INFORMATION REPORT

TO:	Chair and Members Light Rail Transit Sub-Committee
COMMITTEE DATE:	May 16, 2022
SUBJECT/REPORT NO:	Hamilton Light Rail Transit (LRT) Design Update (PED22118) (City Wide)
WARD(S) AFFECTED:	City Wide
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COUNCIL DIRECTION

Not applicable.

INFORMATION

The City completed the first concept design of the Hamilton Light Rail Transit (LRT) project in 2007. Since then, the design has evolved first when the City completed the Transit Project Assessment Process (TPAP) in 2011 and later in 2017 when Metrolinx and the City completed an Environmental Project Report (EPR) addendum. During the original procurement process of 2018, some design features were further modified, which were reported to City Council through reports: Hamilton Light Rail Transit (LRT) Project Update (PED18116) received by Council on May 31, 2018, Hamilton Light Rail Transit (LRT) Project Update (PED19100) received by Council on May 15, 2019, and Hamilton Light Rail Transit (LRT) Project Update and Other Metrolinx Initiatives (PED19100(a)) received by Council on December 4, 2019.

The purpose of this report is to provide a high-level overview of the current design and key areas of focus since the 2017 EPR Addendum.

Current Design Overview

The Hamilton LRT project, as detailed in the 2017 Environmental Project Report (EPR), addendum traverses a 14 km corridor with 17 stops between its western terminus at McMaster University and its eastern terminus at Eastgate Square as mapped on Figure 1. The LRT alignment is fully separated from traffic throughout the length of the corridor, but there are several differing characteristics of the right of way which influence the project design.

For the entire length of the corridor, traffic will only be allowed to cross the LRT guideway at signalized intersections. Non-signalized side streets will be restricted to right-in and right-out movements since neither turning left nor through movements are permitted. U-turns will be permitted at strategic signalized locations. Additional pedestrian-only crossing points are also included at various locations along the corridor.

Figure 1: Hamilton LRT Corridor

Current Areas of Focus

During the project's current phase, City and Metrolinx staff will work together to review the current state of the design to ensure it continues to reflect the goals and needs of the City, contemplated in various City-wide guiding documents such as the City's Transportation Master Plan.

The following are some of the themes that City staff will be interested in exploring with Metrolinx staff as the design is further advanced.

Pedestrian Environment

The Project Team (staff members from Metrolinx, City and consultants) continue to prioritize improvements in pedestrian safety and comfort. Pedestrian-oriented design considerations include reductions in curb radii, length of pedestrian crossings and the construction of intermediate islands at intersections. Particular focus is being applied to LRT platform locations, intersections with high pedestrian and cyclist volumes, as well as other complex and/or problematic areas.

The provision of Urban Braille sidewalks, also known as accessible sidewalks, for the entire length of the corridor and enhanced crosswalk treatments at platform locations and throughout the downtown will reinforce the visibility and importance of accessible pedestrian use in the corridor.

Cycling Facilities and Connectivity

Cycling network, connectivity to existing facilities and related considerations for the integration of cycling facilities in select corridor segments continue to be explored.

Confirmed cycling infrastructure in the corridor and key initiatives under consideration are provided in the Ward specific discussions which follow within this report.

Transit Connectivity

The Hamilton LRT will become the core of the east-west transit network in the lower city and will support and be supported by HSR and other transit services.

LRT is a key component of the Metrolinx Frequent Rapid Transit Network (FRTN) and connects with other regional services including GO bus and GO Rail, with multiple transfer opportunities.

Together with the planned improvements to regional transit services, the convenience of travel to and from Hamilton other parts of the GTHA will be greatly enhanced. This would also include service integration and working closely with HSR to ensure seamless service between the many routes connecting with the LRT.

Infrastructure Opportunities

The Project Team is currently reviewing the potential of taking advantage of the opportunity of LRT construction to advance the City's long-term goals. We will report back on feasibility and commercial considerations once further design work is complete.

Streetscape Elements

Opportunities to enhance the streetscape through the inclusion of street trees, plantings and other urban design features are being examined. Opportunities for street trees vary along the corridor depending on the width of the right-of-way. In constrained sections, side streets may provide additional opportunities for trees and plantings. This may include planting consideration within the City, on Metrolinx or private land parcels outside of road right-of-way.

Guideway bullnose islands located on either side of the stop platforms are proposed to be planted with low shrub, perennials and grasses. In roadway median islands and where additional opportunities are available in wider portions of the corridor, more extensive opportunities for the placement of street trees and irrigated plantings may exist.

