



RAPID TRANSIT STRATEGY

What is Rapid Transit?

*Rapid Transit is a form of fast and reliable transit service that typically operates in a **dedicated right of way** and can **shape land use patterns** by attracting development near stations*

(Examples of a dedicated right of way include bus only lanes and the Halifax Harbor)

Where did this Strategy Originate?

- The strategy builds on previous work

Previous
Rapid
Transit
Studies
(Commuter
Rail, Ferry
Cultivation,
etc.)

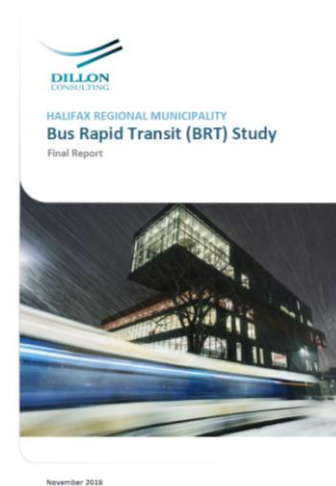


2003-15

2016



2017



2018

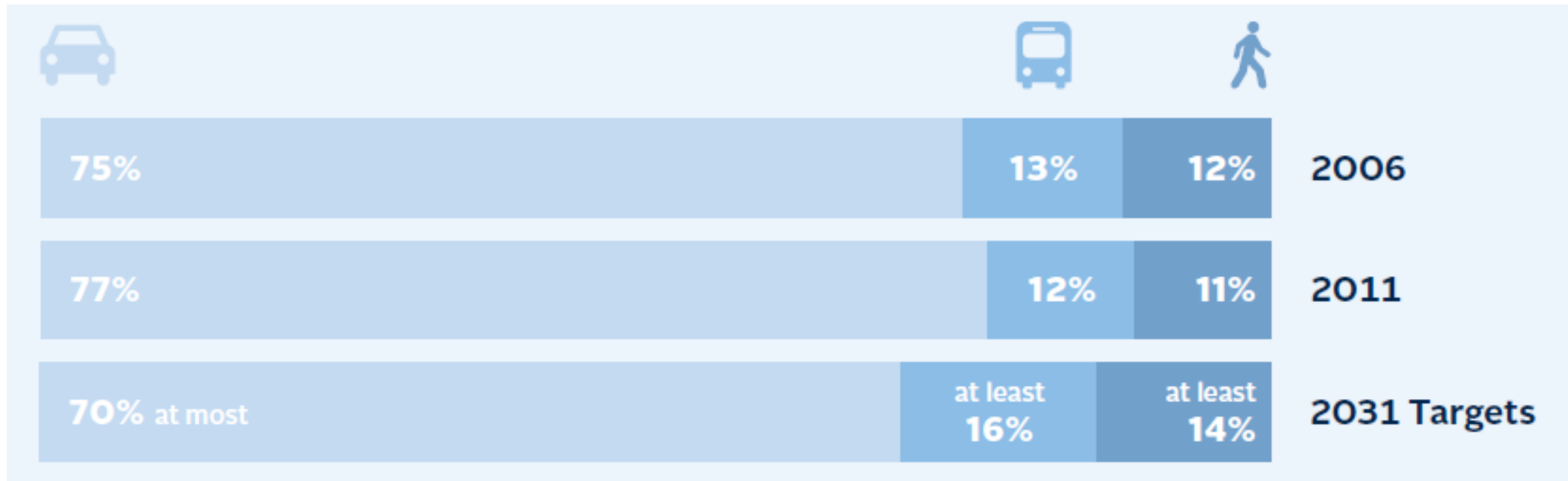
Bedford
Highway and
Herring Cove
Functional
Planning
Projects

2019

What is the Purpose of the Strategy?

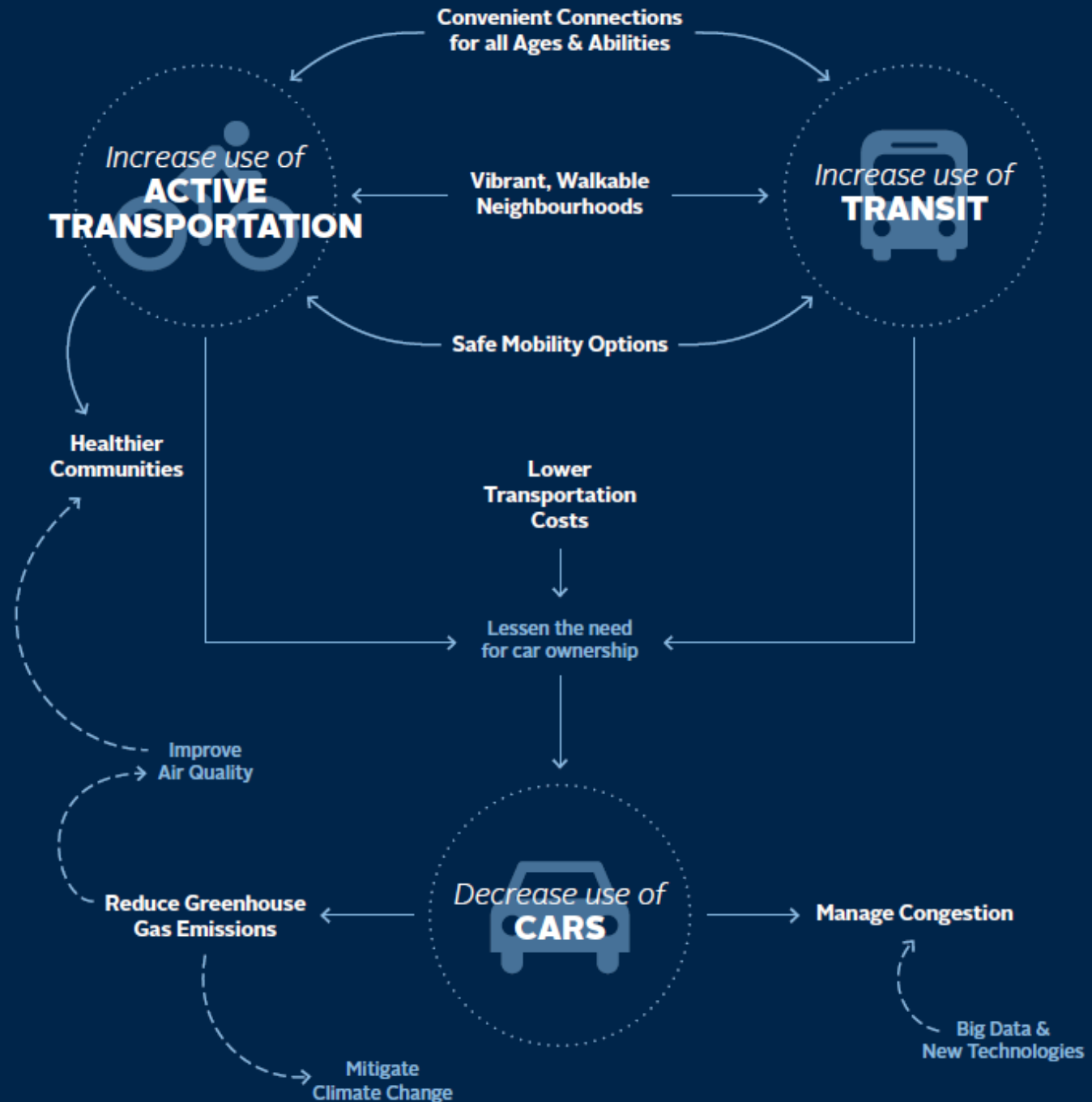
- Design a transit network to meet or exceed HRM's 2031 mode-share targets
- Establish a long-term strategic vision for rapid transit
- Inform long-term settlement patterns to support land use intensification (i.e. more people living) along key corridors

What are HRM's Mode Share Targets?



Note: These are targets for the entire municipality

Why it is important to increase the use of transit, walking and biking?



Rapid Transit Modes



Bus Rapid Transit (BRT)

BRT is a form of Rapid Transit that often includes features such as dedicated bus lanes, off-board fare collection, and enhanced stops to provide high quality, frequent and reliable bus service

