

Tunney's Pasture to Dominion Station – Traffic and Transit Detours

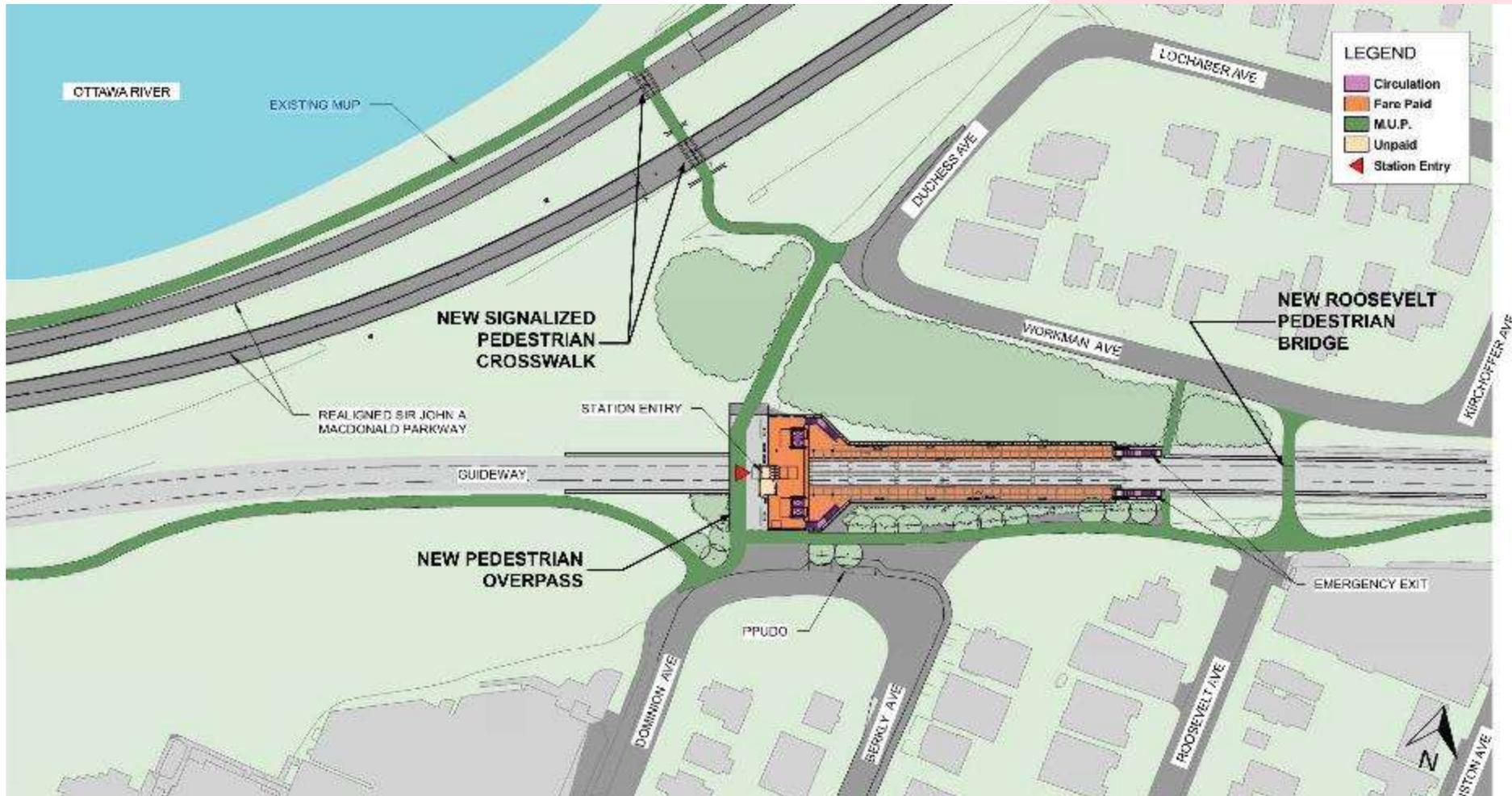
April 4, 2017

C. Wheeler/ C. Swail

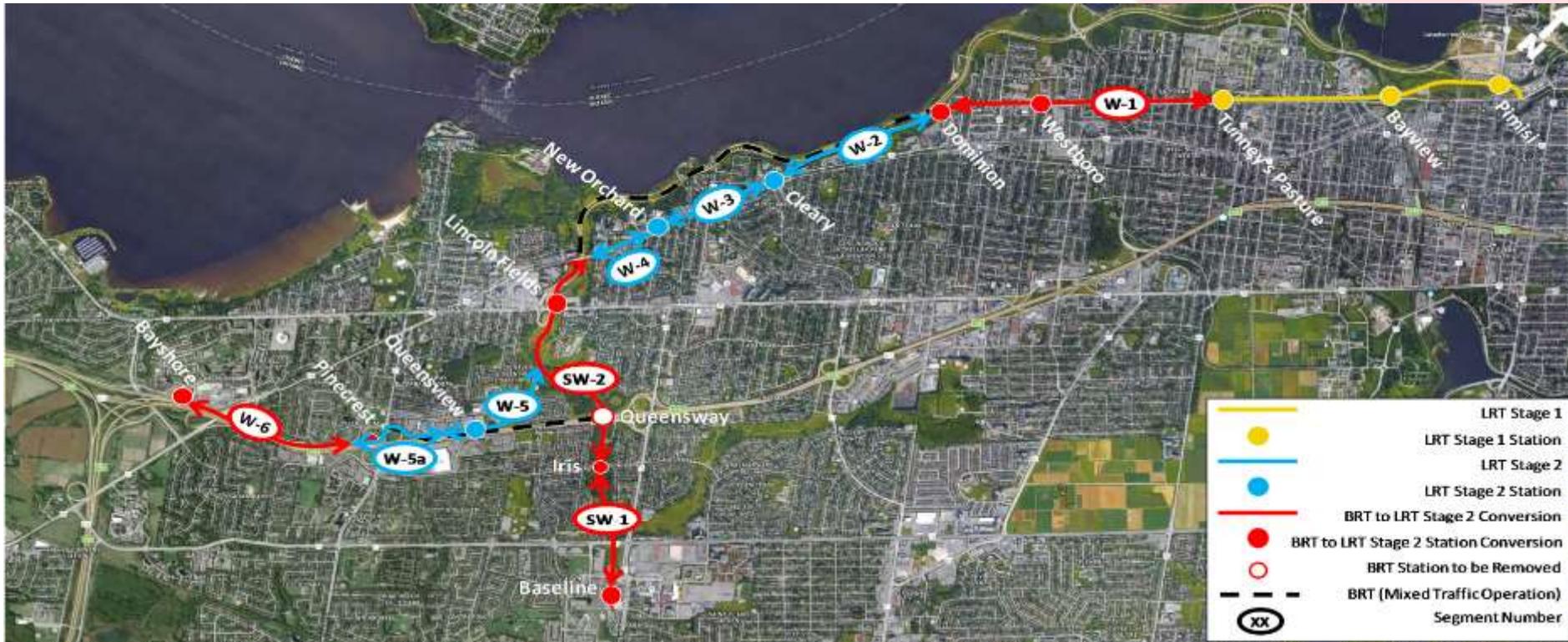


Purpose of Presentation

- Outline key principles for traffic and transit management
- Implementation strategies for Segment W-1
- Tunney's to Dominion....how to replace the Transitway while LRT/Dominion Station is under construction ?
- Describe options developed, rationale for short-listed traffic options, prescribed detour in this area
- Noise, vibration and forthcoming air quality analysis
- Identification of specific mitigation measures
- Respond to concerns from Workman Working Group
- Reinstatement requirements for affected areas
- Next steps in the process



