3. KANATA LIGHT RAIL TRANSIT PLANNING AND ENVIRONMENTAL ASSESSMENT STUDY (MOODIE DRIVE TO HAZELDEAN ROAD) – RECOMMENDATIONS

ÉTUDE DE PLANIFICATION ET D'ÉVALUATION ENVIRONNEMENTALE DU TRAIN LÉGER SUR RAIL PROPOSÉ VERS KANATA (DE LA PROMENADE MOODIE AU CHEMIN HAZELDEAN) – RECOMMANDATIONS

COMMITTEE RECOMMENDATIONS

That Council:

1. **Approve the functional design for the Kanata Light Rail Transit (Moodie Drive to Hazeldean Road), as described in this report and supporting documents one and two; and,**
2. **Direct Transportation Planning staff to initiate the Transit Project Assessment Process in accordance with the Ontario Environmental Assessment Act (Regulation 231/08), including the preparation and filing of the Environmental Project Report for final public review and comment.**

RECOMMANDATIONS DU COMITÉ

Que le Conseil municipal :

1. **approuve la conception fonctionnelle du Train léger sur rail vers Kanata (de la promenade Moodie au chemin Hazeldean), comme présentée dans le présent rapport et dans les documents un à deux; et,**
2. **demande au personnel de la Planification des transports d'amorcer le processus d'évaluation des projets de transport en commun conformément à la Loi sur les évaluations environnementales de l'Ontario (Règlement 231/08), y compris la préparation et le dépôt du**

rapport environnemental sur le projet aux fins de consultation et d'examen final par le public.

FOR THE INFORMATION OF COUNCIL

The Committee approved the following Direction to Staff:

That staff provide the ridership projection from the Kanata Environmental Assessment Study prior to Council on 9 May 2018.

POUR LA GOUVERNE DU CONSEIL

Le Comité a donné l'instruction suivante au personnel :

Que le personnel fournisse les projections du nombre d'usagers de l'étude d'évaluation environnementale de Kanata avant la réunion du Conseil du 9 mai 2018.

DOCUMENTATION / DOCUMENTATION

1. General Manager, Transportation Services Department's report, dated 17 April 2018 (ACS2018-TSD-PLN-0002)

   Rapport du directeur général, Direction générale des transports, daté le 17 avril 2018 (ACS2018-TSD-PLN-0002)

2. Extract of Draft Minute, Transportation Committee, 2 May 2018.

   Extrait de l'ébauche du procès-verbal de la Comité des transports, le 2 mai 2018

Report to
Rapport au:

Transportation Committee
Comité des transports
2 May 2018 / 2 mai 2018

and Council
et au Conseil
9 May 2018 / 9 mai 2018

Submitted on April 17, 2018
Soumis le 17 avril 2018

Submitted by
Soumis par:
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Ward: KANATA NORTH (4) / KANATA NORD (4) / STITTSVILLE (6) / BAY (7) / BAIE (7) / COLLEGE (8) / COLLÈGE (8) / KANATA SOUTH (23) / KANATA-SUD (23)

File Number: ACS2018-TSD-PLN-0002

SUBJECT: Kanata Light Rail Transit Planning and Environmental Assessment Study (Moodie Drive to Hazeldean Road) – Recommendations

OBJET: Étude de planification et d'évaluation environnementale du Train léger sur rail proposé vers Kanata (de la promenade Moodie au chemin Hazeldean) – Recommandations

REPORT RECOMMENDATIONS

That Transportation Committee recommend that Council:

1. **Approve the functional design for the Kanata Light Rail Transit (Moodie Drive to Hazeldean Road), as described in this report and supporting documents one and two; and,**

2. **Direct Transportation Planning staff to initiate the Transit Project Assessment Process in accordance with the Ontario Environmental Assessment Act (Regulation 231/08), 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 :

1. **d'approuver la conception fonctionnelle du Train léger sur rail vers Kanata (de la promenade Moodie au chemin Hazeldean), comme présentée dans le présent rapport et dans les documents un à deux; et,**

2. **de demander au personnel de la Planification des transports d'amorcer le processus d'évaluation des projets de transport en commun conformément à la Loi sur les évaluations environnementales de l'Ontario (Règlement 231/08), y compris la préparation et le dépôt du rapport environnemental sur le projet aux fins de consultation et d'examen final par le public.**

EXECUTIVE SUMMARY

Assumption and Analysis

On September 7, 2016, Transportation Committee approved the statement of work for the *Kanata Light Rail Transit (LRT) Planning and Environmental Assessment Study (Bayshore Station to Palladium Drive)*. Subsequent to this approval, on March 8, 2017, Council approved the *Stage 2 LRT Implementation – Project Definition and Procurement Plan,* which included a recommendation to expand the Confederation Line

West LRT from Bayshore Station to Moodie Drive. As such, the Bayshore Station to Moodie Drive segment was de-scoped from the Kanata LRT study limits, with the new reduced limits extending from Moodie Drive to Palladium Drive.

In addition, on September 13, 2017, Council approved the *Stage 2 Light Rail Transit Project and Procurement Update*, and received the functional design for the Bayshore to Moodie LRT, including the 2.5 kilometres of additional rail, Moodie Station, and a Light Maintenance and Storage Facility (LMSF) to meet operational needs and requirements for the expanded Stage 2 LRT. There were two functional designs provided for this LMSF: one for opening day, and a second "ultimate" footprint that protected for a potential future expansion when Stage 2 LRT to Kanata is implemented. This location of the "ultimate" LMSF close to Moodie Drive was assessed along with various options in the Kanata area as part of the scope of work for the Kanata LRT Environmental Assessment (EA).

Consultation with the Kanata North Business Park (KNBP) and the Department of National Defence (DND) was undertaken to address the high growth potential for their sites. Although both preferred LRT corridor options to the north that directly served their respective sites, the Kanata LRT Study considered corridor options that provided the most benefit to all of Kanata. In the near term when LRT is extended to Moodie Station, transit can be provided to these sites with frequent bus service along Moodie Drive, Carling Avenue, and March Road. In the future, the feeder network will consider new technologies of that time, such as fixed guideway systems and connected autonomous vehicles. Any technology option must be capable of aligning with future capacity and service requirements, which could be significant during peak demand.

The Kanata LRT Study identified and examined 13 LRT corridor options, covering a broad area of Kanata. Following an extensive evaluation based on criteria such as ridership, network connectivity, the natural and social environment, and cost, the preferred LRT corridor is identified along the north side of Highway 417 as it best meets all the criteria. The preferred option is depicted in Figure 1 below.

Figure 1: Preferred LRT corridor

The benefits of this corridor are as follows:

- Provides a central transit spine equally supporting all of Kanata;
- Supports the future March Road and Fernbank Bus Rapid Transit (BRT) corridors and other north-south bus routes;
- Includes no significant environmental or social impacts;
- Supports development objectives along route;
- Significant portions of this corridor are being protected through previous EA studies; and,
- Provides a cost-effective solution to build and operate.

In response to public feedback to address the intensification opportunities in the growing Kanata South and Stittsville area, additional analysis was undertaken, resulting in a recommended plan that extends LRT from Palladium Drive/Canadian Tire Centre to Hazeldean Road. Long-term benefits include:

- Maximizes ridership by connecting more directly to the development around Hazeldean Road, whereas the Canadian Tire Centre, on its own, has comparatively low ridership except during events;

- Creates a more efficient transit network with LRT on a an elevated structure in this section as it avoids conflicts with major cross streets;
- Maximizes connectivity with the future east-west transit priority corridor serving Stittsville as well as the future Bus Rapid Transit (BRT) corridor serving Fernbank lands; and,
- Maximizes opportunities for transit-oriented development on vacant lands surrounding the LRT corridor.

Light Maintenance and Storage Facility (LMSF)

Although Council approved the functional design, including protection for an ultimate LMSF at Moodie, as part of the 2017 *Stage 2 Light Rail Transit Project and Procurement Update*, the location of the LMSF was confirmed as part of the scope of the Kanata EA study. This analysis was included within the Kanata study in order to explore the various alternatives, as well as to identify if a more suitable location to serve Kanata LRT was available, and if LMSF operations would further improve at an alternate site. The Kanata LRT study identified eight additional sites for evaluation that were assessed from a transportation, social, biological environment, operations, and cost perspective.

Many sites either had active development applications or existing development commitments through the Kanata West Development Area. In addition, many sites were too close to residential areas, and as such, ranked poorly from a social perspective. Based on this analysis, the Moodie LMSF, as shown in Figure 8, continues to be the recommended site. The Confederation Line West LRT extension to Moodie Drive and LMSF received provincial EA approval in February 2018.

Recommended Plan

Building on the City's Stage 1 and Stage 2 LRT plans, the Kanata LRT extension will include another 11 kilometres, terminating at Hazeldean Road, will include eight stations, and four park and rides. This extension will bring 90% of Kanata residents within 5 kilometres of rail and for the City as a whole, 80% of residents within 5 kilometres of rail.

Much of this LRT corridor has been protected as it has been defined through previous planning and EA studies dating back to the mid 1990s. Key elements of the LRT design include:

- Approximately 5.5 kilometres of the LRT will be at grade;
- Approximately 1.5 kilometres will be below grade in an open cut;
- Approximately 4 kilometres will be on an elevated structure or embankment;
- Convenient pedestrian and cycling connectivity from stations to surrounding communities. A parallel multi-use pathway throughout the full length of the LRT corridor will be provided through a combination of existing and new linkages;
- Public washrooms at terminus stations and major transfer stations; and,
- Four park and ride facilities consisting of the existing park and ride lots at Eagleson (1,220 spaces) and Terry Fox Stations (540 spaces), a relocated park and ride at Palladium Station/Canadian Tire Centre (200 spaces), and a new park and ride lot at Hazeldean Station (650 spaces).

Financial Implications

Even though the Kanata LRT link is beyond the City's 2031 Affordable Rapid Transit Network plan, the study examined how the project can be implemented in sections, if, and when, funding is available. The proposed staging priority identified below is based on ridership and capital cost (2017 dollars, Class C estimate).

Staging Priority	**Capital Cost**
1. Moodie Station to Terry Fox Station	$710 M
2. Terry Fox Station to Palladium Station	$640 M
3. Palladium Station to Hazeldean Station	$500 M
Total Project Cost	$1.85 B

Public Consultation/Input

Consultation included three (3) rounds of meetings with the Agency Consultation Group (National Capital Commission (NCC); Ministry of Transportation Ontario (MTO); Ontario Ministry of Tourism; Culture and Sport (MTCS); Ottawa Provincial Police (OPP); Rideau Valley Conservation Authority (RVCA); Hydro Ottawa; and, Infrastructure Ontario), the Business Consultation Group (landowners; developers; and, businesses), and the Public Consultation Group (community associations; and, interest groups) and two public open houses. Separate consultation with Indigenous Peoples included a presentation to the Algonquins of Ontario Consultation Office.

Overall, there was significant support for the recommended LRT corridor and station locations with some concerns that were addressed as follows:

- Connectivity to stations – A connectivity study proposes parallel multi-use pathways (new and existing) throughout the length of the LRT corridor with linkages to the stations;
- March Road/Eagleson Road connectivity to park and ride – A pedestrian and cycling overpass will be provided to connect the park and ride on the south side of Highway 417 to the LRT station on the north side;
- Advance the timing of implementation – This project is currently identified as post 2031 as it is not included in the City's affordable network; and,
- LRT does not serve the Kanata North Business Park – This site can be served with feeder service to the main LRT line. March Road is identified as a transit corridor through the 2012 Kanata North Transitway (March Road) BRT EA Study. Opportunity still exists to determine the technology choice for these feeder lines at a later date.

RÉSUMÉ

Hypothèses et analyses

Le 7 septembre 2016, le Comité des transports a approuvé l'énoncé de travail de *l'Étude de planification et d'évaluation environnementale du Train Léger sur rail (TLR) vers Kanata (de la station Bayshore à la promenade Palladium)*. Suivant cette approbation, le 8 mars 2017, le Conseil a approuvé la *Mise en œuvre de l'Étape 2 du*

TLR - Définition du projet et plan d'approvisionnement, et une recommandation de prolonger le TLR de la Ligne de la Confédération vers l'ouest, de la station Bayshore à la promenade Moodie. Cela étant, le tronçon de la station Bayshore/Moodie a été retiré des limites de l'étude du TLR vers Kanata et les nouvelles limites réduites de l'étude s'étendent de la promenade Moodie à la promenade Palladium.

