

7. STAGE 2 LIGHT RAIL TRANSIT PROJECT AND PROCUREMENT UPDATE
MISE À JOUR SUR L'ÉTAPE 2 DU PROJET DE TRAIN LÉGER SUR RAIL
ET LE PLAN D'APPROVISIONNEMENT

COMMITTEE RECOMMENDATIONS

That Council:

- 1. Receive the functional design for the Bayshore to Moodie LRT as described in this report;**
- 2. Direct staff to initiate an Environmental Project Report (EPR) Addendum to Trillium Line Extension approved EPR, as described in this report, and file the Addendum with the Ministry of the Environment and Climate Change in accordance with section 15 of *Ontario Regulation 231/08, Transit Projects and Metrolinx Undertakings*;**
- 3. Delegate authority to the City Manager to include the extension of the Trillium Line to Limebank Road in the Trillium procurement documents via an addendum, subject to the recommendation cost, operational and maintenance, legislative approval and assessment parameters, as described in this report, and direct staff to undertake the necessary supporting activities required to bring forward a recommendation to Committee and Council as part of the contract award, as described in this report;**
- 4. Approve the Stage 2 governance plan and additions to the Executive Steering Committee's mandate, as further described in this report;**
- 5. Approve the plan to refinance the long term debt on Confederation Line, as further described in this report, and delegate authority to the City Treasurer to execute an Assignment and Assumption Agreement to assume the Lenders' obligations under the existing Credit Agreement to Project Co., and to execute and issue debentures directly to each of the Long Term Lenders to finance capital works previously approved;**

6. Enact a Debenture By-law substantially in the form attached as Document 2 to authorize debentures in the total principal amount of \$225,000,000; and,
7. Approve the amended funding source for project 908650 Stage 2 LRT – RTG MOU, changing the Development Charge funding component to Development Charge debt, as described in this report.

RECOMMANDATIONS DU COMITÉ

Le Conseil :

1. reçoit la conception fonctionnelle pour le TLR de Bayshore à Moodie, décrite dans le présent rapport;
2. demande au personnel d'élaborer un addenda au Rapport environnemental sur le projet (REP) approuvé pour le prolongement de la Ligne Trillium, comme décrit dans le présent rapport, et de déposer l'addenda auprès du ministère de l'Environnement et du Changement climatique, conformément à la section 15 du *Règlement de l'Ontario 231/08 Projets de transport en commun et entreprises de Metrolinx*;
3. délègue au directeur général, Direction générale des transports, le pouvoir d'inclure le prolongement de la Ligne Trillium jusqu'au chemin Limebank dans les documents d'approvisionnement pour la Ligne Trillium par le biais d'un addenda, sous réserve des exigences relatives aux coûts, aux opérations et à l'entretien recommandés, à l'approbation législative et aux paramètres d'évaluation, comme décrit dans le présent rapport, et de demander au personnel d'entreprendre les activités de soutien nécessaires pour présenter une recommandation au Comité et au Conseil dans le cadre de l'attribution du contrat, comme décrit dans le présent rapport;
4. approuve le plan de gouvernance de l'Étape 2 et les ajouts au mandat du Comité directeur, comme décrit plus en détail dans le présent rapport;
5. approuve le plan visant à refinancer la dette à long terme pour la Ligne de la Confédération, comme décrit plus en détail dans le présent rapport, et de déléguer à la trésorière Municipale le pouvoir d'exécuter un accord de

cession et de prise en charge afin d'assumer les obligations des prêteurs en vertu de l'accord de crédit existant avec la société responsable du projet et d'exécuter et d'émettre des débetures directement à chacun des prêteurs à long terme afin de financer les travaux d'immobilisations déjà approuvés;

- 6. adopte un Règlement sur les débetures, essentiellement sous la forme du Document 2 ci-joint, en vue d'autoriser l'émission de débetures pour un montant nominal de 225 000 \$ et**
- 7. approuve la source de financement modifiée pour le PE de RTG pour le projet 908650 - Étape 2 du TLR, changeant ainsi la composante de financement par redevances d'aménagement en une dette de redevances d'aménagement, comme décrit dans le présent rapport.**

FOR THE INFORMATION OF COUNCIL

The Finance and Economic Development Committee approved the following Directions to Staff:

Transportation Services staff is directed to:

- 1) consider protecting the infrastructure that the City is funding and building during flooding; and
- 2) develop construction techniques to ensure low impact and that surfaces are as permeable as possible.

POUR LA GOUVERNE DU CONSEIL

Le comité des finances et du développement économique des finances et du da donné les instructions suivantes au personnel :

Le personnel de la Direction générale des transports doit :

- 1) envisager de protéger, lors d'inondations, les infrastructures que la Ville finance et construit;
- 2) mettre au point des techniques de construction qui limitent les conséquences des inondations et rendent les surfaces les plus perméables possible.

DOCUMENTATION/DOCUMENTATION

1. General Manager's report, Transportation Services, dated 29 August 2017
(ACS2017-TSD-OTP-0002)

Rapport du Directeur général, Direction générale des transports, daté le 29 août 2017 (ACS2017-TSD-OTP-0002)

2. Extract of draft Minutes, Finance and Economic Development Committee, 5
September 2017

Extrait de l'ébauche du procès-verbal, Comité des finances et du développement économique, le 5 septembre 2017

**Report to:
Rapport au:**

**Finance and Economic Development Committee
Comité des finances et du développement économique
5 September 2017 / 5 septembre 2017**

**and Council
et au Conseil
13 September 2017 / 13 septembre 2017**

**Submitted on August 29, 2017
Soumis le 29 août 2017**

**Submitted by
Soumis par:
John Manconi, General Manager / Directeur général, Transportation Services /
Direction générale des transports**

**Contact Person
Personne ressource:
Chris Swail Director / Directeur, O-Train Planning / Planification du O-Train
613-580-2424 ext./poste 12408, Chris.Swail@ottawa.ca**

Ward: CITY WIDE / À L'ÉCHELLE DE LA VILLE File Number: ACS2017-TSD-OTP-0002

SUBJECT: Stage 2 Light Rail Transit Project and Procurement Update

**OBJET: Mise à jour sur l'Étape 2 du projet de train léger sur rail et le plan
d'approvisionnement**

REPORT RECOMMENDATIONS

That the Finance and Economic Development Committee recommend Council:

- 1. Receive the functional design for the Bayshore to Moodie LRT as described in this report;**
- 2. Direct staff to initiate an Environmental Project Report (EPR) Addendum to Trillium Line Extension approved EPR, as described in this report, and file the Addendum with the Ministry of the Environment and Climate Change in accordance with section 15 of *Ontario Regulation 231/08, Transit Projects and Metrolinx Undertakings*;**
- 3. Delegate authority to the City Manager to include the extension of the Trillium Line to Limebank Road in the Trillium procurement documents via an addendum, subject to the recommendation cost, operational and maintenance, legislative approval and assessment parameters, as described in this report, and direct staff to undertake the necessary supporting activities required to bring forward a recommendation to Committee and Council as part of the contract award, as described in this report;**
- 4. Approve the Stage 2 governance plan and additions to the Executive Steering Committee's mandate, as further described in this report;**
- 5. Approve the plan to refinance the long term debt on Confederation Line, as further described in this report, and delegate authority to the City Treasurer to execute an Assignment and Assumption Agreement to assume the Lenders' obligations under the existing Credit Agreement to Project Co., and to execute and issue debentures directly to each of the Long Term Lenders to finance capital works previously approved;**
- 6. Enact a Debenture By-law substantially in the form attached as Document 2 to authorize debentures in the total principal amount of \$225,000,000; and,**
- 7. Approve the amended funding source for project 908650 Stage 2 LRT – RTG MOU, changing the Development Charge funding component to Development Charge debt, as described in this report.**

RECOMMANDATIONS DU RAPPORT

Le Comité des finances et du développement économique recommande au Conseil :