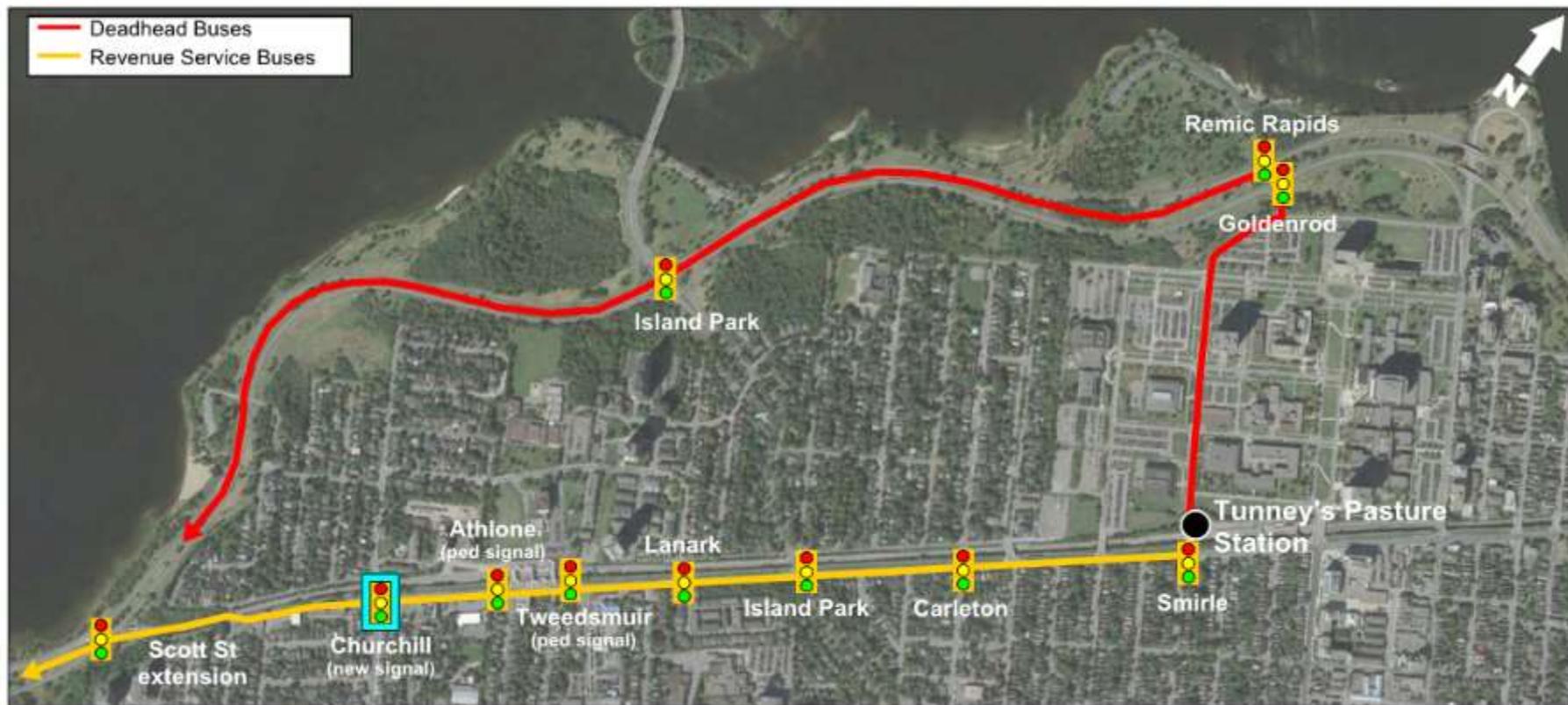
Confederation West Construction Segments



Traffic Management Principles

- Maintain existing transit services as closely as possible to current level/quality of service
- Maximize use of existing BRT
- Minimize travel time variability
- Minimize travel time/transfers
- Minimize operating, throw away and capital costs
- Minimize disruption to other road users and adjacent properties
- Minimize additional bus traffic in residential areas
- CONTEXT- this section of BRT one of the busiest in the City

Recommended Traffic and Transit Detour



Transitway Detour Schedule / Durations

- Trillium Line shutdown (2020-2021) will be prescribed
- Extra buses needed to replace Trillium Line operations
- Tunney's-Dominion temporary Transitway will use these buses in 2021-2023 **after** shutdown is over
- Construction of Tunney's to Dominion portion of project delayed until Trillium buses available:
 - ❑ Construction of Scott Street detour in 2021
 - ❑ Operation of temporary Scott Street detour not until Q4 2021
 - ❑ In place for 26 months to revenue service(end of 2023)

BRT Detour Schedule and Durations

Line & Segment	BRT Detours		Date (mths)	Q3	Q4	Q1	Q2	Q3	Q4												
	Description	Duration		2019	2019	2020	2020	2020	2020	2021	2021	2021	2021	2022	2022	2022	2022	2023	2023	2023	2023
Confederation West																					
W-1: EB & WB	Tunney's - Dominion	Nov. 2021 - Dec. 2023	26																		
Trillium Line																					
Existing Trillium	Bayview - Greenboro	May 2020 - Aug. 2021	16																		

Detour: Revenue - Scott St Detour / Deadheads - SJAM

Bus Detour - OC Route 107 (TBD)



Stage 2 Implementation Strategies for TTMP

- Preliminary engineering concept outlines one way of doing things but not the only way
- Specifications outline contractual requirements but proponents pick the best detour option
- UNLESS.....there is only one feasible/cost effective way to implement detours in a particular area;
 - ❑ Prescribe the detour to the contractor
- Benefits of prescribed detours;
 - ❑ Mitigation measures committed in advance
 - ❑ Public consultation can address community concerns
 - ❑ OC can plan/budget to buy buses for prescribed detours
- Tunney's to Dominion detour will be prescribed

Recommended BRT Service Plan- Tunney's to Dominion

- Scott Street including extension from Churchill to SJAM for revenue bus service
- Deadhead buses on SJAMP includes bridge rehabilitation of two NCC bridges
- Requires temporary bridge across Transitway near Dominion Station
- MUP connectivity maintained but Roosevelt pedestrian bridge to be closed, demolished and rebuilt
- Noise and vibration analysis completed
- Air quality analysis underway

Initial Screening of Options

- Long list of options developed regardless of feasibility/cost/community impacts
- Some options screened out as unworkable
- Remaining options subject to costing analysis/assessment of community impacts/mitigation

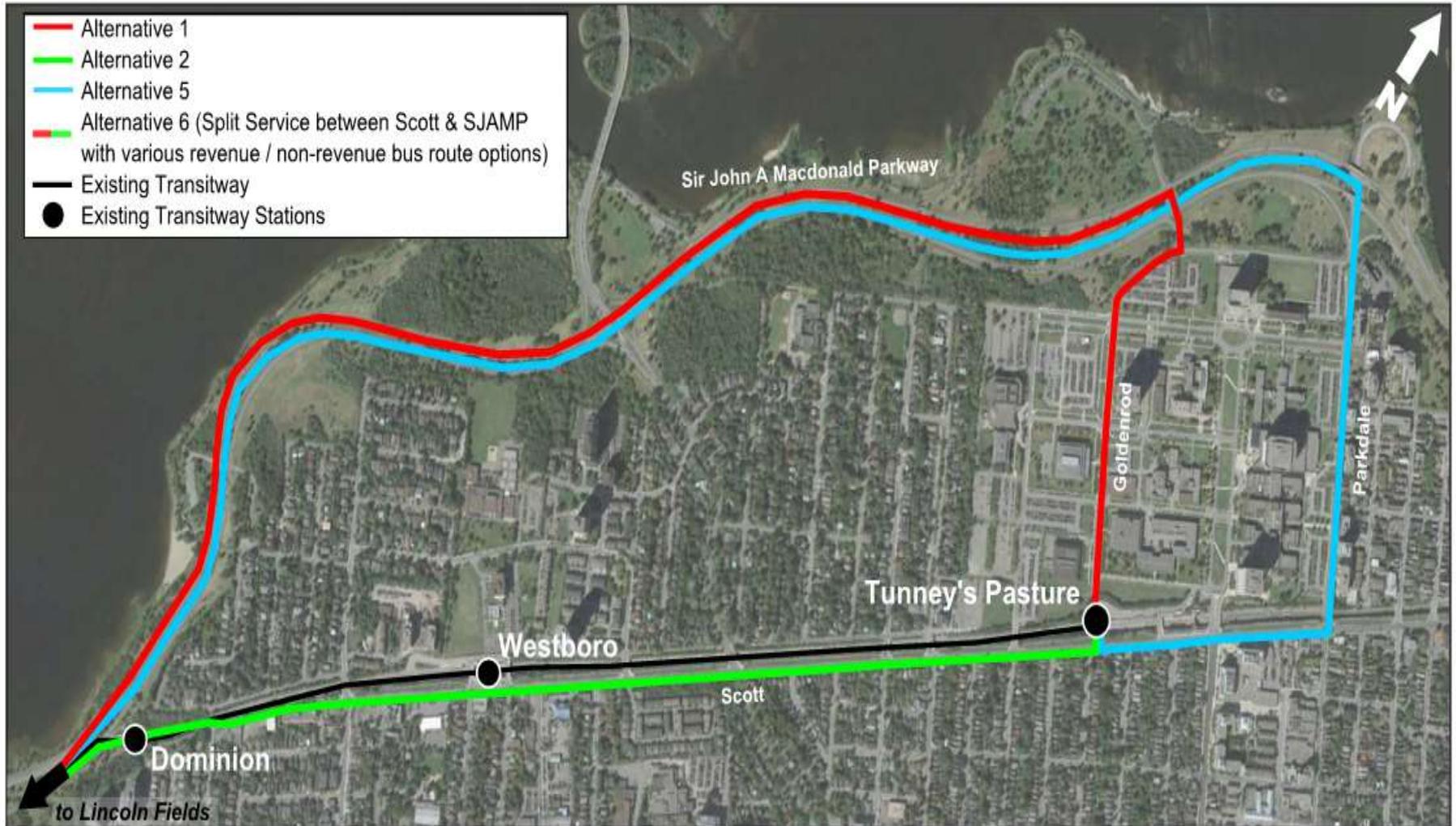
Dominion to Tunney's- Initial Screening of Options