En outre, le 13 septembre 2017, le Conseil a approuvé la *Mise à jour sur l'Étape 2 du projet de train léger sur rail et le plan d'approvisionnement* et a reçu la conception fonctionnelle du TLR de la station Bayshore à la promenade Moodie, incluant 2,5 km de voie ferrée additionnelle, la station Moodie et une installation d'entretien léger et de remisage (IELR) pour répondre aux besoins et aux exigences opérationnels de l'expansion de l'Étape 2 du TLR. Deux conceptions fonctionnelles ont été fournies pour cette installation d'entretien léger et de remisage : une conception correspondant à sa « journée d'ouverture » et une autre, à son empreinte « définitive », qui tient compte d'un agrandissement possible lorsque l'Étape 2 du TLR vers Kanata sera mise en œuvre. L'emplacement de cette installation « définitive » à proximité de la promenade Moodie a été évalué parallèlement à d'autres options dans le secteur de Kanata dans le cadre de l'étude d'évaluation environnementale du TLR vers Kanata.

Des consultations ont été menées auprès des responsables du parc industriel de Kanata-Nord et du ministère de la Défense nationale afin de prendre en compte la croissance potentiellement élevée de leurs installations. Tous les deux privilégiaient les options de couloir du TLR vers le nord, ceux-ci les desservant directement, mais ce sont les options de couloir qui recelaient le plus d'avantages pour l'ensemble de Kanata qui ont été étudiées dans le cadre de l'étude du LTR vers Kanata. À moyen terme, lorsque le TLR sera prolongé jusqu'à la station Moodie, des services d'autobus fréquents le long de la promenade Moodie, de l'avenue Carling et du chemin March pourront desservir le parc industriel et les installations du ministère. Et dans le futur, les nouvelles technologies du moment, comme les systèmes de guidage fixe et les véhicules autonomes connectés, seront envisagées pour le réseau capillaire. Peu importe les technologies, elles devront toutes pouvoir répondre aux besoins futurs en matière de capacité et de service, des besoins qui pourraient être considérables aux heures de pointe.

Treize options de couloir couvrant un vaste secteur de Kanata ont été retenues et examinées dans le cadre de l'étude du TLR vers Kanata. Suivant une évaluation

exhaustive, fondée sur des critères comme l'achalandage, la connectivité du réseau, l'environnement naturel et social et les coûts, le couloir de TLR préféré, celui qui répond le mieux à tous les critères, longe le côté nord de l'autoroute 417. Voir le schéma 1 ci-après.

Schéma 1 : couloir du TLR privilégié

Les avantages de ce couloir sont les suivants :

- Il fournit un axe central de transport en commun pour desservir l'ensemble de Kanata;
- Il appuie les futurs couloirs du chemin March et du transport en commun rapide par autobus (TCRA) vers Fernbank;
- Ses répercussions sont minimes sur le plan social ou environnemental;
- Il appuie des objectifs d'aménagement le long du parcours;
- Des parties importantes de ce couloir sont protégées par des études d'évaluation environnementale effectuées antérieurement; et,
- Sa construction et son fonctionnement sont rentables financièrement.

En réponse aux commentaires du public relatifs à la densification possible dans Kanata-Sud et Stittsville, d'autres analyses ont été réalisées et, cela étant, dans le plan recommandé, le TLR est prolongé de la promenade Palladium/Centre Canadien Tire

jusqu'au chemin Hazeldean. Les avantages à long terme de ce prolongement sont les suivants :

- Il optimise l'achalandage en créant des liens plus directs aux aménagements autour du chemin Hazeldean, l'achalandage du Centre Canadian Tire, pris isolément, étant relativement faible, sauf lorsqu'il y a des activités spéciales;
- Il crée un réseau de transport en commun plus efficace, car le TLR se trouvant sur une structure surélevée dans ce secteur, les conflits avec d'importantes rues transversales sont évités;
- Il optimise la connectivité au futur couloir prioritaire de transport en commun est-ouest desservant Stittsville ainsi qu'au futur couloir de transport en commun rapide par autobus (TCRA) desservant Fernbank; et,
- Il optimise les possibilités d'aménagement axé sur le transport en commun sur les terrains vacants entourant le couloir du TLR.

Installation d'entretien léger et de remisage (IELR)

Quoique le Conseil ait approuvé dans le cadre de la *Mise à jour de 2017 sur l'Étape 2 du projet de train léger sur rail et le plan d'approvisionnement* la conception fonctionnelle d'une installation d'entretien léger et de remisage (IELR) sur la promenade Moodie, y compris la protection de l'emprise en vue de son aménagement, il a été confirmé que l'étude de son emplacement faisait partie de la portée de l'EE de Kanata afin d'examiner diverses options et de déterminer s'il existait un emplacement plus propice qui aurait pour effet de mieux servir le TLR et d'améliorer les opérations en général. Dans le cadre de l'EE du TLR vers Kanata, huit autres emplacements pour l'IELR ont été évalués du point de vue du transport, de l'environnement social et biologique, des opérations et des coûts.

Beaucoup de ces emplacements faisaient l'objet de demandes d'aménagement actives ou d'engagements d'aménagement par l'entremise de la Zone d'entreprises de Kanata-Ouest. En outre, plusieurs étaient trop près des secteurs résidentiels et, cela étant, obtenaient une faible cote du point de vue social. En fonction de cette analyse, l'emplacement de l'installation d'entretien léger et de remisage sur la promenade Moodie, illustré dans le schéma 8, demeure l'emplacement recommandé. Le prolongement vers l'ouest du TLR de la Ligne de la Confédération jusqu'à la promenade

Moodie et l'emplacement de l'IELR ont reçu l'approbation de l'évaluation environnementale provinciale en février 2018.

Plan recommandé

Prenant appui sur les plans de l'Étape 1 et de l'Étape 2 du TLR de la Ville, le prolongement du TLR vers Kanata comportera onze kilomètres de plus et s'arrêtera au chemin Hazeldean. Il comptera huit stations et quatre parcs-o-bus. Ce prolongement fera en sorte que 90 % des résidents de Kanata seront à moins de cinq kilomètres du train et, pour la ville dans son entier, 80 % des résidents se trouveront à moins de cinq kilomètres du train.

Une bonne partie de ce couloir du TLR a été protégée par des études de planification et d'évaluation environnementales précédentes, datant du milieu des années 1990. Voici une liste des principaux aspects de la conception fonctionnelle du TLR :

- Environ 5,5 km du TLR seront au niveau du sol;
- Environ 1,5 km du TLR sera sous le niveau du sol, dans une tranchée à ciel ouvert;
- Environ 4 km seront sur une structure surélevée ou un remblai;
- Il y aura des liens commodes pour les piétons et les cyclistes entre les stations et les collectivités environnantes; un sentier polyvalent longeant sur toute sa longueur le couloir du TLR sera aménagé utilisant des liens existants et de nouveaux liens;
- Il y aura des toilettes publiques dans les stations terminales et dans les principales stations de correspondance; et,
- Il y aura quatre parcs-o-bus soit l'actuel parc-o-bus d'Eagleson (1220 places de stationnement), celui de la station Terry-Fox (540 places), un parc-o-bus déplacé vers la station Palladium/Centre Canadian Tire (200 places), et un nouveau parc-o-bus à la station Hazeldean (650 places).

Répercussions financières

Même si le volet du TLR vers Kanata ne fait pas partie du réseau abordable de transport en commun rapide de 2031 de la Ville, l'étude s'est penchée sur des façons de le déployer par section si des fonds devenaient disponibles. L'étape prioritaire proposée et présentée ci-après est basée sur l'achalandage et sur les coûts d'immobilisation (dollars de 2017, estimation Catégorie C)

Étape prioritaire	**Coûts d'immobilisation**
1. De la station Moodie à la station Terry-Fox	710 millions de dollars
2. De la station Terry-Fox à la station Palladium	640 millions de dollars
3. De la station Palladium à la station Hazeldean	500 millions de dollars
Coût total du projet	1,85 milliard de dollars

Consultations publiques/commentaires

Les consultations ont comporté trois rencontres avec le Groupe de consultation d'organismes (Commission de la capitale nationale - CCN, le ministère des Transports de l'Ontario - MTO; le ministère du Tourisme, de la Culture et du Sport de l'Ontario - MTCS; la Police provinciale de l'Ontario - PPO; l'Office de la protection de la nature de la vallée de la Rideau - OPNVR; Hydro Ottawa; et Infrastructure Ontario), avec le Groupe de consultation du milieu des affaires (propriétaires fonciers; promoteurs; et entreprises) et avec le Groupe de consultation publique (associations communautaires; et groupes d'intérêt), et deux séances portes ouvertes. Une consultation distincte s'est déroulée auprès des Autochtones et une présentation a été faite devant le Bureau de consultation des Algonquins de l'Ontario.

Dans l'ensemble, le couloir de TLR recommandé ainsi que l'emplacement des stations ont été très bien reçus et les quelques préoccupations soulevées ont été traitées comme suit :

- Connectivité aux stations : une étude sur la connectivité propose des sentiers polyvalents parallèles (formés de nouveaux sentiers et de sentiers existants) au couloir du TLR sur toute sa longueur et des liens aux stations;

- Connectivité des chemins March et Eagleson au parc-o-bus : une passerelle pour piétons et cyclistes sera construite pour relier le parc-o-bus du côté sud de l'autoroute 417 à la station de TLR située du côté nord; et,

- Avancer le calendrier de mise en œuvre : la réalisation de ce projet est prévue pour le moment après 2031 étant donné qu'il ne fait pas partie du réseau abordable de la Ville.

- Le TLR ne dessert pas le parc industriel de Kanata-Nord : le parc industriel peut être desservi par le réseau capillaire qui rejoint la ligne principale du TLR. Le chemin March est désigné couloir de transport en commun dans l'EE du TCRA et du Transitway vers Kanata-Nord (chemin March). Et il existe encore des possibilités pour déterminer, à une date ultérieure quelles, options technologiques seront utilisées pour le réseau capillaire.

BACKGROUND

To prepare for future LRT extensions, on September 7, 2016, Transportation Committee approved the statement of work for the *Kanata Light Rail Transit (LRT) Planning and Environmental Assessment Study (Bayshore Station to Palladium Drive).* Subsequent to this approval, on March 8, 2017, Council approved the *Stage 2 LRT Implementation – Project Definition and Procurement Plan* which included a recommendation to expand the Confederation Line West LRT from Bayshore Station to Moodie Drive. As such, the Bayshore Station to Moodie Drive segment was de-scoped from the Kanata LRT study limits, with the new reduced limits now extending from Moodie Drive to Palladium Drive as shown in Figure 2.

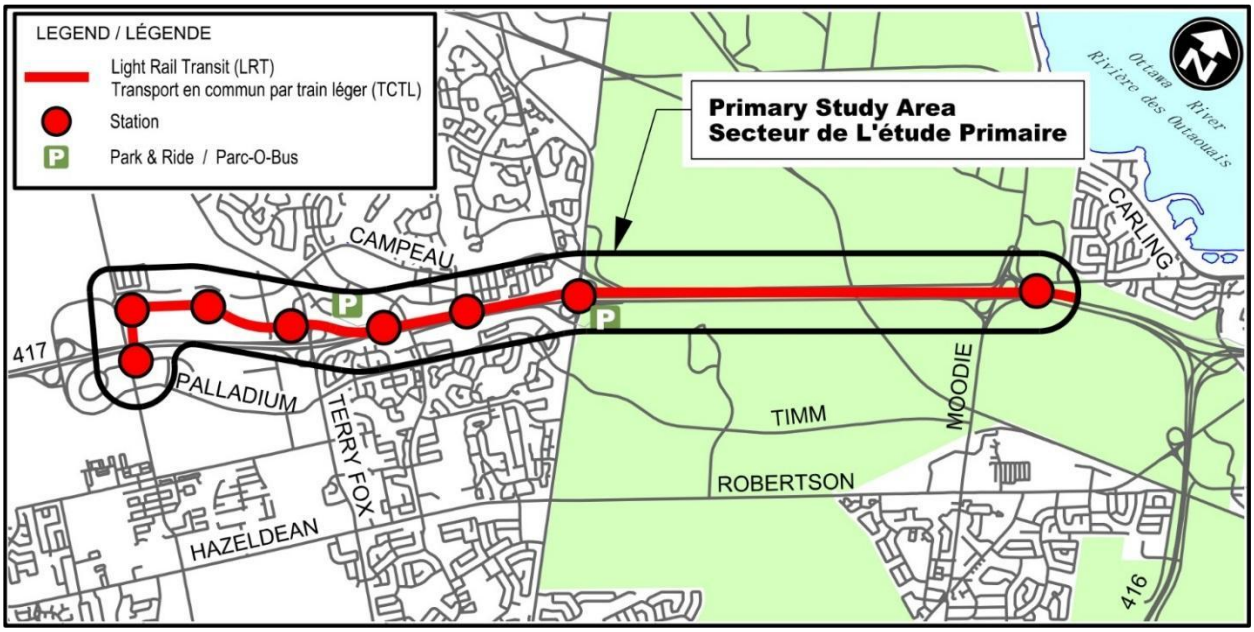

Figure 2: Kanata LRT Study Limits

In addition, on September 13, 2017, Council approved the *Stage 2 Light Rail Transit Project and Procurement Update,* and received the functional design for the Bayshore to Moodie LRT, including the 2.5 kilometres of additional rail, Moodie Station and a Light Maintenance and Storage Facility (LMSF) to meet operational needs and requirements for the expanded Stage 2 LRT. There were two functional designs provided for this LMSF: one for opening day, and a second "ultimate" footprint that protected for a potential future expansion when LRT to Kanata is implemented. This location of the ultimate LMSF close to Moodie Drive was assessed along side various options in the Kanata area as part of the scope of work for the Kanata LRT EA.

