6 – Teron to March
Transportation/Transit System: The purpose of this category is to compare the effectiveness of the alternatives to contribute to the success of the planned transportation systems. - single sided catchment potential - good catchment potential - good connectivity to pedestrian / cycling / transit networks - fair connectivity to pedestrian / cycling / transit networks - moderate impact on transportation system capacity - least impact on transportation system capacity	- best catchment potential - good connectivity to pedestrian / cycling / transit networks - moderate impact on transportation system capacity	- good catchment potential - fair connectivity to pedestrian / cycling / transit networks - moderate impact on transportation system capacity	- single sided catchment potential - good connectivity to pedestrian / cycling / transit networks - moderate impact on transportation system capacity	- least catchment potential - poor connectivity to pedestrian / cycling / transit networks - moderate impact on transportation system capacity - least ability to accommodate future grade-separations	- good catchment potential - good connectivity to pedestrian / cycling / transit networks - moderate impact on transportation system capacity - least ability to accommodate future grade-separations
Effect on Social Environment: This category encompasses criteria that assess opportunities to promote healthy communities, protect the enjoyment of the outdoor environment and/or preserve cultural resources in the corridor. will add development pressure to adjacent Open Space	- will focus development along March Road - in the centre of the developed area (residential and commercial)	- will focus development along March Road - in the centre of the developed area (residential and commercial)	will add development pressure to adjacent agricultural area	- support future development of the Enterprise Area - will add development pressure to adjacent agricultural area	- in the centre of the developed residential area along Teron - facility will substantially change the character of the residential area
Effect on Economic Environment: This category encompasses criteria that assess either opportunities to promote existing and increased economic activity or the potential adverse effects on current business activity in the corridor. - no support for Enterprise Area - some support for existing business park	- high development incentives - most supportive of existing development - support for Enterprise Area	- high development incentives - most supportive of existing development - support for Enterprise Area	- high development incentives - supportive of existing development - support for Enterprise Area - most impact on communities	- high development incentives - supportive of future development - support for Enterprise Area - most impact on communities	- high development incentives north of Teron - supportive of existing development - support for Enterprise Area - most impact on communities
Effect on Urban Form: This category focuses on accessibility within and to existing and future communities. Also considered is enhanced integration of regional facilities and development. - shared hydro corridor creates potential problems for future LRT conversion - focus on existing and future communities	- good TOD opportunities (primarily infill / redevelopment) - strong focus on existing communities - uses existing transportation corridor	- good TOD opportunities (primarily infill / redevelopment) - strong focus on existing communities - uses existing transportation corridors - impact on rail corridor	- some TOD opportunities (primarily infill / redevelopment) - strong focus on existing communities - uses existing transportation corridors	- some TOD opportunities (Enterprise Area) - focus on future communities - impact on rail corridor - uses some existing transportation corridors	- limited TOD opportunities (primarily infill / redevelopment) - redevelopment pressure along Teron - strong focus on existing communities - uses existing transportation corridors - impacts to local community access
Effect on Natural Environment: The focus of this category is to assess the potential effect of the alternative alignments on elements of the natural environment such as fisheries, wildlife, natural vegetation and key natural features within the ecosystem. - adjacent to woodlot - requires new infrastructure corridor	within roadway corridor	within roadway corridor	- within roadway corridor - adjacent to greenbelt	- within roadway / railway corridor - adjacent to greenbelt	within roadway corridor
Cost: The criteria in this group involve the identification of the economic factors associated with an alternative alignment to determine whether it is an acceptable solution to those who will ultimately pay for implementation and to identify public sector capital funding needs. - some land acquisition cost - acquisition cost for utility ROW	- limited land acquisition costs - shortest and most direct route	- limited land acquisition costs - acquisition costs for railway ROW - most expensive rail grade separation	- limited land acquisition costs - acquisition costs for railway ROW - limited land acquisition costs	- acquisition costs for railway ROW - limited land acquisition costs	- limited land acquisition costs - shortest and most direct route