Other Alternatives Screened Out

- **Full closure of Scott St to general traffic (buses only)**
 - ❑ Requires significant traffic diversion to other roads
 - ❑ Restricts access to businesses and residences on Scott
- **Detour buses to Scott St, Churchill Ave, Sir John A Macdonald Parkway**
 - ❑ Churchill Ave a local road, with 48 homes fronting on Churchill Ave
 - ❑ Significant backtracking for buses (0.7 km).
 - ❑ Requires northerly extension of Churchill Ave through NCC “no go” zone.
 - ❑ Traffic signal at Churchill Ave/SJAMP and upgraded all way stops.
 - ❑ Traffic calming measures on Churchill Ave indicates previous community concerns
- **Convert two existing lanes on SJAMP to transit only**
 - ❑ Conversion of one general purpose lane in each direction to transit only/major diversion of traffic to local road network
 - ❑ Intersection of Sir John A Parkway / Island Park fails with this option

Detour Alternatives Carried Forward for Future Analysis



Analysis of Detour Alternatives

Alt	Route	Stations Served		Buses			Bus Operation			Road Widen	Road Ext
		Westboro	Dominion	Revenue		Deadhead	Mixed Traffic	Exclusive Lane	Shared Lane		
				Express	Non Express						
1 (a)	Sir John A Pkwy / Goldenrod Dwy	Indirect ²	Indirect ¹	x	x	x	x	-	-	-	-
1 (b)	Sir John A Pkwy / Goldenrod Dwy	Indirect ²	Indirect ¹	x	x	x	-	x	-	-	-
2 (b)	Scott St + extension (revenue buses only)	Direct	Direct	x	x	-	x	-	-	-	Yes
2 (c)	4-lane Scott (Goldenrod to Lanark) / 3-lane Scott (Lanark to Churchill)	Direct	Direct	x	x	x	-	x	-	Yes	Yes
2 (d)	4-lane Scott St + extension	Direct	Direct	x	x	x	-	x	-	Yes	Yes
5	Sir John A Pkwy / Parkdale Ave	Indirect ²	Indirect ¹	x	x	x	x	-	-	-	-
6 (a)	Partial Scott St widening + extension with non-express buses only	Direct	Direct	-	x	-	x	x	-	Yes	Yes
6 (b)	Partial Scott St widening + extension with revenue buses	Direct	Direct	x	x	-	x	x	-	Yes	Yes

Footnotes

1. Temporary bus stops could be set up on the Parkway, while Dominion Station is under construction. This assumes that the pedestrian underpass is completed ahead of the temporary bus stops being put into service.
2. Temporary transit service plan could be designed to provide limited service to Westboro Station



Analysis of Detour Alternatives – Bus Running Times (PM Rush Hour)

Alt	Route Configuration	Bus Running Times/Minutes	
		Eastbound	Westbound
1 (a)	SJAM Parkway/Goldenrod (Mixed)	8.06 m	9.09 m
1 (b)	SJAM Parkway/Goldenrod (Exclusive)	6.32 m	5.07 m
2 (b)	Scott St + extension (revenue buses only)	6.39 m	4.44 m
2 (c)	4-lane Scott (Goldenrod to Lanark) / 3-lane Scott (Lanark to Churchill)	5.05 m	3.48 m
2 (d)	4-lane Scott St + extension	4.39 m	3.15 m
5	SJAM Parkway / Parkdale Ave	18.17 m	14.26 m
6 (a)	Partial Scott St widening + extension with non-express buses only on Scott	5.58 m	3.22 m
6 (b)	Partial Scott St widening + extension with revenue buses only on Scott	6.22 m	3.33 m

- Worst Performers
- Best Performers

Detour Alternatives-Cost Comparison

Alt	Route	Configuration	Additional Incremental Costs				Total Cost
			Capital Cost	Bus Operating Cost (1)	Fleet Cost (1)	Usage/ Access Fee (2)	
1 (a)	SJAM Parkway/ Goldenrod	All,mixed traffic	\$1.2 M	\$18.3 M	\$6.9 M	\$1.4 M	\$27.8
1 (b)	SJAM Parkway/ Goldenrod	All,bus only lanes	\$1.7 M	\$13.0 M	\$4.0 M	\$1.4 M	\$20.1
2 (b)	Scott St + extension	Revenue buses only in mixed traffic	\$3.5 M	\$13.0 M	\$3.6 M	\$0.2 M	\$20.3
2 (c)	4-lane Scott (Goldenrod to Lanark) / 3-lane Scott (Lanark to Churchill)	All buses	\$5.8 m	\$6.8 M	\$2.3 M	\$0.2 M	\$15.1
2 (d)	4-lane Scott St + extension	All buses	\$7.2 M	\$6.2 M	\$1.8 M	\$0.2 M	\$15.4
5	SJAM Parkway / Parkdale Ave	All buses	\$1.3 M	\$38.5 M	\$14.8 M	\$1.3 M	\$55.9
6 (a)	Partial Scott St widening + extension	Express buses only	\$4.2 M	\$9.2 M	\$3.9 M	\$1.4 M	\$18.7
6 (b)	Partial Scott St widening + extension	Revenue buses only	\$4.2 M	\$8.4 M	\$2.8 M	\$0.2 M	\$15.6

Worst Performers



Best Performers



Rationale for Screening of Options

Alt	Route	Service to Existing Stations	Running Times for Bus/ Quality	Total Costs	Community Impacts	SJAMP Impacts	Retain
1 (a)/ 1(b)	SJAM Parkway / Goldenrod	Indirect	Poor	High	Moderate	Medium	No
2 (b)	Scott St + extension (revenue buses only)	Direct	Fair	Medium	Moderate	Low	No
2 (c)	4-lane Scott (Goldenrod to Lanark) / 3-lane Scott (Lanark to Churchill)	Direct	Good	Lowest	Moderate – High	Low	Yes
2 (d)	4-lane Scott St + extension	Direct	Good	Low	Moderate – High	Low	Yes
5	SJAM Parkway / Parkdale Ave	Indirect	Poorest	Highest	Moderate	Medium	No
6 (a)	Partial Scott St widening + extension with non-express buses only	Direct	Good	Medium	Moderate	Low	No
6 (b)	Partial Scott St widening + extension with revenue buses only	Direct	Good	Low	Moderate	Low--	Yes

Rationale for Preferred Option

Option 2C/2D

- 3 lane/4 lane Scott Street options bring new lanes closer to homes/businesses on south side of Scott
- Little or no benefit in running times for buses with widened road
- Overall cost savings is \$0.5 M compared to Option 6b.

