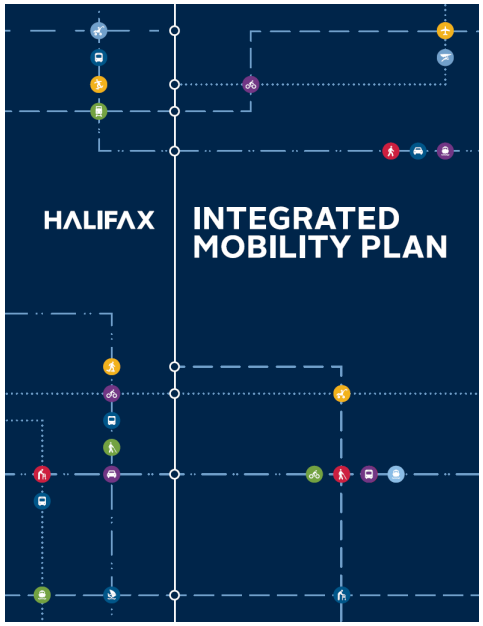
Re: Item No. 9.1.7

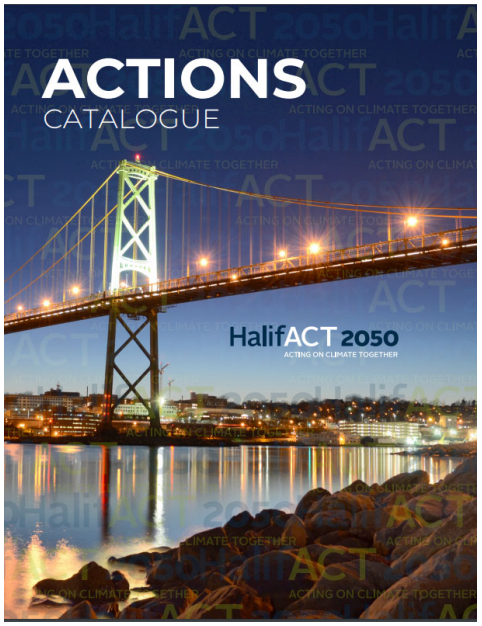
STRATEGIC TRANSIT PROJECTS

Halifax Regional Council
May 26, 2020

HALIFAX

BACKGROUND



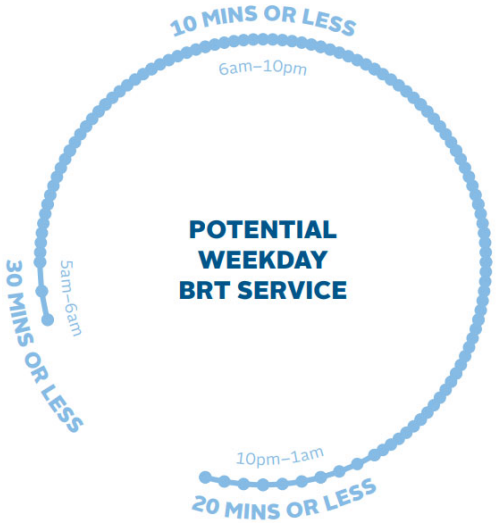


The Rapid Transit Strategy and the electrification of the transit fleet are two significant transit projects to help achieve the goals and actions outlined in the Integrated Mobility Plan (2017), and HalifACT 2050, the Municipality's proposed long-term climate action plan

