

**Subject: Barrhaven Light Rail Environmental Assessment Study - Revised Alignment / Woodroffe Avenue Median LRT Plan**

**File Number: ACS2023-PRE-TP-0002**

**Report to Transportation Committee on 27 April 2023  
and Council 10 May 2023**

**Submitted on April 17, 2023 by Vivi Chi, Director, Transportation Planning,  
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**Wards: Barrhaven West (3), College (8), Knoxdale-Merivale (9) and Barrhaven  
East (24)**

**Objet : Étude d'évaluation environnementale du réseau de TLR de  
Barrhaven – Tracé révisé/Plan du TLR sur le terre-plein central de  
l'avenue Woodroffe**

**Dossier : ACS2023-PRE-TP-0002**

**Rapport au Comité des transports le 27 avril 2023  
et au Conseil le 10 mai 2023**

**Soumis le 17 avril 2023 par Vivi Chi, Directrice, Planification des transports,  
Services de la planification, des biens immobiliers et du développement  
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**REPORT RECOMMENDATIONS**

**That the Transportation Committee recommend that Council:**

- 1. Receive for information the revised functional design for the Barrhaven LRT Environmental Assessment Study between Knoxdale Road and West Hunt Club Road and the associated consultation outcome as described in this report and supporting documents; and**
- 2. Direct staff to re-initiate the Transit Project Assessment Process (TPAP) in accordance with Regulation 231/08 of the *Ontario Environmental Assessment Act*, 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 municipal :**

- 1. de prendre connaissance, pour information, du plan de conception fonctionnelle révisé de l'Étude de l'évaluation environnementale du réseau du TLR de Barrhaven entre le chemin Knoxdale et le chemin West Hunt Club, ainsi que des résultats de la consultation afférente, exposés dans ce rapport et dans les pièces justificatives;**
- 2. de demander au personnel de la Ville de relancer le processus d'évaluation des projets de transport en commun (PEPTC) conformément au Règlement de l'Ontario 231/08 de la Loi sur les évaluations environnementales de l'Ontario, dont la préparation et le dépôt du Rapport sur le projet environnemental pour examen et commentaires définitifs du public.**

## **EXECUTIVE SUMMARY**

On June 8, 2022, City Council approved the revised alignment of the Barrhaven Light Rail Transit (LRT) between Knoxdale Road and West Hunt Club Road (1.3 km), and directed staff to finalize the functional design, conduct public consultation on the design change, document the process and inform Transportation Committee of the consultation outcome, as part of the larger Barrhaven Light Rail Transit project from Baseline Station to the Barrhaven Town Centre.

The revised functional design includes:

- An elevated LRT corridor in the median of Woodroffe Ave between Knoxdale Road and West Hunt Club Road;
- Relocation of Knoxdale Station to the north by about 80 metres;

- Incorporation of gentler curves to allow the LRT guideway to transition into and out of the median to minimize noise and ensure rider comfort;
- Reconstruction of Woodroffe Avenue which includes five intersections conforming to City's Protected Intersections Design Guidelines;
- Uni-directional cycle tracks on both sides of Woodroffe Avenue between Knoxdale Avenue and West Hunt Club Road to replace the existing on-street bike lanes including landscaping;
- Sufficient clearance from Hydro One lines near Knoxdale Road and West Hunt Club Road;
- Removal of the existing bus-only lanes along Woodroffe Avenue to accommodate median LRT corridor; and
- On-street bus stops on Woodroffe Avenue for local bus service

### Assumptions and Analysis

The work to finalize the functional design for the Barrhaven LRT between Knoxdale Road and the Nepean Sportsplex included reviewing and assessing impacts of the revised alignment in consultation with various City departments, undertaking a constructability review as well as a third-party Road Safety Audit, updating the cost estimate for this revised alignment, and consulting with the public. There are underground utilities and hydro poles that require coordination when constructing the median overhead LRT. It includes relocation of a 300-metre section of watermain (1200 mm diameter) which runs under the existing southbound lanes of Woodroffe Avenue. A traffic management plan will be developed when this project is in the implementation phase.

The process has been documented and the Environmental Project Report (EPR) for the Barrhaven LRT (Baseline Station to Barrhaven Town Centre) will be updated and filed to complete the provincial Environmental Assessment (EA) requirements, as approved by Council in November 2020 and June 2022.

### Financial Implications

The Class C estimate (2023 dollars) to design and implement the Barrhaven LRT (Baseline Station to Barrhaven Town Centre) and Rail Grade-Separations, with the median alignment, along with the purchase of additional vehicles is \$4.019 billion.