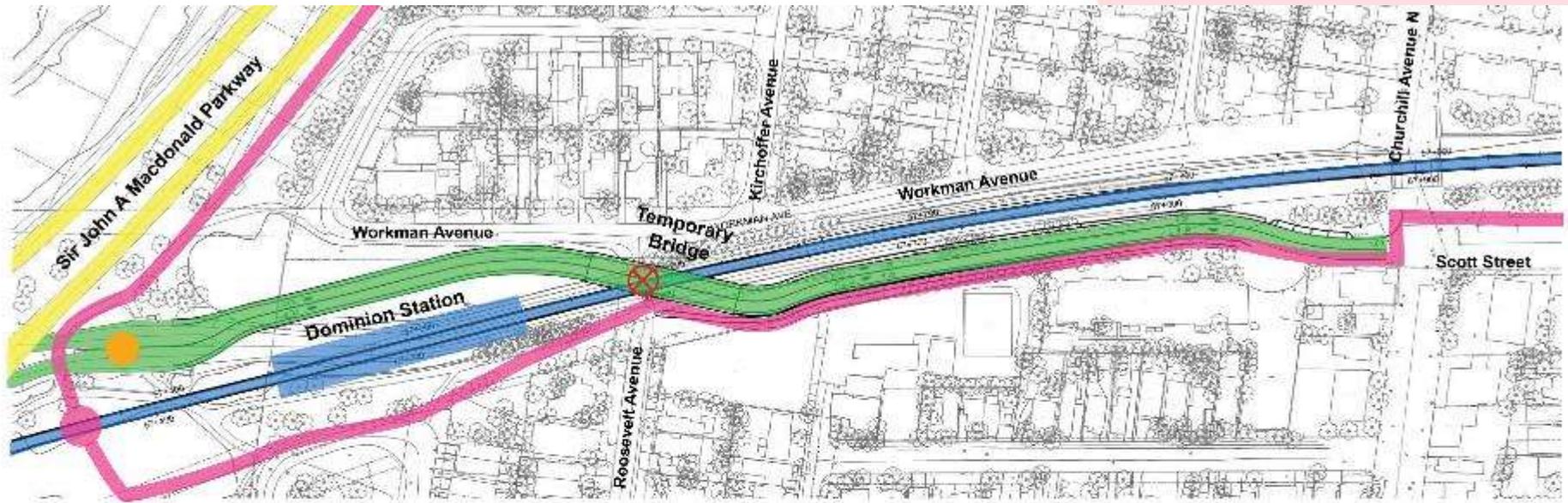
Option 6b

- Capital cost savings (due to intersection improvements only) almost offsets operating cost premium
- Intersection improvement approach lessens impact on residents/businesses of new lanes

CONCLUSION :

- Option 6b preferred, slightly higher cost (\$0.3-\$0.5 m) worth it to reduce community impacts of full widening throughout.

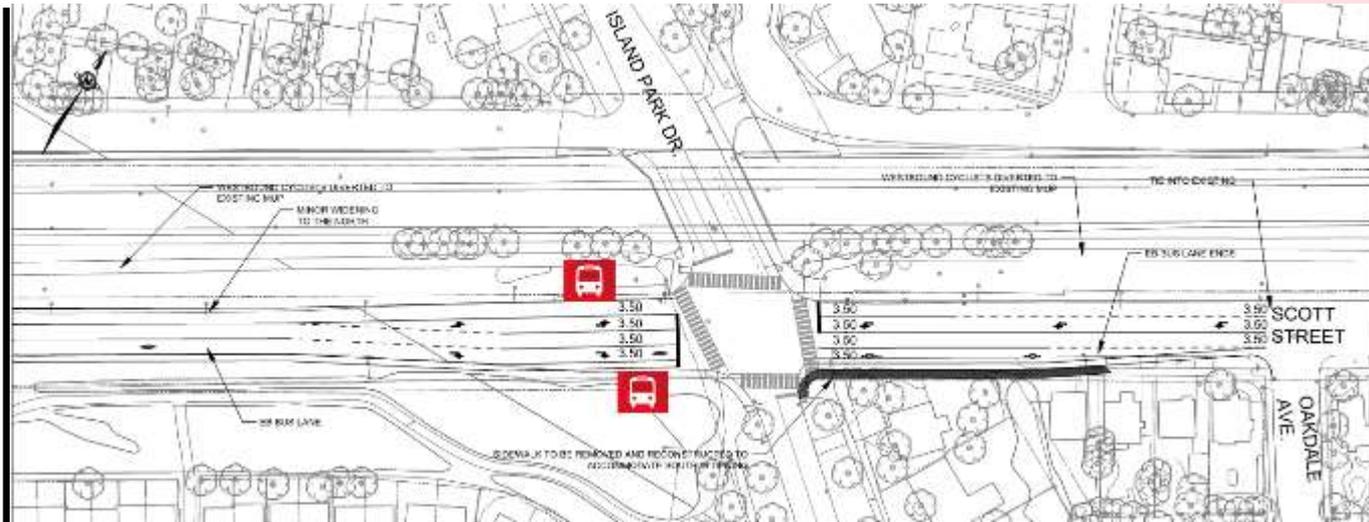
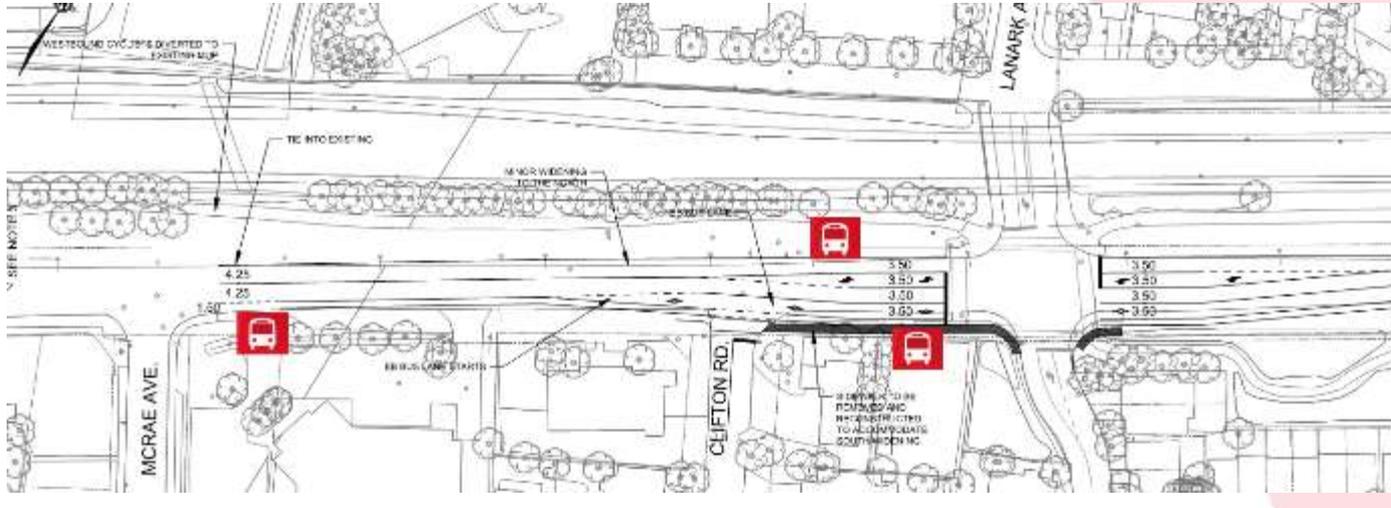
Preferred Scott St Extension Detour



- Sir John A Macdonald Parkway
- Temporary Transitway Detour
- Existing Transitway/LRT Alignment
- Temporary Pedestrian Pathway

- At-Grade Temporary Pedestrian Crossing of LRT Construction Area
- Closure of Roosevelt Pedestrian Bridge
- Temporary Bus Stop Location