Table 2: Evaluation of Design Alternatives

Criteria	Rationale for Criteria	Indicators	March Road Median	March Road Shoulder
Compatibility with Existing and Future Road System	• Maintain appropriate levels of service within road corridor • Minimize potential for spill-over or cut-through traffic on local road network	• Roadway Level of Service	Fair • All left turns are controlled and consolidated at intersections • Required U-Turn for some drivers • Little potential for spill-over or cut-through traffic	Good • Right turns must cross bus lane • Little potential for spill-over and cut-through traffic
Compatibility with Existing and Future Transit Operations	• Supportive of an efficient rapid and local transit service network • Reduces transit travelling time for passengers	• ease of connection to existing and future transit routes	Very Good • Short and direct route • Good connectivity for local routes	Fair • Short and direct route • Good connectivity for local routes • Pedestrians must cross wide road in one stage
Multi-modal Integration	• Providing a network of multiple types of transportation systems supports the use of alternative transportation modes (i.e., other than the automobile)	• effectiveness of integration of transit with road and with bicycle/pedestrian networks • compatibility with existing and future bicycle/pedestrian networks	Very Good • Median platforms allow for superior pedestrian access • Width of corridor allows for bicycle lanes • Good connectivity at cross-streets	Good • Marginally less pedestrian access as passengers must cross wide road in a single stage • Width of corridor allows for bicycle lanes • Good connectivity at cross-streets
Maximize Ridership Potential	• Have the greatest effect on reducing travel times for users • Have the greatest ability to influence future demand	• degree of transit priority achieved • ability to influence TOD potential • ability to provide ridership capacity beyond expected 2031 ridership	Very Good • High degree of priority • Reduced travel time • Capacity for future expansion • Positive TOD potential	Fair • Good degree of priority • Slightly reduced travel time • Capacity for future expansion • Positive TOD potential
Compatibility with Existing/Planned Communities	• Protection of existing built facilities • Protection of features important to the community	• Displacement of, or loss of access to, existing land uses • Compatibility with existing use of land	Good • Compatible with arterial function of March Road and existing land uses	Good • Compatible with arterial function of March Road and existing land uses
Urban Design Potential	• Supportive of improved visual environment	• Ability to incorporate streetscaping improvements, public art • Ability to create/support vibrant public spaces • Compatibility with existing visual environment	Good • The width of the road allows for streetscaping • Median facility is compatible with visual environment	Good • The width of the road allows for streetscaping • Curb lane facility is compatible with visual environment
Effects on Built	• Protection of heritage and/or	• Impact on identified	Not distinguishing All of the	Not distinguishing All of the alternatives

Table 2: Evaluation of Design Alternatives (continued)

Heritage Features and Archaeology	archaeological features important to the community	and/or potential archaeological resources (i.e., area of land/feature which will be affected)	alternatives are located in existing road allowances or immediately adjacent to them where there is little potential for impact	are located in existing road allowances or immediately adjacent to them where there is little potential for impact
Effects on natural heritage features	Protection of significant habitats, species, corridors, and other natural spaces.	- Loss/impact on significant species (flora/fauna) - Potential impact on non-significant natural areas (i.e., common woodlots, common fields, and common habitats)	Not distinguishing All of the alternatives are located in existing road allowances or immediately adjacent to them where there are few natural features that have not already been disturbed. Mitigation for remaining features can be achieved.	Not distinguishing All of the alternatives are located in existing road allowances or immediately adjacent to them where there are few natural features that have not already been disturbed. Mitigation for remaining features can be achieved.
Effects on Municipal Services and Utilities	Identification of impacts to municipal services and utilities	- Minimizes utility relocations - Minimizes drainage impacts	Good - Very few services under March Road - Additional drainage infrastructure requirements	Very Good - Very few services under March Road - No additional drainage infrastructure requirements
Capital cost	- Identification of the preliminary capital costs of the construction. - Construction difficulties	- Estimated construction costs (infrastructure, construction complexity, ability to phase) - Potential throw away costs	Not a Differentiator	Not a Differentiator
Land Acquisition	Identification of the land requirements to determine overall cost of project	Estimated area of all required land	Good Some land required at intersections for local widening	Good Some land required at intersections for local widening