1. de recevoir la conception fonctionnelle pour le TLR de Bayshore à Moodie, décrite dans le présent rapport;
2. de demander au personnel d'élaborer un addenda au Rapport environnemental sur le projet (REP) approuvé pour le prolongement de la Ligne Trillium, comme décrit dans le présent rapport, et de déposer l'addenda auprès du ministère de l'Environnement et du Changement climatique, conformément à la section 15 du *Règlement de l'Ontario 231/08 Projets de transport en commun et entreprises de Metrolinx*;
3. de déléguer au directeur général, Direction générale des transports, le pouvoir d'inclure le prolongement de la Ligne Trillium jusqu'au chemin Limebank dans les documents d'approvisionnement pour la Ligne Trillium par le biais d'un addenda, sous réserve des exigences relatives aux coûts, aux opérations et à l'entretien recommandés, à l'approbation législative et aux paramètres d'évaluation, comme décrit dans le présent rapport, et de demander au personnel d'entreprendre les activités de soutien nécessaires pour présenter une recommandation au Comité et au Conseil dans le cadre de l'attribution du contrat, comme décrit dans le présent rapport;
4. d'approuver le plan de gouvernance de l'Étape 2 et les ajouts au mandat du Comité directeur, comme décrit plus en détail dans le présent rapport;
5. d'approuver le plan visant à refinancer la dette à long terme pour la Ligne de la Confédération, comme décrit plus en détail dans le présent rapport, et de déléguer à la trésorière Municipale le pouvoir d'exécuter un accord de cession et de prise en charge afin d'assumer les obligations des prêteurs en vertu de l'accord de crédit existant avec la société responsable du projet et d'exécuter et d'émettre des débentures directement à chacun des prêteurs à long terme afin de financer les travaux d'immobilisations déjà approuvés;
6. d'adopter un Règlement sur les débentures, essentiellement sous la forme du Document 2 ci-joint, en vue d'autoriser l'émission de débentures pour un montant nominal de 225 000 \$ et
7. d'approuver la source de financement modifiée pour le PE de RTG pour le projet 908650 - Étape 2 du TLR, changeant ainsi la composante de

financement par redevances d'aménagement en une dette de redevances d'aménagement, comme décrit dans le présent rapport.

EXECUTIVE SUMMARY

The Stage 2 Light Rail Transit (LRT) project is the cornerstone of the City of Ottawa's 2013 Transportation Master Plan (TMP). The plan builds on the Confederation Line Light Rail Transit Project, which is currently under construction, to extend the benefits of LRT farther east to Trim, west to Baseline and Moodie, and south to Earl Armstrong/Bowesville with a link to the Ottawa Macdonald–Cartier International Airport.

The Stage 2 LRT project continues to proceed towards contract award in Q2 2018 with the major construction elements anticipated to start in early 2019. These major upcoming milestones are based on several years of planning work, and the roadmap to implementation as described in the *Stage 2 Implementation – Project Definition and Procurement Plan Report* ([ACS2017-TSD-OTP-0001](#)) approved by Council on March 8, 2017.

The approval of the Stage 2 Implementation report provided the foundation for a competitive procurement process to take place for all three rail extensions. Since March, the two distinct procurement processes described in the report – one for the Confederation Line extensions and the second for the Trillium Line extension – have been initiated. The Request for Proposal (RFP) for the Confederation Line was released to three short-listed bidders on June 26, 2017, followed by the Trillium Line RFP release on July 17, 2017.

The purpose of the report is to provide updates on direction provided by Council in March 2017 for the implementation of the Stage 2 project. The report is organized into three main sections:

Part 1 - Provides details and changes to the definition of the Stage 2 projects, and specifically to the Bayshore to Moodie portion as well as a new alignment shift for the Trillium Line south of Leitrim station.

While the Stage 2 Implementation Report approved that both the extension to Moodie Station and a Light Maintenance and Storage Facility (LMSF) be incorporated into the Confederation Line extension procurement process, this update report provides an overview of the functional design that, subject to receiving direction from Committee and Council, will be submitted to the Minister of the Environment and Climate Change as

part of the *Ontario Regulation 231/08, Transit Projects and Metrolinx Undertakings* approval process.

Subject to Committee and Council approval, the scope of the functional design for the extension to Moodie Station as well as the LMSF location will be included in the Confederation Line extension procurement process via an addendum to the RFP this fall.

Additionally, this report provides updates to the Trillium Line procurement process, including the recently announced alignment shift of the future Bowesville Station further south near the intersection of Bowesville and Earl Armstrong. The benefits of this alignment shift include the greater use of the City's existing rail corridor, improved constructability, reduced environmental impacts as well as creating the possibility of extending the existing LRT technology farther into the Riverside South community either as part of the Stage 2 LRT project, or as a separate project at a later date. By bringing the station and Park and Ride closer to Earl Armstrong, a major east-west arterial in Riverside South, this new alignment supports smart planning principles and the adoption of transit in the broader south community.

The report also provides a summary of the work staff are undertaking to support these alignment changes, including updates to the Trillium Line Extension Environmental Project Report and the Riverside South Community Design Plan, and identifying potential for private sector funding for the implementation of the potential extension to Limebank. Staff are also seeking the authority to include the extension to Limebank in the Trillium Line procurement documents subject to specific parameters for cost, operations and maintenance.

Part 2 - Provides details and seeks the authority from Council for the City Treasurer to execute and issue debentures directly to each of the Long Term Lenders to finance capital works previously approved as detailed in "Schedule A" of the debenture By-law attached as Document 2. These debentures do not involve any new debt authority (amounts owed to the Long Term Lenders are the same as the amounts authorized in the financing previously authorized by Council at the time the capital works were approved in 2012).

Part 3 - Provides an update on the governance structure for the Stage 2 project, including some changes to the composition of the Executive Steering Committee.

Public Consultation

In support of the Stage 2 Implementation report recommendations approved on March 8, 2017, there have been two public open houses for the Bayshore to Moodie extension Environmental Assessment process. The first on March 22, 2017, and a second on June 13, 2017. An additional consultation opportunity took place August 21, 2017 on the connectivity studies for Moodie Station.

BACKGROUND

Part 1: Defining Stage 2 Projects

In November 2013, Council unanimously approved the City's 2013 Transportation Master Plan ([ACS2013-PAI-PGM-0193](#)) which set out the City's priority for transit and transportation infrastructure investments until the end of 2031, including a significant vision to extend rail farther east, west and south through the Stage 2 LRT Project.

Further to this approval, the City focused its efforts on advancing the planning for these LRT extensions. Specifically, three environmental assessment studies were conducted and consolidated into the *Stage 2 Light Rail Transit Environmental Assessment and Functional Design Report* approved by Council in July 2015 ([ACS2015-CMR-OCM-0017](#)). At the time, it was understood that these were "intentionally high level in order to give maximum flexibility to the preliminary engineering team and the winning design build Project Proponent."

Since that time, extensive public consultation efforts and further reviews of station connectivity to adjacent communities were undertaken, and recommendations were put forward for alignment improvements for the expanded O-Train system. In the Stage 2 Implementation Report approved by Council March 8, 2017, the following alignment refinements were added to the Stage 2 procurement process:

1. Confederation Line West extension refinements, including:
 - Alignment Improvement at Richmond Road;
 - Alignment Improvement and Station Shift at Lincoln Fields;
 - Pinecrest Creek Re-alignment at Iris Station;
 - Bayshore Station Shift; and,
 - Goldenrod Bridge Connection.

2. Trillium Line South extension refinements, including:
 - Airport Station Shift;
 - Relocated Walkley Yard Maintenance and Storage Facility; and,
 - Leitrim Road Overpass Shift.
3. The Trim Extension and Airport Rail Link, conditional on full funding from the Federal and Provincial governments.