### Public Consultation/Input

Consultation with stakeholders included the Agency Consultation Group (ACG), Business Consultation Group (BCG), and Public Consultation Group (PCG). Consultation with the general public occurred primarily through an open house and through the project webpage ([www.ottawa.ca/barrhavenlrt](http://www.ottawa.ca/barrhavenlrt)) and email.

Feedback received showed considerable support for the new alignment and support for active transportation and landscaping. Some comments related to accessibility, traffic mitigation during construction, hydro poles and timing of the project.

## **RÉSUMÉ**

Le 8 juin 2022, le Conseil municipal a approuvé le tracé révisé du réseau de train léger de Barrhaven entre les chemins Knoxdale et West Hunt Club (tronçon de 1,3 km) et a demandé au personnel d'effectuer les travaux de finalisation du plan de conception fonctionnelle, de mener des consultations publiques sur la modification de la conception, de documenter le processus et d'informer le Comité des transports des résultats de la consultation, dans le cadre du projet d'ensemble de train léger reliant la station Baseline au centre-ville de Barrhaven.

Le plan de conception fonctionnelle révisé comprend ce qui suit :

- Couloir du TLR en hauteur dans le terre-plein de l'avenue Woodroffe entre le chemin Knoxdale et le chemin West Hunt Club
- Déplacement de la station Knoxdale vers le nord (environ 80 mètres)
- Intégration de courbes moins prononcées afin de permettre d'assurer la transition de la voie de guidage à l'entrée et à la sortie de cette voie sur le terre-plein et afin de minorer le bruit et d'assurer le confort des usagers
- Réfection de l'avenue Woodroffe, dont cinq intersections conformes au Guide de conception des intersections protégées de la Ville
- Pistes cyclables à sens unique des deux côtés de l'avenue Woodroffe entre le chemin Knoxdale et le chemin West Hunt Club afin de remplacer les bandes cyclables sur rue existantes, ainsi que le paysagement
- Dégagement suffisant à partir des lignes d'Hydro One non loin du chemin Knoxdale et du chemin West Hunt Club
- Enlèvement des voies existantes réservées aux autobus sur l'avenue Woodroffe afin d'aménager le couloir du TLR dans le terre-plein central
- Arrêts d'autobus sur rue dans l'avenue Woodroffe pour le service local d'autobus

## Hypothèses et analyse

Les travaux de finalisation du plan de conception fonctionnelle du réseau du TLR de Barrhaven entre le chemin Knoxdale et le Sportsplex de Nepean ont consisté à revoir et à évaluer les répercussions du tracé révisé en consultant différentes directions générales de la Ville, à mener un examen de la constructibilité et une vérification indépendante de la sécurité routière, à actualiser l'estimation des coûts de ce tracé révisé et à consulter le public. Il faut coordonner l'installation des services publics en sous-sol et des poteaux d'électricité pendant la construction du réseau de TLR qui surplombe le terre-plein. Il s'agit de réinstaller un tronçon de 300 mètres de la conduite d'eau principale (de 1 200 mm de diamètre) enfoui sous les voies de circulation existantes dans le sens sud sur l'avenue Woodroffe. On mettra au point un plan de gestion de la circulation dans la phase de la mise en œuvre de ce projet.

Ce processus est consigné par écrit, et le Rapport sur le projet environnemental (RPE) pour le réseau du TLR de Barrhaven (entre la station Baseline et le centre-ville de Barrhaven) sera actualisé et déposé pour répondre aux exigences du gouvernement provincial dans l'évaluation environnementale (EE); le Conseil municipal a donné son approbation en novembre 2020 et en juin 2022.

## Répercussions financières

L'estimation du type C (en dollars de 2023) pour l'étude et la mise en œuvre du réseau du TLR de Barrhaven (entre la station Baseline et le centre-ville de Barrhaven) et du saut-de-mouton ferroviaire, ainsi que du tracé du terre-plein et l'achat de véhicules supplémentaires, se chiffre à 4,019 milliards de dollars.

## Consultation et commentaires du public

Ont été consultés, le Groupe de consultation des organismes (GCO), le Groupe de consultation des entreprises (GCE) et le Groupe de consultation publique (GCP). La consultation du grand public s'est déroulée essentiellement pendant une assemblée portes ouvertes et sur la page Web du projet ([www.ottawa.ca/BarrhavenTLR](http://www.ottawa.ca/BarrhavenTLR)) ainsi que par courriel.

Les intervenants qui ont déposé des commentaires sont très favorables au nouveau tracé et sont d'accord du point de vue du transport actif et du paysagement. Nous avons reçu des commentaires sur l'accessibilité, les mesures permettant de minorer les inconvénients liés à l'achalandage automobile pendant les travaux, les poteaux d'électricité et le calendrier du projet.

