

EGLINTON EAST LRT

Introduction

The Eglinton East Light Rail Transit ("EELRT") is an eastern extension of Line 5 (Eglinton Crosstown LRT), which is currently under construction and owned by Metrolinx. The concept (Figure 1) comprises an extension up to 15 km from Kennedy Station to Malvern with up to 21 stops, three connections to GO Transit (Kennedy, Eglinton & Guildwood), and a potential connection to the proposed Durham-Scarborough Bus Rapid Transit at Ellesmere and Military Trail.



Figure 1. Full Eglinton East LRT concept.

Project Benefits

The Eglinton East LRT would serve historically underserved communities in the City. The EELRT would travel through or adjacent to seven Neighbourhood Improvement Areas (NIAs), and would bring higher-order transit to within walking distance of an additional 49,000 people, including an equity-weighted population of 30,000.

The EELRT would operate in its own dedicated guideway, which would reduce uncertainty in travel time. Currently, it can take anywhere from 24 minutes to 39 minutes to travel between Kennedy Station and University of Toronto Scarborough (UTSC) by buses operating in mixed traffic.¹ The LRT would provide improved transit reliability along the corridor. By also providing connections to other higher-order transit services, including Eglinton, Guildwood and Kennedy GO stations and Line 2 subway, the EELRT would provide improved transportation choice in a predominantly auto-oriented environment.

The EELRT envisions catalyzing wider community-building benefits as a result of the investment in the project. This includes development of new community-gathering spaces and civic spaces at key locations, such as Eglinton Avenue and Kingston Road (Figure 2), and improving the streetscape and public realm along the route. These community gathering spaces would support wider social equity and community development goals.

¹ UTSC Commuting Patterns & Transit Reliability, by J.Allen, N.Wessel, S.Farber, University of Toronto Scarborough



Figure 2. Proposed new community gathering space at Eglinton Ave and Kingston Road (view facing west).

Extended to UTSC, the EELRT would support campus expansion, projected to grow to 35,000 students and 2,500 faculty and staff over the long-term. The EELRT would provide a strategic link between UTSC and the central and western areas of Toronto, and would support UTSC's ambition to become an anchor institution.²

The EELRT addresses the project objective of providing local transit access, which will connect up to five retail clusters, up to 72 existing community services and facilities, two post-secondary institutions, and the Toronto Pan Am Sports Centre, an elite sports facility and community centre.

The EELRT route is planned to support local economic development. The EELRT would bring higher-order transit access to 7,400 existing jobs not currently served by transit. A Skills Workback Strategy (which would aim to train local people to work on the project) and Community Benefits Agreement (which would ensure local labour was hired) could be planned to connect local Scarborough residents with skills training and connections to jobs related to the implementation of the EELRT.

² <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.SC25.7>

The EELRT would also support the development of complete communities and transit-oriented development along designated Avenues of Eglinton Avenue East and Kingston Road (Figure 3), and Malvern Town Centre.

