



City of Hamilton

PUBLIC WORKS COMMITTEE ADDENDUM

Meeting #: 24-003
Date: February 20, 2024
Time: 1:30 p.m.
Location: Council Chambers
Hamilton City Hall
71 Main Street West

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

	Pages
6. DELEGATION REQUESTS	
*6.1 Delegation Requests respecting Item 11.3 - Detailed Drainage Assessment Study (Phase 2) of Rurally Serviced Existing Residential Neighbourhoods in Ancaster (PW16100(a)/PED24032) (Ward 12) (for today's meeting)	
*a. Derek Sohail	3
*b. Shophan Daniel	4
8. STAFF PRESENTATIONS	
8.1 Hamilton Street Railway Annual Service Plan Enhancements - Year 8 of the 10-Year Local Transit Strategy (PW24010) (City Wide)	
*a. Staff Presentation - Hamilton Street Railway Annual Service Plan Enhancements - Year 8 of the 10-Year Local Transit Strategy (PW24010) (City Wide)	5
*b. Appendix B - Hamilton Street Railway Annual Service Plan Enhancements - Year 8 of the 10-Year Local Transit Strategy (PW24010) (City Wide) - REVISED	14
*8.2 Main Street Two-Way Conversion Implementation and One-Way Street Conversion Considerations (PW23074(a)/PED23248(a)) (City Wide) (Outstanding Business List Item)	17

14. GENERAL INFORMATION / OTHER BUSINESS

*14.1 Amendments to the Outstanding Business List

*a. Items Considered Complete and Needing to be Removed:

- *a. Implementation plan for the two-way conversion of Main Street 48

Addressed as Item 8.2 (PW23074(a)/PED23248(a))
(on today's agenda)

Submitted on Sat, 02/17/2024 - 15:19

Submitted by: Anonymous

Submitted values are:

Committee Requested

Committee
Public Works Committee

Will you be delegating in-person or virtually?
Virtually

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

Requestor Information

Requestor Information
Derek Sohail



Preferred Pronoun
he/him

Reason(s) for delegation request
To discuss the detailed drainage report

Will you be requesting funds from the City?
No

Will you be submitting a formal presentation?
No

Submitted on Sat, 02/17/2024 - 15:21

Submitted by: Anonymous

Submitted values are:

Committee Requested

Committee
Public Works Committee

Will you be delegating in-person or virtually?
Virtually

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

Requestor Information

Requestor Information
Shophan Daniel



Preferred Pronoun
he/him

Reason(s) for delegation request
To discuss detailed drainage report

Will you be requesting funds from the City?
No

Will you be submitting a formal presentation?
No



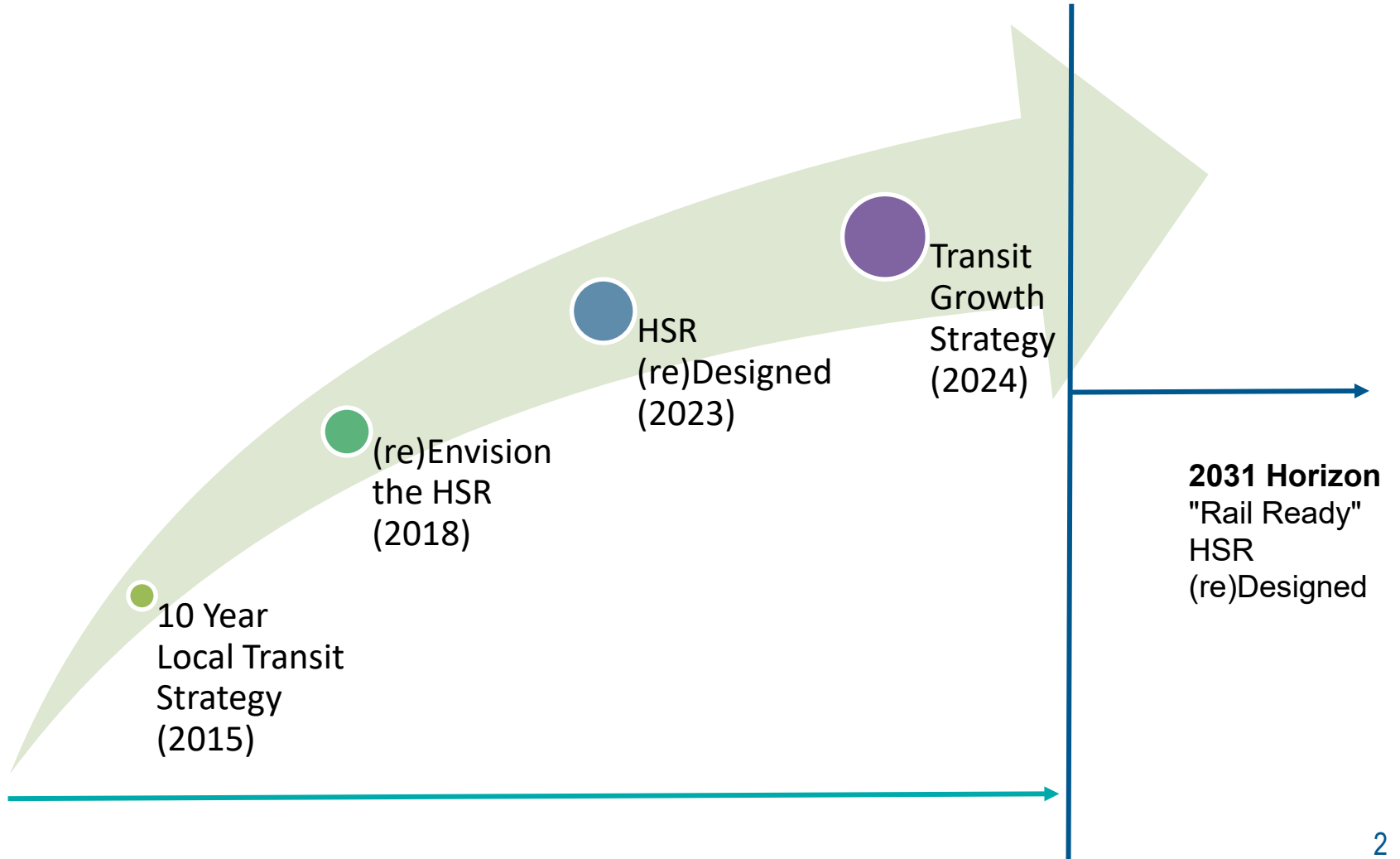
Hamilton

HSR ANNUAL SERVICE PLAN ENHANCEMENTS

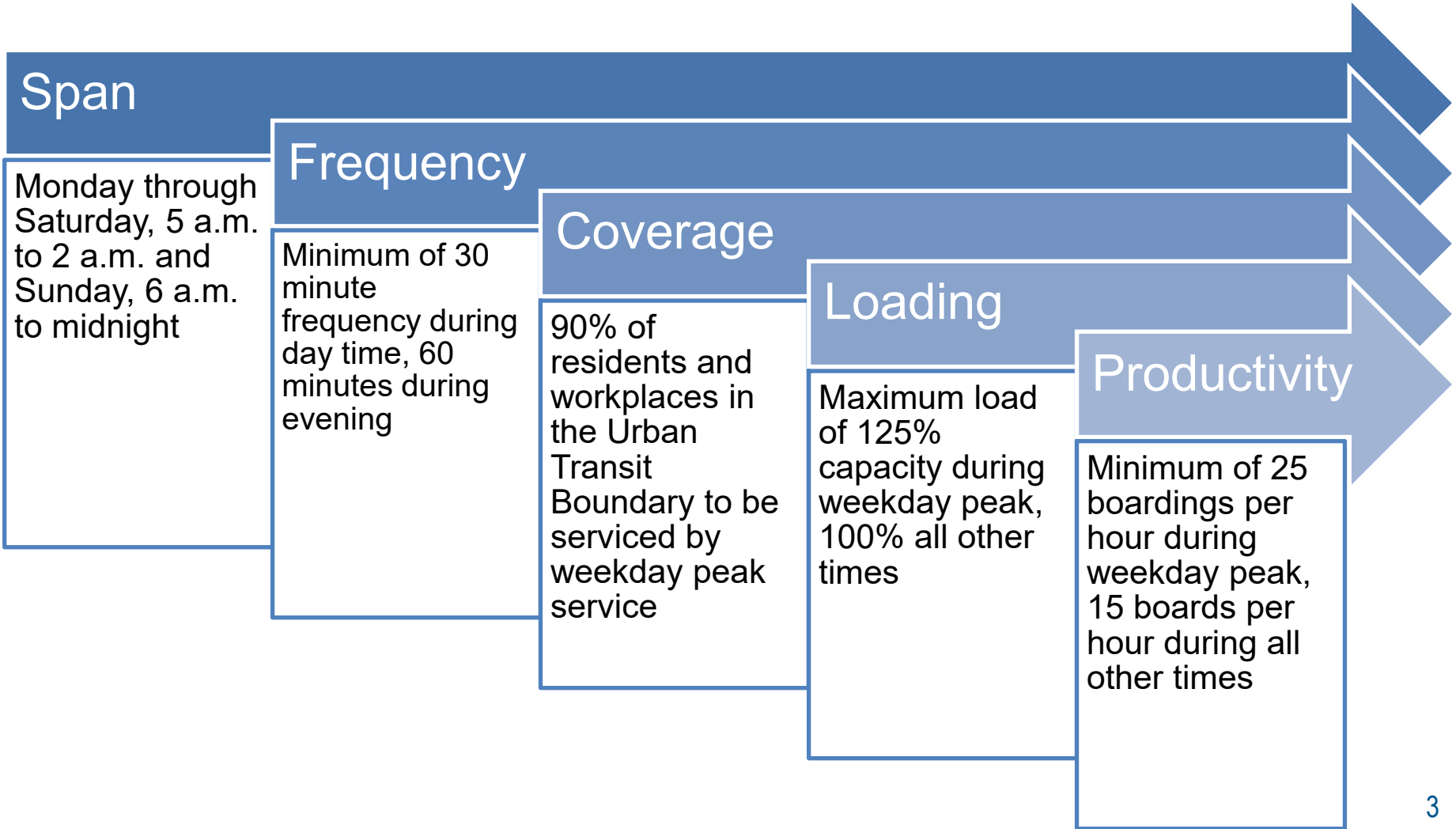
February 20, 2024

Public Works Committee

Transit's Continuum

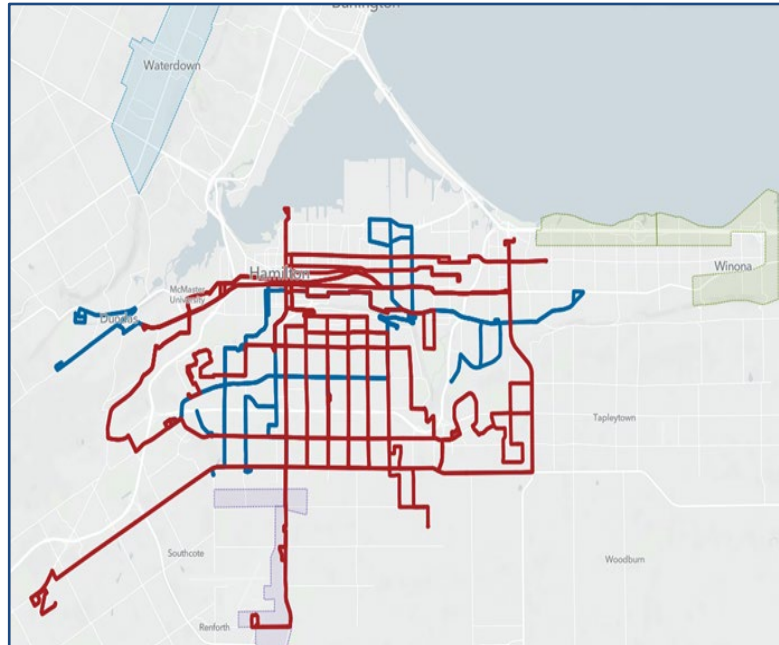


Transit Service Standards



High Frequency Routes

- Currently, 16 routes offer 15 minute or better service in peak periods*
- An additional 4 routes with branching service offer 15 minute or better service for the shared trunk
- 92% of boardings are on routes that run every 15 minutes or better



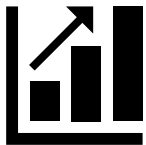
1 King	25 Upper Wentworth
2 Barton	26 Upper Wellington
3 Cannon	27 Upper James
5 Delaware (Central Trunk)	33 Sanatorium
10 B-Line	34 Upper Paradise (Central Trunk)
20 A-Line	35 College (Central Trunk)
21 Upper Kenilworth	41 Mohawk (Central Trunk)
22 Upper Ottawa	43 Stone Church
23 Upper Gage	44 Rymal
24 Upper Sherman	51 University

***Peak periods: Weekdays from 6am-9am and 3pm-6pm**

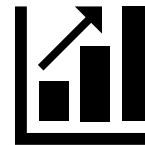
Fall 2024 (Year 8) Frequency Enhancements

- Focus on **filling gaps in service span and frequency**, as well as preparing for Year 1 of the Transit Growth Strategy.
- **Increased equity and improved access to service** by adding late evening service on 5 additional routes on weekdays and Saturdays and 8 additional routes on Sundays.
- **All routes** will meet the service standard of 30 minutes or less during daytime operating hours and will cover a maximum span of Monday through Saturday, 5 a.m. to 2 a.m. and Sunday, 6 a.m. to Midnight.
- 13 routes will increase to 30-minute frequencies during **Sunday service** in the late evening.