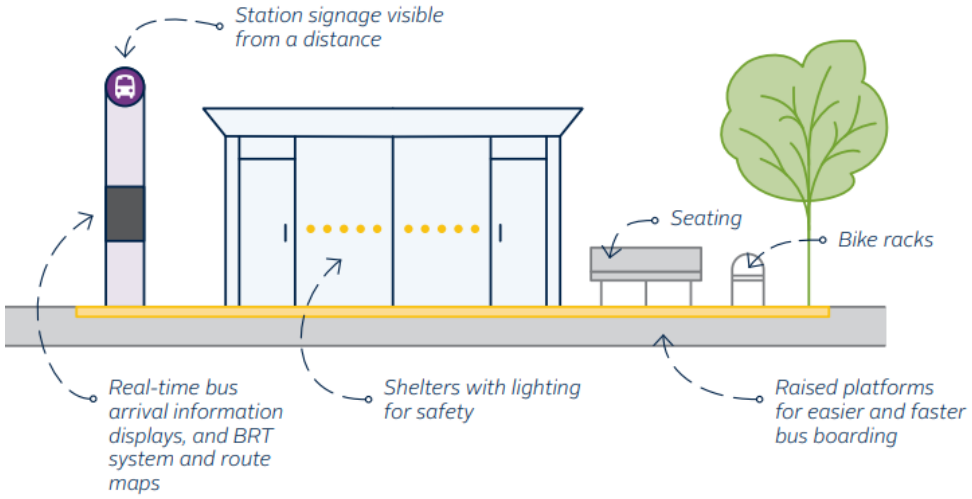
RAPID TRANSIT STRATEGY

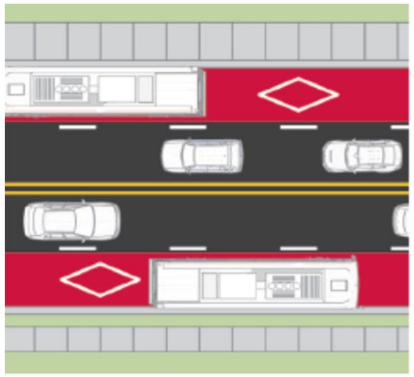
Bus Rapid Transit (BRT) Features

High frequency service, seven days a week



Enhanced station amenities





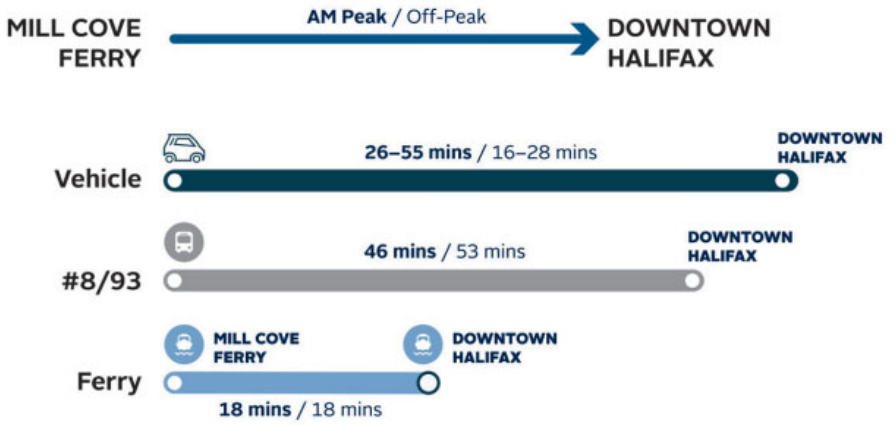
Transit priority lanes

Legible network

New Ferry Service Features

Express-like weekday service

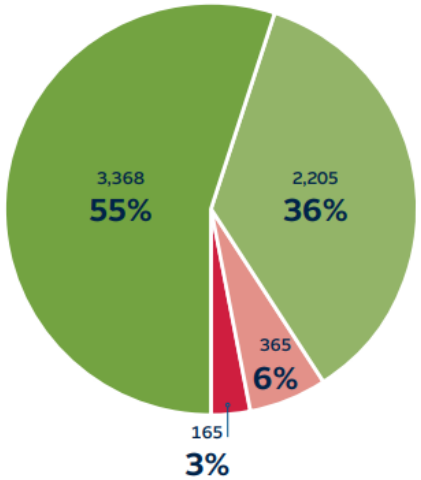
Very low travel times



Single-deck catamaran vessels

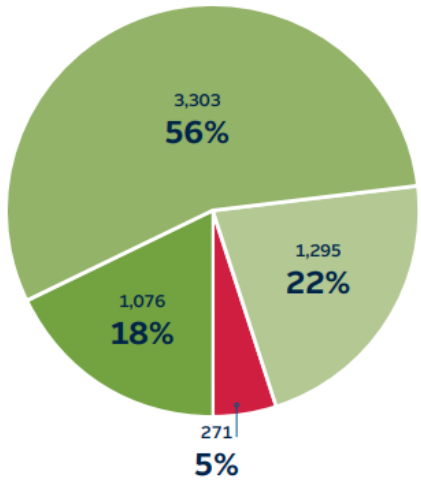
RAPID TRANSIT ENGAGEMENT

Do you support the idea of creating this BRT Network?