BRT: Bus Lanes

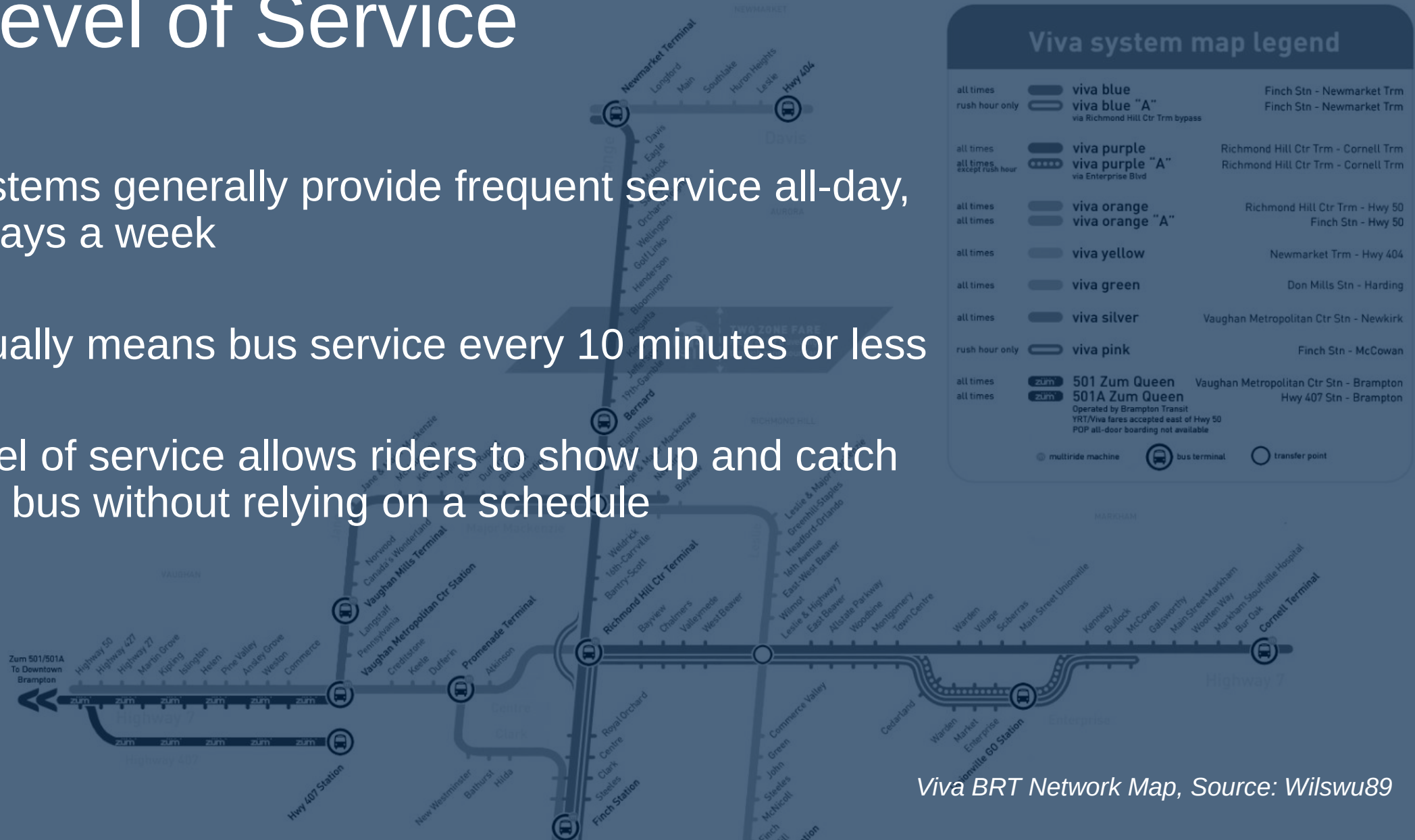
- Dedicated bus lanes are a key element of BRT
- These lanes help maintain service reliability and reduce travel times by allowing buses to bypass congestion

BRT: Stops

- BRT stops typically include more features than traditional bus stops and often include:
 - Large, raised platforms for easier and faster boarding
 - Canopy-style shelters for more protection from the weather
 - Heat & lighting for passenger comfort
 - Real time bus arrival information, and more

BRT: Level of Service

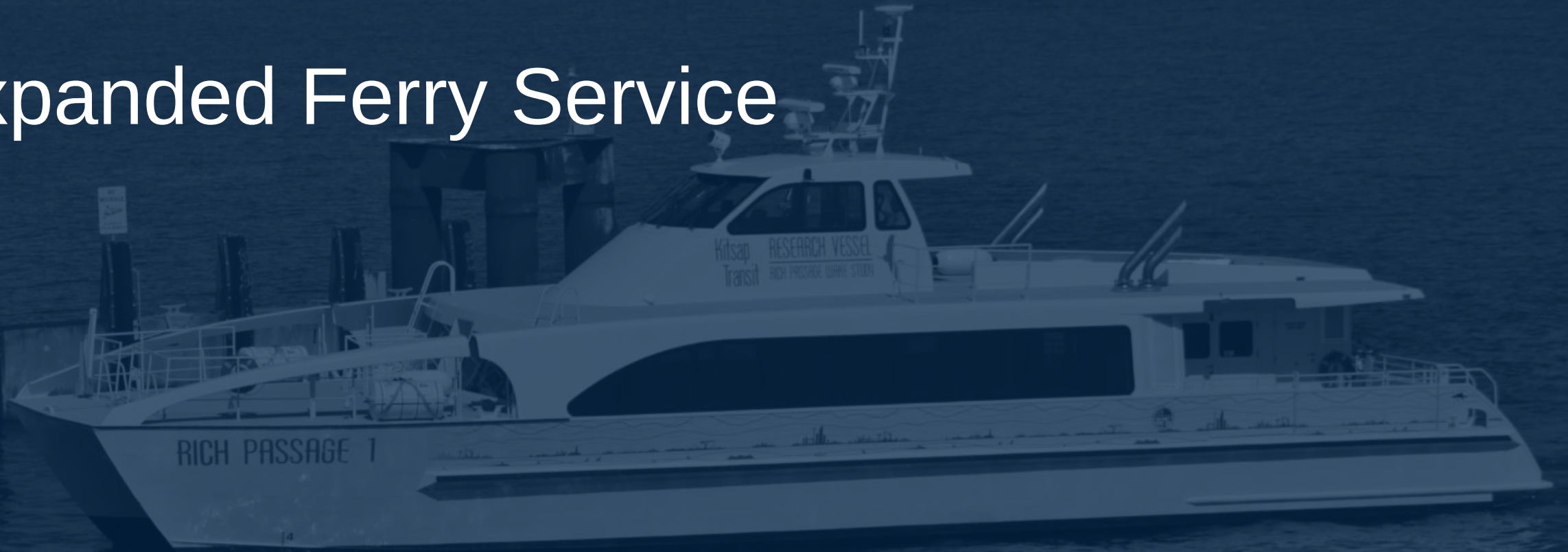
- BRT systems generally provide frequent service all-day, seven-days a week
- This usually means bus service every 10 minutes or less
- This level of service allows riders to show up and catch the next bus without relying on a schedule



Expanded Ferry Service

Potential new connections between Bedford, North Dartmouth, and Downtown Halifax using vessels capable of higher speeds than the current ferries

Expanded Ferry Service



This type of ferry service operates in many locations including Boston, New York, and Seattle, to name a few

Network Inputs



What Areas Can Support Rapid Transit?

- Rapid Transit service, particularly BRT, is most viable in areas where there is a large amount of residential and commercial land uses
- There needs to be enough people, jobs and activity along a route to support the frequent, all-day service provided by BRT
- Within the next ten years, many areas in HRM can support BRT service (see map on next page), while other areas may be better suited to focusing on transit for commuters, or community-based transit

Population + Job Density

2031 Projection; Feb 2020

This map shows projected population and job density by the year 2031. The darker the shading, the better suited the area is for BRT. Typically, areas above 100 people and/or jobs per hectare can start to support BRT.

Legend

2031 Pop + Jobs / Ha

0 - 30

31 - 50

51 - 100

101 - 150

151+



0 1.5 3 6 km

Planned Corridor, Express and Ferry Routes

Per Final Moving Forward Together Plan

Legend

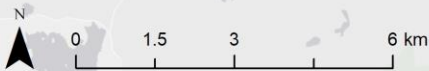
- Corridor Routes
- Express
- Ferry (Existing)

