

MAIN STREET AT EDGEWATER STREET RECONFIGURATION CONCEPT DESIGN PRESENTATION



April 2023



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Project Scope & Timelines

Background
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Options Review

Options
Evaluation

Recommended
Option

Project Scope

Stage 1.1 – Background Information

Stage 1.2 – Functional Planning

- Concepts
 - Option 1 – Roundabout
 - Option 2 – Main Street T-Intersection
 - Option 2A – All-Way STOP
 - Option 3 – Edgewater Street T-Intersection

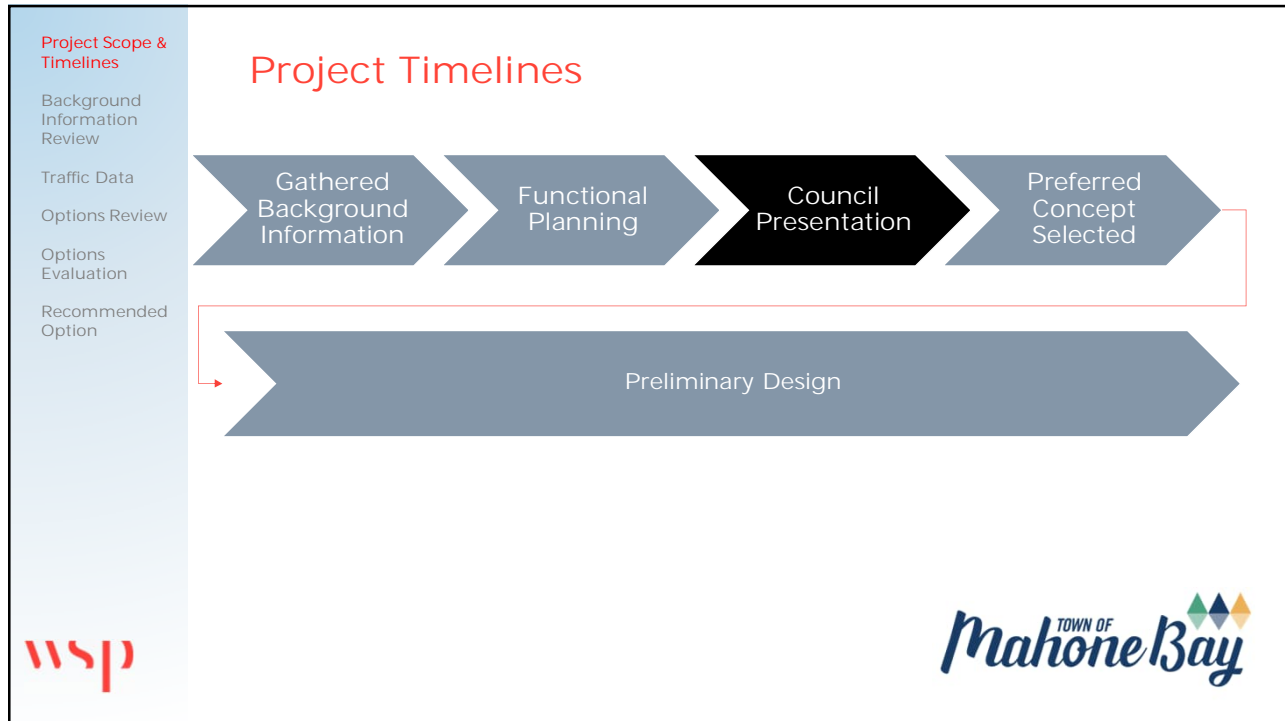
Stage 1.3 – Concept Design Report

Stage 1.4 – Select Preferred Concept

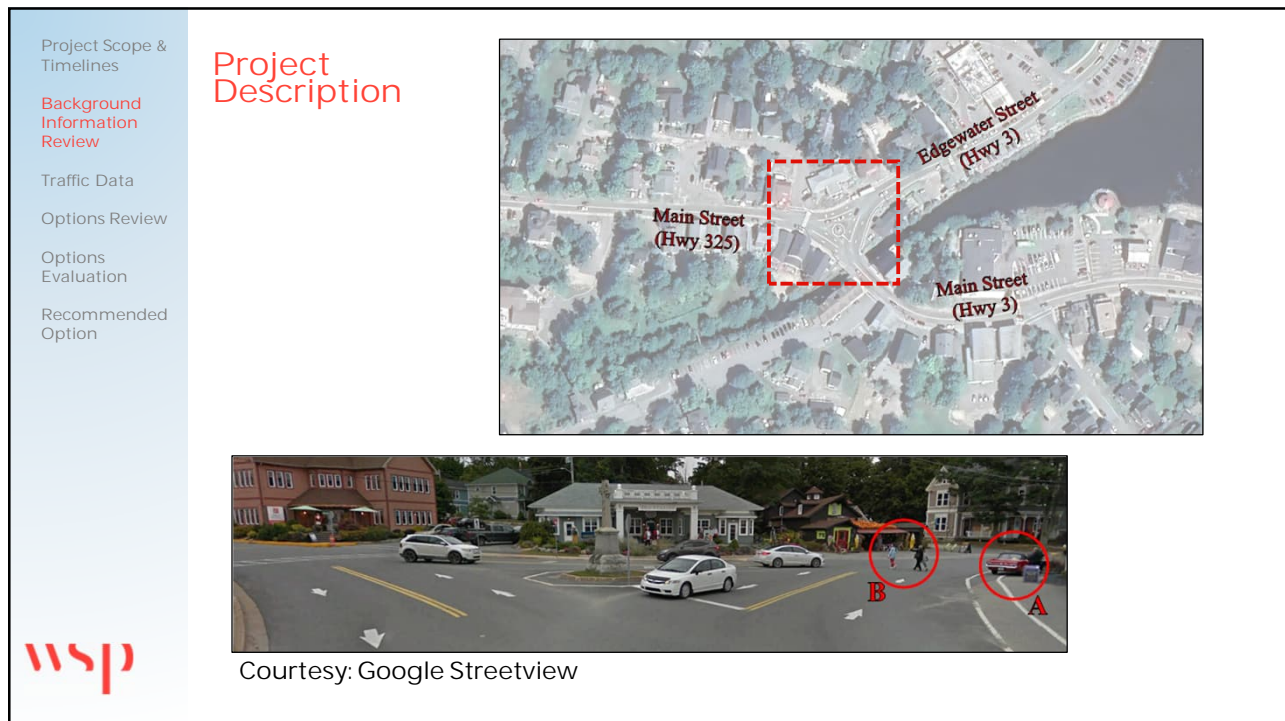
Stage 1.5 – Preliminary Design



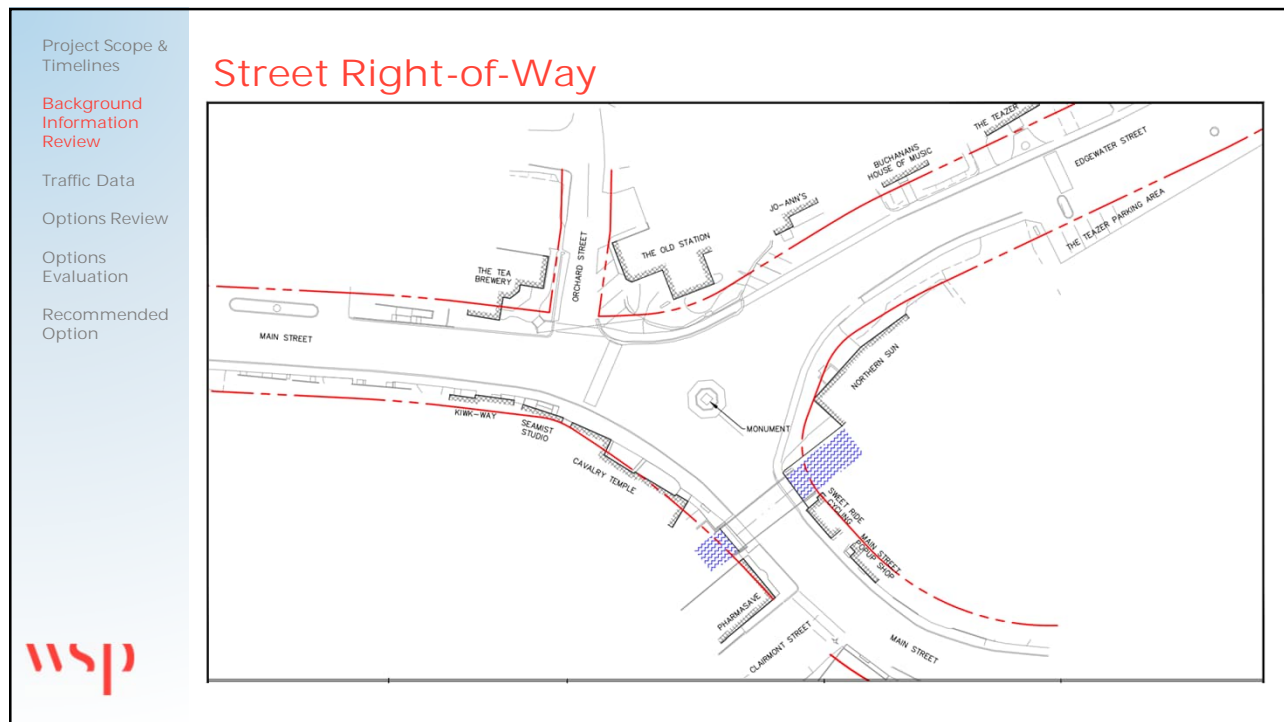