Staff were also directed to initiate an Environmental Assessment (EA) addendum to the West Transitway Extension Environmental Assessment Study (Bayshore Station to Moodie Drive) to advance the conversion from bus rapid transit (BRT) to light rail transit (LRT), and identify locations for the station and potential Light Maintenance and Storage Facility (LMSF). Direction was also given to initiate an EA addendum, if required, to expand the Bayshore Station bus facility.

Since approval of the Stage 2 Implementation report, additional work on the Stage 2 alignments has taken place in two key areas:

- Confederation Line West Extension – Bayshore to Moodie Extension Environmental Project Report (to be submitted to the Ministry of the Environment and Climate Change for approval in accordance with *Ontario Regulation 231/08* for transit projects). As directed by Council, preliminary engineering work has been undertaken, two public consultations have taken place, and targeted meetings have been conducted with key area stakeholders. An additional public meeting on the station connectivity has also been conducted. A summary of findings and staff recommendations are provided in the discussion portion of this report; and,
- Trillium Line Extension alignment shift south of Leitrim Station. In the Stage 2 Implementation report, the Trillium Line south terminus was proposed to be located at Bowesville, north of Earl Armstrong Road. Since then, additional preliminary engineering activities were completed, and discussions took place with stakeholders to respond to two key areas of interest: (1) the desire from the community to bring LRT closer to Riverside South; and, (2) reducing, where possible, environmental impacts on sensitive Greenbelt lands. Based on these activities and as detailed in a memo to Mayor and Council on July 5, 2017, staff are now moving forward with this new alignment and location for the Trillium Line

Bowesville Station. The new alignment will move the current Bowesville Station to the edge of the urban boundary just southeast of the Earl Armstrong and Bowesville Road intersection. As previously mentioned, this new alignment facilitates a potential future extension to Limebank Road to better integrate with the community of Riverside South as it grows. Both the alignment shift, as well as this potential future extension require the preparation of an Environmental Project Report Addendum, as well as a targeted update to the Community Design Plan for Riverside South. The discussion portion of the report will provide an update on these activities.

Part 2: Long-Term Debt Cost Avoidance

In July 2011, City Council approved a Design Build Finance Maintain (DBFM) procurement based on Infrastructure Ontario's Alternative Financing and Procurement (AFP) model for Phase 1 of the Confederation Line project. The long-term project financing of \$300 million was to be provided by the proponent Rideau Transit Group (RTG) who would design, construct, finance and then maintain the infrastructure. To secure the \$300 million of private sector financing, RTG entered into a long term financing arrangement with long-term lenders and equity providers. The City would then repay this capital investment over the 30-year maintenance and service period. The benefit of this financing arrangement is that it puts RTG at risk for their maintenance payments and the payments to repay the long-term debt. The lender also has additional step-in rights and tools for improved oversight to ensure that the project is delivered on time, on budget and built to operate smoothly. In December 2012, Council approved the project funding ([ACS2012-ICS-RIO-0004](#)), which included the \$300 million in private sector debt, specifically comprised of \$75 million equity funding and \$225 million in long-term debt secured by RTG with a consortium of long-term lenders (Long Term Lenders). Traditional city financing of capital works sees the City issue debentures directly in the bond markets; however, the debt approved in 2012 is private sector financing, but also requires re-payment by the City and the payments of principal and interest required by this loan were included in the 2017 Budget debt service estimate schedule. RTG also has a short-term loan facility in place to cover the construction phase and provides additional risk protection up to completion of Revenue Service Availability.

With Stage 1 of the Confederation Line nearing completion, and the addition of new infrastructure for the Stage 2 project that will more than double the number of vehicles

and the number of vehicle kilometers delivered, changes are required to the original arrangement with RTG, the Special Purpose Vehicle (SPV) charged with delivering maintenance services over the long-term. The additional scope of maintenance services that RTG would undertake, in terms of the performance of the expanded system and fleet, have the potential to alter the lenders risk profile.

On March 8, 2017 Council delegated authority to the General Manager, Transportation Services, to negotiate and execute an agreement with the long-term lenders to support the implementation of the MOU with RTG ([ACS2017-TSD-OTP-0001](#)). Lenders are entitled to a consent right on any change to the project which involves the expenditure of \$5,000,000 or more. Lender consent was dependent on maintaining a consistent and unaltered risk profile. When City Council approved the Stage 2 Implementation Report in March, staff had assessed options to implement the MOU to achieve consent with lenders. Further to this, negotiations were held with the long-term lenders to find the best and most efficient way to structure arrangements to ensure that the integrity of the original Stage 1 risk profile was maintained.

The Infrastructure Ontario P3/AFP model has many advantages, however it is not designed to accommodate significant scope changes. The model provides lenders with consent rights on any major variation, such as for extensions; and in these cases where significant change is required, lenders can demand additional amounts of private financing. While the City has benefited from the effective discipline the model has imposed on the Confederation Line project to date, it was not designed to accommodate large scale expansions, and in this case, the extensions of Confederation Line that Stage 2 seeks to implement.

A key metric assessed by lenders on P3 transactions is “**debt service resiliency**” which indicates the extent to which, in this case, RTG’s equity payments can absorb cost increases during the project’s operational phase while preserving their ability to make debt service payments (principal and interest). Due the expanded system, the debt service resiliency ratio would have been negatively impacted and the Lenders insisted that RTG would be required to inject an additional \$50-\$100 million of equity into the project. This equity would come at a cost of up to 13% per annum.

Assuming an incremental equity investment requirement of \$80 million, and an internal rate of return (IRR) of 11% over the operating period (Jan 2025 to May 2048), the total cost to the City would have been approximately \$214.4 million, which equates to an

additional \$134.4 million in interest costs over the 30-year concession period for no additional value. The full burden of these costs would fall on the City as they are not eligible for sharing with the Federal and Provincial governments.

To avoid the costs related to Lender consent, staff are recommending a solution whereby the City will assume the role of the long-term lender, which allows the fixed-price MOU with RTG to be implemented with no additional cost or risk to the City. In exchange, the City will enter into and issue debentures in the equivalent principal amount and with the equivalent repayment profile directly to the Long Term Lenders. This solution does not compromise the P3/AFP structure, and provides increased project oversight to the City; essentially, the City will assume the Long Term Lenders' additional oversight powers with respect to RTG, which are significant, and eliminate the consent rights of the Long Term Lenders. RTG will remain fully at risk for performance during the 30-year maintenance term.

Change to Source of Funding for the RTG MOU

Unrelated to the refinancing of the long-term debt, staff is also recommending that there be an amendment to the source of funding for the RTG MOU. As per the Stage 2 Light Rail Transit Implementation – Project definition and procurement plan ([ACS2017-TSD-OTP-0001](#)), project 908650 (Stage 2 LRT – RTU MOU) was approved by Council with \$102,040,800 of Development Charge funding, on March 8, 2017. Subsequently, the Development Charges By-law Amendment 2017 ([ACS2017-PIE-PS-0064](#)) was updated and approved on May 24, 2017. One of the changes included in this amendment, resulted in the addition of debt and finance related costs, as permitted by the Development Charges Act. The Transit Long Range Financial Plan (LRFP) ([ACS2017-CSD-FIN-0002](#)) also identified the requirement for additional debt to support the advancement of the Stage 2 program. Therefore, consistent with the development charge amendment and the Transit LRFP, staff recommend that the funding source for project 908650, related to Development Charges be changed to Development Charge Debt.

Part 3: Supporting the implementation of the Stage 2 project – Stage 2 Governance

As indicated in the *Stage 2 Light Rail Transit Implementation – Project Definition and Procurement Plan* ([ACS2017-TSD-OTP-0001](#)) approved by Council 8 March 2017, a

number of related activities and actions must be undertaken to prepare for the implementation of the Stage 2 LRT project in preparation of and following the contract award. This includes a continued focus on Stage 1 governance and integration with governance for Stage 2 LRT.