Porters Lake

To Fall River/ Airport

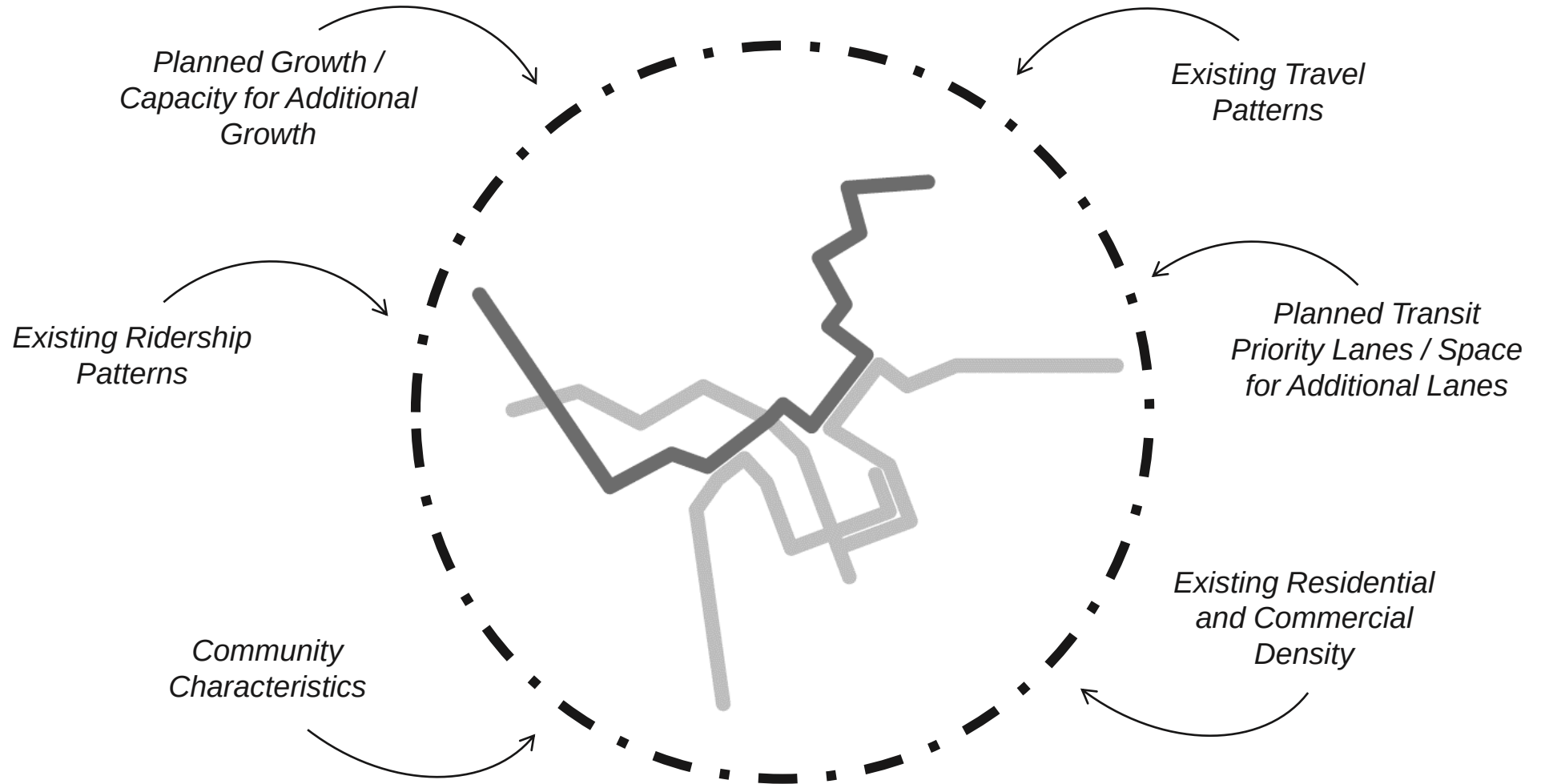
To Tantallon – Sheldrake Lake

This map shows planned Corridor and Express routes. Corridor routes are frequent and well used all day, while Express routes carry high numbers of passengers during popular commuting times. Both of these types of routes complement and support BRT service.



Summary of Key Factors

Population and job density are key factors in determining an ideal BRT network. Other key considerations are shown here.



Proposed BRT with Corridor, Express and Ferry Routes

Draft for Rapid Transit Strategy; Feb 2020

Legend

- Proposed BRT
- Corridor Routes
- Express
- Ferry (Existing)
- Ferry (Potential)

This map shows how the proposed rapid network could connect those areas with the strongest demand for bus service, and also how it could work within the transit system, providing both frequent service and express service to a broader area.



How is BRT Different Than Express Routes?

Bus Rapid Transit

- Allows many people to move around to many locations, including downtown
- All-day, every day
- High frequency
- Regular stops about every 800m

Express Routes

- Bring in commuters from outer suburbs via direct route to downtown
- Often peak-only
- Variable frequency
- Very few stops

Proposed BRT Routes



Proposed BRT Network

Draft for Rapid Transit Strategy; Feb 2020

This map shows the four proposed BRT routes with potential locations for stops and stations along each route.

Legend

Proposed BRT Routes

- Dunbrack ↔ Dartmouth Crossing
- Herring Cove ↔ Spring Garden
- Lacewood ↔ Robie
- Portland ↔ Downtown

Stop Type

- Enhanced Stop
- Medium Station
- Terminal

An alternative route for the Yellow Line is shown here. *Complete the survey to provide your input on which option you prefer.*

Alternate Quinpool Routing



Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

Proposed BRT Level of Service

- This table shows the proposed level of service for the BRT routes, with daytime and evening service providing a bus every 10 minutes or less.

Weekdays	Saturdays	Sundays/Holidays
5-6AM 30 minutes or less	5-8AM 30 minutes or less	6-9AM 30 minutes or less
6AM-10PM 10 minutes or less	8AM-10PM 10 minutes or less	9AM-8PM 10 minutes or less
10PM-1AM 20 minutes or less	10PM-1AM 30 minutes or less	9PM-1AM 30 minutes or less

Proposed Network of Transit Priority Lanes

Draft for Rapid Transit Strategy; Feb 2020

Legend

Transit Priority Lanes

- Transit priority lane (both directions)
- Transit priority lane (one direction)
- Mixed traffic

This map shows the potential network of bus lanes within the next 5 to 10 years. These bus lanes would not only benefit the BRT routes but also many other routes within the transit network.

There are different potential levels of transit priority on the two Yellow Route options on the peninsula.

Alternate Quinpool Routing



Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

Access to BRT Stops and Stations (800m)

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Legend

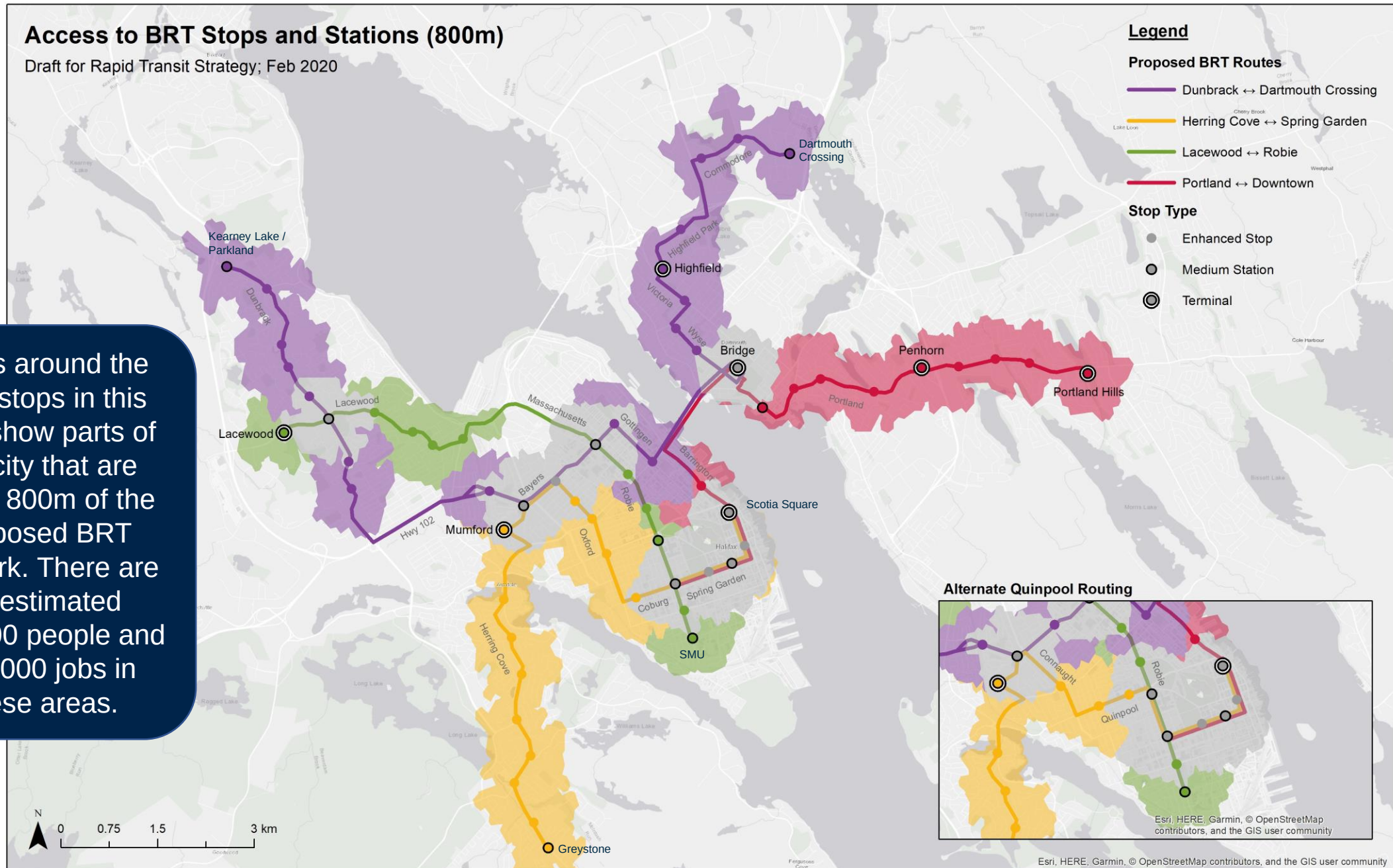
Proposed BRT Routes

- Dunbrack ↔ Dartmouth Crossing
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- Portland ↔ Downtown

Stop Type

- Enhanced Stop
- Medium Station
- Terminal

Areas around the BRT stops in this map show parts of the city that are within 800m of the proposed BRT network. There are an estimated 121,000 people and 104,000 jobs in these areas.