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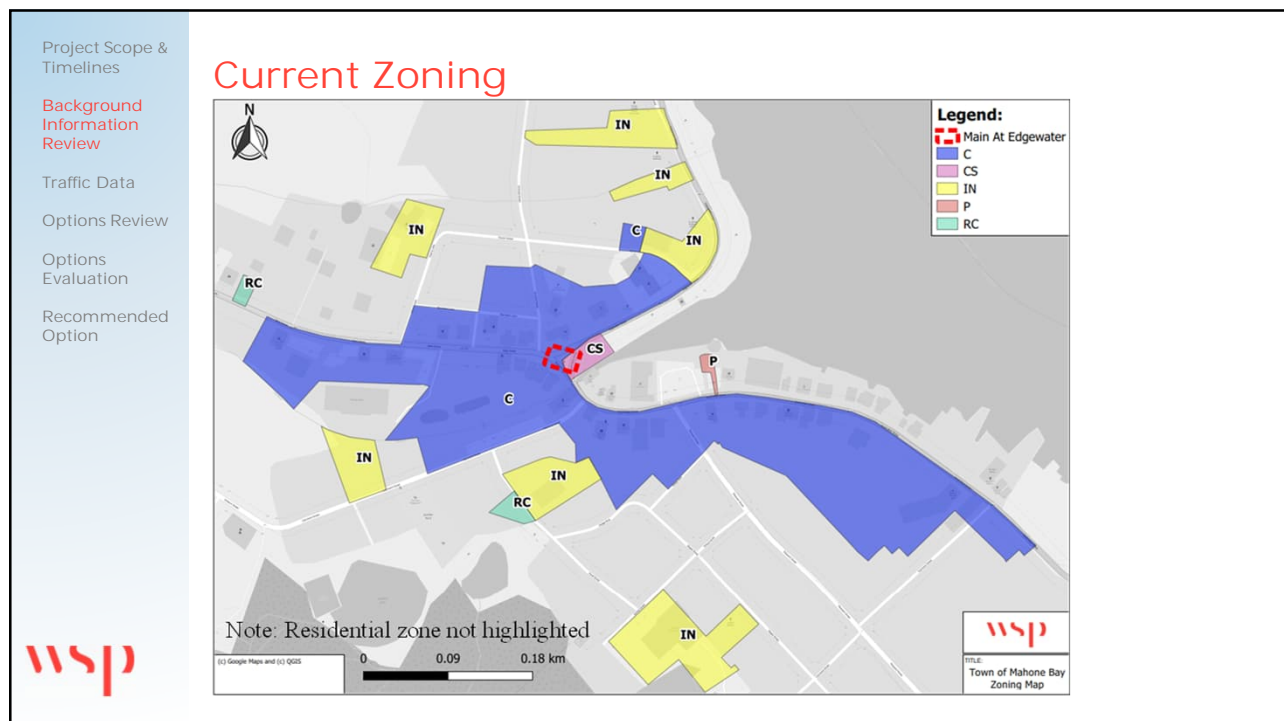
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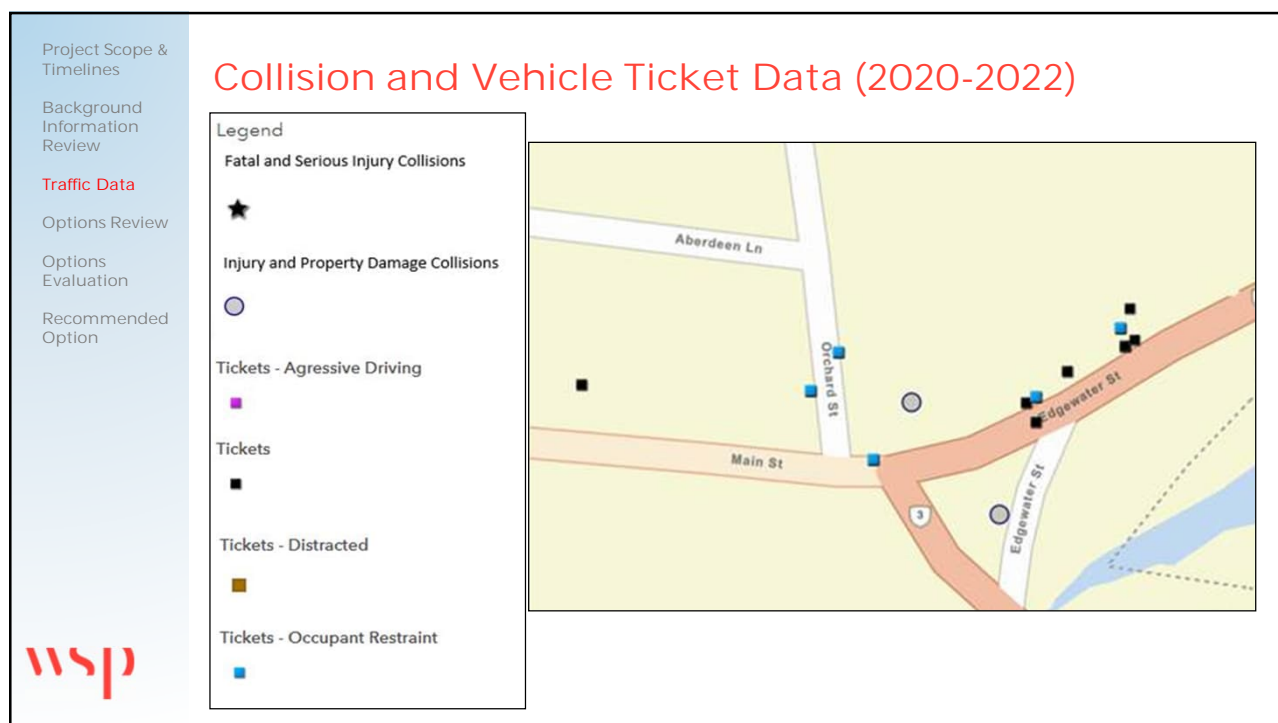
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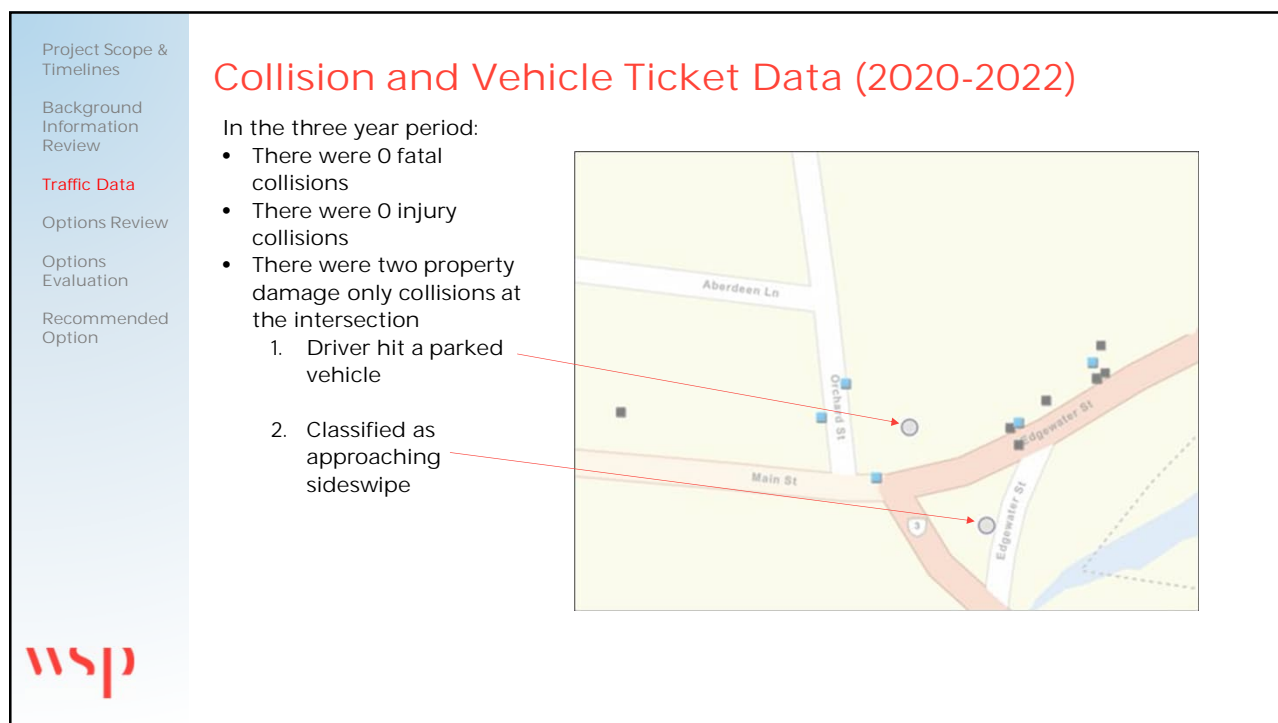
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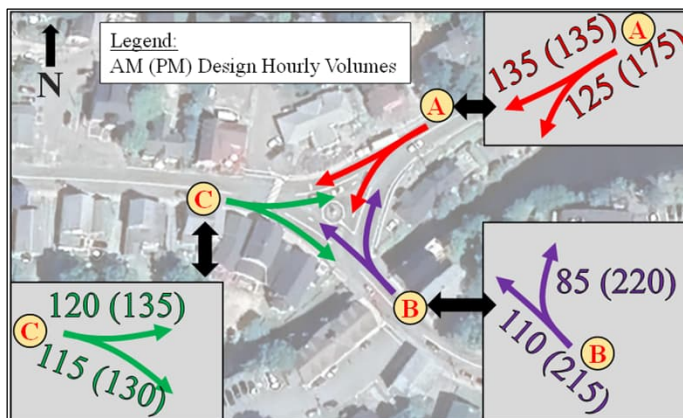