Table 3: Evaluation of Alternatives for Connection with West Transitway

Criteria	Rationale for Criteria	Indicators	March Road Underpass (Original Concept)	North Flyover	North Tunnel (Use existing space under Bridge)	South Flyover
Compatibility with Existing and Future Road System	- Maintain appropriate levels of service within road corridor - Minimize potential for spill-over or cut-through traffic on local road network	Roadway Level of Service	Good - Grade separations minimize impact on road system	Fair - Potential constraints of future widening of March Road	Poor - Relies on MTO space under the Eagleson Bridge, limiting future highway expansion	Poor - Major structures will impact future expansion of Highway 417
Compatibility with Existing and Future Transit Operations	- Supportive of an efficient rapid and local transit service network - Reduces transit travelling time for passengers	- Ease of connection to existing and future transit routes - Compatible with future east-west LRT and March Road BRT operation	Fair - Future LRT/BRT operation will require more space near OPP for bus loop - Separation between platforms is not ideal	Good - Connection to the north is longer than in other options, but still grade separated - Future LRT/BRT operation can be achieved with little impact	Poor - Station to the east of Eagleson is hard to integrate - Future LRT/BRT operation requires significant modifications	Fair - Connection to the March Road facility is in mixed traffic over the Hwy 417 bridge
Multi-modal Integration	Providing a network of multiple types of transportation systems supports the use of alternative transportation modes (i.e., other than the automobile)	- Effectiveness of integration of transit with road and with bicycle/pedestrian networks - Compatibility with existing and future bicycle/pedestrian networks	Fair - Pedestrian and bicycle access is challenging - Station will function primarily as a transfer facility with some limited local activity	Good - Station to the west of Eagleson provides for better pedestrian link to local community	Poor - Station is remote from all pedestrian and cycling access	Poor - Station provides same level of community access as the current station, which is perceived as poor
Maximize Ridership Potential	- Have the greatest effect on reducing travel times for users - Have the greatest ability to influence future demand	- Degree of transit priority achieved - Ability to influence TOD potential - Ability to provide ridership capacity beyond expected 2031	Good - Provides high quality transit connection - Low TOD opportunity at station site due to existing land uses and development	Good - Provides high quality transit connection - Low TOD opportunity at station site due to existing land uses and development	Fair - Good for through services and transfers but will not encourage local traffic	Fair - Provides lower level of service to the north than other options and a longer more circuitous route to the east
Compatibility with Existing/Planned Communities	- Protection of existing built facilities - Protection of features important to the community	- Displacement of, or loss of access to, existing land uses - Compatibility with existing use of land	Good - Generally compatible - Has an impact on the OPP site	Poor - Elevated structure will have significant impact on existing residents	Good - Generally compatible - Has an impact on the OPP site	Poor - Major elevated viaduct will have a major impact on adjacent community
Urban Design Potential	Supportive of improved visual environment	- Ability to incorporate streetscaping improvements, public art - Ability to create/support vibrant public spaces - Compatibility with existing visual environment	Good - Some opportunities to provide opportunities along the runningway	Fair - Opportunities exist, but may be overshadowed by the infrastructure	Good - Some opportunities to provide opportunities along the runningway	Poor - Elevated viaduct will have a strong negative impact on the visual environment including the Capital Arrival Experience along Hwy 417
Effects on Built Heritage Features and Archaeology	Protection of heritage and/or archaeological features important to the community	- Impact on identified and/or potential archaeological resources (i.e., area of land/feature which will be affected) - Impact on identified heritage features including buildings and landscapes	Not a Differentiator	Not a Differentiator	Not a Differentiator	Not a Differentiator
Effects on natural heritage features	Protection of significant habitats, species, corridors, and other natural spaces.	- Loss/impact on significant species (flora/fauna) - Potential impact on non-significant natural areas (i.e., common woodlots, common	Fair - Some impact on Watts Creek and the tributary flowing through the MTO Loop ramp	Poor - Elevated station will shadow Watts Creek - Longer access routes will impact open areas	Fair - Some impact on Watts Creek and the tributary flowing through the MTO Loop ramp	Fair - Elevated viaduct will have some impact