The Finance and Economic Development Committee has primary carriage over the project for items such as contracts and procurement, property acquisition and real estate, budget, economic development and partnership arrangements. The Transportation Committee will retain governance for the Statements of Work for the Environmental Assessments. The Transit Commission will oversee matters that are directly related to transit operations, such as wayfinding, branding, advertising standards, etc. The Transit Commission will also have oversight over the Stage 2 extensions once they have been built and become part of the City's O-Train transit network.

In July 2011, as part of the *Implementation of Ottawa's Light Rail Transit Project* report to Council ([ACS2011-ICS-RIO-0002](#)), the Executive Steering Committee (ESC) was formed to oversee project procurement and implementation of the Confederation Line. Subsequently, the role of ESC was included in the Confederation Line Project Charter. To date, ESC has provided strategic direction on project issues.

DISCUSSION

Part 1: Defining Stage 2 alignment

Since the *Stage 2 Light Rail Transit Implementation Project Definition and Procurement Plan Report* ([ACS2017-TSD-OTP-0001](#)) approved by Council on March 8, 2017, staff have undertaken the EA work for two sections of the future expanded O-Train system, including:

- Confederation Line West – LRT extension from Bayshore to Moodie Station and Light Maintenance and Storage Facility (LMSF); and,
- Trillium Line – New alignment shift south of Leitrim Station and station location at Earl Armstrong/Bowesville, as well as potential future extension to Limebank.

Moodie LRT Extension and LMSF - Current Status of Environmental Assessment (EA) Process

On September 7, 2016, the Transportation Committee approved the Statement of Work for the proposed Kanata Light Rail Transit Planning and Environmental Assessment Study (Bayshore Station to Palladium Drive – [ACS2016-TSD-PLN-0001](#)). However, during the planning of the Stage 2 project, staff assessed the feasibility of expanding the LRT 2.5 kilometres farther west to Moodie Station, and determined that the Stage 2 procurement process presented an opportunity to undertake the conversion of the West Transitway Extension (Bayshore Station to Moodie Station) from Bus Rapid Transit to Light Rail Transit within the project's affordability cap.

As a result, the Bayshore to Moodie portion was de-scoped from the Kanata LRT Environmental Assessment, and staff were directed, in the March 8, 2017 Stage 2 Implementation report to immediately begin the process to seek the necessary EA approvals to facilitate a potential Bayshore to Moodie Drive extension of LRT. The scope of this extension includes 2.5 kilometers of revenue service rail, a station at Moodie Drive and a Light Maintenance and Storage Facility (LMSF) located west of Moodie Drive between Corkstown Road and Highway 417. Direction was also given to initiate an EA addendum, if required, to expand the Bayshore Station bus facility. Should the Moodie extension become implemented as part of the Confederation Line extension procurement, the design change covered by the EA change for an expanded bus facility at Bayshore Station would no longer be required. The EA process will be completed and filed in order to protect the process.

In terms of study process, the conversion of BRT to LRT, and siting of future Moodie station and LMSF, are subject to a new Environmental Project Report (EPR) as part of the Transit Project Assessment Process (TPAP), in accordance with Ontario EA Regulation 231/08 for transit projects. To date, staff have initiated the Moodie EPR consultation process, including the organization of Technical and Public Advisory Committees and two public open houses. The Notice of Commencement was issued on August 24, 2017 and staff expect to issue a Notice of Completion by Q4 2017, as well as a review of the recommendations by the Ontario Minister of Environment and Climate Change.

At the first public meeting for the Moodie LRT Extension on March 22, 2017, staff outlined the objectives for the project, the study area, the long list of potential locations for the Light Maintenance and Storage Facility (LMSF) options based on specific search criteria and functional requirements, possible LRT station locations, and the criteria for evaluating and screening station and LMSF options. This public meeting also confirmed

the initial screening of eight LMSF options to a short list of three potential sites to be examined in more detail. Specifically, the list of LMSF options was narrowed to Site Options 2, 3 and 4 (see figure 1 below). There was general consensus with the proposed short listed LMSF options and the three possible station locations presented.

A second public consultation was held on June 13, 2017 and was attended by approximately 195 people. At this open house, recommendations were provided by staff for both the site of the LMSF and future Moodie LRT Station, including:

- The location for the future Moodie LRT station on the east side of Moodie Drive on the north side of Highway 417; and,
- The location for the LMSF site (“Option 2”) on the east side of Moodie Drive, north of Highway 417, north-west of Abbott Industries and south of the Crystal Bay Centre for Special Education.

Light Maintenance and Storage Facility (LMSF)

The Belfast Yard Maintenance and Storage Facility will be used to ensure the good repair and availability of the vehicle fleet that will service the Confederation Line. In addition to the heavy maintenance activities that will take place at this facility, it was determined during the preliminary engineering of the Stage 2 LRT project that an additional facility in the west was preferred to meet operational needs and requirements of the expanded line as it could be implemented within the overall scope of the Stage 2 procurement.

It was identified that this additional western facility would be used for light maintenance and storage purposes for light rail vehicles (LRVs). Beyond the provision of overnight covered storage for LRVs, activities on this site could include: inspections and some component replacement, exterior car wash, interior vehicle cleaning, graffiti clean up, minor repairs (seats, doors, windows), minor HVAC repairs.

In total, three Light Maintenance and Storage Facility (LMSF) locations were short listed as part of the Bayshore to Moodie EA review (see Figure 1 below).



Figure 1: Short listed Light Maintenance and Storage Facility Options

These potential locations were then reviewed from a transportation, connectivity, social, biophysical, operations, and cost (capital and operating) perspective.

Further to an initial assessment, LMSF “Option 2” was identified as the preferred option given the advantages it provided from capital and operating cost perspectives.

The LMSF “Option 2” location was presented as the preferred option to the study’s Public Advisory Committee (PAC), Technical Advisory Committee (TAC), and subsequently at the June 13, 2017 public consultation, but was met by substantial opposition, with a clear preference expressed by the community for “Option 3”.

While LMSF “Option 3” scored slightly lower from a capital and operating perspective, it was preferred over “Option 2” from an environmental and social perspective during the initial assessment, scoring higher on criteria such as connectivity, noise/vibration/air quality, species at risk, impacts on natural habitats and operational flexibility.

Staff also deemed that the principle advantages of LMSF Option 2 (capital and operating costs, deadhead mileage) that lead to it being assessed as the initially

preferred option were not so significant in comparison to Option 3 so as to dissuade the City from striving to achieve a location that is ultimately acceptable to the community.

Thus, in response to community feedback, LMSF “Option 3” was carried forward as the preferred alternative solution for further assessment and design and, as a result of this subsequent work and analysis, it is now the staff recommended site.

Much of the work the City has performed to further assess the potential merits of “Option 3” has been in consultation with the National Capital Commission (NCC), who are the adjacent landowner as well as Wesley Clover Parks, who are the NCC’s tenants at this location.

The City and the NCC developed an informal working group with a mandate to further assess the feasibility of “Option 3” as well as other alternatives from both Capital Criteria and Stage 2 operational requirements perspectives, and to confirm an engagement and approvals process.

These discussions identified design refinements for the LMSF location and further analysis was undertaken to determine if the storage and maintenance requirements for 2023 (opening day) could be contained within the area between the 417 and Corkstown Road, with a future expansion limited to the southwest corner of these federal lands in order to mitigate impacts to the current and future operations of Wesley Clover Parks.

As result of the success of these efforts, the Moodie Light Maintenance and Storage Facility (LMSF) is now proposed to be located between Corkstown Road and Highway 417, west of both Moodie Drive and the proposed LRT Station.

