EX9.1



STAFF REPORT ACTION REQUIRED

SmartTrack Status Update

Date:	October 15, 2015
То:	Executive Committee
From:	City Manager
Wards:	All
Reference Number:	

SUMMARY

The City is currently undertaking planning studies on SmartTrack, the Scarborough Subway Extension (SSE), Relief Line and Waterfront Light Rail Transit (LRT). The Province and Metrolinx are currently planning and beginning early implementation of GO Regional Express Rail (RER), in addition to continued implementation of the Metrolinx LRT Program (e.g. Eglinton Crosstown LRT, Finch West LRT, and Sheppard East LRT). Projects are in various stages of approval and construction, but together will significantly transform the future transit network of the city and region. Through the Feeling Congested? framework developed as part of the City's Official Plan Review, the City Planning division is taking a comprehensive view of future transit projects from a network perspective. This information report provides an update on the review of SmartTrack and the preliminary findings to date.

The SmartTrack concept proposes a heavy rail local transit service within the existing regional GO transit network, specifically on parts of the Kitchener and Stouffville/Lakeshore East GO Corridors. SmartTrack includes enhanced service levels (better than 15-minute frequencies) in both directions, additional stations, service and fare integration with the Toronto Transit Commission (TTC) network, and a new heavy rail corridor connecting to the Mississauga Airport Corporate Centre (MACC)/Pearson Airport. By leveraging the provincial commitment to improve the GO network, SmartTrack seeks to address the immediate need for greater access to rapid transit service in Toronto; provide relief to the overcrowded Yonge subway line; encourage development opportunities across the city; and create connections between major employment centres within the city and region.

In February 2015, City Council approved a work plan to undertake analysis of the SmartTrack concept and requested the Province and Metrolinx to consider specific SmartTrack components in the GO RER plan. Metrolinx has since developed the GO RER Program, and in the 2015 Ontario Budget, \$13.5 billion of the Province's \$16 billion Greater Toronto and Hamilton Area (GTHA) Transit Fund was committed to implement GO RER by 2025. This funding includes capital construction costs, but does not include other costs such as financing, lifecycle maintenance and operating costs.

GO RER includes several key elements that lay the foundation for SmartTrack. This includes electrification of GO corridors; a service frequency of every 15 minutes on the Stouffville/Lakeshore East and Kitchener GO Corridors; and all-stop service in both directions. Appendix 1 provides further details on the GO RER Program. A number of SmartTrack elements are not included in the GO RER plan:

- opportunities for service frequencies better than 15 minutes;
- additional new stations; and
- fare integration with a TTC fare option.

A new western heavy rail corridor connecting Mount Dennis to the MACC/Pearson Airport is a component of the SmartTrack concept currently being reviewed through a City led feasibility review. City Council also directed the TTC to review opportunities for transit service integration with the proposed SmartTrack plan.

The City, Metrolinx and TTC continue to assess the opportunities for providing a more local SmartTrack service in the same corridors as GO RER. Analysis is underway to assess the SmartTrack components not included in GO RER, and the related service concept, infrastructure and cost implications of integrating SmartTrack and GO RER in the same GO corridors. An assessment of the planning merits, transit network implications and city building opportunities is also underway. A key input is the new ridership demand forecasting model under development by the University of Toronto, which will provide capacity to assess different network scenarios, travel behaviours and off-peak demand. The new model is currently delayed until the calibration and validation process is complete. Model runs are expected to be complete by Q4 2015.

This report provides an update on the preliminary findings to date, including the detailed analysis that has been undertaken with respect to potential new station sites (Appendix 2 and 2A); the feasibility of a new western heavy rail corridor (Appendix 3); and integrating TTC services (Appendix 4). An update on the public consultation program is included (Appendix 5). Preliminary planning analysis has also been undertaken to assess the current SmartTrack concept. Appendix 6 provides details on the Official Plan Review "Feeling Congested?" framework and the preliminary assessment of the current SmartTrack concept from a transit network perspective. An update on key inputs required to complete the planning assessment are included in Appendices 7 and 8. Finally, Appendix 9 provides an update on the work to date to develop a City Funding and Financing Strategy for SmartTrack.

A report will be provided to City Council in Q1 2016 with recommendations to further develop and optimize the SmartTrack and GO RER concepts to better serve Toronto's transit network and city building objectives. Additional public consultation on SmartTrack and other transit planning studies will occur in Q4 2015.

RECOMMENDATIONS

The City Manager recommends:

1. Executive Committee request the City Manager to forward this report for information to the Toronto Transit Commission, the Ministry of Transportation, Metrolinx, the City of Mississauga and York Region.

Financial Impact

In December 2014, City Council approved funding of up to \$750,000 under the Transit Expansion Initiatives capital account to conduct the various SmartTrack studies in 2015 (EX1.12). In February 2015, City Council approved additional funding of up to \$850,000 in 2015, and \$900,000 in 2016 (EX2.2). The total approved funding in 2015 for SmartTrack studies is \$1.6 million.

The Deputy City Manager & Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

On December 11, 2014, City Council directed the City Manager to work with the Toronto Transit Commission (TTC) and the Provincial Government and its agencies to provide an accelerated work plan for a review of the SmartTrack/GO RER plan. Link: <u>http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.EX1.12</u>

On February 10, 2015, City Council adopted the report EX 2.2 SmartTrack Work Plan (2015-2016) and directed the City Manager, in partnership with the Province to carry out the accelerated SmartTrack work plan. Council directed the City Manager to report in fall 2015 on the following:

- Kitchener GO and Stouffville/Lakeshore East GO RER/SmartTrack Service Concept, Infrastructure Plan and Business Case analysis
- Western Heavy Rail Corridor Feasibility Study findings and options for rapid transit connecting Mount Dennis to the MACC/Pearson Airport
- High level costs estimates and planning analysis for all three corridors
- Capital cost sharing and City financing strategy
- Plan for additional Environmental Assessments that may be required on all corridors
- Update on public consultation activities
- TTC service integration plan

Link: http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.EX2.2

ISSUE BACKGROUND

The TTC currently has a ridership of 535 million riders per year (2014). GO Transit also provides service in Toronto, with 68 million riders annually (2014) across the entire GO network. Approximately 12 percent of GO Transit's annual ridership are Toronto residents. Figure 1 illustrates Toronto's existing high frequency and high capacity transit network, which includes GO rail lines, TTC subway, and the TTC streetcar and bus 10 minute surface transit network.¹



Figure 1. Existing High Frequency & High Capacity Transit Network and Approved Projects in Toronto

The challenges facing the City's transit infrastructure and the demand for expanding the rapid transit network have been documented in previous reports to the TTC Board, Standing Committees and Council. The transit network has not significantly expanded in the past 30 years, yet transit use is growing faster than population. Over the past 5 years to 2015, the population of the Toronto Census Metropolitan Area is estimated to have increased 1.2% per year², while TTC and GO Transit use has grown at 2.5% and 5% per year respectively.