The Purple Line

- Connects Clayton Park with North Dartmouth and Dartmouth Crossing
- Provides connections to the Yellow and Green Lines for one-transfer rides Downtown Halifax and a connection at Bridge Terminal for a one-transfer ride to destinations throughout Dartmouth



Route Design Information:

- Could be up to a 26% improvement in travel time (for comparable routes)
- 23 stops in each direction (38% fewer stops to improve travel time)
- Over 56,000 people and 35,000 jobs would be within 800m of these stops
- Could be extended further, to West Bedford, in the future

The Green Line

- Connects Clayton Park with the southern peninsula via Lacewood and Robie
- Offers a direct connection between Lacewood Terminal and hospitals and universities on the peninsula, and a one-transfer ride to destinations across the BRT network

Route Design Information:

- Could be up to a 13% improvement in travel time (for comparable routes)
- 13 stops in each direction (52% fewer stops to improve travel time)
- Over 44,000 people and 40,000 jobs would be within 800m of these stops



The Yellow Line

- Connects Armdale and Spryfield with Downtown Halifax, linking key destinations on the peninsula including the Halifax Shopping Centre, Quinpool Road, Spring Garden Road and Downtown Halifax
- Offers one-transfer connections to Dartmouth via the Red and Purple Lines

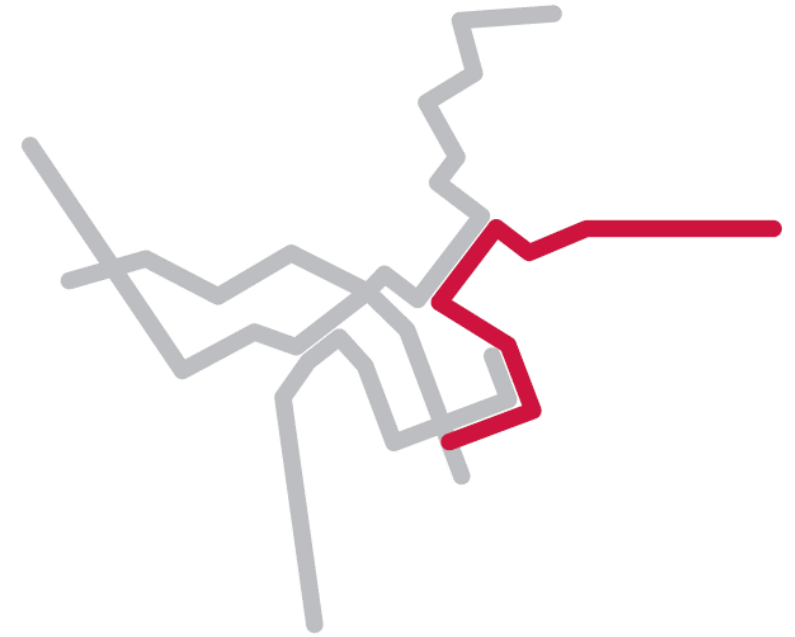
Route Design Information:

- Could be up to a 22% improvement in travel time (for comparable routes)
- 20 stops in each direction (39% fewer stops to improve travel time)
- Over 47,000 people and 62,000 jobs would be within 800m of these stops



The Red Line

- Connects Portland Street with Downtown Dartmouth and Downtown Halifax
- Offers a direct connection between Portland Hills Terminal and the downtown areas and provides one-transfer connections to north Dartmouth via the Purple Line



Route Design Information:

- Could be up to a 17% improvement in travel time (for comparable routes)
- 16 stops in each direction (53% fewer stops to improve travel time)
- Over 37,000 people and 61,000 jobs would be within 800m of these stops

Potential Ferry Service



Recommendation for the Type of Ferry

- The proposed ferry service would use a faster vessel with a lower passenger capacity than existing ferry service
- 150 passenger capacity with a single deck passenger area is recommended for more efficient boarding
- The type of boat would be a catamaran which would lead to less wake disturbance (smaller waves)

Potential Ferry Routes

Draft for Rapid Transit Strategy; Feb 2020

Legend

— Ferry (Existing)

..... Ferry (Potential)

Mill Cove (about 18 mins)

Larry Uteck (about 16 mins)

Shannon Park (about 10 mins)

Site Considerations

Mill Cove: Best option for near-term service

Shannon Park: Potential longer-term option, in connection with future new development

Larry Uteck: Constraints around a potential terminal site make this a longer-term conceptual option for future service

This map shows estimated travel times for one-way trips to the Halifax Ferry Terminal that could be possible with new ferry service.



0 0.5 1 2 km

Potential Level of Service

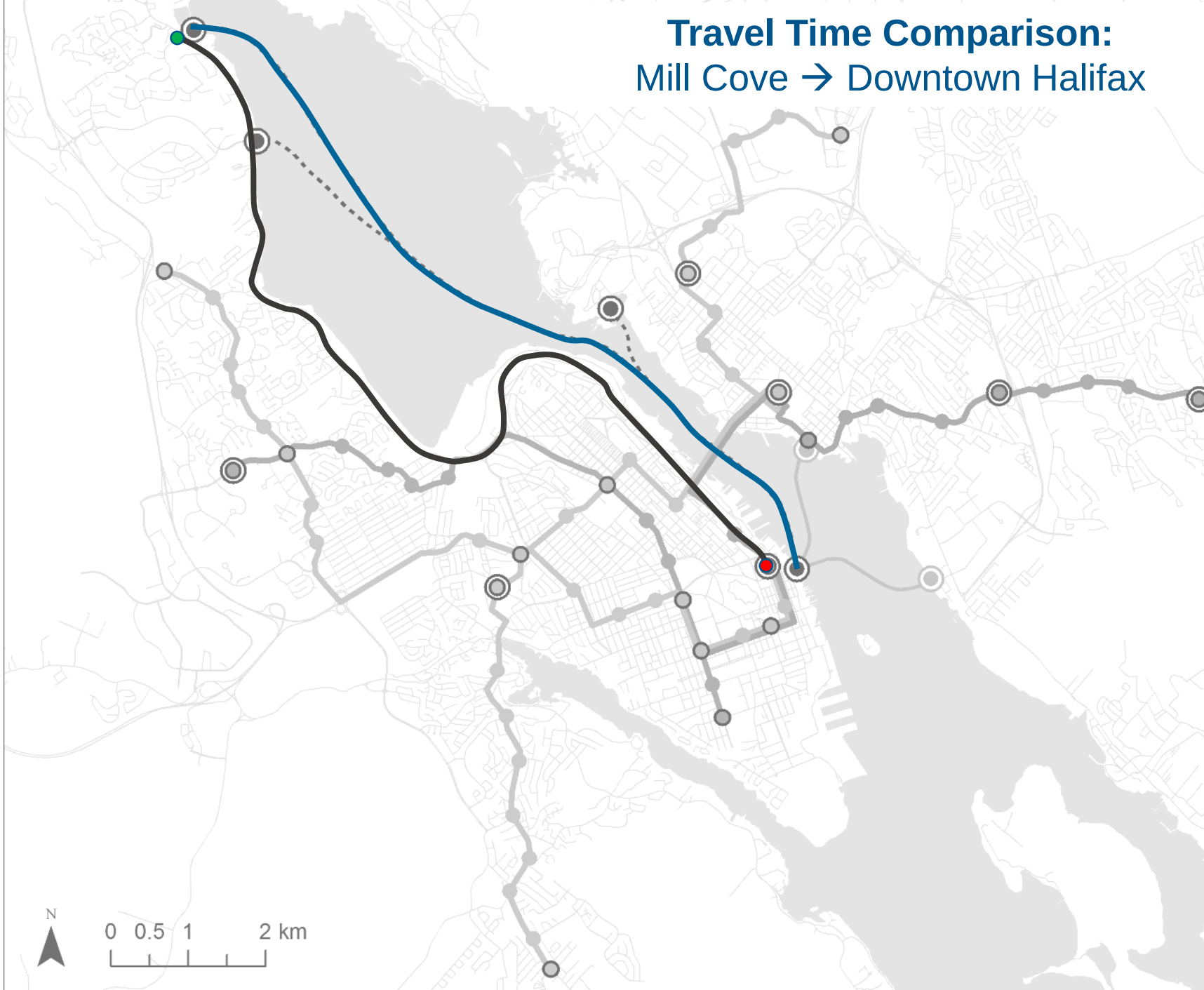
- New ferry service would be focused on peak commuting hours, similar to express buses