The entrance to the yard is approximately 660m west of the proposed Moodie Station platform, and the track connection from the Moodie Station to the yard entrance passes through the existing Moodie Drive/Highway 417 interchange with new structures required at both westbound on-ramps and Moodie Drive itself. A structure to allow the LRT to cross under the westbound off-ramp is currently under construction as part of the West Transitway construction, and will be re-used for LRT.

While this 660 metre westerly extension to the LMSF will initially operate as a non-revenue service line to provide vehicle access to the facility, it will become a revenue service line with the implementation of a future Kanata West Extension. Design features

of this Moodie LMSF include a special events platform that could provide LRT access for large scale events at Wesley Clover Parks.

Other facilities to be located on the Moodie LMSF site in 2023 could include an administration building, staff parking, a maintenance shed, and covered storage for 18 trains (or 36 LRVs). In total, this site requires approximately 5.5 hectares of mostly MTO lands that are north of the Highway 417 corridor to house a facility capable of supporting opening day operations. This site is also capable of housing interim capacity if necessary of up to 40 additional LRVs without causing any impacts to adjacent federal lands.

Due to its location adjacent to Highway 417 and the types of activities that will take place at this facility, there is no requirement for noise mitigation as ambient noise level increases are not anticipated.



Figure 2: Recommended Moodie LMSF Facility (2023)

When the Kanata LRT is implemented, an expansion of this facility will be required to accommodate additional maintenance and storage needs as well as ridership growth. In total, the ultimate LMSF will require approximately 2.5 hectares of additional land which is enough space for the facility to accommodate a total of 94 LRVs. This expansion would provide storage for the 29 additional trains (or 58 LRVs) as well as a westerly turnout track to connect to the future lead track to Kanata near the western limits of the site. It will also require the slight realignment of Corkstown Road as well as the existing entrance to Wesley Clover Parks.

The facility, as described above and in Figure 2, is a variation of “Option 3,” and will inform the recommendations in the Environmental Project Report (EPR). Some further work is required to finalize more detailed design and performance requirements through the procurement process, including additional consultation with the Ontario’s Ministry of Transportation, the NCC and Wesley Clover Parks.

Both the NCC and Wesley Clover have seen these plans and Wesley Clover has considered them in the context of their longer term visions. The MTO has also been provided with these preliminary plans and are assessing the location of various elements to ensure spacing and safety requirements with respect to proximity to Highway 417.



Figure 3: Moodie LMSF Facility (Ultimate Expansion)

Moodie Station Location

Several options for potential station locations were considered within certain parameters required by the project, including the station functional requirements. Functional requirements were identified to support the bus facilities and the Moodie LRT station, including the following:

Requirements to support bus operations:

- 9 bus platforms;
- Fare paid bus terminal;
- 14 staging spaces for buses to wait for their scheduled departure; and,

- Service building.

The requirements for the Moodie LRT station itself included:

- Common Look and Feel as Stage 1;
- LRT platform (initially 90 metres in length, protection for 100 metres);
- Likely a side platform station but City will leave this to contractor to decide;
- Redundant elevators;
- Escalators serving the entrance and platforms;
- Four PPUDO spaces to provide for local community needs;
- LRT operator facility
- LRT support service facilities;
- Fare paid entrance;
- Emergency exit facilities; and,
- Public washrooms.

While the station selection was undertaken independent of the LMSF evaluation, in all instances, the location of the station had to be compatible with the future maintenance facility. As well, connectivity, station catchment areas, bus travel times, and quality of services were all key drivers in the evaluation of the station location.

Figure 4 below provides an overview of the station options considered as part of the evaluation:



Figure 4: Moodie LRT Station Options

A future east side Moodie Station location was identified through this evaluation as the preferred option for several reasons, including:

- Some re-use of existing BRT facilities;
- Provides better connection to NCC trails;
- More accessible to the residential community and Abbott lab based on the 600 metre catchment area;
- Shorter distance for DND transit service;
- Less impact on views and vistas/lower visibility for “capital arrivals”; and,
- Lower impact on existing land uses and avoids impacts on Wesley Clover Parks and in favour of impacting soccer fields on NCC lands east of Moodie Drive.

The reconfiguration required for Corkstown Road was similar in all options, and therefore was not a deciding factor.

The east side station location was presented to the study's Public Advisory Committee (PAC), Technical Advisory Committee (TAC) and subsequently at the June 13, 2017 public consultation meeting. As presented to the community in June, this remains the current recommended option as this location is best positioned to support local potential ridership based on the catchment area it serves.

This easterly Moodie LRT Station location and design builds on previous BRT studies that also strongly preferred an easterly station location. This will be the recommended site included in the Environmental Project Report to be finalized later this year.

Moodie Park & Ride

With the approval of the Stage 2 Implementation report, a motion was approved to direct staff to consider a park and ride at the future Moodie LRT station.

Subsequent technical investigations have resulted in staff not recommending a new large park and ride lot at this location for several reasons, including:

- Lack of space immediately adjacent to Moodie LRT station;
- A parking deck would likely be required given space constraints;
- Parking deck may be underutilized once LRT is extended to Kanata, with the potential for significant throw away capital costs; and,
- Would encourage additional traffic across the Greenbelt and is contrary to City and NCC policy.

However, there may be potential to provide a limited/short term paid ("Gold Permit") park and ride using the existing Abbott Industries surface lot if unused spaces are available. Discussions to assess the feasibility of implementing this additional parking will continue to be explored through the in-market period and a final recommendation will come before Committee and Council at the time of the Confederation Line Extension contract award.

Moodie Station Connectivity Study

Integrating the Stage 2 LRT alignment and stations with local pedestrian and cyclist networks is one of the key principles of the project. Recognizing this, connectivity studies were carried out for each of the stations for the Stage 2 LRT project. The connectivity study will now be extended to include both the Moodie LRT Station as part

of the Moodie to Bayshore extension, as well as the Trillium re-alignment of Bowesville station.

For Moodie Station, a connectivity study was also carried out as part of the BRT extension for Moodie to Bayshore. This resulted in new future cycling/pedestrian connections (e.g. sidewalk along Corkstown Road to Crystal Beach) that are already under construction. The current connectivity study for the Moodie extension will build on this work, and also identify additional connections for the LRT project to implement (e.g. Moodie/Corkstown crossings). The Moodie consultation took place on August 21, 2017, and this public feedback is currently being assessed and incorporated into a final study that will help inform the ultimate station design at Moodie.

For the Bowesville LRT Station, a public consultation opportunity will be held later in 2017 and the results will help inform the final station design at Bowesville/Earl Armstrong.

Conclusions and Next Steps

The Bayshore to Moodie EPR was initiated with the objective of obtaining the necessary EA and other approvals for the conversion from BRT to LRT along this 2.5 kilometre stretch, as well as locations for a new Moodie LRT station and LMSF. The immediate timing of this study, and the identification of recommendations, were to ensure that this information could be included in an addendum to the Confederation Line Request for Proposals (RFP) document in October 2017.

The final EPR provides several recommendations, including the conversion of BRT to LRT, the modified “Option 3” site for a LMSF, and an east side Moodie station location as described in this report. Staff believe these can be implemented within the existing project affordability cap.

With respect to the LMSF, the City and National Capital Commission struck a Working Group with the objective of identifying a mutually acceptable location and design for this facility. This Working Group reviewed several options for the LMSF from an NCC Capital requirements perspective, as well as a Stage 2 operational perspective. The Working Group reviewed the potential for a variation of “Option 3”, which would be an interim, storage-only design concept located on MTO lands between Highway 417 and Corkstown Road. This interim facility would support Stage 2 operational requirements for Opening Day (2023), and accommodate up to 16 trains or 32 light rail vehicles

(LRV). Operational requirements continue to be evaluated to support this option, and the City is continuing discussions with the NCC and Wesley Clover on the requirements for a potential future expansion, as well as coordinating any necessary utility and servicing works.

The City has also contacted the MTO and provided the functional design of the current recommended facility.

