City of Hamilton

LIGHT RAIL TRANSIT SUB-COMMITTEE

AGENDA

Meeting #:	24-001
Date:	January 29, 2024
Time:	1:00 p.m.
Location:	Council Chambers Hamilton City Hall 71 Main Street West

Carrie McIntosh, Legislative Coordinator (905) 546-2424 ext. 2729

Pages

1. CEREMONIAL ACTIVITIES

2. APPROVAL OF AGENDA

   (Added Items, if applicable, will be noted with *)

3. DECLARATIONS OF INTEREST

4. APPROVAL OF MINUTES OF PREVIOUS MEETING

   4.1 December 11, 2023 — 3

5. COMMUNICATIONS

6. DELEGATION REQUESTS

   6.1 Eric Tuck, Amalgamated Transit Union Local 107, respecting LRT Options Report (In-Person) (For today's meeting) — 11

   6.2 Vic Wojciechowska, CUPE 3906, respecting Keep Transit Public campaign (In-Person) (For today's meeting) — 12

   6.3 Councillor Josh Matlow, City of Toronto, respecting the Hamilton LRT (Virtually) (For today's meeting) — 14

   6.4 John Di Nino, ATU Canada, respecting operation and maintenance of Hamilton LRT (Virtually) (For today's meeting) — 15

7. DELEGATIONS

8. STAFF PRESENTATIONS

9. CONSENT ITEMS

10. PUBLIC HEARINGS

11. DISCUSSION ITEMS

12. MOTIONS

13. NOTICES OF MOTION

14. GENERAL INFORMATION / OTHER BUSINESS

15. PRIVATE AND CONFIDENTIAL

16. ADJOURNMENT

4.1

LIGHT RAIL TRANSIT SUB-COMMITTEE
MINUTES 23-005
9:30 a.m.
Monday, December 11, 2023
Council Chambers
Hamilton City Hall
71 Main Street West

Present: Mayor A. Horwath, Councillors M. Wilson (Chair), N. Nann (Vice-Chair) C. Cassar, J.P. Danko, M. Francis, T. Hwang and C. Kroetsch

Absent with Regrets: Councillors M. Francis and T. Hwang - Personal

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THE FOLLOWING ITEMS WERE REFERRED TO GENERAL ISSUES COMMITTEE FOR CONSIDERATION:

1. Hamilton Light Rail Transit Community Benefits Update (PED23262) (City Wide) (Outstanding Business List Item) (Item 9.1)

(Cassar/Danko)
That Report PED23262, respecting Hamilton Light Rail Transit Community Benefits Update (City Wide), be received.

Result: **Motion CARRIED by a vote of 6 to 0, as follows:**

Yes - Mayor Andrea Horwath
Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Cameron Kroetsch
Yes - Ward 3 Councillor Nrinder Nann
Not Present - Ward 4 Councillor Tammy Hwang
Not Present - Ward 5 Councillor Matt Francis
Yes - Ward 8 Councillor John Paul Danko
Yes - Ward 12 Councillor Craig Cassar

2. Light Rail Transit Strategic Site Selection – Update Report (PED23142(a)) (Wards 1,2, 3, 4 and 5) (Item 15.2)

(Nann/Cassar)

(a) That the direction provided to staff in the Closed Session, respecting Report PED23412(a) be approved; and

(b) That the entirety of Report PED23412(a) Light Rail Transit Strategic Site Selection – Update Report remain confidential and not be released as a public document.

Result: Motion CARRIED by a vote of 6 to 0, as follows:

Yes - Mayor Andrea Horwath
Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Cameron Kroetsch
Yes - Ward 3 Councillor Nrinder Nann
Not Present - Ward 4 Councillor Tammy Hwang
Not Present - Ward 5 Councillor Matt Francis
Yes - Ward 8 Councillor John Paul Danko
Yes - Ward 12 Councillor Craig Cassar

FOR INFORMATION:

(a) APPROVAL OF AGENDA (Item 2)

The Committee Clerk advised of the following change to the agenda:

8. PRESENTATIONS

8.2 (a) Report respecting Getting Hamilton's LRT on the Right Track

(Cassar/Danko)
That the agenda for the December 11, 2023, Light Rail Transit Sub-Committee meeting be approved, as amended.

Result: Motion CARRIED by a vote of 5 to 0, as follows:

Yes - Mayor Andrea Horwath
Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Cameron Kroetsch
Not Present - Ward 3 Councillor Nrinder Nann
Not Present - Ward 4 Councillor Tammy Hwang

Not Present - Ward 5 Councillor Matt Francis
Yes - Ward 8 Councillor John Paul Danko
Yes - Ward 12 Councillor Craig Cassar

(b) DECLARATIONS OF INTEREST (Item 3)

There were no declarations of interest.

(c) APPROVAL OF MINUTES OF PREVIOUS MEETING (Item 4)

(i) September 25, 2023 (Item 4.1)

(Kroetsch/Cassar)
That the Minutes of the September 25, 2023, meeting of the Light Rail Transit Sub-Committee be approved, as presented.

Result: Motion CARRIED by a vote of 5 to 0, as follows:

Yes - Mayor Andrea Horwath
Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Cameron Kroetsch
Not Present - Ward 3 Councillor Nrinder Nann
Not Present - Ward 4 Councillor Tammy Hwang
Not Present - Ward 5 Councillor Matt Francis
Yes - Ward 8 Councillor John Paul Danko
Yes - Ward 12 Councillor Craig Cassar

(d) COMMUNICATIONS (Item 5)

(i) Correspondence from Rosa Beraldo respecting Light Rail Transit (LRT) is Not Needed (Item 5.1)

(Cassar/Horwath)
That the correspondence from Rosa Beraldo respecting Light Rail Transit (LRT) is Not Needed, be received.

Result: Motion CARRIED by a vote of 5 to 0, as follows:

Yes - Mayor Andrea Horwath
Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Cameron Kroetsch
Not Present - Ward 3 Councillor Nrinder Nann
Not Present - Ward 4 Councillor Tammy Hwang
Not Present - Ward 5 Councillor Matt Francis

Yes - Ward 8 Councillor John Paul Danko
Yes - Ward 12 Councillor Craig Cassar

(e) PRESENTATIONS (Item 8)

(i) Lessons Learned from Waterloo's Light Rail Transit System (Item 8.1)

Mike Murray, former Region of Waterloo Chief Administrative Officer, addressed the Committee respecting Lessons Learned from Waterloo's Light Rail Transit System, with the aid of a PowerPoint presentation.

(Cassar/Danko)
That the presentation by Mike Murray, former Region of Waterloo Chief Administrative Officer, respecting Lessons Learned from Waterloo's Light Rail Transit System, be received.

Result: Motion CARRIED by a vote of 6 to 0, as follows:

Yes - Mayor Andrea Horwath
Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Cameron Kroetsch
Yes - Ward 3 Councillor Nrinder Nann
Not Present - Ward 4 Councillor Tammy Hwang
Not Present - Ward 5 Councillor Matt Francis
Yes - Ward 8 Councillor John Paul Danko
Yes - Ward 12 Councillor Craig Cassar

(ii) Applying a Climate Justice Lens to the Light Rail Transit (Item 8.2)

McMaster University and Redeemer University students Diana Samanou, Griffin Kinzie, Isabela Sipos, Hannah Horlings, Kiana Craig, and Simon Batusic addressed Committee respecting Applying a Climate Justice Lens to the Light Rail Transit, with the aid of a PowerPoint presentation.

(Cassar/M. Wilson)
That the presentation from McMaster University and Redeemer University students Diana Samanou, Griffin Kinzie, Isabela Sipos, Hannah Horlings, Kiana Craig, and Simon Batusic respecting Applying a Climate Justice Lens to the Light Rail Transit, be received.

Result: Motion CARRIED by a vote of 6 to 0, as follows:

Yes - Mayor Andrea Horwath

Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Cameron Kroetsch
Yes - Ward 3 Councillor Nrinder Nann
Not Present - Ward 4 Councillor Tammy Hwang
Not Present - Ward 5 Councillor Matt Francis
Yes - Ward 8 Councillor John Paul Danko
Yes - Ward 12 Councillor Craig Cassar

For further disposition of this matter, refer to Item (f)(i)

(iii) Report respecting Getting Hamilton's LRT on the Right Track (Added Item 8.2(a))

(1) (Cassar/M. Wilson)
That the Report respecting Getting Hamilton's LRT on the Right Track, be received.

Result: Motion CARRIED by a vote of 6 to 0, as follows:

Yes - Mayor Andrea Horwath
Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Cameron Kroetsch
Yes - Ward 3 Councillor Nrinder Nann
Not Present - Ward 4 Councillor Tammy Hwang
Not Present - Ward 5 Councillor Matt Francis
Yes - Ward 8 Councillor John Paul Danko
Yes - Ward 12 Councillor Craig Cassar

(2) (Nann/Kroetsch)
That staff be directed to report back to the Light Rail Transit Sub-Committee respecting a Terms of Reference for establishing a baseline of measures that would enable the City to track changes over time with respect to a wide and comprehensive range of metrics including economic, environmental and social metrics.

Result: Motion CARRIED by a vote of 6 to 0, as follows:

Yes - Mayor Andrea Horwath
Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Cameron Kroetsch
Yes - Ward 3 Councillor Nrinder Nann
Not Present - Ward 4 Councillor Tammy Hwang
Not Present - Ward 5 Councillor Matt Francis
Yes - Ward 8 Councillor John Paul Danko

Yes - Ward 12 Councillor Craig Cassar

(f) NOTICES OF MOTION (Item 13)

Councillor M. Wilson relinquished the Chair to Councillor Danko in order to introduce the following Notice of Motion:

(i) Applying a Climate Justice Lens to the Light Rail Transit Recommendations (Added Item 13.1)

That staff be directed to review the presentation respecting Applying a Climate Justice Lens to the Light Rail Transit and report back to the Light Rail Transit Sub-Committee respecting what recommendations the City is acting on and if there are additional recommendations for the Light Rail Transit Sub-Committee to consider.

Councillor M. Wilson assumed the Chair.

(g) GENERAL INFORMATION / OTHER BUSINESS (Item 14)

(i) Amendment to the Outstanding Business List (Item 14.1)

(Cassar/Kroetsch)
That the following amendment to the Light Rail Transit Sub-Committee Outstanding Business List, be approved:

(1) Items Considered Complete and Needing to be Removed (Item 14.1(a))

(i) Metrolinx Community Benefits Approach (Item 14.1(a)(a))
Item on OBL: D
Addressed as Item 9.1 (PED23262) (on today's agenda)

Result: Motion CARRIED by a vote of 6 to 0, as follows:

Yes - Mayor Andrea Horwath
Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Cameron Kroetsch
Yes - Ward 3 Councillor Nrinder Nann
Not Present - Ward 4 Councillor Tammy Hwang
Not Present - Ward 5 Councillor Matt Francis
Yes - Ward 8 Councillor John Paul Danko
Yes - Ward 12 Councillor Craig Cassar

(h) PRIVATE AND CONFIDENTIAL (Item 15)

(i) Closed Session Minutes - September 25, 2023

(Cassar/Danko)
That the Light Rail Transit Sub-Committee Closed Session Minutes of September 25, 2023, be approved and remain confidential.

Result: Motion CARRIED by a vote of 6 to 0, as follows:

Yes - Mayor Andrea Horwath
Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Cameron Kroetsch
Yes - Ward 3 Councillor Nrinder Nann
Not Present - Ward 4 Councillor Tammy Hwang
Not Present - Ward 5 Councillor Matt Francis
Yes - Ward 8 Councillor John Paul Danko
Yes - Ward 12 Councillor Craig Cassar

(Cassar/Nann)
That the Committee move into Closed Session respecting Item 15.2, Light Rail Transit Strategic Site Selection – Update Report (PED23142(a)) (Wards 1,2, 3, 4 and 5), pursuant to Section 9.3, Sub-sections (c) and (k) of the City's Procedural By-law 21-021, as amended, and Section 239(2), Sub-sections (c) and (k) of the *Ontario Municipal Act, 2001*, as amended, as the subject matter pertains to a proposed or pending acquisition or disposition of land for City or a local board purposes; and a position, plan, procedure, criteria or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the City or a local board.