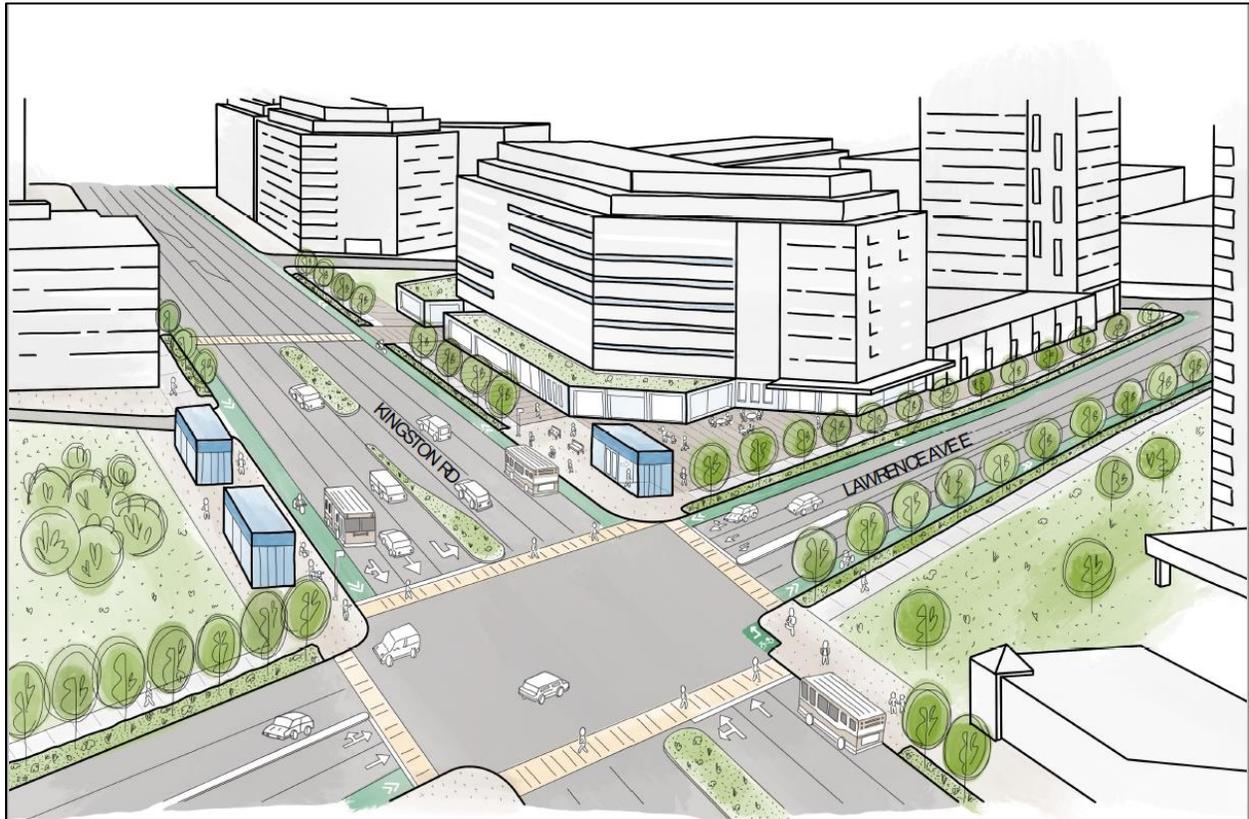


Figure 3. This illustration shows a potential scenario for future development at Kingston-Lawrence-Morningside as suggested by the planning and urban design consultant firm, Perkins+Will. The view looks north-east at the intersection of Kingston Road and Lawrence East, and shows entrances to the LRT stop, which would be underground on Kingston at this location. This image is for illustrative purposes only. To enact transformative change to the area, detailed planning and urban design studies, that include consultation with the adjacent community and stakeholders, would be required.

The EELRT would provide approximately the same transit travel time between points along the corridor as the future Business as Usual ("BAU") scenario where the existing bus services are maintained and grown to meet demand. In all cases, the frequency of the LRT service is less than bus frequency in the BAU scenario, but the LRT would improve transit reliability, crowding, amenity, and would provide higher capacity.

There is a strong need for a higher-order transit service to be provided along the Eglinton East corridor. Future travel demand modelling estimates that approximately 4,800 peak period, peak direction (PPPD) riders would ride buses in the Eglinton East corridor in a future scenario where there is no higher-order transit investment. While it is technically possible to provide enough buses to carry this many riders in the future, accommodating them would require large expansions to the Kennedy Station bus terminal and storage facilities. Operations of this terminal and the buses along Eglinton Avenue East would be a challenge, and reliability and comfort would be low.

Decision History

In March 2016, City Council considered *EX13.3 Developing Toronto's Transit Network Plan: Phase One* and directed the Chief Planner and Executive Director, City Planning in consultation with the TTC, to complete the review of corridor options and related work for the Line 2 East Extension, including integration of an Eglinton East LRT into the University of Toronto Scarborough (UTSC) as part of the Scarborough Transit Network plan. At this meeting, City Council also directed staff identify areas in need of an Avenue Study to facilitate intensification along the proposed LRT corridor in consultation with the Toronto Transit Commission, Metrolinx and the University of Toronto.

Link: <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.EX13.3>

In July 2016, City Council adopted *EX16.1 Developing Toronto's Transit Network Plan to 2031* and requested staff to advance the EELRT between Kennedy Station and UTSC to five percent design, including the connection to Kennedy Station and its interface with the preferred Line 2 East Extension alignment, the potential realignment of Military Trail through UTSC and the requirements of the next phase of the EELRT extension to Malvern. City Council also requested a business case analysis for the Scarborough Rapid Transit Network.