Based on technical work and stakeholder discussions to date, staff recommend that the functional design and approvals for an ultimate LMSF facility to support expanded fleet requirements be included within the scope of work for the current Kanata Light Rail Transit Planning and Environmental Assessment (EA) Study. Specifically, the Kanata EA study would look at a number of potential location options for this future facility, including the ultimate configuration of the Moodie facility as one of these options. In the meantime, the ultimate scenario will be protected for in the Bayshore to Moodie EPR.

Staff will also be completing geotechnical investigations, site surveys, traffic analysis, property negotiations and preliminary engineering activities. This will include the preliminary design of the LRT station and surface transit facilities, the functional requirements and configuration of the LMSF, the relocation of Corkstown Rd, and Traction Power Substation (TPSS) locations for both the LMSF and station facilities.

The City issued the Transit Project Assessment Process (TPAP) Notice of Study commencement on 24 August 2017, and expect to issue the completion notice in Q4 2017. An addendum to the Stage 2 LRT Confederation Line Extension RFP (including the Moodie LRT/LMSF base scope elements) in the fall of 2017. With the above schedule, the final Environmental Project Report (EPR) approval is anticipated by the end of 2017. This would be followed by property agreements and all necessary agency approvals by Spring 2018, prior to Financial Close in August 2018. The continued technical work will also include additional Public and Technical Advisory committee meetings in 2017.

The EPR with the recommended Moodie Station location and LMSF Option is attached as Document 1 to this report.

Improved Trillium Line Extension



Figure 5: Improved Alignment, Station Location and Future Extension

In 2014, the City of Ottawa initiated a provincial Planning and Environmental Assessment (EA) study to develop a recommended plan for the extension of the diesel-powered Trillium Line (formerly O-Train). This plan would extend the Trillium Line south from its current terminus at Greenboro Station to Riverside South (Bowesville Road), and to the Ottawa Macdonald-Cartier International Airport.

The plan includes an extension and options to service the growing communities of Riverside South and Leitrim, the Airport and adjacent lands, as well as new stations at Gladstone Avenue and Walkley Road on the existing Trillium Line. The plan also allows for future conversion of the Trillium Line to electric light rail transit (LRT) technology. This alignment received provincial Notice to Proceed approval from the Ontario Minister of Environment and Climate Change on March 21, 2016.

In the *Stage 2 Light Rail Transit Implementation Report* approved by Council on March 8, 2017 the Trillium Line south terminus was located on Bowesville Road, several hundred metres north of Earl Armstrong Road, consistent with the approved Environmental Project Report for Trillium Line.

Further to this staff report, additional preliminary engineering activities were completed, and discussions took place with stakeholders to respond to two key areas of interest: the desire from the community to bring LRT closer to Riverside South, and reducing, where possible, environmental impacts on sensitive Greenbelt lands.

Based on these activities, staff recommended a new alignment and location for the Bowesville Station. These changes were announced by the Mayor, and Council was informed via a memo on July 5, 2017.

The new alignment will move Bowesville Station to the edge of the urban boundary just southeast of the Earl Armstrong Road and Bowesville Road intersection. The alignment will now continue to follow the former CP rail corridor farther south until it crosses Earl Armstrong Road, at which point it will turn westward and terminate just east of Bowesville Road at the new Earl Armstrong/Bowesville Station. An overpass structure carrying Earl Armstrong Road over the extended Trillium Line will be built as part of the Stage 2 Project.

This new Earl Armstrong/Bowesville alignment provides several benefits as it will:

- Take advantage of an existing rail corridor, ultimately reducing land costs and simplifying construction, which will enable the City to add approximately 800 metres of rail within the existing budget;
- Reduce the environmental impact on sensitive lands in and around the Greenbelt, as the City will no longer require approximately 12 acres of these environmentally sensitive lands; and,
- Improve rail access to residents in Riverside South and broader Ottawa south communities by providing closer access to Earl Armstrong, a major east-west arterial in Riverside South, and bringing the Park and Ride closer to Riverside South.

This new alignment also facilitates a potential future extension beyond Earl Armstrong/Bowesville to Limebank Road to better integrate with the community of Riverside South as it grows.

The new Earl Armstrong/Bowesville alignment was included in the Trillium Line procurement as base scope for the Stage 2 project. The Request for Proposals (RFP) for the Trillium line was released to three qualified consortium teams on July 17, 2017.

To complete these changes along with the future extension to Limebank, from a planning perspective, an Environmental Project Report addendum to the existing Trillium Line Environmental Project Report (EPR) is required.

Also, a targeted update to the Community Design Plan (CDP) for Riverside South will be required. Both processes are described in the following sections.

Improved Trillium Line Extension Environmental Project Report Addendum

The improved Trillium Line alignment and new terminus location at Earl Armstrong/Bowesville, as well as a potential future alignment extension to Limebank Road, require an addendum to the existing Trillium Line Extension Environmental Project Report (EPR). This addendum will need to be documented in accordance with section 15 of *Ontario Regulation 231/08, Transit Projects and Metrolinx Undertakings* and will identify the modified alignment and station locations, the impetus for these changes, and evaluate any potential impacts that these changes may have from an environmental perspective. This report will also propose mitigation measures where necessary.

Final results of this research will be included in an EPR Addendum Report to be filed with the Ministry of the Environment and Climate Change in November 2017.

Targeted Update to the Riverside South Community Design Plan

The Riverside South Community Design Plan (CDP) is being updated to align and support this Trillium Line extension adjustment south of Leitrim Station, and the potential extension of this diesel-powered LRT system farther into this community from the new terminus at Earl Armstrong/Bowesville to Limebank Road. Most of the easterly half of the CDP area (east of Limebank Road) will need to be updated to accommodate the relocation of the alignment in terms of the arrangement of future land use, infrastructure servicing plans, environmental and transportation components.

The CDP update will be conducted by the Planning, Infrastructure and Economic Development Department, Community Planning Unit. The O-Train Planning Office will work with the Community Planning Unit when updating the CDP to ensure a comprehensive review of the impacts of the alignment changes are incorporated, including the future grade-separation crossings along the Trillium Line.

The scope of the CDP review includes, but is not limited to:

- Review of the rapid transit corridor alignment and grade separation options south of Earl Armstrong Road to optimize the arrangement of land use and minimize the community impacts associated with the relocated Trillium Line;
- Assessing the impacts on site plan, and draft and approved plans of subdivision;
- Planning new locations for land use, streets, and determining related development densities, parkland requirements and changes to walking/cycling routes;
- Evaluating street design options for the future Earl Armstrong Road east of Limebank Road to better integrate the transportation corridor with adjacent land use;
- Determining required updates to supporting and master servicing studies; and,
- Bringing forward for approval any zoning by-law and official plan amendments necessitated by the CDP changes.

The CDP update process commenced in July 2017 and will be completed by June 2018. It will involve stakeholder meetings and public input through open house sessions in addition to collaboration with the affected developer landowner - Riverside South Development Corporation (RSDC). The updated CDP will be brought forward to Planning Committee and Council for approval. This Trillium Line extension to Limebank Road is outside of the City's Affordable Transportation model. As such, the potential for this extension to be implemented as part of the Stage 2 procurement is dependant on securing an alternative funding source. Financing could be provided through either an area specific Development Charge (up to 2031), or a combination of an area specific Development Charge and private financing from the land owners that would benefit from the extension to their lands. This funding would also have to accommodate any debt servicing charges related to the extension's potential implementation.

In the meantime, staff are seeking Council's approval to delegate authority to the General Manager, Transportation Services to include the extension of the Trillium Line to Limebank Road in the Trillium procurement documents via an addendum, subject to a solution being identified that meets the following parameters:

- Cost: The extension will be privately financed through an area specific Development Charge (DC), to a maximum cost of \$40 million, which includes the provision of the additional vehicle required to operate this extended service;

- Operation and maintenance: The extension will not undermine system operability, and can be incorporated within the City's long term affordability model for operations and maintenance of the LRT system.
- Legislative approvals: Approval of the updated CDP by Committee and Council as well as Environmental Assessment amendments for the adjusted alignment.
- Confirmation through contract award. Implementation of the extension will need to be assessed through the in-market period and confirmed as part of the final contract award.

