Re: Item 9.1.1

HALIFAX

Portland Street - Cole Harbour Road Functional Planning

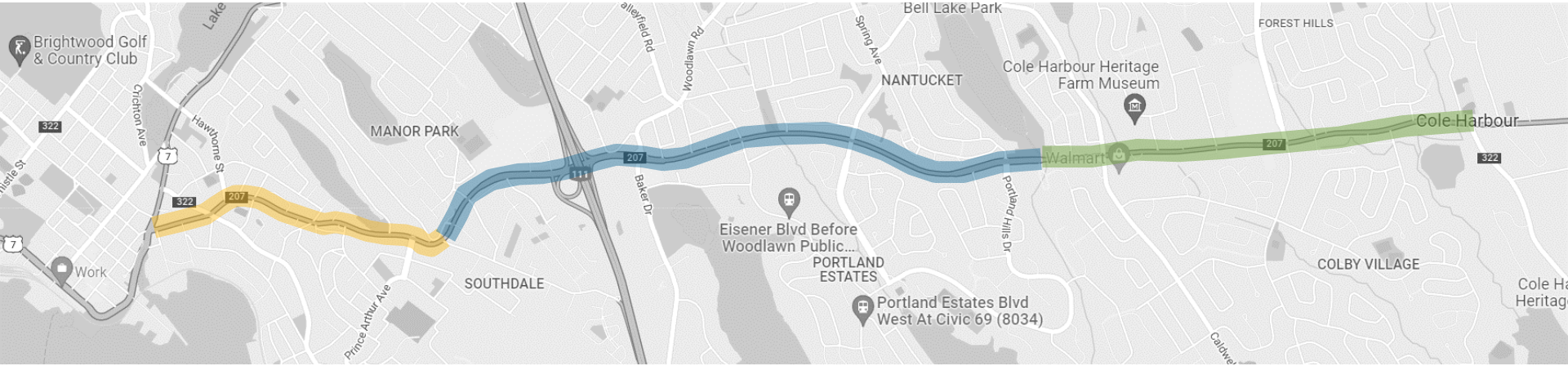
Active Transportation Advisory Committee

2024-07 - 18

Agenda

- Project context and design objectives
- Project history and timelines
- New analysis methodologies
- Concept design options for each segment, and associated trade-offs
- Project schedule and next steps
- Discussion questions

Project Extent



Segment 1: Alderney to Gaston Segment 2: Gaston to Portland Hills Terminal Segment 3: Portland Hills Terminal to Bissett

HALIFAX


STAPLES


ARMOUR

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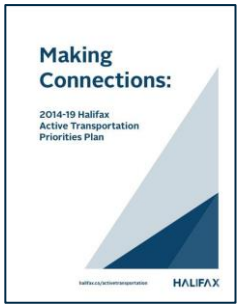
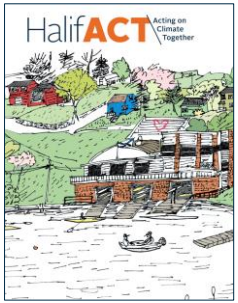
Guiding Policy

- Integrated Mobility Plan (2017)
- Rapid Transit Strategy (2020)
- AT Priorities Plan (2014)
- Strategic Road Safety Plan (2018)
- HalifACT (2020)





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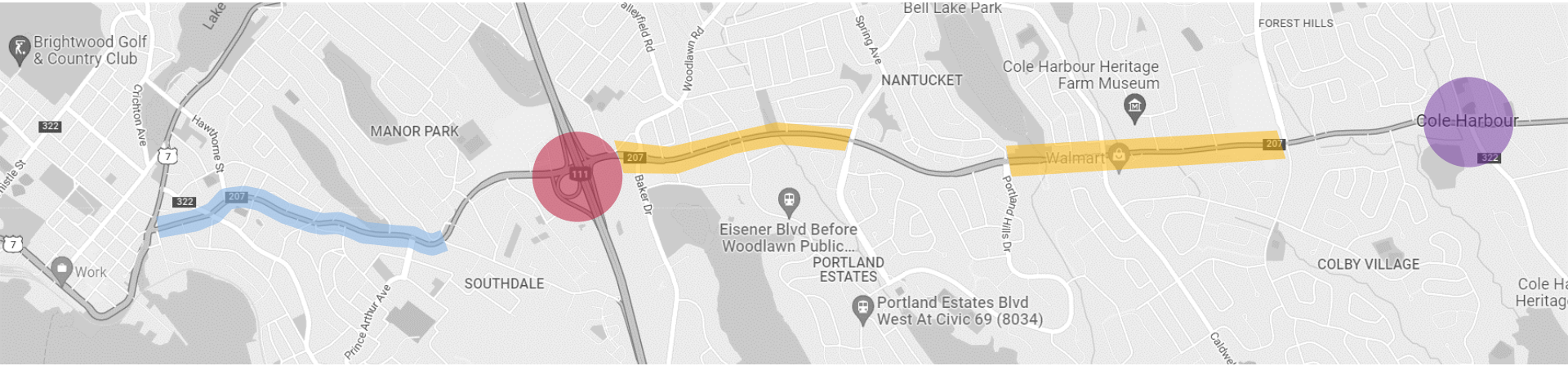
Design Objectives

- Determine how best to implement transit priority → BRT service;
- Enhance pedestrian realm and incorporate connected cycling infrastructure;
- Improve people-moving efficiency and address future mobility demand;
- Apply a Complete Streets lens to promote a mixed commercial + residential ‘main street’;
- Base recommendations on best practices for road safety address areas of previous collisions.

Challenges



Corridor-Wide

- Limited Right-of-Way
- No cycling infrastructure
- Car-oriented low density land use
- Vulnerable user safety

Narrow roadway, older homes to back of sidewalk

Highway 111 crossing, missing sidewalk on south side

Peak hour congestion, car-oriented commercial

Seasonal congestion

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Challenges

- How do we get transit priority?
- Liveable street vs. peak hour convenience
- Need BRT-supportive density
- Can we add cycling too?