Sample Travel Time Comparisons



Travel Time Comparison: Mill Cove → Downtown Halifax



Existing Auto Drive Time



AM Peak

26–55 min

Off-Peak

16–28 min

Existing Transit Travel Time

8/93

AM Peak

46 min

Off-Peak

53 min

Potential Rapid Transit Travel Time



AM Peak

18 min

Off-Peak

18 min

Travel Time Comparison: Clayton Park → Halifax Centre Library

Existing Auto Drive Time



AM Peak

16–35 min

Off-Peak

14–28 min

Existing Transit Travel Time



AM Peak

40 min

Off-Peak

37 min

Potential Rapid Transit Travel Time



AM Peak

35 min

Off-Peak

23 min

Assuming 5 min transfer wait



Travel Time Comparison: Armdale → Robie & Spring Garden

Existing Auto Drive Time

AM Peak

Off-Peak



10–20 min

9–14 min

Existing Transit Travel Time

AM Peak

Off-Peak



32 min

30 min

Potential Rapid Transit Travel Time

AM Peak

Off-Peak



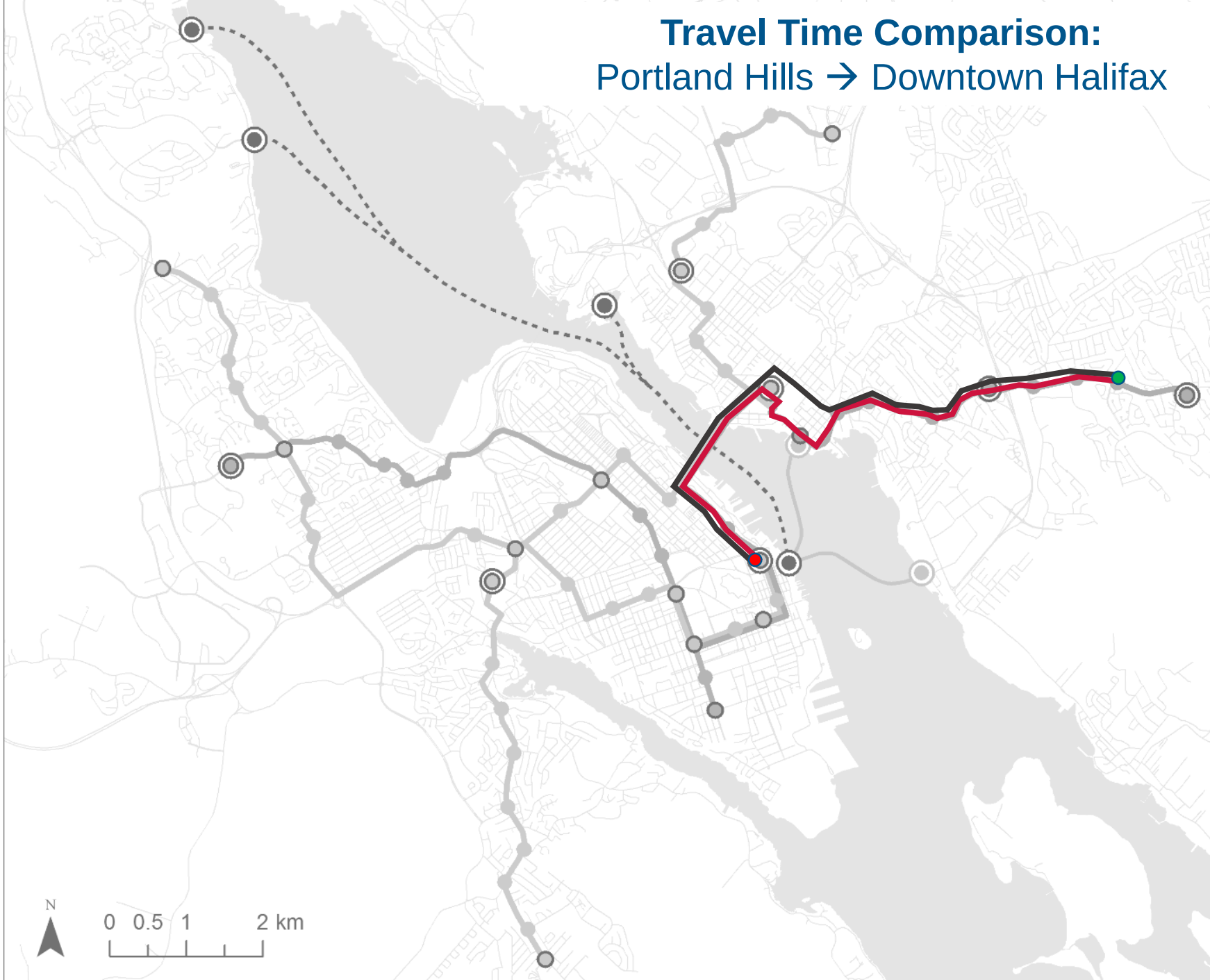
25 min

16 min



0 0.5 1 2 km

Travel Time Comparison: Portland Hills → Downtown Halifax



Existing Auto Drive Time

AM Peak

Off-Peak



16–40 min

14–26 min

Existing Transit Travel Time

AM Peak

Off-Peak

59/61

34 min

31 min

Potential Rapid Transit Travel Time

AM Peak

Off-Peak



30 min

21 min

Travel Time Comparison: North Dartmouth → Downtown Halifax

Existing Auto Drive Time

AM Peak

Off-Peak



12–26 min

9–18 min

Existing Transit Travel Time

3

AM Peak

Off-Peak

+

33 min

34 min

1/10

Potential Rapid Transit Travel Time

AM Peak

Off-Peak



29 min

22 min

Assuming 2.5 min transfer wait



0 0.5 1 2 km

Sample Transit Access Comparisons



Area consistently accessible in 45 minutes, all day, from the starting point shown

This next set of maps shows where you could travel using transit within 45 minutes from the point on the map, all throughout the day. This includes getting to the nearest bus stop, waiting, and transferring to other bus routes.

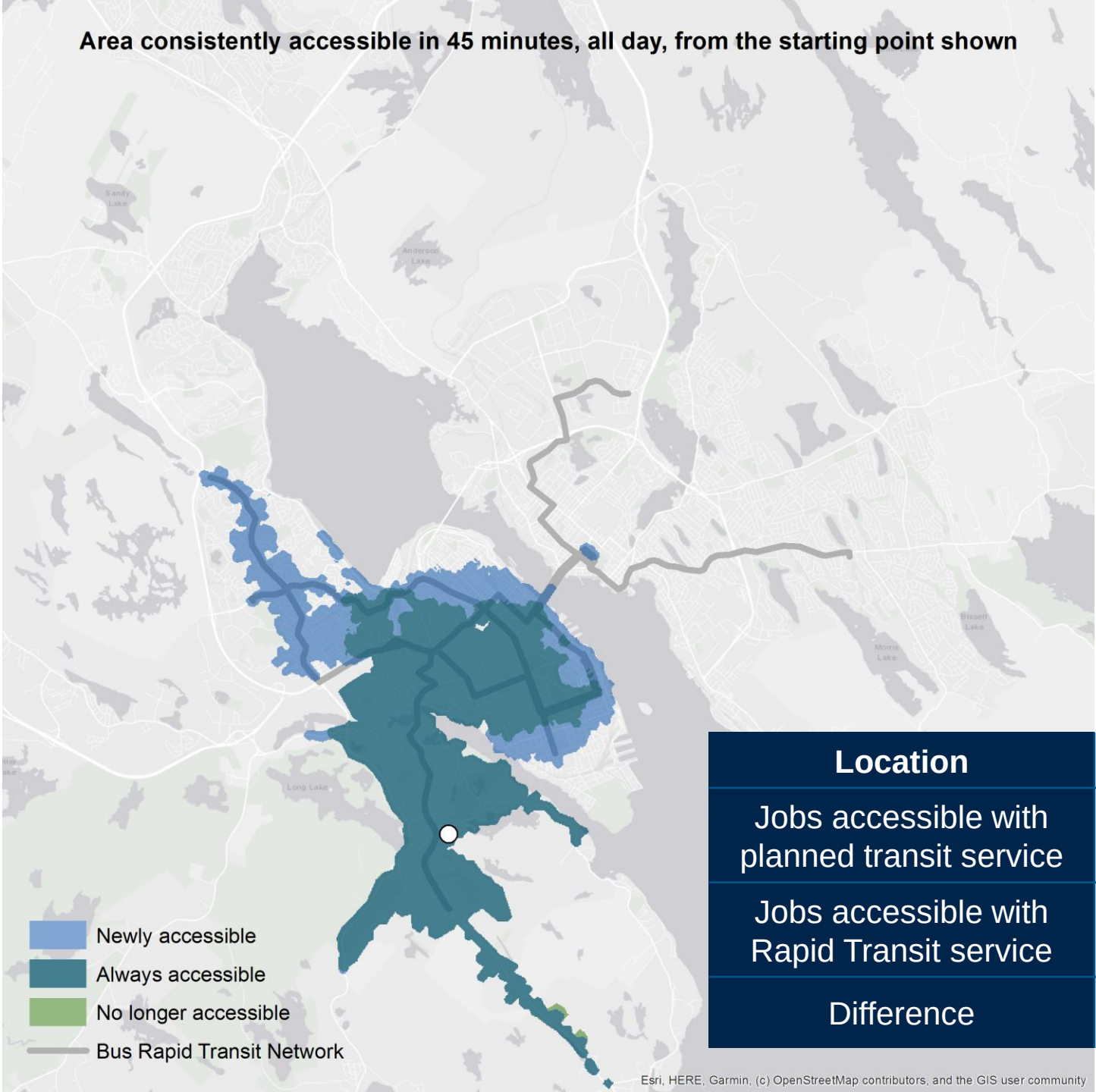
The different shades show the areas you could get to using the planned transit service, and the areas you could get to if the BRT network was implemented.

- Newly accessible
- Always accessible
- No longer accessible
- Bus Rapid Transit Network

Access to jobs within these two areas are shown in the table below:

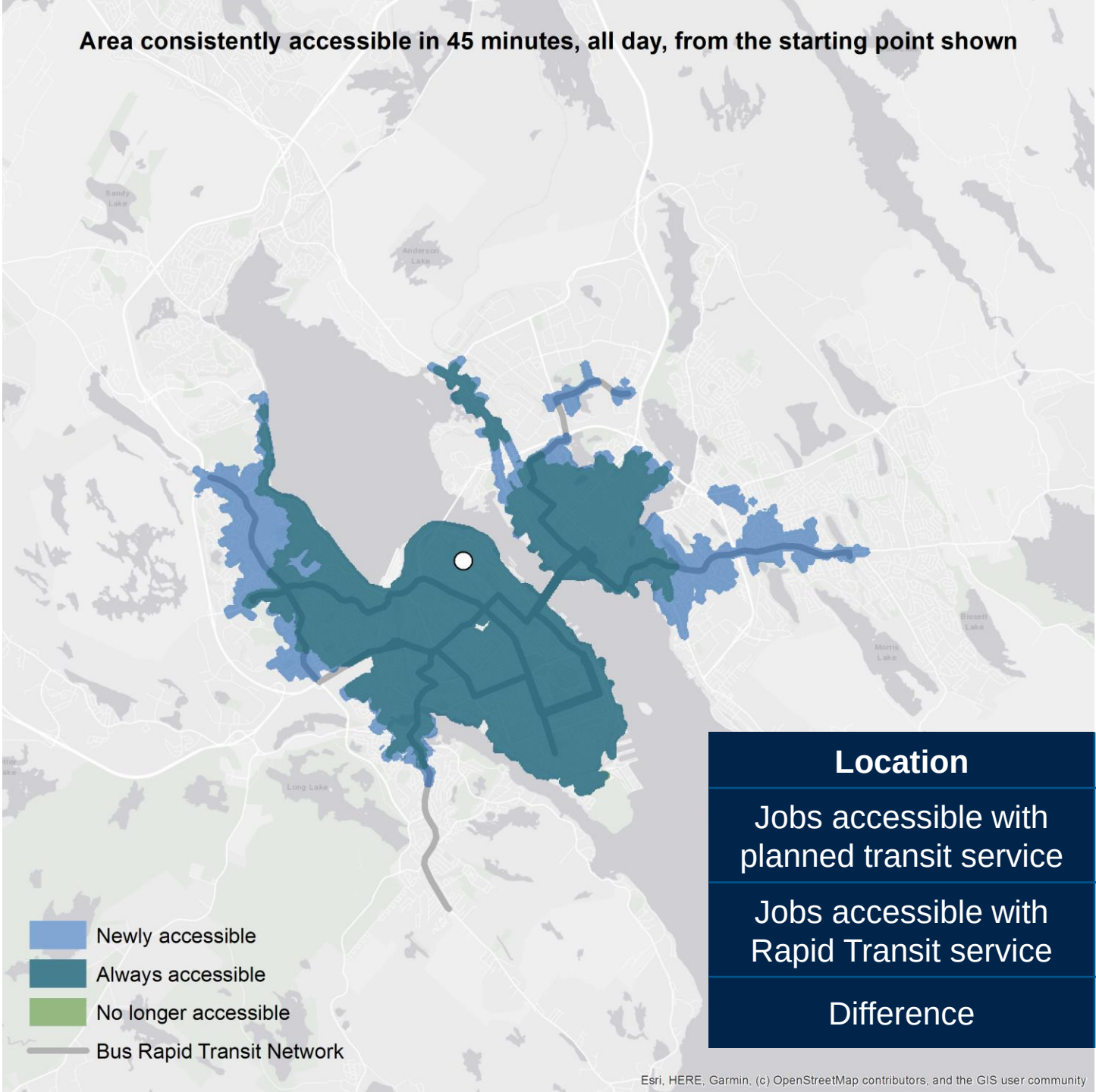
Location	Dunbrack
Jobs accessible with planned transit service	38,500
Jobs accessible with Rapid Transit service	98,500
Difference	+60,000

Area consistently accessible in 45 minutes, all day, from the starting point shown



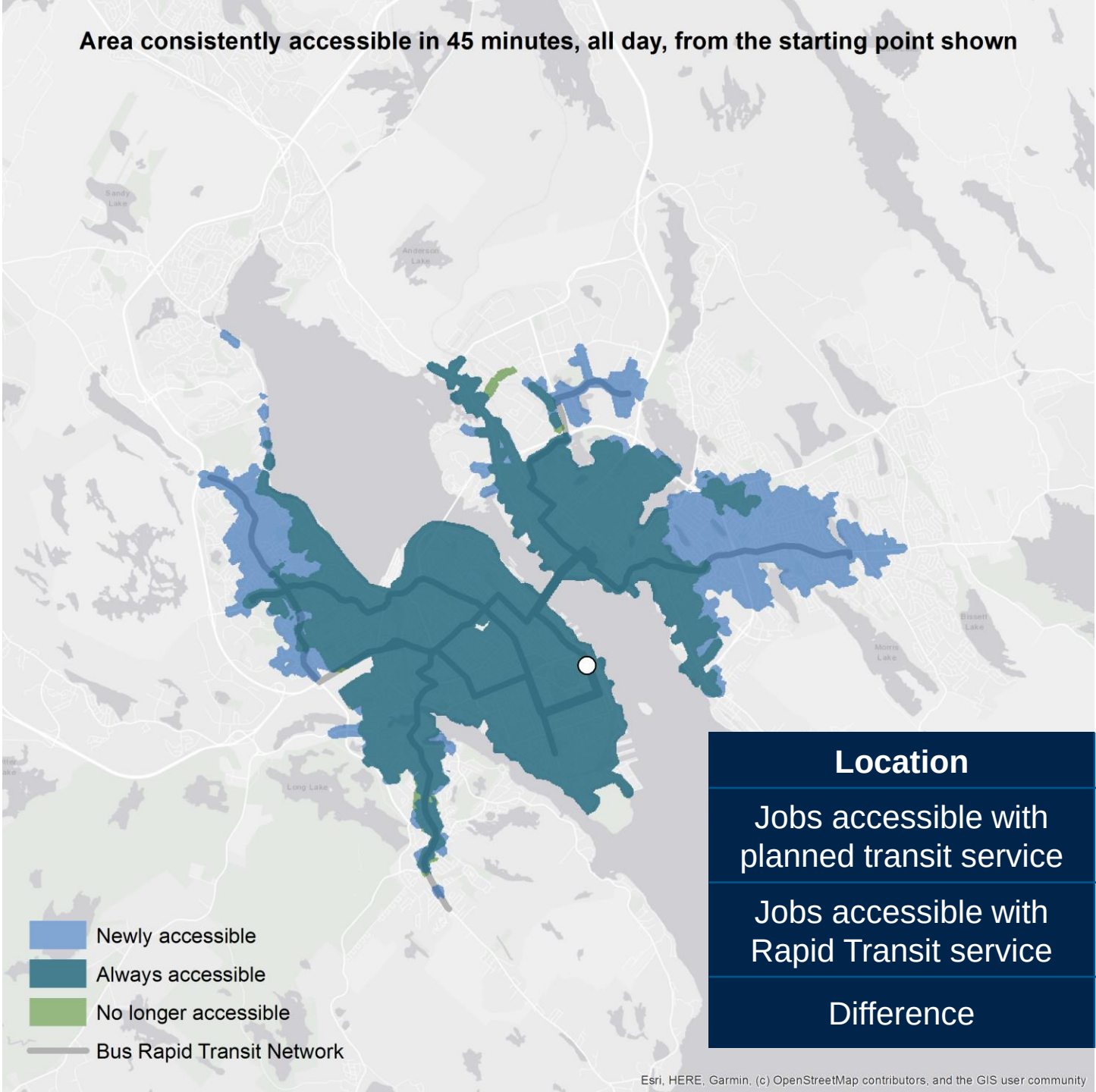
Location	Spryfield
Jobs accessible with planned transit service	46,000
Jobs accessible with Rapid Transit service	86,000
Difference	+40,000

Area consistently accessible in 45 minutes, all day, from the starting point shown



Location	North Peninsula
Jobs accessible with planned transit service	97,000
Jobs accessible with Rapid Transit service	105,500
Difference	+8,500

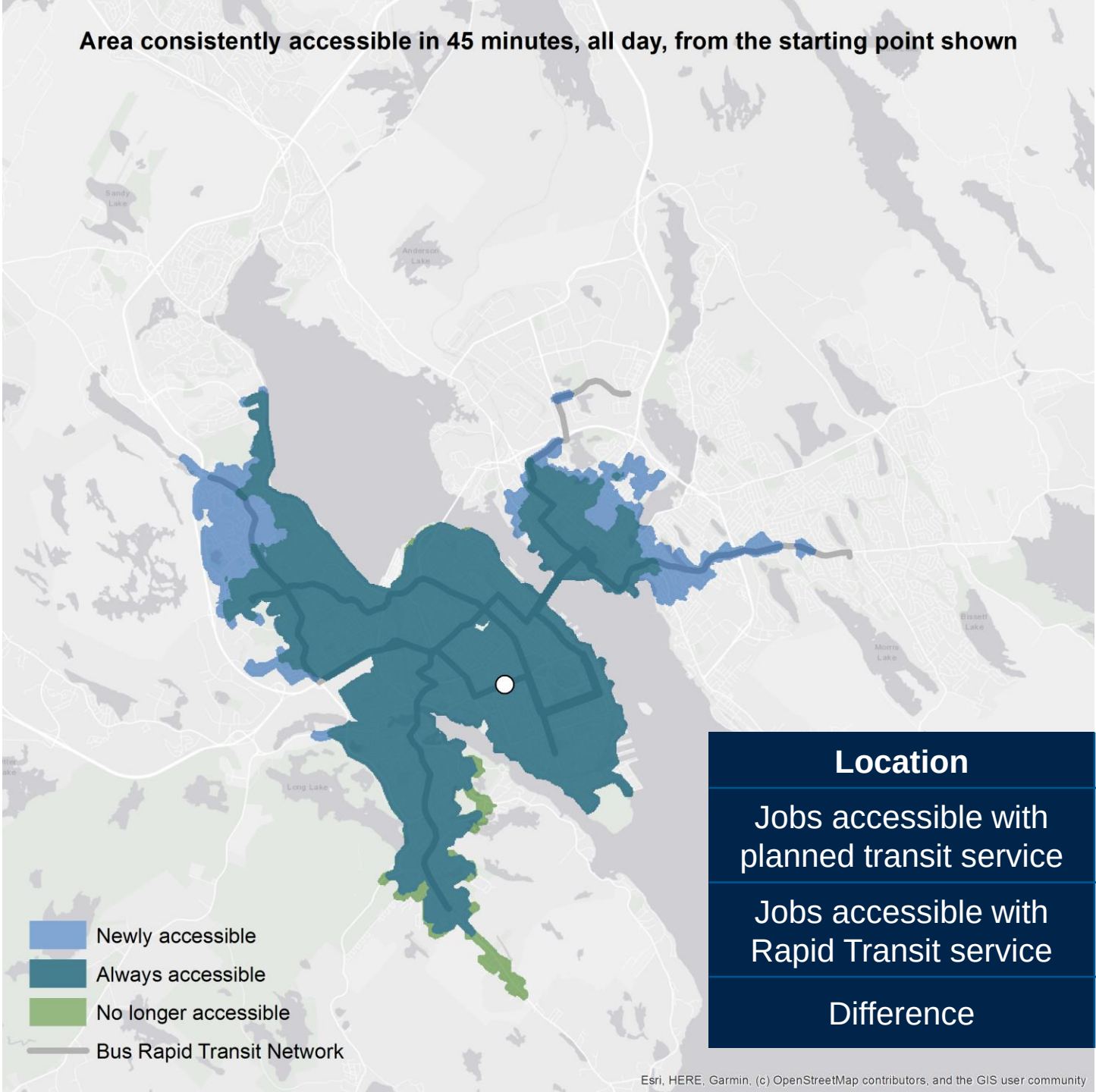
Area consistently accessible in 45 minutes, all day, from the starting point shown