Link: <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.EX16.1>

In November 2016, City Council adopted *EX19.1 Transit Network Plan Update and Financial Strategy*, confirming that the TTC will be responsible for operating the proposed EELRT and that the City will be responsible for the operating and regular (i.e., all non-lifecycle) maintenance costs of the EELRT.

Link: <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.EX19.1>

In March 2017, City Council adopted *EX23.1 Next Steps on the Scarborough Subway Extension*, which included direction to the City Manager to develop a construction timeline and funding plan for the EELRT.

Link: <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.EX23.1>

In May 2018, City Council considered *EX34.1 Eglinton East Light Rail Transit Project Update and Next Steps*, and approved a tunneled alignment through the Kingston-Lawrence-Morningside intersection with a single stop, an at-grade alignment through UTSC and a realigned Military Trail, as well as an extension to Malvern with up to six stops.

Link: <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2018.EX34.1>

Current Status of Project

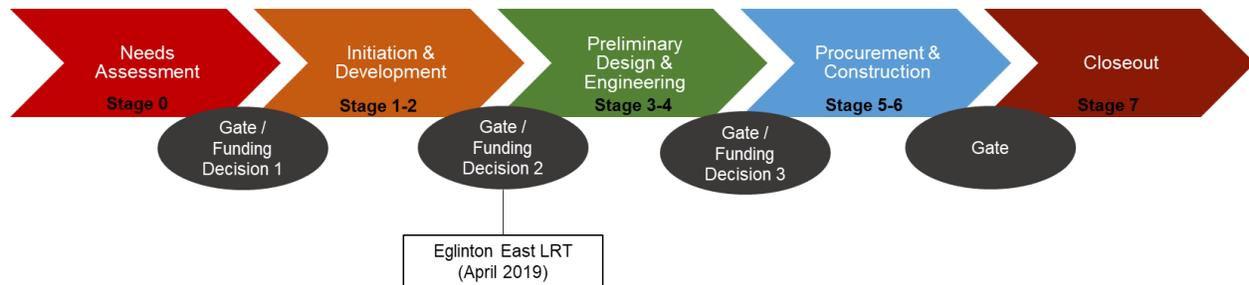


Figure 4. Current status in the project lifecycle

City staff, in partnership with TTC and in consultation with Metrolinx, have completed the requirements for the Initiation and Development phase of work (Figure 4). This phase includes completion of conceptual design of the alignment to a proposed Malvern Centre Station and a Maintenance and Storage Facility (MSF) south of Highway 401 and east of Morningside Avenue, and the creation of an updated Class 4 cost estimate.

The conclusion of this work is a recommendation that the scope of the EELRT be defined as an easterly extension of Line 5 (Eglinton Crosstown) from Kennedy Station to UTSC as a first phase. A second phase to Malvern Centre is dependent on further discussions with Metrolinx about timing and scope of the Sheppard East LRT (SELRT) and the construction timing for the Conlins MSF. Should it proceed ahead of the SELRT, the first phase of the EELRT would need to be serviced by a new MSF south of Highway 401 and east of Morningside Avenue.

In accordance with other City Council direction, staff are finalizing a study of opportunities for updated land use planning policy work, community development policy work or other infrastructure investments to further achieve the objectives of the LRT. Staff anticipate reporting the findings of this study to Scarborough Community Council before the end of 2019.

Comments/Analysis

In July 2016, City Council directed City staff to advance the design of the EELRT to a minimum of 5% and to develop an updated cost estimate and business case analysis (BCA). City Council also directed staff to identify the requirements for the next phase of the LRT extension to Malvern. In May 2018, City Council endorsed the inclusion of the Malvern extension as part of the Initiation and Development phase of work.

The full concept of the Eglinton East LRT (Figure 1) would extend Line 5 (Eglinton Crosstown LRT) 15 km east from Kennedy Station with 21 stops to Malvern. The LRT would be surface-running in the centre of the road, with the following exceptions:

- Tunnelling under the Stouffville rail corridor, between Kennedy Station and Midland Avenue to connect with the Line 5 Kennedy LRT Station currently under construction;
- Tunnelling from Kingston Road and Lawrence Avenue East to Morningside Avenue north of Kingston Road, as endorsed by City Council in May 2018;

- Running on the east side of the road along Morningside Avenue from north of Kingston Road to south of Ellesmere Road; and
- Running on the south side of the road along Ellesmere Road from east of Morningside Avenue to the west side of a realigned Military Trail.