Result: Motion CARRIED by a vote of 6 to 0, as follows:

Yes - Mayor Andrea Horwath
Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Cameron Kroetsch
Yes - Ward 3 Councillor Nrinder Nann
Not Present - Ward 4 Councillor Tammy Hwang
Not Present - Ward 5 Councillor Matt Francis
Yes - Ward 8 Councillor John Paul Danko
Yes - Ward 12 Councillor Craig Cassar

(ii) Light Rail Transit Strategic Site Selection – Update Report (PED23142(a)) (Wards 1,2, 3, 4 and 5) (Item 15.2)

For disposition of this matter, refer to Item 2.

(i) ADJOURNMENT (Item 16)

(Cassar/Kroetsch)
That there being no further business, the Light Rail Transit Sub-Committee adjourned at 12:33 p.m.

Result: Motion CARRIED by a vote of 6 to 0, as follows:

Yes - Mayor Andrea Horwath
Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Cameron Kroetsch
Yes - Ward 3 Councillor Nrinder Nann
Not Present - Ward 4 Councillor Tammy Hwang
Not Present - Ward 5 Councillor Matt Francis
Yes - Ward 8 Councillor John Paul Danko
Yes - Ward 12 Councillor Craig Cassar

Respectfully submitted,

Councillor M. Wilson, Chair,
Light Rail Transit Sub-Committee

Carrie McIntosh
Legislative Coordinator
Office of the City Clerk

Submitted on Sat, 01/13/2024 - 11:21

Submitted by: Anonymous

Submitted values are:

Committee Requested

Committee
LRT Sub committee

Will you be delegating in-person or virtually?
In-person

Will you be delegating via a pre-recorded video?
No

Requestor Information

Eric Tuck
Amalgamated Transit Union Local 107
[redacted]
president@atu107.com
[redacted]

Preferred Pronoun
he/him

Reason(s) for delegation request
LRT Options Report- To Ensure Hamilton has the best available options to deliver a successful LRT to meet the transit needs of the future.

Will you be requesting funds from the City?
No

Will you be submitting a formal presentation?
Yes

Submitted on Mon, 01/15/2024 - 12:31

Submitted by: Anonymous

Submitted values are:

Committee Requested

Committee
LRT Sub-Committee on the 29th

Will you be delegating in-person or virtually?
In-person

Will you be delegating via a pre-recorded video?
No

Requestor Information

Requestor Information
Vic Wojciechowska
CUPE 3906
[redacted]

Preferred Pronoun
he/him

Reason(s) for delegation request
Speaking to the Keep Transit Public campaign.

Will you be requesting funds from the City?
No

Will you be submitting a formal presentation?
No

The sender designated this message as non-commercial mandatory content with the following note:

Change communication preferences

71 Main Street West
Hamilton, ON, L8P 4Y5
Canada

Submitted on Fri, 01/19/2024 - 15:20

Submitted by: Anonymous

Submitted values are:

Committee Requested

Committee
LRT Sub-Committee on January 29th

Will you be delegating in-person or virtually?
Virtually

Will you be delegating via a pre-recorded video?
No

Requestor Information

Requestor Information
Councillor Josh Matlow
City of Toronto
100 Queen Street West
Suite A17
Toronto, ON. M5H2N2
councillor_matlow@toronto.ca
4163927906

Preferred Pronoun
he/him

Reason(s) for delegation request
To discuss the Hamilton LRT.

Will you be requesting funds from the City?
No

Will you be submitting a formal presentation?
No

Submitted on Mon, 01/22/2024 - 12:45

Submitted by: Anonymous

Submitted values are:

Committee Requested

Committee
LRT subcommittee meeting January 29, 2024 @1pm

Will you be delegating in-person or virtually?
Virtually

Will you be delegating via a pre-recorded video?
No

Requestor Information

Requestor Information
John Di Nino
ATU Canada
61 International Blvd, Suite 210
Etobicoke, ON. M9W 6K4
president@atucanada.ca
4169380746

Preferred Pronoun
he/him

Reason(s) for delegation request
regarding operation and Maintenace of Hamilton LRT

Will you be requesting funds from the City?
No

Will you be submitting a formal presentation?
No

CITY OF HAMILTON
PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
Hamilton LRT Project Office

TO:	Chair and Members Light Rail Transit Sub-Committee
COMMITTEE DATE:	January 29, 2024
SUBJECT/REPORT NO:	Light Rail Transit Operations Models (PED23166(b)) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Abdul Shaikh (905) 546-2424 Ext. 6559 Farhad Shahla (905) 546-2424 Ext. 5360
SUBMITTED BY: **SIGNATURE:**	Abdul Shaikh Director, Hamilton LRT Project Office Planning and Economic Development Department 

RECOMMENDATION

That the City endorse Operations Model 2 (*Municipality performs passenger interface activities)* to be selected as the City's preferred LRT operations model with the right to opt-in (transition) to Operations Model 4 (*Municipality performs all aspects of Operational activities except facility operations*) after an initial 10-year term.

EXECUTIVE SUMMARY

The 2021 Memorandum of Understanding between the City and Metrolinx and the Ministry of Transportation notes that the City will be responsible to pay operations and maintenance costs for the Hamilton Light Rail Transit (LRT) project, save and except lifecycle maintenance costs. The Province has indicated they are open to input from the City regarding the role the City would like to play in the operations of the LRT; however, the final decision rests with Metrolinx.

At the July 26, 2023, LRT Sub-Committee meeting, staff presented Report PED23166 which provided an overview of potential LRT operating models and assessment criteria. On September 25, 2023 staff presented Report PED23166(a) to the LRT Sub-

Committee providing staff's preliminary assessment of the potential LRT operating models.

The purpose of Report PED23166(b) is to present staff's final assessment of the potential LRT operating models, and to seek Council's endorsement of Operations Model 2 (*Municipality performs passenger interface activities)* as the City's preferred LRT operations model with the right to opt-in (transition) to Operations Model 4 (*Municipality performs all aspects of Operational activities except facility operations*) after an initial 10-year term.

Alternatives for Consideration – See Page 15

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The Memorandum of Understanding with Metrolinx and the Ministry of Transportation commits the City to fund the costs of operations and non-lifecycle maintenance costs, whether or not the City is the operator. Staff's assessment of the relative financial impacts of the different potential operating models is summarized in Appendix "D" and Appendix "E" to Report PED23166(b).

Staffing: Staff's assessment of the relative staffing impacts of the different potential operating models is summarized in Appendix "B" to Report PED23166(b). The staff recommendation to endorse Model 2 would require the City to perform passenger interface activities for the LRT operations period. This will require dedicated City staffing resources for customer service, communications, fare enforcement and safety and security of customers and staff.

Legal: The City and Metrolinx will need to execute the legal agreements necessary for the operating and maintenance period, including performance and service levels, in accordance with the recommendations from the report and the terms and conditions set forth in the Memorandum of Understanding.

HISTORICAL BACKGROUND

On September 15, 2021, City Council ratified a Memorandum of Understanding with Metrolinx and the Ministry of Transportation to move forward with the 14-kilometre Hamilton Light Rail Transit (LRT) Project. The Memorandum of Understanding notes that the City will be responsible to pay operations and maintenance costs, save and except lifecycle maintenance costs. Metrolinx has indicated they are open to input from the City regarding the role the City would like to play in the operations of the LRT; however, the final decision rests with Metrolinx.

At the July 26, 2023, LRT Sub-Committee meeting staff presented Report PED23166 which provided an overview of potential LRT operating models and assessment criteria.

At the September 25, 2023, LRT Sub-Committee meeting staff presented Report PED23166(a) summarizing staff's preliminary assessment of the potential LRT operating models.

At the LRT Sub-Committee meeting on December 11, 2023, Mike Murray, consultant to the City for the Hamilton LRT project, presented Sub-Committee with a lessons-learned overview, highlighting the Region of Waterloo's approach to the operations and maintenance of the Waterloo ION LRT system.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

N/A

RELEVANT CONSULTATION

Staff undertook internal as well as external consultation, including a peer review, and also considered the input received at previous LRT Sub-Committee meetings.

- *LRT Project Office and Operational Models Working Group*

  The LRT Project Office has been supported by an Operational Models Working Group which includes representatives from various City departments who will interact with LRT planning and operations. The process involved development of assessment criteria followed by a ranking and weighting of the proposed criteria. These steps were followed by a detailed assessment of each option against the criteria and validation by the Operational Models Working Group .

  The LRT Project Office reports to the City's LRT Steering Committee, which includes directors from key departments, who provided input into the decision-making process.

  The LRT Project Office has received the endorsement of staff's recommendations from the City's Senior Leadership Team.

- *Consultation with Metrolinx*

  The LRT Project Office has engaged Metrolinx, as the asset owner, from the early stages of the process. This includes a series of workshops led by Metrolinx on the activities involved with operations and maintenance of the LRT. These workshops have assisted staff in their assessment of LRT models.

- *Strategic Advisory Services*

  Mike Murray, former Region of Waterloo Chief Administrative Officer, has been providing strategic advisory services to the City on the Hamilton LRT project for two years. Mr. Murray is a member of the City's Operational Models Working Group, providing input into the assessment of the LRT operating model. Mr. Murray shared a Waterloo ION LRT lessons-learned presentation at the December 11, 2023, LRT Sub-Committee.

- *Peer Review*

  Dennis Fletcher & Associates was retained by the LRT Project Office in August 2023 to provide peer review and assessment support to the development of operational models for Hamilton LRT. The purpose of this review was to provide verification and validation of the internal assessment by an experienced external source. The goal was to review the process, activities and recommendations with the LRT Project Office.

  Dennis Fletcher & Associates has observed and reviewed the overall process of operational model development and evaluation and found it to be a comprehensive process, with assessments that are accurate and consistent with industry practice and experience.

  The peer review assessment can be found in Appendix "C" to Report PED23166(b) "Peer Review Assessment for Hamilton LRT Operational Models."

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Operating Models

Staff has worked with Metrolinx to develop a list of operational activities and group related activities into three bundles:

a) Bundle 1: Light Rail Transit B Line Operations
b) Bundle 2: Light Rail Transit Vehicle Operations
c) Bundle 3: Passenger Interface Provider

These bundles are designed to assess the advantages, disadvantages and/or implications to the City in taking on any of the bundle activities. Details of each bundle were set out in Report PED23166 and presented at the July 26, 2023, LRT Sub-Committee meeting and are described in more detail in Appendix "A" to Report PED23166(b) "Operational Activities." Additional operational activities related to facility

operations as well as a series of maintenance activities (lifecycle and non-lifecycle) will be the responsibility of a third party selected through Metrolinx's procurement process.

Based on these bundles, the following four operating models were selected for review and assessment:

a) Model 1: Third party performs all 'Operational Activities.' Staff are not presently aware of any use of this model for LRT systems in Ontario.

b) Model 2: City performs 'Passenger Interface Provider Activities.' This model is presently used in the Region of Waterloo's LRT system and will also be used for the Hazel McCallion Line in Peel Region.

c) Model 3: City performs 'LRT Vehicle Operations and Passenger Interface Provider Activities.' Staff is not presently aware of the use of this model for LRT systems in Ontario. However, this model is similar GO Transit's operating arrangement, whereby a third party provides staffing and operates GO under a contract with Metrolinx.

d) Model 4: City performs all 'Operational Activities.' This is the approach planned for operating the Eglinton Crosstown and Finch West lines, whereby the TTC will perform all operating functions, and the City of Ottawa's Confederation Line, which is being operated by OC Transpo.

Table 1 summarizes the operational activity bundles and the operating models.

Table 1 – Light Rail Transit Operating Models

Operational Activities	Operating Model 1		Operating Model 2		Operating Model 3		Operating Model 4	
	City	Third Party	City	Third Party	City	Third Party	City	Third Party
Bundle 1: LRT B Line Operations		x		x		x	x	
Bundle 2: LRT Vehicle Operations		x		x	x		x	
Bundle 3: Passenger Interface Provider		x	x		x		x	

Assessment Criteria

As outlined in Report PED23166, staff developed four criteria for the assessment of the operating models. A series of questions were also provided for each criterion to assist with context and the application of the criterion. The assessment criteria and questions were further refined based on feedback received at the July 26, 2023, LRT Sub-Committee meeting and outlined in Report PED23166(a) at the September 25, 2023, LRT Sub-Committee meeting:

a) *Customer experience:* To assess a seamless experience between all modes of transit, ease of information, and continuity for the public and to determine if the model fosters opportunities for enhanced Inclusion, Diversity, Equity and Accessibility (IDEA).

b) *Interface(s) between parties:* To assess the interface(s) between Metrolinx, the City and various third parties and to determine the associated complexities with shared activities.

c) *Risks and liability:* To assess the types of risks and liabilities that exist for each model, their likelihood of occurrence, the consequences associated with each risk and the potential for mitigation.

d) *Cost to the City:* To assess the relative cost impact of each model to determine if this creates an additional funding liability for the City.