Year 7 Highlights



+ 48,800 Hamiltonians
within 400m of 15
min service



+ 5,400 Hamiltonians
within 400m of a bus
stop

Fall 2024 (Year 8) Span Enhancements

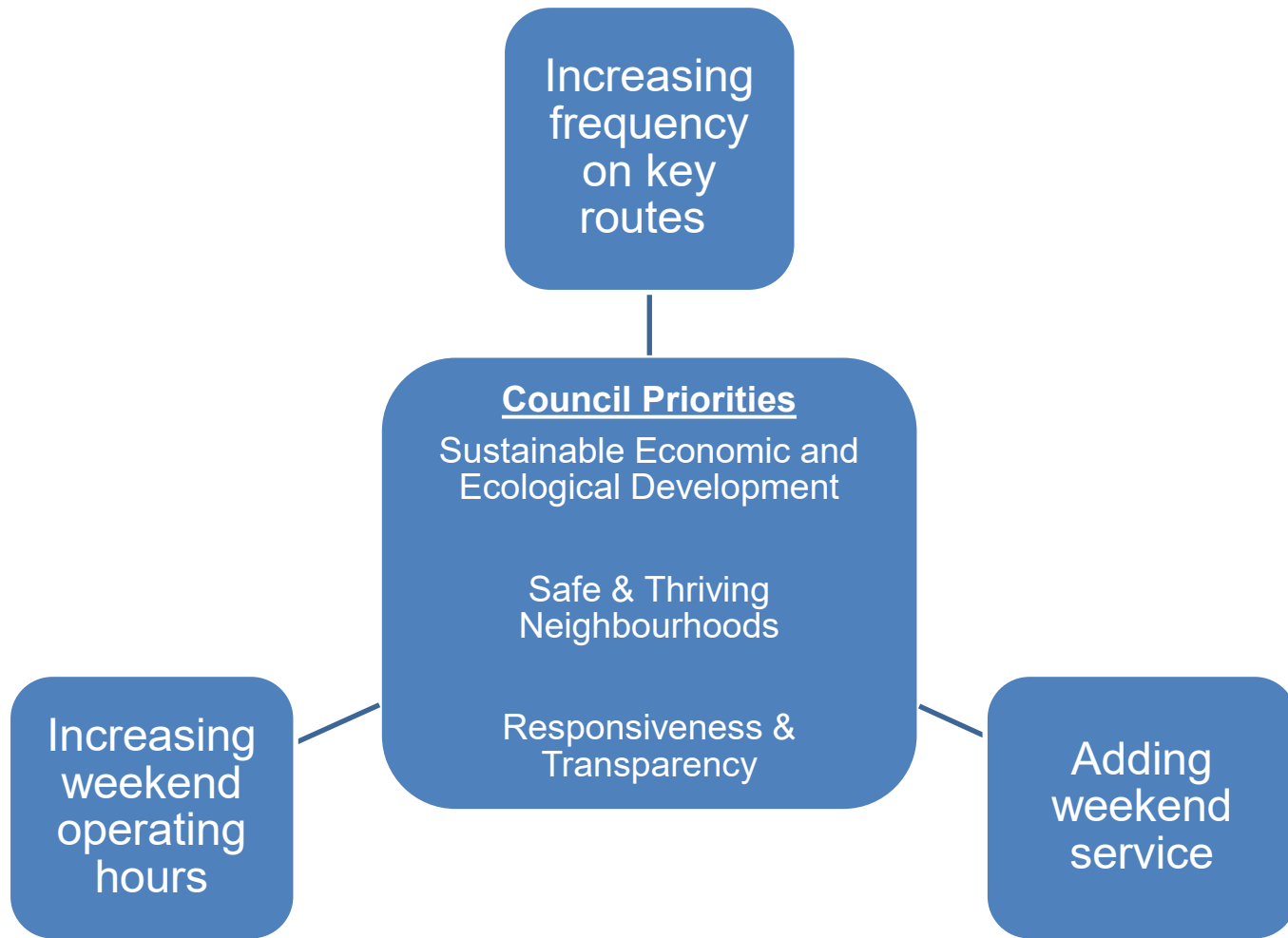
CURRENT STATE				
Route	Weekday	Saturday	Sunday	
2	Barton			
3	Cannon			
4	Bayfront			
5	Delaware			
6	Aberdeen			
7	Locke			
8	York			
10	B-Line			
11	Parkdale			
12	Wentworth			
16	Ancaster			
18	Waterdown			
myRide	Waterdown			
20	A-Line			
21	Upper Kenilworth			
22	Upper Ottawa			
23	Upper Gage			
24	Upper Sherman			
25	Upper Wentworth			
26	Upper Wellington			
27	Upper James			
33	Sanatorium			
34	Upper Paradise			
35	College			
41	Mohawk			
43	Stone Church			
44	Rymal			
51	University			
52	Dundas Local			
55	SC Central			

SEPTEMBER 2024 STATE				
Route	Weekday	Saturday	Sunday	
2	Barton			
3	Cannon			
4	Bayfront			
5	Delaware			
6	Aberdeen			
7	Locke			
8	York			
10	B-Line			
11	Parkdale			
12	Wentworth			
16	Ancaster			
18	Waterdown			
myRide	Waterdown			
20	A-Line			
21	Upper Kenilworth			
22	Upper Ottawa			
23	Upper Gage			
24	Upper Sherman			
25	Upper Wentworth			
26	Upper Wellington			
27	Upper James			
33	Sanatorium			
34	Upper Paradise			
35	College			
41	Mohawk			
43	Stone Church			
44	Rymal			
51	University			
52	Dundas Local			
55	SC Central			

An additional **2 routes** will have Saturday service and **3 routes and myRide** will have Sunday service.

An additional **7 routes** and **myRide** will operate into the late evening period.

Aligning Enhancements with Council Priorities



Transit's Next Steps

Completed:

- ✓ (Re)Envision the HSR
- ✓ HSR (re)Designed conceptual network to meet 2031 growth horizon
- ✓ Public consultation of HSR (re)Designed transit network

Next Steps:

New Transit Growth Strategy to be presented to Council in Fall 2024



Hamilton

THANK YOU

Appendix "B" to Report PW24010
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Table Summary of Route Enhancements

	Route Number	Current Service Level	Year 8 Service Enhancement(s)
3	3 Cannon	<p>Early evening service ends at 10 pm on weekdays and Saturdays.</p> <p>Early evening service ends at 6 pm on Sundays.</p>	<p>Extend span to late evening (10 p.m. to 2 a.m.) at 30 min frequencies during weekdays and Saturdays.</p> <p>Extend span to early evening (6 p.m. to 10 p.m.) and late evening at 30 min frequencies on Sundays.</p>
4	4 Bayfront	Late evening service operates at 60 min frequencies on Sundays.	Extend late evening service (10 p.m. to 2 a.m.) at 30 min frequencies on Sundays.
10B	10 B Line	Early evening service ends at 9:30 pm on weekdays, Saturdays and Sundays.	Add late evening service (10 p.m. to 2 a.m.) at 30 min frequencies on weekdays, Saturdays and Sundays
16	16 Ancaster	<p>Early evening service operates at 60 min frequencies.</p> <p>Service operates at 60 min frequencies during off-peak, weekday hours.</p> <p>There is no late evening span on Saturdays.</p> <p>All service operates at 60 min frequencies on Saturdays.</p> <p>There is no Sunday service.</p>	<p>Extend late evening service (9 p.m. to 1 a.m.) on weekdays.</p> <p>Enhance late evening frequency to 30 mins on weekdays.</p> <p>Enhance mid-day frequency to every 30 mins during weekdays.</p> <p>Add early morning service (Prior to 6 am) on Saturdays and Sundays.</p> <p>Extend early evening and late evening span to midnight on Saturdays and Sundays.</p> <p>Operate at 30 min frequencies in all periods during Saturdays and Sundays.</p>

Appendix "B" to Report PW24010

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18	18 Waterdown	Early evening service operates until 7pm without late evening service during weekdays and Saturdays. There is no Sunday service.	Extend late evening span (10 p.m. to 2 a.m.) and operate at 30 min frequencies on weekdays, Saturdays and Sundays. Add early morning service (prior to 6 a.m.) on Saturdays and Sundays Enhance all service periods on Sundays to 30 min frequencies.
22	22 Upper Ottawa	Late evening service operates at 60 min frequencies on Sundays.	Enhance late evening frequency to 30 mins on Sundays.
23	23 Upper Sherman	Late evening service operates at 60 min frequencies on Sundays.	Enhance late evening frequency to 30 mins on Sundays.
24	24 Upper Gage	Late evening service operates at 60 min frequencies on Sundays.	Enhance late evening frequency to 30 mins on Sundays.
25	25 Upper Wentworth	Late evening service operates at 60 min frequencies on Sundays.	Enhance late evening frequency to 30 mins on Sundays.
26	26 Upper Wellington	Late evening service operates at 60 min frequencies on Sundays.	Enhance late evening frequency to 30 mins on Sundays.
27	27 Upper James	Late evening service operates at 60 min frequencies on Sundays	Enhance late evening frequency to 30 mins on Sundays.
34	34 Upper Paradise	Early and late evening service operates at 60 min frequencies on Sundays.	Enhance early evening and late evening service to 30 min frequencies on Sundays.
41	41 Mohawk	Late evening service operates at 60 min frequencies (on common segment).	Enhance late evening frequency to 30 mins (on common segment).
43	43 Stone Church	Early and late evening service operates at 60 min frequencies on Sundays.	Enhance early evening and late evening frequency to 30 mins on Sundays.

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44	44 Rymal	<p>Every other trip on Saturdays and Sundays short-turns at the Glancaster Loop.</p> <p>Late evening service operates at 60 min frequencies on Sundays.</p>	<p>Extend all trips to Ancaster Business Park on Saturdays and Sundays.</p> <p>Enhance late night frequency to 30 mins on Sundays.</p>
51	51 University	<p>Early morning service begins at 7:30am.</p> <p>No service on Sundays.</p>	<p>Add early morning 20 min frequencies during weekdays.</p> <p>Add early morning to late evening 30 min frequencies on Sundays.</p>
	MyRide	<p>Current MyRide service operates within the service span of Route 18.</p>	<p>Extend early and late evening service to 1:30 a.m. during weekdays and Saturdays.</p> <p>Add early morning (Prior to 6 a.m.), early and late evening (6 p.m. to 2 a.m.) service on Saturdays and Sundays.</p> <p>Add two buses on late evening service to align with Route 18.</p>



CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
 Transportation Division
 and
PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
 Transportation Planning and Parking Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	February 20, 2024
SUBJECT/REPORT NO:	Main Street Two-Way Conversion Implementation and One-Way Street Conversion Considerations (PW23074(a)/PED23248(a)) (City Wide) (Outstanding Business List Item)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Mike Field (905) 546-2424 Ext. 4576 Dipankar Sharma (905) 546-2424 Ext. 3016
SUBMITTED BY:	Carolyn Ryall Director, Transportation Division Public Works Department
SIGNATURE:	
SUBMITTED BY:	Jackie Kennedy Director, Engineering Services Division Public Works Department
SIGNATURE:	
SUBMITTED BY:	Brian Hollingworth Director, Transportation Planning and Parking Planning and Economic Development Department
SIGNATURE:	

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SUBJECT: Main Street Two-Way Conversion Implementation and One-Way Street Conversion Considerations (PW23074(a)/PED23248(a)) (City Wide) – Page 2 of 14

RECOMMENDATION

That the Recommendations in Report PW23074/PED23248 be replaced with the following:

- (a) That the General Manager of Public Works be authorized and directed to negotiate and execute a non-competitive single source contract with WSP Canada Inc., to complete the detailed design and contract administration for the Main Street Two-Way Conversion Project, in a form satisfactory to the City Solicitor and in adherence to the City of Hamilton Procurement Policy By-law No.22-255;
- (b) That staff be directed to undertake an accelerated project delivery approach as outlined in Report PW23074(a)/PED23248(a), funding for the implementation be referred for inclusion in the 2025 capital budget at a value of \$26,492,000 with a target timeline to complete detailed design by Q3 2025/Q4 2025, commence construction Q4 2025, and target a project completion date of Q4 2027/Q1 2028;
- (c) That the remaining unbudgeted candidate one-way to two-way street conversions and alternative complete street interventions as identified in Appendix “E” to Report PW23074/PED23248 be programmed, and that funding associated with the conversions be identified and brought forward as part of future annual capital budget submissions for consideration of Council.

EXECUTIVE SUMMARY

This Report addresses the December 4, 2023 Public Works Committee direction related to the conversion of Main Street from one-way operation to two-way operation as detailed in Report PW23074/PED23248.

Report PW23074/PED23248 outlined the cost to convert Main Street to two-way operation as \$26,492,000. A proportion of scope was previously planned and budgeted for that would have been needed regardless of two-way conversion. Of the overall project budget, costs associated strictly with two-way conversion are approximately \$15,417,000.

Further clarification of the recommended alternative is also provided, including a summary of the lane and space allocation considerations by segment. These considerations included traffic operations, transit, corridor flexibility and integration with the Light Rail Transit project. The recommended alternative (asymmetrical configuration) allows for the incorporation a number of complete streets features including curb extensions, parking and greening opportunities in the easterly section,

SUBJECT: Main Street Two-Way Conversion Implementation and One-Way Street Conversion Considerations (PW23074(a)/PED23248(a)) (City Wide) – Page 3 of 14

cycling facilities in the east/central section, and transit priority measures and low impact development opportunities in the central/westerly segment.