Property Acquisition

Timeline

Fall 2020: Project Award and Initiation

Spring 2021: Existing Conditions Analysis

Spring 2021: Round One Public + Stakeholder Engagement

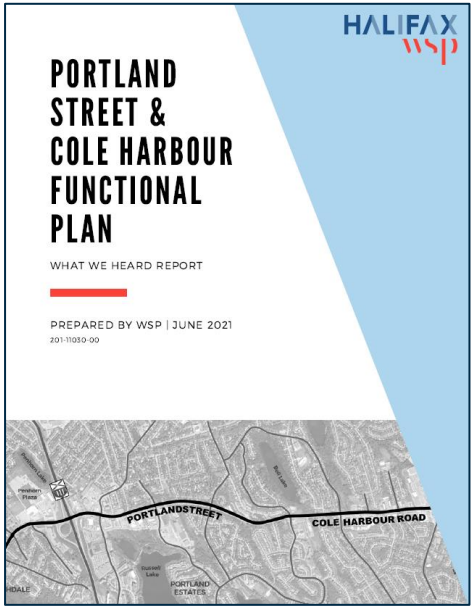
Summer 2021: What We Heard Report

Fall - Winter 2021: Early Concept Design Work

[Project paused in early 2022 for staff capacity + competing priorities]

Round One Public Engagement

- April 7th – 21st 2021
- Virtual Open House
  - 161 attendees
  - 185 questions submitted
- Online Survey
  - 574 respondents



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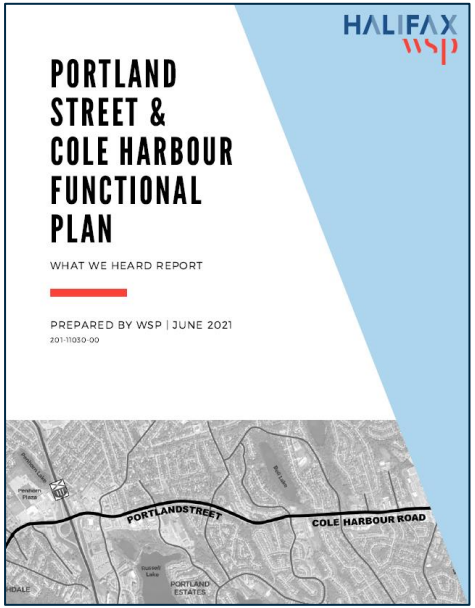
Round One Public Engagement

- Nearly **40%** of respondents would consider shifting some trips to transit if **dedicated bus lanes** were installed
- Nearly **60%** of respondents would consider walking/rolling for transport on Portland if the **pedestrian realm and crosswalks** were improved
- Around **30%** of respondents would consider cycling if given a **protected facility** separate from traffic



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Timeline (cont.)

Summer 2023: Project Manager hired to oversee completion of functional plan

Fall 2023: Reinitiation and scoping with Technical Committee and consultant

Fall – Winter 2023: Additional data collection

Early 2024: Change Order approved by CAO via Audit + Finance

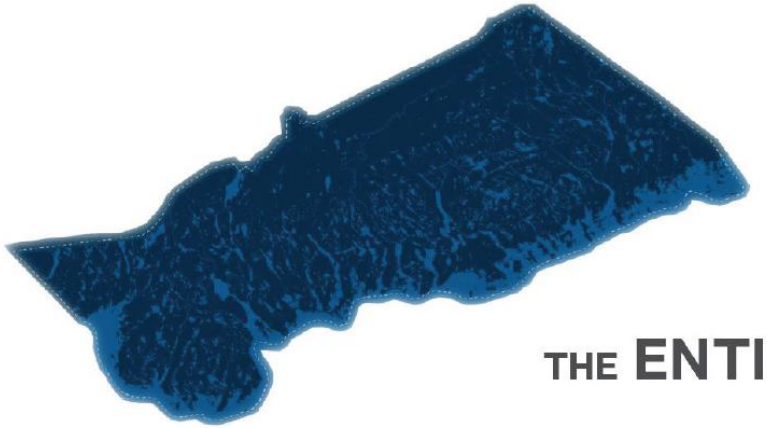
Winter 2024: Additional Analysis and Concept Design Work

Ongoing:

Spring/Summer 2024: Round Two Public + Stakeholder Engagement

Future Land Use Considerations

PLAN FOR



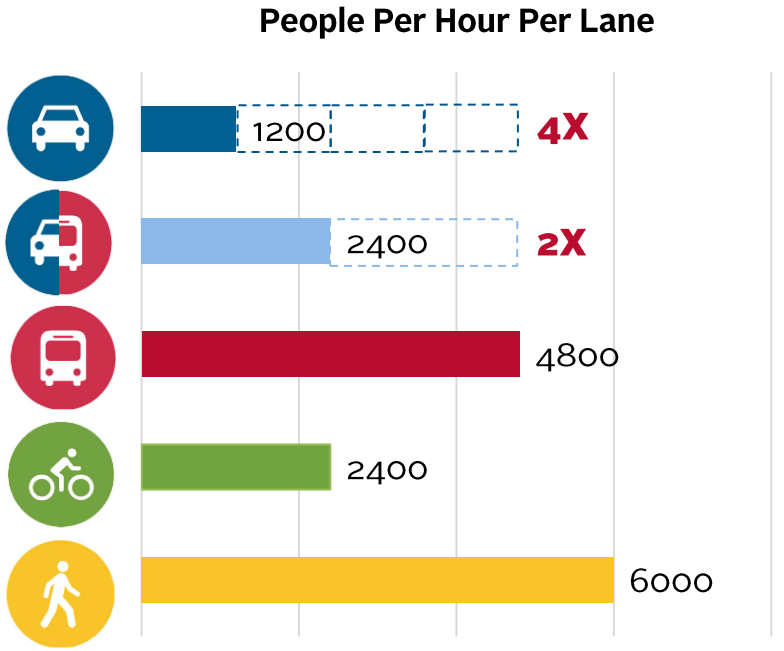
THE ENTIRE REGION

1 MILLION

POPULATION

People-Moving Capacity

- New methodology
- Vehicle trips → people trips to capture overall mobility demand
- Efficiency measured using people-moving capacity of proposed cross sections
- Used in other jurisdictions for corridor visioning



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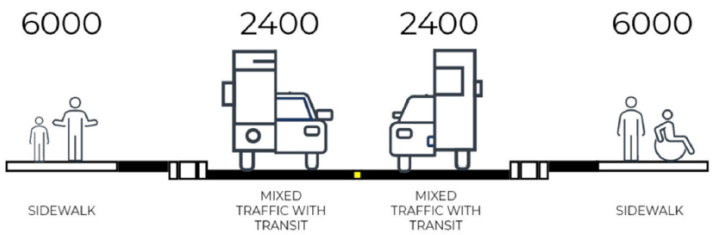
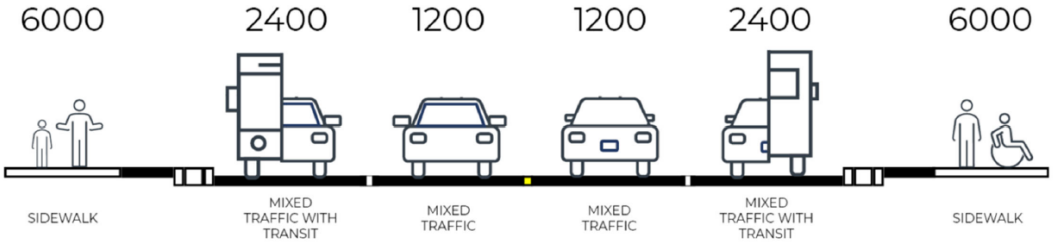
People-Moving Capacity



16,800 pph
4,800 pph w/o sidewalks

Figure 6 - Existing PMC (People per hour) on Portland Street Between Alderney Drive and Gaston Road



19,200 pph
7,200 pph w/o sidewalks

Figure 7 - Existing PMC (People per hour) on Portland Street/Cole Harbour Road Between Gaston Road and Bissett Road

- Can this carry future projected mobility demand?
- What are the mode share assumptions?