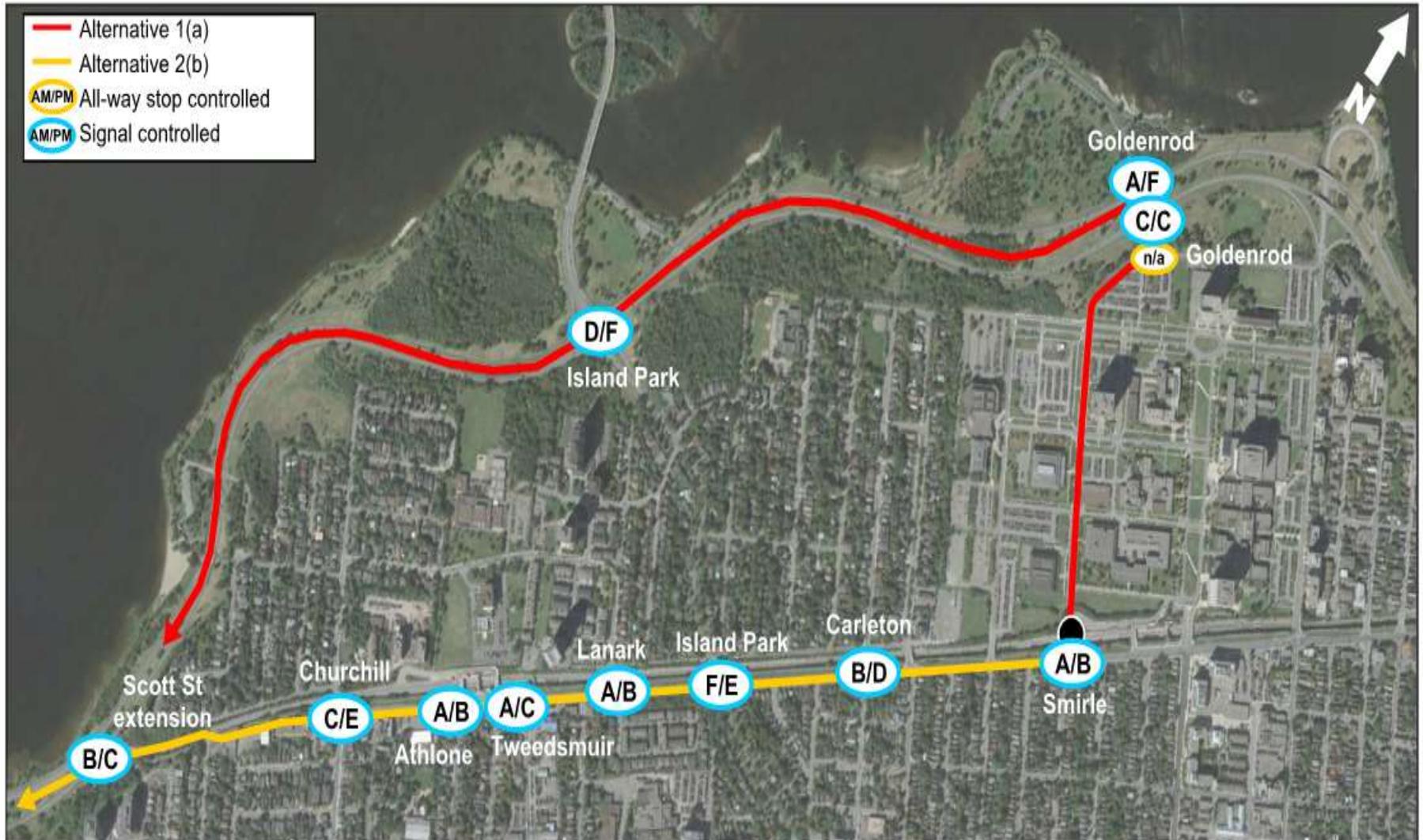
Intersection Improvements at Scott Street and Lanark Ave / Island Park Dr



Bridge Rehabilitation on SJAMP



Recommended Traffic and Transit Detour



Preferred Option – Identified Construction Issues

- Noise and vibration mitigation measures
- Connectivity during construction/operations
- Roosevelt bridge reconstruction
- Air quality impacts
- Construction site staging/mobilization
- Re-landscaping of green space on west side of Workman occupied by temporary bus detour
- Scott Street/Island Park Drive WB to NB right-turn
- Improved cycling and pedestrian facilities implemented as part of detour construction
- Left in place and enhanced following removal of detour

Scott Street/Island Park Intersection

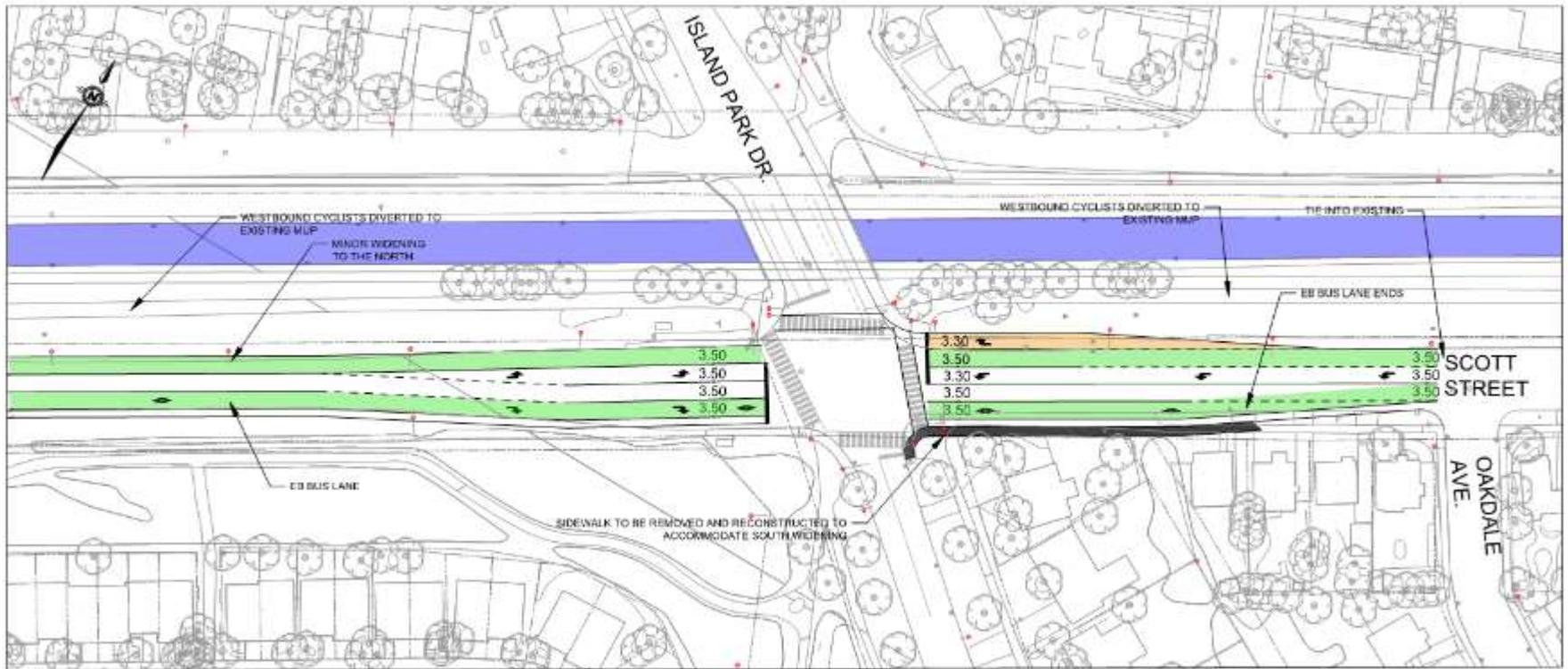
Question: Is it feasible to introduce a WB to NB right turn lane?