Report PED23166(a) also provided a ranking and weighting of each criterion per the following (1 is highest, 4 is lowest):

1. Customer Experience (35%);
2. Risks and Liability (30%);
3. Costs to the City (25%); and,
4. Interfaces between Parties (10%).

The first three criteria, i.e., Customer Experience, Risks and Liability, and Costs to the City, are considered to be of greatest priority. Customer Experience is the highest priority as it fundamentally addresses the success of the system to attract and retain ridership and serve the residents of Hamilton. Interfaces between Parties criteria are given lesser importance, as these can be mitigated through carefully planned operations.

Preliminary Assessment

Report PED23166(a) presented a preliminary review of the operating models against the four assessment criteria. The assessment of the operations models was anchored on a series of themes aligned with the selected criteria:

1) Maximize seamless customer experience with enhanced opportunities for Inclusion, Diversity, Equity and Accessibility;

2) Minimize risk exposure and liability for the City with consideration for 'ease of mitigation' of the risk or deficiency; and,

3) Maximize accountability.

Cost to the City

At the September 25, 2023, LRT Sub-Committee further elaboration on the "Cost to the City" criterion was requested.

The cost assessment in this exercise is qualitative, not quantitative, due to the complexities involved. Precise cost estimates of each model would require significant further work, as well as knowledge of operational aspects for the project that are not certain at this time. Estimates would not be able to be guaranteed until the bids are received through a competitive bidding process.

To undertake this qualitative analysis, staff referred to the 2011 analysis undertaken by the City with respect to the Preliminary Operations and Maintenance Plan. It identified items involved for the costing purposes of operations and maintenance of the LRT. The breakdown of these proportional costs is summarized in Table 2.

Table 2 – Operations and Maintenance Cost Share Breakdown (%)

Items	Approximate Cost Share
Labour Costs (Admin, operation, maintenance)	83.3%
Vehicle Maintenance Costs	2.7%
Track maintenance / rail replacement	0.6%
Power Costs	3.4%
Cost for parts for maintenance of Catenary and Traction Powered Sub Station (TPSS)	0.4%
Cost for parts for maintenance of Communication and fare collection equipment	0.2%
Office supplies	0.3%

Items	Approximate Cost Share
10% insurance, rates, property taxes, etc.	9.1%
Total	100%

Labour costs are estimated to represent more than 80% of the total costs involved in operations and maintenance, which therefore make it a key factor in staff's assessment of the "Cost to the City" criteria.

To complete this qualitative assessment, staff broke down the cost assessment into three categories: 1 - Cost Certainty, 2 - Start-Up (upfront) Cost and 3 - Ongoing Cost.

- *Cost Certainty*

  Per industry practices, it is generally expected that the greatest cost certainty can be achieved for procurement with contracts assigned to a third party, as costs will need to be presented as fixed (as part of the bidders' submissions) over a defined period of time for the operations phase. Cost certainty is low when the City takes on more responsibilities, as it depends on various factors, including the periodic collective bargaining process.

- *Start-Up (up-front) Cost*

  Start-up costs are costs associated with setting up facilities, equipment, and hiring and training staff required to undertake the operations activities. Start-up costs are typically high if the municipality has not provided the operation activity in the past or needs to be further expanded to meet the requirements of LRT infrastructure. As this would be the City's first LRT line, the start-up cost would be higher as the City takes on more up-front responsibilities compared to a third party with experienced staff from similar projects.

- *Ongoing Cost*

  Ongoing cost, in the context of operations activities, includes staff salaries, ongoing training, hiring, and onboarding training of new personnel. Operations will typically have lower ongoing costs with a third party provider, as operations agreements go through a procurement process which encourages multiple vendors or suppliers to propose competitive costs, driving prices down as each participant tries to offer the most competitive pricing to win the contract. To lower the cost, the third party could employ some efficiencies, such as fewer activities being outsourced to another third party on a retainer basis, rather than keeping full-time employees.

Staffing Requirements for LRT Operating Bundles

The City's 2011 Preliminary Operations and Maintenance Plan also outlined preliminary staffing requirements for the operations and maintenance of LRT. According to this report, a total of 182 staff would be required for operations and maintenance activities. Staffing requirements per the 2011 Preliminary Operations and Maintenance Plan can be found in Appendix B to Report PED23166(b).

Though this report does not break down the staffing requirement for the three bundled activities under consideration for this assessment, information is provided for context related to the types of positions which will be required. This information will be reassessed and validated as needed at a later stage.

Based on learning from similar projects, the following could be considered as an estimate for the staffing requirements for each bundle:

- Bundle 1: Up to 15 employees will be required as controllers, supervisors, etc.
- Bundle 2: Up to 70 employees will be required as operators, trainers, recruiters, supervisors, etc.
- Bundle 3: Up to 30 employees will be required as safety and security officers, fare enforcement officers, customer service and communications specialists, supervisors, etc.

In addition to the above, the City will need to establish an LRT operations service area, which will be responsible for managing all aspects of the transit service, including coordinating contract administration with Metrolinx. Anticipated positions in the LRT operations service area will include managerial, supervisory, administrative and contract management positions, the size and scope of which are yet to be determined based on the final model selected by the City.

Assessment of the Operating Models

The following is a high-level summary of the assessment of the operating models. A detailed summary of the assessment of the models can be found in Appendix D to Report PED231766(b).

- *Model 1*

  Model 1 may create customer confusion, require more efforts to coordinate schedules between HSR and a third party, with potential lack of alignment between fare enforcement and optimizing revenue for the City, minimal public-facing presence, with the least opportunity for the City to influence delivery of the City's mandate for enhanced Inclusion, Diversity, Equity and Diversity (IDEA).

For Model 1, customer service and fare enforcement/fare collection are additional interfaces anticipated compared to other common interfaces expected for Model 2. Some risks are primarily transferred to the third-party operator, the overall risk to the City is considered medium.

Model 1 would benefit the City by means of the greatest cost certainty due to a procurement contract with a third party, as costs will be fixed as part of the bidding process for a defined period of time over the operations period. Model 1 has the least upfront cost to the City to bring in new functions compared to other models. Ongoing costs should be comparable to Model 2 and slightly lower than Models 3 or 4.

- *Model 2*

  Model 2 presents a relatively seamless customer experience, as the City will be responsible for customer interface for both HSR and LRT. With this model, the City has an opportunity to implement measures which consider socio-economic factors when dealing with Customer Service and Fare Enforcement, such as addressing the barriers affordability and enforcement can present to some. This model provides an opportunity to achieve IDEA as the City takes on customer facing and customer service responsibilities. Model 2 has been assessed to have the fewest and least complex interfaces. Model 2 has been assessed to have the least overall risks to the City. Risks related to drivers, collisions, etc., are borne by the third party operator, not the City.

  Model 2 has slightly less cost certainty than Model 1, slightly more upfront cost to the City to bring in new functions compared to Model 1, similar ongoing costs to Model 1 and slightly lower ongoing costs than Models 3 or 4.

- *Model 3*

  Model 3 presents a relatively seamless customer experience, with considerable effort to coordinate schedules between HSR service and third party operation of LRT. The City could experience an increased public profile and increased opportunity to consider socio-economic factors when dealing with Customer Service and Fare Enforcement. A higher opportunity to achieve IDEA is expected as the City takes on more responsibilities, including driver recruitment and training. Model 3 has the highest number of interfaces between parties, which could lead to added challenges when managing accountability. With overall medium to high risk, operational activities are partially borne by the City, and as such Light Rail Vehicle driver related incidents in case of Light Rail Vehicle collisions present greater accountability on the part of the municipality.

Model 3 was assessed to have less cost certainty than Models 1 and 2, more upfront cost to the City to bring in new functions compared to Models 1 and 2 and ongoing costs similar to Model 4 and slightly higher than Models 1 and 2.

- *Model 4*

  Model 4 presents a relatively seamless customer experience, as the City would be responsible for customer interface for both HSR and LRT. With this model, the City would have a high public profile with increased opportunity for the City to consider socio-economic factors when dealing with Customer Service and Fare Enforcement. The highest opportunity for the City to influence delivery of the City's mandate for enhanced IDEA is anticipated. Model 4 contemplates a relatively high number of interfaces, with overall risk being high, as risks associated with all operational activities (Light Rail Vehicle drivers, Light Rail Vehicle-related collisions) are borne by the City.

  Model 4 provides the least cost certainty compared to the other models, as fewest activities are contracted with a fixed amount per year during the operation period. This model is presumed to have the most upfront cost to the City to bring in new functions compared to other models. The City would be required to expand some HSR customer service activities, create a fare enforcement program, hire, train and manage Light Rail Vehicle drivers, and operate and manage the LRT system. Ongoing costs are estimated to be similar to Model 3 and slightly higher than Models 1 and 2.

Assessment Results

Staff have assigned numeric scoring from 1 to 9 to assess the operating models; a higher score would mean a more favourable model for the City (i.e., Score 1 is the least favourable to the City, and Score 9 is the most favourable to the City). The scores were carefully allocated for each model based on the qualitative assessment information developed together with the Working Group.

Appendix "E" to Report PED23166(b) "Model Assessment Results" summarizes the scoring along with key rationale and overall weighted scores for each model.

Table 3 – Scoring Summary

Operations Model Assessment Criteria	Established Weights**	Model 1	Model 2	Model 3	Model 4
		Scores*	Scores*	Scores*	Scores*
Customer Experience	35%	2	5	6	7
Accountability - Interfaces between parties (# of interfaces, complexity and ease of mitigation)	30%	6	7	5	6
Risks and Liabilities (consequence, likelihood, overall risk)	25%	8	9	6	5
Cost (cost certainty, up-front and ongoing cost)	10%	6	6	3	2
Weighted Scores* **		**5**	**7**	**5**	**6**

** Higher score translates to more favourable/benefit to the City*
*** Level of importance to the City (higher weight means the criterion is more important to City)*
****Scores for operations model accounting for the criterion's weighing*

Some of the key observations from the assessment of the models are summarized below:

- For ‘Customer Experience’, targeted questions were designed for fair assessment of each model. According to Table 3, Model 4 appears to be the most favourable to the City due to showing the highest score (7) from a Customer Experience perspective.

- For ‘Accountability – Interfaces between parties’, relevant qualifiers such as number of known interfaces, complexity of the interface, and ease of mitigation of each interface are used to numerically identify the most favourable model to the City. As shown in Table 3, Model 2 appears to be the most favourable to the City, from an accountability/interface perspective, with the highest score (7) compared to the other models.

- For ‘Risks and Liabilities’, relevant qualifiers such as risk consequence and risk likelihood are used to quantify the overall risk associated with every risk known and identified for the models. As shown in Table 3, Model 2 appears to be the most favourable to the City, from a Risks and Liabilities perspective, with the highest score (9) compared to the other models.

- For ‘Cost’, relevant cost components such as cost certainty, upfront cost and ongoing cost are used to quantify the overall cost score associated with the models. As shown in Table 3, Models 1 and 2 appear to be the most favourable to the City, from a cost perspective compared to the other models.

The assigned weights, as an indication of the level of importance of the City for each criterion, are used to generate the overall scores across all models. Considering the established weights for the models, Table 3 shows Model 2 has the highest overall weighted score (7), followed by Model 4 with the second highest overall weighted score (6).

Based on staff’s analysis, Model 2 is recommended as the preferred operating model for the City as it would:

- provide relatively seamless customer service, with the City providing the customer-facing functions;
- minimize risks associated with the transition from design and construction to operations and maintenance;
- minimize the City's risk related to operational activities;
- provide greater cost-certainty to the City; and,
- likely be one of the lowest cost options for the City.