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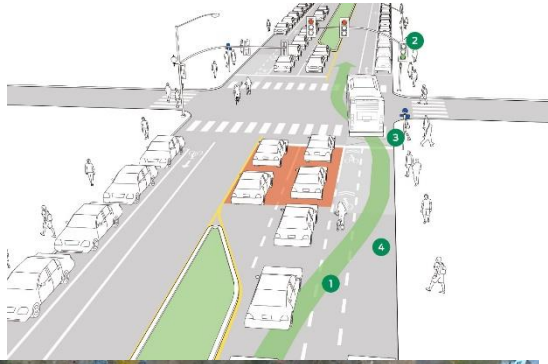
Concept Design Development

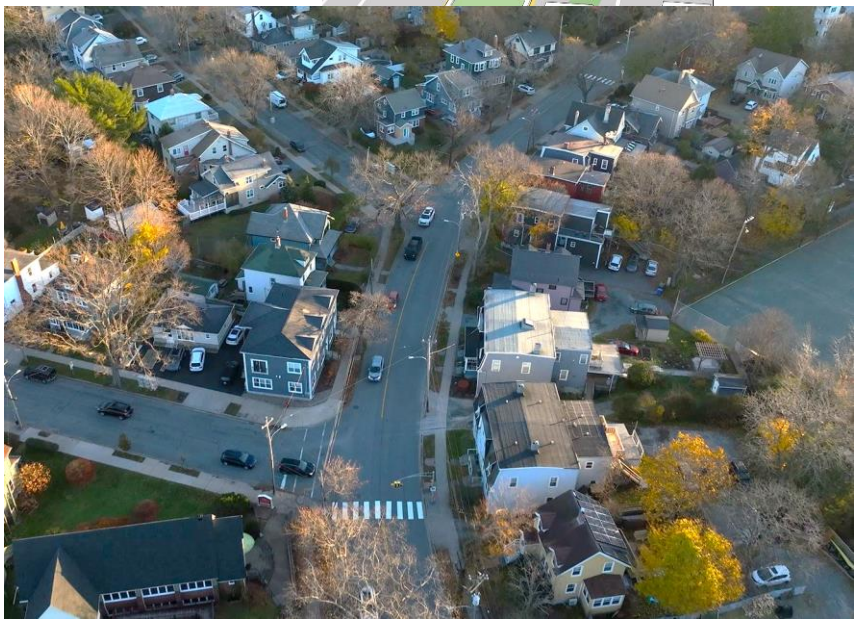
Alderney to Gaston

Concept Design Development



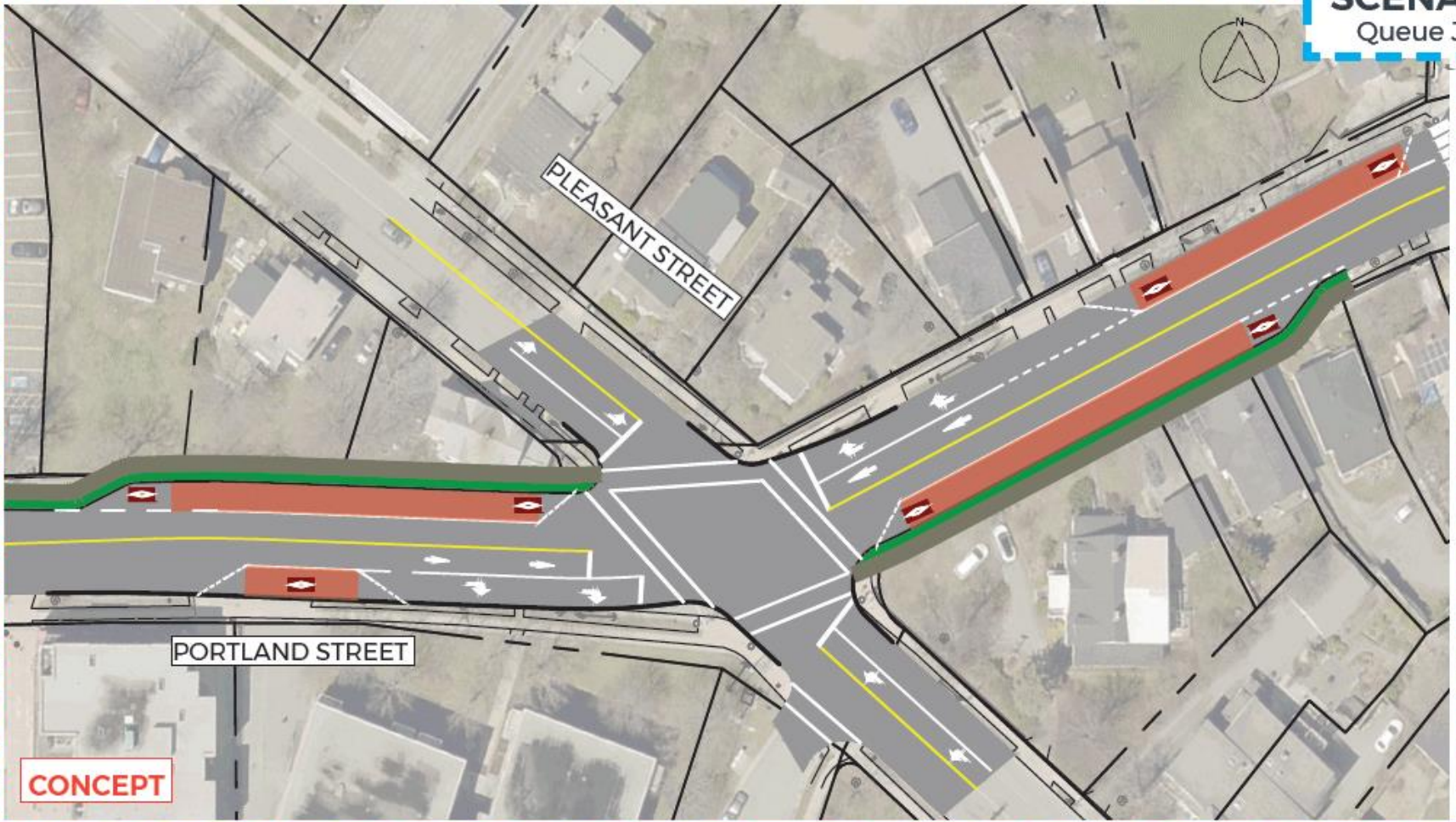
Alderney to Gaston

- Scenario 1: Queue jump lanes
- Scenario 2: Continuous inbound transit lane



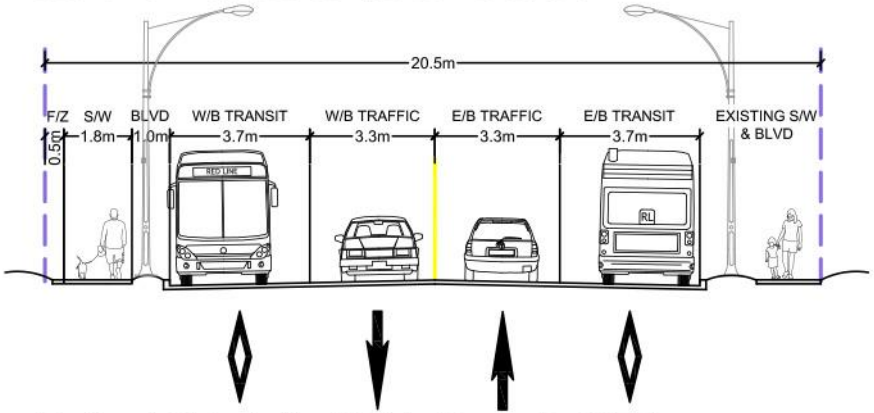
- Wide sidewalks, tree boulevards
- Alternative cycling route proposed from Maynard Lake to Shubie Greenway / Starr Park