Table 3: Evaluation of Alternatives for Connection with West Transitway (continued)

Criteria	Rationale for Criteria	Indicators	March Road Underpass (Original Concept)	North Flyover	North Tunnel (Use existing space under MTO Bridge)	South Flyover
Effects on Municipal Services and Utilities	Identification of impacts to municipal services and utilities	- fields, and common habitats) - Minimizes utility relocations - Minimizes drainage impacts - Stormwater management	Fair - Proposed alignment east of Eagleson Road prevents MTO ditches to drain to Watts Creek tributary. 2 culverts will need to be added - Proposed alignment west of Eagleson Road blocks the access to the maintenance road to the pond located south of Birkendale Drive	Fair - Proposed alignment east of Eagleson Road prevents MTO ditches to drain to Watts Creek tributary. 2 culverts will need to be added - Proposed alignment west of Eagleson Road blocks the access to the maintenance road to the pond located south of Birkendale Drive	Fair - Proposed alignment prevents MTO ditch to drain to Watts Creek tributary and crosses Watts Creek. 2 culverts will need to be added - Proposed alignment is located on a section of the maintenance road to the pond located south of Birkendale Drive	Poor - Proposed alignment west of Eagleson Road prevents MTO ditch to drain to Watts Creek tributary. Add 1 culvert and realign existing drainage ditch - Proposed alignment west of Eagleson Road blocks the maintenance road to the pond located south of Birkendale Drive - Proposed alignment west of Eagleson Road blocks the Old Teron Road access to the south
Capital cost	- Identification of the preliminary capital costs of the construction. - Construction difficulties	- Estimated construction cost range (infrastructure, construction complexity, ability to phase) - Potential throw away costs	Good (Low Cost) - March Road underpass has cost risk due to poor soils - Other elements are typical and have little cost risk - Little throw away cost but future BRT-LRT connection will require additional work on the OPP site	Fair (Mid Range Cost) - Elevated station and structure over MTO ramps and March Road - Longest connection to March Road - Some throw away costs in link to March Road, but good future integration between BRT and LRT	Good (Low Cost) - Low Cost - March Road crossing uses existing space under MTO bridge (with minimal upgrade) but lengthens alignment - Little throw away cost but potential limiting of highway expansion - Future BRT-LRT link will require additional work on OPP site	Poor (High Cost) - Longest option with greatest amount of structure - Two skew crossings of Hwy 417 - Elevated station - Little throw away cost as BRT can be converted to LRT and bus connections can be made in the Park and Ride lot
Land Acquisition cost and value	Identification of the land requirements to determine overall cost of project	Estimated land requirements	Good - MTO easements - Cross under three ramps - Pass through north portion of interchange - OPP land required for connection to March Road	Good - MTO easements - Cross over three ramps - Pass over north portion of interchange - OPP land required for connection to March Road - Small amount of NCC land acquisition (north-east of the March Road and Campeau Drive intersection)	Fair - MTO easements - Cross under three ramps - Pass through interchange - Occupy land directly adjacent to westbound MTO lane - OPP land required for connection to March Road	Poor - MTO easements - Two skew crossings over Hwy 417 - Pass through south portion of interchange - Potential private land acquisition on the South side of Hwy 417

The original concept was selected as the preliminary preferred option. Refinements were made based on input and agency comments regarding:

- Placing it under March/Egleson
- Allowing the entrances to be on the west side of March Road, outside the MTO ramps
- Reducing the road grade to the west, allowing for easier bicycle access beside the Transitway

Drainage and flooding issues are reduced and can be handled more easily, particularly as the station is sheltered under the road bridge.