Traffic Network

Impacts to vehicular traffic and transit during and post-LRT construction continue to be analysed in parallel with the evolving design.

Corridor Section Summaries

The following sections are intended to provide a high-level overview of each section of the corridor, generally organized by Ward from west to east.

The project descriptions, highlighted in the following sections, are taken from the preliminary design completed in the 2017 EPR and subsequent modifications in 2018 and 2019, which were reported to Council through various reports. These project descriptions reflect the design status as it existed during the original procurement process in 2019. This will be subject to further modifications as Metrolinx and the City work together to continue advancing the design during the current phase of the project.

Cootes Drive to Macklin Street (Ward 1)

This segment provides connections to McMaster, Westdale, McMaster Innovation Park and is the transfer point for trips to/from Dundas and beyond. Within this section, the TPAP design maintains three eastbound vehicular lanes and two westbound vehicular lanes on Main Street West, with signalized access/egress to and from adjacent neighbourhoods. The LRT guideway starts at McMaster (Cootes Drive) as a side running on the north side of Main Street West, then a centre running from Dalewood Crescent to Paradise Road and a combination of side running and a dedicated LRT bridge from Paradise Road to Dundurn Street at King Street West.

Priority Focus Areas for review under a Pedestrian Lens are Main Street West at Emerson Street, Main Street West at the Highway 403 ramps near Columbia International College and Longwood Road at Main Street East.

Ensuring safe and comfortable cycling connections to the McMaster and Longwood stations from adjacent neighbourhoods is an important consideration. Additionally, the section of Main Street between Macklin and McMaster connects to multiple north-south cycling spines, but itself is a gap in the cycling network. While the 2017 TPAP design did not include cycling infrastructure within the LRT corridor, the fact that the design includes a third lane in the eastbound direction may present an opportunity to allocate space for cycling infrastructure.

The Operations, Maintenance and Storage Facility (OMSF) site is located in the vicinity of Chatham and Frid Street, east of Longwood Road South, and shared running track will extend from the intersection of Longwood and Main Street, across Longwood Bridge over Highway 403, and via Frid Street to the north end of the site. As part of the development of the OMSF site, Frid Street will be extended to connect the existing western portion from Longwood Road to the existing eastern portion to Main Street West

Highway 403 Crossing

Starting east of Paradise Road South, the LRT changes to side running on the north side of Main Street West and transitions to an LRT only bridge to cross Highway 403. It then connects to King Street West travelling through the King/Dundurn intersection side running on the south side of King Street west to Margaret Street where the LRT transitions to center running.

Bay Street to Dundurn Street (Wards 1 and 2)

From Strathcona Avenue to Dundurn Street, two westbound vehicular lanes on King Street West have been provided to improve westbound traffic capacity through the Dundurn Street intersection.

From Bay Street to Strathcona Avenue, the road network consists of one eastbound and one westbound vehicular lane with a centre-running LRT guideway. There is no eastbound vehicular lane between Ray Street and Queen Street.

Priority Focus Areas for review under a Pedestrian Lens are King Street West at Dundurn Street and King Street West at Queen Street.

Consultation with the cycling community has identified the provision of a bi-directional cycle facility on King Street West from Breadalbane Street to Dundurn Street as a priority. Additionally, the reconstruction of the King and Dundurn intersection as part of LRT could be a catalyst to re-envision the segment of Dundurn between King and Main, which is presently includes only sharrow markings for bikes.

Wellington Street to Bay Street (Ward 2)

When westbound traffic reaches Wellington Street, it is not permitted to continue through International Village to the Downtown Core but must rather turn left towards Main Street. In the International Village area, traffic is restricted to local traffic in the eastbound direction with one vehicular lane provided adjacent to the LRT guideway for access to southside properties. Loading access to properties on the north side is achieved by using the alleyway behind them. Prior to Wellington Street, eastbound traffic will be directed to Main Street East along Spring Street, which will be revised to a one-way southbound operation.

The road network moves from a neighbourhood context to one that promotes pedestrian use and provides only those vehicular and servicing opportunities suited to the local context. International Village and Hughson Street South (Main Street East to King Street East) will be reflective of the treatments used on the south leg of King Street East adjacent to Gore Park and the differentiation between the “roadway.” The sidewalk will be achieved through the selective use of decorative bollards, pedestrian scale illumination poles and other types of street furniture. Urban Braille sidewalk will be placed adjacent to the buildings and coloured concrete with varying textures will be used for the shared spaces and the guideway to highlight the special character of the area. These treatments will also be extended to the “closed” sections of Mary Street, Walnut Street North and Ferguson Street North between King Street East and the east/west alley on the north side of International Village. As the Streetscaping Plan for the corridor and side streets is advanced, it will look to identify opportunities for further enhancements such as landscaped planting beds, raised planters and street trees.