SCENARIO 1:
Queue Jumps



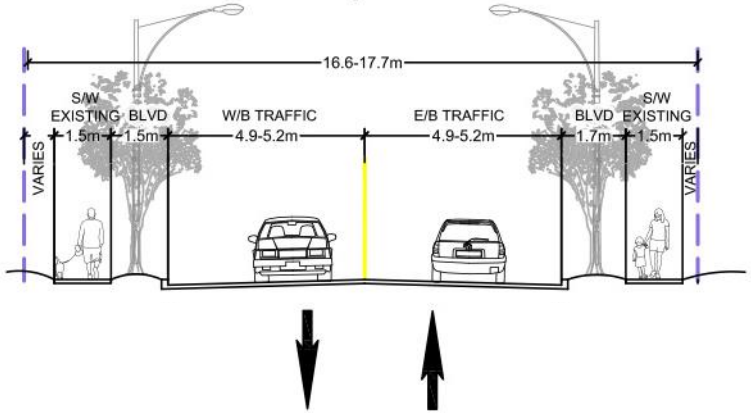
Scenario 1: Queue Jump Lanes

SEGMENT 1 Alderney to Gaston
Scenario 1: Queue Jumps at Intersection



Portland St: Lakefront Rd to Manor Dr (NTS)

SEGMENT 1 Alderney to Gaston
Scenario 1: Queue Jumps Midblock



Portland St: Existing (Before Pleasant) (NTS)

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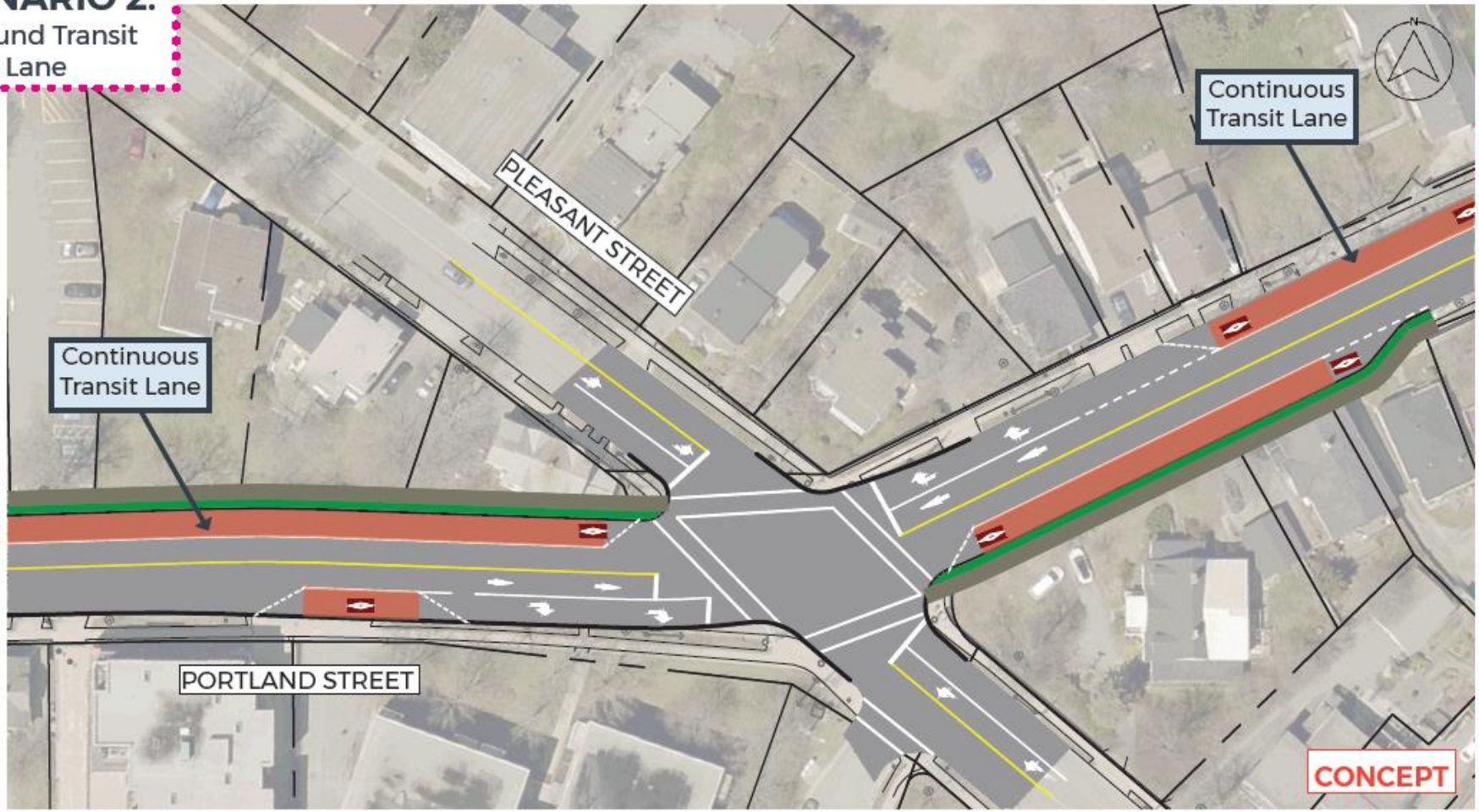
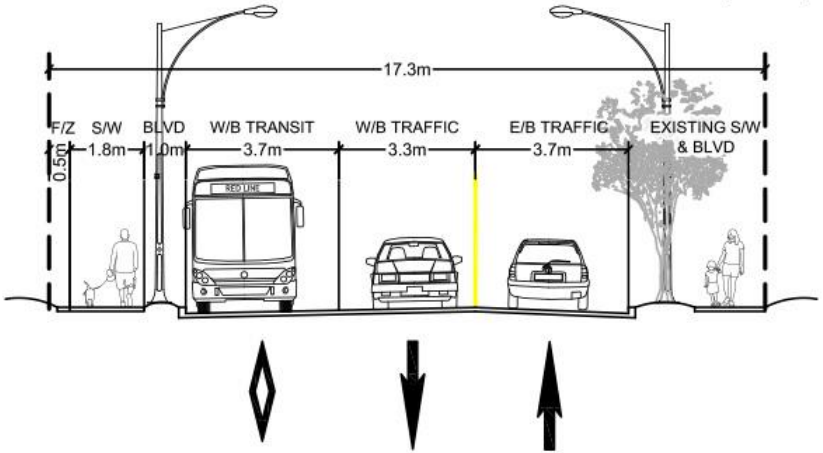
SCENARIO 2:
Inbound Transit Lane