A review of project delivery identified options which could compress the schedule. An accelerated plan could enable a total savings of approximately 17 months; from a total project delivery of 60 months as initially presented in Report PW23074/PED23248, thereby enabling project completion by Q4 2027/Q1 2028. To enable the use of an accelerated approach, Council approval for single-sourcing would be required and therefore formed the Recommendation included in Report PW23074(a)/PED23248(a).

ALTERNATIVES FOR CONSIDERATION – Not Applicable

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: There are no staffing implications associated with this Report. Approval to execute a non-competitive single source contract with WSP Canada Inc., to complete the detailed design and contract administration for the Main Street Two-Way Conversion Project, using the City of Hamilton Procurement Policy, By-law No. 22-255, requiring Council approval of non-competitive contracts under Policy #11 – Non-Competitive Procurements that are valued at greater than \$250,000.

Funding for the detailed engineering design of the two-way conversion of Main Street between Dundurn Street South and Main Street East/King Street East (Delta) has been submitted as Capital Project ID #4032411048 at a value of \$1,000,000 through the 2024 annual capital budget process.

Staffing: N/A

Legal: N/A

HISTORICAL BACKGROUND

At the December 4, 2023 Public Works Committee, Report PW23074/PED23248 was presented. The report responded to previous Council direction related to the conversion of Main Street from one-way to two-way operations and included three recommendations:

- (a) That funding for the detailed engineering design of the two-way conversion of Main Street between Dundurn Street South and Main Street East/King Street East (Delta) in alignment with the principles established by the Main Street Two-

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Way Conversion Study, be submitted as Capital Project ID #4032411048 at a value of \$1,000,000 through the 2024 annual capital budget process for consideration of Council;

- (b) Funding for the implementation of Main Street between Dundurn Street South and Main Street East/King Street East (Delta), following the completion of detailed engineering design, be earmarked in the 2026 capital budget at a value of \$26,492,000 and considered for future approval by Council to enable construction targeted to begin in 2026 and completion in 2028;
- (c) That the remaining unbudgeted candidate one-way to two-way street conversions and alternative complete street interventions as identified in Appendix “E” to Report PW23074/PED23248 be programmed, and that funding associated with the conversions be identified and brought forward as part of future annual capital budget submissions for consideration of Council.

Report PW23074/PED23248 was deferred, and additional direction was provided by the Public Works Committee. The approved direction was:

That staff be directed to report back to the Public Works Committee on February 5, 2024 on the following:

- a) Quantify the core capital investment required to convert Main Street to two-way traffic, exclusive of necessary and already programmed capital works, AODA compliance upgrades, any other necessary or contemplated upgrades, reconstruction and rehabilitation capital works and residual lifecycle infrastructure renewal costs.
- b) Provide further quantification of the assessment of the Main Street two-way evaluation criteria versus prioritizing eastbound vehicular traffic capacity in the recommended Option Three.
- c) Provide options to implement Council’s direction of Main Street two-way traffic conversion within two years and/or prior to the initiation of LRT corridor construction by prioritizing core two-way conversion lane re-alignments, intersection and signal upgrades, and corridor upgrades necessary for implementation with further corridor upgrades, resurfacing and other capital rehabilitation work phased over the following four to six years.
- d) Meet with impacted and interested Ward Councillors with Public Works staff and consulting engineering team.

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SUBJECT: Main Street Two-Way Conversion Implementation and One-Way Street Conversion Considerations (PW23074(a)/PED23248(a)) (City Wide) – Page 5 of 14

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The City of Hamilton Procurement Policy, By-law No. 22-255, requires Council approval of non-competitive contracts under Policy #11 – Non-Competitive Procurements that are valued at greater than \$250,000.

RELEVANT CONSULTATION

The following parties have been consulted with during the development of this Report:

- LRT Project Office; and,
- Metrolinx.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Main Street Two-Way Conversion Capital Budget Composition:

Report PW23074/PED23248 provided a capital budget estimate for Main Street two-way conversion based on the functional design plans (Option Three). The estimated construction budget includes traffic signal reconstruction (\$8,425,000), roadway rehabilitation (\$10,000,000), corridor improvements (\$3,557,000), and contingency/miscellaneous/staffing costs (\$4,510,000), totalling \$26,492,000.

Regardless of converting Main Street to two-way operation, the roadway rehabilitation was previously included in the five-year capital plan prior to the two-way conversion motion. Additionally, two new traffic signals were planned at the intersection of Main Street at Albert Street and Main Street at Hilda Avenue. The rehabilitation of Main Street between Dundurn Street and Delta scope included for roadway replacement, pavement markings and associated project contingencies. The budget cost estimate for these activities totalling \$11,075,000 and detailed as follows.

<u>Item:</u>	<u>Budget Estimate:</u>
Traffic Signal Construction	\$ 450,000
Roadway Rehabilitation	\$10,000,000
Pavement Markings	\$ 535,000
Contingency and Miscellaneous	\$ 90,000
Total:	<u>\$11,075,000</u>

There are other infrastructure needs on Main Street that have not been planned for in the five-year capital budget which would be addressed within the scope of two-way conversion. These include existing traffic signal rehabilitation, Accessibility for Ontarians with Disabilities Act improvements, sidewalk, and curb replacements. Budget cost

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estimates for these works have not been developed, however they would be in the scale of multiple millions of dollars.

The estimated cost to convert Main Street to two-way operation, without inclusion of the previously planned rehabilitation work, totals \$15,417,000.

Main Street Proposed Configuration:

As outlined in Report PW23074/PED23248, two different lane configuration alternatives for achieving two-way traffic flow on Main Street were evaluated, in addition to the “Do Nothing” option. A summary of the different two-way alternatives is presented in the table below. It should be noted that the lane allocations are the total lanes that could be available to vehicular traffic, not accounting for off-peak parking or other non-permanent lane utilization.

	Dundurn Street to Caroline	Caroline to Victoria	Victoria to Sherman	Sherman to King
Pre-2022				
Eastbound	5	4	4	4
Westbound	0	0	0	0
Current				
Eastbound	3	3	3	3
Westbound	0	0	0	0
Symmetrical/or Balanced				
Eastbound	2	2	2	2
Westbound	2	2	2	2
Proposed Asymmetrical				
Eastbound	3	2+Left turn	2	2
Westbound	1	1+Left turn	1	1
Bike lanes/greening	Future potential	Future potential	Bi-directional	0
On-street parking	South lane off-peak	South lane off-peak	0	North lane, full time

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The primary difference between the two future options evaluated would be for the segment between Dundurn Street and Victoria Avenue. For this segment, the proposed alternative would consist of three eastbound lanes to Victoria Avenue and one westbound lane. Between Caroline and Victoria, one lane would operate as a left turn lane alternating between eastbound and westbound traffic. This configuration is like James Street and John Street between Cannon Street and St. Joseph's Drive which operate with an asymmetrical configuration.

Between Victoria Avenue and the Delta, the preferred option consists of two eastbound lanes and one westbound lane. For this segment, moving to an option that provides for a balanced capacity could be achieved by:

- Replacing the proposed parking on the north side with a vehicle lane. This is not recommended as the proposed parking is intended to provide a buffer for pedestrians and would be implemented in conjunction with bump-outs at intersections to shorten pedestrian crossing distances.
- Moving to a configuration with only one lane of vehicle traffic in each direction. This alternative is not recommended as one lane of travel would provide less than 50% of the capacity required to carry existing volumes. For example, the eastbound volumes in the afternoon peak hour are 1,850 vehicles per hour while the capacity of one arterial lane is typically about 800 vehicles per hour. Even with significant mode shifts and traffic diversions to other routes, it is not feasible that Main Street could function with one eastbound lane in this section.

Overall, between Dundurn and the Delta, the proposed asymmetrical configuration will provide corridor enhancements as presented in the following table:

Quantity:	Element:
3 kilometres	New cycling lanes on Main Street
21	New Transit stops for west-bound transit operations
20	Locations to be leveraged for green infrastructure, such as trees
3 kilometres	Additional pedestrian space buffered from vehicle traffic by on-street parking or separated cycling facilities

Traffic Volume Trends Analysis:

Main Street is currently one of the busiest streets related to motor vehicle use in the City. Before changes were implemented in 2022 to reduce the number of effective travel lanes, Main Street West between Dundurn Street and Queen Street carried approximately 33,500 vehicles per day. By comparison, at its highest point, the Lincoln

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Alexander Parkway carries approximately 44,000 vehicles in one direction per day while James Street North at King William Street handles approximately 11,500 vehicles per day. These high volumes are directly a result of the fact that Main Street is the primary access off Highway 403 downtown, with York Boulevard and Aberdeen Avenue being the other alternatives. Without question, the high volumes have significant negative impacts on the walkability and overall liveability of the street, and its desirable to plan for reduced volumes over time.

In August 2022, changes were made to Main Street to reduce the effective traffic capacity and in turn, realize safer travel speeds. These changes have had a measurable but varied effect as summarized in the table below. Comparing the volumes before and after implementation there was an approximate 10% reduction in average daily traffic on Main Street. Speeds also decrease significantly for two of the sample locations.

Location (Main Street @)	Count Date	Volume (Annual Average Daily Traffic)	85 th Percentile Speed
East of Dundurn Street Before After	June 2022	33,361	49.6
	June 2023	30,088	49.7
East of Bay Street	June 2022	28,591	57.5
	June 2023	26,851	49.9
East of Wentworth Street	June 2022	24,203	57.6
	June 2023	20,108	52.9
East of Gage Avenue	June 2022	17,993	59.6
	June 2023	16,549	60.9

Recognizing that reductions in traffic volumes is a key consideration in achieving a more liveable and complete Main Street, it is also important to present the overall volume context for the different alternatives. For illustrative purposes, the tables below summarize the volumes and capacities for Main Street, York Boulevard, and Aberdeen Avenue at Dundurn Street. Volumes are based on counts taken in May and June of 2023. A nominal capacity of 800 vehicles per lane is used for this simple analysis, based on industry rules of thumb. A more detailed traffic modelling exercise was conducted as part of the previous Main Street two-way conversion with results presented in Appendix “D” of Report PW23074/PED23248.

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As shown in the tables below, the proposed configuration consisting of three eastbound lanes on Main Street (which is reflective of the existing number of lanes currently), Main Street is effectively operating at or close to capacity. This is reflective of actual experience where traffic occasionally is queued from the Highway 403 off-ramp to Bay Street or farther east. Similarly, York Boulevard and Aberdeen Avenue are at or exceeding their theoretical capacity.

A configuration with two eastbound lanes on Main Street, based on nominal per lane capacity assumptions, would be over capacity during some periods. Under this scenario, it could be expected that traffic would seek out other routes, or more desirably, shift to other modes.

Proposed Asymmetrical Configuration (Eastbound priority):

	Number of Lanes (Eastbound)	Capacity	P.M. Peak Hour Volume	Volume-to-Capacity Ratio	Residual Capacity
Main Street	3	2,400	2,135	89%	265
York Boulevard	2	1,600	1,750	109%	-150
Aberdeen Avenue	1	800	674	84%	126
Combined	6	4,800	4,559	95%	241

Alternate Configuration (Balanced capacity):

	Number of Lanes (Eastbound)	Capacity	P.M. Peak Hour Volume	Volume-to-Capacity Ratio	Residual Capacity
Main Street	2	2,400	2,135	133%	-535
York Boulevard	2	1,600	1,750	109%	-150
Aberdeen Avenue	1	800	674	84%	126
Combined	5	4,800	4,559	114%	-559

Overall, the key goals of the Main Street two-way conversion are to create a more Complete Street and a safer street, with enhanced road-user equity within the corridor through a lowered priority for vehicular level of service. However, it is also important to understand the potential impacts of the different alternatives. Moving to a balanced lane configuration on Main Street (i.e. two eastbound lanes and two westbound lanes) could mean that there is higher potential for traffic to infiltrate into local neighbourhood streets with associated impacts.

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SUBJECT: Main Street Two-Way Conversion Implementation and One-Way Street Conversion Considerations (PW23074(a)/PED23248(a)) (City Wide) – Page 10 of 14

Transit Considerations:

At present, there are no HSR services operating in the westbound direction on Main Street between Longwood Road and the Delta (due to its one-way configuration). However, with the conversion of Main Street to two-way, there are opportunities to provide service in both directions. This will be advantageous during LRT construction for service continuity, and even post LRT construction for local service.

A design which can accommodate three lanes of capacity for vehicles in the eastbound direction would ensure efficient movement for HSR buses in the eastbound direction. In particular, it would mean that the existing bus queue jump lanes (painted red lanes) could be maintained, and potential expanded to provide a full transit lane. The drawback of this option is that only one lane would be provided in the westbound direction for both regular vehicles and HSR buses. HSR buses, which are planned to provide local service only at a peak frequency of every 20 minutes, would impede traffic flow when stopped due to the single lane configuration. It is noted that this is not unprecedented; for example, HSR buses operate in a single lane on portions of James Street North, Wilson Street – Ancaster and portions of Rymal Road.

Flexibility:

One of the factors which influenced the selection of Option Three – Asymmetrical as the preferred configuration was its flexibility to accommodate various use in the south lane. This could include a combination of bus priority lanes, on-street parking, or greening opportunities. An option with two westbound lanes would have less flexibility in this regard. However, it could be possible to utilize a second lane in the westbound lane for on-street parking or bus bays.