Staff will implement an affordability cap of \$3.315 B for the rail component to ensure the project stays on budget, as was done with Stage 1 of the Confederation Line. Approval for the final scope and financial arrangements for the Limebank extension would be sought from Committee and Council at the time of approval for the Trillium Line contract award in Q2 2018.

Part 2: Long-Term Debt Cost Avoidance

As described in the Background section, staff are recommending that the City execute an assignment and assumption agreement with the Long Term Lender whereby the City:

- takes an assignment of the existing credit facility as Long Term Lender to RTG,
- and, in exchange, issues debentures in the equivalent principal amount and with the equivalent repayment profile to the Long Term Lenders

Several options were discussed with the Long Term Lenders, including protecting the Long Term Lenders from the additional risks associated with the Stage 2 project but this would have eroded the risk transfer to RTG and would have been much more complicated to implement. An alternate option was for the Lenders to expand the current credit agreement to include the Stage 2 expansion risk profile. As explained earlier, the Lenders insisted that RTG would be required to inject an additional \$50-\$100 million of equity into the project at a cost of up to 13% per annum. Such an incremental equity investment would have cost the City a significant amount in additional financing costs, for minimal benefit to the City from a risk transfer perspective

given the security package already provided by RTG's maintenance joint venture partner (RTM) as part of the Stage 1 project.

The Long Term Debt Cost Avoidance solution was determined to be the preferred option, as it did not have an additional cost impact to the City as it does not involve new debt authority, it preserves the risk transfer in the project agreement and the credit agreement structure, and it is relatively simple to implement which would enable the City to meet the target MOU completion date and move forward with the Stage 2 project.

The Long Term Lender Debt Cost Avoidance solution is an arrangement whereby the City enters into and issues debentures directly to each of the Long Term Lenders (as Borrower) and therefore makes payments directly to the Lenders, and, in exchange, the City will step into the shoes of the Long Term Lenders (as Lender) in respect of the Stage 1 long-term debt by executing an Assignment and Assumption Agreement. As mentioned above, by preserving the existing Project Agreement and Credit Agreement structure, this maximizes the City's strategic options during the operational period. The new debentures will be issued at the same interest rate as the loan in existing credit agreement.

Upon completion of the assignment and assumption, the City will have all the same rights attributed to the Lenders in the existing credit agreement with RTG. The key benefits of having lenders' rights include:

- Diligence – From RTG's perspective, the borrower-lender arrangement still prevails with the City taking over the role as lender while from the City's perspective, it receives additional reports for the Stage 1 Project including: Lenders reports, Lenders Technical Advisor reports, and regular financial reporting;
- Enhanced security package – The City will have direct access to liquid security, parent company guarantees and equity from the RTG consortium;
- Remedies on Project Co default – The City will have access to all of the events of default under the lending arrangement which are more numerous with tighter cure period timeframes, in addition to those under the Project Agreement; and,

- Support City's Options / Rights - Clarity under the Compensation on Termination Schedule concerning the amounts it will be required to pay to Project Co in the event of termination.

As with any new debt obligation, it will be necessary for the City to pass a by-law authorizing the long term loan agreement that will be entered into in exchange for the City stepping into the shoes of the existing Long Term Lenders. Part XIII of the *Municipal Act, 2001*, governs the City's power to enter into debt arrangements and debentures, and refers to enacting by-laws in order to authorize the long term debt transactions. In this regard, the associated draft debenture By-law is attached as Document 2.

The Credit Agreement does not involve any new debt authority but provides the financing authorized by Council at the time the capital works were approved, as detailed in Schedule "A" to the debenture By-law attached as Document 2.

Change to Source of Funding for the RTG MOU

As indicated in the background section of this report, unrelated to the refinancing of the long-term debt, staff is also recommending that there be an amendment to the source of funding for the RTG MOU. As per the Stage 2 Light Rail Transit Implementation – Project definition and procurement plan ([ACS2017-TSD-OTP-0001](#)), project 908650 (Stage 2 LRT – RTU MOU) was approved by Council with \$102,040,800 of Development Charge funding, on March 8, 2017. Subsequently, the Development Charges By-law Amendment 2017 ([ACS2017-PIE-PS-0064](#)) was updated and approved on May 24, 2017. One of the changes included in this amendment, resulted in the addition of debt and finance related costs, as permitted by the Development Charges Act. The Transit Long Range Financial Plan (LRFP) ([ACS2017-CSD-FIN-0002](#)) also identified the requirement for additional debt to support the advancement of the Stage 2 program. Therefore, consistent with the development charge amendment and the Transit LRFP, staff recommend that the funding source for project 908650, related to Development Charges be changed to Development Charge Debt.

Part 3: Supporting the implementation of the Stage 2 project – Stage 2 Governance

As indicated in the *Stage 2 Light Rail Transit Implementation – Project Definition and Procurement Plan* ([ACS2017-TSD-OTP-0001](#)) approved by Council 8 March 2017, a

number of related activities and actions must be undertaken to prepare for the implementation of the Stage 2 LRT project in preparation of and following the contract award. This includes a continued focus on Stage 1 governance and integration with governance for Stage 2 LRT.

The Finance and Economic Development Committee has primary carriage over the project for items such as contracts and procurement, property acquisition and real estate, budget, economic development and partnership arrangements. The Transportation Committee will retain governance for the Statements of Work for the Environmental Assessments, and the Transit Commission will oversee matters that are directly related to transit operations, such as wayfinding, branding, advertising standards, etc. The Transit Commission will have oversight over the Stage 2 extensions once they have been built and become part of the City's O-Train transit network.

In July 2011, as part of the *Implementation of Ottawa's Light Rail Transit Project* report to Council ([ACS2011-ICS-RIO-0002](#)), the Executive Steering Committee (ESC) was formed to oversee project procurement and implementation of the Confederation Line. Subsequently, the role of ESC was included in the Confederation Line Project Charter. To date, ESC has provided strategic direction on project issues.

ESC will be maintained and has expanded its scope to now include the procurement and implementation of the Stage 2 expansion project, including the authority to confirm and recommend the preferred proponent for Stage 2 to Council at the close of the Request for Proposals. Further to the March 8 Implementation Report, the City assembled industry leading procurement experts, legal and finance advisors and an Owner's Engineer team.

Staff have consulted with Infrastructure Ontario (IO) and both parties have confirmed that the City does not require IO services as part of Stage 2. IO has been highly effective and supported the City throughout Stage 1 and their work will cease once Stage 1 is in revenue service.

As we are currently in a transition between Stage 1 and Stage 2, the City Manager, under delegated authority, may invite Stage 2 staff to be consulted as required. Once Stage 1 is complete, the following changes will be implemented:

1. ESC's mandate will include the role of the former Contingency Management Committee and ESC's terms of reference will be amended to include the

following functions formally associated with the Committee: reviewing and approving expenditures against the Confederation Line's \$100 Million Contingency Fund; ensuring that variations and risks are properly accounted for as potential draws against the account; and approving requests for:

- Increased project funding outside of approved funds (including project contingency); and,
- Design changes requiring funding outside of the existing delegated authority (substantial design changes).

2. The composition of ESC includes:

- City Manager (Chair);
- General Manager, Transportation Services Department;
- Director, Rail Construction Program;
- City Clerk and Solicitor; and,
- General Manager, Corporate Services and City Treasurer.

An Executive Advisor to ESC may be appointed at the discretion of the City Manager and other City General Managers/Directors and other City staff may be invited to participate as required. The City Manager is delegated the authority to add or remove members of the Executive Steering Committee to reflect any new organizational changes or if a need to add specific expertise is identified.