Scenario 2: Continuous Inbound Transit Lane

SEGMENT 1 Alderney to Gaston
Scenario 2: Continuous Inbound Transit Lane (NTS)



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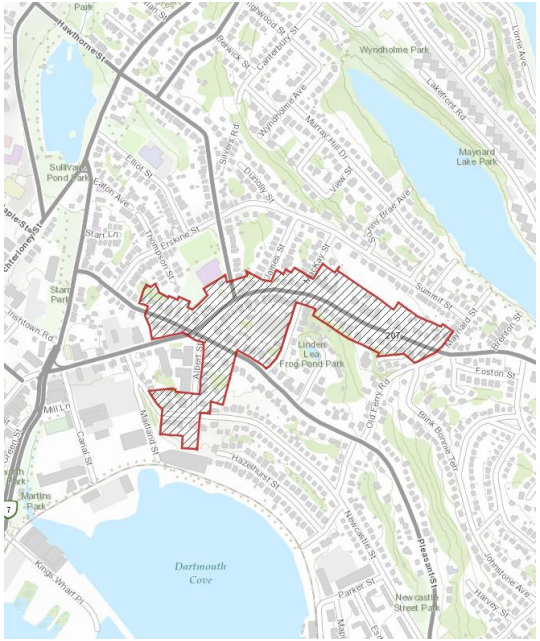
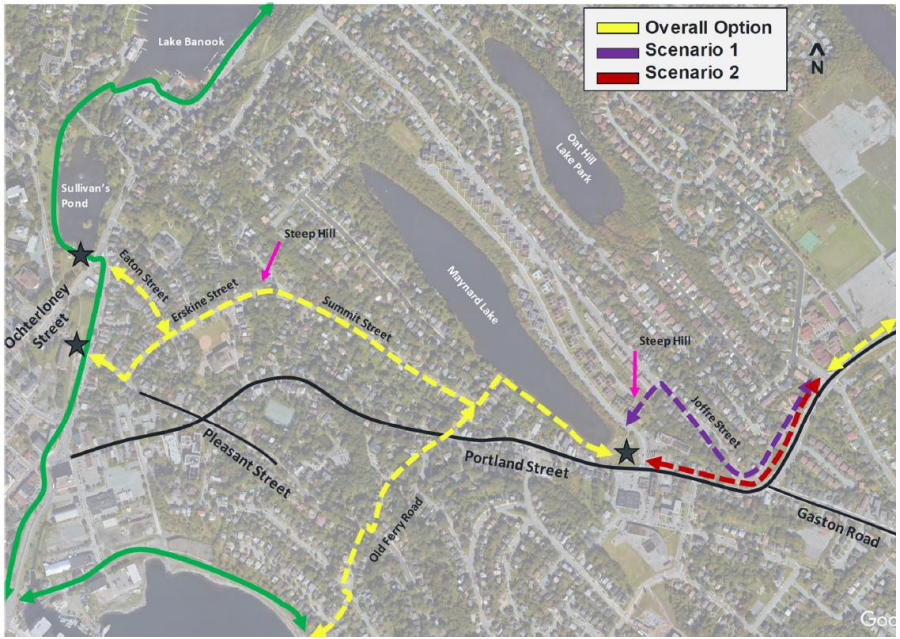
Concept Design Development



Future Proposed 'Five Corners' Heritage Conservation District



Alternative Cycling Routing from Maynard Lake to Starr Park

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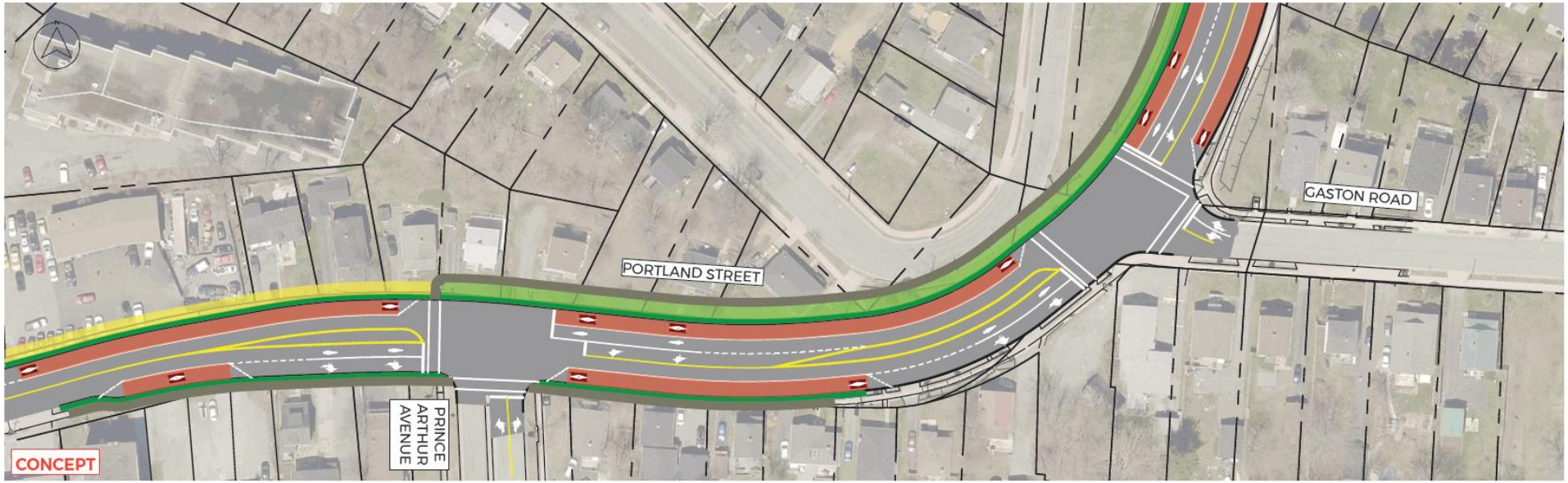
Concept Design Development