- *Yes, it is a great idea.*
- *Yes, but the network could be improved.*
- *Not sure.*
- *No, I don't support Bus Rapid Transit.*

How important do you think each ferry route is to the region?



- *Very important (all three routes).*
- *Very important (at least one route).*
- *Would be nice (at least one route).*
- *Not important (all routes).*

RAPID TRANSIT IMPACT

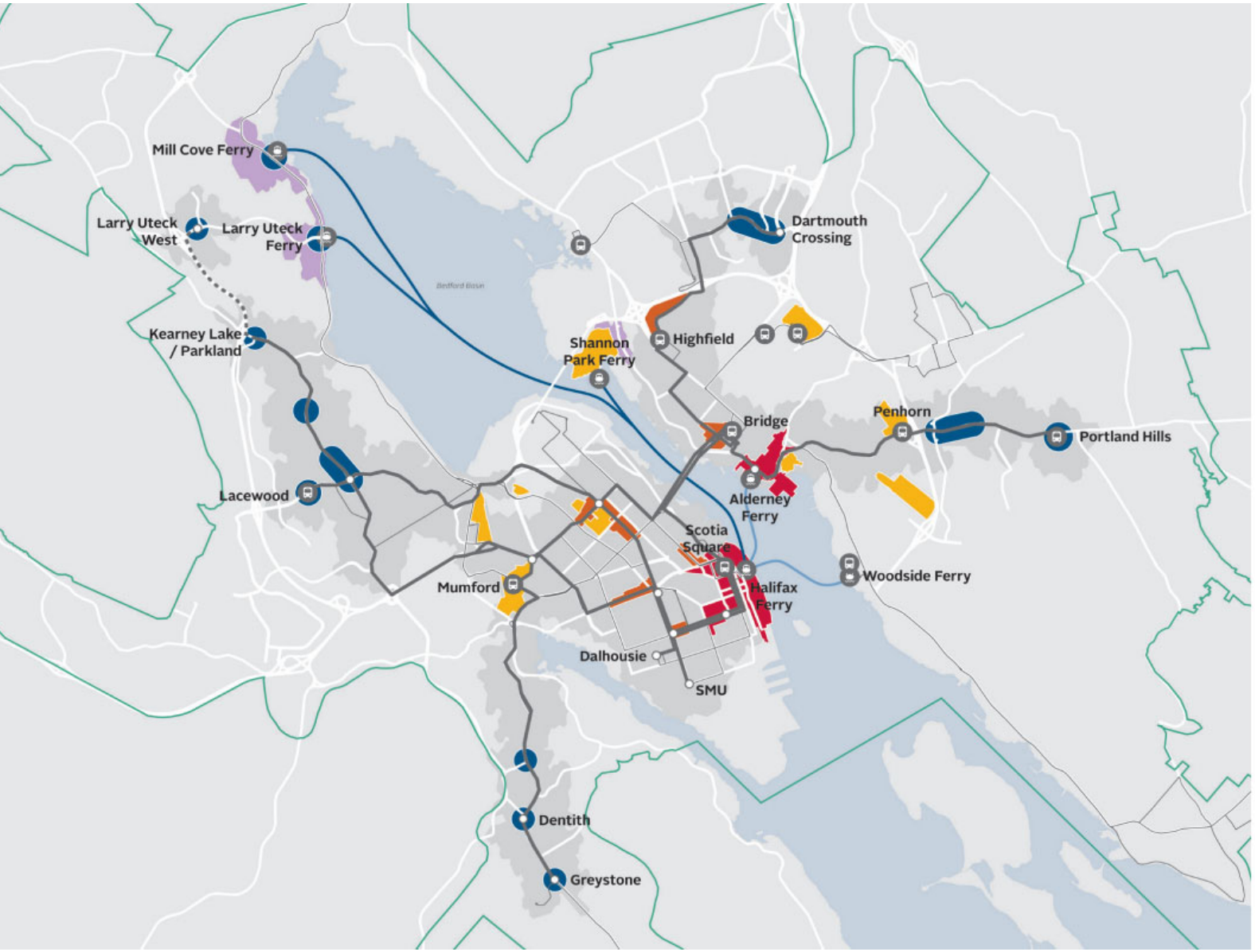
Improves mobility options	• Provides more reliable, frequent, faster, connected and easier to use service • Makes many types of trips possible • Lowers transportation costs for residents
Orients land use toward transit	• Encourages development around stations and terminals • Promotes complete communities • Reduces need to invest in road expansions
Makes transportation more sustainable and equitable	• Helps residents reduce vehicle use and decrease GHGs • Supports shifts toward more compact and sustainable development patterns • Builds more equitable communities by providing mobility options for those unable to access private vehicles