The concept also includes the realignment of Military Trail, consistent with the concept through UTSC campus endorsed by City Council in May 2018.

1. Role of the Sheppard East LRT

The EELRT concept between UTSC and Malvern is inter-related with the development of the Line 7 Sheppard East LRT (SELRT). Along Sheppard Avenue East between Morningside Avenue and Neilson Road, the alignment would share track and stops with the SELRT. This alignment was recommended by staff and endorsed by City Council in May 2018 because it provides the best service to the residents of Malvern and reduces the cost of the EELRT, assuming that the SELRT will be built first.³

The full Eglinton East LRT concept could be serviced by the expansion of the Maintenance and Storage Facility (MSF) that would be built as part of the SELRT project and be located on a site north of Sheppard Avenue East at Conlins Road (Figure 5).



Figure 5. Sheppard East LRT Maintenance and Storage Facility (“Conlins MSF”)

The SELRT is an approved project funded by the Province, to be built after the Line 6 Finch West LRT. There is uncertainty around the construction timeline for the SELRT. Further engagement with Metrolinx is required to understand the interdependencies with the location of the MSF for the recommended EELRT concept and the SELRT.

³ <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2018.EX34.1>

2. Summary of Phasing Options

Three concepts, each contemplating an eastern extension of Line 5 (Eglinton Crosstown LRT) from Kennedy Station to a different terminus, have been evaluated:

- Option 1 7.5 km surface-running extension with 12 stops to a below-ground terminal station in the area around Kingston Road, Lawrence Avenue East and Morningside Avenue (Figure 6).
- Option 2 11 km surface-running extension with 16 stops to a terminal stop near the Toronto Pan-Am Sports Centre on the campus of UTSC (Figure 7).
- Option 3 15 km surface-running extension with 21 stops to a terminal stop in Malvern Centre, near the intersection of Neilson Road and Sewell's Road/Tapscott Road (Figure 8).

All options have been evaluated with a parallel bus service from Kingston/Lawrence/Morningside to Kennedy Station, operating alongside Line 5. Further detailed bus service planning is required to refine the connecting bus network, and to determine if this parallel bus service is required. Enhanced on-street connections to connecting bus services are envisioned at Eglinton Avenue East and Markham Road, Kingston/Lawrence/Morningside, and at Ellesmere Avenue and the realigned Military Trail.

The connection to an underground Kennedy Station will require a portal and tunnel below the Stouffville GO Corridor, between Kennedy Station and Midland Avenue. This portal will be constructed in close proximity to the Line 2 East Extension tunnel below Eglinton Avenue. City and TTC staff have been working together to coordinate the design of both facilities. A pre-investment in the EELRT has been recommended as part of the Line 2 East Extension scope to ensure that both facilities are protected (see Attachment 2).



Figure 6. Option 1 – Terminal station at Kingston/Lawrence/Morningside



Figure 7. Option 2 – Terminal stop at UTSC



Figure 8. Option 3 – Terminal stop at Malvern Centre

2.1 Option 1 – Terminus at Kingston/Lawrence/Morningside

Option 1 supports the development of complete communities along the growth corridors of Eglinton Avenue East and Kingston Road. This portion of the EELRT corridor has the highest existing density of people.

Option 1 would bring transit infrastructure investment to six Neighbourhood Improvement Areas (NIAs).⁴ Approximately 37,000 more residents would be within walking distance of a higher-order transit stop, including an equity-weighted population of 23,000. Approximately 5,400 more existing jobs would be within walking distance of higher-order transit stops. Daily transit ridership across the network would increase by 500 transit users.

No appropriate site has been identified for an MSF between Kennedy Station and Kingston/Lawrence/Morningside. Option 1, therefore, would need to be serviced by an expansion to the Mt. Dennis MSF, which will service LRVs for Line 5 (Eglinton Crosstown) currently under construction. An expansion to the Mt. Dennis MSF has been designed by Metrolinx to service LRVs required for the Eglinton West LRT (EWLRT). However, the Mt. Dennis MSF cannot be expanded to accommodate LRVs required for both EWLRT and EELRT.

Even if the EWLRT is not built, use of the Mt. Dennis MSF may constrain the level of service available for the entirety of Line 5 and would add operational costs and risks to the EELRT Option 1 due to the distance between the MSF and the eastern terminus at Kingston/Lawrence/Morningside.