## **BACKGROUND**

In November of 2020, Council approved the recommended alignment for the Barrhaven LRT (Baseline Station to Barrhaven Town Centre) Environmental Assessment Study ([City Council - November 25, 2020 \(escribemeetings.com\)](#)). This included a 0.6 kilometres pinch point between Knoxdale Road and West Hunt Club Road, where residential units were built very close to the west side of Woodroffe Avenue. The functional design showed a straight alignment from Baseline Station, on the west side of Woodroffe Avenue. Through the pinch point, this alignment would require a 20 metre strip of land west of Woodroffe that would affect 100 residential units of the approximately 180 units that comprise Manor Village and Cheryl Gardens. As part of the study approval, Council directed staff through motions 2020 – 12/2 and 44/6, to establish a Working Group to look for options to mitigate the impact on tenants facing permanent displacement. Through that effort, staff recommended a revisit of the more complex median alignment (between Knoxdale Road and the Nepean Sportsplex) and revised it to mitigate impacts to rail operation that was evident with the original median alternative.

On June 8, 2022, ([City Council - June 08, 2022 \(escribemeetings.com\)](#)), Council approved the replacement of the previously approved alignment for the Barrhaven LRT through the pinch point. The report included the response to motions 2020-12/2 and 44/6, which summarized the efforts of the Working Group, and specifically the change to the LRT alignment that would eliminate the displacement of tenants, and consequently prevent the loss of low-cost housing units.

## DISCUSSION

### FUNCTIONAL DESIGN

The following provides an overview of the functional design for the revised median alignment (Figure 1) including alignment of the elevated median LRT, reconstruction of Woodroffe Avenue, a shift in the location of Knoxdale Station, transportation impacts, utilities and impact assessment to the social environment and planning context. The Plan and Profile for the alignment is provided in Appendix 1.

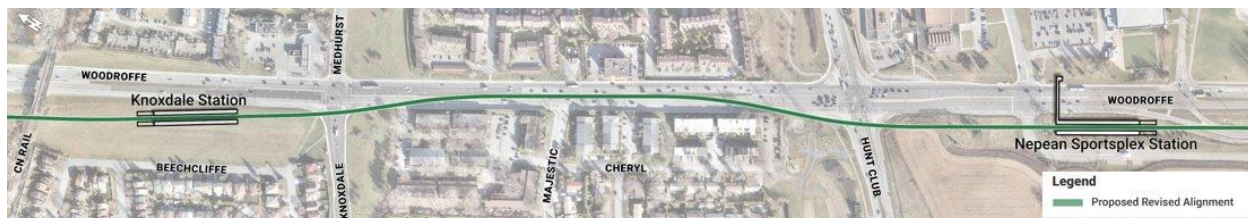


Figure 1 – Revised Median Elevated Alignment

### Elevated Median LRT Alignment

A cross-sectional view of the elevated median LRT is shown in Figure 2A. To accommodate the elevated LRT guideway, the existing bus-only lanes along Woodroffe Avenue will be removed and the central median widened. The wider median is required to protect the piers that support the elevated guideway from oncoming traffic. Straddle bent structures (Figure 2B) are required to span over the southbound lanes of Woodroffe Avenue and support the elevated guideway as it crosses into and out of the median.