LRT Alignment Design:

In November 2023, Metrolinx announced a change in the alignment of the LRT which would see it running on Dundurn Street between King and Main and then along Main Street West vs the previous alignment which included a bridge over Highway 403. As a result, there will need to be significant modifications to the Main Street West and Dundurn Street intersection. At the time of this Report, the intersection design has not yet been finalized, but could potentially include a reduced overall number of traffic lanes than the five lanes that exists today (recognizing the LRT tracks will accommodate the space of two traffic lanes).

As such, the design for Main Street at Dundurn may need to evolve as the designs for the revised LRT alignment are finalized.

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Implementation Schedule Compression:

Report PW23074/PED23248 for the detailed design phase of the two-way conversion provides a schedule estimate of 24-30 months with a construction schedule of an additional approximately 30 months.

On December 4, 2023, Council directed staff to provide options to implement Main Street two-way conversion within two years and/or prior to the initiation of LRT corridor construction by prioritizing core two-way conversion lane re-alignments, intersection and signal upgrades, and corridor upgrades necessary for implementation with further corridor upgrades, resurfacing, and other capital rehabilitation work phased over the following four to six years.

The work on Main Street is multidisciplinary in nature, requiring coordination of roadway design, including new signalized intersections, active transportation, parking, transit and street lighting. Multidisciplinary work requires design time for different specialties, as well as time to allow for specialties to cross-review and coordinate the work.

Additionally, the Main Street two-way conversion design will require coordination with the LRT team, such that construction sequencing is well understood and planned, to minimize traffic impacts and avoid rework. However, precise coordination of construction timelines and staging with the LRT team poses challenges since its schedule has not yet been published.

Given the request to accelerate pre-engineering work using internal City Staff was initiated in January 2024. This includes activities such as the inspection of existing underground traffic infrastructure, detailed surveying, preparation of base plans, and documentation of project management.

Staff evaluated three delivery options to accelerate the overall implementation schedule as follows:

Traditional Project Delivery:

Under a traditional project delivery model, there is a projected timeframe of 24-30 months allocated for the detailed design phase, including hiring of dedicated resources, followed by a 30-month period for the construction phase. This approach adheres to conventional project management practices and sequential approach and is the basis of the approach included in Report PW23074(a)/PED23248(a).

SUBJECT: Main Street Two-Way Conversion Implementation and One-Way Street Conversion Considerations (PW23074(a)/PED23248(a)) (City Wide) – Page 12 of 14

Accelerated Project Delivery:

Provides opportunities to advance the detailed design by nine to twelve months and construction by four to six months, resulting in an 18-21 month design period and a 24-26 month construction timeframe. To avail these opportunities, the following approaches are presented for consideration:

Seeking out consultant support to aid in detailed engineering design and construction administration would require a formal request for proposal process. This process is complex and time consuming. WSP Canada Inc. completed the Main Street two-way conversion study and are familiar with the project details and developed the preliminary design options. Negotiating a single-source agreement with WSP Canada Inc. to conduct the detailed engineering design and construction administration, rather than issuing a request for proposal, would offer a reduction of approximately five months to the overall design schedule. This reduction comes from a faster procurement process (three months), as well as a reduced design timeline (two months) realized by having the consultant who is most familiar with the design and stakeholders complete the detailed design assignment.

Significant public feedback was sought during the spring 2023 consultations, which aided in informing the options included in Recommendation Report PW23074/PED23248. It would accelerate the schedule by up to three months if further public engagement during the detailed design stage is limited to communication updates. The project team would also prepare and implement a robust communications plan prior to and throughout the construction period.

Implementing a delay of other capital projects to allow the reassignment of a dedicated existing staffing resource to the Main Street Conversion Project immediately would offer a reduction of approximately three months in the design timeline. Recommended projects to be put on hold include Fifty Road escarpment access - retaining walls, and Locke Street – King Street to York Boulevard and Margaret Street – Main Street to King Street.

The construction schedule designates an 18–20 week window for a contractor to obtain necessary equipment and materials such as traffic signal poles, signal heads, and other similar infrastructure components. If the City pre-purchases these items before awarding the contract, a potential saving of approximately four months in construction time could be achieved.

One of the construction schedule challenges is that two lanes of traffic must be maintained on Main Street during peak hours. However, using a full closure would allow for faster asphalt milling and paving. To achieve this, a staging plan that allows for work

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in off-peak hours, including on weekends, when full closures could be implemented, would be included as part of the tender specifications, potentially saving 2-4 months in construction time. However, this would likely increase contractual costs.

The following table summarizes where schedule savings could be achieved by the accelerated project delivery model.

Item:	Description:	Project Phase:	Approximate Schedule Compression:
1	Single sourcing detailed design to WSP Canada Inc.	Detailed Design	3 months
2	Streamlined Public Engagement and Notice	Detailed Design	3 months
3	Project Deferrals	Detailed Design	3 months
4	Pre-purchase of materials and equipment	Construction	4 months
5	Staged full-closures	Construction	4 months
Total Estimated Schedule Savings:			17 months

Agile Project Delivery:

The agile project delivery method involves division of the project into manageable segments which would be constructed as soon as they are designed. Several tenders would be issued and awarded, potentially starting as early as mid-2025.

The drawback to the agile project delivery approach is that the cost of the work would increase for both design and construction because of additional administration and loss of efficiencies, and it will be more resource intensive for City Divisions, including Engineering Services, Traffic Engineering, and Procurement.

After review of the options presented in this Report for consideration, the accelerated project delivery approach is preferred, and therefore, the recommendation included in Report PW23074(a)/PED23248(a) supports undertaking this plan to deliver the project. This would enable targeting a completion date of mid-to-late 2027.

Consultation with Interested Ward Councillors:

Transportation, Engineering Services, and Transportation Planning and Parking staff met with Wards 1, 2, 3, 4 and 8 Councillors to discuss the Main Street two-way conversion project and sought input and feedback regarding the approach to

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undertaking the project. Their comments have been considered in the development of Report PW23074(a)/PED23248(a).

ALTERNATIVES FOR CONSIDERATION

N/A

APPENDICES AND SCHEDULES ATTACHED

N/A



Hamilton

MAIN STREET TWO-WAY REPORT PW23074(a)/PED23248(a)

FEBRUARY 20, 2024

Main Street Two-Way Initiative Timeline

Main Street Two-Way Conversion Motion
May 11, 2022

Main Street Two-Way Conversion Study
2022/2023

PWC Main St Report Back
February 20, 2023
(We are here today)

Main & King
Immediate Safety Measures
Summer/Fall 2022

PWC Main St Report & Deferral/Direction
December 4, 2023

- Identify actions that can be taken immediately to improve safety for all users along Main Street and King Street;
- Convert Main Street to two-way operation integrating complete streets and climate resiliency to enable the safer use of road users including transit riders, pedestrians, motorists and cyclists;
- Undertake public engagement that leverages a Complete Streets, EDI and Climate Change approach;
- Consult with Metrolinx and MTO regarding two-way conversion considerations for LRT and the 403 interchanges;
- Report back with an implementation plan for two-way conversion that includes an assessment of costs, construction timing and resource requirements; and
- Update and reassess all remaining one-way streets in the city utilizing the street conversion framework identified in the Transportation Master Plan and report back.

- (a) That funding for the detailed engineering design of the two-way conversion of Main Street between Dundurn Street South and Main Street East/King Street East (Delta) in alignment with the principles established by the Main Street Two-Way conversion study, be submitted as Capital Project ID #4032411048 at a value of \$1,000,000 through the 2024 annual capital budget process for consideration of Council;
- (b) Funding for the implementation of Main Street between Dundurn Street South and Main Street East/King Street East (Delta), following the completion of detailed engineering design, be earmarked in the 2026 capital budget at a value of \$26,492,000 and considered for future approval by Council to enable construction targeted to begin in 2026 and completion in 2028;
- (c) That the remaining unbudgeted candidate one-way to two-way street conversions and alternative complete street interventions as identified in Appendix “E” to Report PW23074/PED23248 be programmed, and that funding associated with the conversions be identified and brought forward as part of future annual capital budget submissions for consideration of Council.

PWC Direction: December 4, 2023

- (a) Quantify the core capital investment required to convert Main Street to two-way traffic, exclusive of necessary and already programmed capital works, AODA compliance upgrades, any other necessary or contemplated upgrades, reconstruction and rehabilitation capital works and residual lifecycle infrastructure renewal costs.
- (b) Provide further quantification of the assessment of the Main Street two-way evaluation criteria versus prioritizing eastbound vehicular traffic capacity in the recommended Option three.
- (c) Provide options to implement Council's direction of Main Street two-way traffic conversion within two years and/or prior to the initiation of LRT corridor construction by prioritizing core two-way conversion lane re-alignments, intersection and signal upgrades, and corridor upgrades necessary for implementation with further corridor upgrades, resurfacing and other capital rehabilitation work phased over the following four to six years.
- (d) Meet with impacted and interested Ward Councillors with Public Works staff and consulting engineering team.

Direction A: Core Capital Investment

Main Street Two-Way Conversion Overall Project Budget Estimate: \$26,492,000

Activities NOT Related to Two-Way Conversion:	
<u>Item:</u>	<u>Budget Estimate:</u>
Traffic Signal Construction (Hilda Ave & Albert St)	\$ 450,000
Roadway Rehabilitation	\$10,000,000
Pavement Markings	\$ 535,000
Contingency & Miscellaneous	\$ 90,000
Total:	\$11,075,000

Main Street Two-Way Conversion Conceptual Budget Estimate:
\$15,417,000

Direction B: Configuration Evaluation Criteria



Safety/Conflict Mitigation

Mitigate conflicts between motorist and cyclists



Two-Way Traffic Operations

Impact to two-way roadway capacity and intersection operations



Pedestrian Friendliness

Have access to safe, walkable and convenient pedestrian routes



Cyclist Network

Provide cycling facilities and connectivity to destinations



Transit Operations

Impact and compatibility with local transit



Social Health & Equity

Provides a fair and accessible environment for users



On-street Parking

Impact to on-street parking supply



Cost

Anticipated cost to construct the conceptual design

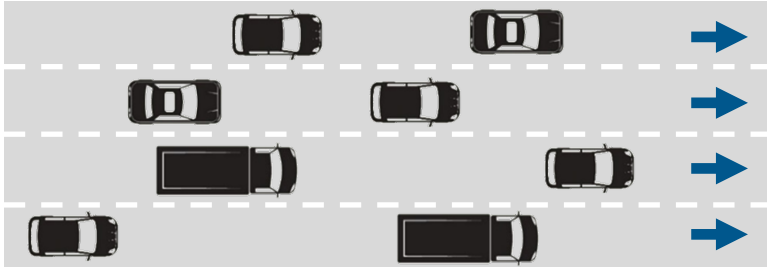


Green and Resilient Infrastructure

Provide opportunities for greening, permeable surfaces and beautification

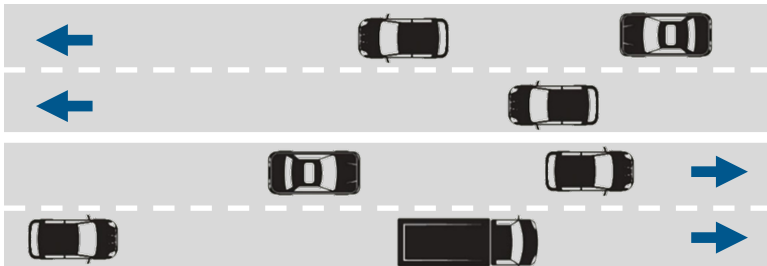
Direction B: Configuration Alternatives

Option 1: Do Nothing – 4 Eastbound Lanes



- Does not provide two-way traffic flow as directed by Council
- Not pedestrian- and cyclist-friendly
- Poor safety outcomes
- Does not improve social health and equity