⁴ For more information on Neighbourhood Improvement Areas, see: <https://www.toronto.ca/legdocs/mmis/2014/cd/bgrd/backgroundfile-67382.pdf>

2.2 Option 2 – Terminus at University of Toronto Scarborough (UTSC)

In addition to supporting complete communities along Eglinton Avenue East and Kingston Road, Option 2 also supports UTSC as an anchor post-secondary institution and helps advance UTSC's growth ambition. UTSC is anticipated to grow to over 35,000 students and 2,500 staff over the long-term. The EELRT supports this growth and provides a higher-order transit connection to downtown and the St. George campus.

Compared to the future BAU scenario, Option 2 would bring a higher-order transit stop to within walking distance of approximately 44,000 more existing residents, including equity-weighted population of approximately 27,000. Approximately 7,400 more existing jobs would be within walking distance of higher-order transit stops. Daily ridership across the transit network would increase by 1,000 transit users.

Option 2 would also bring a higher-order transit connection to within walking distance to Centennial College Morningside Campus and the Toronto Pan Am Sports Centre, an important community centre and elite sports training facility.

Further discussions are required with Metrolinx to understand the timing and location of the MSF to service the LRVs required for Option 2. The MSF could be serviced by a Morningside MSF located south of Highway 401 and east of Morningside Avenue (Figure 9), which could have the flexibility to service LRVs required for the SELRT should the SELRT be built after the EELRT.

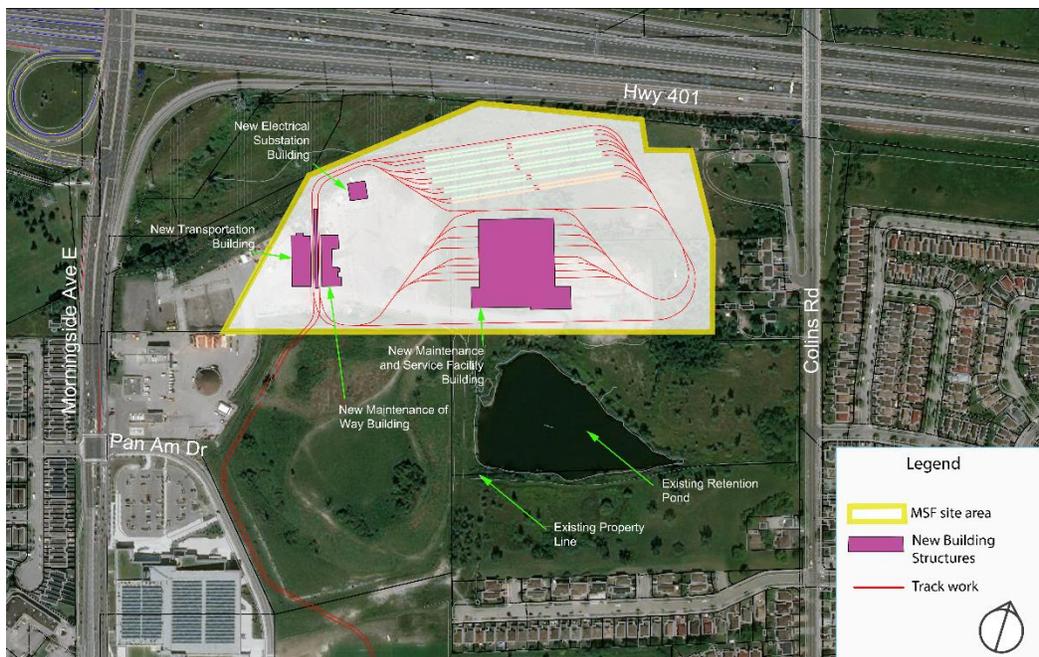


Figure 9. Maintenance and Storage Facility at Highway 401 and Morningside Ave ("Morningside MSF")

Option 2 would have significant property impacts along Morningside Avenue between Kingston Road and the Morningside Ravine, where the existing right-of-way is narrow. While final requirements are not yet confirmed, several residential parcels may be required to facilitate construction.

There would also be environmental impacts to the Morningside Ravine, which may exceed those identified in the project's previously-approved Environmental Project Report.

2.3 Option 3 – Terminus at Malvern Centre

In addition to supporting the development of complete communities on Eglinton Avenue East and Kingston Road, and supporting UTSC as an anchor post-secondary institution, Option 3 would bring a higher-order transit connection to Malvern Centre.