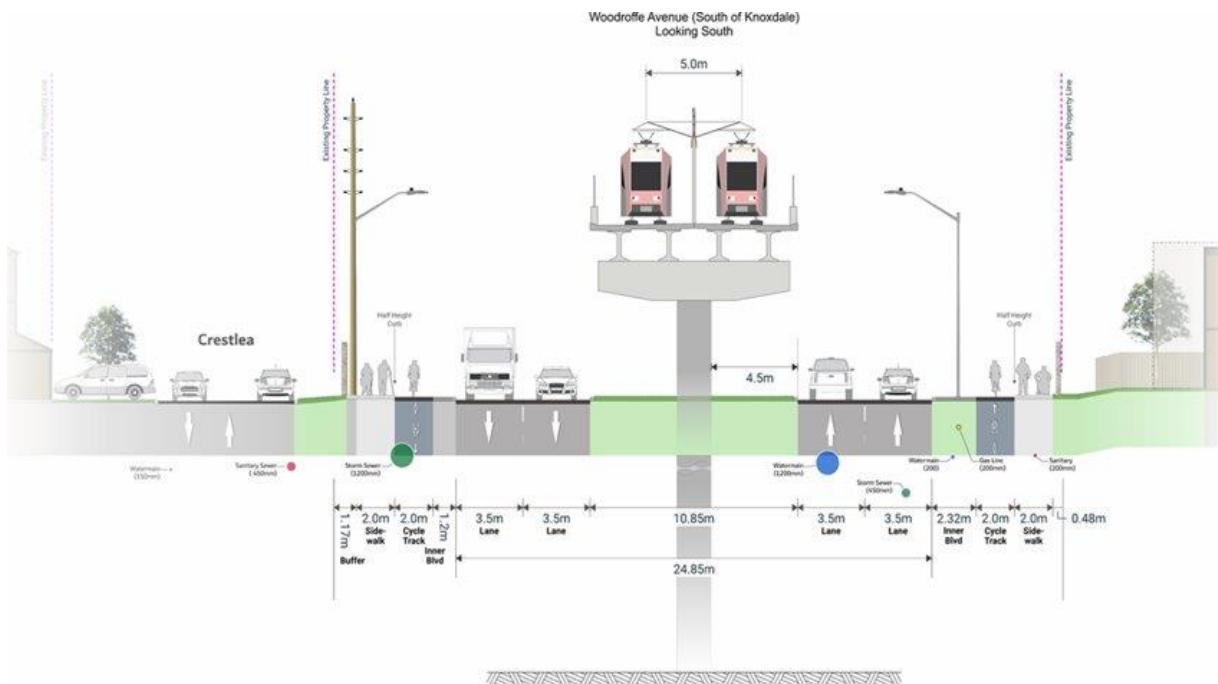


Figure 2A – Woodroffe Avenue Median LRT (Knoxdale Road to West Hunt Club Road)



Figure 2B – Example of Straddle Bent Structure

The LRT guideway has been designed to accommodate snow storage and to prevent snow and ice from blowing off the tracks and onto the street below. This is accomplished by increasing the width of the guideway, creating additional space between the track and the guideway structure, and barrier walls.

### **Reconstruction of Woodroffe Avenue**

The existing two general purpose lanes in each direction will remain after construction is complete. Existing accesses to Woodroffe Avenue will also be maintained.

Woodroffe Avenue will be rebuilt to the City's contemporary Complete Street design standard, which includes uni-directional cycle tracks on both sides of the road to replace the existing on-street bike lanes, and protected intersections at all five intersections along the corridor. Protected intersections incorporate design features such as separated cycling and pedestrian crossings as well as changes to traffic signal phasing to reduce conflicts and improve safety for all road users.

Channelized right-turn lanes have been maintained at a few locations as part of the design such as southbound on Woodroffe Avenue at Knoxdale Road and West Hunt Club Road and eastbound on West Hunt Club Road at Woodroffe Avenue. These right-turn lanes are needed to meet traffic and transit operational requirements and will incorporate a Smart Channel configuration as per the City's Protected Intersection Design Guide. Raised crossings and yield to pedestrian signage will be used to provide for pedestrian priority at these crossing points.

On-street bus stops are provided on Woodroffe Avenue for local bus services serving various communities and other destinations. The location and design of Nepean Sportsplex Station remains unchanged from the November 2020 Recommended Plan. Reconstruction of Woodroffe Avenue in the vicinity of the station will result in the creation of two new protected intersections adjacent to the station, enhancing pedestrian and cycling connectivity with the existing multi-use pathway which continues south along Woodroffe Avenue into Barrhaven and with the Nepean Sportsplex Facility.

### **Knoxdale Station**

Knoxdale Station will shift to the north by about 80 metres. This shift allows the gentle curve transition of the LRT guideway from the west side of Woodroffe Avenue to the median, to minimize noise. The transition occurs south of the Knoxdale Road and Medhurst Drive intersection. Future design work will refine the customer experience for those walking between the station entrance and the Woodroffe Avenue, Knoxdale Road, and Medhurst Drive intersection.



A multi-use pathway (MUP) along the west side of Woodroffe Avenue will connect to the station from the north and form an extension of the pathway recently built by the City from Baseline (Algonquin) Station to Norice Avenue. At Knoxdale Avenue cyclists would transition from the MUP to uni-directional cycle tracks on either side of the roadway. As a community-focused station, the emphasis is on providing rapid transit access via walking and cycling through enhanced connectivity for those modes. Although there will likely be some increase in traffic on surrounding streets due to increased activity, no formal passenger pick-up and drop-off facilities are planned at this station. Access via walking and cycling will be encouraged in keeping with the community focus of this station. The public will be encouraged to use other stations, such as Algonquin Station, which will continue to have a limited-capacity Park and Ride facility and dedicated pick-up and drop-off point available. A limited number of passenger pick-up and drop-off activity may be accommodated on-street, with short-term parking spaces designated in the vicinity of the station. Additional traffic measures including signage and physical measures will be considered during future design phases to address the concerns of spillover parking and neighbourhood traffic impacts as noted from stakeholder feedback. As part of detailed design, additional traffic control measures to reduce traffic infiltration and to direct the public to use dedicated facilities will be considered. During detailed design, landscaping opportunities to enhance the station area and to screen or buffer the west side of the station will be explored.