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Concept Design Development

Gaston to Eisener

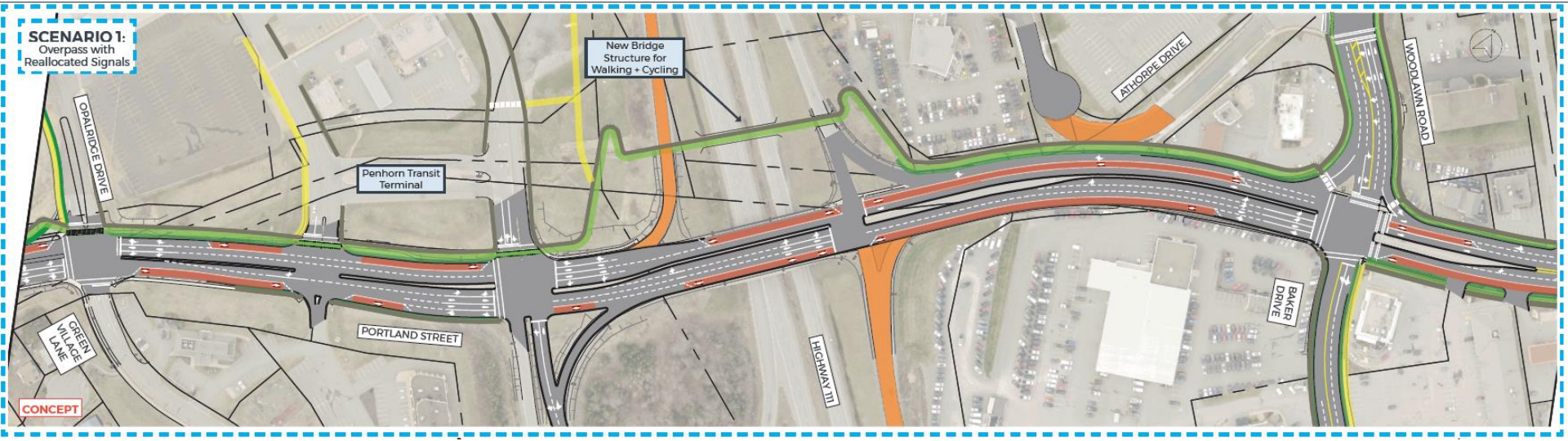
Concept Design Development

Gaston to Eisener

- Scenario 1: Overpass with Reallocated Signals
- Scenario 2: Overpass with Woodlawn-Athorpe Roundabout

- Wide sidewalks, tree boulevards
- Protected bidirectional bikeway on north side
- Separate AT bridge over Hwy 111

Hwy 111 Overpass Scenario 1



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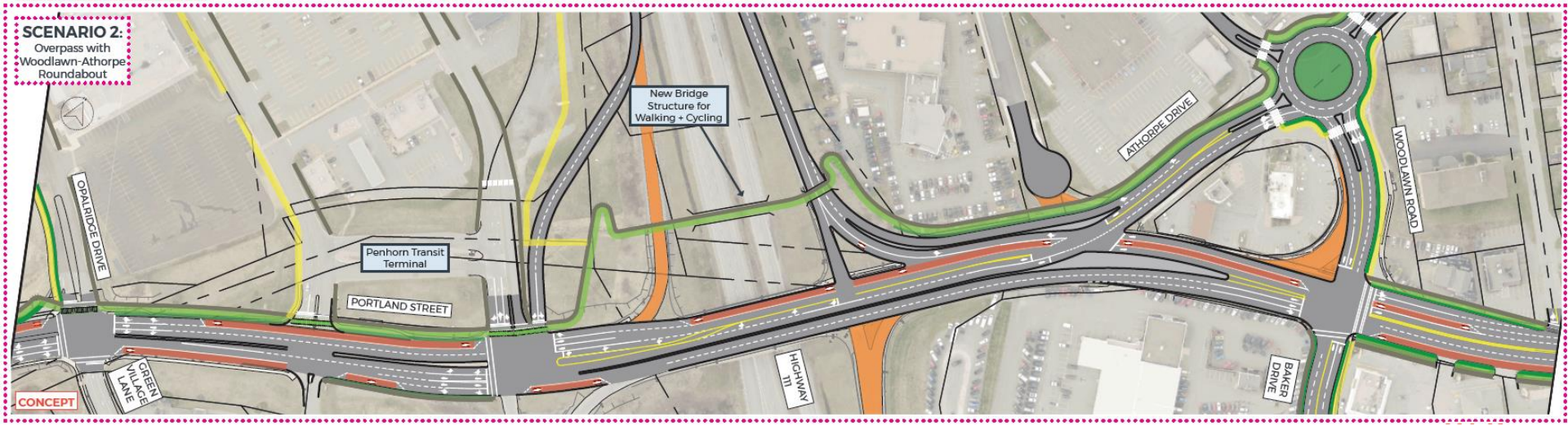
Hwy 111 Overpass Scenario 2



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Gaston to Eisener: Evaluation

						$ $-$$$
SCENARIO 1: Overpass with Reallocated Signals	» Wide sidewalks with roadway buffer. » Shorter crossing distance (4-5 lanes). » Bridge across Highway 111. » Entirely separate from bicycles. BETTER	» Wide two-way bikeway with roadway buffer. » Bridge across Highway 111. » Most direct. » Least amount of mixing with pedestrians. BETTER	» Dedicated transit lane in both directions. » Right turn except buses at intersections. » Improved transit time + reliability » Longer delay at Woodlawn / Baker signal. BETTER	» Longer signal length + delay at Woodlawn / Baker. » Reduction in vehicle capacity to one lane across overpass. » Realigned access ramp improves viewing angles. OKAY	» Less property acquisition than Scenario 2. » Less impact to utilities than Scenario 2. » Minimal tree impact, opportunity to plant trees in boulevard. BETTER	$$
SCENARIO 2: Overpass with Woodlawn-Athorpe Roundabout	» Wide sidewalks with roadway buffer. » Longer crossing distance (4-7 lanes). » Bridge across Highway 111. » Short section of multi-use pathway. » Longer travel distance and roundabout crossings. » No left-turn conflicts at Woodlawn / Baker. GOOD	» Wide two-way bikeway with roadway buffer. » Bridge across Highway 111. » Short section of shared multi-use pathway. » Less direct and has roundabout crossings. GOOD	» Dedicated inbound transit lane. » Gap in outbound transit lane at overpass. » Right turn except buses at intersections. » Improved transit time + reliability » Shorter delay at Woodlawn / Baker signal. GOOD	» Shorter signal length + less delay at Woodlawn / Baker. » Increase to vehicle capacity. » Realigned access ramp improves viewing angles. » Significant routing changes required. GOOD	» More property acquisition than Scenario 1 for roundabout and Athorpe ramp. » More impact to utilities than Scenario 1. » Minimal tree impact, opportunity to plant trees in boulevard. » Roundabouts could promote slower vehicle speeds. OKAY	$$$