Compared to the BAU scenario, Option 3 would bring a higher-order transit stop within walking distance of approximately 49,000 more existing residents, including equity-weighted population of approximately 30,000. Approximately 8,700 more existing jobs would be within walking distance of higher-order transit stops. Daily ridership across the transit network would increase by 300 transit users, which is less than the two scenarios that terminate near Kingston-Lawrence-Morningside and UTSC.

The capital cost of this option is minimized through the sharing of infrastructure with the Sheppard East LRT, including track and LRT stops along Sheppard Avenue between Neilson Road and Morningside Avenue. LRVs required for Option 3 would be serviced by the Conlins MSF located north of Highway 401 at Conlins Avenue. This MSF is already approved as part of the SELRT project, and would be able to expand to service LRVs required for the EELRT should it be built after the SELRT. This option would provide greater flexibility for the TTC in defining service options on the two LRT lines.

Option 3 would also require coordination with MTO on the rehabilitation of the Morningside overpass across Highway 401. MTO anticipates rehabilitating this structure in the 2020s, and this rehabilitation work could constrain when the Eglinton East LRT could be delivered.

3. Cost Estimates

The estimated cost of the Eglinton East LRT concept terminating at UTSC (corresponding to Option 2) was previously reported to City Council in 2016.⁵ To compare the three phasing options currently being considered, certified cost estimators under contract to the City prepared updated Class 4 Cost estimates based on updated engineering design work. A comparison of costs for all options is shown in Table 1.

⁵ <https://www.toronto.ca/legdocs/mmis/2016/ex/bgrd/backgroundfile-94597.pdf>

Table 1. Comparison of LRT Cost Estimates (excluding MSF in all cases)

	2016 Class 5 ⁽¹⁾ Estimate (2019\$) ⁽²⁾	2019 Class 4 Estimate (2019\$) ⁽³⁾
Option 1 (Kingston/Lawrence/Morningside)	N/A	\$1.4 B
Option 2 (UTSC)	\$1.5 - 1.6 B	\$1.6 B
Option 3 (Malvern)	N/A	\$2.0 B
Notes: All cost estimates in this table exclude Maintenance and Storage Facility (MSF), property acquisition, escalation, financing, lifecycle and operations/maintenance. (1) Class 5 estimates are considered accurate within a range of -50% to +100%. (2) Escalation assumed to be 3% per year for three years. (3) Class 4 estimates are considered accurate within in a range of -30% to +50%. This estimate includes the tunnel segment in the vicinity of Kingston Road, Lawrence Avenue East and Morningside Avenue, endorsed by City Council in May 2018.		

The initial investment in an MSF is much more costly than a future expansion because all of the systems and maintenance facilities need to be built, whereas an expansion may be restricted to an increase of the storage space needed. Both the Conlins MSF and Morningside MSF are expected to have similar costs if either was built to accommodate LRVs for both EELRT and SELRT. Therefore, the costs associated with the MSF options have been excluded from the comparison of the LRT options. Further discussions are required with Metrolinx to understand the location and cost implications of the MSF.

4. Public Feedback

The project team has received thousands of comments, questions, ideas and suggestions, primarily from residents in Scarborough. Throughout the consultation program, there have been:

- 81 community touchpoints;
- 11 public meetings;
- 4 stakeholder meetings;
- 4 stakeholder workshops;
- 4 walking tours;
- 528 survey responses;
- 3000+ postcards;
- 39,000+ website hits;
- 28,700+ flyer invitations; and,
- 5 pop-ups.

The feedback gathered on the EELRT has overall showed strong public support for the project. One of the strongest messages the project team heard during all three phases of consultation was a desire to see the transit investment in Scarborough to improve local and regional connectivity and access to jobs, education and services. Other themes and comments that have emerged through public consultation include:

- **Make this project happen.** There has been general support and awareness of this project. Many people were supportive of the LRT and appreciated that the LRT project team is working to bring much-needed transit to Scarborough.
- **Provide connections to transit services and key destinations along the LRT route.** Participants were interested in understanding how the EELRT line will connect with the wider transit system in Scarborough and beyond. They were also interested in how connections will be made or improved to key destinations and communities in the study area. Residents want to see bus service connected to LRT stops so that the full transit system is connected.
- **Provide good planning for amenities and public spaces along the corridor.** There is support for building on investment in LRT. Participants want nicely designed public space with places to sit and gather. Transit waiting stations should be comfortable, safe, heated and accessible as a way to encourage ridership.
- **Communicate the process and timelines of this project.** Participants want this project to be transparent so that they are informed of project updates, timelines, outcomes of the business case, and options for funding commitments.
- **Manage traffic and communicate alternatives.** There was general interest in understanding what the traffic impacts will be along the corridor before, during and after construction, and particularly for bus service during construction.