## **Traffic During Construction**

Given that the LRT will be constructed in the median, there will be disruption to traffic that will need to be managed. During the weekday AM and PM peak hours, it is estimated that up to 1,000 vehicles per hour will need to shift to other road corridors, travel at different times or travel by different modes, to allow construction activities along the corridor. An emphasis on transit will be an important mitigation measure. The potential for temporary transit priority measures or services in other locations to support transit detours or faster trips in other corridors are examples. Traffic will distribute across a combination of parallel road corridors, such as Greenbank Road, Merivale Road and Prince of Wales Drive, with no single corridor accommodating all diverted traffic. It is further anticipated that many motorists would use Highway 416 as an alternate route, given that it is a fast and high-capacity corridor serving north-south trips for the south-end of the City.

Traffic Management Plans will be developed as part of the detailed design of the LRT and will be based on current traffic volumes at that time.

## **Utilities**

Major utilities both crossing and under Woodroffe Avenue will need to be considered as part of detailed design and construction of the project. Near Knoxdale Road and West Hunt Club Road, there are major Hydro One transmission lines which cross over the corridor. The functional design for the elevated LRT provides sufficient clearances from those lines, except for the most northerly line at Knoxdale Road, which will need to be raised as part of this project. Work is ongoing with Hydro One to confirm exact requirements for design and relocation.

There is an existing large diameter (1200 millimetre) watermain which runs under the existing southbound lanes of Woodroffe. This watermain is a critical piece of infrastructure which carries drinking water to Barrhaven. Based on the proposed location of Knoxdale station, a 300-metre section of this watermain will need to be relocated. As part of the LRT construction, complete replacement of the watermain could be considered in coordination with Asset Management, based on life cycle requirements, timing of construction and economies of scale.

## **Planning Context**

Lands on the west side of Woodroffe Avenue between Knoxdale Road and West Hunt Club Road were subject to an interim control by-law and a subsequent zoning by-law amendment to prevent development on land that may be needed for the construction of the Barrhaven LRT. The zoning amendment affects a strip of land between Woodroffe

Avenue and the residential buildings on the properties. The zoning amendment was appealed to the Ontario Land Tribunal. During the time that the amendment is under appeal, development is not permitted on the strip of land affected by the amendment. A hearing date has not yet been scheduled. It is recommended that the interim control by-law remain in effect until Ministerial Approval is attained, signaling completion of the EA process.

## **CONSTRUCTABILITY REVIEW**

A Constructability Review was undertaken to confirm the feasibility of constructing the elevated median LRT alignment. Given the complexities of this project and limited space for construction within the Woodroffe Avenue corridor, a four-year construction timeframe is likely. Woodroffe Avenue will need to be reduced to one general purpose traffic lane and one transit-only lane per direction. It is essential to maintain a transit-only lane to mitigate the expected traffic impacts during construction. The existing active transportation facilities will be maintained although there may be detours at times. While transit priority will be maintained as much as possible, there will likely be delays and detours for transit services from time to time. Periodic lane reductions on intersecting roadways can be expected as intersections are rebuilt. To minimize traffic disruption, activities associated with lane closures (such as crane swings, construction staging and major deliveries) will be scheduled during off-peak times.

Protection measures will be required for existing utilities within the construction operations zone. The 1200 millimetre diameter watermain in the pinch point area will require special protection measures during construction and provisions for access for future maintenance.

### **Cost Estimate**

The revised total project cost, with the median alignment, is approximately \$4.019 billion (in 2023 dollars). This is based on the functional design completed to date and is a Class C estimate with an accuracy range of +/- 20 per cent. The cost will be refined through subsequent phases of the project.

Within this current total project estimate, for the pinch-point segment (Knoxdale Road to the Nepean Sportsplex) where the alignment shifted to the median, the incremental cost is approximately \$38 million more than the original alignment (west side of Woodroffe Avenue). Although significant property acquisition is avoided with the median alignment, there are higher construction costs due to:

- Reconstruction of Woodroffe Avenue;
- Additional utility relocations;

- Guideway designed to provide more resilience to snowfall; and
- Noise and vibration measures.

For context, the additional \$38 million is less than 1 per cent of the overall total project estimate.