This report describes the findings and functional design of the Kanata LRT Planning and EA Study.

DISCUSSION

Project Need

The City's Transportation Master Plan (TMP) identifies the Kanata LRT in the Ultimate Transit Network post 2031. This corridor represents a combination of several completed Bus Rapid Transit (BRT) Environmental Assessments (EA). The future expansion of the City's LRT network to Kanata needs to be identified and protected through an updated

LRT EA to keep pace with rapid development and to address the change in technology from BRT to LRT.

The Kanata LRT Planning and EA Study identifies the corridor and functional design to establish future right-of-way requirements, protect the corridor, and inform the ongoing planning and development of adjacent lands. A completed EA study is also a requirement before commitments to implementation can be made.

LRT Corridor Options

The study identified 13 LRT corridor options covering a broad area north and south of Kanata as shown in Figures 3 and 4. To minimize environmental impacts, existing transportation corridors were identified in developing these options, consisting of road, abandoned and active rail corridors and combinations thereof.

North of Highway 417, four out of six corridors included the use of the active Renfrew Subdivision rail line, while south of Highway 417, two out of three corridors included the use of the former Carleton Place Subdivision rail line, now known as the Trans Canada Trail. Along and near Highway 417, four corridors were identified, including the Campeau Drive corridor, as well as north, south, and in the median of Highway 417.

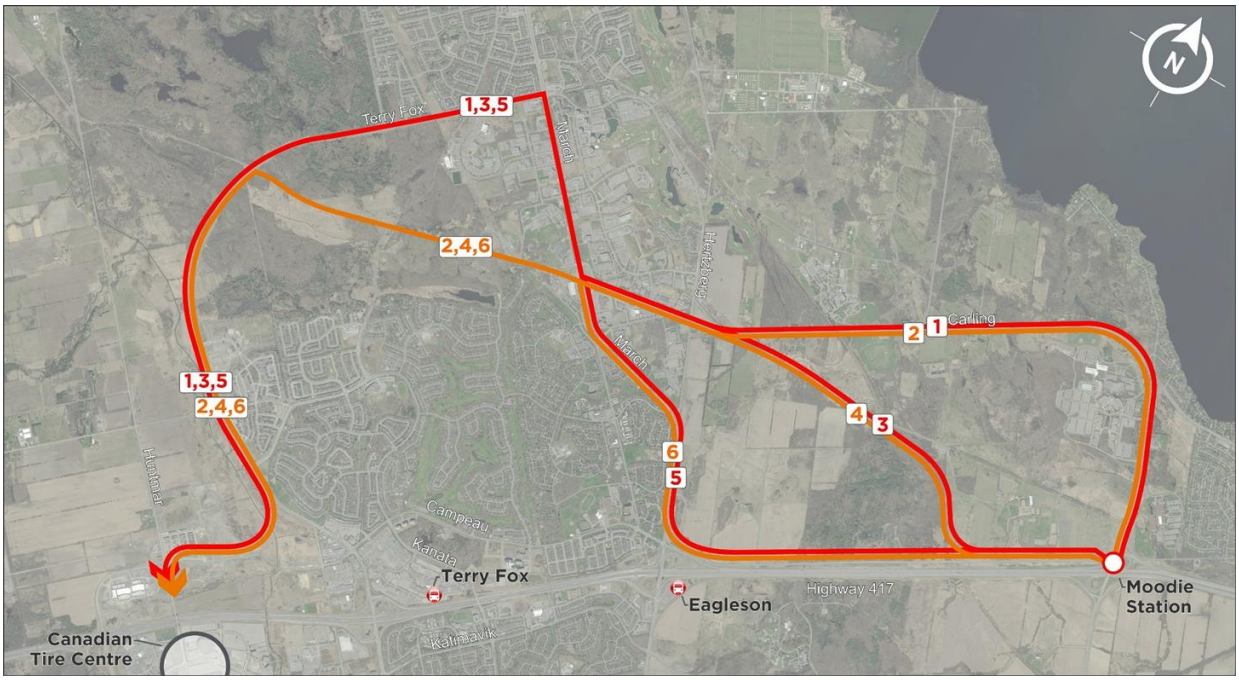

Figure 3: LRT Corridor Options for North Kanata

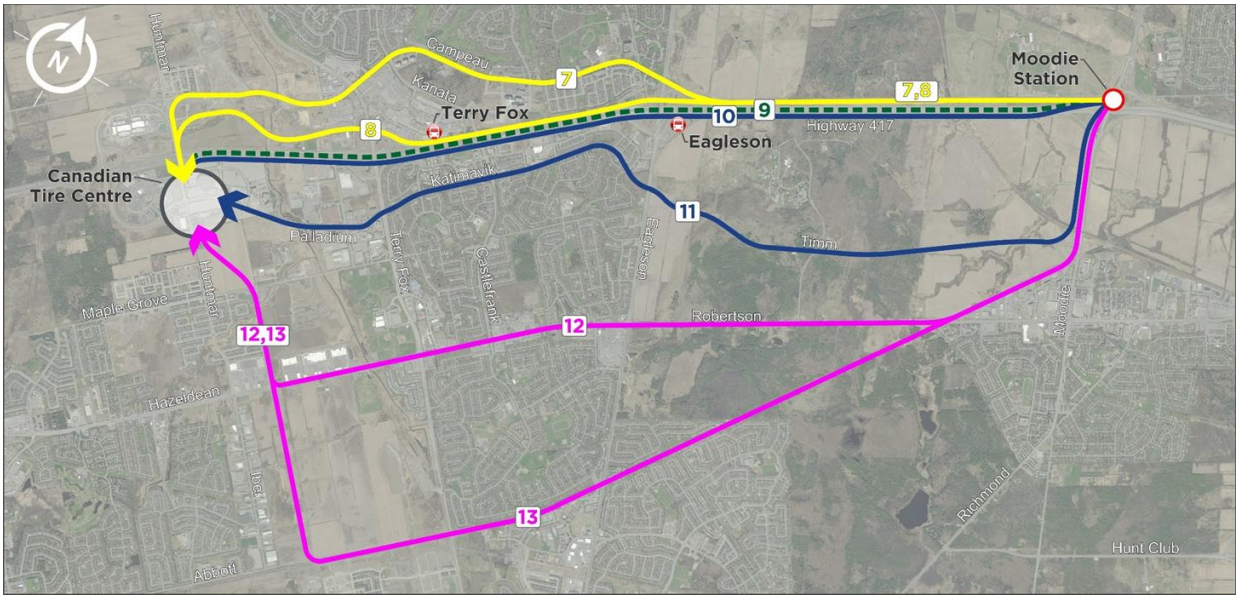

Figure 4: LRT Corridor Options for Kanata Central and South

Based on evaluation criteria such as ridership, network connectivity, the natural and social environment, city building opportunities, and cost, Corridor 8, along the north side of Highway 417, was identified as the preferred corridor. The benefits of this corridor include the following:

- Provides a central transit spine equally supporting all of Kanata;
- Supports the future March Road and Fernbank BRT corridors and other north-south bus routes;
- Includes no significant environmental or social impacts;
- Supports development objectives along the route;
- Significant portions of this corridor is being protected through previous EA studies; and,
- Provides cost effective solution to build and operate.

Details of this corridor evaluation are available in Document 1A.

The results of this evaluation were presented to the public with general feedback requesting a further review of LRT corridor options serving Kanata North and Kanata

South. This was to address the high employment area in the Kanata North Business Park as well as the intensification opportunities in the growing Kanata South and Stittsville area.

Accordingly, the study team conducted a second round of evaluation on three corridors (5, 8, and 13) as well as their hybrids (5a, 8a, and 13a). The corridor options shown in Figure 5 are as follows:

1. Corridor 5 – Hwy 417/March Road/Terry Fox Drive/Palladium Drive.
2. Corridor 5a – Terminates at Innovation Park and Ride.
3. Corridor 8 – North side of Hwy 417.
4. Corridor 8a – Extended to Hazeldean Road.
5. Corridor 13 – Moodie Drive/Trans Canada Trail/North-South Arterial/Palladium Drive.
6. Corridor 13a – Terminates at Robert Grant/Abbott.

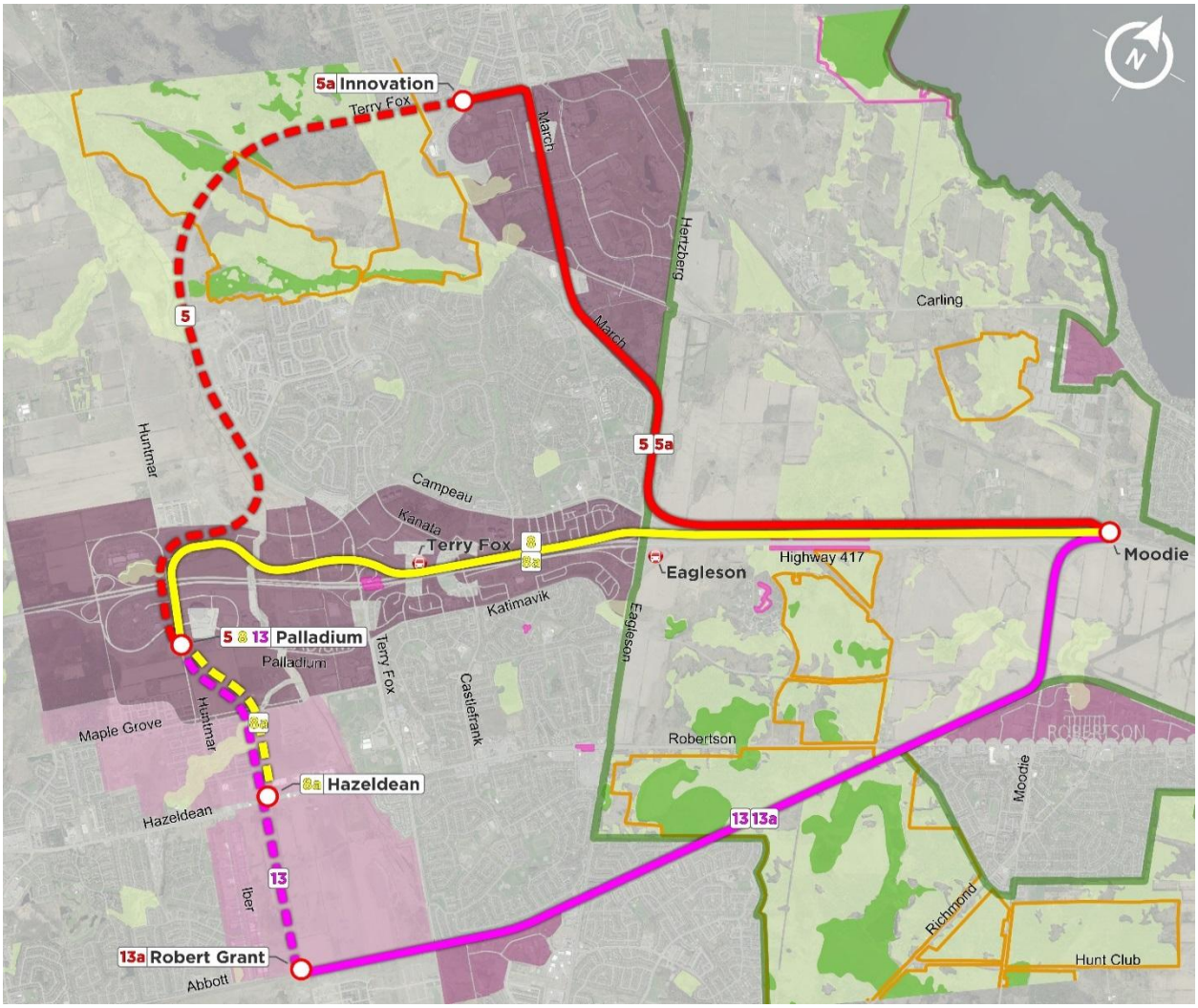

Figure 5: Secondary analysis of LRT Corridor Options

The same evaluation criteria were applied against the six corridor options, and ridership projections from the City's EMME3 Regional Transportation Demand Model as well as additional City building opportunities were examined to further inform the evaluation. For this evaluation, Corridor 8a extending to Hazeldean Road ranked highest overall and is the preferred corridor as shown in Figure 6 as it provides these additional long-term benefits:

- Maximizes ridership by connecting more directly to the development around Hazeldean Road, whereas the Canadian Tire Centre, on its own, has comparatively low ridership except during events;

- Creates a more efficient transit network with an LRT on a structure in this section as it avoids conflicts with major cross streets;
- Maximizes connectivity with the future east-west transit priority corridor serving Stittsville as well as the future Bus Rapid Transit corridor serving Fernbank lands;
- Maximizes opportunities for transit-oriented development around the LRT stations; and,
- Provides a more cost-effective solution as it avoids building a very expensive terminus at the Canadian Tire Centre connecting LRT to a grade separated BRT on a structure as envisioned in the City's TMP.

Document 1B provides additional details on this secondary evaluation.

Figure 6: Preferred Corridor

Light Maintenance and Storage Facility

Although Council approved the functional design, including protection for an ultimate LMSF at Moodie, as part of the 2017 *Stage 2 Light Rail Transit Project and Procurement Update*, the location of the LMSF was confirmed through the Kanata EA study. This study identified several additional LMSF site options in Kanata to explore if a more suitable location to serve Kanata LRT was available and if LMSF operations would further improve at this alternate site. Accordingly, nine sites as shown in Figure 7, including the Moodie LMSF site, were identified for evaluation.

The sites were then assessed from a transportation, social, biophysical, operations, and cost perspective. Many sites either had active development applications or existing development commitments through the Kanata West Development Area. Many sites were also too close to residential areas. Further to this assessment, the Moodie LMSF site as shown in Figure 8 ranked the highest, and as such, continues to be the recommended site. Document 1C provides the full details of the evaluation.

It should be noted that the Environmental Project Report for the Confederation Line West LRT Extension (Bayshore to Moodie) EA Study, including the LMSF, received approval from the Ministry of the Environment and Climate Change in February 2018.

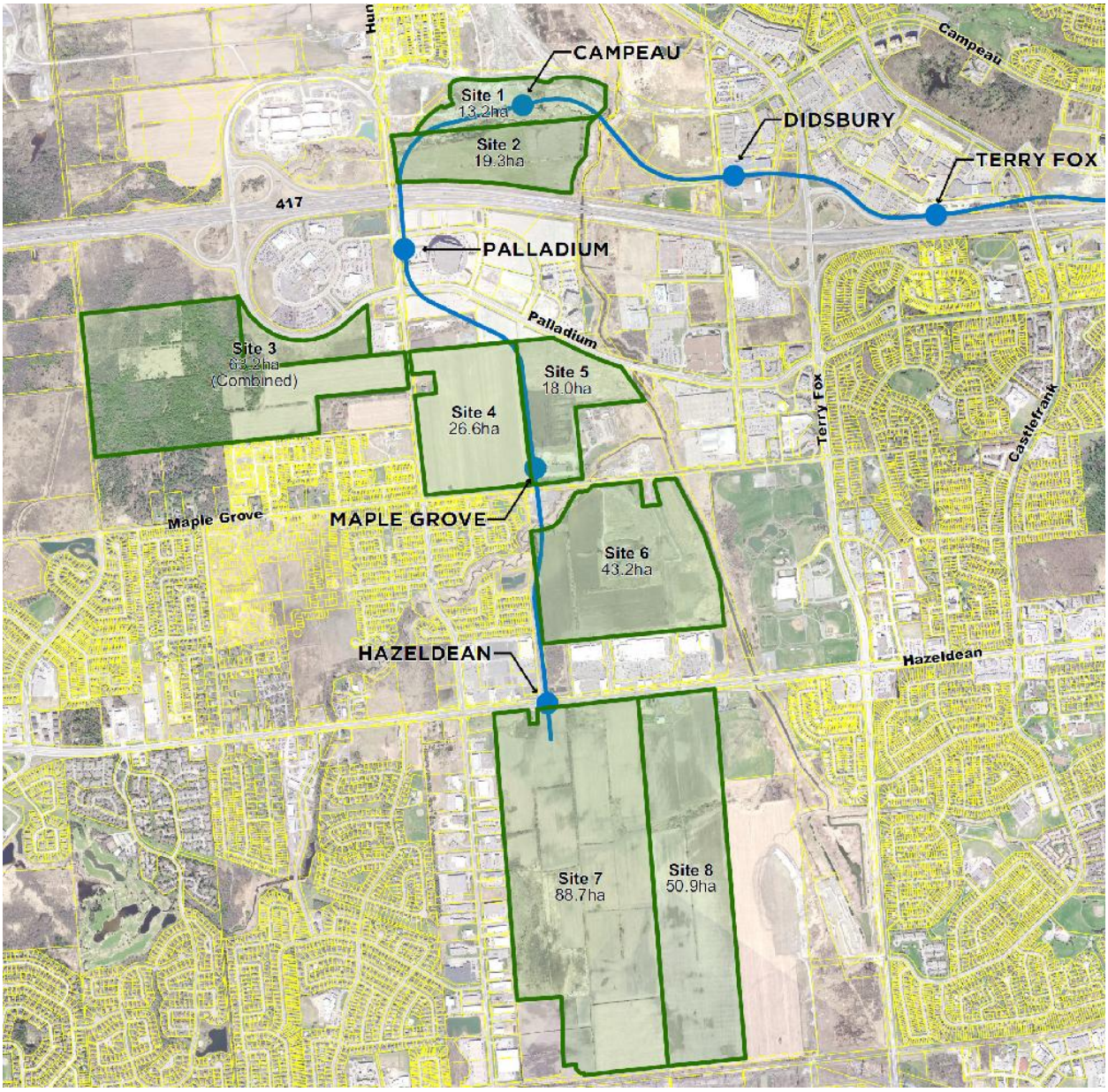

Figure 7: LMSF Site Options

As per the September 13, 2017 Council approved *Stage 2 LRT Project and Procurement Update* report, the ultimate Moodie LMSF will require additional land beyond the size needed for Stage 2 opening day facility requirements. The LMSF expansion to its ultimate configuration would also require a slight realignment of Corkstown Road as well as a realignment of the existing entrance to Wesley Clover Park.

Both the National Capital Commission and Wesley Clover have seen these plans and Wesley Clover has considered them in the context of their long-term vision. These plans have also been discussed with the Ministry of Transportation (MTO) as the LMSF plans are adjacent to the Highway, and safety and spacing parameters must be considered. Discussions with these stakeholders will continue.

Figure 8: Moodie LMSF Site

Recommended Plan

Building on the City's Stage 1 and Stage 2 LRT, the Kanata LRT will further extend the Confederation Line West another 11 kilometres terminating at Hazeldean Road, with eight stations, and four park and rides as shown in Figure 9. This will bring 90% of Kanata residents within 5 kilometres of rail and for the City as a whole, 80% of residents within five kilometres of rail

Much of this LRT corridor has been protected as it has been defined through previous planning and EA studies dating back to the mid 1990s. Key elements of the LRT design includes:

- Approximately 5.5 kilometres of the LRT will be at grade;
- Approximately 1.5 kilometres will be below grade in an open cut;
- Approximately 4 kilometres will be on an elevated structure or embankment;

- Convenient pedestrian and cycling connectivity from stations to surrounding communities is proposed. A parallel multi-use pathway facility throughout the full length of the LRT corridor will be provided through a combination of existing and new linkages;
- Public washrooms at terminus stations and major transfer stations; and,
- Four park and ride facilities, consisting of the existing park and ride lots at Eagleson (1,220 spaces) and Terry Fox Stations (540 spaces), a relocated park and ride at Palladium Station/Canadian Tire Centre (200 spaces), and a new park and ride lot at Hazeldean Station (650 spaces).

Below is a summary description of the recommended plan for the Kanata LRT. The full plan is shown in Document 2.

MOODIE TO MARCH STATION

Moodie Station will be the terminus of the Stage 2 Confederation Line West LRT project, and will include an LMSF with construction anticipated to commence in 2019. The Kanata LRT will start approximately 200 metres west of Moodie Drive at the junction where the tracks for the LMSF diverge from the main LRT tracks. West of this junction, the Kanata LRT runs parallel along the north side of Highway 417 at grade before crossing over the active Canadian National Railway Beachburg Subdivision rail corridor and National Capital Commission (NCC) multi-use pathway on a new structure.

As the LRT approaches March Road, it continues along the north side of the highway, curving slightly north to follow the westbound highway off-ramp and descending below existing grade into an open cut. The alignment then passes underneath the existing westbound highway ramps before entering March Station.

Figure 9: Kanata LRT Recommended Plan

March Station (Figure 10 and 11)

March Station will be located south of the existing March Road and Campeau Drive intersection, with the station platforms spanning under March Road into an open cut, consistent with the 2012 Council-approved Kanata North (March Road) Transitway Planning and EA Study, show in Figure 10. Modifications to this approved plan to accommodate a change from bus to rail technology include provision for a bus terminal facility, to be located on the west side of March Road and south of the LRT alignment. Figure 11 illustrates a rendering of this station under March Road.

The station will include a new multi-use pathway structure spanning over Highway 417 to connect to the existing Eagleson Park and Ride lots (1,220 spaces) located east and west of Eagleson Road and south of Highway 417. Consistent with Stage 1 and Stage 2 LRT, public washrooms are proposed as March Station is a major transfer station.

This station is adjacent to the Ontario Provincial Police (OPP) Detachment, who currently has exclusive use of Provincial Police Lane, which is a public right of way. Due to the constrained area and potential impacts, three station design options were developed in consultation with the OPP and Infrastructure Ontario (IO), who own the land. The preferred design has minor impact on the OPP facility and operations. Provincial Police Lane provides the only access into March Station and will become mixed use with busses, and limited general purpose traffic picking up and dropping off passengers. As well, some property by way of landscaped area is required to accommodate the passenger pick up and drop off area.