Answer: YES, PM peak hour que lengths reduced from 181 m to 105 m

Conclusion: To be implemented as part of Stage 2 LRT intersection improvements



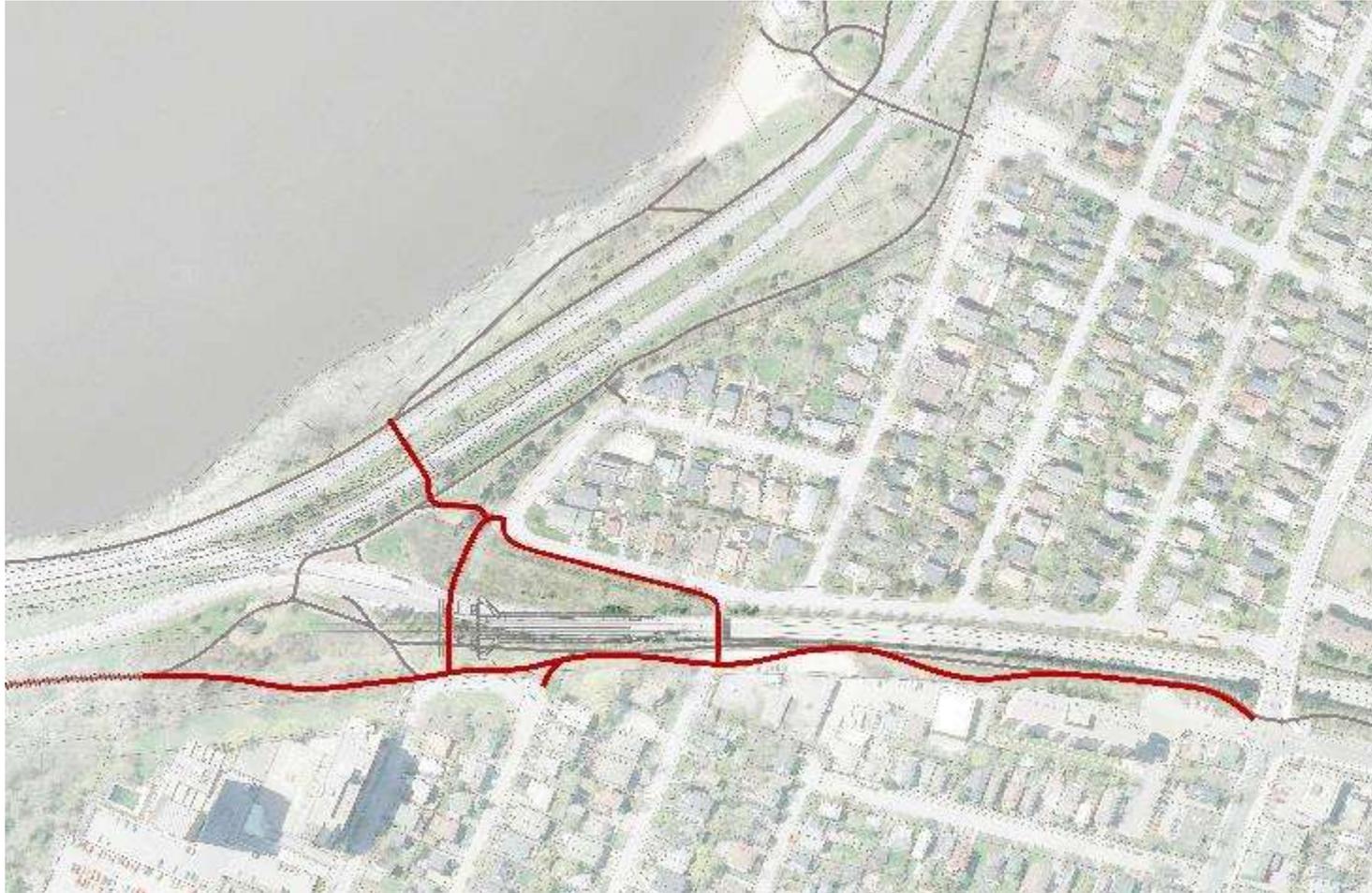
Intersection Improvements at Scott St / Island Park Dr



LEGEND:

- UNDER CONSTRUCTION
- GENERAL TRAFFIC CIRCULATION
- MUP
- EXISTING TRANSITWAY
- NEW WB TO NB RIGHT TURN LANE
- TEMPORARY TRANSITWAY

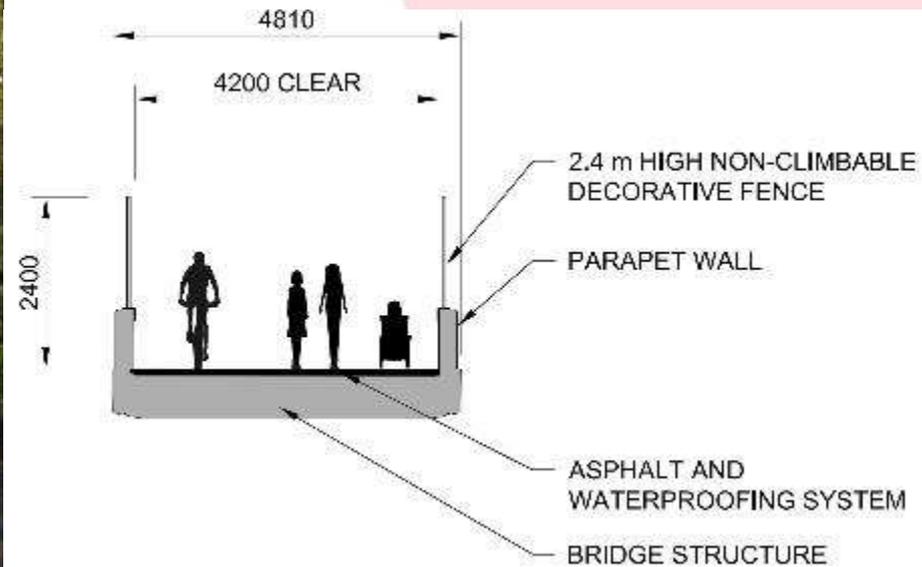
Post 2023 MUP Connections



Roosevelt Bridge Reinstatement



Existing Pedestrian Bridge
(Looking South from Workman Ave.)



Proposed Pedestrian Bridge Section

Protection of Trees/ Tree Replacement/Scott St Improvements

- Loss of some trees west of Workman Ave to build temporary BRT is unavoidable
- Trees may be impacted to some degree if noise barriers are implemented on west side of Workman Ave
- Tree protection plan to be developed
- Landscape and tree compensation plan to be developed in consultation with local community
- Will be implemented following LRT construction
- Scott St intersection changes to be reinstated to accommodate future Scott St design(post 2030)

Noise and Vibration

- Impact of Scott St detour is temporary for 26 months
- Assessment of Scott St Stage 2 detour undertaken based on MOECC/City noise and vibration criteria for permanent impacts
- Mitigation required if:
 - Noise impact is more than 5 dBa(MOECC)
 - Predicted sound level is greater than 60 dBa(Ottawa)
- Noise control measures should be “economically and technically feasible”
- Front yards of homes difficult to mitigate



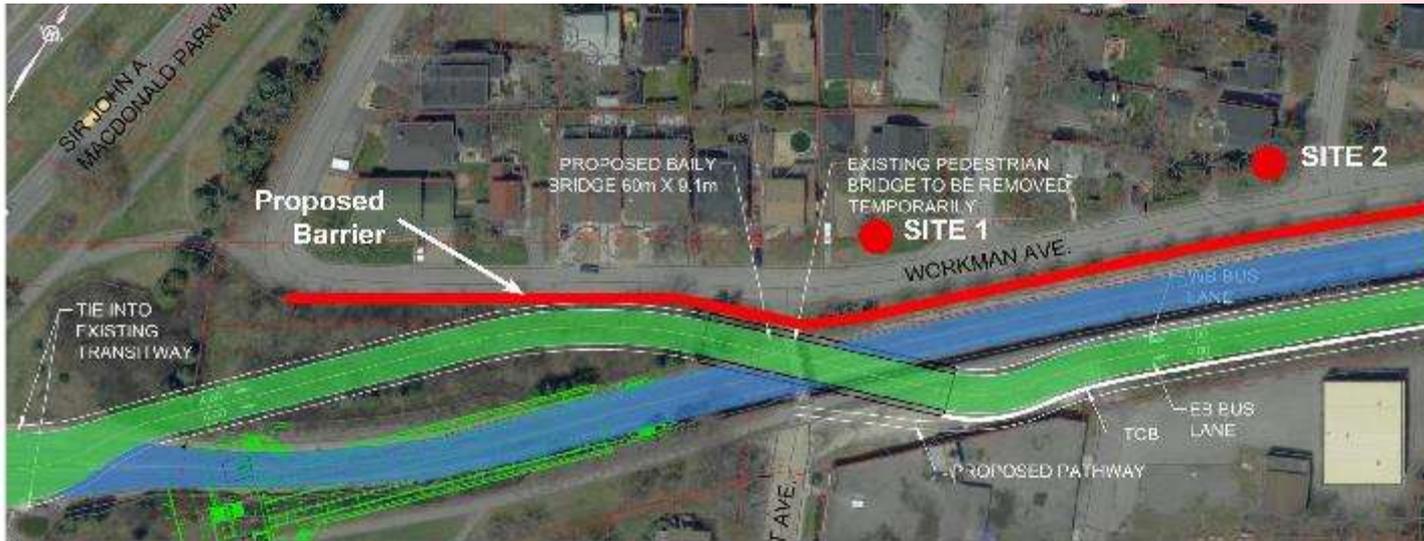
Temporary Noise Mitigation

Location	Overall Traffic Noise (dBA)		Projected Noise Impact Change (dB)	Mitigation Requirement – City of Ottawa		Mitigation Requirement – MTO/MOE > 5 dB Impact	Mitigation Required	dbA with Mitigation (1)
	No Project	With Project		> 60 dBA	≥5 dB impact and between 55 and 60 dBA			
Site 1	52.73	66.59	13.86	Yes	>60	Yes	Yes	60.46
Site 2	55.01	66.85	11.84	Yes	>60	Yes	Yes	60.51
Site 3	57.97	62.62	4.65	Yes	No	No	Yes	57.22
Site 4	60.64	65.31	4.67	Yes	No	No	Yes	59.49

(1) 2.0 metre high noise wall



Recommended Noise Mitigation



-  Recommended Noise Barrier
-  Temporary Transitway Detour
-  Existing Transitway