Design Hourly Volumes

WSP Collected January 2023
Traffic Counts at the
Intersection

Previous (2022 Summer and
November) Traffic Counts
were provided by Town Staff
and available from the
Province along Trunk 3

We used the historical and
2023 counts to estimate the
Design Hourly Volumes
(DHVs, See right)

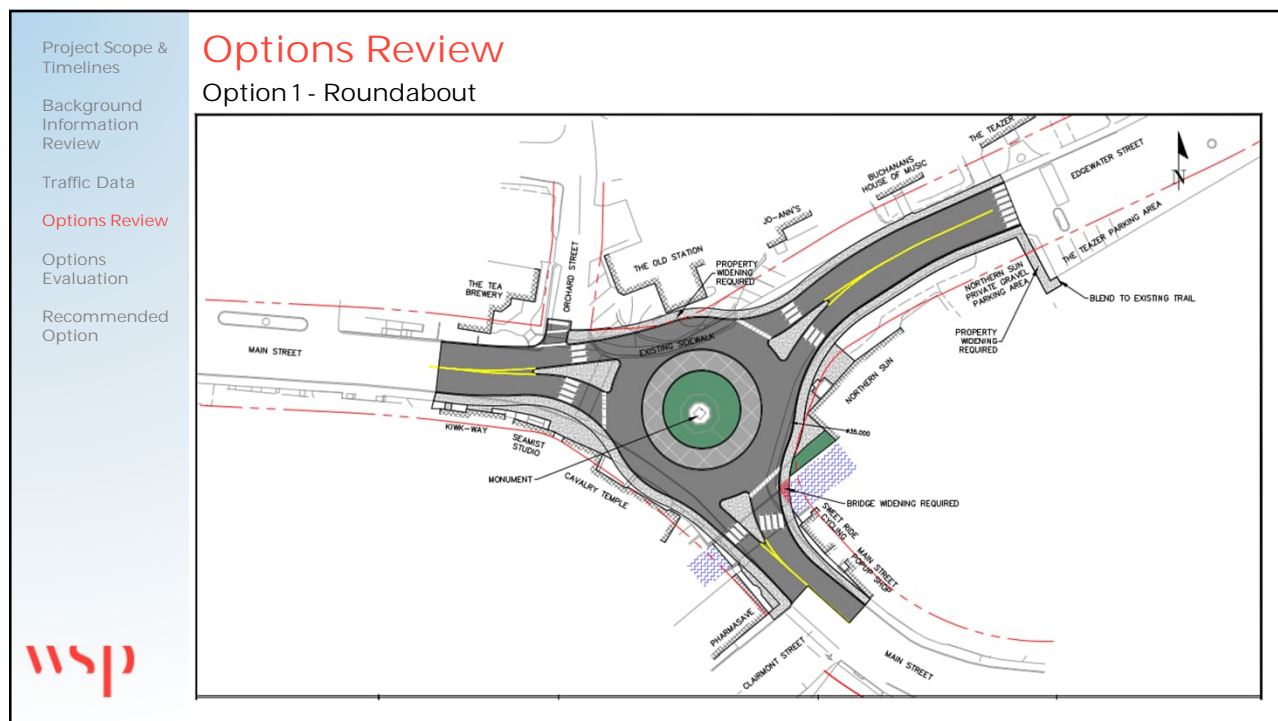


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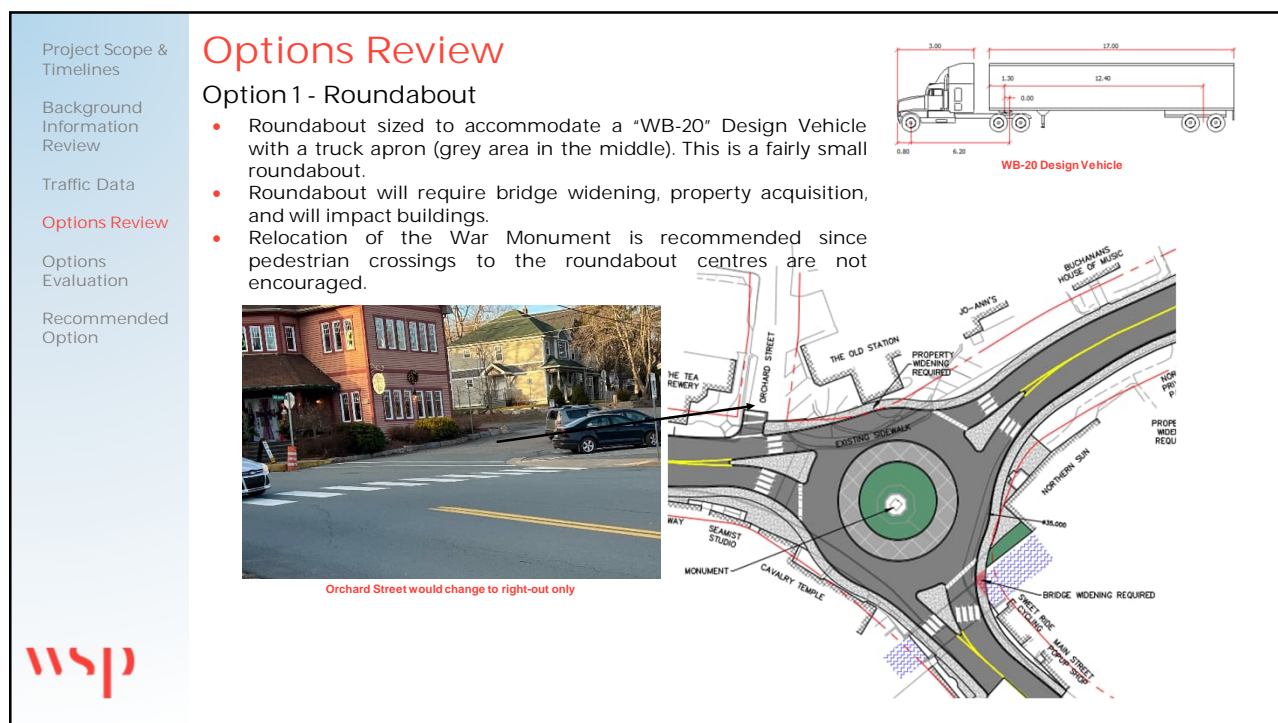
Options Review Option 1