Transitional Approach

As discussed in the September 25, 2023, Report PED23166(a), though the operating models have been analysed as discrete models for the purposes of the assessment, in practice opportunities exist for “transition” between the models. For example, there can be an initial “start-up” period in which certain functions are operated by a third party, with an option for the City to assume responsibility for those functions after an initial period of time. This can be an automatic option or an optional “opt-in” approach.

Transitional operations models are being used in other jurisdictions. For example, Waterloo Region’s LRT system has a contract with a third party operator for an initial 10 year operations period, with up to four five-year extensions. Waterloo Region has the option to operate LRT after the expiry of the initial period. Similarly, Metrolinx has an agreement with the TTC to operate the Eglinton Crosstown LRT line for an initial period of 10 years with two successive renewal terms, each for an additional 10 years.

Staff is recommending a transitional operations model for Hamilton LRT. This would entail operations Model 2 being deployed, at minimum, for the “start-up” phase for the duration of 10 years, followed by an optional “opt-in” to Model 4.

Staff would bring forward a recommendation report in year seven of the operations and maintenance period which would assess the operations-to-date of the LRT system and recommend whether or not the LRT operational model should transition from Model 2 to Model 4 after the 10-year operation and maintenance “start-up” period.

It is expected that the transition would require approximately 18-24 months lead time as a transition period to allow time for third party notification, for the City to hire and train appropriate staff, to establish Standard Operating Procedures, infrastructure setup, and shift to Model 4 at the beginning of year 11.

The benefits associated with the approach of endorsing Model 2 with the option to transition to Model 4 include:

- The City taking on the role as Passenger Interface Provider role from the outset, which would provide a seamless customer service experience, would give the City an appropriate profile with transit customers and would provide an opportunity to advance the City's objectives and policies related to Inclusivity, Diversity, Equity and Accessibility.

- Minimizing the risks associated with the transition from the design and construction phases to the start-up, commissioning, operations and maintenance phase, for the 10 year “start-up” period, as a single third party entity would be responsible for all activities.

- Minimizing the City's risks related to operations for the initial operating period.

- Providing an opportunity for the City to observe and monitor LRT operation activities, driver management, and LRT line operation, and provide the necessary knowledge and experience for the City to make an informed decision about the risks, costs and benefits of the City taking on these operational activities at an appropriate time in the future, i.e., after the 10 year operation and maintenance “start-up” period.

- Providing an opportunity for the City to choose to take on additional operational activities in the future (transition to Model 4), assuming the City would have access to the systems and processes which had been developed for the initial operations period, which would make it more efficient for the City to put in place the necessary operating procedures.

Maintenance Activities:

At the July 26 and September 26 LRT Sub-Committee meetings, Sub-committee members asked for potential consideration of an additional model within the assessment, referred to as "Model 5", in which the City would perform all maintenance activities in addition to undertaking all operational activities of LRT. Staff noted in Report PED23166 *"Metrolinx has recommended that the four maintenance activities listed above [constituting all non-lifecycle and lifecycle maintenance activities] be performed by the third party…"*. To provide further clarity, the Ministry of Transportation has provided the City with a letter, included as Appendix "F", " Letter to City of Hamilton from Ministry of Transportation regarding maintenance activities, January 22". As noted in the letter, lifecycle maintenance activities will remain with a third party contracted by the Province. There may be opportunities for the City to take on some non-lifecycle maintenance activities (e.g. custodial activities such as platform snow clearing, garbage collection, etc.), however, this is a decision which would be made at a later date.

Next Steps

Upon receiving Council endorsement of an operating model, staff will present the preferred model to Metrolinx. Metrolinx, as owner of the Hamilton LRT project and assets, will ultimately decide on the operating model.

If Metrolinx agrees to the City's preferred operating model, Metrolinx and the City will develop the requirements for procurement and execute the legal agreements necessary for the operating and maintenance period in accordance with the terms and conditions in the Memorandum of Understanding. Procurement documents will specify the roles and responsibilities for the City and the third-party operator during the operation phase of the LRT project.

Staff will work with Metrolinx to assess non-lifecycle maintenance activities and identify specific activities the City should be performing as an alternative to a third party through Metrolinx procurement. Staff will bring this information to the LRT Sub-Committee at a later date.

ALTERNATIVES FOR CONSIDERATION

It is important to note whichever operating model is selected for Hamilton LRT, the City will be responsible for operations and maintenance costs, except lifecycle maintenance.

<u>Alternative One – Select an Alternative Model</u>

Council could decide to endorse an alternative model. This is not recommended for the reasons outlined in this report.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to Report PED23166(b) – Operational Activities
Appendix “B” to Report PED23166(b) – Staffing Requirements for Operations and Maintenance
Appendix “C” to Report PED23166(b) – Peer Review Assessment for Hamilton LRT Operational Models
Appendix “D” to Report PED23166(b) – Detailed Operations Model Assessment
Appendix “E” to Report PED23166(b) – Model Assessment Results
Appendix “F” to Report PED23166(b) – Letter to City of Hamilton from Ministry of Transportation regarding maintenance activities, January 22

Operational Activities

Activity Bundles	List of Main Activities*
Bundle 1: Light Rail Transit B Line Operations	Activities include, but are not limited to, the following: - Light Rail Transit Operations Control Centre (24/7/365) - manage on-time service performance and disruptions, service in the event of an emergency, and implementing service recovery post-emergency, including coordination with City traffic and transit - unplanned event management, including coordination with power utilities, HSR, Traffic, etc. - emergency event oversight - scheduling and planning of LRT service, including planned event management - establishing, monitoring and reporting operational performance (on-time performance, root cause analysis of service faults, etc) - safety and security of the LRT line, including guideway and corresponding infrastructure. i.e., traction powered substations, overhead catenary systems, platform stops - power control authority for traction power with local hydro provider - training to third parties who access right of way (emergency services, utility companies, etc) - associated employee management activities for groups listed above, including staffing and forecasting, recruitment, training/testing, scheduling, performance management
Bundle 2: Light Rail Transit Vehicle Operations**	Activities include, but are not limited to, the following: - operating LRT vehicles (i.e. drivers) - driver staffing and forecasting, recruitment, training/testing, scheduling, performance management; - driver performance, including safe operation of vehicles and adhere to schedules - driver adherence to safety-sensitive protocols, specifically during service disruptions and emergencies

Activity Bundles	List of Main Activities*
Bundle 3: Passenger Interface Provider	Activities include, but are not limited to, the following: - overall customer experience: call centre management, public inquiries, issues management, public affairs and media relations - communications, including meeting AODA standards for service disruptions - safety and security of employees and passengers on board the vehicles and at stops, including vandalism, loitering, threat response, medical emergency response - fare collection and enforcement, fraud investigation and fare evasion ticketing - passenger communication during emergencies

* List of activities is not exhaustive. List is intended to highlight major components for illustrative and comparison purposes.

** Typical industry practice includes combining Bundle 2 (Light Rail Transit Vehicle Operations) within Bundle 1 (Light Rail Transit B Line Operations). Staff has "deconstructed" these two bundles in order to allow the City to consider if it wants to provide either, neither or both of Bundles 1 and 2.

Staffing Requirements for Operations and Maintenance (2011)

The information presented in the table below is based on the LRT Preliminary Operations and Maintenance Plan (2011). This report was completed by a consultant to provide a high-level estimate for the number of employees required to undertake typical LRT operation and maintenance activities. As this work was undertaken in 2011, it may not reflect the City's current organization structure or job roles or the current design or operating assumptions of the Hamilton LRT Project. The information below is for illustrative purposes only.

Department (Service Area)	**Job Types (FTEs)**	**Total Number of Employees (FTEs)**
General Manager's Office	• General Manager (1) • Administrative Assistant (1)	2
Transportation Department	• Manager (1) • Administrative Assistant (1) LRT Operations Section • Operators (72) Operations & Control Centre • Supervisors (3) • Controllers (9)	86
Equipment Department	• Manager (1) • Administrative Assistant (1) LRT Repair Section • Superintendent (1) • Inspectors (2) • Technicians (6) • Mechanics (4) • Cleaners (4) • Operators (2) Traction & Body Repair Section • Supervisors (2) • Technicians/Mechanics (4)	27
Plant Department	• Manager (1) • Administrative Assistant (1) Facilities Section • Supervisor (1) • Plumber (0.7) • A/C Technician (0.7) • Electrician (0.7) • Cleaners (4) Electrical Systems Section • Supervisor (1) • Signals Technicians (3) • Substation, O/H Electricians (3) • Communications Technicians (3) Track & Way Section	29.1

Department (Service Area)	Job Types (FTEs)	Total Number of Employees (FTEs)
	• Supervisor (1) • Track Maintainers (4) • Equipment Operators (3) Engineering Section • Structural/Architectural/Track (1) • Electrical Engineer (1)	
Administrative Department	• Manager (1) • Administrative Assistant (1) Finance • Superintendent (1) • Budget (1) • Accounts Payable/Receivable (1) • Accountant (1) • Pay Office (1) • Clerical (1) • Fare Clerk (1) Legal • Solicitor (0.5) Human Resources • Recruiter (1) • Health Services (1) • Clerk (1) Training • Supervisor (1) • Trainers (Transportation) (1) • Trainers (Equip. & Plant) (1) • Trainers (Security) (1) Materials & Procurement • Buyer (1) • Stores Clerk (1) Marketing, Public Relations • Marketing & PA Representative (1) IT Support • Support Staff (1)	20.5
Safety & Security Department	• Manager (1) • Administrative Assistant (1) Safety & Fire Prevention • Safety Coordinator (1) • Safety and Fire Prevention Technicians (3) Security • Supervisors (3) • Building & Gate Attendants (6) • Audit/Quality Assurance (1)	17

Department (Service Area)	Job Types (FTEs)	Total Number of Employees (FTEs)
	• Environment (1)	
Total Number of Employees (FTEs)		**182**

MEMO

2023-10-18
Project: 23-12

Hamilton LRT Operational Models Assessment Review

Purpose

Dennis Fletcher & Associates (DFA) was retained by the City of Hamilton LRT Project Office in August 2023 to provide peer review and assessment support to the development of operational models for the Hamilton LRT.

This review's purpose was to provide verification and validation of the internal assessment by an experienced external source with a broader range of experience and local understanding and expertise.

The goal was to review the process, activities, and recommendations from the LRT project Office to the LRT Sub-Committee.

Process Context

Following Council's approval in 2017 of a Memorandum of Understanding for the Hamilton LRT project, Metrolinx sought input from the City regarding a preferred operational model outlining the responsibilities for the various operational activities. This framework is to be independent of cost responsibilities, is not to include facility and maintenance activities and a final decision is to remain with Metrolinx.

The assessment and evaluation process was divided into three stages:

- **Stage 1**: Develop models and assessment framework. The results of this stage of work were presented to the Sub-committee in July 2023.
- **Stage 2:** Preliminary Analysis of operational models. The results of this stage of work were presented to the Sub-committee in September 2023
    - **Stage 3:** Final Analysis and recommendations. The results of this stage are to be presented to the sub-committee in November 2023

This review was initiated during Stage 2, but included a review of the outcomes of Stage 1

The LRT project office is supported in this work by an Operational Models Working Group (OMWG) comprising representatives of various City departments that will interact with the LRT planning and operations. The Project Office reports to the LRT Sub-Committee through the LRT Steering Committee, including senior staff from key departments and the Senior Leadership Team, among others. This ensures comprehensive vetting of analysis and recommendations.

The following sections of this review examine the evaluation activities and outcomes of this process.

Evaluation Activities and Outcomes

Activity Bundling and Model Development

The development of operational models began with developing an understanding of the activities to be considered. These various bundles were then used to construct a range of operational models that covered various combinations of allocation of responsibilities for the bundles between the City and the contracted third party (through Metrolinx).

Activity Bundling

Staff developed three activity models to from the bass of the operational model options:

- Bundle 1 – including LRT network operations
  - Operations Control Centre
  - Scheduling, planning and service management
  - Safety, security and emergency management
- Bundle 2 – including LRT vehicle operations
  - Driving LRT vehicles
  - Operator staff management (recruiting, training etc.)
- Bundle 3 – including passenger interface activities
  - Customer experience (call centre, lost and found etc.)
  - Fare collection and enforcement
  - Customer communications
  - Passenger safety and security

Staff noted that the separation of network and vehicle operations into distinct bundles is not common in the industry but was done to give the City the option to consider these activities separately.