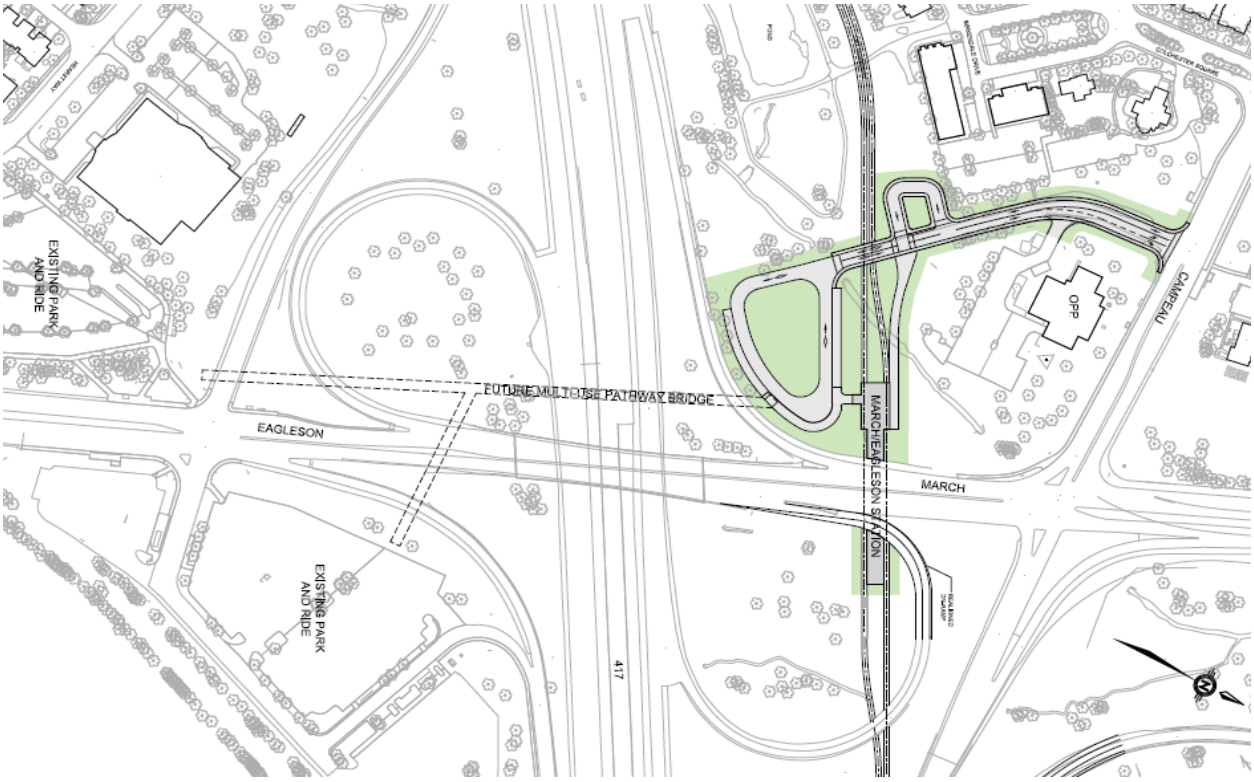

Figure 10: March Station

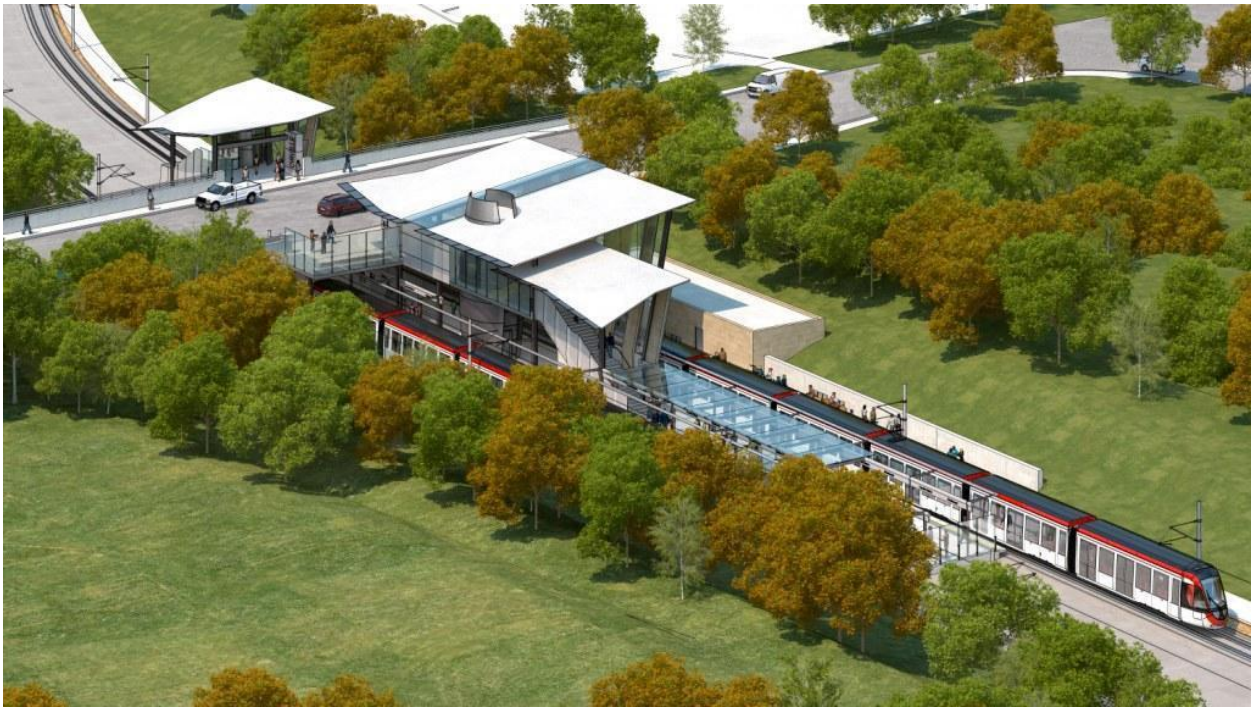

Figure 11: March Station Rendering

Kanata Town Centre Station (Figure 12)

West of March Station, the LRT rises back up to grade and curves around the north side of an existing stormwater management pond before returning to parallel Highway 417 approaching Kanata Town Centre Station. Located 1.1 kilometers from March Station, this station lies west of the existing multi-use pathway (MUP) crossing Highway 417 and will include curbside passenger pick up and drop off facilities located on-street along Gray Crescent, and on the south side of the MUP overpass, near the Hearst Way and Whitney Drive intersection. This station will serve adjacent communities north and south of Highway 417. Existing and well-established pathways will provide strong local connectivity from the station into the communities.

As the LRT continues west, the alignment will curve to the north of the Kanata Avenue westbound off-ramp and pass under Kanata Avenue using a structure pre-built to accommodate rapid transit. West of Kanata Avenue, the alignment will then curve south, again paralleling Highway 417, and enter Terry Fox Station.

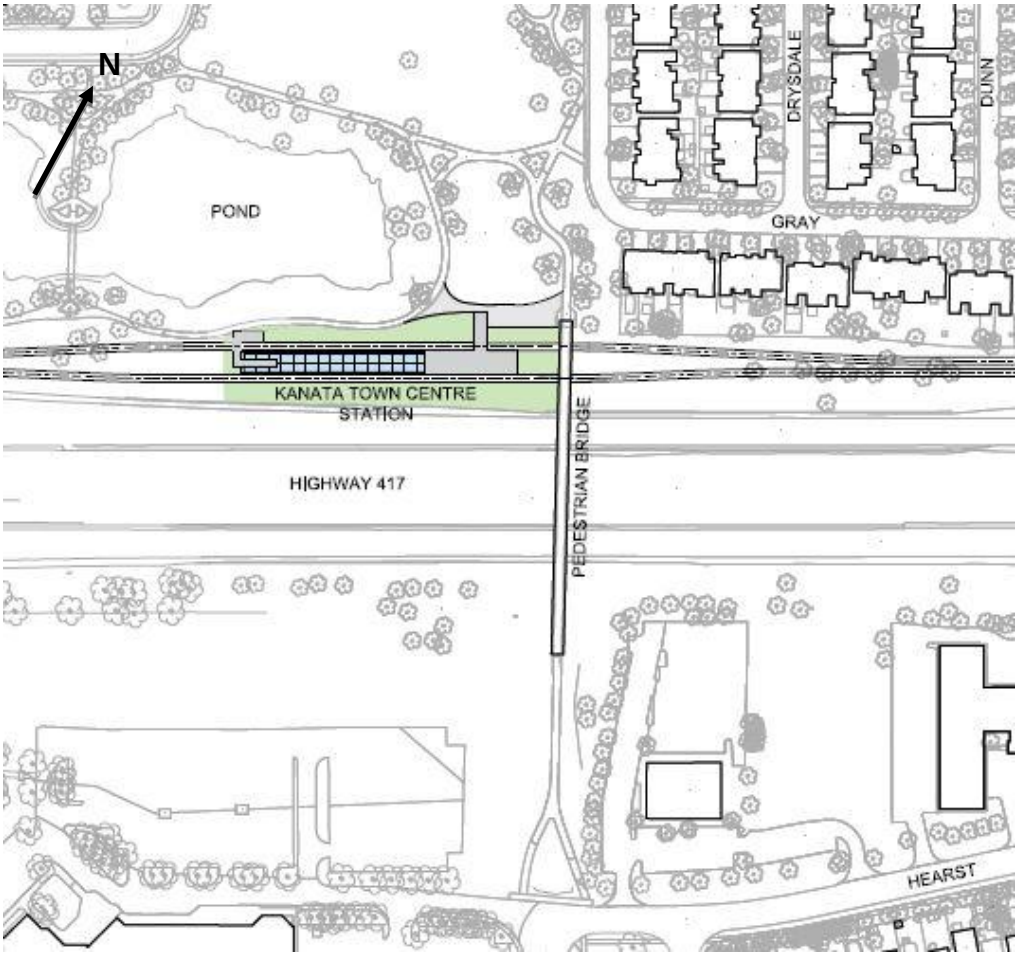

Figure 12: Kanata Town Centre Station

Terry Fox Station (Figure 13)

The existing Terry Fox Station is located adjacent to the Kanata Centrum development and will continue to be used for local transit service. This station consists of a 200 meter long centre island bus platform with 540 park and ride spaces. The new LRT platforms will be located between the existing bus platforms and Highway 417, with new overhead walkways to facilitate transfers. A new multi-use pathway crossing over Highway 417 is proposed to the east of the station to enhance connectivity. Moreover, it will provide access to McGibbon Park and communities south of Highway 417, including Holy Trinity School.

West of Terry Fox Station, the LRT tracks descend below grade in an open cut, following the curve of the westbound Highway 417 Terry Fox Drive off-ramp and then

passes under Terry Fox Drive. Continuing in an open cut, the LRT passes under Didsbury Road East and into Didsbury Station, located between the two legs of Didsbury Road and one kilometre west of Terry Fox Station.

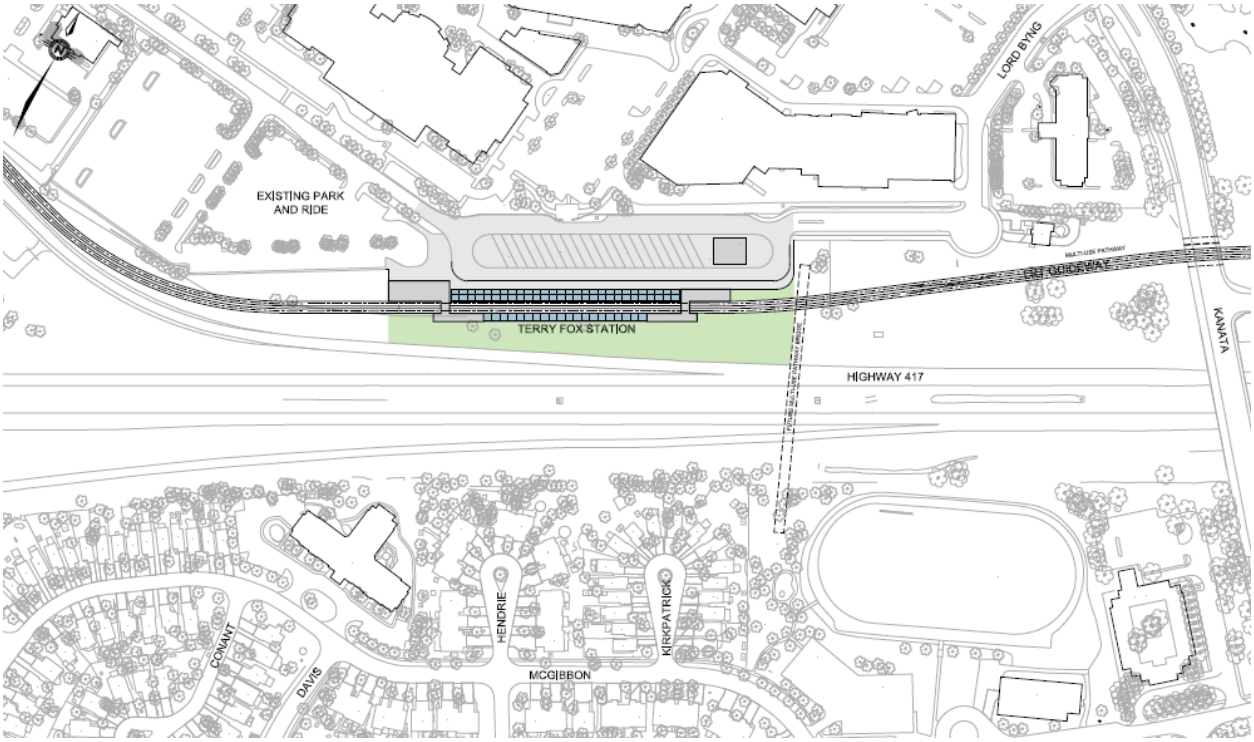

Figure 13: Terry Fox Station

Didsbury Station (Figure 14)

Didsbury Station is located below grade in an open cut section and provides service to local communities. A station house east of Didsbury Road will provide access from street level to the LRT platforms. A curbside passenger pick up and drop off area will accommodate local demand with walking and cycling as the primary means of access.