3. An External Rail Expertise Advisory Board will form a key part of the Stage 2 project governance. This group is composed of three external rail executives with extensive rail construction and operations expertise. With their diverse and significant experience, the Advisory Board will be available to the General Manager, Transportation Services Department and ESC to advise, support and assist on the complexity with Stage 2. The Advisory Board will be a strategic resource supporting program outcomes, assisting with complex financial elements of the agreement, proactively managing risk, and ensuring continuity of commercial elements from Stage 1 to Stage 2 of the program.

RURAL IMPLICATIONS

The Stage 2 LRT Project will have significant City-wide benefits as outlined in the updated Stage 2 Benefits Case (www.stage2lrt.ca/resources). The new Trillium Line

alignment, located approximately 800 metres south of the original alignment with a station just southeast of the Earl Armstrong Road and Bowesville Road will bring the benefits of LRT closer to the rural areas.

CONSULTATION

The City conducted stakeholder and public consultations for each of the three Stage 2 LRT Environmental Assessments, including consultations for recommended design modifications. As well, consultations have been held with respect to the Richmond Complete Street and Stage 2 LRT Pedestrian and Cycling Connectivity Study.

A comprehensive consultation plan was carried out for each Environmental Assessment that included several rounds of public engagement at key milestones in the study process. Each round consisted of meetings with the Agency, Business and Public Consultation Groups prior to open houses.

The Stage 2 project has had numerous touchpoints in 2017 with the communities it will serve in the future, including almost 50 public events in the first half of the year. The result of these discussions have led to refinements to the information and plans that form the basis of the RFP documents.

To support the EA works as described in this report, and as required by the Transit Project Assessment Process, public consultation opportunities have taken place in support of the alignment modifications, including two public open houses for residents on the Bayshore to Moodie EA amendments (on March 22, 2017 and June, 13 2017). Technical and Public Advisory Committees have been organized for key stakeholder review of the process and recommendations for the project. Additional advisory committee meetings for both the Bayshore to Moodie and Trillium Line EA amendment work will be organized in 2017, and advertised through the standard City process.

Looking ahead, public consultation opportunities for the connectivity study for both the Bayshore to Moodie and Trillium Line projects will take place.

COMMENTS BY THE WARD COUNCILLOR(S)

This is a City-wide report.

ADVISORY COMMITTEE(S) COMMENTS

Advisory Committees have been organized for key stakeholder review of the process and recommendations for the project. Additional advisory committee meetings for both

the Bayshore to Moodie and Trillium Line EA amendment work will be organized in 2017, and advertised through the standard City process.

LEGAL IMPLICATIONS

Section 401 of the Municipal Act, 2001, as amended, authorizes a municipality to incur debt for municipal purposes by borrowing money or in any other way, and further authorizes a municipality to issue debentures in relation to debt. The City of Ottawa's Delegation of Authority By-law 2016-369, Schedule "B", Sections 11 and 12, authorize the City Treasurer to proceed with debt issue and bank loans respectively, where the project debt authority has been previously approved by Council. Subsection 15(3) of By-law 2016-369 further authorizes the City Treasurer and City Manager to place the debenture by-law associated with debt issued directly on the agenda of the Finance and Economic Development Committee or Council. The debenture by-law is attached as Document 2 for reference purposes.

RISK MANAGEMENT IMPLICATIONS

Risks identified and explained in the report are being managed by the appropriate staff.

ASSET MANAGEMENT IMPLICATIONS

There are no Asset Management implications for this report at this time.

FINANCIAL IMPLICATIONS

The debentures to be issued to each of the Long Term Lenders do not involve any new debt authority, as the payments match those that were part of the financing authorized by Council at the time the capital works were approved, as detailed in Schedule "A" to the debenture By-law attached as Document 2.

The interest rate for each of the debentures is set at 4.894%. The payments of principal and interest required by the debentures were included in the debt service estimates provided in the 2017 Budget. The debt service costs associated with these debentures are well within the 25% limits set by the Province and the City of Ottawa's Fiscal Framework target of 7.5%.

ACCESSIBILITY IMPACTS

As with all other aspects of the Stage 2 project, the EA works and technical modifications to the project being proposed will be designed to meet the accessibility goals set by Council. The project team will continue to advance implementation of universal accessible design standards in both station design and vehicles.

The strategy includes a compliance review process for the detailed design development and the construction phase. The project team will continue to work with the accessibility community to incorporate accessibility features into the detailed design work that has occurred to date. This project will be designed to comply with the Ontario Building Code and to the greatest extent possible with the new City of Ottawa Accessibility Design Standards. The City of Ottawa's conventional and specialised transportation services are federally or independently regulated and therefore the AODA, a provincial statute, is not applicable. Nevertheless, the City's Stage 2 LRT Project will follow the standards developed under the AODA, as they represent the City and provincial best practices. In keeping with this commitment, the project team has included accessibility features into the planning and design of this project to date. The specific accessibility features planned for the Stage 2 LRT Project are built on the performance standards set by the Confederation Line project and include, but are not limited to:

- Barrier-free path of travel to entrances of stations;
- Each vehicle includes four designated multipurpose areas for wheelchairs and other mobility devices;
- The vehicle interior is designed with a 100 per cent low-floor passenger area and seating arrangement;
- Vehicle is designed to meet low noise performance standards both inside and outside of the train;
- Signs will include the International Symbol of Accessibility, will consider colour contrast and large print and will be displayed on the exterior of each vehicle;
- The doors use auditory and visual warning signals to alert passengers when doors are closing. Each vehicle contains accessible signage that indicates which seats are priority seats for persons with disabilities;
- All passengers have access to push buttons to request assistance or to communicate with onboard staff in an emergency;
- The vehicle is equipped with seven dual leaf, 1450mm wide doors per side to optimize passenger accessibility and reduce the time it takes for customers to enter/exit the vehicle;

- All wayfinding and safety signage will be provided following the applicable accessibility standards (including type size, tactile signage, and appropriate colour contrast);
- Elevator dimensions that allow for the turning radius for a mobility device and buttons and emergency controls that are mounted at accessible height; and,
- Clear open sight lines and pedestrian design that make wayfinding simple and intuitive.

ENVIRONMENTAL IMPLICATIONS

The recommendations for the Trillium Line alignment, including an alignment that takes advantage of an existing rail corridor, will ultimately simplify construction. This alignment will also reduce the environmental impact on sensitive lands in the Greenbelt and in the general vicinity.

These environmental benefits are in addition to the general Stage 2 project, which will result in significant environmental benefits including reducing GHG emissions by 110,000 tonnes and 3,000 tonnes of Criteria Air Contaminants a year by 2048, and reducing fuel consumption in the City by 78 million litres annually in that same timeframe.

TERM OF COUNCIL PRIORITIES

The work summarized in this report is supportive of the following Term of Council Priorities:

- TM1 – Ensure sustainable transit services;
- TM2 – Maximize density in and around transit stations;
- TM3 – Provide infrastructure to support mobility choices;
- TM4 – Promote alternative mobility choices;
- GP3 – Make sustainable choices;
- FS2 – Maintain and enhance the City's financial position; and,
- EP3 – Support growth of the local economy

SUPPORTING DOCUMENTATION

Document 1 – Bayshore to Moodie Bus Rapid Transit (BRT) Conversion to Light Rail Transit Environmental Assessment (EA) – Environmental Project Report

(Held on file with the City Clerk)

Document 2 - Draft Debenture By-law (Held on file with the City Clerk)

DISPOSITION

Upon Council approval, staff will implement the recommendations outlined in this report.

Document 1 – Bayshore to Moodie Bus Rapid Transit (BRT) Conversion to Light Rail Transit Environmental Assessment (EA) – Environmental Project Report

Document 2 - Draft Debenture By-law