The project can be constructed in phases if funding is limited:

- Rail grade separations only at Woodroffe Avenue, Southwest Transitway, and Fallowfield Road in advance of LRT construction (\$535 million, in 2023 dollars);
- Phase 1 of LRT construction: Baseline Station to Fallowfield Station, including the rail grade separations and the expansion of the Corkstown Light Maintenance and Storage Facility (\$2.717 billion, in 2023 dollars); and
- Phase 2 of the LRT construction: Fallowfield Station to Barrhaven Town Centre (\$1.302 billion, in 2023 dollars).

Although the order of magnitude cost information above is adequate for the purposes of the EA study, it must be noted that the procurement process for Stage 3 will need to include additional analysis and assessment of the final budget forecast prior to contract award(s), and prior to confirmation of funding request to other levels of government. Changes to project delivery methods, and market sensitivity to areas such as design development and project risk allocation, will require further analysis as these factors will affect the total project cost. Furthermore, additional cost planning including the use of reference class forecasting or other means should be leveraged to validate final costs. The costs provided in this report can only be considered preliminary and the costs will evolve with further design and procurement planning. In the next phase of the project, a Concept of Operations also needs to be undertaken to validate the various phasing scenarios and cost implications if the project is split into phases for implementation. These project cost development actions are aligned with the Public Inquiry Report on Ottawa's Light Rail Transit (Recommendations 2, 6, 8, 9, 10, 11, 12).

It is worth repeating that Stage 3 LRT (Barrhaven LRT and Kanata LRT) are not within the current affordable plan. To move forward, this program requires 100 per cent funding from senior levels of government.

## **FINANCIAL IMPLICATIONS**

Stage 3 LRT is not within the current affordable plan. The 2019 Transit Long Range Financial Plan assumed 100 per cent funding from senior levels of government for future LRT. A full business case will be required, which takes into consideration the capital costs of implementing future stages of LRT, assuming 100 per cent government

funding, adjusted by ineligible cost criteria that may require the City to contribute a portion of the capital cost and cost of financing. The business case will also need to consider the additional ongoing costs of operating the extended LRT such as, lifecycle, insurance, maintenance and operating costs, including any new ridership assumptions.

## **LEGAL IMPLICATIONS**

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

## **COMMENTS BY THE WARD COUNCILLOR(S)**

Councillor Devine had the following comments: The only area of concern I have at the moment is based on what I see as a potential lost opportunity for maximizing the city-owned land immediately adjacent to Knoxdale Station. In the project images pertaining to Knoxdale Station, there is a large track of land between the station and Beechcliffe Street which is currently projected to be nothing more than what looks like a series of pedestrian pathways. Yes, greenspace is important, but it's key to the city's plans to build transit adjacent housing, and this looks like a lost opportunity. In the conversations I've had with Housing staff, it appears that staff is aware of the potential opportunity here, but is also cognizant that all plans are subject to the land's primary use being for transit. I would like to ensure that Housing staff are kept in the loop as the project advances (or doesn't advance) so that this synthesis of land use needs can be maximized.

Councillor Johnson is aware of the report.

Councillor Hill had the following comments: The City needs to be very deliberate in the decision making process for all aspects of LRT Phase 3; It needs to be completely compliant and grounded in the Hourigan Light Rail Transit Public Inquiry report; We need to ensure that in the short to mid term, the planning focus is on enhancing the BRT model from Barrhaven to Algonquin station as this will be the mechanism used until Phase 3 operates in many years from now; The routing of Phase 3 along Woodroffe needs a complete and deliberate cost benefit analysis and should not be rushed as the timeline for Phase 3 is reliant on uncommitted funds from other levels of Government.

Councillor Lo had the following comments: Businesses and residents in Barrhaven are excited for the LRT to finally be "complete" and reach the community after being set back with a cancelled project almost 20 years ago. However, while the project as designed now will support ridership along an existing rapid transit corridor, without concurrent land use considerations, its potential to be anything more than bus rapid

transit replacement and generate new ridership is low.

### **ADVISORY COMMITTEE(S) COMMENTS**

A member of the AAC participated in the Public Consultation Group meetings. This report was circulated to AAC for information.

### **CONSULTATION**

The study benefitted from the review and feedback of participants through the Agency Consultation Group (ACG), Business Consultation Group (BCG), Public Consultation Group (PCG) and a Public Open House (POH). Consultation details are provided in Document 2 including consultation process, issues and responses.