New investments are being made, and the transit network will expand over the next 10+ years. The Province has committed \$8.4 billion in the Eglinton Crosstown LRT (currently under construction), the Finch West LRT, Sheppard East LRT, including contributing to the Scarborough Subway Extension (SSE). The City and federal government have also

¹ TTC Streetcar and bus 10 minute surface transit network will be fully implemented by September 1, 2016. ² Statistics Canada, Population estimates and projections, <u>http://www.statcan.gc.ca/tables-tableaux/sum-</u>som/101/cst01/demo05a-eng.htm

committed funds to the SSE. Planning work is also underway with respect to the Relief Line and Waterfront LRT.

Since 2013, the City Planning division has been advancing through the Official Plan Review ("Feeling Congested?") the development of a long term transportation plan which will come forward for Council consideration in Q2 2016. Feeling Congested? includes a rapid transit decision making framework to evaluate future transit priorities through a comprehensive assessment of how each individual project contributes to the overall network and the policy objectives of the City's Official Plan. A series of reports have been considered by Standing Committee and Council, and detailed information on Feeling Congested? and the 25 rapid transit projects identified in the City's Official Plan can be found online: toronto.ca/FeelingCongested

The introduction of SmartTrack and GO RER, requires additional analysis on the implications to the proposed future transit network priorities through Feeling Congested?. Both GO RER and SmartTrack propose enhancements to the current regional GO network, however with different vision and objectives.

GO Regional Express Rail (RER)

Currently, the regional GO Transit network is oriented to long distance regional commuters coming into the downtown core. The infrastructure is currently underutilized as a local transit option in Toronto, and does not provide off-peak service. GO Transit service typically is not used as a rapid transit option by Toronto residents for a number of reasons:

- GO service frequency is limited;
- Peak hour, peak direction service to Union Station on five of seven GO corridors;
- Higher GO fares
- Very limited fare integration between GO transit and the TTC; and
- Limited service integration with the TTC and limited station access (few stations).

In 2014 the Province introduced GO RER which envisions all day two way service across the regional GO Transit network. Metrolinx has developed the preliminary GO RER plan. In the 2015 Budget, the Province committed \$13.5 billion of the \$16 billion Greater Toronto & Hamilton Area (GTHA) transit infrastructure funding over the next ten years to GO RER.

Although planning and design work continue for projects in the Next Wave of the Big Move (e.g. Relief Line), they are not prioritized for provincial funding. Provincial investments in Toronto transit that continue to have funding commitments are the Eglinton Crosstown LRT (under construction), the Finch West LRT, the Sheppard East LRT, and the Scarborough Subway Extension (SSE).

Through GO RER, core segments of the GO network will be upgraded to feature more frequent all-day service, faster trip times and electric trains. A preliminary GO RER

service concept has been developed and is currently undergoing refinement by Metrolinx. Figure 1 illustrates the service improvements planned under GO RER.



Figure 2 Existing GO Service Concept and GO RER Service Concept

Peak hour trips will increase in frequency, with 15 minute service frequencies on parts of the GO network. Metrolinx also anticipates 15 minute midday, evening and weekend service on the Stouffville, Kitchener, Barrie and Lakeshore East and West Corridors. GO RER will provide more GO service throughout the system including within Toronto.

Metrolinx has an aggressive schedule to implement GO RER and is advancing GO rail infrastructure improvements across all seven GO rail corridors in the immediate term. Environmental Assessments (EAs) are underway (see Appendix 1). Metrolinx staff recently provided an update to their Board on the status of work to improve the GO rail network. For further information, see the <u>September 22, 2015 Presentation to the Metrolinx Board of Directors on Regional Express Rail Progress</u>.

Appendix 1 of this report provides an overview of the GO RER Program.

SmartTrack

SmartTrack proposes a heavy rail local transit service within the existing regional GO transit network, specifically on parts of the Kitchener and Stouffville/Lakeshore East GO corridors (see Figure 2). Enhanced service levels (better than 15-minute frequencies) in both directions, additional stations, service and fare integration with the TTC network are

key elements of the proposal. A new heavy rail connection to the Mississauga Airport Corporate Centre (MACC)/Pearson Airport is also proposed.

In February 2015, City Council directed the City Manager to work in consultation with Metrolinx and the TTC to implement the work plan outlined in <u>EX2.2 SmartTrack Work</u> <u>Plan (2015-2016)</u>.



Figure 3. SmartTrack Study Areas

SmartTrack/GO RER Program Governance

The City Manager's Office and the Office of the Secretary of the Cabinet, Province of Ontario are overseeing the SmartTrack and GO RER integration discussions. The City, Metrolinx and TTC have developed a SmartTrack/GO RER Working Committee and working groups to coordinate the scope of work outlined in the February 2015 report to Council.

The SmartTrack/RER Working Committee will be further enhanced with appropriate City, TTC, Metrolinx and Ministry of Transportation (MTO) representation to provide more comprehensive consultation on GO RER implementation within Toronto. This includes opportunities for consultation on Environmental Assessments and other work that will be occurring across the GO network in Toronto³.

³ City Council on April 2, 2015 adopted MM5.33 Metrolinx GO Train Bridge Plan <u>http://www.toronto.ca/legdocs/mmis/2015/mm/bgrd/backgroundfile-78729.pdf</u>

Figure 4. SmartTrack/GO RER Program Governance



Since Q1 2015, the SmartTrack/GO RER Program Committee has undertaken the analysis contained in Appendices 1 to 9 of this report:

- Appendix 1: Metrolinx GO Transit Regional Express Rail Overview
- Appendix 2: SmartTrack Stations Preliminary Assessment (Appendix 2A: SmartTrack Station Profiles)
- Appendix 3: Update on the SmartTrack Western Corridor Feasibility Review
- Appendix 4: Integration of TTC Services with SmartTrack
- Appendix 5: Public Consultation
- Appendix 6: Transit Network Analysis
- Appendix 7: Population and Employment Projections
- Appendix 8: SmartTrack Demand Forecasting Modelling Approach
- Appendix 9: Capital Funding & Financing Update

Developing an optimal service concept, infrastructure plan and costing for SmartTrack will take several phases of work. This report provides an update on the preliminary findings and identifies areas where further analysis is required.

COMMENTS

1. DEVELOPING THE SMARTTRACK SERVICE CONCEPT & INFRASTRUCTURE PLAN

SmartTrack is different from GO RER in terms of vision and objectives. SmartTrack proposes utilizing GO infrastructure to provide more local urban transit service. GO RER has a mandate to provide regional commuter trips at a higher frequency than the current GO system. Reconciling the different objectives of SmartTrack and GO RER, and identifying the optimal service concept and infrastructure plan to best serve Toronto's transit needs will take several phases of analysis. As outlined in the February 2015 report to Council, developing the optimal SmartTrack service concept and infrastructure plan is an iterative process (see Figure 5).