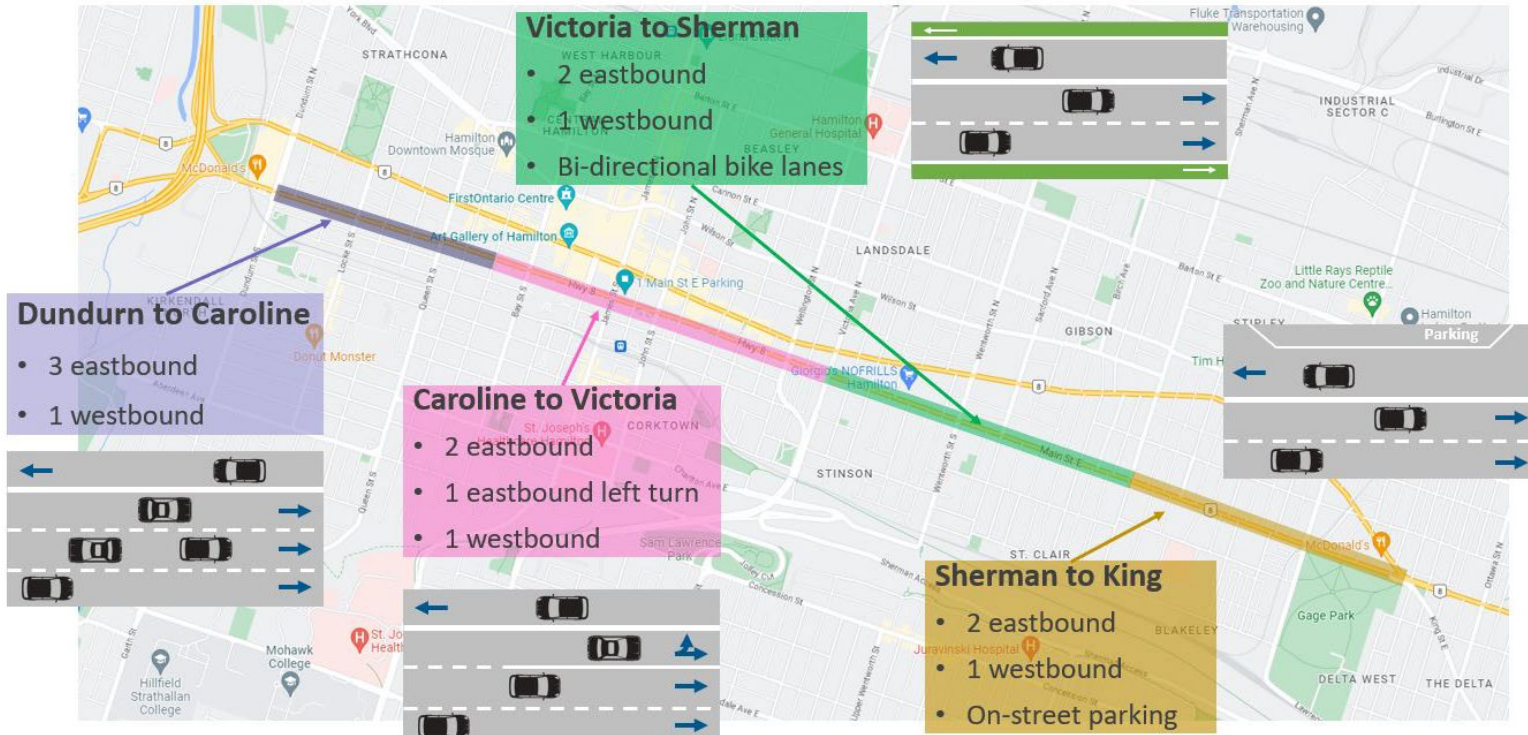
Option 2: Symmetrical Lane Capacity



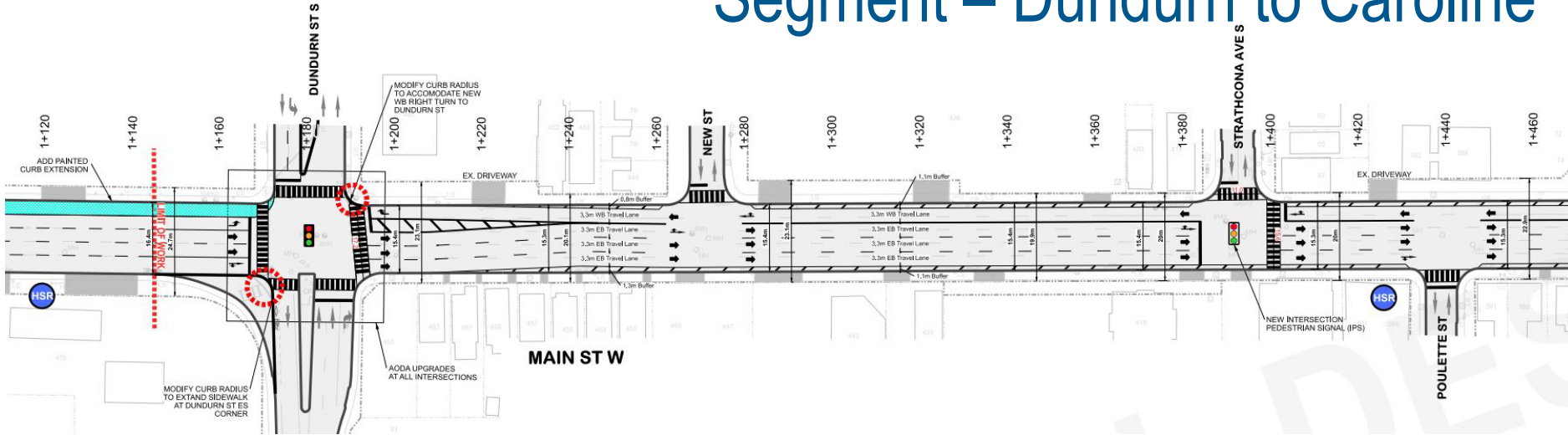
- Current four lanes reconfigured to two lanes eastbound and two lanes westbound
- Provides equal amounts of westbound and eastbound capacity on Main Street
- Most traffic congestion of three options

Direction B: Configuration Alternatives

Option 3: Asymmetric Lane Capacity (Preferred Configuration)



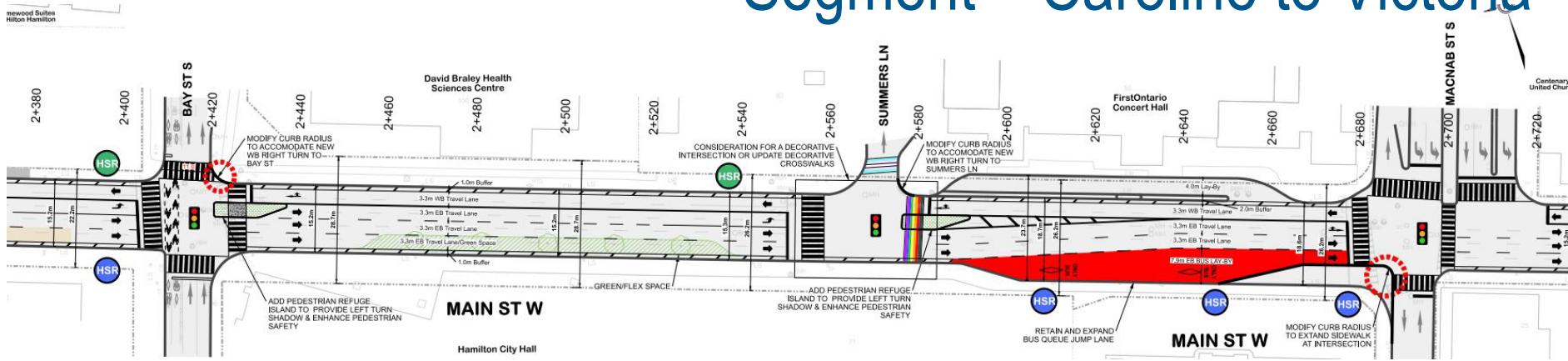
Preferred Configuration Segment – Dundurn to Caroline



Key Segment Features:

- High volume of east bound traffic from Westdale and Hwy 403
- Flexibility for south curb lane to be utilized as transit priority lane
- Future integration with LRT

Preferred Configuration Segment – Caroline to Victoria



Key Segment Features:

- Flexibility for south curb lane to be used for off-peak parking and greening opportunities
- Provides for dedicated left turn lanes at Bay Street and Summer's Lane
- Transit movement prioritization trough MacNab intersection

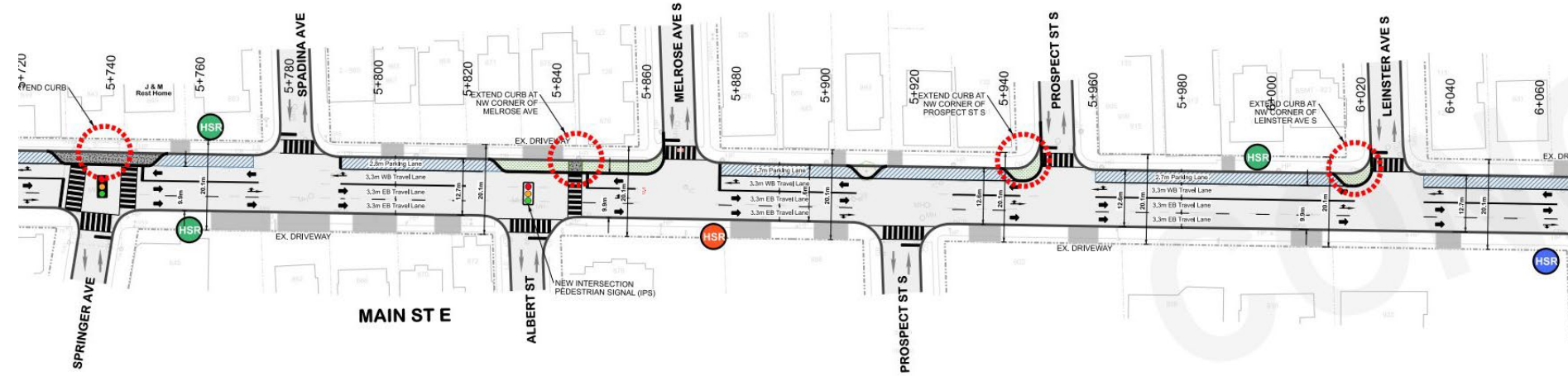
Preferred Configuration Segment – Victoria to Sherman



Key Segment Features:

- Incorporates protected cycling facility between Victoria and Sherman
- Sidewalk is buffered from vehicle travel lanes

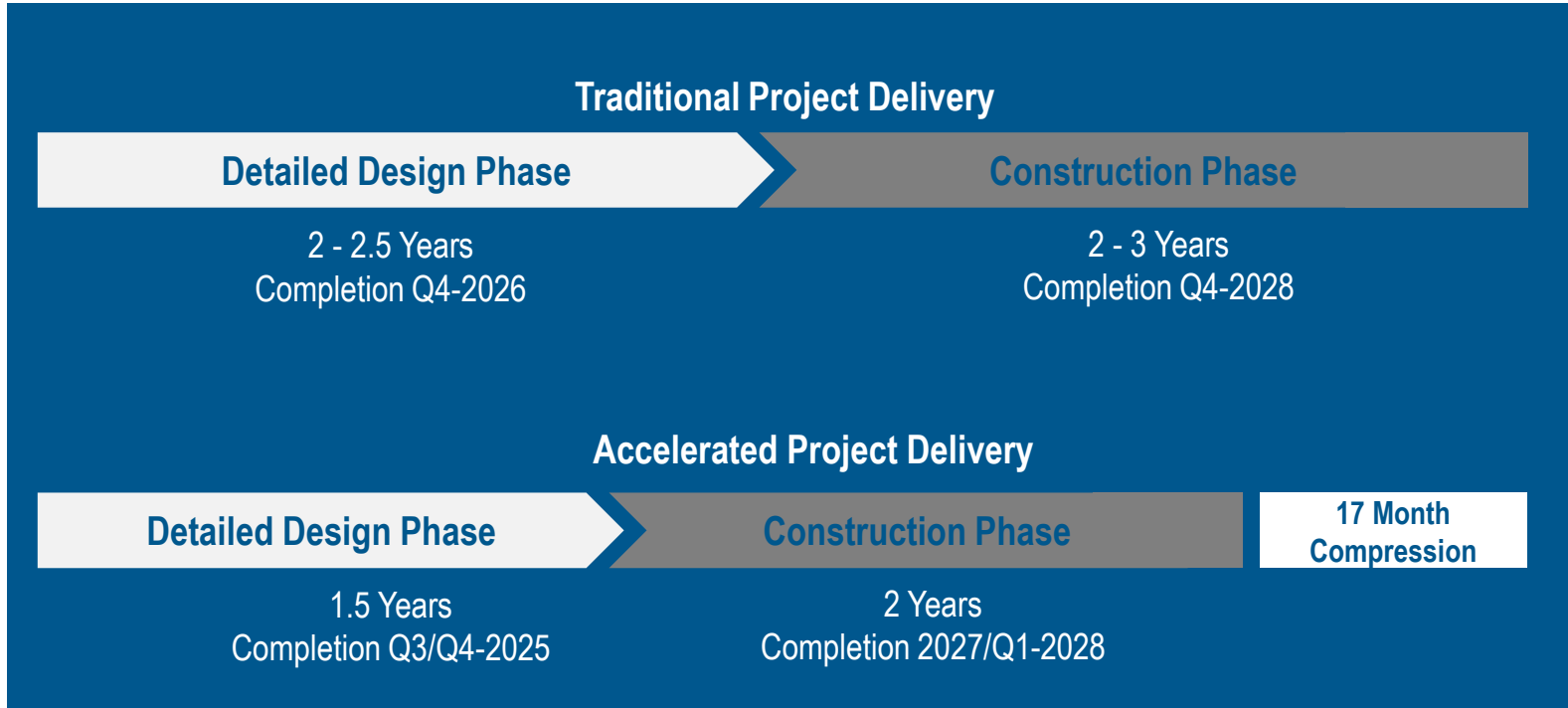
Preferred Configuration Segment – Sherman to King (Delta)



Key Segment Features:

- Traffic calming bump-outs incorporating green infrastructure
- On-street parking that buffers pedestrian realm from vehicles
- Future integration with LRT

Direction C: Implementation Schedule Page 44 of 78



Councillor Consultation:

- Transportation, Engineering Services, and Transportation Planning and Parking Divisions met with Wards 1, 2, 3, 4 and 8 Councillors to discuss the Main Street two-way conversion project
- Feedback has been considered in the development of Report PW23074(a)/PED23248(a)

Communications:

- Streamlined public engagement during the detailed design stage using communication updates
- Implementation of a robust communications plan prior to and throughout the construction period




February 20 Amended PWC Report Recommendation

- a) That the General Manager of Public Works be authorized and directed to negotiate and execute a non-competitive single source contract with WSP Canada Inc., to complete the detailed design and contract administration for the Main Street Two-Way Conversion Project, in a form satisfactory to the City Solicitor and in adherence to the City of Hamilton Procurement Policy By-Law No.22-255;
- a) That staff be directed to undertake an accelerated project delivery approach as outlined in Report PW23074(a)/PED23248(a), funding for the implementation be referred for inclusion in the 2025 capital budget at a value of \$26,492,000 with a target timeline to complete detailed design by Q3 2025/Q4 2025, commence construction Q4 2025, and target a project completion date of Q4 2027/Q1 2028; and
- b) That the remaining unbudgeted candidate one-way to two-way street conversions and alternative complete street interventions as identified in Appendix “E” to Report PW23074/PED23248 be programmed, and that funding associated with the conversions be identified and brought forward as part of future annual capital budget submissions for consideration of Council.