HALIFAX

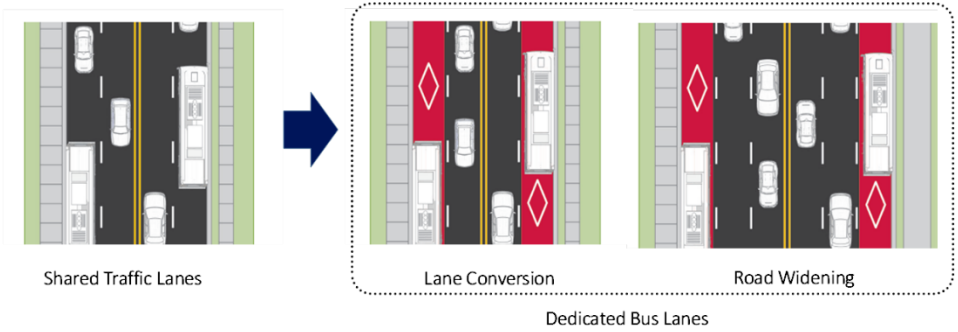
Concept Design Development

Eisener to Portland Hills Terminal

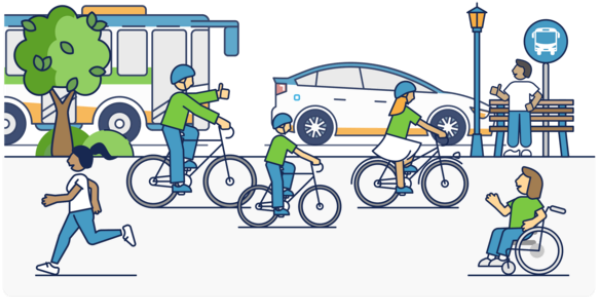
Concept Design Development

Eisener to Portland Hills Terminal

- Scenario 1: Reallocated
  - Working within existing cross section
  - Less additional property requirement
- Scenario 2: Expanded
  - Widening roadway for bus lanes
  - Significant additional property req't



- Wide sidewalks, tree boulevards
- Protected unidirectional cycle lanes
- Additional crossing opportunities



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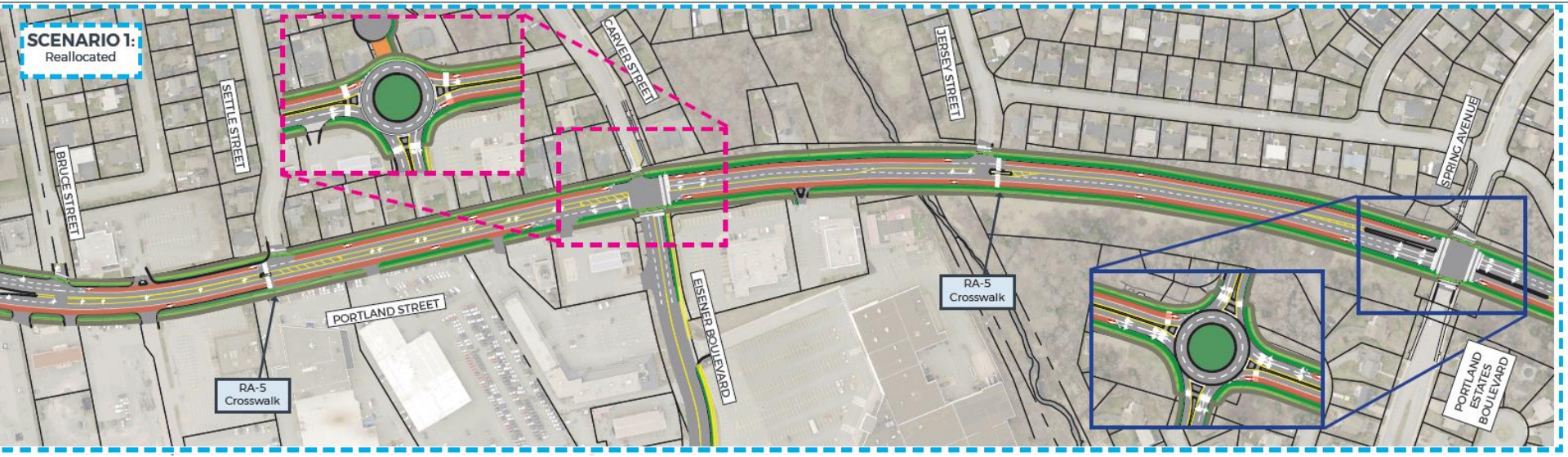
Scenario 1: Reallocated



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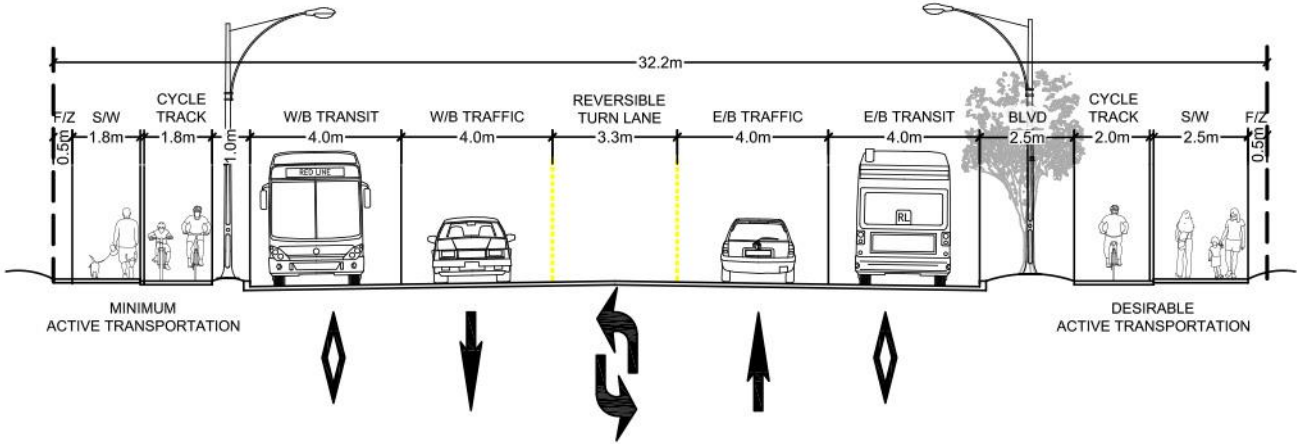
Scenario 1: Reallocated