Further information is found in the Eglinton East LRT Consultation Summary available on the project website.⁶

5. Preferred Option

Option 2 is the recommended first phase of the EELRT because it achieves the strategic objectives of supporting growth and development of Complete Communities along the Avenues and providing a higher-order transit connection to UTSC.

Option 1 is not recommended because its LRVs must be serviced at an expanded Mt. Dennis MSF. This is only sustainable if the Eglinton West LRT is not constructed, and the service required on the rest of Line 5 (from Mt. Dennis to Kingston/Lawrence/Morningside) does not exceed the capacity of the MSF.

Option 3 is not recommended as part of the first phase of the project because its concept is complicated by interdependencies with the SELRT and bridge rehabilitation work planned by MTO. The uncertainty around the delivery timeline for the SELRT would have an impact on the delivery timeline of the EELRT. That risk and uncertainty could increase costs of the project and make it difficult for both the City and private landowners to make future plans for investment.

⁶ <http://www.eglintoneastlrt.ca/april2019report>

While it would be possible to build the EELRT to Malvern prior to delivery of the SELRT, preliminary estimates of travel demand suggest that there may be few riders travelling between Malvern and UTSC, and that the case for a higher-order transit investment in this area is stronger when there is a good connection to the SELRT. Further work would be required to fully understand the benefits of the Malvern Extension should it be built prior to the SELRT.

To provide the Malvern community with access to higher-order transit, the Malvern Extension alignment from UTSC to Malvern should be considered as a second phase of the EELRT project.

6. Supporting Growth and Community Development

In March 2016, City Council also directed staff to identify areas in need of an Avenue study to support intensification. City staff have consulted with local communities along the EELRT corridor to identify key areas where investment in the project could also achieve other community objectives. Staff have also identified areas that may have potential for development and growth.

The study identifies opportunities along the full length of the EELRT route with a particular focus on Neighbourhood Improvement Areas. Examples include:

- Provision of public spaces in key locations and enhanced public realm;
- Economic development potential for key industry clusters and employment areas;
- Achievement of key objectives of the Toronto Strong Neighbourhoods Strategy through initiatives like Community Benefits Agreements; and
- Identification of appropriate areas for Transit-Oriented Development.

City staff anticipate reporting to Scarborough Community Council by the end of 2019 on the conclusions and recommended next steps to capitalize on the benefits of the LRT investment, including potential public realm amount projects.

7. Conclusion

As a first phase, the Eglinton East LRT should be advanced to terminate at UTSC. This recommendation is based on the following considerations:

1. There is a strong need for a higher-order transit service to be provided along the Eglinton East corridor.

Future travel demand modelling estimates that approximately 4,800, peak period, peak direction (PPPD) riders are riding on buses in the Eglinton East corridor in a future scenario where there is no higher-order transit investment. While it may be possible to provide enough buses to carry this many riders in the future, accommodating them would likely require large expansions to the Kennedy Station bus terminal and storage facilities. Operations of this terminal and the buses along Eglinton Avenue East may be a challenge; reliability and comfort would be low.

In the case where the EELRT is built, future travel demand modelling estimates that peak hour ridership in the busiest direction in the morning peak period would be approximately 7,400 riders on the LRT and on buses in the corridor.

2. The EELRT would provide important enhanced connections to neighbourhoods along the LRT corridor, including seven Neighbourhood Improvement Areas.
3. Investment in public transit infrastructure along this corridor represents an investment in communities. Enhanced public realm and public spaces that will be part of the LRT will encourage further private investment and growth along the corridor.

Staff recommend that City Council request Metrolinx to work with the City to develop a plan to address the phasing for the EELRT, including a first phase to UTSC and a second phase to Malvern Centre; the location and construction timing of the MSF; and commence the preliminary design and engineering phase of the EELRT project. Staff also recommend that City Council request the Deputy City Manager, Infrastructure and Development Services to report back to City Council with recommended plan, schedule, cost and funding requirements for consideration in the City's 2020 budget process.

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