Potential Noise Mitigation



- Recommended Noise Barrier
- Temporary Transitway Detour
- Existing Transitway

Current vs Temporary Bus Volumes

Scenario	AM Peak Hour			PM Peak Hour		
	EB	WB	Total	EB	WB	Total
Existing Transitway in Trench	133	98	231	97	129	226
Scott St Temporary Detour (Option 6b)	154	54	208	65	160	225

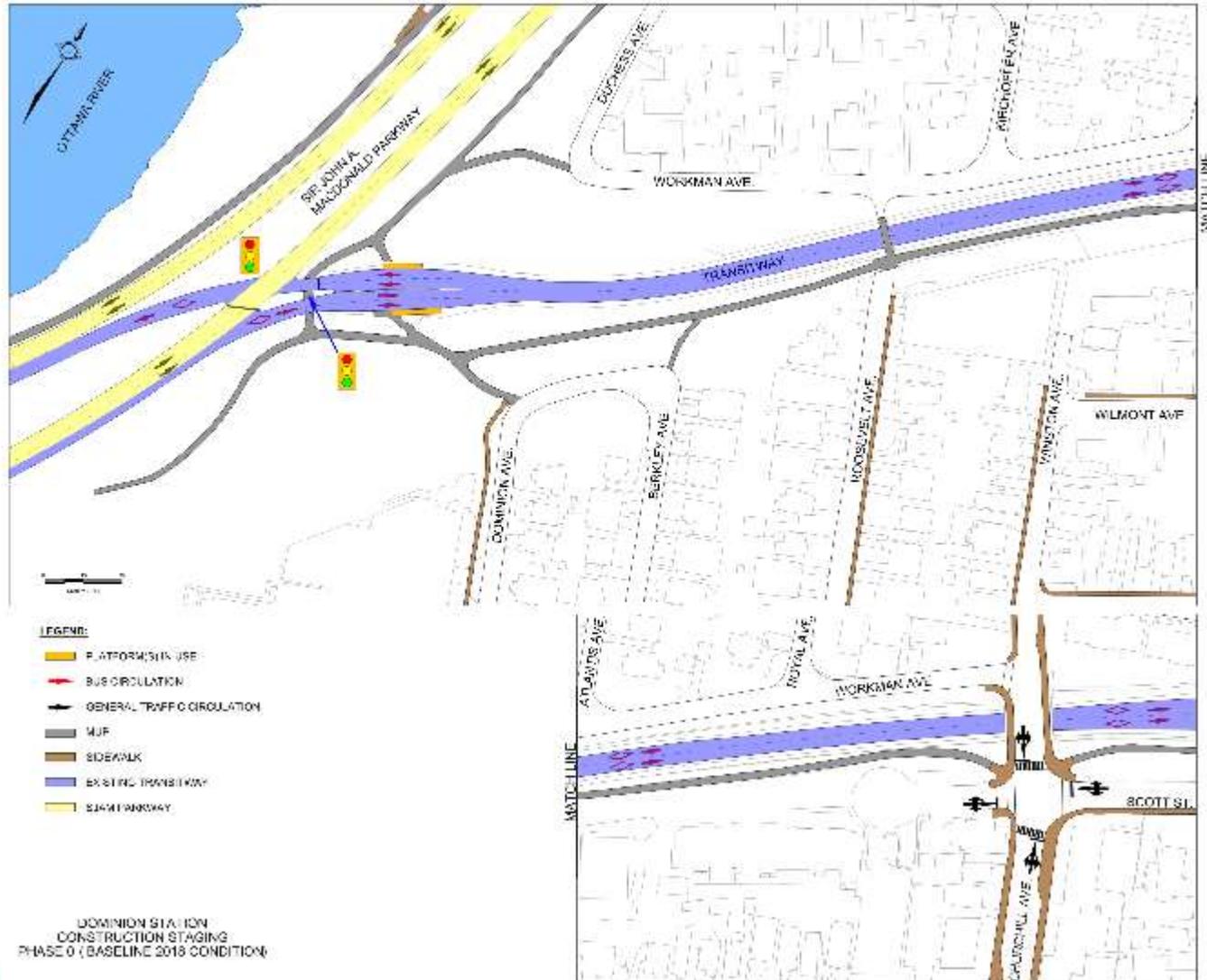
Summary

- AM Peak Hour – temporary bus detour on Scott St extension will have 10% fewer buses than present Transitway bus service
- PM Peak Hour – existing and temporary volumes are the same as present

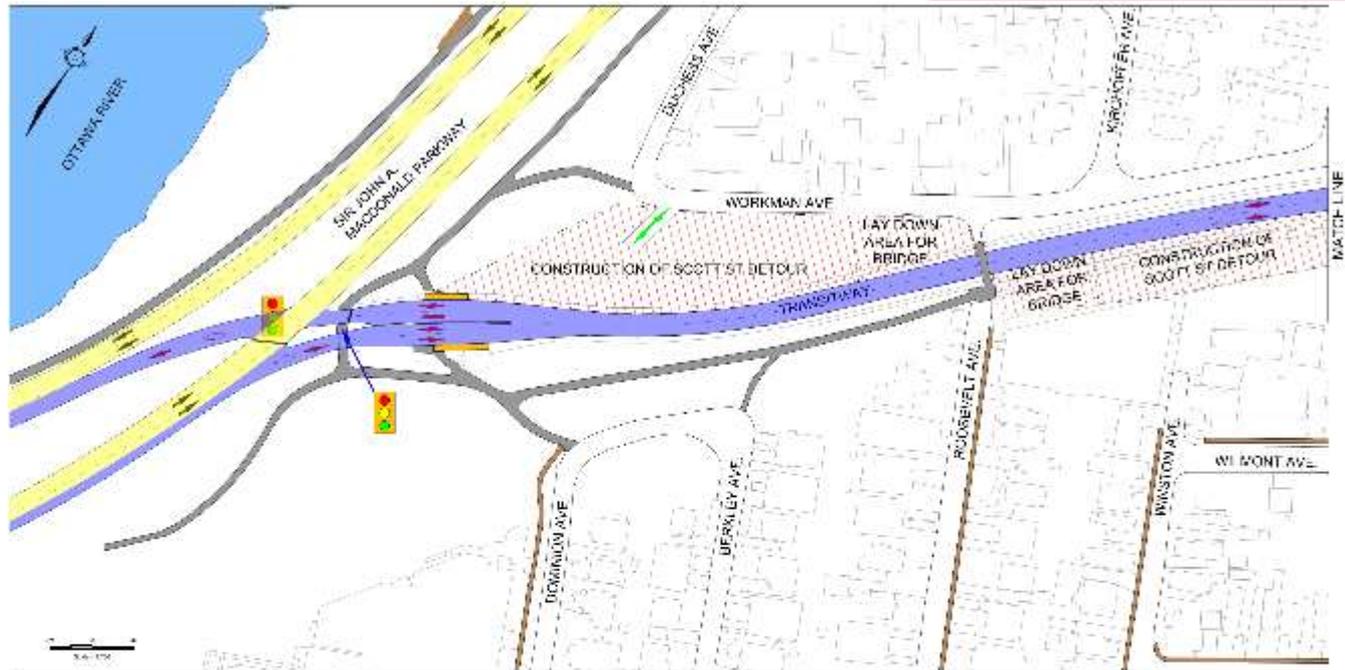
Air Quality

- Air quality analysis of Scott St detour is underway
- As deadhead buses that are currently in the BRT trench will use SJAMP, total bus volumes at Dominion in AM peak hour reduced during construction
- Offset by slightly closer proximity of temporary BRT out of trench
- Net air quality analysis will be available by mid April
- This is a temporary condition
- Permanent condition replaces diesel buses with electrically powered LRT vehicles
- Construction air quality impact is greater than bus operations based on Stage 1 Scott St experience

Dominion Station - Existing Conditions



Dominion Station - Phase 1



- LEGEND:**
- UNDER CONSTRUCTION
 - LA FERRASSIN LINE
 - BUS CIRCULATION
 - GENERAL TRAFFIC CIRCULATION
 - CONSTRUCTION ACCESS
 - M/P
 - SIDEWALK
 - EXISTING TRINSTRAY
 - BIWAY PARKWAY