Stakeholders include Indigenous groups, government agencies (Ministry of the Environment, Conservation, and Parks; Ministry of Citizenship and Multiculturalism; Environment and Climate Change Canada; Ministry of Natural Resources and Forestry), Ottawa Housing, NCC, VIA Rail, Rideau Valley Conservation Authority (RVCA), City's Accessibility Advisory Committee (AAC), Barrhaven Business Improvement Area (BIA), developers, landowners, business groups, School Boards, Community Associations and Special Interest Groups.

The study area for the revised functional design involved the Knoxdale-Merivale ward (9). Councillors in the larger study area, including Barrhaven West (3), College (8), Barrhaven East (24) were also briefed on the changes.

Two meetings each were held with the ACG, BCG and PCG in August 2022 and January 2023. Consultation with the general public occurred through a virtual POH in February 2023. The work completed to date and the Recommended Plan for the revised alignment section were presented.

The major discussion themes from the Consultation Group meetings and the POH include:

- General support for the new median alignment;
- Impacts to traffic flow during construction and sightlines/safety and cross section design;
- Landscaping strategy and maximizing/enhancing active transportation facilities and public realm nodes, including shade trees and rest areas;
- Traffic-related concerns such as movements/congestion/speed/cut through traffic and access during construction;

- Noise and vibration during construction;
- Accessibility considerations, navigation of the corridor as well as safety;
- Formal Passenger Pickup/dropoff (PPUDO) facilities in the corridor and their absence at Knoxdale Station;
- Setbacks, property requirements and the zoning hold on the property to the west of the pinch point;
- Clearances and potential impacts to Hydro One infrastructure;
- Duration of construction and disruption to the community; and
- Timing of the project and funding.

### **Indigenous Consultation**

On January 23, 2023, the Algonquins of Pikwàkanagàn First Nation (AOPFN), the Ottawa Metis Council, Kitigan Zibi Anishinabeg and Algonquins of Ontario (AOO) were provided with formal notification of the realignment of the Barrhaven LRT between Knoxdale Road and Hunt Club Road. Information pertaining to the Public Open House was provided as well as an invitation to provide commentary on the draft EPR, previously distributed in October of 2021. Individual group meetings were offered as part of the communication. At this time, the City continues to work with the communities that have expressed an interest to ensure meaningful consultation throughout the project. The Algonquins of Pikwakanagan and the City have entered into a Capacity Agreement to allow the Algonquins of Pikwakanagan to make formal comments on the Environmental Assessment Report. The Capacity Agreement provides AOPFN members the opportunity to participate in the monitoring, construction and operations of the Project.

### **ACCESSIBILITY IMPACTS**

The City of Ottawa is committed to ensuring accessibility for persons with disabilities and older adults. Active transportation planning and the development of public spaces at the City of Ottawa is guided by a legislated accessibility framework that includes the City's Accessibility Policy, the *Accessibility for Ontarians with Disabilities Act, 2005* and the Integrated Accessibility Standards Regulation, O.Reg. 191/11.

Various opportunities for public consultation were available for this project including an open house, through the project webpage ([www.ottawa.ca/barrhavenlrt](http://www.ottawa.ca/barrhavenlrt)) and by email. A dedicated representative of the Accessibility Advisory Committee participated throughout the consultation process of this project.

As with the rest of the Barrhaven LRT project (Baseline Station to the Barrhaven Town Centre), the revised alignment segment is designed to follow the City's Accessibility Design Standards and other relevant accessibility requirements. Feedback from this project has included accessibility concerns and considerations, traffic mitigation and pedestrian safety concerns during construction, removal of pick-up and drop-off facilities at Knoxdale Station, clearance and location of hydro infrastructure and impacts of noise/vibration concerns during the light rail transit construction.

Accessibility improvements following light rail construction in this area will include:

- The design of protected intersections to incorporate design features of separated cycling and pedestrian crossings as well as changes to traffic signal phasing to reduce conflicts and improve safety for all road users including pedestrians with disabilities
- Channelized right-turn lanes will incorporate a Smart Channel configuration as per the City's Protected Intersection Design Guide southbound at Knoxdale and West Hunt Club and eastbound on West Hunt Club at Woodroffe. The creation of raised crossings and yield-to-pedestrian signage will be used to emphasize pedestrian priority at these crossing points.
- Noise and vibration from the LRT are two of the main concerns identified by residents along the corridor. As part of the built-in mitigation included in the Recommended Plan is the use of gentler curves along the track in the transition segments to significantly reduce the potential for noise.
- Knoxdale Station will shift to the north by about 80 m to allow for the curve transition of the LRT guideway from the west side of Woodroffe Avenue to the median, to minimize noise. The transition occurs south of the Knoxdale/Medhurst intersection. As a community-focused station, the emphasis is on providing rapid transit access via walking and cycling through enhanced connectivity has resulted in no formal passenger pick-up and drop-off facilities being planned for Knoxdale station. However, a limited number of passenger pick-up and drop-off activity may be accommodated on-street, with short-term parking spaces designated in the vicinity of Knoxdale station.