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Project Scope & Timelines

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Options Review

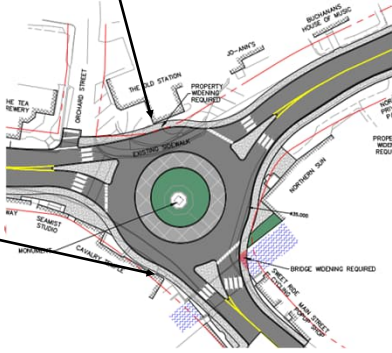
Options Evaluation

Recommended Option

Options Review

Option 1 - Roundabout



Will impact stairs to Cavalry Temple Door

Property Widening required
Sidewalk will abut Overhang at the Old Station

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Project Scope & Timelines

Background Information Review

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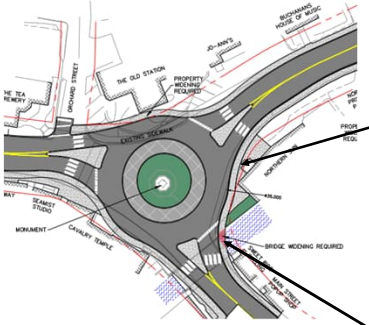
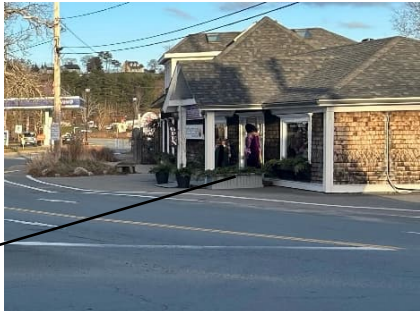
Options Review


Options Evaluation

Recommended Option

Options Review

Option 1 - Roundabout



The roundabout will also impact the utility poles due to the constrained space between the sidewalk and property line.

Sidewalk will abut Overhang and steps at Northern Sun

Bridge Widening Required

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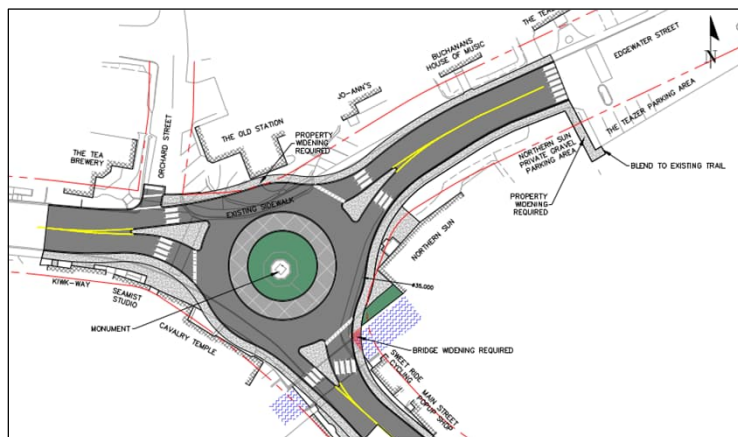
Options Review

Option 1 – Roundabout – Active Transportation

- Marked Crosswalks on all approaches
- Concrete sidewalk on both sides of all approaches
- Proposed sidewalk on the North side (at the Old Station) is 1.6m wide (next to traffic)
- Slower traffic speeds at the roundabout will increase comfort for bicyclists



Pedestrian Crossing at Bridgedale Boulevard
Roundabout, Riverview, NB



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Options Review Option 2

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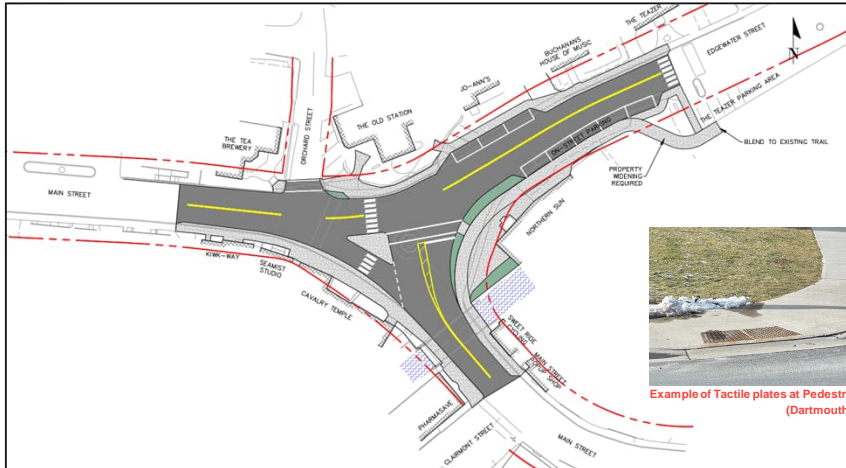
Recommended
Option



Options Review

Option 2 – Main Street T-Intersection – Active Transportation

- Marked Crosswalks on the west and south approaches (Main Street)
- Additional marked crosswalk to the east at the Teazer
- Concrete sidewalk on both sides of all approaches



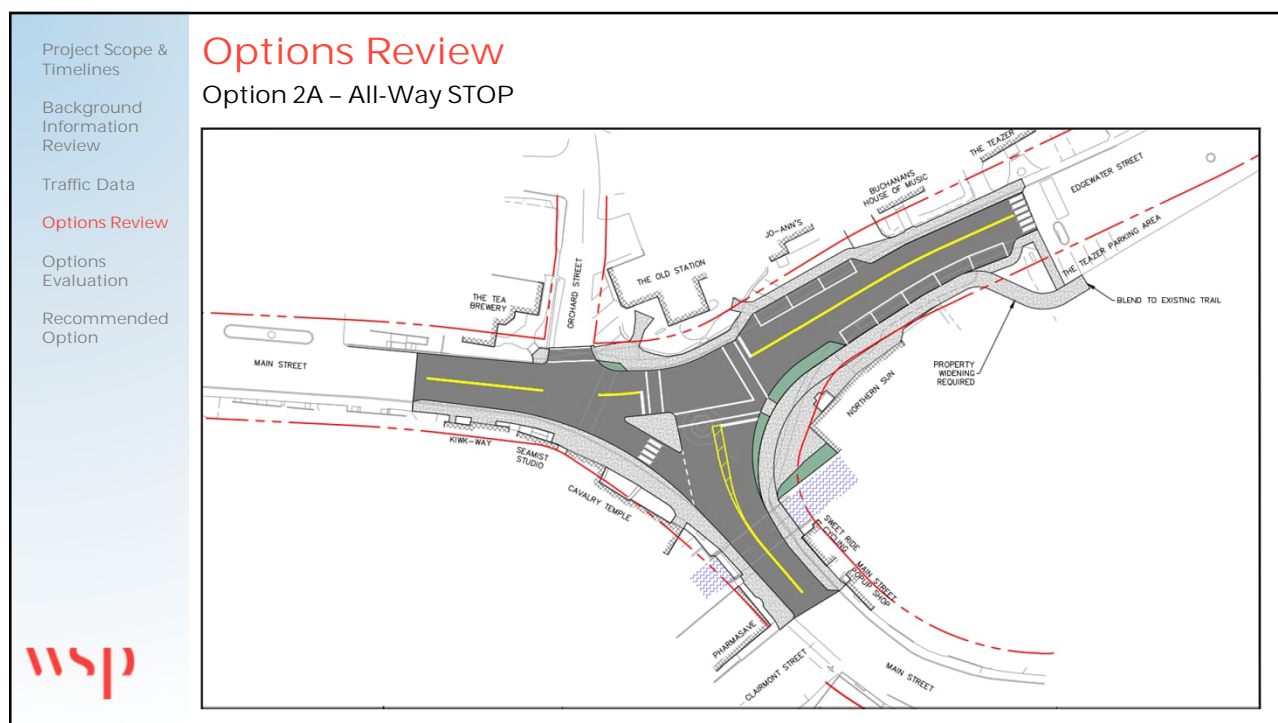
Example of Tactile plates at Pedestrian crossings for Accessibility (Dartmouth, NS)