Separating these two aspects of the operations is not standard industry practice for a variety of reasons, which were made clear in the detailed assessment. However, the approach taken by staff did achieve the stated goal of allowing consideration of both aspects separately, and ultimately led to a better understanding of the implications of the models among the OMWG members and improved the final assessment for presentation to the Sub-Committee.

Operational Model Options

Operational models for consideration were developed by creating different distributions of responsibility for each activity bundles between the City and the third party. Figure 1 shows the characteristics of the four models.

Figure 1 - Operational Model Options

Operational Activities	Operational Model 1		Operational Model 2		Operational Model 3		Operational Model 4	
	Third party Performs all Operational Activities		City performs Passenger Interface Provider Activities.		City performs Passenger Interface Activities and LRT Vehicle Operations		City performs all aspects of Operational Activities except for Facility Operations	
	City	Third Party	City	Third Party	City	Third Party	City	Third Party
Bundle 1: LRT B Line Operations		X		X		X	X	
Bundle 2: LRT Vehicle Operations		X		X	X		X	
Bundle 3: Passenger Interface Provider		X	X		X		X	

Model 1, where the third party is responsible for all aspects of the operation, is commonly referred to as a Design-Build-Operate-Maintain (DBOM) model, and in the Metrolinx setting, often expanded to include Financing (DBFOM). Both the Waterloo ION and Ottawa Confederation Line projects were originally conceived as DBFOM models but are being implemented as somewhat modified models. No other current Ontario transit projects are being implemented as strict DBFOM models. In the United States, DBOM models are not uncommon, but very few to date have included the financing aspect.

In Model 4, where the municipality takes responsibility for all operational activities (excluding facility), the third party is primarily responsible for the Design-Build-Finance-Maintain components (DBFM). The current TTC projects, Eglinton Crosstown and the Finch West LRT, as well as Ottawa's Confederation Line, operate as DBFM models. In each case, it was considered vital by the respective agencies to keep control of both the vehicle operations and customer interface elements.

These two models, Model 1 and Model 4, represent the traditional approaches to private sector project involvement.

Model 2, where the municipality takes responsibility for the passenger interface elements of the service, is actually a modified DBFOM model, where the third party retains operational responsibility for all network and LRT operations. Model 2 is a special case where the City retains customer interface elements. Both Waterloo ION and the Mississauga Hazel McCallion Line use this model, though they are often called DBFOM applications.

Model 3 is a unique application derived from the non-traditional separation of activity Bundle 1 and Bundle 2. There are no current known LRT projects using this model.

The process of model development using the unique bundling approach created a robust set of operational models for consideration. The range of models was both exhaustive and comprehensive within Metrolinx's guidelines and presented logically.

Evaluation Process

The evaluation process was designed to be a collaborative effort between LRT Project Office staff and the OMWG. The process involved two preliminary steps: development of assessment criteria followed by a ranking and weighting of the proposed criteria. These steps were followed by a detailed assessment of each option against the criteria and validation by the OMWG.

Assessment Criteria

LRT Project office staff developed preliminary assessment criteria, based on their expertise and experience in other systems. Each of the four criteria was further elaborated in a set of questions that not only helped articulate the implications of the criterion but provided a basis for detailed assessment.

The four criteria are:

- **Customer experience**, including aspects of communication, planning and scheduling implications, City profile with customers and such
- **Risk and liability**, including assessment of likelihood and consequence of identified risks and potential for mitigation
- **Cost,** including both overall cost and potential for cost certainty and assessing operating and maintenance cost as well as costs of new functions
- **Interface between parties**, assessing the number and complexity of interfaces between agencies for each model, with the understanding that fewer and less complex interfaces are preferred.

Ranking and Weighting

Developing relative weights for the assessment criteria included a two-step process where the members of the OMWG first ranked the assessment criteria from most to least important without regard for weights. A workshop process was used to reach consensus on the overall ranking of the criteria. Once established, the ranked criteria were further reviewed in a workshop process to reach a consensus on the relative weights of the criteria.

In any process of ranking and weighting evaluation criteria, there is a risk of introducing bias by the key staff developed in the way the criteria are presented. Even the order in which the criteria are described to evaluators can be perceived as a bias.

This process was not immune to that influence, but staff went to considerable lengths to try to eliminate bias through careful consideration of all criteria and encouraging OMWG members to consider alternatives.

The initial ranking process resulted in the criteria being ranked, from most important to least as

- Customer experience
- Risk and liability
- Cost
- Interface between parties

More than 90 percent of participants rated Customer experience at 35 to 40 percent, Risk and liability at 30 percent, Cost at 25 to 30 percent and interfaces at 10 percent.

There was sone discussion of minor variations in some of these values, within similar ranges. However, the initial values were accepted as consensus with the understanding that the weights would be applied qualitatively rather than strictly quantitatively.

This notion of a more qualitative assessment is appropriate given the level of data and information available (for example, specific costs are unknown at this time)

Detailed Assessment

This review is not to revisit the detailed assessment but to examine the process and identify areas where consideration was inadequate or misaligned with industry practice and experience.

Initial assessments for each model were prepared by Project Office staff, then reviewed by OMWG members. DFA participated in assessment, both in the development phase and the review with OMWG.

The conclusion is that the detailed assessment is comprehensive. An assessment such as this cannot be exhaustive, but the assessment was certainly comprehensive and addressed a wide range of key aspects. Considering industry practice and experience, no important aspects of the assessment relevant to the Hamilton context were left out.

Challenges and suggestions from the Sub-Committee and OMWG were welcomed and incorporated into the assessment. A key example is the IDEA principles which were incorporated and adjusted to be consistent with the assessment of other criteria.

Presentation

A key challenge in this process was creating a summary of the assessment that was detailed enough to reflect key elements and nuance of the assessment in each area, while being summarized at a level that would help comprehension by senior decision-makers.

Staff put considerable effort into achieving this balance, and in DFA's opinion, the overall implications of the detailed assessment are accurately reflected in the summary material.

In DFA's opinion, the risks associated with Model 3, where third party private sector contractors would be responsible for directing the work activities of represented municipal employees are somewhat understated in the summary presentation, though they were well understood by the evaluators. However, in this case, strengthening the presentation of an argument against Model 3 merely re-enforces the overall recommendation.

Evaluation Outcomes

Generally, the results of the evaluation reflected concern over Model 1 where the City would not have control over customer facing elements. As noted here, all other Ontario examples of DBFOM models (Model 1), separate the customer interface elements from the operations aspects, creating a modified DBFOM model, which in this case is Model 2.

Model 3 was the least preferred, with the highest level of risk.

Model 4 was also supported, with the concern over the City's lack of experience in key areas of network management and operations, particularly in the short-term.

Recommendations

The recommendation derived from this process, to be presented to the Sub-Committee in November, is "That the City adopt Operations Model 2 as the most preferred model for Hamilton, with the City reserving the right to opt-in to Operations Model 4 after 10 years of LRT operations".

This review supports that recommendation, with the caveat that a potential transition after some period of time must be addressed in some detail in the initial contract considerations, as it will have financial implications for the third party contractor.

The recommendation includes a summary of the merits of the recommendation:

Benefits associated with Models 2 and Model 4 Hybrid, include but are not limited to:

- The City taking on the role as Passenger Interface Provider from the outset (Model 2)
- Minimizing the risks associated with the transitions from the design and construction phases to the start-up, commissioning, operations and maintenance phases
- Minimizing the City's risks related to operations for the initial operating period

- An opportunity for the City to observe and learn and take over operations when the initial commissioning period has passed and with any outstanding matters addressed. **Option for the City to Model 4, as decided by the City.**

DFA supports this rationale, adding that the City maintaining control of the passenger interface elements is of paramount importance

Conclusions

In summary, DFA has observed and reviewed the overall process of Operational Model development and evaluation directed by the LRT Project Office and found it to be a comprehensive process, with assessments that are accurate and consistent with industry practice and experience.

Further DFA supports the recommendation to adopt Model 2, with the future option to transition to Model 4.

Detailed Operations Model Assessment

City of Hamilton -
LRT Project Office
Hamilton LRT
Project Assistance
Operations Models Assessment Matrix - Nov 2023 - Draft.xlsm

Assessment Criteria	Model 1 - Third Party performs all Operational Activities.	Model 2 - Municipality performs Passenger Interface Provider Activities; Third Party Responsible for Everything Else (HC, Waterloo)	Model 3 - Municipality performs Passenger Interface Provider and LRT Driver Management Activities; Third Party Responsible for LRT Line Operations and Facility Operations	Model 4 - Municipality performs all aspects of Operational Activities except for Facility Operations. (TTC, Ottawa)
<u>Customer Experience</u> Is the model likely to contribute to a seamless customer service experience between bus service and the LRT service?	- High potential for overlaps and/or gaps in customer experience - High potential for customer confusion about who to call for inquiries - Significant effort needed to coordinate customer communication between the City and third party - High potential for inconsistent public messaging from the City and third party - Creates complexities for call centre, incident management, reporting and lost/found - Creates complexities related to stop communications: multiple screens/signs - Creates barriers for customer experience improvements, leading to customer experience issues/confusion may impact overall HSR brand.	- Should be relatively seamless customer experience, as City will be responsible for customer interface for HSR and LRT.	- Should be relatively seamless customer experience, as City will be responsible for customer interface for HSR and LRT.	- Should be relatively seamless customer experience, as City will be responsible for customer interface for HSR and LRT.
Is the model providing benefits to schedule and service integration requirements of the project?	- High level of effort will be needed to coordinate schedules between HSR and third party. - Coordination required through Metrolinx creates more complexities. - Potential for confusion when unpredicted schedule disruptions occur.	- Effort will be needed to coordinate schedules between HSR (City) and third party. - Coordination required through Metrolinx creates more complexities. - Potential for confusion when unpredicted schedule disruptions occur.	- Effort will be needed to coordinate schedules between HSR (City) and third party.	- Schedule and service integration should be relatively seamless, as City will be responsible for both HSR and LRT operations. - Will need to coordinate with Metrolinx and third party if any schedule changes have an impact on maintenance activities (should be minimal).
Does the model give the City the desired profile with transit customers?	- City would have limited presence on LRT system or vehicles. - Low ability to influence and provide quality control over customer interactions. - Potential for lack of alignment between fare enforcement activities, and optimizing revenue to the City.	- City will have public profile as the customer interface provider (although not as the system operator). - City will have the ability to optimize fare enforcement activities to achieve best balance between customer service and revenue objectives.	- City will have high profile as the Passenger Interface Provider (PIP) and Light Rail Vehicle (LRV) driver. City will be seen as responsible for system successes and any challenges/issues. - City will have the ability to optimize fare enforcement activities to achieve best balance between customer service and revenue objectives.	- City will have high public profile as the operator of the LRT and as the customer interface provider. City will be responsible for system successes and any challenges/issues. - City will have the ability to optimize fare enforcement activities to achieve best balance between customer service and revenue objectives.