TRANSIT-ORIENTED LAND USE

The Strategy outlines four key land use policy directions:

1. Plan for higher-density mixed use development around Rapid Transit
2. Work to ensure that affordable housing and amenities are available near Rapid Transit
3. Improve the connectivity of local streets and the quality of active transportation infrastructure near stations and terminals
4. Pursue a long-term vision for Rapid Transit together with a long-term vision for land use

Growth Areas and Potential Transit-Oriented Communities



Transit

- Proposed BRT Network
- Enhanced Station
- Terminal
- Corridor Routes
- Existing Ferry Route
- Proposed Ferry Route
- Ferry Terminal

Plan Areas

- Centre Plan: Downtowns
- Centre Plan: Centres
- Centre Plan: Future Growth Nodes
- Potential Transit-Oriented Communities
- Urban Transit Service Boundary

Walksheds

- BRT Walksheds (800m)
- Ferry Walksheds (800m)

IMPLEMENTATION

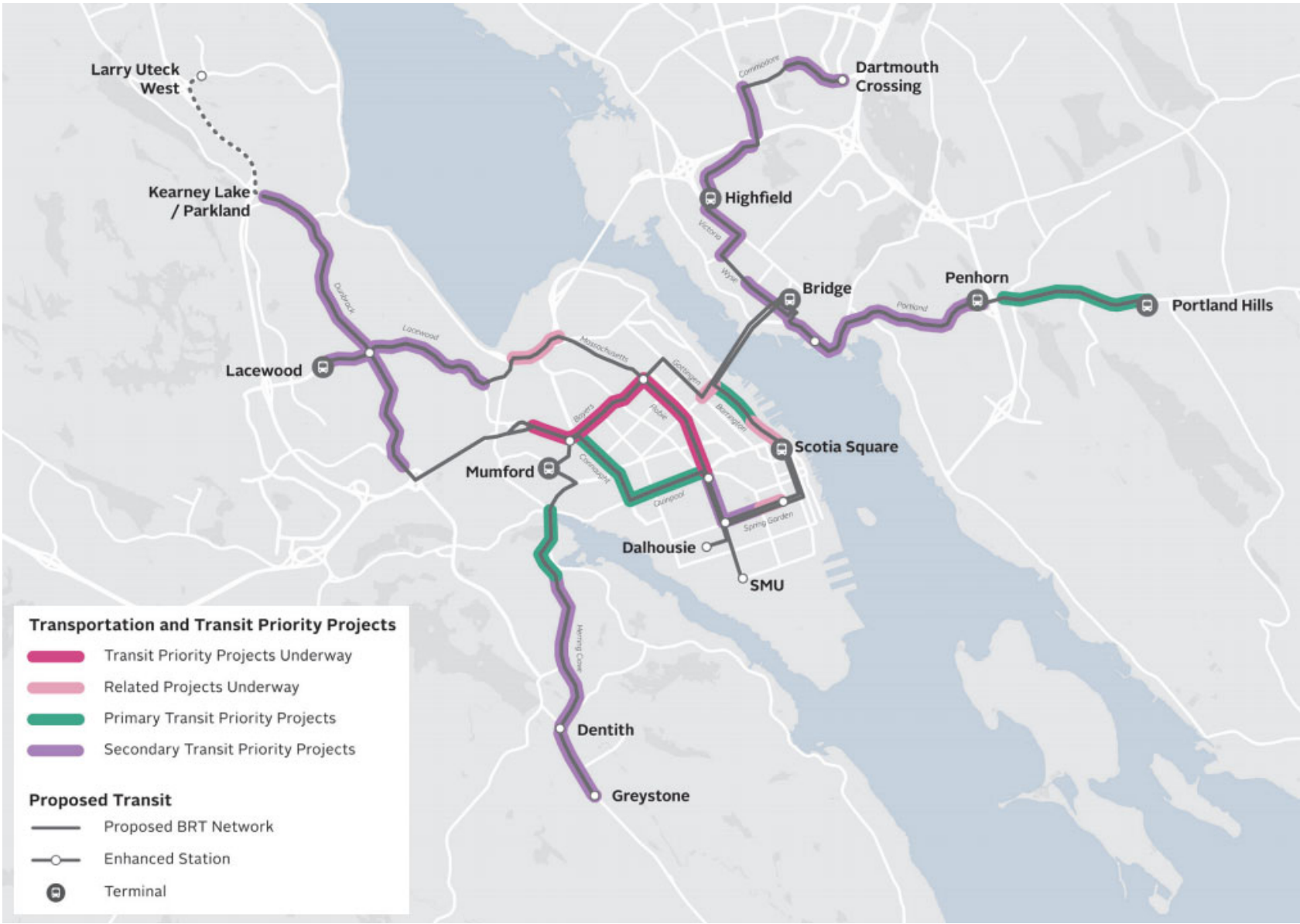
Complex undertaking to take place over the next seven to eight years

Implementation will require:

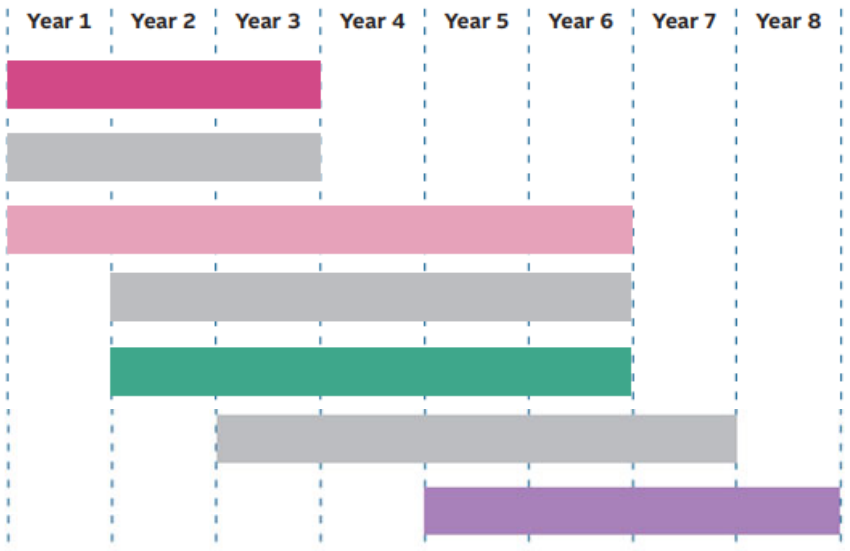
- Additional dedicated staff resources
- Coordination among multiple stakeholders
- Management of many concurrent projects