SmartTrack could potentially be integrated with GO RER and/or coexist within the same corridors, utilizing common infrastructure elements (tracks, stations, rolling stock, crossings). The degree to which GO RER and SmartTrack are integrated, and how the services are operated and governed is subject to future discussion between the Province and the City once the service concept and infrastructure planning work has been further advanced.

SmartTrack and GO RER are both complex programs comprising many components (or projects) to enhance GO network infrastructure. The SmartTrack analysis is currently focused on assessing individual components of the SmartTrack concept to determine the feasibility, planning merits and business case for including them within the larger program. This includes assessing additional stations, options for a new western heavy rail corridor from Mount Dennis to the MACC/Pearson Airport, fare integration and fare options, and service frequency. Multiple options are currently being considered with respect to each component part of the program, as summarized in Table 1.

Component of the SmartTrack Program	# of Options Under Assessment
Service Frequencies	Service frequencies between four and twelve trains per hour
	are being studied (15 min to 5 min).
Western Heavy Rail Corridor from Mount	8 Corridors and 11 Alignments (see section 4)
Dennis to MACC/Pearson Airport	
New Stations	14+ new stations (including assessment of clusters of
	stations in close proximity to one another). See section 3.1.
Fare	2 + fare options (TTC Fare and GO Fare). Fare policy is
	influenced by the Metrolinx GTHA Fare Integration Study.
	See section 6.

Table 1 Options under Review by Component of the SmartTrack Program

Staff recommendations will come forward to narrow the range of options described in Table 1, in Q1 2016. The next iteration of the analysis will provide a comprehensive assessment of how each component fits together within the larger program to develop the optimal SmartTrack scenario. Additional analysis is also required to understand how the optimal SmartTrack scenario relates to GO RER, and the refinements required to develop the best solution to meet residents' transit needs. This includes identifying how SmartTrack and GO RER integrate with the rest of the transit network and in particular TTC services. The analysis will also identify potential opportunities for phasing in early implementation of specific components of the SmartTrack plan, in the interest of improving transit services in Toronto on an expedited basis.

The Q1 2016 report to City Council will provide recommendations that will support the development of the optimal SmartTrack service concept and infrastructure plan.

2. SMARTTRACK AND GO REGIONAL EXPRESS RAIL (RER)

In February 2015, City Council requested Metrolinx to include additional SmartTrack elements in the review of GO RER on the Stouffville/Lakeshore East GO Corridor (from Unionville to Union Station) and Kitchener GO Corridor (from Mount Dennis to Union Station). Specific elements include:

- A service frequency of better than 15 minutes;
- All-stop service in both directions;
- Accelerated electrification of the entire SmartTrack line;
- Transit service integration;
- Integrated fares between GO Transit and the TTC;
- Seven additional stations on the Stouffville /Lakeshore East GO corridor; and
- Four additional stations including one south of Bloor Street between Queen Street and Dundas Street West, plus the already planned new station at Mount Dennis on the Kitchener GO corridor.

The GO RER service concept includes two-way all day service including peak, midday, evening and counter-peak service. In the geography of the GO corridors common with SmartTrack, the service frequency is anticipated to be 15 minutes (or better). The GO RER service concept also includes additional service beyond Unionville Station on the Stouffville Corridor and Mount Dennis on the Kitchener Corridor. Further analysis is required to determine how SmartTrack can be integrated with GO RER from a service

concept perspective if additional infrastructure elements (discussed later in this report) are included in the final SmartTrack plan.

The \$13.5 billion provincially funded GO RER program includes infrastructure components that are supportive of SmartTrack. Some of the infrastructure improvements include:

- electrification of the Stouffville/Lakeshore East GO corridor, the Kitchener GO corridor to Bramalea and the Union Station Rail Corridor. Infrastructure includes catenary systems and electrification substations;
- additional track to support bi-directional service (e.g. Stouffville double-tracking);
- some grade separations to support increased frequency;
- upgrades to existing stations;
- railway bridges;
- signals;
- retaining walls;
- utilities;
- grading; and
- environmental mitigation measures (noise walls and vibration mitigation).

Several SmartTrack components were not included in the funded GO RER program. For instance, service frequency options better than every 15 minutes, fare integration, 11 new stations, and continuous service between Kitchener and Stouffville/Lakeshore East corridors at Union Station. The new western heavy rail spur connecting Mount Dennis to the MACC/Pearson Airport is also outside the scope of GO RER and is the subject of a feasibility review described in section 4 below.

Many of the additional SmartTrack elements not included in the GO RER program are subject to additional studies underway by the SmartTrack/GO RER Program Committee. Updates on these studies are provided in this report. The preliminary GO RER service concept and SmartTrack plans will need to be further refined once additional analysis has been undertaken (as described in section 1 above).

3. SMARTTRACK INFRASTRUCTURE PLAN DEVELOPMENT

3.1 New Stations

In February 2015, City Council requested 11 additional stations be considered by Metrolinx in the GO RER business case analysis. This included opportunities for seven new stations on the Stouffville/Lakeshore East GO line between Union Station and Unionville, and 4 new stations on the Kitchener GO line between Union Station and Mount Dennis. City Council also requested staff to assess the potential for at least 3 new stations to be considered as part of The Western Corridor Feasibility Review for the proposed new heavy rail corridor. Table 2 below identifies the specific station locations on each corridor. Several identified stations are outside the City of Toronto, and require consultation and further analysis with the City of Mississauga and York Region. The GO RER program, as announced in the 2015 Ontario Budget, does not contemplate new stations. A process has been initiated by Metrolinx to review the potential for new stations across the entire GO network. Metrolinx has assessed approximately 120+ new stations locations across the GO network. Interim results of this analysis were presented to the Metrolinx Board in September 2015. The 11 new SmartTrack stations on the Kitchener and Stouffville/Lakeshore East GO Corridors remain on the list of 50+ to be considered for further analysis and an initial business case.

For further information on the Metrolinx analysis please see the <u>September 22, 2015</u> Presentation to Metrolinx Board of Directors on New Stations Analysis.

City of Toronto Review of New SmartTrack Stations

City Planning staff have undertaken a preliminary review of new SmartTrack station sites located in Toronto focusing primarily on planning merits. Feasibility has not been incorporated into the assessment to date. This work complements the assessment undertaken by Metrolinx and collectively, the City and Metrolinx assessments will be refined and merged to inform decision making on new stations.

The preliminary screening of potential new SmartTrack station sites has been undertaken using the principles established under the Official Plan's Feeling Congested? framework. For the purposes of completeness, City Planning has included existing GO stations as part of the preliminary assessment to help develop a complete understanding of City-building opportunities with respect to SmartTrack and the Official Plan. The assessment of existing GO stations does not relate to the value of these stations from the perspective of Metrolinx's commuter rail or regional express rail operations.

The preliminary assessment indicates that some stations perform more strongly than others as summarized in Table 2. Please see Appendix 2 for further information on the City's preliminary analysis for new SmartTrack station located in Toronto. Appendix 2A includes detailed station site profiles.