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Does this model provide appropriate opportunities for the City to consider socio-economic circumstances when dealing with transit customers? Does the model foster opportunities for enhanced Inclusion, Diversity, Equity and Accessibility (IDEA) for the public?	- Limited or no opportunity for the City to consider socio-economic factors when dealing with customer service and fare enforcement i.e., addressing the barriers that affordability and enforcement can present to some. - Least opportunity for the City to influence delivery of the City's mandate for enhanced IDEA. - Low ability to influence and provide quality control over customer interactions.	- Increased opportunity (compared to Model 1) for the City to consider socio-economic factors when dealing with Customer Service and Fare Enforcement (i.e. addressing the barriers that affordability and enforcement can present to some). - Moderate opportunity for the City to influence delivery of the City's mandate for enhanced IDEA (coordination required with Metrolinx, and third party).	- Increased opportunity (compared to Model 1) for the City to consider socio-economic factors when dealing with Customer Service and Fare Enforcement i.e. addressing the barriers that affordability and enforcement can present to some. - Higher opportunity for the City to influence delivery of the City's mandate for enhanced IDEA; coordination required with Metrolinx, and third party (compared to Models 1 and 2).	- Increased opportunity (compared to Model 1) for the City to consider socio-economic factors when dealing with Customer Service and Fare Enforcement i.e. addressing the barriers that affordability and enforcement can present to some. - Highest opportunity for the City to influence delivery of the City's mandate for enhanced IDEA; coordination required with Metrolinx, and third party.
Does the model allow for the integration/coordination of some customer facing roles to enhance efficiency? (e.g. security also performs fare enforcement and passenger relations)?	- Two separate customer service departments (HSR and LRT) would introduce inefficiencies (duplication of some effort). - Same party (third party) would be responsible for all LRT customer facing functions, which would potentially enhance LRT customer service efficiency.	- This should be efficient as the City will provide fully integrated customer service activities (e.g., one call centre, one communications team, one escalation process, etc). - Same party (City) would be responsible for all LRT customer facing functions, which would potentially enhance LRT customer service efficiency.	- This should be efficient as the City will provide fully integrated customer service activities (e.g. one call centre, one communications team, etc). - Same party (City) would be responsible for all LRT customer facing functions, which would potentially enhance LRT customer service efficiency.	- This model should be efficient as the City will provide fully integrated customer service activities (e.g. one call centre, one communications team, etc). - Same party (City) would be responsible for all LRT customer facing functions, which would potentially enhance LRT customer service efficiency.
<u>Accountability - Interface(s) between parties</u> In the model, what interfaces exist between the City and other parties? How complex are the interfaces between the City and other parties?	Model 1 contemplates some commonly known interfaces as Model 2, with the addition of customer service and fare enforcement/fare revenue interfaces. Interfaces in this model are mainly Moderate in complexity. For this model, known interfaces include but are not limited to the following: - Scheduling: Third party will be responsible for Light Rail Vehicle (LRV) scheduling; The City (HSR) will be responsible for bus scheduling. Will need close coordination to integrate scheduling, hours of operation etc. Complexity: Low to Moderate - Bus Bridging: Third party will be responsible for LRT operations, but the City (HSR) will be responsible for providing buses and operators needed for bus bridging, for planned and emergency service disruptions. Complexity: Moderate	Model 2 contemplates commonly known interfaces as model 1 with the addition of operation/communications interface. This model has the fewest number of interfaces. Interfaces in this model are mainly Low to Moderate in complexity. For this model, known interfaces include but are not limited to the following: - Scheduling: Third party will be responsible for Light Rail Vehicle (LRV) scheduling; The City/HSR will be responsible for bus scheduling. Will need close coordination to integrate scheduling, hours of operation, etc. Complexity: Low to Moderate - Bus Bridging: Third party will be responsible for LRT operations, but the City/HSR will be responsible for providing buses and operators needed for bus bridging for planned and emergency service disruptions. Complexity: Moderate	Model 3 has the highest number of known interfaces, including many associated with model 2, with the addition of operation/communications, LRV Operations/Network Operations and Transition from construction to operations. Interfaces in this model are mainly Moderate to High in complexity. For this model, known interfaces include but are not limited to the following: - Scheduling: Third party will be responsible for LRV .scheduling; The City / HSR will be responsible for bus scheduling. Will need close coordination to integrate scheduling, hours of operation etc. Complexity: Low to Moderate - Bus Bridging: Third party will be responsible for LRT operations, but the City/HSR will be responsible for providing buses and operators needed for bus bridging – for planned and emergency service disruptions. Complexity: Moderate	While many interfaces are expected to be resolved compared to the other models, Model 4 still contemplates some of the interfaces identified for other models, with the addition of some unique interfaces, such as Operations vs Maintenance, Maintenance Scheduling, LRT's Facility Operations, etc. Interfaces in the model are mainly Moderate to High in complexity. For this model, known interfaces include but are not limited to the following: - Operations monitoring/payments - Third party is responsible for operation facility; Metrolinx is responsible for monitoring Project Agreement (PA) compliance; The City is responsible for paying all operating costs. The City needs efficient, effective mechanisms to obtain operations monitoring/PA compliance information to determine appropriate payments and/or penalties. Complexity: Low

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<u>Accountability - Interface(s) between parties</u> In the model, what interfaces exist between the City and other parties? How complex are the interfaces between the City and other parties? **(continued)**	- Emergency Response: Third party will be responsible for responding to LRT-related emergencies; especially collisions involving LRVs. The City will likely also be involved in some aspects of emergency response (e.g., related to traffic operations; EMS; fire; others?) Protocols will be needed for the communication of notifications of emergencies between LRV and general traffic. Complexity: Moderate - Operations Monitoring/Payments: Third party is responsible for operations; Metrolinx is responsible for monitoring Project Agreement (PA) compliance; the City is responsible for paying all operating costs. The City needs efficient, effective mechanisms to obtain operations monitoring/PA compliance information to determine appropriate payments and/or penalties. Complexity: Moderate - Traffic Signal Operation: Higher level of coordination for different modes of transportation will be required between LRT's Operation Control Centre and the City's Traffic Signals Operations. Complexity: Moderate - Customer Service: The City and third party will both be providing customer service. Will need to be close coordination between them with respect to responsibility for various calls, complaints, and transfer and tracking protocols. Complexity: Low to Moderate. - Fare Revenue/Fare Enforcement: Depends on physical design of system and platforms, and location of "fare-paid zone". City is entitled to fare revenue, but third party is responsible for fare enforcement. May be motivation for third party to minimize (cost of) fare enforcement, which may reduce City's revenue. Complexity: Moderate. - Agreements: Anticipated that Metrolinx will have a PA with third party for design, construction, maintenance, network, LRV, and facility operation), and a separate agreement with the City for Customer interface. This may be cumbersome as the many interfaces between City and third party will need to be managed by Metrolinx, as there likely will not be an agreement between City and third party. Complexity: Moderate to High.	- Emergency Response: Third party will be responsible for responding to LRT-related emergencies, especially collisions involving LRVs. The City will likely also be involved in some aspects of emergency response (e.g., related to traffic operations; EMS; fire). Complexity: Moderate - Operations Monitoring/Payments: Third party is responsible for operations; Metrolinx is responsible for monitoring Project Agreement (PA) compliance; The City is responsible for paying all operating costs. The City needs efficient, effective mechanisms to obtain operations monitoring / PA compliance information to determine appropriate payments and/or penalties. Complexity: Moderate - Traffic Signal Operation - Higher level of coordination for different modes of transportation will be required between LRT's Operation Control Centre and the City's Traffic Signals Operations. Complexity: Moderate - Fare Revenue/Fare Enforcement: Depends on physical design of system and platforms, and location of "fare-paid zone". City is entitled to all fare revenue, but third party is responsible for fare enforcement. May be motivation for third party to minimize (cost of) fare enforcement, which may reduce City's revenue. Complexity: Moderate. - Agreements: Anticipated that Metrolinx will have a PA with third party for design, construction, maintenance, network, LRV, and facility operation), and a separate agreement with the City for Customer interface. This may be cumbersome as the many interfaces between City and third party will need to be managed by Metrolinx, as there likely will not be an agreement between City and third party. Complexity: Moderate. - Operation / Communications: Third party will be responsible for operations; City will be responsible for customer interface. Will need close coordination between third party operations staff and City Communications staff to ensure timely and accurate operational information is communicated to customers. Complexity: Low	- Emergency Response: Third party will be responsible for responding to LRT-related emergencies, especially collisions involving LRVs. The City will likely also be involved in some aspects of emergency response (e.g., related to traffic operations; EMS; fire). Complexity: Moderate - Operations Monitoring/Payments: Third party is responsible for operations; Metrolinx is responsible for monitoring Project Agreement (PA) compliance; The City is responsible for paying all operating costs. The City needs efficient, effective mechanisms to obtain operations monitoring / PA compliance information to determine appropriate payments and/or penalties. Complexity: High - Traffic Signal operation - Higher level of coordination for different modes of transportation will be required between LRT's Operation Control Centre and the City's Traffic Signals Operations. Complexity: Moderate - Customer Service: N/A - Fare Revenue: N/A - Agreements: Anticipated that Metrolinx will have a PA with third party for design, construction, maintenance, network, and facility operation), and a separate agreement with the City for Customer interface and LRV operations. This may be cumbersome as the many interfaces between City and third party will need to be managed by Metrolinx, as there likely will not be an agreement between City and third party. Complexity: Moderate to High - Operation / Communications: Third party will be responsible for operations; City will be responsible for customer interface. Will need close coordination between third party operations staff and City Communications staff to ensure timely and accurate operational information is communicated to customers. Complexity: Low	- Agreements – Anticipated that Metrolinx will have a PA with third party for design, construction, maintenance, and facility operation), and a separate agreement with the City for Customer interface and LRT system and vehicle operations. This may be cumbersome as the many interfaces between City and third party will need to be managed by Metrolinx, as there likely will not be an agreement between City and third party. Complexity: Low to Moderate. - Operations vs Maintenance - City will be responsible for all aspects of system and vehicle operations. Third party will be responsible for system and vehicle maintenance. This will create potential for disputes about the cause(s) of operational and maintenance issues (e.g., operational disruptions may be caused by improper maintenance; excessive maintenance may be caused by improper operation). Complexity: Moderate to High - Maintenance Scheduling (Vehicles and System) - City will be responsible for scheduling of operations, including number of vehicles required etc. Third party will be responsible for scheduling the necessary preventive and corrective maintenance on the vehicles and system. This may create conflicts between the need for in-service vehicles vs vehicles requiring maintenance. Complexity: Moderate - LRT's Facility Operations - City will be responsible for all aspects of operations, including network operations (such as power control/electrification). Third party will be responsible for facility operations, including stops and Traction Power Sub Station. This may create coordination issues related to operations and maintenance of stops, Traction Power Sub Station, power supply etc. Complexity: Moderate - Transition from construction to operations - Third party will be responsible for design, construction, commissioning, and facility operations. City will be responsible for LRT system and vehicle operations. Will require careful management of the start-up phase to avoid disputes about early operational challenges due to unforeseen design, construction, and commissioning issues. Complexity: Moderate to High