West of Didsbury Station, the LRT alignment will follow the 2011 Council approved West Transitway BRT Corridor, and curve north, away from Highway 417 before crossing over the Carp River with a new structure. West of the Carp River, the LRT alignment will remain elevated on a long viaduct structure to allow for development access underneath.

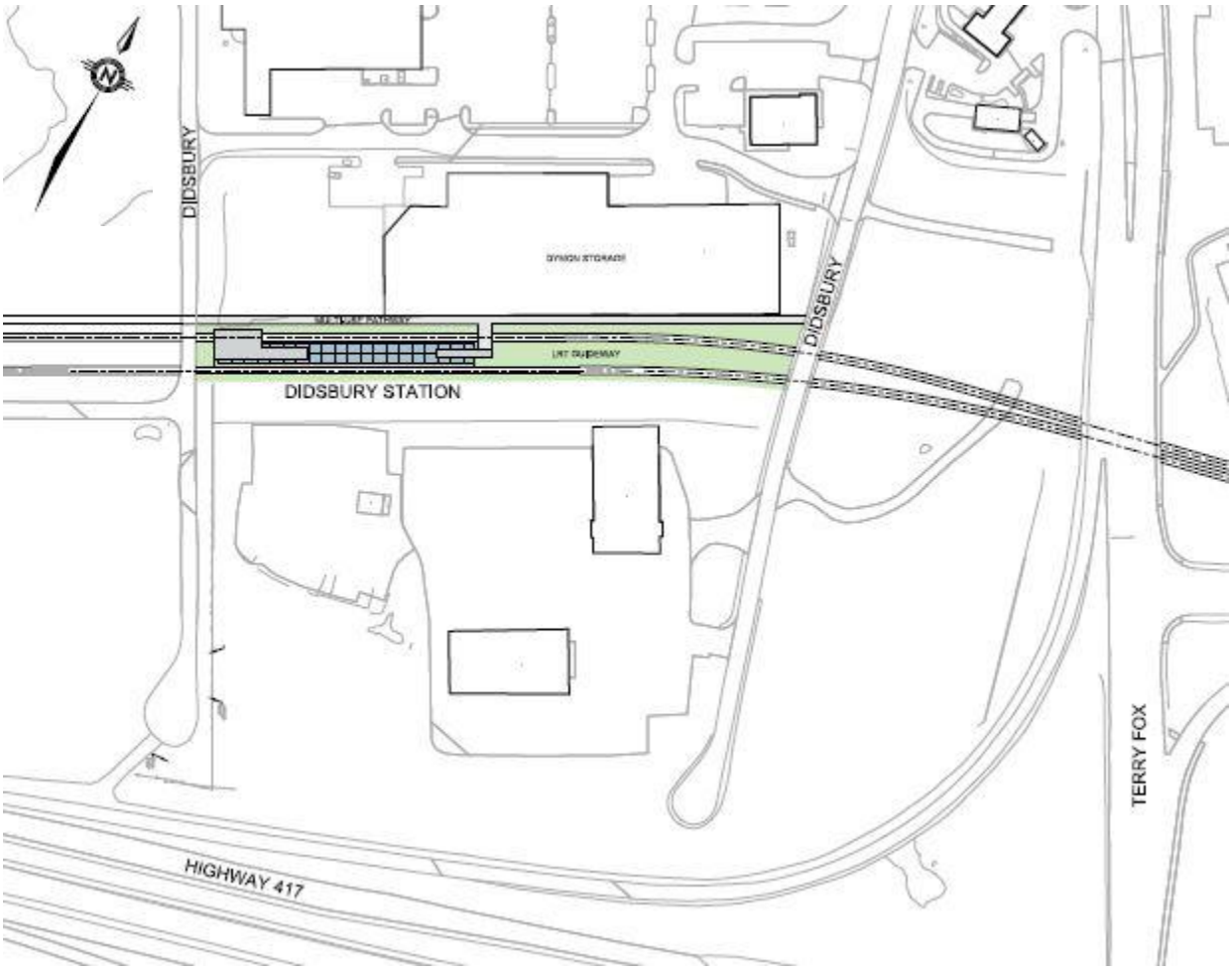

Figure 14: Didsbury Station

Campeau Station (Figure 15)

To respond to the adjacent landowners with respect to minimizing property impacts and maximizing development potential, six LRT corridor options were developed between Didsbury Road and Palladium Drive. Key considerations in evaluating the six options included maximizing ridership potential, compatibility with the transportation network, effects on the social and natural environment, and cost. Based on these criteria, the recommended alignment from the Carp River was further refined from the 2011 Council approved BRT Corridor to directly abut the north side of Feedmill Creek.

While the 2011 Council approved BRT Corridor bisected and thereby compartmentalized the lands between Campeau Drive and Feedmill Creek effectively reducing the developable area, this LRT corridor was shifted further south and tight to the Feedmill Creek to maximize development potential. The elevated LRT alignment will also allow for development access and loading areas as well as parking to be accommodated underneath the LRT to minimize land impacts. Details of this analysis can be found in Document 1D.

Campeau Station, one kilometre west of Didsbury Station, is located west of the planned Riverchase Drive that extends south from Campeau Drive to serve development lands north and south of Feedmill Creek. The station will be on an elevated structure with access from street level. Figure 16 provides an example of an elevated LRT station (Vancouver Skytrain) while Figure 17 shows the cross-section of an elevated LRT accommodating a clear height of 4.5 metres.

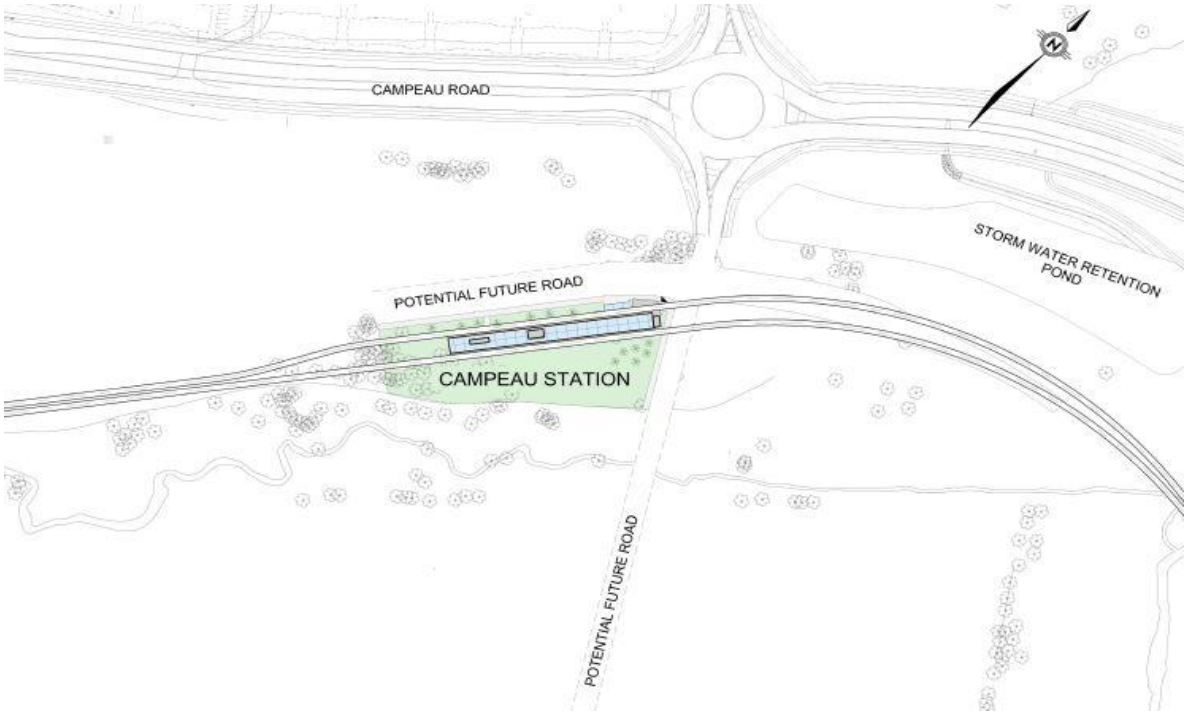

Figure 15: Campeau Station

Figure 16: Vancouver Skytrain Example of Elevated Station

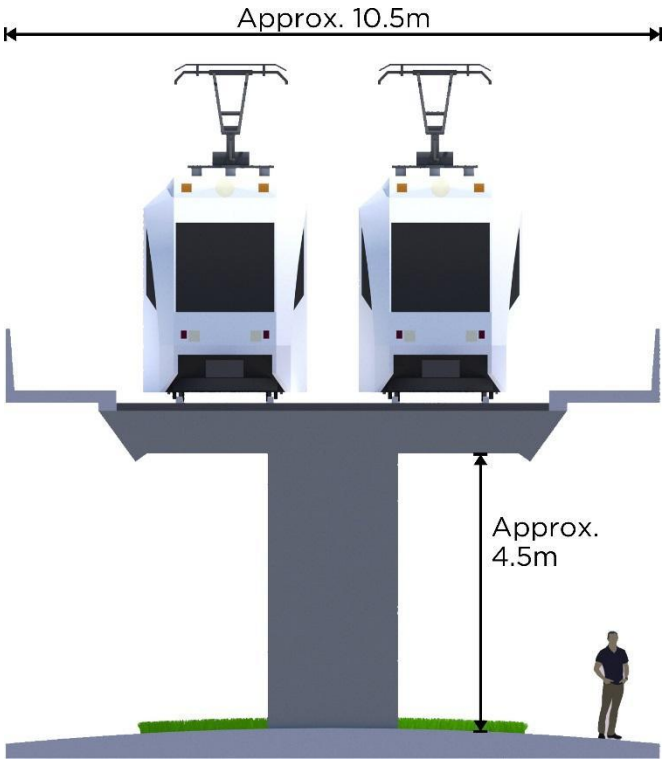

Figure 17: Cross-Section Rendering of Elevated LRT

West from Campeau Station the LRT corridor will parallel Feedmill Creek on its north side before curving south and crossing over the creek and over Highway 417 to enter Palladium Station. The LRT corridor remains elevated through this segment. A MUP bridge structure crossing Highway 417 parallel to Huntmar Bridge and the LRT track is proposed to provide connectivity with existing MUPs both north and south of the highway.

Palladium Station (Figure 18)

Palladium Station is one kilometre west of Campeau Station and is positioned on the west side of the existing Canadian Tire Centre (CTC), between Cyclone Taylor Drive and Palladium Drive. The elevated station provides sufficient clearance to accommodate an elevated pedestrian walkway to access the second floor of the CTC. This preferred configuration by the CTC allows for optimum circulation during special events as the west entrance serves transit users while the east entrance serves the parking lot.

This station will include a local bus terminal and drop off area on the west side of Huntmar Drive accessed by an overhead walkway over Huntmar Drive. An existing park and ride lot at the Canadian Tire Centre provides 200 spaces and will be relocated closer to the LRT station. South of Palladium Station, the LRT alignment remains elevated as it crosses over Palladium Drive. It then drops down to grade for a short section and then curves to the south to meet up with the future North-South Arterial, with the LRT on the east side of this road corridor. From here, it rises back up on an elevated structure as it continues south paralleling the North-South Arterial towards Maple Grove Station. The alignment between Palladium Drive and Maple Grove Road has been refined from the 2011 Council approved BRT Study in consultation with affected landowners to reduce impacts on future development lands.