Thank You



CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
 Transportation Division
 and
PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
 Transportation Planning and Parking Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	February 20, 2024
SUBJECT/REPORT NO:	Main Street Two-Way Conversion Implementation and One-Way Street Conversion Considerations (PW23074(a)/PED23248(a)) (City Wide) (Outstanding Business List Item)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Mike Field (905) 546-2424 Ext. 4576 Dipankar Sharma (905) 546-2424 Ext. 3016
SUBMITTED BY: SIGNATURE:	Carolyn Ryall Director, Transportation Division Public Works Department 
SUBMITTED BY: SIGNATURE:	Jackie Kennedy Director, Engineering Services Division Public Works Department 
SUBMITTED BY: SIGNATURE:	Brian Hollingworth Director, Transportation Planning and Parking Planning and Economic Development Department 

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SUBJECT: Main Street Two-Way Conversion Implementation and One-Way Street Conversion Considerations (PW23074(a)/PED23248(a)) (City Wide) – Page 2 of 14

RECOMMENDATION

That the Recommendations in Report PW23074/PED23248 be replaced with the following:

- (a) That the General Manager of Public Works be authorized and directed to negotiate and execute a non-competitive single source contract with WSP Canada Inc., to complete the detailed design and contract administration for the Main Street Two-Way Conversion Project, in a form satisfactory to the City Solicitor and in adherence to the City of Hamilton Procurement Policy By-law No.22-255;
- (b) That staff be directed to undertake an accelerated project delivery approach as outlined in Report PW23074(a)/PED23248(a), funding for the implementation be referred for inclusion in the 2025 capital budget at a value of \$26,492,000 with a target timeline to complete detailed design by Q3 2025/Q4 2025, commence construction Q4 2025, and target a project completion date of Q4 2027/Q1 2028;
- (c) That the remaining unbudgeted candidate one-way to two-way street conversions and alternative complete street interventions as identified in Appendix “E” to Report PW23074/PED23248 be programmed, and that funding associated with the conversions be identified and brought forward as part of future annual capital budget submissions for consideration of Council.

EXECUTIVE SUMMARY

This Report addresses the December 4, 2023 Public Works Committee direction related to the conversion of Main Street from one-way operation to two-way operation as detailed in Report PW23074/PED23248.

Report PW23074/PED23248 outlined the cost to convert Main Street to two-way operation as \$26,492,000. A proportion of scope was previously planned and budgeted for that would have been needed regardless of two-way conversion. Of the overall project budget, costs associated strictly with two-way conversion are approximately \$15,417,000.

Further clarification of the recommended alternative is also provided, including a summary of the lane and space allocation considerations by segment. These considerations included traffic operations, transit, corridor flexibility and integration with the Light Rail Transit project. The recommended alternative (asymmetrical configuration) allows for the incorporation a number of complete streets features including curb extensions, parking and greening opportunities in the easterly section,

SUBJECT: Main Street Two-Way Conversion Implementation and One-Way Street Conversion Considerations (PW23074(a)/PED23248(a)) (City Wide) – Page 3 of 14

cycling facilities in the east/central section, and transit priority measures and low impact development opportunities in the central/westerly segment.

A review of project delivery identified options which could compress the schedule. An accelerated plan could enable a total savings of approximately 17 months; from a total project delivery of 60 months as initially presented in Report PW23074/PED23248, thereby enabling project completion by Q4 2027/Q1 2028. To enable the use of an accelerated approach, Council approval for single-sourcing would be required and therefore formed the Recommendation included in Report PW23074(a)/PED23248(a).

ALTERNATIVES FOR CONSIDERATION – Not Applicable

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: There are no staffing implications associated with this Report. Approval to execute a non-competitive single source contract with WSP Canada Inc., to complete the detailed design and contract administration for the Main Street Two-Way Conversion Project, using the City of Hamilton Procurement Policy, By-law No. 22-255, requiring Council approval of non-competitive contracts under Policy #11 – Non-Competitive Procurements that are valued at greater than \$250,000.

Funding for the detailed engineering design of the two-way conversion of Main Street between Dundurn Street South and Main Street East/King Street East (Delta) has been submitted as Capital Project ID #4032411048 at a value of \$1,000,000 through the 2024 annual capital budget process.

Staffing: N/A

Legal: N/A

HISTORICAL BACKGROUND

At the December 4, 2023 Public Works Committee, Report PW23074/PED23248 was presented. The report responded to previous Council direction related to the conversion of Main Street from one-way to two-way operations and included three recommendations:

- (a) That funding for the detailed engineering design of the two-way conversion of Main Street between Dundurn Street South and Main Street East/King Street East (Delta) in alignment with the principles established by the Main Street Two-

SUBJECT: Main Street Two-Way Conversion Implementation and One-Way Street Conversion Considerations (PW23074(a)/PED23248(a)) (City Wide) – Page 4 of 14

Way Conversion Study, be submitted as Capital Project ID #4032411048 at a value of \$1,000,000 through the 2024 annual capital budget process for consideration of Council;

- (b) Funding for the implementation of Main Street between Dundurn Street South and Main Street East/King Street East (Delta), following the completion of detailed engineering design, be earmarked in the 2026 capital budget at a value of \$26,492,000 and considered for future approval by Council to enable construction targeted to begin in 2026 and completion in 2028;
- (c) That the remaining unbudgeted candidate one-way to two-way street conversions and alternative complete street interventions as identified in Appendix “E” to Report PW23074/PED23248 be programmed, and that funding associated with the conversions be identified and brought forward as part of future annual capital budget submissions for consideration of Council.

Report PW23074/PED23248 was deferred, and additional direction was provided by the Public Works Committee. The approved direction was:

That staff be directed to report back to the Public Works Committee on February 5, 2024 on the following:

- a) Quantify the core capital investment required to convert Main Street to two-way traffic, exclusive of necessary and already programmed capital works, AODA compliance upgrades, any other necessary or contemplated upgrades, reconstruction and rehabilitation capital works and residual lifecycle infrastructure renewal costs.
- b) Provide further quantification of the assessment of the Main Street two-way evaluation criteria versus prioritizing eastbound vehicular traffic capacity in the recommended Option Three.
- c) Provide options to implement Council’s direction of Main Street two-way traffic conversion within two years and/or prior to the initiation of LRT corridor construction by prioritizing core two-way conversion lane re-alignments, intersection and signal upgrades, and corridor upgrades necessary for implementation with further corridor upgrades, resurfacing and other capital rehabilitation work phased over the following four to six years.
- d) Meet with impacted and interested Ward Councillors with Public Works staff and consulting engineering team.

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POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The City of Hamilton Procurement Policy, By-law No. 22-255, requires Council approval of non-competitive contracts under Policy #11 – Non-Competitive Procurements that are valued at greater than \$250,000.

RELEVANT CONSULTATION

The following parties have been consulted with during the development of this Report:

- LRT Project Office; and,
- Metrolinx.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Main Street Two-Way Conversion Capital Budget Composition:

Report PW23074/PED23248 provided a capital budget estimate for Main Street two-way conversion based on the functional design plans (Option Three). The estimated construction budget includes traffic signal reconstruction (\$8,425,000), roadway rehabilitation (\$10,000,000), corridor improvements (\$3,557,000), and contingency/miscellaneous/staffing costs (\$4,510,000), totalling \$26,492,000.

Regardless of converting Main Street to two-way operation, the roadway rehabilitation was previously included in the five-year capital plan prior to the two-way conversion motion. Additionally, two new traffic signals were planned at the intersection of Main Street at Albert Street and Main Street at Hilda Avenue. The rehabilitation of Main Street between Dundurn Street and Delta scope included for roadway replacement, pavement markings and associated project contingencies. The budget cost estimate for these activities totalling \$11,075,000 and detailed as follows.

<u>Item:</u>	<u>Budget Estimate:</u>
Traffic Signal Construction	\$ 450,000
Roadway Rehabilitation	\$10,000,000
Pavement Markings	\$ 535,000
Contingency and Miscellaneous	\$ 90,000
Total:	<u>\$11,075,000</u>

There are other infrastructure needs on Main Street that have not been planned for in the five-year capital budget which would be addressed within the scope of two-way conversion. These include existing traffic signal rehabilitation, Accessibility for Ontarians with Disabilities Act improvements, sidewalk, and curb replacements. Budget cost

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estimates for these works have not been developed, however they would be in the scale of multiple millions of dollars.

The estimated cost to convert Main Street to two-way operation, without inclusion of the previously planned rehabilitation work, totals \$15,417,000.

Main Street Proposed Configuration:

As outlined in Report PW23074/PED23248, two different lane configuration alternatives for achieving two-way traffic flow on Main Street were evaluated, in addition to the “Do Nothing” option. A summary of the different two-way alternatives is presented in the table below. It should be noted that the lane allocations are the total lanes that could be available to vehicular traffic, not accounting for off-peak parking or other non-permanent lane utilization.

	Dundurn Street to Caroline	Caroline to Victoria	Victoria to Sherman	Sherman to King
Pre-2022				
Eastbound	5	4	4	4
Westbound	0	0	0	0
Current				
Eastbound	3	3	3	3
Westbound	0	0	0	0
Symmetrical/or Balanced				
Eastbound	2	2	2	2
Westbound	2	2	2	2
Proposed Asymmetrical				
Eastbound	3	2+Left turn	2	2
Westbound	1	1+Left turn	1	1
Bike lanes/greening	Future potential	Future potential	Bi-directional	0
On-street parking	South lane off-peak	South lane off-peak	0	North lane, full time

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The primary difference between the two future options evaluated would be for the segment between Dundurn Street and Victoria Avenue. For this segment, the proposed alternative would consist of three eastbound lanes to Victoria Avenue and one westbound lane. Between Caroline and Victoria, one lane would operate as a left turn lane alternating between eastbound and westbound traffic. This configuration is like James Street and John Street between Cannon Street and St. Joseph's Drive which operate with an asymmetrical configuration.

Between Victoria Avenue and the Delta, the preferred option consists of two eastbound lanes and one westbound lane. For this segment, moving to an option that provides for a balanced capacity could be achieved by:

- Replacing the proposed parking on the north side with a vehicle lane. This is not recommended as the proposed parking is intended to provide a buffer for pedestrians and would be implemented in conjunction with bump-outs at intersections to shorten pedestrian crossing distances.
- Moving to a configuration with only one lane of vehicle traffic in each direction. This alternative is not recommended as one lane of travel would provide less than 50% of the capacity required to carry existing volumes. For example, the eastbound volumes in the afternoon peak hour are 1,850 vehicles per hour while the capacity of one arterial lane is typically about 800 vehicles per hour. Even with significant mode shifts and traffic diversions to other routes, it is not feasible that Main Street could function with one eastbound lane in this section.

Overall, between Dundurn and the Delta, the proposed asymmetrical configuration will provide corridor enhancements as presented in the following table:

Quantity:	Element:
3 kilometres	New cycling lanes on Main Street
21	New Transit stops for west-bound transit operations
20	Locations to be leveraged for green infrastructure, such as trees
3 kilometres	Additional pedestrian space buffered from vehicle traffic by on-street parking or separated cycling facilities

Traffic Volume Trends Analysis:

Main Street is currently one of the busiest streets related to motor vehicle use in the City. Before changes were implemented in 2022 to reduce the number of effective travel lanes, Main Street West between Dundurn Street and Queen Street carried approximately 33,500 vehicles per day. By comparison, at its highest point, the Lincoln

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Alexander Parkway carries approximately 44,000 vehicles in one direction per day while James Street North at King William Street handles approximately 11,500 vehicles per day. These high volumes are directly a result of the fact that Main Street is the primary access off Highway 403 downtown, with York Boulevard and Aberdeen Avenue being the other alternatives. Without question, the high volumes have significant negative impacts on the walkability and overall liveability of the street, and its desirable to plan for reduced volumes over time.

In August 2022, changes were made to Main Street to reduce the effective traffic capacity and in turn, realize safer travel speeds. These changes have had a measurable but varied effect as summarized in the table below. Comparing the volumes before and after implementation there was an approximate 10% reduction in average daily traffic on Main Street. Speeds also decrease significantly for two of the sample locations.

Location (Main Street @)	Count Date	Volume (Annual Average Daily Traffic)	85 th Percentile Speed
East of Dundurn Street	June 2022	33,361	49.6
	June 2023	30,088	49.7
East of Bay Street	June 2022	28,591	57.5
	June 2023	26,851	49.9
East of Wentworth Street	June 2022	24,203	57.6
	June 2023	20,108	52.9
East of Gage Avenue	June 2022	17,993	59.6
	June 2023	16,549	60.9

Recognizing that reductions in traffic volumes is a key consideration in achieving a more liveable and complete Main Street, it is also important to present the overall volume context for the different alternatives. For illustrative purposes, the tables below summarize the volumes and capacities for Main Street, York Boulevard, and Aberdeen Avenue at Dundurn Street. Volumes are based on counts taken in May and June of 2023. A nominal capacity of 800 vehicles per lane is used for this simple analysis, based on industry rules of thumb. A more detailed traffic modelling exercise was conducted as part of the previous Main Street two-way conversion with results presented in Appendix “D” of Report PW23074/PED23248.