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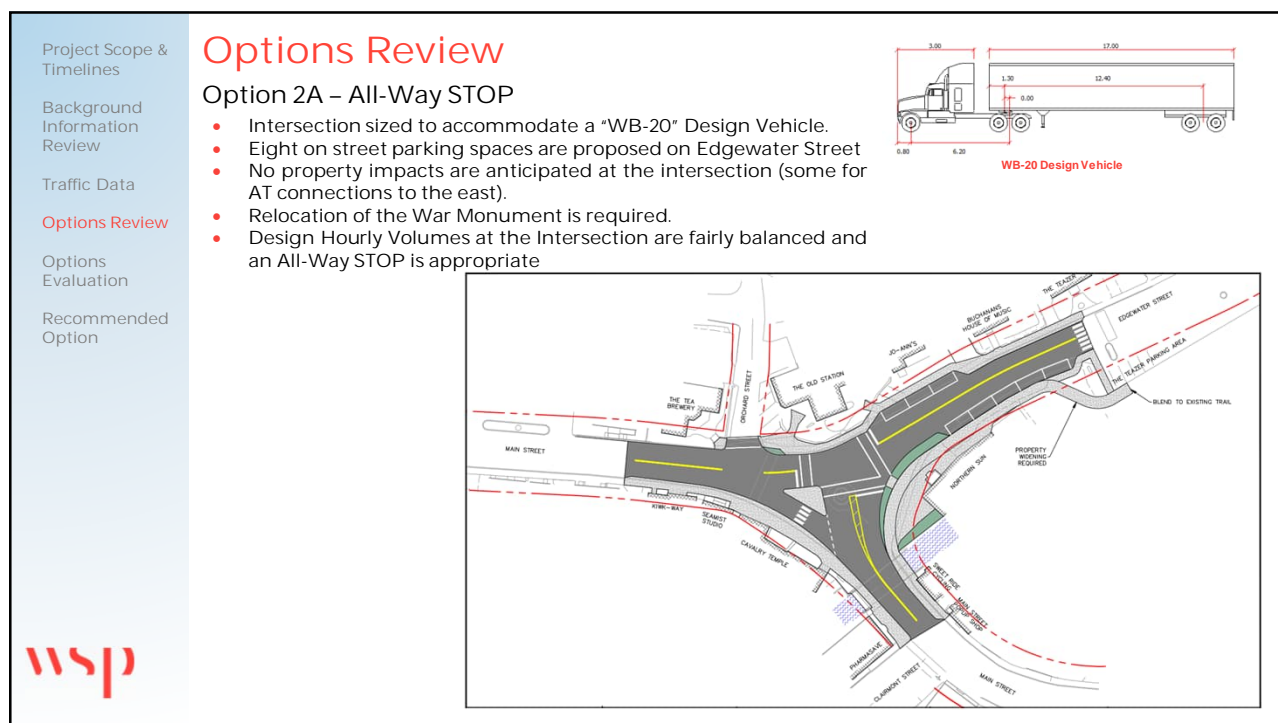
Options Review Option 2A



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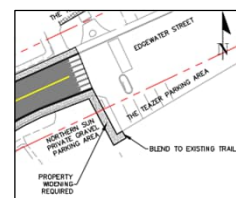
Recommended
Option



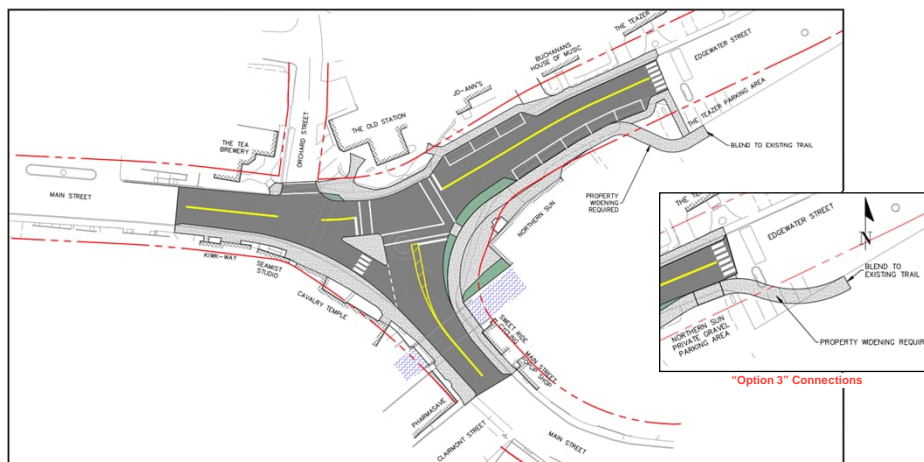
Options Review

Option 2A – All-Way STOP – Active Transportation

- Marked Crosswalks on the west and south approaches (Main Street)
- Additional marked crosswalk to the east at the Teazer
- Concrete sidewalk on both sides of all approaches
- Slower traffic speeds at the intersection will increase comfort for bicyclists