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<u>Accountability - Interface(s) between parties</u> In the model, what interfaces exist between the City and other parties? How complex are the interfaces between the City and other parties? **(continued)**			- Transition from construction to operations: Third party will be responsible for design, construction, commissioning, and network operations. City will be responsible for LRV operations. Will require careful management of the start-up phase to avoid disputes about early operational challenges due to unforeseen design, construction and commissioning issues. Complexity: Moderate	
Ease of Mitigation: How easy or difficult will it be to create agreements that clarify interface roles and responsibilities and provide adequate incentive for other parties to act responsibly?	In general, interface issues can be partially mitigated through appropriate provisions in the Project Agreement (PA) and in Standard Operating Procedures (SOPs) between the various parties: - Scheduling Mitigation: Create or use current PAs/SOPs to specify initial hours of service and need to coordinate/align schedules. PA could provide mechanism for ongoing coordination of schedules. - Bus Bridging Mitigation: PA and/or SOPs could specify roles and responsibilities and financial arrangements for bus bridging. Need to avoid incentive for third party to over-use the frequency or duration of bus bridging. - Emergency Response Mitigation: PA and/or SOPs could specify roles and responsibilities related to emergency response. - Operations Monitoring/Payments Mitigation: PA could include mechanisms for monitoring operations performance and tracking appropriate payments and penalties. Operation & Maintenance payment agreement between The City and Metrolinx could contain provisions to ensure The City gets appropriate information to inform Operations payments. - Traffic Signal Operation Mitigation: New SOPs established between the City and third party. - Customer Service Mitigation: Create or use current PAs/SOPs (who handles which types of calls, tracking customer calls, transferring calls, lost and found, etc.).	In general, interface issues can be partially mitigated through appropriate provisions in the Project Agreement (PA) and in Standard Operating Procedures (SOPs) between the various parties: - Operation / Communications: Mitigation – SOPs to specify roles and responsibilities for timely sharing of operational information with Communications staff. Potential for customer service/communications staff to have real time access to operational information. - Scheduling: Mitigation – PA could specify initial hours of service and need to coordinate/align schedules. PA could provide mechanism for ongoing coordination of schedules. - Bus Bridging: Mitigation – PA and/or SOPs could specify roles and responsibilities and financial arrangements for bus bridging. Need to avoid incentive for third party to over-use the frequency or duration of bus bridging. - Emergency Response: Mitigation – PA and/or SOPs could specify roles and responsibilities related to emergency response. - Operations Monitoring/Payments: Mitigation – PA could include mechanisms for monitoring operations performance and tracking appropriate payments and penalties. Operation & Maintenance payment agreement between the City and Metrolinx could contain provisions to ensure the City gets appropriate information to inform Operations payments.	In general, interface issues can be partially mitigated through appropriate provisions in the Project Agreement (PA) and in Standard Operating Procedures (SOPs) between the various parties: - Operation / Communications: Mitigation - SOPS to specify roles and responsibilities for timely sharing of operational information with Communications staff. Potential for customer service/communications staff to have real time access to operational information. - Scheduling: Mitigation - PA could specify initial hours of service and need to coordinate/align schedules. PA could provide mechanism for ongoing coordination of schedules. - Bus Bridging: Mitigation - PA and/or SOPs could specify roles and responsibilities and financial arrangements for bus bridging. Need to avoid incentive for third party to over-use the frequency or duration of bus bridging. - Emergency Response: Mitigation - PA and/or SOPs could specify roles and responsibilities related to emergency response. - LRV Operations/Network Operations: Mitigation - PA will need to include specific provisions about network operations vs LRV operations roles and responsibilities. - Transition from construction to operations: Mitigation - PA will need to provide considerable detail about commissioning, start-up and acceptance testing, and mechanisms to resolve disputes about early operational issues.	In general interface issues can be partially mitigated through appropriate provisions in the Project Agreement (PA) and in Standard Operating Procedures (SOPs) between the various parties: - Transition from construction to operations – Mitigation: PA will need to provide considerable detail about commissioning, start-up and acceptance testing, and mechanisms to resolve disputes about early operational issues. - Operations vs Maintenance – Mitigation: PA will need to provide considerable detail about maintenance responsibilities, and mechanisms to resolve disputes related to the operations/maintenance interface. Models and "lessons learned" from other projects that could inform these requirements. - Maintenance Scheduling (Vehicles and System) – Mitigation: PA and SOPs will need to provide clarity about roles and responsibilities for vehicle (and system) availability for service vs availability for maintenance. - Facility Operations: Mitigation: Metrolinx agreements with third party and the City will need to be carefully structured to deal with the interfaces and relationships between City and third party. - Operations Monitoring/Payments – Mitigation: PA could include mechanisms for monitoring operations performance and tracking appropriate payments and penalties.

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Ease of Mitigation: How easy or difficult will it be to create agreements that clarify interface roles and responsibilities and provide adequate incentive for other parties to act responsibly? **(continued)**	- Fare Revenue/Fare Enforcement Mitigation: PA could provide a minimum standard for fare enforcement.	- Traffic Signal Operation: Mitigation: Create updated SOPs for coordination between the systems. - Agreements: PA between Metrolinx and third party for design, construction, maintenance, network, LRV, and facility operation, and a separate agreement with the City for Customer interface.	- Operations Monitoring/Payments: Mitigation - PA could include mechanisms for monitoring operations performance and tracking appropriate payments and penalties. -Operation & Maintenance payment agreement between the City and Metrolinx could contain provisions to ensure The City gets appropriate information to inform Operations payments. - Agreements: Mitigation - Metrolinx agreements with third party and the City will need to be carefully structured to deal with the interfaces and relationships between City and third party.	- Operation & Maintenance payment agreement between the City and Metrolinx could contain provisions to ensure the City gets appropriate information to inform Operations payments. - Agreements: Mitigation: Metrolinx agreements with third party and the City will need to be carefully structured to deal with the interfaces and relationships between City and third party.
<u>Risks and Liability</u> What risks to the City does the model create? What are the likelihood and consequence of each risk? Assessment Criteria Model 1 - Third Party performs all Operational Activities. Model 2 - Municipality performs Passenger Interface Provider Activities; Third Party Responsible for Everything Else (HC, Waterloo) Model 3 - Municipality performs Passenger Interface Provider and LRT Driver Management Activities; Third Party Responsible for LRT Line Operations and Facility Operations Model 4 - Municipality performs all aspects of Operational Activities except for Facility Operations. (TTC, Ottawa)	The risks associated with all of the operational activities (LRV drivers, vehicle collisions etc.) are borne by third party operator, not by the City. This model generally has the same number of commonly known risks compared to Model 2; however, contemplates Medium overall risk to the City: - Poorly integrated/coordinated customer service and customer information. Likelihood: Medium; Consequence: High; Overall Risk: Medium - Schedules are not integrated/aligned. Likelihood: Low; Consequence: Medium; Overall Risk: Low to Medium - Bus bridging is not well-coordinated and/or is overly costly to the City. Likelihood: Medium; Consequence: Medium; Overall Risk: Medium - Emergency response not well-coordinated. Likelihood: Medium; Consequence: Medium; Overall Risk: Medium - Misalignment with COH objectives/philosophies when choosing third party contractor e.g. changes in priorities. Likelihood: Medium; Consequence: Medium; Overall Risk: Medium - Lack of reporting of LRV-related collisions, untimely investigations, resulting in claims. Likelihood: Low; Consequence: Low to Medium; Overall Risk: Low	In this model, the risks associated with all the operational activities (LRV drivers, LRV-related collisions etc.) are borne by third party operator, not by the City. In this model, the City's assumption of public interface activities eliminates some problematic interfaces. This model generally has the same number of commonly known risks compared to Model 1; however, contemplates the least overall risk to the City (Low), compared to all models: - Customer Service/Communications may not be given access to timely/accurate operational information. Likelihood: Low to Medium, Consequence: Low Overall Risk: Low - Schedules are not integrated/aligned. Likelihood: Low, Consequence: Medium Overall Risk: Low - Bus Bridging is not well-coordinated and/or is overly costly to the City. Likelihood: Medium, Consequence: Medium Overall Risk: Medium - Emergency Response not well-coordinated. Likelihood: Medium, Consequence: Medium Overall Risk: Medium - Misalignment with COH objectives e.g. change in priorities. Likelihood: Low, Consequence: Low to Medium Overall Risk: Low	In addition to many of the risks identified for Models 1 and 2, Model 3 contemplates a new set of commonly known risks relating to LRV operation, LRV drivers and drivers management and training. Risks associated with this model are perceived to be of overall Moderate to High. Some of the most commonly known risks relating to Model 3 include but are not limited to the following: - For Model 3, operational activities are partially transferred to third party. For this model, similar to Model 4, in case of an LRV-related collision, the City (as the driver's employer and supervisor) is likely to bear some (or all) of the alleged liability– unless the collision is the result of non-driver related causes such as system malfunction, signal or vehicle mechanical problems. For this model risks associated with LRV driver and management (including LRV collision-related risks) are borne by the City. Likelihood: Medium, Consequence: High Overall Risk: Medium to High - Customer Service/communications not given access to timely/accurate operational information. Likelihood: Low to Medium, Consequence: Low Overall Risk: Low - Schedules are not integrated/aligned. Likelihood: Low, Consequence: Low to Medium Overall Risk: Low	In addition to many of the risks identified for other models, Model 4 contemplates a new set of commonly known risks relating to operational activities fully transferred to the City. Model 4 exposes many risks with overall Medium to High and High as a result of their likelihood and consequence. Some of the most commonly known risks relating to Model 4 include but are not limited to the following: - For Model 4, operational activities are fully transferred to the City party. For this model, in case of a Light Rail Vehicle (LRV)-related collision, the City (as the driver's employer and supervisor) is most probable to bear any alleged liability, either related to driver or system related such as malfunctions in traffic signal or vehicle mechanical problems. In Model 4 risks associated with all operational activities are borne by the City (LRV drivers, LRV-related collisions etc.) and not transferred to third Party). - Disputes during start-up and operations related to design, construction, and commissioning issues - Likelihood: High, Consequence: Medium to High Overall Risk: Medium to High - Operations vs maintenance conflicts - Likelihood: High, Consequence: Medium to High Overall Risk: Medium to High - Insufficient Operations Procedures and SOPs - Likelihood: Medium, Consequence: Medium to High Overall Risk: Medium

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<u>Risks and Liability</u> What risks to the City does the model create? What are the likelihood and consequence of each risk? Assessment Criteria Model 1 - Third Party performs all Operational Activities. Model 2 - Municipality performs Passenger Interface Provider Activities; Third Party Responsible for Everything Else (HC, Waterloo) Model 3 - Municipality performs Passenger Interface Provider and LRT Driver Management Activities; Third Party Responsible for LRT Line Operations and Facility Operations Model 4 - Municipality performs all aspects of Operational Activities except for Facility Operations. (TTC, Ottawa) **(continued)**	- Fare enforcement is not appropriately aligned with fare revenue optimization. Likelihood: Depends on system design; Low to Medium; Consequence: Medium; Overall Risk: Medium - Reputational/Public perception risk for having public interface e.g. customer service, communication, fare enforcement and passenger interface security by third party (any bylaw issues or privacy issues having third party performing public interface security and fare enforcement). Likelihood: Low; Consequence: Medium; Overall Risk: Low - Operations do not meet PA service standards. Likelihood: Low; Consequence: Medium to High; Overall Risk: Low to Medium.	- Lack of reporting of LRV-related collisions, untimely investigations, resulting in claims. Likelihood: Low, Consequence: Low to Medium Overall Risk: Low - Operations do not meet PA service standards. Likelihood: Low, Consequence: Medium to High Overall Risk: Medium - Fare Enforcement/Revenue Collection. Likelihood: Low, Consequence: Low to Medium Overall Risk: Low - Reputational/Public Perception Risk: Once the City starts taking responsibility for some elements, the public perception of responsibility begins to shift. So while there remains a medium likelihood of the public assigning responsibility to the City (at least in the short-term) the consequence is now medium, since the City will bear some responsibility for information, coordination etc., affecting the customer service, increasing the overall risk to medium. Likelihood: Medium, Consequence: Medium Overall Risk: Medium - Operations do not meet PA service standards: Likelihood: Low, Consequence: Medium to High Overall Risk: Medium.	- Bus bridging is not well-coordinated and/or is overly costly to the City: Likelihood: Medium, Consequence: Medium Overall Risk: Medium - Emergency response not well-coordinated: Likelihood: Medium, Consequence: Medium Overall Risk: Medium - Disputes during start-up and operations related to design, construction, and commissioning issues: Likelihood: Medium to High, Consequence: High Overall Risk: Medium to High - Operations vs maintenance conflicts: Likelihood: Medium to High, Consequence: High Overall Risk: Medium to High - Insufficient Operations Procedures and SOPs: Likelihood: Medium, Consequence: Medium to High Overall Risk: Medium to High - Poor coordination between Network operations (Operations Control Centre) and LRV operations, due to misaligned or competing objectives between Operations Control Centre and LRV operations: Likelihood: Low to Medium, Consequence: Medium Overall Risk: Low to Medium - Insufficient operator training: Likelihood: Low, Consequence: Medium to High Overall Risk: Low to Medium - LRV driver scheduling problems/lack of availability of operators causing missed trips, leading to financial implications to the City and customer inconvenience Likelihood: Medium, Consequence: Medium Overall Risk: Medium - City's liability for all operator-related incidents, ranging from customer service complaints to death claims Likelihood: High Consequence: Medium Overall risk: High	- Insufficient operator training - Likelihood: Low, Consequence: Medium to High Overall Risk: Low to Medium - Maintenance Scheduling Conflict - Likelihood: Medium to High, Consequence: Medium Overall Risk: Medium - Coordination Issues, related to operations and maintenance of stops, Traction Power Sub Station, power supply, etc. - Likelihood: Medium, Consequence: Medium Overall Risk: Medium - Training scheduling of Operations Control Centre staff - Likelihood: Low, Consequence: Low Overall Risk: Low - Incidents associated with dispatch / communications - Likelihood: medium, Consequence: Medium Overall Risk: Medium - Incidents associated with the operation of signals and control systems - Likelihood: Medium, Consequence High Overall Risk: High