Further analysis is underway to support more detailed evaluation of the stations. The preliminary analysis currently does not include the impacts of ridership and network integration, which may alter current assessment results. Additional analysis is also required to understand the service and infrastructure implications (e.g. extra tracks, grade separations, etc) of each additional new station within the context of the overall SmartTrack and GO RER program. There are also a number of proposed SmartTrack stations outside Toronto's jurisdiction. Further analysis and consultation with the City of Mississauga and York Region is required.

Each proposed station will require detailed analysis to determine the merits of adding each new station to the network from a cost-benefit perspective. Consultation on both potential new SmartTrack and GO RER station locations (on other GO corridors) will be undertaken in Q4 2015. Staff recommendations on new SmartTrack stations within Toronto will be provided to Executive Committee in Q1 2016.

#	Station Name	Proposed New or Existing Station	Preliminary City Assessment Score (High, Medium, Low)	Included in Metrolinx 50+ Stations Shortlist	Prelin TTC Service Integra	ninary tion Candidate Routes		
	Stouffville/Lakeshore East GO Corridor							
1.	Unionville **	Existing GO	Outside Jurisdiction	-				
2.	14 th Ave**	New	Outside Jurisdiction	\checkmark				
3.	Milliken	Existing GO	High	-	17 Birchmount 21 Brimley 43 Kennedy	53 Steeles East 57 Midland New Steeles Rocket Bus		
4.	Finch East	New	Low	\checkmark	39 Finch East 169 Huntingwood	199 Finch East New Commander Bus		
5.	Agincourt	Existing GO	Low	-	6 Sheppard East LRT			
6.	Ellesmere	New	Medium	\checkmark	95 York Mills	New Ellesmere Rocket bus		
7.	Lawrence East	New	Medium	\checkmark	54 Lawrence East	New Lawrence Rocket bus		
8.	Kennedy	Existing GO	High	-	5 Eglinton LRT 20 Cliffside 21 Brimley	43 Kennedy 57 Midland 113 Danforth		
9.	Scarborough	Existing GO	Low	-	20 Cliffside	New Kingston Rd East bus		
10.	Danforth	Existing GO	Medium	-	64 Main 135 Gerrard	506 Carlton		
11.	Gerrard	New	Medium	\checkmark	72 Pape	506 Carlton		
12.	Queen	New	Low	Ţ	501 Queen 503 Kingston Rd	502 Downtowner		
13.	Unilever	New	High	\checkmark	New East Bayfront streetcar			
			Union Stat	tion Rail Corridor				
14.	Union	Existing GO	High	-	509 Harbourfront 510 Spadina	New East Bayfront streetcar		
			Kitchen	er GO Corridor				
15.	Spadina	New	High		510 Spadina			
16.	Liberty Village	New	High	\checkmark	63 Ossington	504 King		
17.	Lansdowne	New	Low	J	47 Lansdowne 505 Dundas	506 Carlton		

Table 2. Summary of Proposed New SmartTrack Stations and Existing GO Stations

#	Station Name	Proposed New or Existing	Preliminary City Assessment Score	Included in Metrolinx 50+	P TTC Service Into	reliminary egration Candidate Routes
10	Deep las West	Station	(High, Mealum, Low)	Stations Shortlist		504 V:
18.	Dundas west	Existing GO	High	-	40 Junction	504 King
10		N		,	168 Symington	505 Dundas
19.	St. Clair West	New	Medium	\checkmark	41 Keele	47 Landsdowne
					89 Weston	512 St. Clair
					168 Symington	New Caledonia bus
20.	Mt. Dennis	Existing GO	Medium	-	5 Eglinton LRT	161 Rogers Rd
					32 Eglinton West	168 Symington
					34 Eglinton	171 Mt Dennis
					35 Jane	195 Jane Rocket
					71 Runnymede	New Jane South bus
					89 Weston	New Weston Rocket bus
		New We	estern Heavy Rail Corr	idor: Eglinton West (Corridor Option*	
21.	Scarlett/Jane	New	Low	N/A	32 Eglinton West	79 Scarlett Rd
					73B Royal York	
22.	Kipling	New	Low	N/A	32 Eglinton West	52 Lawrence West
					45 Kipling	New Princess Margaret bus
					46 Martin Grove	C C
23.	Renforth Gateway	New	Outside Jurisdiction	N/A	32 Eglinton West	111 East Mall
					112 West Mall	
24.	MACC West **	New	Outside Jurisdiction	N/A	N/A	
		New Weste	ern Heavy Rail Corrido	or: Northern Extensio	on Corridor Option*	
21.	Weston	Existing GO	Medium	-		
22.	Etobicoke North	Existing GO	Medium	-		
23.	Woodbine	New	High	N/A		
24.	Pearson Airport	New	Outside Jurisdiction	N/A		
	passenger					
	terminals**					
25.	Renforth Gateway**	New	Outside Jurisdiction	N/A	32 Eglinton West	111 East Mall
					112 West Mall	
26.	MACC West**	New	Outside Jurisdiction	N/A	N/A	

*Note: Eglinton West and the Northern Extension Corridors are both options under review as part of the Western Heavy Rail Corridor Study

**Note: SmartTrack Stations outside City of Toronto jurisdiction are not being assessed by the City of Toronto. Further consultation with City of Mississauga and York Region are required.

3.2 Union Station Rail Corridor (USRC)

Union Station is the central destination point within the current GO network for peak period commuters and is anticipated to be the primary destination under GO RER. Ninety percent of current GO passengers' origin/destination point in peak period is Union Station.

SmartTrack proposes through service at Union Station enabling a continuous service between the Kitchener and Stouffville/Lakeshore East GO corridors to connect other employment centres in the region with the downtown core. Currently the Lakeshore East and Lakeshore West corridors operate a through service at Union Station. All other GO services currently terminate at Union Station.

Metrolinx is undertaking a USRC study to ensure that sufficient capacity exists to support planned GO RER service levels. This includes assessing capacity on tracks, platforms and the approach to tracks throughout the USRC. Analysis is also required to understand how SmartTrack service levels impact capacity in the USRC and the required infrastructure improvements that may be required to accommodate both GO RER and SmartTrack. This will need to be evaluated as the service concepts for both GO RER and SmartTrack become further refined and optimized.

3.3 Electrification

Electrification of five of the GO corridors is a key component of the GO RER program, and includes the GO corridors where SmartTrack is contemplated. Currently GO operates most rail services with 10-12 car trains powered by diesel locomotives. GO RER would use a mixed fleet that would include electric trains. Electric Multiple Unit (EMU) and electric locomotive trains are critical to achieving the service levels proposed by GO RER and SmartTrack. Electrified trains can accelerate faster and travel at top speeds for longer, cutting journey times for some trips by up to 20%.

Electrified service will be implemented on the following Metrolinx corridors with the highest service levels:

- The Lakeshore West line between Burlington and Union Station;
- The Lakeshore East line between Oshawa and Union Station;
- The Kitchener line between Bramalea and Union Station, including the Union Pearson Express service;
- The Barrie line between Allandale Waterfront and Union Station; and
- The Stouffville line between Lincolnville and Union Station.