**SUMMARY OF ENVIRONMENTAL IMPLICATIONS AND RECOMMENDED
MITIGATION MEASURES****Transportation***Traffic Management, Access and Pedestrian Control Plan:*

A Traffic Management Plan would be developed during the detailed design/pre-construction phase and implemented in the construction phase of the project. Traffic detours and land reductions will be required during construction of the segregated transitway. The Contractor will be required to develop a Traffic Management Plan for all detours which shall be monitored by the City.

Natural Environment*Fisheries Compensation Plan for the Crossing of Watt's Creek*

The RVCA and MVC have an agreement with DFO and are responsible for the evaluation of any proposed works as to their impact upon fish habitat in the drainage basins of the Mississippi/Rideau River.

Species at Risk

Various Species at Risk were identified in the general area. The urban nature of the corridor however, likely precludes their presence. The OESA is updated twice a year. Prior to construction, the OESA should be reviewed and an update of the potential species present and their habitat should be undertaken prior to construction.

Geotechnical Considerations:

The subsurface conditions along the March and Teron Road sections of the study area consist primarily of sensitive silty clay. This risk is managed in the cost estimate. A detailed geotechnical investigation should be undertaken during the design process to inform the cut, fill and structure types especially in the vicinity of the Highway 417/March-Eagleson interchange.

Social Environment*Stage Two Archaeological Assessments*

Areas adjacent to the corridor from Teron to south of Corkstown and in areas at the north end of the corridor have been identified as having archaeological potential. A Stage 2 Assessment should be conducted if the Transitway is constructed prior to development and disturbing new areas.

Public Communications Plan:

The purpose of the public communications plan is to keep the public informed about the work in progress and the end result of the construction activities, so that their activities can be planned with minimum disruption.

Property Impact:

The majority of the Transitway can be accommodated within the existing ROW. Minor land takings are required from adjacent land owners (4.66 ha) as well as easements from MTO.

Noise and Vibration:

An Environmental Noise, Air Quality and Ground Vibration Study was completed for the project. The assessment procedure included a combination of computational modelling based on current environmental data, physical site measurements, and interpretation of gathered data. The existing conditions data is compared to established City guidelines and provincial guidelines set forth by the Ministry of the Environment. A comparison of the existing and future conditions indicates that the addition of the Transitway will generally reduce noise impacts from roadway vehicle traffic which relates to both the reduction in auto traffic owing to high quality transit service and the placement of the buses in the median.

Air Quality:

The future predicted pollutant levels produced by vehicle emissions fall significantly below the MOE recommended standards for all pollutants studied, which include carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides (NOX) and suspended particulate matter (PM). Favorable future air quality conditions are principally due to the expected improvements in pollution control and vehicle-emission technology, despite increased traffic volumes.

Landscaping:

A landscape plan will be prepared during the detailed design and implemented during the construction phase. The plan will be prepared to the satisfaction of the regulatory authorities.

Safety/Security:

- Pedestrian Control - Implement measures to direct the safe and secure movement of pedestrians in and around the new Transitway infrastructure.
- Right of Way Encroachment - Deter people or objects from interfering with the safe operation of buses.
- Lighting - Provide enhanced lighting to ensure security and visibility in key 24hr use zones.
- Enclosed Spaces - Minimize enclosed spaces in which persons or animals can hide or find shelter.

Integration:

- Perceived Proximity - Create clearly articulated spaces through the use of buffers and screens that provide visual separation between the Transitway Corridor and its adjacent land uses.
- Lighting – Use lighting to accentuate and unify the narrow Transitway corridor with the adjacent landscape.

User and Community Acceptance:

- Way Finding – Provide signage and landmarks that facilitate the navigation and use of the Transitway.
- Perceived Disturbance – Employ measures to minimize noise, and visual disturbances to adjacent properties.
- Rider Enjoyment – Foster and enhance design elements that add to the thermal comfort, visual appeal, and sense of belonging of potential riders.
- Branding – Introduce a vernacular of landscape elements that identify and promote the Transitway as part of a larger transportation network.