Recommendation is that implementation is led by a dedicated project office

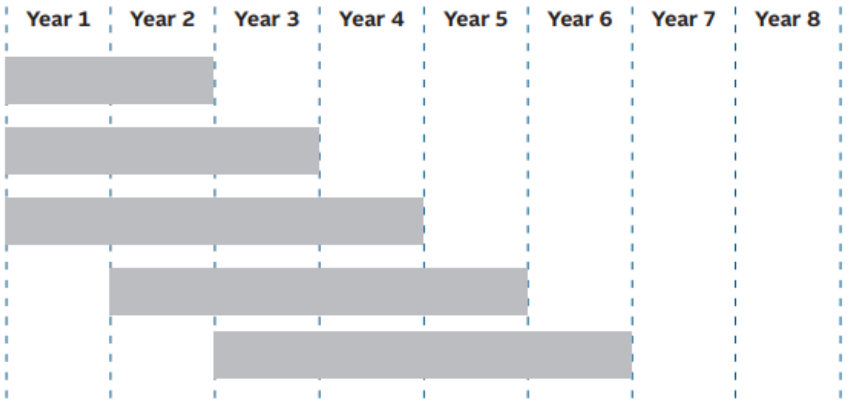
Rapid Transit Corridor Projects



Preliminary BRT Phasing



Preliminary Ferry Phasing



RAPID TRANSIT COST ESTIMATES

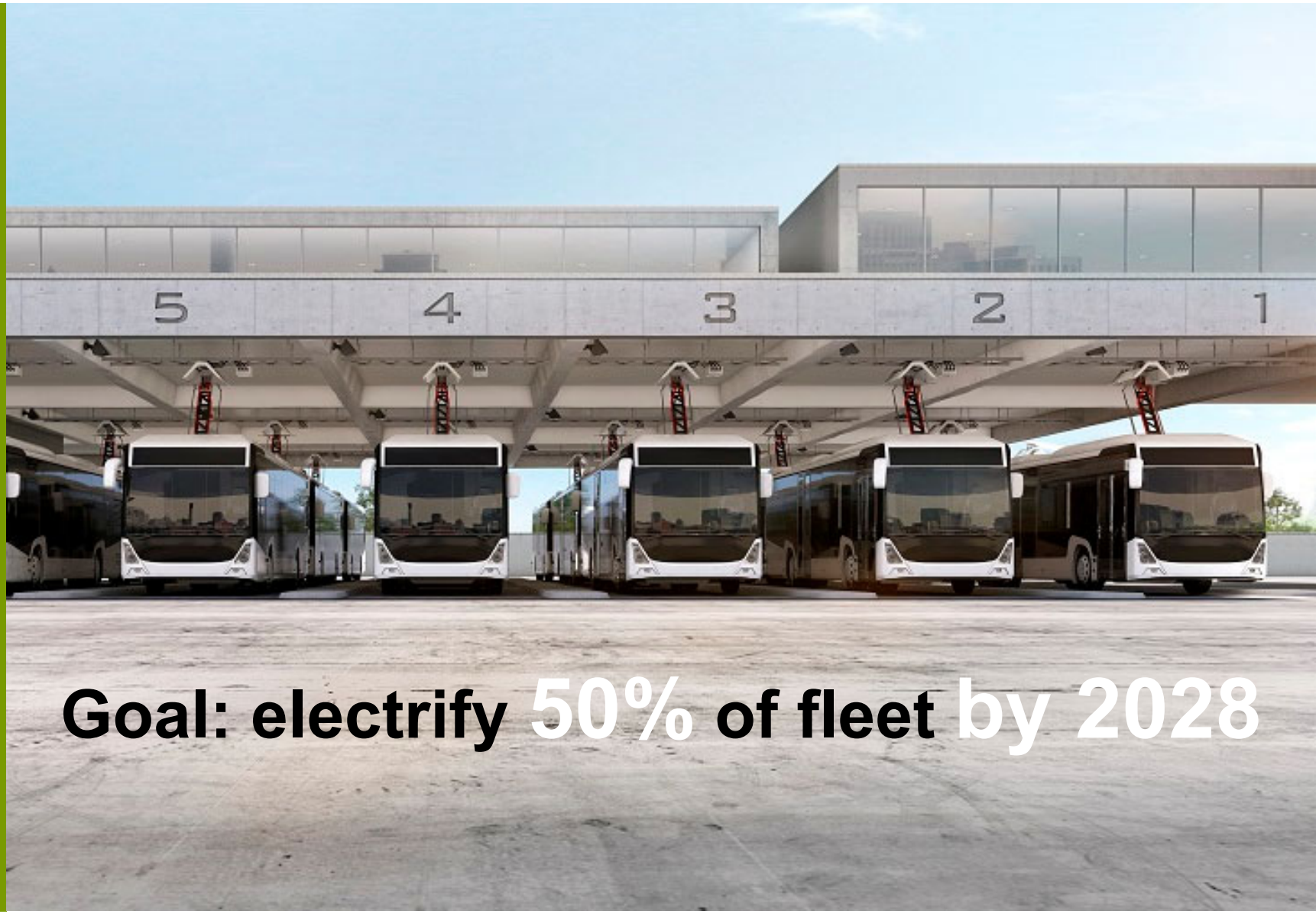
Capital

Bus Rapid Transit (All four lines)	
New expansion buses (33)	$36M to $64M
Stations (130)	$62M
Transit priority lanes and intersection improvements	$86M
Property acquisition	TBD
Additional studies, functional plans and project overhead	$5M
Subtotal	*$189M to $217M*
Ferry (All three routes)	
Vessels (10)	$71M
Halifax Ferry Terminal (rebuild)	$17M
Mill Cove Terminal	$6M to $18M
Larry Uteck Ferry Terminal	$6M to $7M
Shannon Park Ferry Terminal	$4M to $8M
Property acquisition	TBD
Additional studies, concept designs and project overhead	$4M
Subtotal	*$108M to $125M*
Total capital costs	**$297M to $342M**

Operating

Bus Rapid Transit (All four Lines)	
BRT operating costs	$29M
Operating costs reassigned from corridor routes	($18M)
Anticipated new annual fare revenue	($4M to $5M)
Net new operating costs	*$6M to $7M*
Ferry (All three routes)	
Ferry operating costs	$14M to $18M
Anticipated annual fare revenue	($3M to $5M)
Net operating costs	*$9M to $15M*
Overall net new operating costs	**$15M to $22M**