Metrolinx is currently advancing work to electrify the identified corridors in the GO network (see Figure 9). This work will build on the recently completed EA for the Union Pearson Express Electrification Project⁴. Metrolinx is launching a design study and Environmental Assessment (EA) for electrification of the GO network. The EA will consider impacts and mitigation measures for the surrounding area, existing and future land use including areas for maintenance facilities and power transfer stations.

In June 2015, Metrolinx contracted a technical advisor. A System Wide EA is expected to be complete by late 2017. Public consultations will be held to share information on the process and seek feedback from residents on the EA process, study area and scope, as well as any proposed locations for new facilities.

3.4 Additional Infrastructure

The GO RER plan identifies additional track, grade crossings and upgrades to existing stations to accommodate GO RER service levels (see Appendix 1). Additional infrastructure may be required to accommodate further service enhancements proposed under SmartTrack. Requirements will become defined once the optimal SmartTrack and GO RER service concepts has been defined.

As part of the Regional Express Rail Program, Metrolinx has advanced several environmental assessment initiatives. One of these initiatives is the Davenport Community Rail Overpass study which was introduced to City staff in April, 2015. Since

⁴ http://www.gotransit.com/electrification/en/default.aspx

that time, Metrolinx has held meetings with the community and met with City staff to advance work prior to formal issuance of Notice of Commencement of the Transit Project Assessment Process later this year. The current option under consideration by Metrolinx is to provide an 8.4m elevated overpass structure where none exists today to address this rail-rail grade separation. Recently, the City received material that has been key to Metrolinx decision-making on the various options including an elevated, trench or tunnel solution. City staff are in the process of reviewing this information, the findings of which will be reported to the November 16, 2015 meeting of Planning and Growth Management Committee.

4. WESTERN HEAVY RAIL CORRIDOR FEASIBILITY REVIEW

In February 2015, City Council directed the City Manager, in partnership with Metrolinx and the TTC to undertake a feasibility study of SmartTrack options on the Eglinton Avenue West corridor, from Mount Dennis station to the MACC/Pearson Airport. The feasibility study also included an additional option to continue SmartTrack further north on the Kitchener Corridor terminating at the MACC/Pearson Airport. The feasibility study is a background study for any future Transit Project Assessment Process (TPAP) that may be requested by City Council.

The services of HDR were retained by the City to undertake the Feasibility Review. HDR has identified eight potential corridors in total, including one option identified following the June public consultation process. Figure 7 depicts the study area under consideration. Five of the corridor options run along Eglinton Avenue West to the MACC and three options extend further north on the Kitchener Corridor (near Woodbine Racetrack) before extending over the MACC.



Figure 7 Feasibility Review Study Area

The feasibility of the corridor options was assessed through five lenses:

- Technical
- Regulatory
- Service concept
- Land use planning
- Financial/costing

The base reference case for the feasibility review is the approved extension of the Eglinton West LRT from Mount Dennis to the MACC and Pearson Airport. There has been no funding committed to this project.

The corridor options were presented to the public in a series of public meetings in June, along with information describing the proposed approach to the feasibility assessment.

Based on initial technical analysis, two of these corridor options were eliminated (2A and 3 as identified in Table 3). Specific alignment options were developed for the remaining corridors for further assessment in this study. Several of these alignments were eliminated through secondary technical screening. One additional alignment (Eglinton Corridor 1D) was introduced after the public consultations and has not been through the same full assessment as the other alignments. The refined alignments of the remaining options will be presented to the public for review prior to a final report being submitted to Council.

Corridor Option	Preliminary Screening	Alignment Option	Secondary Screening
Eglinton Corridor 1A	Carried forward	1A Elevated	Carried forward
		1Aa Below Grade	Carried forward
		1Ab Below Grade	Not carried forward
Eglinton Corridor 1B	Carried forward	1Ba Below Grade (between GO and CP)	Carried forward
		1Bb Below Grade (west side of GO)	Not carried forward
Eglinton Corridor 1C	Carried forward	1C Below Grade	Carried forward
Eglinton Corridor 1D	Introduced after primary screening	Alignment to be developed	
Woodbine/Airport Corridor 2A	Not carried forward		
Woodbine/Airport Corridor 2B	Carried forward	2B	Carried forward
Woodbine/Airport	Carried forward	2Ca Elevated	Carried forward
Corridor 2C		2Cb Below Grade	Carried forward
Stand-alone Eglinton Corridor 3	Not carried forward		

Table 3 Feasibility Review: Summary of Options and Status

Appendix 3 provides a detailed description of each corridor option and alignment.

It is premature to draw final conclusions from the analysis to date without consideration of projected ridership, and further engagement of stakeholders outside of Toronto, such as the City of Mississauga and the Greater Toronto Airport Authority. However, certain emerging directions have been identified:

- For reasons related to technical feasibility and regulations affecting heavy rail operations, all corridor options are a combination of elevated and tunneled sections.
- All corridor options along Eglinton Avenue would have significant impacts on the community around Mount Dennis station and across the Eglinton Flats.
- All corridor options would require some additional track in the Kitchener corridor to connect. This would require some expansion to the existing rail corridor, with potential impacts on properties adjacent to the corridor. (This would vary with each option.)

The Feasibility Review has identified a number of technical areas that require additional analysis, including:

- Integration with the Kitchener GO Corridor and additional infrastructure requirements; including capacity to add more track, signalling upgrade requirements, etc.
- Operations management with the Kitchener Corridor, including GO RER, Union Pearson Express (UPX), VIA Rail and Freight; and
- Impacts on existing development adjacent to the Kitchener Corridor

The results of the ridership modelling will also need to be incorporated in order to finalize the analysis and develop recommendations for Council's consideration. Recommendations on the preferred option for connecting to the MACC, will be brought forward in Q1 2016.

Appendix 3 provides further information on the feasibility review. Appendix 3 is a staff summary of the HDR report on the SmartTrack Western Corridor Feasibility Review, and relies on content from that report.

LRT Options for the Eglinton Corridor

Metrolinx has recently undertaken preliminary work to develop options for an enhanced Eglinton LRT between Mt. Dennis and the MACC and Pearson Airport. Options to improve travel speed along the corridor have been developed by Metrolinx, including optimizing the number of stations and enhancing the degree of grade separation. Further detail on these options including ridership, travel time impacts, transit accessibility, feasibility, and cost will need to be developed over the next several months with collaboration and input of City and TTC staff.

5. TTC SERVICE INTEGRATION

In February 2015, City Council requested the TTC to report to the Executive Committee in fall 2015 on a service integration plan that highlights dedicated express bus routes for efficient connections to proposed SmartTrack stations.

The service integration plan identifies both existing and planned future TTC services – including new proposed express bus services – which could provide convenient and customer-friendly connections to SmartTrack stations. The objectives of the service integration analysis is to make the service accessible, provide more options to commuters, and to allow SmartTrack to function as an integral part of the TTC network.