"Option 1" Connection



"Option 3" Connections

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Options Review: Option 3



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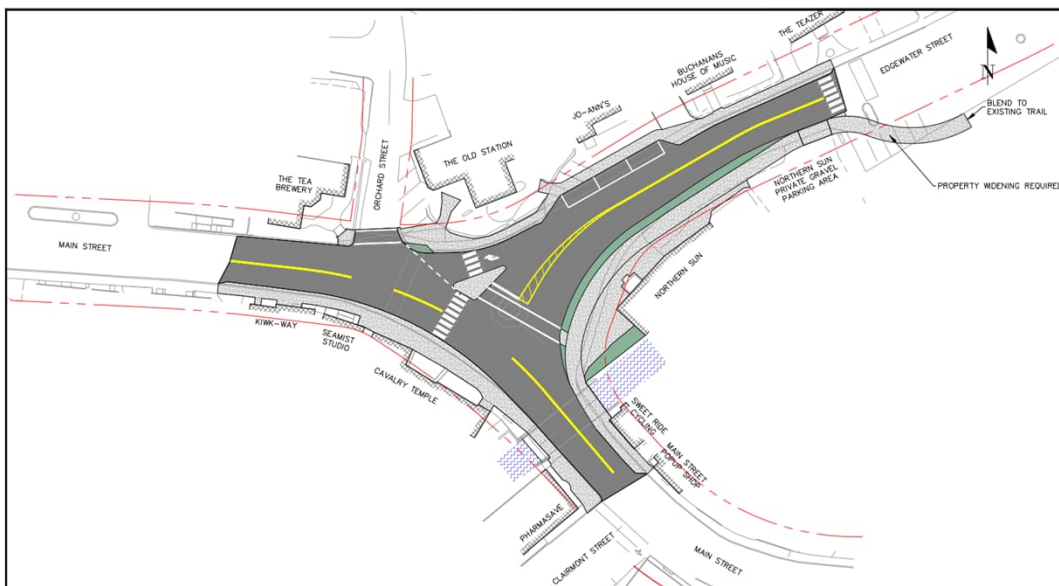
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Options Review

Option 3 – Edgewater Street T-Intersection



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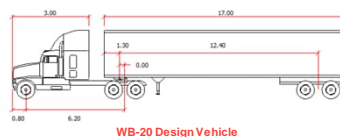
Recommended
Option



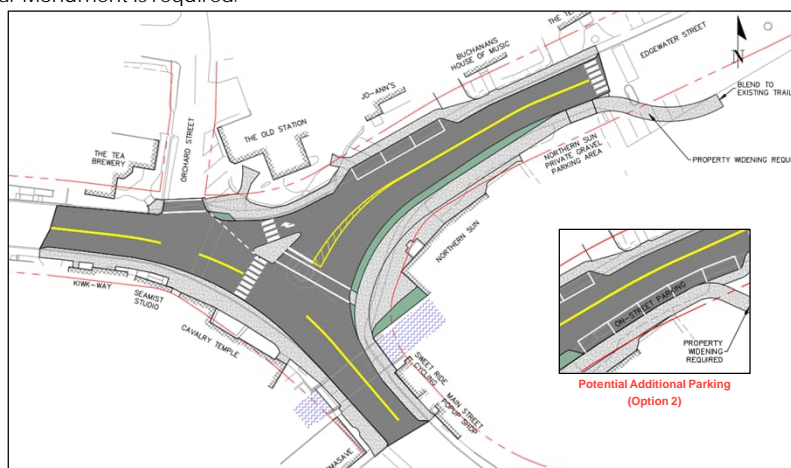
Options Review

Option 3 – Edgewater Street T-Intersection

- Intersection sized to accommodate a "WB-20" Design Vehicle.
- Three onstreet parking spaces are proposed on Edgewater Street, more could be provided on the south side, similar to Option 2
- No property impacts are anticipated at the intersection (some for AT connections to the east).
- Relocation of the War Monument is required.



WB-20 Design Vehicle



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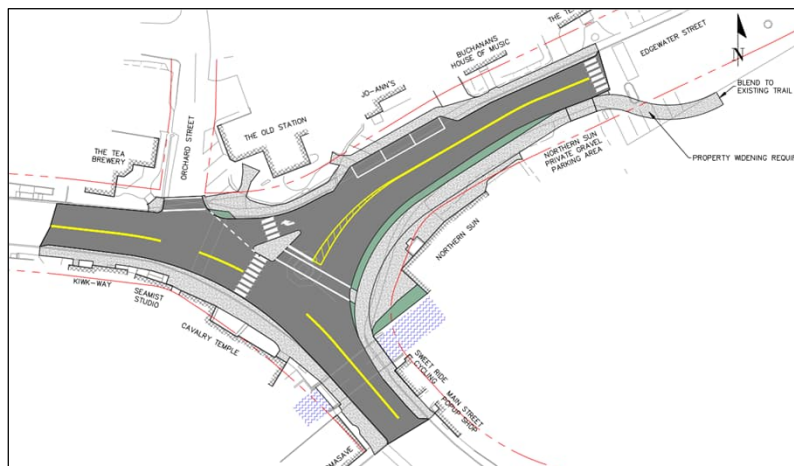
Recommended
Option



Options Review

Option 3 – Edgewater Street T-Intersection – Active Transportation

- Marked Crosswalks on the west (Main Street) and north (Edgewater Street) approaches
- Additional marked crosswalk to the east at the Teazer
- Concrete sidewalk on both sides of all approaches



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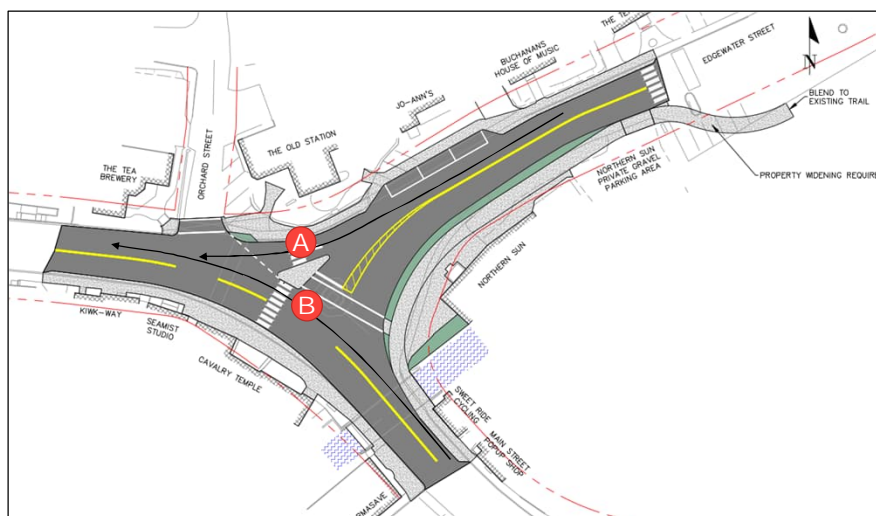
Recommended
Option



Options Review

Safety

Option 3 includes two movements, the right turn from Edgewater (A) and westbound through on Main Street (B) that could operate at high speed. While the right turn would be yield controlled, this conflict is identified for consideration.