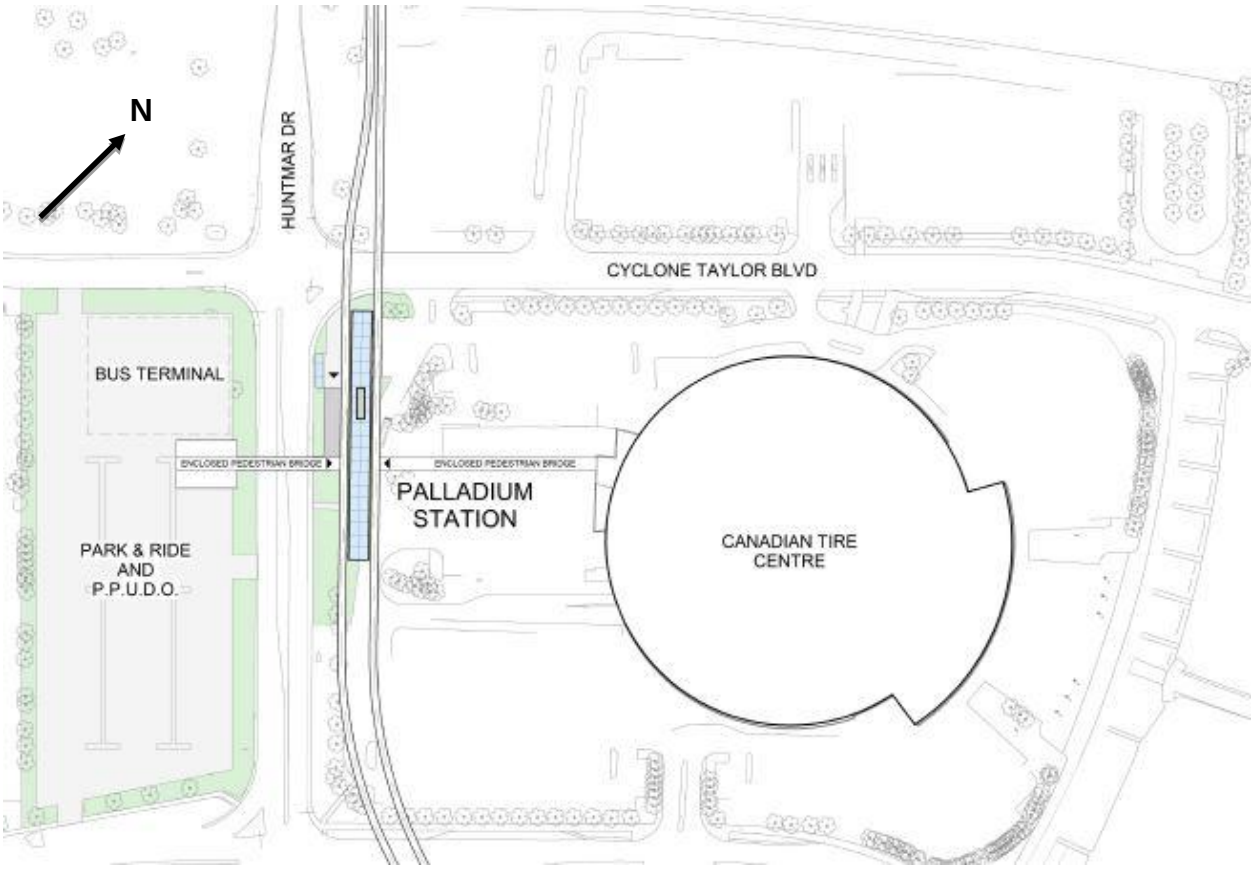

Figure 18: Palladium Station

Maple Grove Station (Figure 19)

Maple Grove Station is located 1.2 kilometres south of Palladium Station, on the north-east quadrant of Maple Grove Road and the future North-South Arterial. The LRT platforms will be elevated above street level. A station house will be located at street level with stairs and elevators providing access between the street and the LRT platforms. Local bus connections and a curbside passenger pick up and drop off area will be accommodated on street. South of Maple Grove Station the LRT alignment will remain elevated to cross over Poole Creek and on towards Hazeldean Station.

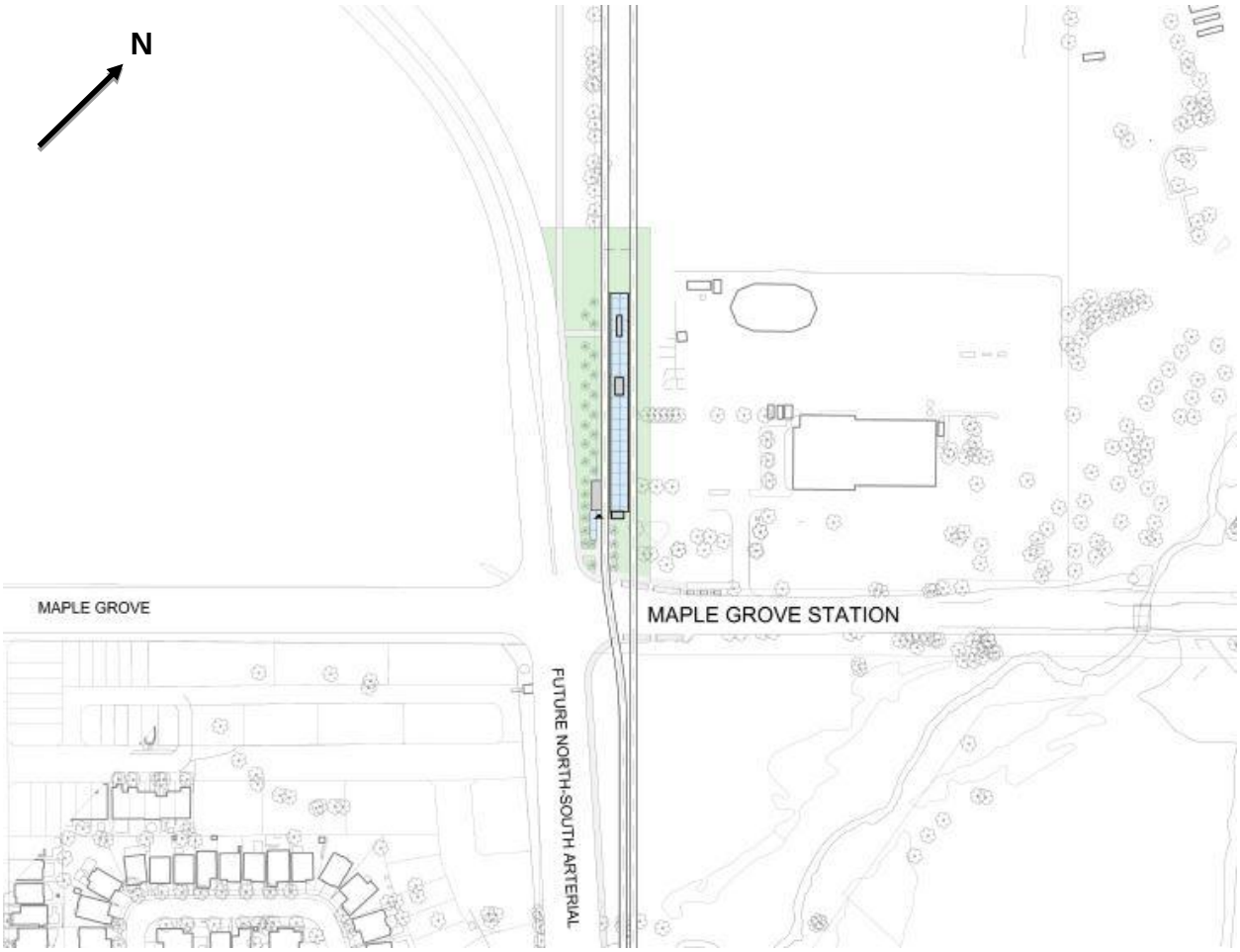

Figure 19: Maple Grove Station

Hazeldean Station (Figure 20)

Hazeldean Station, located one kilometre south of Maple Grove Station is the terminus for the LRT and public washrooms will be included. Also on a structure to avoid conflicts with traffic, the station straddles over Hazeldean Road. Although two park and ride lots, each with 325 spaces were identified as part of the 2011 BRT EA Study, the south lot is required to accommodate a local bus terminal. Additional property is being protected to preserve the 325 park and ride spaces in the south lot. The park and ride lot north of Hazeldean Road will displace the existing stormwater management pond adjacent to Hazeldean Road and the pond will be relocated to the northern limits of the park and ride to provide greater station visibility.

This station will serve the Stittsville and Fernbank communities via the proposed at-grade median BRT which is planned to continue south along the future North-South Arterial.

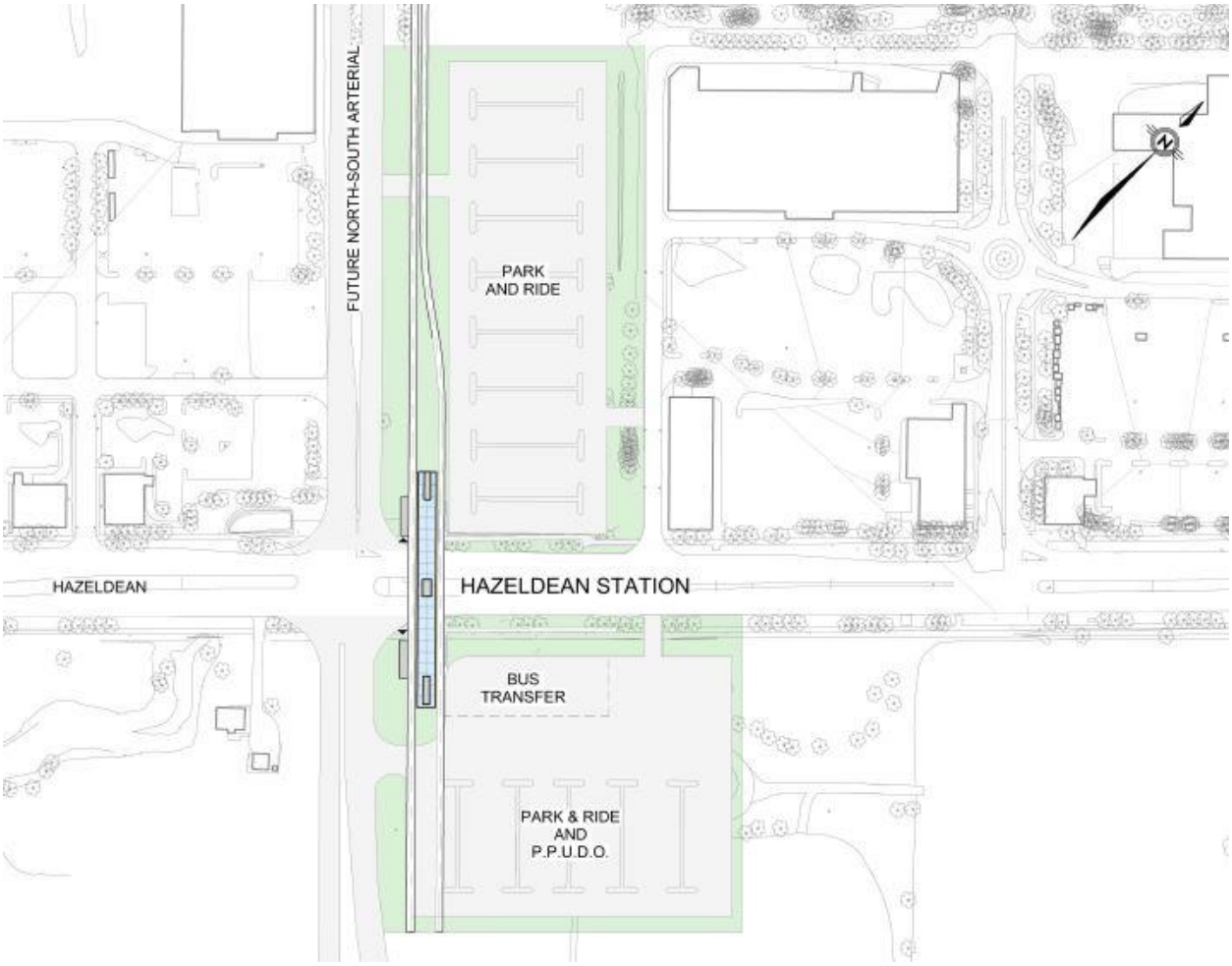

Figure 20: Hazeldean Station

Property Impacts

The Kanata LRT requires 20 hectares of additional property throughout the corridor, consisting of public and private landowners primarily on vacant and unoccupied land. Existing buildings and residential homes are unaffected. Stakeholder consultations were held with property owners whose lands are significantly impacted by this project.

Cost Estimate and Implementation Staging

Even though the Kanata LRT is beyond the City's 2031 Affordable Rapid Transit Network, the study examined how the project could be implemented in sections if and when funding is available. The proposed staging priority is based on ridership and capital cost. Cost for design, construction, property, public art, and contingencies in

2017 dollars (Class C estimate) is summarized according to the proposed implementation and staging plan below.