Staff remain committed to addressing all accessibility concerns and eliminate barriers to persons with disabilities in the implementation of the Barrhaven light rail transit project. Feedback received to date has demonstrated considerable support for the new rail alignment and for the provision of an integrated and accessible transportation network for pedestrians, cyclists and transit riders, including those with disabilities. This has been accomplished through public and stakeholder consultation and feedback opportunities, active transportation development, improvements to pedestrian



walkability and safety, attention to potential hydro infrastructure mitigation opportunities and landscaping enhancements in the area.

## **ASSET MANAGEMENT IMPLICATIONS**

There are no asset management implications associated with the receipt of the revised Functional Design report for for the Barrhaven LRT Environmental Assessment Study for information.

Future construction of new assets such as those included in the Functional design will increase future budget needs for lifecycle operation and maintenance in the long term. Future construction scope will include protection of existing assets within the project limit, such as the large diameter watermain on Woodroffe Avenue.

## **CLIMATE IMPLICATIONS**

The Barrhaven LRT will help to reduce greenhouse gas emissions in Ottawa by transitioning from diesel buses to electrified light rail transit vehicles and encouraging transit ridership. Climate Change implications have been considered as part of the entire Barrhaven LRT project and were reported to Council in November 25,2020.

## **ENVIRONMENTAL IMPLICATIONS**

### **Impact Assessment**

The impact assessment undertaken through the pinch point has been updated, with a focus on social environmental issues.

### **Social Environment – Noise**

Noise and vibration from the LRT are two of the main concerns identified by residents along the corridor. Part of the built-in mitigation included in the Recommended Plan is the use of gentler curves along the track in the transition segments. This will significantly reduce the potential for noise.

An update to the previous noise, vibration and air quality assessment was undertaken which included additional sensitive receivers in the corridor given the shift in the LRT alignment. Road traffic noise is and will remain the dominant noise source in the corridor, but implementation of the LRT will marginally increase noise levels above existing conditions. Noise walls and special track fasteners along the elevated LRT guideway are recommended. Consultation with the City's Rail Construction Office regarding lessons learned from the Stage 1 and 2 LRT projects resulted in additional

noise and vibration mitigation measures such as rail lubrication systems and ballast mats.

### **Social Environment – Landscaping**

Providing space for landscaping through the pinch point is challenging due to the constrained width of the corridor. Within the City right-of-way, landscaping is generally limited to the median. Where space permits, opportunities to make minor enhancements are being examined including greenery or public art in the space below the guideway. The largest opportunities are at the stations at either end of the pinch point where there is more space.

### **Social Environment – Property and Privacy**

The Recommended Plan has been designed to fit within the existing City-owned right-of-way of Woodroffe Avenue. The revised alignment identifies minor parcels of land (439 metres squared) on the west side of Woodroffe Avenue that will be required for implementation.

Privacy is addressed through the barrier walls along the LRT guideway. These will also serve as noise barriers and keep snow and ice within the guideway area. Additional measures to help screen views and to soften the look of the corridor with landscaping elements will be considered in the detailed design phase of this project.

### **INDIGENOUS GENDER AND EQUITY IMPLICATIONS**

There are no gender and equity implications. Consultation with Indigenous groups was carried out in accordance with provincial legislation and is documented in the Consultation section of this report.

### **RISK MANAGEMENT IMPLICATIONS**

This revised design of a median alignment has construction risks due to the presence of underground utilities and a large watermain serving Barrhaven. Construction activities will need to be carefully planned to mitigate any disruption of service, which may include mitigations to the existing watermain network. A relocation of the watermain may be needed to keep it at a manageable distance from the light rail alignment and construction zone.

### **RURAL IMPLICATIONS**

The project is within the City's urban area but does have positive impacts for rural residents. Rural residents can make use of the park and ride lots and access the LRT for connections to other parts of the City.

## **SUPPORTING DOCUMENTATION**

Document 1 Barrhaven LRT Environmental Assessment Functional Design

Document 2 Barrhaven LRT Environmental Assessment Consultation

## **DISPOSITION**

Following Transportation Committee and Council approval of the report, Planning, Real Estate and Economic Development Department will reinitiate the Transit Project Assessment Process (TPAP) in accordance with the Ontario Regulation 231/08 of the *Ontario Environmental Assessment Act*, finalize the Environmental Project Report and make it available for the 30-day public review period.