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As shown in the tables below, the proposed configuration consisting of three eastbound lanes on Main Street (which is reflective of the existing number of lanes currently), Main Street is effectively operating at or close to capacity. This is reflective of actual experience where traffic occasionally is queued from the Highway 403 off-ramp to Bay Street or farther east. Similarly, York Boulevard and Aberdeen Avenue are at or exceeding their theoretical capacity.

A configuration with two eastbound lanes on Main Street, based on nominal per lane capacity assumptions, would be over capacity during some periods. Under this scenario, it could be expected that traffic would seek out other routes, or more desirably, shift to other modes.

Proposed Asymmetrical Configuration (Eastbound priority):

	Number of Lanes (Eastbound)	Capacity	P.M. Peak Hour Volume	Volume-to-Capacity Ratio	Residual Capacity
Main Street	3	2,400	2,135	89%	265
York Boulevard	2	1,600	1,750	109%	-150
Aberdeen Avenue	1	800	674	84%	126
Combined	6	4,800	4,559	95%	241

Alternate Configuration (Balanced capacity):

	Number of Lanes (Eastbound)	Capacity	P.M. Peak Hour Volume	Volume-to-Capacity Ratio	Residual Capacity
Main Street	2	2,400	2,135	133%	-535
York Boulevard	2	1,600	1,750	109%	-150
Aberdeen Avenue	1	800	674	84%	126
Combined	5	4,800	4,559	114%	-559

Overall, the key goals of the Main Street two-way conversion are to create a more Complete Street and a safer street, with enhanced road-user equity within the corridor through a lowered priority for vehicular level of service. However, it is also important to understand the potential impacts of the different alternatives. Moving to a balanced lane configuration on Main Street (i.e. two eastbound lanes and two westbound lanes) could mean that there is higher potential for traffic to infiltrate into local neighbourhood streets with associated impacts.

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

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Transit Considerations:

At present, there are no HSR services operating in the westbound direction on Main Street between Longwood Road and the Delta (due to its one-way configuration). However, with the conversion of Main Street to two-way, there are opportunities to provide service in both directions. This will be advantageous during LRT construction for service continuity, and even post LRT construction for local service.

A design which can accommodate three lanes of capacity for vehicles in the eastbound direction would ensure efficient movement for HSR buses in the eastbound direction. In particular, it would mean that the existing bus queue jump lanes (painted red lanes) could be maintained, and potential expanded to provide a full transit lane. The drawback of this option is that only one lane would be provided in the westbound direction for both regular vehicles and HSR buses. HSR buses, which are planned to provide local service only at a peak frequency of every 20 minutes, would impede traffic flow when stopped due to the single lane configuration. It is noted that this is not unprecedented; for example, HSR buses operate in a single lane on portions of James Street North, Wilson Street – Ancaster and portions of Rymal Road.

Flexibility:

One of the factors which influenced the selection of Option Three – Asymmetrical as the preferred configuration was its flexibility to accommodate various use in the south lane. This could include a combination of bus priority lanes, on-street parking, or greening opportunities. An option with two westbound lanes would have less flexibility in this regard. However, it could be possible to utilize a second lane in the westbound lane for on-street parking or bus bays.

LRT Alignment Design:

In November 2023, Metrolinx announced a change in the alignment of the LRT which would see it running on Dundurn Street between King and Main and then along Main Street West vs the previous alignment which included a bridge over Highway 403. As a result, there will need to be significant modifications to the Main Street West and Dundurn Street intersection. At the time of this Report, the intersection design has not yet been finalized, but could potentially include a reduced overall number of traffic lanes than the five lanes that exists today (recognizing the LRT tracks will accommodate the space of two traffic lanes).

As such, the design for Main Street at Dundurn may need to evolve as the designs for the revised LRT alignment are finalized.

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Implementation Schedule Compression:

Report PW23074/PED23248 for the detailed design phase of the two-way conversion provides a schedule estimate of 24-30 months with a construction schedule of an additional approximately 30 months.

On December 4, 2023, Council directed staff to provide options to implement Main Street two-way conversion within two years and/or prior to the initiation of LRT corridor construction by prioritizing core two-way conversion lane re-alignments, intersection and signal upgrades, and corridor upgrades necessary for implementation with further corridor upgrades, resurfacing, and other capital rehabilitation work phased over the following four to six years.

The work on Main Street is multidisciplinary in nature, requiring coordination of roadway design, including new signalized intersections, active transportation, parking, transit and street lighting. Multidisciplinary work requires design time for different specialties, as well as time to allow for specialties to cross-review and coordinate the work.

Additionally, the Main Street two-way conversion design will require coordination with the LRT team, such that construction sequencing is well understood and planned, to minimize traffic impacts and avoid rework. However, precise coordination of construction timelines and staging with the LRT team poses challenges since its schedule has not yet been published.

Given the request to accelerate pre-engineering work using internal City Staff was initiated in January 2024. This includes activities such as the inspection of existing underground traffic infrastructure, detailed surveying, preparation of base plans, and documentation of project management.

Staff evaluated three delivery options to accelerate the overall implementation schedule as follows:

Traditional Project Delivery:

Under a traditional project delivery model, there is a projected timeframe of 24-30 months allocated for the detailed design phase, including hiring of dedicated resources, followed by a 30-month period for the construction phase. This approach adheres to conventional project management practices and sequential approach and is the basis of the approach included in Report PW23074(a)/PED23248(a).

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Accelerated Project Delivery:

Provides opportunities to advance the detailed design by nine to twelve months and construction by four to six months, resulting in an 18-21 month design period and a 24-26 month construction timeframe. To avail these opportunities, the following approaches are presented for consideration:

Seeking out consultant support to aid in detailed engineering design and construction administration would require a formal request for proposal process. This process is complex and time consuming. WSP Canada Inc. completed the Main Street two-way conversion study and are familiar with the project details and developed the preliminary design options. Negotiating a single-source agreement with WSP Canada Inc. to conduct the detailed engineering design and construction administration, rather than issuing a request for proposal, would offer a reduction of approximately five months to the overall design schedule. This reduction comes from a faster procurement process (three months), as well as a reduced design timeline (two months) realized by having the consultant who is most familiar with the design and stakeholders complete the detailed design assignment.

Significant public feedback was sought during the spring 2023 consultations, which aided in informing the options included in Recommendation Report PW23074/PED23248. It would accelerate the schedule by up to three months if further public engagement during the detailed design stage is limited to communication updates. The project team would also prepare and implement a robust communications plan prior to and throughout the construction period.

Implementing a delay of other capital projects to allow the reassignment of a dedicated existing staffing resource to the Main Street Conversion Project immediately would offer a reduction of approximately three months in the design timeline. Recommended projects to be put on hold include Fifty Road escarpment access - retaining walls, and Locke Street – King Street to York Boulevard and Margaret Street – Main Street to King Street.

The construction schedule designates an 18–20 week window for a contractor to obtain necessary equipment and materials such as traffic signal poles, signal heads, and other similar infrastructure components. If the City pre-purchases these items before awarding the contract, a potential saving of approximately four months in construction time could be achieved.

One of the construction schedule challenges is that two lanes of traffic must be maintained on Main Street during peak hours. However, using a full closure would allow for faster asphalt milling and paving. To achieve this, a staging plan that allows for work

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in off-peak hours, including on weekends, when full closures could be implemented, would be included as part of the tender specifications, potentially saving 2-4 months in construction time. However, this would likely increase contractual costs.

The following table summarizes where schedule savings could be achieved by the accelerated project delivery model.

Item:	Description:	Project Phase:	Approximate Schedule Compression:
1	Single sourcing detailed design to WSP Canada Inc.	Detailed Design	3 months
2	Streamlined Public Engagement and Notice	Detailed Design	3 months
3	Project Deferrals	Detailed Design	3 months
4	Pre-purchase of materials and equipment	Construction	4 months
5	Staged full-closures	Construction	4 months
Total Estimated Schedule Savings:			17 months

Agile Project Delivery:

The agile project delivery method involves division of the project into manageable segments which would be constructed as soon as they are designed. Several tenders would be issued and awarded, potentially starting as early as mid-2025.

The drawback to the agile project delivery approach is that the cost of the work would increase for both design and construction because of additional administration and loss of efficiencies, and it will be more resource intensive for City Divisions, including Engineering Services, Traffic Engineering, and Procurement.

After review of the options presented in this Report for consideration, the accelerated project delivery approach is preferred, and therefore, the recommendation included in Report PW23074(a)/PED23248(a) supports undertaking this plan to deliver the project. This would enable targeting a completion date of mid-to-late 2027.

Consultation with Interested Ward Councillors:

Transportation, Engineering Services, and Transportation Planning and Parking staff met with Wards 1, 2, 3, 4 and 8 Councillors to discuss the Main Street two-way conversion project and sought input and feedback regarding the approach to

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undertaking the project. Their comments have been considered in the development of Report PW23074(a)/PED23248(a).

ALTERNATIVES FOR CONSIDERATION

N/A

APPENDICES AND SCHEDULES ATTACHED

N/A



Hamilton

MAIN STREET TWO-WAY REPORT PW23074(a)/PED23248(a)

FEBRUARY 20, 2024

Main Street Two-Way Initiative Timeline

Main Street Two-Way Conversion Motion
May 11, 2022

Main Street Two-Way Conversion Study
2022/2023

PWC Main St Report Back
February 20, 2023
(We are here today)

Main & King
Immediate Safety Measures
Summer/Fall 2022

PWC Main St Report & Deferral/Direction
December 4, 2023

- Identify actions that can be taken immediately to improve safety for all users along Main Street and King Street;
- Convert Main Street to two-way operation integrating complete streets and climate resiliency to enable the safer use of road users including transit riders, pedestrians, motorists and cyclists;
- Undertake public engagement that leverages a Complete Streets, EDI and Climate Change approach;
- Consult with Metrolinx and MTO regarding two-way conversion considerations for LRT and the 403 interchanges;
- Report back with an implementation plan for two-way conversion that includes an assessment of costs, construction timing and resource requirements; and
- Update and reassess all remaining one-way streets in the city utilizing the street conversion framework identified in the Transportation Master Plan and report back.

- (a) That funding for the detailed engineering design of the two-way conversion of Main Street between Dundurn Street South and Main Street East/King Street East (Delta) in alignment with the principles established by the Main Street Two-Way conversion study, be submitted as Capital Project ID #4032411048 at a value of \$1,000,000 through the 2024 annual capital budget process for consideration of Council;
- (b) Funding for the implementation of Main Street between Dundurn Street South and Main Street East/King Street East (Delta), following the completion of detailed engineering design, be earmarked in the 2026 capital budget at a value of \$26,492,000 and considered for future approval by Council to enable construction targeted to begin in 2026 and completion in 2028;
- (c) That the remaining unbudgeted candidate one-way to two-way street conversions and alternative complete street interventions as identified in Appendix “E” to Report PW23074/PED23248 be programmed, and that funding associated with the conversions be identified and brought forward as part of future annual capital budget submissions for consideration of Council.

PWC Direction: December 4, 2023

- (a) Quantify the core capital investment required to convert Main Street to two-way traffic, exclusive of necessary and already programmed capital works, AODA compliance upgrades, any other necessary or contemplated upgrades, reconstruction and rehabilitation capital works and residual lifecycle infrastructure renewal costs.
- (b) Provide further quantification of the assessment of the Main Street two-way evaluation criteria versus prioritizing eastbound vehicular traffic capacity in the recommended Option three.
- (c) Provide options to implement Council's direction of Main Street two-way traffic conversion within two years and/or prior to the initiation of LRT corridor construction by prioritizing core two-way conversion lane re-alignments, intersection and signal upgrades, and corridor upgrades necessary for implementation with further corridor upgrades, resurfacing and other capital rehabilitation work phased over the following four to six years.
- (d) Meet with impacted and interested Ward Councillors with Public Works staff and consulting engineering team.