Staging Priority	Capital Cost
1. Moodie Station to Terry Fox Station	$710 M
2. Terry Fox Station to Palladium Station	$640 M
3. Palladium Station to Hazeldean Station	$500 M
Total Project Cost	$1.85 B

Project costs were developed in accordance with the Council-approved Project Delivery Review and Cost Estimating process for implementing capital projects. These estimates have been reviewed by the Stage 2 LRT Office.

RURAL IMPLICATIONS

The Kanata LRT passes through the NCC Greenbelt between Moodie Drive and March Road. While it is generally contained within MTO's Highway 417 corridor and Corkstown Road, the rural character of the Greenbelt will be preserved through the use of enhanced grass swales for stormwater management along side landscaping and fencing where required.

CONSULTATION

Consultation included three rounds of meetings with the Agency Consultation Group (National Capital Commission (NCC); Ministry of Transportation Ontario (MTO); Ontario Ministry of Tourism; Culture and Sport (MTCS); Ottawa Provincial Police (OPP); Rideau Valley Conservation Authority (RVCA); Hydro Ottawa; and, Infrastructure Ontario), Business Consultation Group (landowners; developers; and, businesses), and Public Consultation Group (community associations; and, interest groups). Separate consultation with Indigenous Peoples included a presentation to the Algonquins of Ontario Consultation Office. There were also two rounds of public open houses that were well attended. Further details of the public consultation is provided in Document 1E.

Overall, there was significant support for the recommended LRT corridor and station locations with general concerns that were addressed as follows:

- Connectivity to stations – A connectivity study proposes parallel multi-use pathways (new and existing) throughout the length of the LRT corridor with linkages to the stations;
- March Road/Eagleson Road connectivity to park and ride – A pedestrian and cycling overpass will be provided to connect the park and ride on the south side of Highway 417 to the north side to connect to the station;
- Advance the timing of implementation – This project is currently identified as post 2031 as it is not included in the City's Affordable Network; and,
- LRT does not serve the Kanata North Business Park – This site can be served with feeder service to the main LRT line. March Road is identified as a transit corridor through the Kanata North Transitway (March Road) EA study. Opportunity still exists to determine the technology choice at a later date.

As well, individual stakeholder meetings were held to address specific issues and is summarized below.

Kanata North Business Park and Department of National Defence

The Kanata North Business Park (KNBP) and Department of National Defence (DND) prefer corridors that directly serve their respective sites. To respond to this concern, additional LRT corridor options that directly served KNBP and DND were developed and assessed.

This analysis concluded that despite the increased growth projections provided by DND over and above the City's Official Plan growth projections, there was no net benefit to any of the corridor options directly serving KNBP and DND when compared to the recommended corridor. The routes were longer, resulting in travel time increases, the capital costs were higher, and the net ridership decreased. Moreover, an LRT station on Moodie Drive and Carling Avenue, fronting the site, would still require employees to walk as far as one kilometre to reach the furthest building.

While the recommended plan for the Kanata LRT (the main line) will provide service for all of Kanata, there is benefit in providing efficient feeder service to the KNBP and DND

sites. In the near term when LRT is extended to Moodie Station, transit can be provided to these sites with frequent bus service along Moodie Drive, Carling Avenue, and March Road. In the future, the feeder network would consider new technologies of that time such as fixed guideway systems and connected autonomous vehicles. Any technology option must be capable of aligning with future capacity and service requirements, which could be significant during peak demand.

The City has developed some corridor options along with proposed feeder network technologies for future consideration. It should be noted that a separate environmental assessment is required to fully assess the options and develop a functional design. Document 1F contains the review of corridor options as well as examples of feeder network technologies.

COMMENTS BY THE WARD COUNCILLOR(S)

Comments from Councillor Wilkinson (Ward 4)

I support this report and its recommendations and would like to emphasis an item in the report that is not emphasized and that relates to how connections can be made to the Kanata North Business Park and the military campus on Moodie Drive. The idea of using autonomous shuttles on its own right of way should be researched now as that technology is already available and will likely be found in some locations in Ottawa within the next 2-3 years (as described at the Autonomous Vehicle Summit on April 4th).

Comments from Councillor Qadri (Ward 6)

- The extension of the LRT to Hazeldean is the first opportunity for the far west-end communities to be connected - creating a more efficient link to the rest of the transit network.
- Hazeldean is an ideal transition point and the best transfer point for future connections to Kanata South and Richmond through Robert Grant.
- This connection will play an integral role in the success of LRT - Increasing ridership and long-term transit use for the west and south end.
- Fernbank CDP has identified two park and rides at Hazeldean location so the planning is already in place to make it an ideal transfer point.

- Having the LRT end at this location provides potential to create and support Transit oriented development, which in turn will strengthen economic development along the arterial main street of Hazeldean Road.

Comments from Councillor Taylor (Ward 7)

Councillor Taylor is aware of this report.

Comments from Councillor Chiarelli (Ward 8)

Councillor Chiarelli is aware of the report.

Comments from Councillor Hubley (Ward 23)

Thank you for all your efforts to produce this report. I believe you have captured all the considerations and produced a report that the general public will be able to understand what LRT to Kanata will look like and cost. A special thank you for including potential emerging technologies to be a consideration in future planning.

ADVISORY COMMITTEE(S) COMMENTS

The Accessibility Advisory Committee was invited to all consultation events and a member attended the Public Consultation Group meetings as well as the Open Houses. Comments related to ensuring the LRT facilities comply with the Accessibility for Ontarions with Disabilities Act. It should be noted that the Kanata LRT will be designed to meet Ontario and City of Ottawa accessibility standards similar to Stage 1 and 2 LRT of the Confederation Line, and Trillium Line.

LEGAL IMPLICATIONS

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

RISK MANAGEMENT IMPLICATIONS

There are no risk implications.

ASSET MANAGEMENT IMPLICATIONS

The recommendations documented in this report are consistent with the City's Comprehensive Asset Management (CAM) Program (City of Ottawa Comprehensive Asset Management Program) objectives.

The recommended approach for the Kanata LRT extension, is an efficient and affordable approach to project delivery. This forward looking approach supports meeting future challenges, including changing demographics and populations, legislative and environmental factors.

FINANCIAL IMPLICATIONS

There are no financial implications with the approval of the recommendations in this report. The project is beyond the City's 2031 Affordable Rapid Transit Network Plan.

ACCESSIBILITY IMPACTS

The Kanata LRT will be designed to meet Ontario and City of Ottawa accessibility standards similar to Stage 1 and 2 LRT of the Confederation Line, and Trillium Line.

ENVIRONMENTAL IMPLICATIONS

The Kanata LRT project has environmental implications and mitigation measures are proposed as described below.

Noise Impacts

Operational noise impacts due to the LRT are not expected to be significant and preliminary results indicate that along the Highway 417 corridor, noise levels are dominated by highway traffic. Most noise sensitive areas along this part of the LRT corridor currently have noise barriers that are in close proximity to the highway.

Noise sensitive areas along the future North-South Arterial corridor are currently relatively quiet measuring less than 55 dBA. In the future, there could be an increase in noise levels due to the growth in road traffic, and effects will be mitigated if required at that time. Overall, the influence from the LRT will be minor with roadway traffic being the dominant noise source.

Vibration Impacts

Vibration impacts due to the LRT are not expected to be significant although if required, appropriate mitigation such as ballast mats/track isolation slabs and resilient track fasteners will be identified. Similar methods have been used effectively elsewhere and are planned for incorporation into the Confederation Line.

Stormwater Management

Quantity and quality control of storm runoff will be modified along the LRT alignment. LRT drainage will be filtered through the track ballast and granular base before being conveyed to outlets. As the LRT abuts Highway 417, modifications to existing drainage along Highway 417 may need to be undertaken in some parts of the corridor.

Natural Environment

Impacts to fisheries and aquatic habitat can be successfully avoided through standard design and construction practices such as embedding of culverts, provision of substrate, adherence to in-water timing restrictions, and implementation of an erosion and sediment control plan, among others.

Retained vegetation will be protected from incidental disturbance during construction and a site restoration and planting plan will be implemented to replace removed vegetation with native plant species. Potential impacts to vegetation and wildlife will be reduced or eliminated.

There is potential for the project to interact with Species At Risk (SAR). The need for more targeted species studies/inventories have been documented, and following the application of mitigation measures, potential impacts will be reduced or eliminated. In addition, this project will adhere to the City of Ottawa *Protocol for Wildlife Protection during Construction*.

The presence of species at risk habitat exists within the study area. The EA study is recommending mitigation measures required to address impacts to the terrestrial habitats and to SAR.

The City is working with the Ministry of Natural Resources and Forestry, the Mississippi Valley Conservation, and the Rideau Valley Conservation Authority during the EA study and into detailed design to ensure potential impacts to the natural environment are reduced or eliminated.

Watercourse Crossings

The Recommended Plan crosses watercourses in several areas, specifically Poole Creek, the Carp River, Feedmill Creek and Watt’s Creek.

- The alignment crosses Watts Creek in the vicinity of March Road Station. Watts Creek is a cool water system sensitive to alteration and change. Near the station, an existing culvert will be replaced to accommodate the alignment.
- The alignment makes use of the approved BRT crossing of the Carp River. The Carp River, a warm water system, has undergone significant restoration activities within the study area to improve the condition of the river and to enhance terrestrial and aquatic habitats. This restoration considered the approved BRT crossing.
- Feedmill Creek is a tributary of the Carp River. The alignment is largely elevated in this area, and will cross over the creek as it approaches Highway 417. As a cool water system, Feedmill Creek is sensitive to alteration and change. The Kanata LRT EA study is working closely with City staff and considering the restoration study underway for Feedmill Creek. The LRT alignment accommodates the future corridor of Feedmill Creek, and does not preclude any of the improvement measures being examined.
- The LRT alignment crosses Poole Creek south of Highway 417. As a warm water system within this reach of the creek, Poole Creek is tolerant of alteration and change.

To reduce construction-related impacts to these watercourses, an Erosion and Sediment Control Plan and an Environmental Protection Plan will be prepared during subsequent design phases to prevent sediment, contamination, waste or other detrimental substances from entering these watercourses as a direct or indirect result of construction. An appropriate construction timing window will be followed to avoid any impact on aquatic species.

Climate Change

In December 2017, Ministry of Environment and Climate Change (MOECC) released new guidelines titled "*Considering Climate Change in the Environmental Assessment Process*." The guide advises project proponents on the Ministry's expectations for considering climate change in environmental assessment studies including:

- The effects of a project on climate change;

- The effects of climate change on a project; and,
- Various means of identifying and minimizing negative effects during project design.

The Kanata LRT EA has addressed the above expectations and includes:

- Assessment of the project's impacts on greenhouse gas emissions;
- Climate change projections for 2050 and 2080 time horizons;
- Assessment of the resilience or vulnerability of the project to changing climatic conditions; and,
- Identification of potential climate change adaptations or future monitoring requirements.

As an initial assessment, implementation of LRT in Ottawa is expected to reduce greenhouse gas emissions through the replacement of diesel buses with electrified light rail vehicles and through increased transit ridership over time.

TERM OF COUNCIL PRIORITIES

The recommendations summarized in this report will help achieve the following Strategic Objectives of the 2015 - 2018 Term of Council Priorities:

- TM1 Build a world-class environmentally sustainable light rail transit system;
- TM2 Provide and promote infrastructure to support safe mobility choices;
- TM3 Integrate the rapid transit and transit priority network into the community;
- TM5 Ensure reliable and safe transit services; and,
- ES1 Support an environmentally sustainable Ottawa.

SUPPORTING DOCUMENTATION *(held on file with the City Clerk and Solicitor)*

Document 1A Evaluation of LRT Corridor Options

Document 1B Secondary Evaluation of LRT Corridor Options

Document 1C Light Maintenance and Storage Facility Site Options Evaluation

Document 1D Didsbury to Palladium Drive LRT Corridor Options

Document 1E Consultation Summary

Document 1F KNBIA and DND Corridor Review

Document 2 Functional Design of Recommended Plan

DISPOSITION

Following Transportation Committee and Council approval of the functional design, the Transportation Services Department will undertake the following steps to complete the Environmental Assessment Study in accordance with the Ontario EA Regulation 231/08 for Transit Projects:

- Initiate and complete the Transit Project Assessment Process (TPAP);
- File the Environmental Project Report (EPR) with the Ministry of the Environment and Climate Change (MOECC); and,
- Make the EPR available for the 30-day public review period.