The TTC's approved Service Standards require that any change to a TTC service must create a net advantage or benefit to travelers. Service changes will be implemented only if the net effect on all customers (existing and new) is positive.

As part of the SmartTrack work plan, TTC staff are identifying and recommending TTC services which could be connected to SmartTrack stations. This is a multi-step process:

Step 1: Identification of Candidate Routes

All routes which intersect with, pass by, or are in reasonable proximity to a SmartTrack station are examined for connection potential. The specific service characteristics examined are described in Appendix 4 of this report.

Step 2: Determine the type of connection to be considered:

On-street connection: Allows for convenient connections between existing TTC services and intersecting services – subways, GO lines, SmartTrack – with no diversion of the TTC service away from its main routing. On-street connections avoid time-consuming diversions of on-board customers.

Off-street connection: Requires the connection between TTC services and SmartTrack to be made within the station itself. The connection would need to be facilitated by designing and constructing the station to include bus bays and associated facilities such as enclosed customer waiting areas, next vehicle information screens, operators washrooms, retail vendors, etc. This arrangement is premised on only relatively-minor diversion of service away from its main direction of travel for customers.

Off-route diversion: Entails a pronounced diversion of a service away from its main direction of travel, or main arterial alignment for the specific purpose of encouraging travelers to make use of the connecting service. This type of service is limited to situations where there are no other options available and the benefit to customers outweighs the inconvenience of the diversion.

Step 3: Weighting and Evaluation of Effects on Customers

For routes where the proposed connection is off-street or off-route, an assessment of the change in travel time for transferring and non-transferring customers is undertaken, to determine whether the proposed connection is beneficial for all travelers.

Step 4: Preliminary List of Connecting Routes

Consistent with the above process, TTC staff have identified a preliminary list of TTC services – including planned future new services -- which, on an unweighted, pre-evaluation basis, would appear to provide customer-benefitting connections with SmartTrack. The preliminary connecting routes has TTC routes making 75 transfer connections at 21 proposed SmartTrack stations (see Figure 1, Appendix 4).

Step 5: Iteration and Refinement of Transfer Connections

The candidate and, ultimately, recommended routes for connection between TTC and SmartTrack will be modified and refined as part of the ongoing planning, modelling, and business-case analyses for SmartTrack. The final list of connecting services will be established as SmartTrack becomes further optimized and defined. Public consultation, and TTC Board approval of the resulting recommendations is required. Typically, refinement of the service details and characteristics continue up to 12 to 18 months before the new rapid transit service begins operation.

Integration with GO RER

Further work will be undertaken, as a joint effort between the TTC, the City, and Metrolinx, to similarly identify and assess TTC connecting services on the other GO corridors which constitute the planned GO RER system.

Please see Appendix 4 for further information.

6. FARE INTEGRATION

In February 2015 City Council requested the Province and Metrolinx to include integrated fares between GO Transit and the TTC in the design and review of GO RER. As part of the SmartTrack ridership analysis, the City is currently modelling two fare scenarios (TTC and GO fare) to inform optimization of SmartTrack and GO RER service concepts.

Metrolinx has been working on a GTHA Fare Integration study since 2014 as part of its Five-Year Strategy and The Big Move Plan. The regional fare integration plan is being developed with ten GTHA transit agencies, including the TTC.

Metrolinx's objective of integrating fares is to remove barriers in order to enable transit across the GTHA to be perceived and experienced as one network composed of multiple systems and service providers. Metrolinx is conducting the study with a focus on increasing customer mobility and transit ridership while maintaining financial sustainability of the GTHA's transit services.

Metrolinx has undertaken work to develop a fare structure system that has looked at fare structures based on service type and trip length. The next phase of analysis will address service categories, including the number and type of services to be included in each category; fare structure for each category; zone number and design (for applicable structures); price structures; and transfer policies. Ongoing work with municipalities is being undertaken to consult on concession definitions, fare products, and concession discounts.

Public consultation on fare structures will occur in Q4 2015/Q1 2016. Metrolinx recommendations on GTHA Fare Integration are planned for Q2 2016. Further analysis on the potential impact of an integrated fare system will be required once Metrolinx recommendations on GTHA Fare Integration are made in Q2 2016.

For further information please see the <u>September 22, 2015 Presentation to Metrolinx</u> Board of Directors on the GTHA Fare Integration Study.

7. PUBLIC CONSULTATION

In February 2015, City Council requested the Province and Metrolinx to work in partnership with the City and other affected municipalities on the GO RER public outreach and engagement strategy, and include SmartTrack as a component of the strategy.

The City, Metrolinx and TTC consulted the public on SmartTrack and GO RER in June 2015. The public meetings were coordinated with the consultation schedule for the Scarborough Subway Extension (SSE) and Relief Line to provide the public with comprehensive information on current transit network planning.

Public consultation activities included eight public information sessions with representation from the City of Toronto, Metrolinx and TTC at all sessions. The sessions were held across the City, two of which were held in the SmartTrack Eglinton West Feasibility Review study area. A total of approximately 336 participants attended the public information sessions. Feedback was also received through online surveys, emails, and comment sheets that were mailed or submitted following the public information sessions.

The public information sessions were designed to inform and seek input on the overall SmartTrack plan in addition to focusing on the Western Corridor Feasibility Review. With regards to the overall SmartTrack plan, highlights of the feedback received include:

• Positive feedback was received on fare integration with the TTC, electrification and frequency of service;

- Some residents were concerned with the coordination and impact of SmartTrack with other Toronto transit projects; and
- Residents were interested in the similarities and distinctions between SmartTrack and GO RER.

Public feedback on the Western Corridor Feasibility Review was a key component of the sessions. Participants were asked for feedback on the seven alignment options in comparison to the base reference case Eglinton West LRT. Highlights of the feedback include:

- general support for the base reference case Eglinton West LRT;
- Some residents expressed concerns regarding the presence of heavy rail technology along the Eglinton West corridor; and
- A large number of respondents indicated more station stops would be required to better serve the local community.

The feedback received in the June consultations will inform the next phases of this project. Further consultation is scheduled for Q4 2015.

The City has also had discussions with officials from neighbouring municipalities (Mississauga and Markham) on a consultation plan to support the next phases of work for SmartTrack. Consultations occurring in Mississauga and Markham will be led and coordinated by the respective municipalities. City staff will continue to work with these municipalities to support future consultations.

Please see Appendix 5 for further details.

8. PRELIMINARY SMARTTRACK PLANNING ANALYSIS

To date planning and technical analysis has been undertaken on key components of the SmartTrack plan (e.g. stations, western rail corridor, etc). As described in this report, further analysis is required to develop an optimized SmartTrack plan. As SmartTrack becomes more clearly defined, it will be evaluated in the context of the transit network planning framework set out through the transportation component of the City's Official Plan Review (Feeling Congested?).