- Newly accessible
- Always accessible
- No longer accessible
- Bus Rapid Transit Network

Location	Scotia Square
Jobs accessible with planned transit service	104,500
Jobs accessible with Rapid Transit service	116,500
Difference	+12,000

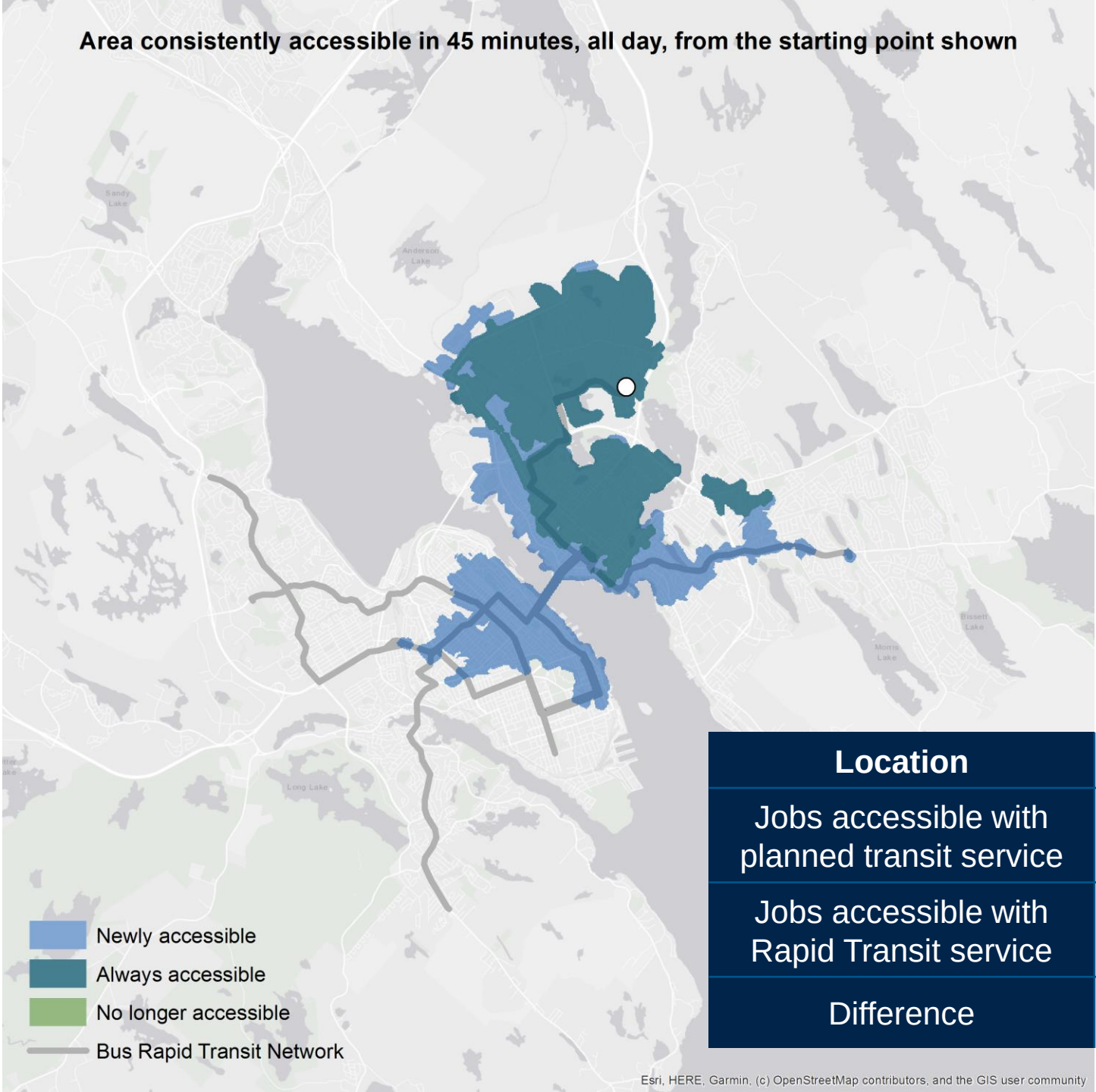
Area consistently accessible in 45 minutes, all day, from the starting point shown



- Newly accessible
- Always accessible
- No longer accessible
- Bus Rapid Transit Network

Location	Quinpool
Jobs accessible with planned transit service	98,500
Jobs accessible with Rapid Transit service	102,500
Difference	+4,000

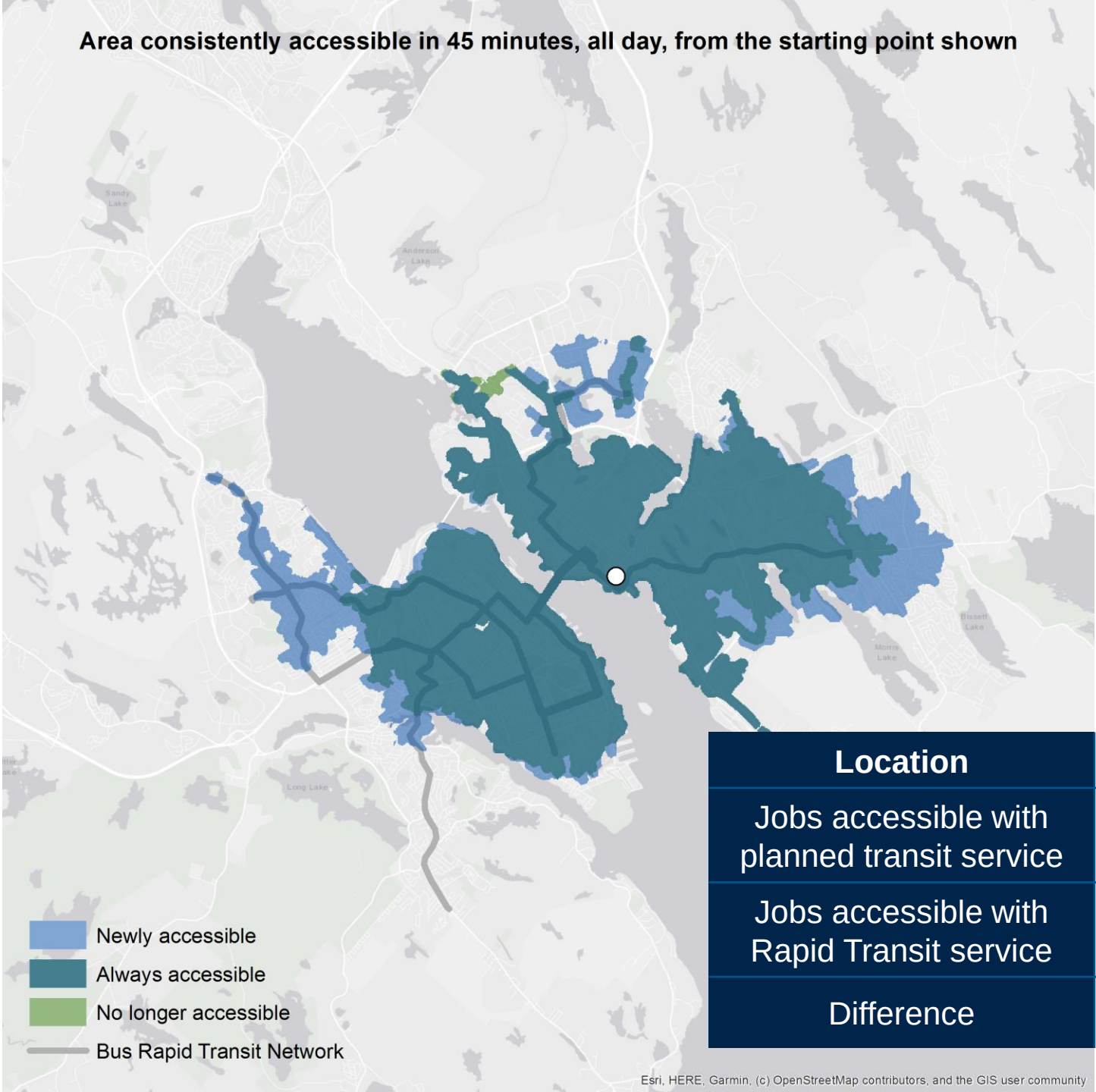
Area consistently accessible in 45 minutes, all day, from the starting point shown



- Newly accessible
- Always accessible
- No longer accessible
- Bus Rapid Transit Network