Option 3

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Options Review: Evaluation



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Options Evaluation

Traffic Analysis

Analysis was completed with SIDRA for Option 1 (Roundabout) and SimTraffic for remaining Options. Analysis results are summarized to the right

Options 1 and 2A balance the queues and delays across each the approaches

Options 2 and 3 have free flow approaches with minimal to no delay or queueing, and one STOP controlled approach that has longer queues and delay.

Design Concept	Criteria				
	Delay	LOS	Max Delay	Max 95%Queue	Control
AM Peak Hour - DHVs					
Option 1	6.6	A	9.4 (NBL)	10.3 (WB)	
Option 2	4.4	A	9.2 (NBL)	26.8 (NB)	
Option 2A	6.9	A	8.3 (EBT, WBT)	26.5 (WB)	
Option 3	5.2	A	11.0 (SBL)	29.4 (SBL)	
PM Peak Hour - DHVs					
Option 1	7.4	A	10.0 (NBL)	30.0 (NB)	
Option 2	10.1	B	21.0 (NBL)	68.9 (NB)	
Option 2A	9.9	A	12.8 (NBL)	45.0 (NB)	
Option 3	7.9	A	22.9 (SBL)	54.6 (SBL)	

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Criteria		Option 1	Option 2	Option 2A	Option 3	Discussion
Modal Operations	Pedestrian Operations/Accommodation					Proposed sidewalk is similar in each option. Options 1 and 2A provide crossings of each approach with lower speed at each crossing due to the lower speeds for the roundabout and All-Way STOP. Option 2 and 3 provide crossings of two approaches.
	Bicycle Operations/Accommodation					Options 1 and 2A are expected to slow motorized vehicles at each approach due to the slower speeds at the roundabout and All-Way STOP. Options 2 and 3 include higher speed approaches that may be more challenging to bicyclists.
	Vehicle Operations/Accommodation					Analysis indicates the roundabout option will work well overall and at each individual approach. Options 2 and 3 are expected to be similar operationally where each has a STOP controlled approach with higher delay and queuing. All options accommodate heavy vehicles.
	User Safety					Safety at the roundabout intersection is expected to be better than the Options 2, 2A, and 3 intersections with its reduced speeds, limiting angled collisions, and reduced stopping and queuing. Option 3 has high speed conflicts between a right turn from Edgewater and a westbound through vehicle from Main Street.
Other Considerations	Property Impacts					The roundabout (Option 1) requires more property than Options 2, 2A, and 3. While the property impacts for Options 2, 2A, and 3 are similar.
	Cost Considerations					Construction of the roundabout and bridge widening in Option 1 will have higher cost than construction in Options 2, 2A, and 3. Cost for Options 2, 2A, and 3 are expected to be similar.
	Construction Impacts					Construction of the roundabout and bridge widening are expected to have major impacts to traffic flow during construction, likely to occur during the busier summer and fall periods. Lessened impacts are expected with Options 2, 2A, and 3.
	Parking					Parallel parking spaces can be accommodated for each option if desired.

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<div> <div>Most Desirable / Least Difficult</div> <div>←</div> <div>→</div> <div>Least Desirable / Most Difficult</div> </div>		<h1>Recommendation</h1>				
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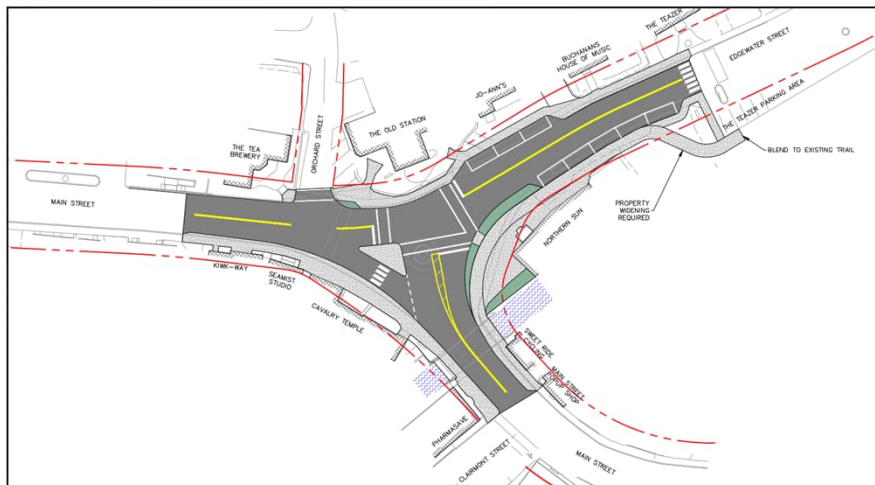
Recommended
Option



Recommendation

WSP recommends Option 2A – All-Way STOP. This option has the following benefits:

- Crosswalks at all approaches and sidewalks on each approach,
- Limits conflicts between high speed vehicles,
- Balances queuing and delay at the intersection,
- If traffic signals are warranted in the future, the intersection alignment and markings are set up.



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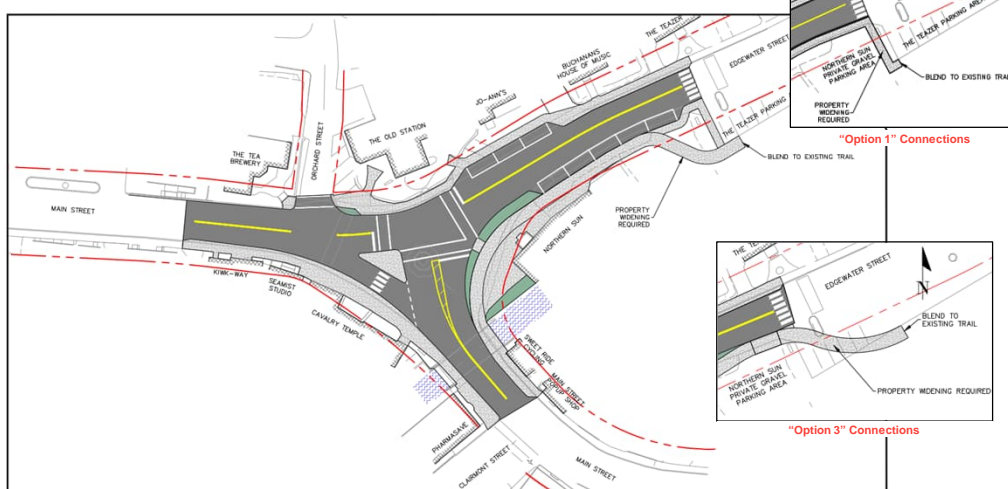
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Recommendation – Option 2A

But With Which Trail Connections??



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