Key objectives of transit network planning include:

- Providing connections to transit for everyone;
- Enabling transit to be competitive, helping to reduce car dependence;
- Ensuring transit is a good neighbour in terms of environmental impact;
- Contributing to the creation of livable places and neighbourhoods;
- Weighing the competing goals of ridership maximization and service coverage;
- Weighing the competing goals of local connectivity and fast regional connectivity;
- Providing demonstrable value for money; and

• Working within the City's fiscal framework.

The Rapid Transit Evaluation Framework (RTEF) is an outcome of Feeling Congested?. It supports the ongoing work of City Planning to develop a long-term, comprehensive rapid transit network plan for inclusion in the Official Plan. The RTEF was developed in 2013 by City Planning staff with extensive input from the public and stakeholders. Further details about Feeling Congested? were reported to Council in <u>PG35.2 "Feeling</u> <u>Congested?" Recommended Official Plan Amendment for Selected Transportation</u> <u>Policies: Official Plan Comprehensive Review</u> and <u>PG34.12 "Feeling Congested?" – Update on Progress to Date</u>.

Three policy principles and eight evaluation criteria are the foundation of the RTEF. The RTEF also uses over twenty measures to evaluate transit expansion projects, consistent with the principles and criteria. A preliminary analysis of SmartTrack using the Feeling Congested evaluation framework is provided in Appendix 6 of this report.

Several measures under the RTEF depend on projections of population and employment (Appendix 7) and results of the City's regional travel demand model (Appendix 8). Ridership data is currently not available. Once data is available it will be applied to the measures in the Feeling Congested? framework to refine and complete the SmartTrack planning evaluation.

Ridership Modelling

The City has retained the services of the University of Toronto to upgrade the City's transportation demand model (GTHA Model V2). The new model (GTHA Model V4) is a state of the art regional travel demand model system that provides greater capacity to model various scenarios, and test sensitivities to changes in fare, service frequency and different network configurations. Model upgrades include:

- Capability to model all day (24 hour) travel demand. The current model forecasts morning peak period travel demand only;
- Improved representation of counter-peak commuter flows;
- Greater flexibility to model alternative fare structures;
- Ability to introduce capacity constraints on the transit network; and
- Automated procedures to extract key network performance measures.

The new model is based on over a decade of research work at the University of Toronto. A peer review is also being conducted by a third party consultant on the model calibration and validation. Ridership model runs will be conducted in Q4 2015 to test various service concept scenarios including sensitivities to different fare options, service frequencies, network configurations, and population and employment scenarios (see Appendices 7 and 8 for further information).

In addition to the City's updated travel demand model, a "connectivity calculator" will be used to estimate a) the density of transit service for any point in the GTHA, and b) the

number of destinations that are reachable by transit from any origin(s). Together with the ridership results, these estimates will help to illustrate how future transit projects would improve the transit network.

The evaluation of SmartTrack through the Feeling Congested? framework will be finalized once ridership information is available. This work will also inform studies underway for other current transit planning projects including the SSE and Relief Line. The analysis will also be incorporated into City Planning's ongoing work to develop a long term transportation plan for the City that sets out future transit network priorities based on City's Official plan policies and directions. Please see Appendix 8 for further details.

9. CAPITAL FUNDING & FINANCING STRATEGY

In February 2015, City Council requested the City Manager, in collaboration with provincial officials and other funding partners, to prepare a strategy for implementing the SmartTrack enhancements to GO RER. Council also requested a strategy for financing and funding the City's share of the capital costs related to SmartTrack.

The development of a financing and funding strategy requires information on the incremental capital costs and timing, and potential revenue sources available to be applied to the project. This information, together with solutions for any funding gap that may be identified, will assist in determining the best financing and funding option for this project. Key inputs on incremental capital costs estimates will not be available until Q1 2016, when decision on key components (i.e. Western Heavy Rail Corridor, new stations, additional infrastructure, etc) of the SmartTrack plan have been made.

Provincial Capital Funding

The 2015 Ontario Budget allocated \$13.5 billion of the \$16 billion GTHA transit fund to implementing GO RER over the next ten years. As identified earlier in the report, the investment in GO infrastructure improvements (electrification, double tracking on Stouffville Corridor, etc) support and enable SmartTrack. The Province has identified its contribution to SmartTrack within the GO RER plan.

In the 2015 Provincial Budget, the Province also acknowledged the benefits of the SmartTrack proposal and indicated that the proposed SmartTrack enhancements to GO RER will require new partnership funding of approximately \$5.2 billion from the City and the Federal government⁵. The additional funding is required to make further incremental improvements to the GO RER plan.

Federal Funding Commitment to SmartTrack

In June 2015, the Government of Canada announced a new Public Transit Fund, which is intended to provide significant permanent support for large-scale public transit projects. The federal government specifically committed to contributing up to one-third of the

⁵ <u>http://www.fin.gov.on.ca/en/budget/ontariobudgets/2015/ch1b.html#ch1b_5</u>

costs for the SmartTrack public transit system proposal, up to a maximum amount of \$2.6 billion, once a formal application is received and approved⁶.

The Federal contribution to SmartTrack will be made by way of a predictable payment stream over 20 to 30 years rather than an upfront contribution. This will allow borrowing against this payment stream and provides flexibility to use traditional or alternate financing mechanisms to raise the federal government's contribution towards the project capital cost.

The terms and conditions of the new Public Transit Fund have not been finalized. The City continues to have discussions with the Federal Government.

City's Capital Funding & Financing Strategy

The Corporate Finance division has undertaken a preliminary review of the revenue tools available to City Council to fund transit infrastructure projects. Appendix 9 in this report provides a detailed discussion on available revenue sources for the City, including:

- Property Taxes
- Tax Increment Financing
- Development Charges
- Sale of development rights on City owned lands along the SmartTrack corridor.

The City will also be retaining a consultant with expertise in the capital financing market to identify potential alternate financing sources and structures that may be used to raise its share of the capital costs of SmartTrack, based on the revenue tools being considered. The scope of this work will include:

- quantifying the financial risk associated with potential project revenue streams, based on their expertise in rail projects;
- determining the amount of capital financing that private investors would be prepared to provide in return for the right to future project-related revenue streams, with and without recourse to government;
- examining various financing structures and risk allocation options, including a global scan of transit financing structures used in other jurisdictions; and
- undertaking a preliminary market sounding of potential private investor interest specific to the SmartTrack project.

The results of this work will inform the City on the most appropriate financing structure to pay for its share of SmartTrack. It is anticipated the Consultant will report on its findings in Q1 2016.

Please see Appendix 9 for further information.

⁶ June 18, 2015, News Release "PM announces Further Details New Public Transit Fund". <u>http://pm.gc.ca/eng/news/2015/06/18/pm-announces-further-details-new-public-transit-fund</u>

10. SUMMARY & NEXT STEPS

Table 4 provides a comparison summary of the current GO RER and SmartTrack programs and identifies areas requiring further analysis. A report will be provided to Executive Committee in Q1 2016 with a comprehensive update and findings to optimize the SmartTrack plan. This will include the fulsome transit network evaluation of SmartTrack once ridership inputs are available for all current transit planning studies being led by City Planning (e.g. SmartTrack, SSE, Relief Line).