ELECTRIC BUS



Goal: electrify 50% of fleet by 2028

PHASING

- Halifax Transit currently operates from two Transit Centres, the Burnside Transit Centre (BTC) and Ragged Lake Transit Centre (RLTC)
- A planned expansion of the RLTC to be modified to accommodate electric buses (Phase 1)
- Further electrification to be accommodated through BTC rebuild (Phase 2)
- Proposal plans for the introduction of electric vehicles in the next two to three years

INFRASTRUCTURE & FLEET

- Over 80% of Halifax Transit network can be electrified by depot charging

- Halifax Transit has elected to primarily adopt depot charging as it requires less changes to the routing system and renders less risk to the charging equipment as all chargers reside at a Halifax Transit depot

OPERATING COSTS

Propulsion type	Diesel	Diesel-Hybrid	Electric
Vehicle Annual Kilometers (km)	55,000	55,000	55,000
Fuel Prices	0.690 $/L	0.690 $/L	0.126 $/kWh
Fuel Economy	0.57 L/km	042 L/km	1.50 kWh/km
Fuel Prices ($/Km)	0.41 $/km	0.30 $/km	0.19 $/km

In 2019/20, an electric bus could save an estimated at $24,000 in annual maintenance costs per bus when compared to diesel

In 2028/29, the potential reduction in maintenance costs could surpass $6 million annually for 210 battery electric buses