From John Street to Bay Street, traffic is restricted to the westbound direction with two vehicular lanes provided adjacent to the LRT Guideway, which is in a side running location adjacent to Gore Park and other properties on the south side. In addition to facilitating circulation in the downtown core, the movement of HSR busses and access to the MacNab Transit Terminal, the second lane also provides the additional vehicular capacity to Highway 403, Westdale, the Community of Dundas and beyond.

Priority Focus Areas for review under a Pedestrian Lens are King Street West at Bay Street, King Street at James Street and King Street East at Wellington Street.

"The Delta" to Wellington Street (Ward 3)

From "The Delta" to Gage Avenue, traffic is restricted to the westbound direction with two vehicular lanes provided adjacent to the LRT guideway, which is in a side running location adjacent to the properties on the north side. The LRT guideway will cross under the CP Tracks at East Bend, however the two westbound lanes and sidewalks will remain at their current elevation to provide access to the adjacent properties on the south side. The LRT guideway will begin to drop at Glendale Avenue and will be raised back to road elevation at Gage Avenue.

From Gage Avenue to the Scott Park platform, the road network consists of one eastbound and one westbound vehicular lane provided adjacent to the LRT guideway, which is in a side-running location adjacent to the properties on the north side. The Scott Park LRT stop location adjacent to the north sidewalk provides convenient connectivity to Bernie Custis Secondary School, the Bernie Morelli Recreation Center, the Jimmy Thompson Memorial Pool and high-demand special events at Tim Hortons Field.

Short road segments are provided north of the LRT guideway to maintain connectivity for residents and service vehicles at Balsam Avenue/Connaught Avenue, Fairview Avenue/East Bend Avenue, Dunsmure Road/Glendale Avenue and Belview Avenue/Belmont Avenue.

From the Scott Park platform to Wellington Street, the road network consists of one eastbound and one westbound vehicular lane with a centre-running LRT guideway. The road network provides pedestrian, transit, goods movement and vehicular opportunities, which are suited to the neighbourhood context.

Priority Focus Areas for review under a Pedestrian Lens are King Street East at Sanford Avenue, King Street East at Melrose Avenue and "The Delta."

Parkdale Avenue to "The Delta" (Wards 3 and 4)

The LRT design road network in this section consists of one eastbound and one westbound vehicular lane with a centre-running LRT guideway. The road network moves from a key transportation link to one that provides pedestrian, transit, goods movement and vehicular opportunities suited to the neighbourhood context. The provision of a single westbound lane beginning at Parkdale Avenue will divert "through traffic" from the LRT corridor and reduce the potential for westbound traffic on Queenston Road using Strathearne Avenue and other local streets west of Parkdale Avenue.

Eastgate Square to Parkdale Avenue (Wards 4 and 5)

The road network maintains two eastbound vehicular lanes, two westbound vehicular lanes, signalized egress from the Red Hill Parkway, select commercial properties and remains a key transportation link to the community of Stoney Creek and beyond. The LRT guideway starts at Eastgate as side-running on the north side and transitions through the Kenora intersection to a centre-running location which is maintained to "The Delta." The Eastgate Square LRT stop location adjacent to the north sidewalk provides convenient connectivity to the mall and the existing HSR Bus Terminal.

Priority Focus Areas for review under a Pedestrian Lens are Main Street East at Ottawa Street, Queenston Road at Parkdale and Queenston Road at the entrance to Eastgate Square.

Next Steps

The City and Metrolinx will continue to explore opportunities to increase efficiencies and accessibility for each mode of transportation inclusive of pedestrians, cyclists, transit users, vehicular traffic and goods movement. This includes the application of Complete Streets and Vision Zero planning and design principles.

Works in both the LRT corridor and the surrounding area will be evaluated to lessen impacts and improve levels of service, which could be inclusive of City and LRT project initiatives.

As with all major infrastructure projects in built-up urban areas, the design of replacement City and Third-Party surface and subsurface utility infrastructure continues to present challenges. However, cost effective solutions are being advanced to address the needs of each party in conjunction with the design of the roadway and guideway surface features.

Overall, given the magnitude of investment and how transformative the LRT project is for the City, opportunities continue to be explored on how to leverage and potentially augment the design and ultimate construction to create a connected corridor and one that enhances the overall urban design of both the corridor and adjacent development.

APPENDICES AND SCHEDULES ATTACHED

Not applicable.