Table 4. Summary of Current GO RER and SmartTrack Concepts: Areas Requiring Further Analysis

Current GO Regional Express Rail (GO	Current SmartTrack Proposal	Key Issues Requiring Further Analysis
RER)		
(Areas common to Smart Frack)		
Vitabanar and Stauffuilla/Lakashara East CO	Full Smort Treak Concert (Kitchener and	Minimum frequency improvement achieved under CO DED on
Corridors in area same as SmartTrack:	Stouffyille/Lakeshore East GO corridors and	the Kitchener and Stouffville/Lakeshore East GO Corridors
• 15 min frequency	new Western Heavy Rail Corridor):	the Kitchener and Stourivine/Lakeshore East GO Confidors.
 Bi directional peak and off peak service 	Better than 15 min frequency	Further analysis is required on:
All stop service at current CO stations	 Bidirectional peak and off-peak service 	 ridership benefits/impacts of more frequent service:
• All-stop service at current GO stations	• All stop service at current + new GO	 feasibility of achieving higher frequencies and the associated
Full Kitchener GO & Stouffville GO Corridors:	stations	infrastructure requirements;
• Additional GO RER service in Stouffville	Additional service on new western heavy	• interaction of higher frequency service with GO RER service
GO corridor beyond Unionville	rail corridor connecting Mount Dennis to	beyond Unionville on the Stouffville Go corridor; and
• Additional GO RER service in Kitchener	MACC/Pearson Airport	• integration of services on the Kitchener Corridor with a
GO corridor beyond Bramalea; UPX		continuous SmartTrack service on a new western heavy rail
service also on Kitchener GO Corridor		corridor requires additional analysis. Potential service,
		infrastructure and operability issues need to be better
		understood.
Infrastructure: Western Heavy Rail Corridor		
Not in GO RER plan.	New heavy rail corridor connection from	See section 4 above.
Extension of Foliaton Crosstown I DT to	Mount Dennis to the MACC/Pearson Airport	Eventhan analysis is manying on a
Extension of Eginnon Crosslown LRT to Deerson Airport is an unfunded project in The	with 5-4 potential new stations.	Further analysis is required on:
Big Move regional transportation plan	City Council requested staff to look at western	 Implications for Kitchener Corridor Integration; proliminary technical analysis and service concept analysis
Dig Move regional transportation plan.	extension options along Eglinton West and a	• premimary technical analysis and service concept analysis indicate additional tracks may be required if GO RER and ST
Metrolinx is currently undertaking work to	northern extension option (see section 4).	service concepts are not modified. Further refinement on
review issues identified in previous Eglinton		additional infrastructure requirements necessary and
LRT EA.		 operability and integration with multiple GO RER. UPX
		services in Kitchener Corridor requires detailed review.
Infrastructure: Stations		
9 existing/planned GO Stations on GO RER	Approximately 24 total existing and new	See Section 3 above.
	stations on SmartTrack	
For details see Table 2 in section 3 above.		Further Analysis is required on:
	For details see Table 2 in section 3 above.	• opportunities for achieving local city building and transit
		service objectives;
		implications to longer distance GO RER trips from adding

Current GO Regional Express Rail (GO	Current SmartTrack Proposal	Key Issues Requiring Further Analysis
(Areas common to SmartTrack)		
		 additional stations (i.e. travel time impacts, increases in dwell time at stations); implications to travel speed (i.e. spacing between stations); technical feasibility and additional infrastructure required to overcome barriers related to track geometry; geotechnical & engineering issues); ridership potential/impacts; station development opportunities; and land use intensification and local transit integration with potential new stations. Note: Station sites located outside of Toronto, such as the Renforth Gateway, MACC West and 14th Avenue require further analysis/consideration in partnership with the City of Mississauga and York Region
	System Wide	and Tork Region.
Electrification	·	
 GO RER includes electrification of five GO corridors including: Full electrification of Stouffville/Lakachara East Corridors 	SmartTrack corridors on existing GO corridors (Stouffville/Lakeshore East & Kitchener) will be electrified as part of GO RER.	Electrification will allow for electric trains to be utilized. Accelerated electrification of SmartTrack on existing GO corridors to be negotiated with Metrolinx.
 Partial electrification of Kitchener Corridor (from Bramalea to Union) Infrastructure improvements for electrification includes electrification substations and catenary system 	Western Rail Corridor electrification included in feasibility study.	 Further analysis is required on: impact on existing and future land use as a result of electrification of GO network, including areas for maintenance facilities and power transfers stations; and cost and infrastructure requirements of electrifying Western Rail corridor.
Fare Integration		
GO RER program does not include fare integration or policy direction on the fare structure. Metrolinx fare integration study is underway GO RER program assumes current GO fare	Assumes fare integration. TTC fare is one option under consideration.	 Further Analysis is required on: ridership impacts of different fare structures; required operating subsidies associated with different fare structures; and impact of proposed fare structure on operating subsidies due to potential changes in ridership of regidents from
policy.		surrounding municipalities.

Current GO Regional Express Rail (GO RER)	Current SmartTrack Proposal	Key Issues Requiring Further Analysis
(Areas common to SmartTrack)		
Local Service Integration		
Not included.	Local service integration with the TTC is a critical component.	Preliminary analysis has been undertaken by the TTC. See section 5.
Municipalities impacted by GO RER will be		
expected to develop plans to integrate local		Further analysis is required on:
services with GO RER.		• final routes and service plan in accordance with optimized SmartTrack service concept, and GO RER plans; and
		 cost implications associated with changing TTC service levels to integrate with SmartTrack and GO RER.
Union Station Rail Corridor (USRC)		
GO RER service terminate/start at Union Station, with exception of Lakeshore East and	SmartTrack proposes continuous through service between the Kitchener and	See section 3.2.
West corridors. Metrolinx is currently	Stouffville/Lakeshore East GO corridors at	Further analysis is required on:
conducting analysis on through service for the	Union Station.	• technical feasibility and constraints in the Union Station Rail
Stouffville and Kitchener corridors.		Corridor.
Additional analysis underway on USRC.		
Fleet		
Mixed fleet (Diesel and Electric Multiple	Electric Multiple Units	Electric Multiple Unit trains accelerate faster and travel at faster
Units).		speeds.
		Optimized SmartTrack and GO RER concept required before required further analysis can be determined (i.e. if GO RER and SmartTrack service will use same fleet, etc).

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ATTACHMENTS

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Appendix 2: SmartTrack Stations Preliminary Assessment (Appendix 2A: SmartTrack Station Profiles)
Appendix 3: Update on the SmartTrack Western Corridor Feasibility Review
Appendix 4: Integration of TTC Services with SmartTrack
Appendix 5: Public Consultation
Appendix 6: Transit Network Analysis
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