HIGH LEVEL CAPITAL COSTS

Phase 1 - Ragged Lake

Ragged Lake Facility	Years	Total BEB Capacity (FFE)		Estimated Expenditures		
RLTC Expansion	1 & 2	54		$12.0M		
Fleet Enhancement	Years	BEB Procurement (FFE)		With 5% Annual Price Decline		At 2020 Pricing
Vehicle Procurement (BEB) including charging stations	3 & 4	Replacement	41	$64.0M	to	$73.0M
		Expansion	13			
Estimated Ragged Lake Total	**1 to 4**	**54**		**$76.0M**	**to**	**$85.0M**

Phase 2 - Burnside

Burnside Facility	Years	Total BEB Capacity (FFE)		Estimated Expenditures		
BTC Replacement	2 to 7	300		$165.0M		
Fleet Enhancement	Years	BEB Procurement (FFE)		With 5% Annual Price Decline		At 2020 Pricing
Vehicle Procurement (BEB) including charging stations	5 to 8	Replacement	136	$159.0M	to	$210.5M
		Expansion	20			
Estimated Burnside Total	**2 to 8**	**156**		**$324.0M**	**to**	**$375.5M**

PROCUREMENT SUMMARY

Procurement Schedule	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2022 to 2028
Bus Location	Ragged Lake TC		Burnside TC				Halifax Transit
Replacement Buses	30	11	46	36	32	22	177
Expansion Buses	7	6	5	5	5	5	33
Total Procurement	**37**	**17**	**51**	**41**	**37**	**27**	**210**

While the capital costs to electrify the fleet are significant, staff anticipate the need for $153M in capital funding for the replacement and expansion of diesels buses under a business as usual scenario for the same time period

Thus, the incremental cost to electrify the fleet is $247M to $307M

FUNDING OPPORTUNITIES

Investing in Canada Infrastructure Program (ICIP)

- ICIP focus is on infrastructure projects that will help them achieve sustainability goals under the Paris Agreement and Pan-Canadian Framework on Climate Change

- A bilateral agreement signed between the Government of Canada and Province of Nova Scotia in 2018 established two funding relevant streams:
  - Green Infrastructure
  - Public Transit Infrastructure Fund (PTIF)

- Staff anticipate that there is sufficient funding within these two streams to support the Rapid Transit Strategy and the fleet transformation towards electric buses

SUMMARY

- The Rapid Transit Strategy, and the Electric Bus Proposal will provide valuable, long term, benefits to the municipality, in terms of meeting the objectives of the IMP and broader climate change objectives
- The capital costs presented here are high level, and will be further refined as implementation plans are developed, but an estimated $710 million to $782 million is required to complete both projects
- The total remaining potential investment through the PTIF program is $526.3 million, and the total remaining available funding through the Green Infrastructure fund is unknown but estimated to be several hundred million dollars

RECOMMENDATIONS

It is recommended that Halifax Regional Council:

1. Suspend the rules of procedure under Schedule 3, the Community Planning and Economic Development Standing Committee Terms of Reference, and under Schedule 7, the Transportation Standing Committee Terms of Reference, of Administrative Order One, the Procedures of the Council Administrative Order.

2. Approve the Rapid Transit Strategy described in this report and direct the CAO to:
    a. develop an implementation plan including resourcing, functional planning, land acquisition strategy, and long-term capital planning, subject to securing external funding; and
    b. consider the application of mechanisms that preserve opportunities to accommodate transit infrastructure within the public right-of-way (e.g. transportation reserves, increased front yard setbacks), in the ongoing review of the Regional Municipal Planning Strategy and other planning documents as applicable;

3. Approve the Electric Bus Proposal described in this report and direct the CAO to commence with the acquisition of low carbon emission public transit buses, subject to securing external funding;

RECOMMENDATIONS CONT.

It is recommended that Halifax Regional Council:

4. Direct the CAO to submit both the Rapid Transit Strategy and Electric Bus Proposal for funding through the Federal Government's Public Transit Infrastructure Fund and the Green Infrastructure Fund, as well as any additional stimulus funding streams that may become available.

5. Authorize the Mayor to send a letter of support for both the Rapid Transit Strategy and Electric Bus Proposal to the Province of Nova Scotia to stimulate discussion regarding the benefits and potential funding for these projects.