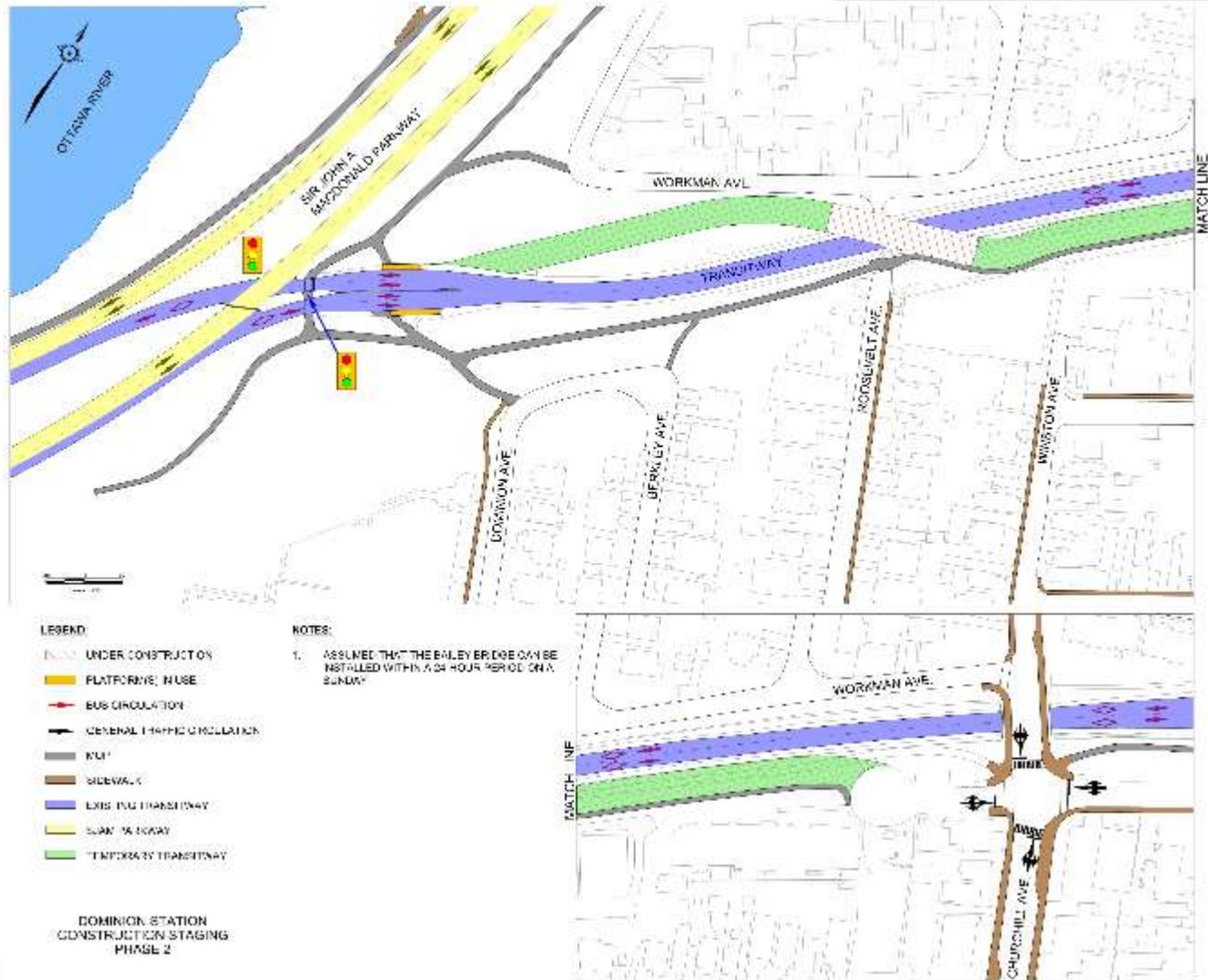
NOTES:

- 1 TELESTRAY BRIDGE IS OPEN



DOMINION STATION
CONSTRUCTION STAGING
PHASE 1

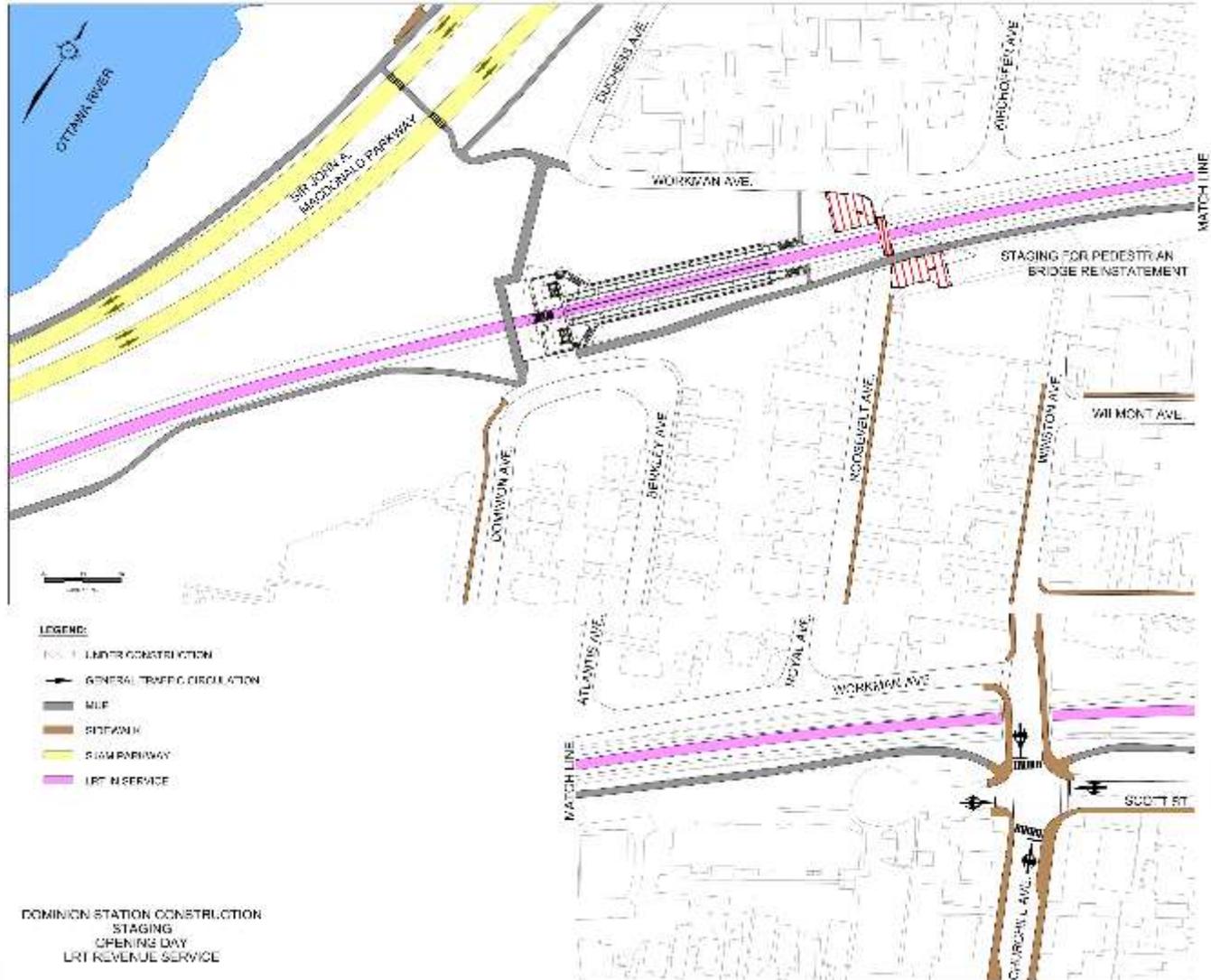
Dominion Station - Phase 2



Dominion Station - Phase 3



Dominion Station - Revenue Service



Project Schedule

- Start of in market period-June 2017
- Bids submitted to City-February 2018
- Award of Contract- May-2018
- Earliest Construction Start-Spring 2019
- Construction constrained by availability of Trillium Line buses after shutdown is finished in Fall 2021
- Construction will not start on detour until Spring 2021
- Detour is in place for about 26 months from Nov 2021 to commencement of revenue service in Dec 2023

Next Steps

1. Address feedback from the community in upcoming RFP including Dominion/Workman Working Group
2. RFP out to tender, June 9, 2017
3. RFP bids received, February 2018
4. Award of Stage 2 contract, May 2018
5. Construction start for project, late 2018/early 2019
6. Construction start for Scott St detour, 2021, in place until revenue service
7. Confederation West LRT open for revenue service, end of 2023

Questions ?

← STAGE
ETAPE ↓
② →