Location	Dartmouth Crossing
Jobs accessible with planned transit service	27,500
Jobs accessible with Rapid Transit service	76,500
Difference	+49,000

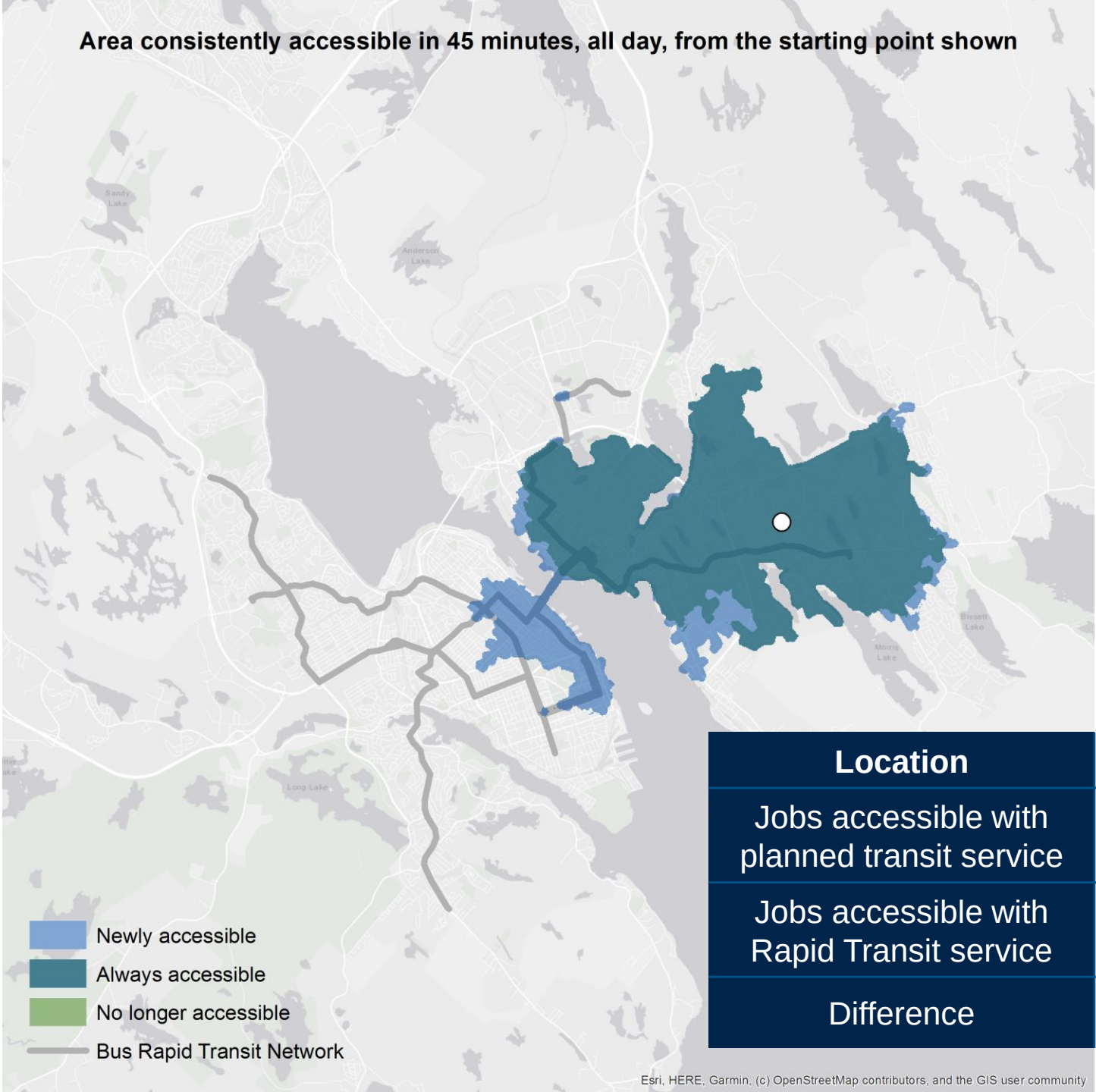
Area consistently accessible in 45 minutes, all day, from the starting point shown



- Newly accessible
- Always accessible
- No longer accessible
- Bus Rapid Transit Network

Location	Downtown Dartmouth
Jobs accessible with planned transit service	107,000
Jobs accessible with Rapid Transit service	119,000
Difference	+12,000

Area consistently accessible in 45 minutes, all day, from the starting point shown



Location	Woodlawn
Jobs accessible with planned transit service	19,000
Jobs accessible with Rapid Transit service	63,500
Difference	+44,500

Proposed Rapid Transit Network



Proposed Rapid Transit Network

Draft; Feb 2020

Legend

Proposed BRT Routes

- Dunbrack ↔ Dartmouth Crossing
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- Lacewood ↔ Robie
- Portland ↔ Downtown

Stop Type

- Enhanced Stop
- Medium Station
- Terminal
- Existing Ferries
- Ferry (Potential)

This map is a summary of the proposed Rapid Transit Network including the four BRT routes and three potential ferry routes.

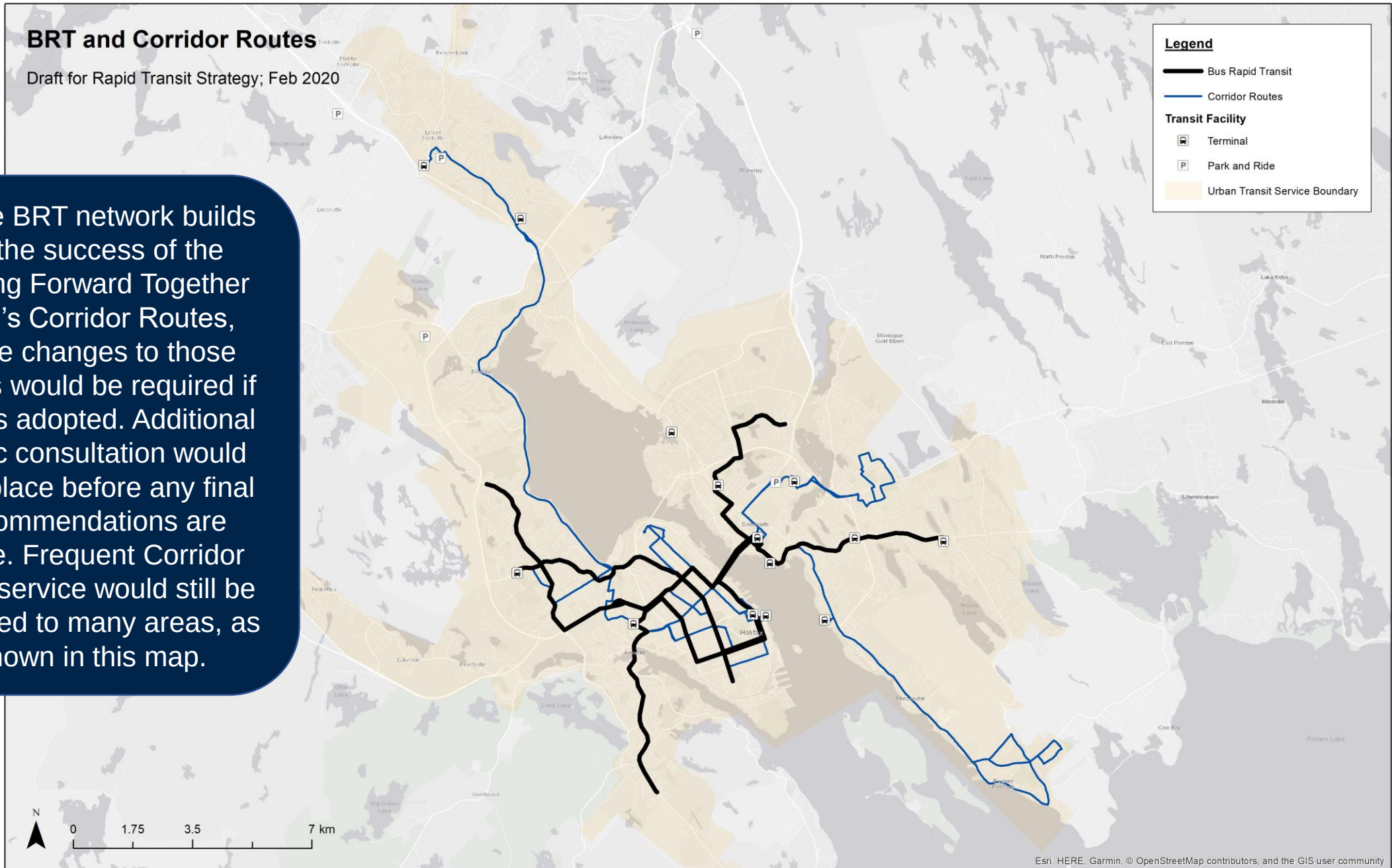
Alternate Quinpool Routing



BRT and Corridor Routes

Draft for Rapid Transit Strategy; Feb 2020

As the BRT network builds on the success of the Moving Forward Together Plan's Corridor Routes, some changes to those routes would be required if BRT is adopted. Additional public consultation would take place before any final recommendations are made. Frequent Corridor route service would still be provided to many areas, as shown in this map.



Rapid Transit and Express Routes

Draft for Rapid Transit Strategy; Feb 2020

This map shows the full extent of the Express routes planned in the Moving Forward Together Plan alongside the proposed rapid transit network. The Express routes would still play a key role in the transit network by providing fast, limited stop service to many HRM commuters and would also benefit from the transit priority infrastructure developed for BRT.