Direction A: Core Capital Investment

Main Street Two-Way Conversion Overall Project Budget Estimate: \$26,492,000

Activities NOT Related to Two-Way Conversion:	
<u>Item:</u>	<u>Budget Estimate:</u>
Traffic Signal Construction (Hilda Ave & Albert St)	\$ 450,000
Roadway Rehabilitation	\$10,000,000
Pavement Markings	\$ 535,000
Contingency & Miscellaneous	\$ 90,000
Total:	\$11,075,000

Main Street Two-Way Conversion Conceptual Budget Estimate:
\$15,417,000



Safety/Conflict Mitigation

Mitigate conflicts between motorist and cyclists



Two-Way Traffic Operations

Impact to two-way roadway capacity and intersection operations



Pedestrian Friendliness

Have access to safe, walkable and convenient pedestrian routes



Cyclist Network

Provide cycling facilities and connectivity to destinations



Transit Operations

Impact and compatibility with local transit



Social Health & Equity

Provides a fair and accessible environment for users



On-street Parking

Impact to on-street parking supply



Cost

Anticipated cost to construct the conceptual design

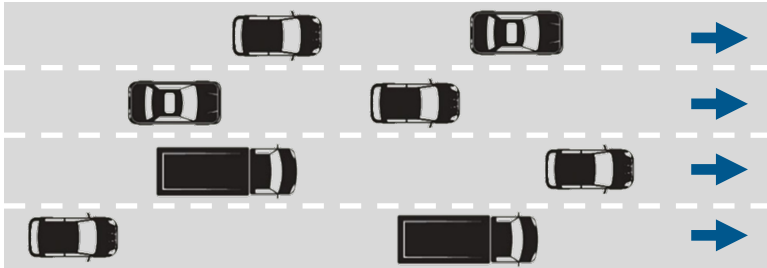


Green and Resilient Infrastructure

Provide opportunities for greening, permeable surfaces and beautification

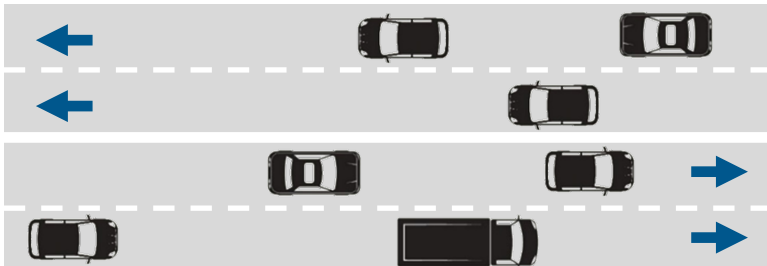
Direction B: Configuration Alternatives

Option 1: Do Nothing – 4 Eastbound Lanes



- Does not provide two-way traffic flow as directed by Council
- Not pedestrian- and cyclist-friendly
- Poor safety outcomes
- Does not improve social health and equity

Option 2: Symmetrical Lane Capacity



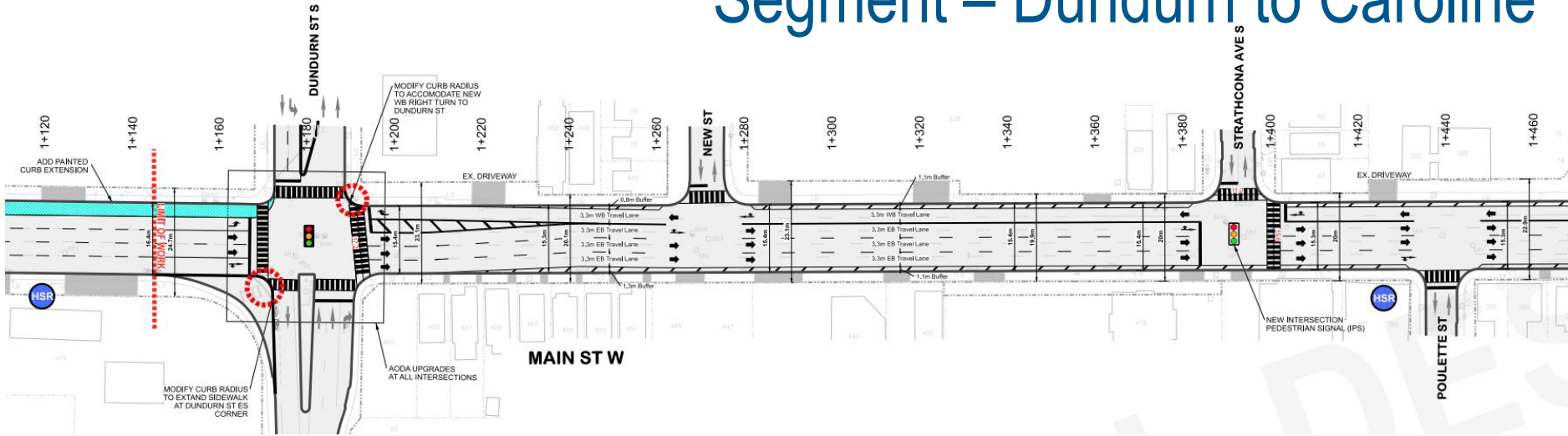
- Current four lanes reconfigured to two lanes eastbound and two lanes westbound
- Provides equal amounts of westbound and eastbound capacity on Main Street
- Most traffic congestion of three options

Direction B: Configuration Alternatives

Option 3: Asymmetric Lane Capacity (Preferred Configuration)



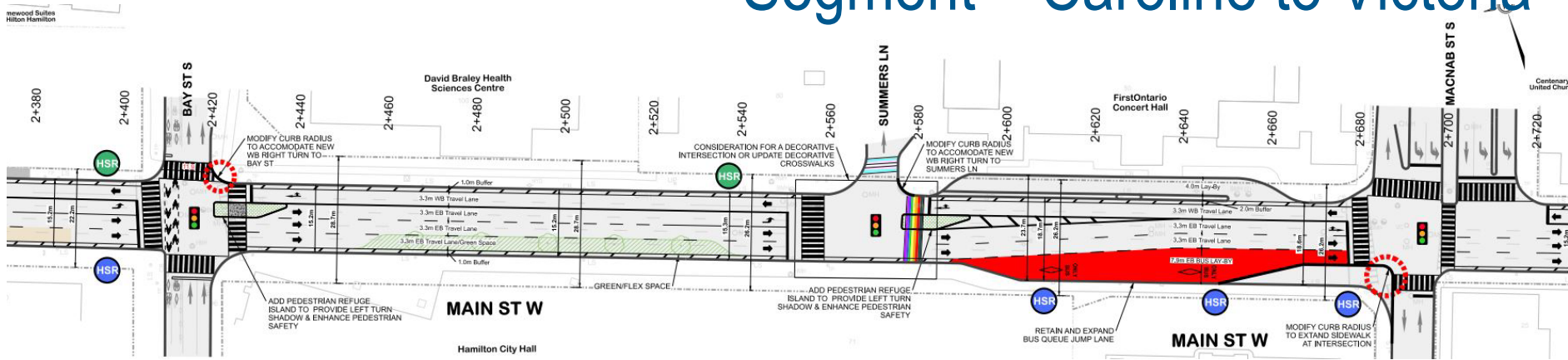
Preferred Configuration Segment – Dundurn to Caroline



Key Segment Features:

- High volume of east bound traffic from Westdale and Hwy 403
- Flexibility for south curb lane to be utilized as transit priority lane
- Future integration with LRT

Preferred Configuration Segment – Caroline to Victoria



Key Segment Features:

- Flexibility for south curb lane to be used for off-peak parking and greening opportunities
- Provides for dedicated left turn lanes at Bay Street and Summer's Lane
- Transit movement prioritization trough MacNab intersection

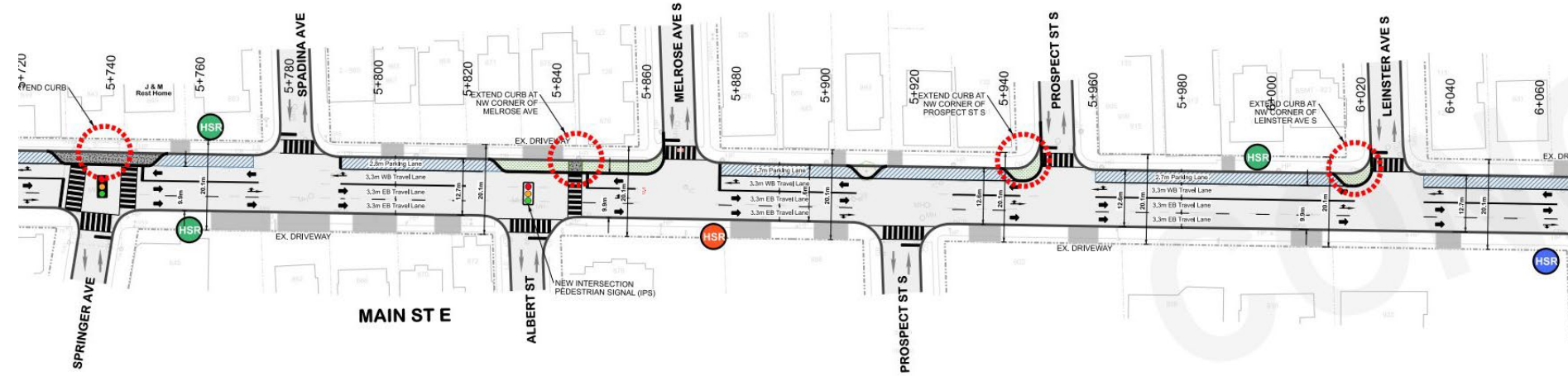
Preferred Configuration Segment – Victoria to Sherman



Key Segment Features:

- Incorporates protected cycling facility between Victoria and Sherman
- Sidewalk is buffered from vehicle travel lanes

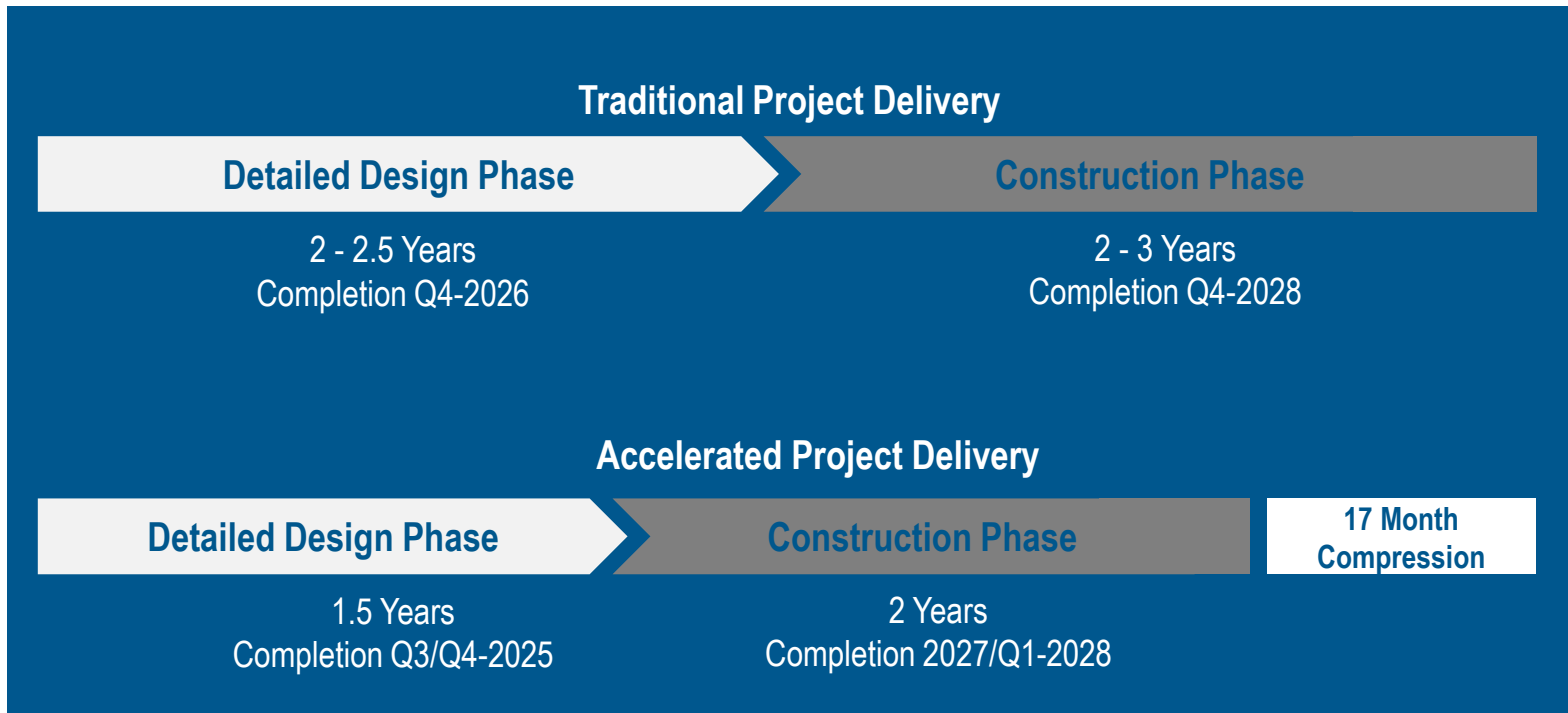
Preferred Configuration Segment – Sherman to King (Delta)



Key Segment Features:

- Traffic calming bump-outs incorporating green infrastructure
- On-street parking that buffers pedestrian realm from vehicles
- Future integration with LRT

Direction C: Implementation Schedule Page 75 of 78



Councillor Consultation:

- Transportation, Engineering Services, and Transportation Planning and Parking Divisions met with Wards 1, 2, 3, 4 and 8 Councillors to discuss the Main Street two-way conversion project
- Feedback has been considered in the development of Report PW23074(a)/PED23248(a)

Communications:

- Streamlined public engagement during the detailed design stage using communication updates
- Implementation of a robust communications plan prior to and throughout the construction period

February 20 Amended PWC Report Recommendation

- a) That the General Manager of Public Works be authorized and directed to negotiate and execute a non-competitive single source contract with WSP Canada Inc., to complete the detailed design and contract administration for the Main Street Two-Way Conversion Project, in a form satisfactory to the City Solicitor and in adherence to the City of Hamilton Procurement Policy By-Law No.22-255;
- a) That staff be directed to undertake an accelerated project delivery approach as outlined in Report PW23074(a)/PED23248(a), funding for the implementation be referred for inclusion in the 2025 capital budget at a value of \$26,492,000 with a target timeline to complete detailed design by Q3 2025/Q4 2025, commence construction Q4 2025, and target a project completion date of Q4 2027/Q1 2028; and
- b) That the remaining unbudgeted candidate one-way to two-way street conversions and alternative complete street interventions as identified in Appendix “E” to Report PW23074/PED23248 be programmed, and that funding associated with the conversions be identified and brought forward as part of future annual capital budget submissions for consideration of Council.

Thank You