Assessment Criteria	Model 1 - Third Party performs all Operational Activities.	Model 2 - Municipality performs Passenger Interface Provider Activities; Third Party Responsible for Everything Else (HC, Waterloo)	Model 3 - Municipality performs Passenger Interface Provider and LRT Driver Management Activities; Third Party Responsible for LRT Line Operations and Facility Operations	Model 4 - Municipality performs all aspects of Operational Activities except for Facility Operations. (TTC, Ottawa)
How easy can the potential risks be mitigated?	In general, risks can be partially mitigated through appropriate provisions in the Project Agreement and appropriate Standard Operating Procedures between the various parties. Create or adjust PAs/SOPs to mitigate the risks and manage high liability circumstances, and to achieve: - Integrated/coordinated customer service and customer information. - Schedule integrated and alignment. - Bus bridging coordination and/or reduced cost to City. - Emergency response coordination. - Enhanced public interface. - Alignment with the City's objectives. - Fare enforcement appropriately aligned with fare revenue optimization (design system to minimize potential for customers to board LRVs without paying fares). - Operations meet PA service standards (adequate information available to City to ensure that appropriate payments are made and/or penalties withheld). - Accurate and timely reporting of LRV-related collisions: ensure collisions are reported to the City, handling of all LRV related collisions with other modes of traffic. i.e. documentation, reporting and investigation. Further mitigation could include the City proposing an initial "start-up" period e.g. 5 years, in which certain activities are operated by a third party, with an option for the City to assume responsibility for those activities after the expiry of the initial start-up period.	In general, the aforementioned risks can be partially mitigated through appropriate provisions in the Project Agreement and appropriate Standard Operating Procedures between the various parties: Create or use updated PAs/SOPs to mitigate the risk and to achieve: - City Customer Service/communications access to timely/accurate operational information. - Schedule integrated and alignment. - Bus bridging coordination and/or minimized cost to City. - Emergency response coordination. - Operations meet PA service standards (Adequate information available to City to ensure that appropriate payments are made and/or penalties withheld). Further mitigation could include the City proposing an initial "start-up" period e.g. 5 years, in which certain activities are operated by a third party, with an option for the City to assume responsibility for those activities after the expiry of the initial start-up period.	In general, risks can be partially mitigated through appropriate provisions in the Project Agreement and appropriate Standard Operating Procedures, emergency response plans and operator training between the various parties. Regardless, more risks to the City in Models 3 and 4. Create or use current PAs/SOPs to mitigate the risk and to achieve: - Customer Service/communications timely/accurate operational information. - Schedule integrated and alignment. - Bus bridging coordination and/or cost to City. - Emergency response coordination. - Coordination between Network operations (Operations Control Centre) and LRV operations. - reduced disputes during start-up and operations related to design, construction, and commissioning. - reduced Operations vs maintenance conflicts. City will need expertise to develop and deliver operation procedures/training to: - establish essential SOPs. - deliver complete operator training package. LRV-related collisions: establish appropriate SOPs related to operator training as well as notification, emergency response etc. Further mitigation could include the City proposing an initial "start-up" period e.g. 5 years, in which certain activities are operated by a third party, with an option for the City to assume responsibility for those activities after the expiry of the initial start-up period.	These risks can be partially mitigated through appropriate provisions in the Project Agreement and appropriate Standard Operating Procedures, emergency response plans and operator training between the various parties. Regardless, more risks to the City in Models 3 and 4. Create or use updated PAs/SOPs to mitigate the risk and to achieve: - Reduced disputes during start-up and operations related to design, construction, and commissioning. - Reduced maintenance scheduling conflicts. - Coordination related to operations and maintenance of stops, Traction Power Sub Station, power supply, etc. - reduced operations vs maintenance conflicts. City will need expertise to develop and deliver operation procedures/training to: - Establish essential SOPs. - Deliver complete operator training package. - LRV-related collisions: establish appropriate SOPs related to notification, emergency response, etc., as well as operator training.

Assessment Criteria	Model 1 - Third Party performs all Operational Activities.	Model 2 - Municipality performs Passenger Interface Provider Activities; Third Party Responsible for Everything Else (HC, Waterloo)	Model 3 - Municipality performs Passenger Interface Provider and LRT Driver Management Activities; Third Party Responsible for LRT Line Operations and Facility Operations	Model 4 - Municipality performs all aspects of Operational Activities except for Facility Operations. (TTC, Ottawa)
<u>Cost to the City</u> Is the model likely to result in greater or lesser cost certainty to the City? Is the model likely to result in higher or lower costs to the City associated with bringing in new functions, setting up the staffing units and appropriate skills and expertise? Is the model likely to result in greater or lesser ongoing cost to the City for operations (excluding facility operations)?	Greatest cost certainty with third party contract compared to other models (most services contracted to third party). Least upfront cost to the City to bring in new functions compared to other models. Ongoing Costs should be similar to Model 2 and slightly lower than Models 3 or 4: - third party will need to make a profit on all aspects of contracted operations. - some duplication of customer service functions would lead to slightly higher costs for that function compared to Model 2. - fewer interfaces requiring management by City staff than Models 3 or 4. - fewest additional City staff required compared to other models. - the relative cost of City staff vs third party staff is unknown.	Slightly less cost certainty than Model 1 (because Passenger Interface activities performed by City rather than third party). Slightly more upfront cost to the City to bring in new functions compared to Model 1 (City would need to expand some HSR customer service activities and create fare enforcement program). Ongoing Costs should be similar to Model 1 and slightly lower than Models 3 or 4: - third party will need to make a profit on all aspects of contracted operations (except for Passenger Interface Activities). - fewest interfaces requiring management by City staff compared to other models. - slightly more City staff required than Model 1, but significantly less than Models 3 and 4. - the relative cost of City staff vs third party staff is unknown.	Less cost certainty than Models 1 and 2 (because Passenger Interface and LRT driving activities performed by City rather than third party). More upfront cost to the City to bring in new functions compared to Models 1 and 2 (City would need to expand some HSR customer service activities, create fare enforcement program, and staff, train and manage LRV drivers). Ongoing Costs should be similar to Model 4 and slightly higher than Models 1 and 2.: - third party will need to make a profit on fewer aspects of contracted operations compared to Models 1 and 2. - significant complex interfaces requiring management by City staff compared to other models. - significantly more new, additional City staff required than Model 1 and 2, but less than Model 4. - the relative cost of City staff vs third party staff is unknown.	Least cost certainty compared to other models (because fewest activities are contracted to third party). Most upfront cost to the City to bring in new functions compared to other models. City would need to expand some HSR customer service activities, create fare enforcement program, and staff, train and manage LRV drivers, and staff to operate and manage the LRT system. Ongoing Costs should be similar to Model 3 and slightly higher than Models 1 and 2: - third party will need to make a profit on fewest aspects of contracted operations compared to other models. - significant complex interfaces requiring management by City staff compared to other models. - most new, additional City staff required compared to other models. - the relative cost of City staff vs third party staff is unknown.

Scoring Summary

Operations Model Assessment Criteria	*Established Weights***	Model 1	Model 2	Model 3	Model 4
		*Scores**	*Scores**	*Scores**	*Scores**
Customer Experience	*35%*	2 Model 1 tends to: - create customer confusion - require high efforts to coordinate schedules -potential for lack of alignment between fare enforcement and optimizing revenue - have least public facing presence - give least opportunity to influence IDEA	5 Model 2 tends to: - provide seamless customer experience - require high efforts to coordinate schedules - enable the City to control alignment between fare enforcement and optimizing revenue - provide more public profile (presence) - give increased opportunity to consider socio-economic factors - provide minimal opportunity to influence IDEA	6 Model 3 tends to: - provide a seamless customer experience - require significant efforts to coordinate schedules - enable the City to control alignment between fare enforcement and optimizing revenue - provide more public profile (presence) - give increased opportunity to consider socio-economic factors - provide moderate opportunity to influence IDEA	7 Model 4 tends to: - provide the most seamless customer experience - offer seamless schedule coordination - enable the City to seamlessly control alignment between fare enforcement and optimizing revenue - provide most public profile (presence) - give highest opportunity to consider socio-economic factors - provide highest opportunity to influence IDEA
Accountability - Interfaces between parties (No. of Interfaces, Complexity and ease of mitigation)	*30%*	6 Tends to contemplate consistent number of interfaces compared to Model 2, with Moderate complexity	7 Tends to contemplate consistent number of known interfaces compared to Model 1, with reduced complexity (low to moderate)	5 Tends to contemplate highest number of known interfaces compared to the other models, with moderate to high complexity	6 Tends to contemplate a new set of known interfaces, with moderate to high complexity

Operations Model Assessment Criteria	*Established Weights***	Model 1	Model 2	Model 3	Model 4
		*Scores**	*Scores**	*Scores**	*Scores**
Risks and Liabilities (Consequence, Likelihood, Overall Risk)	*25%*	8 Tends to contemplate consistent number of known risks compared to Model 2, with low to moderate overall risk	9 Tends to contemplate consistent number of known risks compared to Model 1, with low to moderate overall risk	6 Tends to contemplate highest number of known risks compared to other models (driver-related collision risks now transferred to the City), with medium to high overall risk.	5 Tends to contemplate new set of known risks associated with Light Rail Vehicle and driver-related collision (these risks are transferred to the City), with medium to high overall risk.
Cost (Cost certainty, Upfront and Ongoing Cost)	*10%*	6 Tends to provide the City with high cost certainty, minimal upfront cost and low ongoing cost with the lowest overall cost to be the City	6 Tends to provide the City medium cost certainty, low upfront cost and low ongoing cost with the second lowest overall cost to be the City	3 Tends to provide the City low cost certainty, medium upfront cost and medium ongoing cost with the second highest overall cost to be the City	2 Tends to provide the City minimal cost certainty, high upfront cost and high ongoing cost with the highest overall cost to be the City
Weighted Scores***		5	7	5	6

** A higher score translates to more benefit to the City (more favorable to the City)*
*** Level of importance to the City for each criterion i.e. the higher weight means the criterion is more important to the City*
***Scores for Operations Models accounting for the criterion's level of importance (weight) to the City

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Jason Thorne
General Manager, Planning and Economic Development
City of Hamilton

January 22, 2024

Dear Jason,

I am writing to provide clarity around the operations and maintenance responsibilities for the Hamilton LRT.

As you are aware, the Hamilton LRT is a provincially owned and delivered asset and decision making regarding the LRT's assets resides with the Province and Metrolinx, including determining operations and maintenance roles and responsibilities for the project. Maintenance responsibilities can be divided into day-to-day maintenance, which are tied to the operations of the LRT, and lifecycle maintenance, which are activities to ensure assets are in a state of good repair.

As the asset owner, Metrolinx will be responsible for undertaking all lifecycle maintenance activities to the specifications of its choosing, which has been the case of all provincially owned LRT projects.

The model for operations and some aspects of non-lifecycle (i.e., day-to-day) maintenance activities, including determining which party will be responsible to perform such activities, is subject to future Provincial decision-making. Non-lifecycle maintenance activities may include, but are not limited to, cleaning, snow and waste clearing, and/or minor corrective work such as lighting replacements.

As noted by Hamilton City staff in prior LRT subcommittees, there are several models for how the operational activities of the Hamilton LRT can be performed. I understand Hamilton City staff are currently reviewing a number of options to make a recommendation to Metrolinx on the City's preferred approach to operations. As work on the implementation of the project continues to evolve, there will be opportunities for further discussions on certain aspect of non-lifecycle maintenance.

Should you have any questions or require further clarification, please don't hesitate to reach out.

Sincerely

Felix Fung
Assistant Deputy Minister
Transit Division, Ministry of Transportation

c. Marnie Cluckie, City Manager, City of Hamilton
Doug Jones, Deputy Minister, Ministry of Transportation
Ewa Downarowicz, Director, Transit Delivery and Partnerships, Ministry of Transportation
Kanivanan Chinniah, Head Sponsor, Rapid Transit, Metrolinx

12.1

CITY OF HAMILTON

M O T I O N

Light Rail Transit Sub-Committee: January 29, 2024

MOVED BY COUNCILLOR M. WILSON.....

SECONDED BY COUNCILLOR.....

Applying a Climate Justice Lens to the Light Rail Transit Recommendations

That staff be directed to review the presentation respecting Applying a Climate Justice Lens to the Light Rail Transit and report back to the Light Rail Transit Sub-Committee respecting what recommendations the City is acting on and if there are additional recommendations for the Light Rail Transit Sub-Committee to consider.