SEGMENT 3 Eisener to Portland Hills Terminal
Scenario 1: Reallocated



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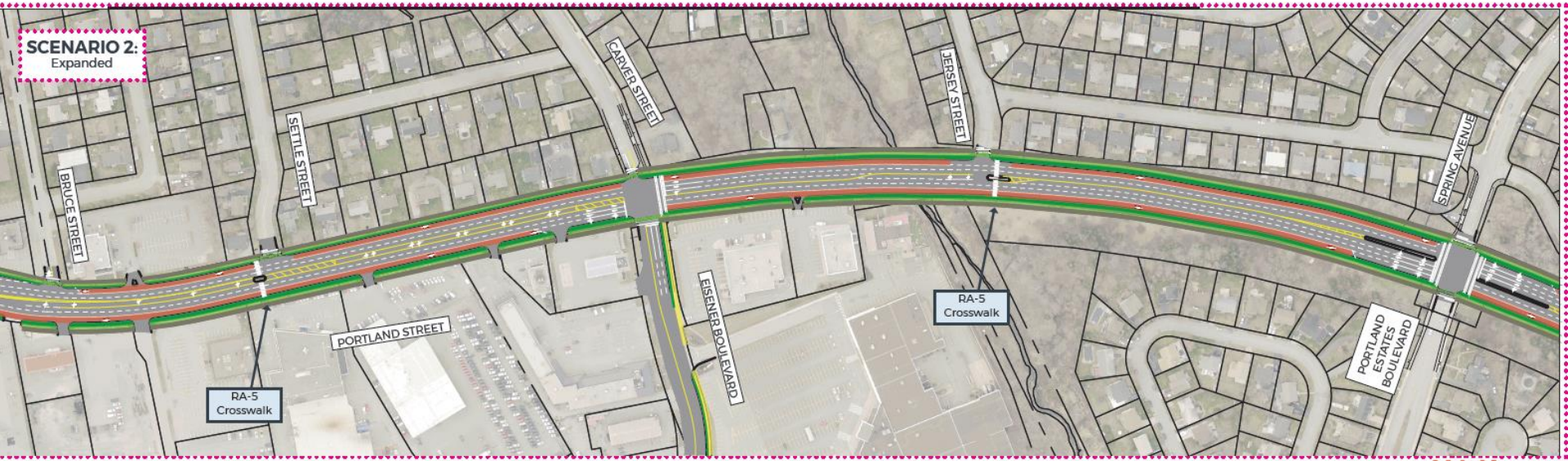
Scenario 2: Expanded



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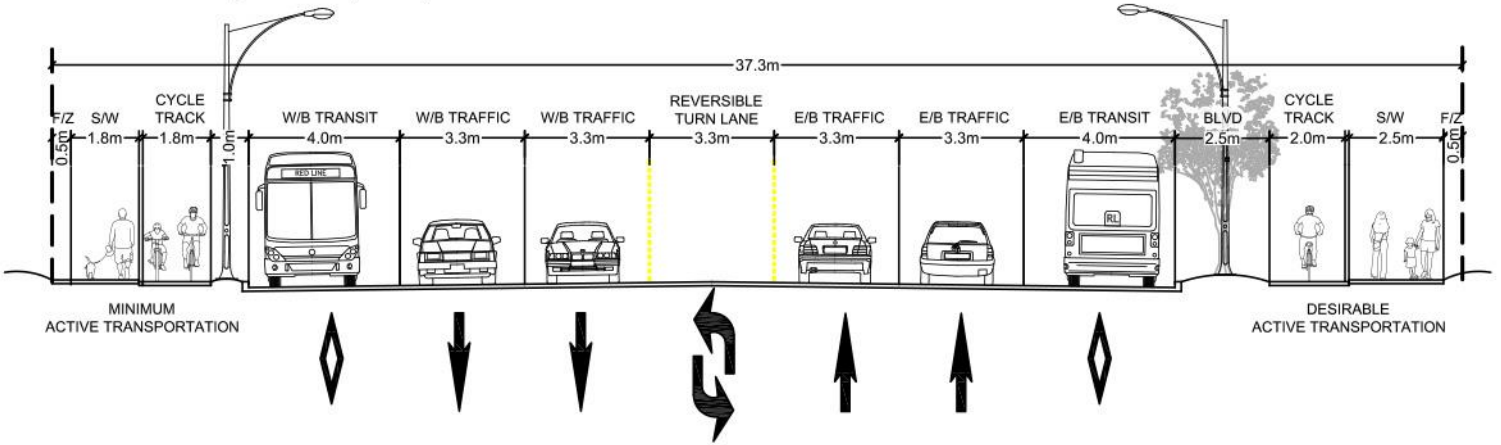
Scenario 2: Expanded

SEGMENT 3 Eisener to Portland Hills Terminal
Scenario 2: Expanded (NTS)



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(1) Reallocated / Lane Conversion Scenario

Scenario 1 -- Portland at Eisener Looking East (Outbound)

Scenario 1 -- Portland at Eisener Looking West (Inbound)

(2) Expanded / Street Widening Scenario

Scenario 2 -- Portland at Eisener Looking East (Outbound)

Scenario 2 -- Portland at Eisener Looking West (Inbound)

Eisener to Portland Hills: Evaluation

						$-$$$
SCENARIO 1: Reallocated	» Wide sidewalks with roadway buffer. (S/RB) » Shorter crossing distances (4-5 lane). (S/RB) » Two stage crossing of 1-2 lanes at a time across roundabouts. (RB) » Longer path and roundabout crossings. (RB) » Separate from bicycles. (S/RB) S: BETTER RB: GOOD	» Wide one-way bikeways with roadway buffer. (S/RB) » Potential roundabout crossings. (RB) S: BEST RB: GOOD	» Improved transit time + reliability. (S/RB) » Dedicated transit lane in both directions. (S/RB) » Right turn except buses at signals or roundabouts. (S/RB) S: BETTER RB: GOOD	» One through lane for cars with strategic turn lanes. (S/RB) » Less congestion and queueing than the existing corridor. (S/RB) » More congestion and queueing than Scenario 2. (S/RB) » Reduction in vehicle capacity. (S/RB) » Potential maneuvering challenges with roundabouts. (RB) S: OKAY RB: GOOD	» Minimal property acquisition required with exception of at roundabout intersections. (RB) » Minimal impact to utilities. (S/RB) » Opportunity for wider buffers, tree planting. (S/RB) » Most energy efficient cross-section. (S/RB) S: BETTER RB: GOOD	S: $ RB: $$
SCENARIO 2: Expanded	» Wide sidewalks with roadway buffer. » Longer crossing distances (6-7 lane). » Separate from bicycles. GOOD	» Wide one-way bikeways with roadway buffer. » Longer crossing distances, more vehicles. BETTER	» Improved transit time + reliability. » Dedicated transit lane in both directions. » Right turn except buses at signals. BETTER	» Maintain two through lanes for cars with strategic turn lanes. » Less congestion and queueing than the existing corridor. » Less congestion and queueing than Scenario 1. » Higher vehicle capacity. BETTER	» Property acquisition along the corridor for widening on both sides. » Significant impact to utilities. » Opportunity for wider buffers, tree planting. » Less energy efficient cross-section, more asphalt. OKAY	$$$

Concept Design Development

Portland Hills Terminal to Bissett

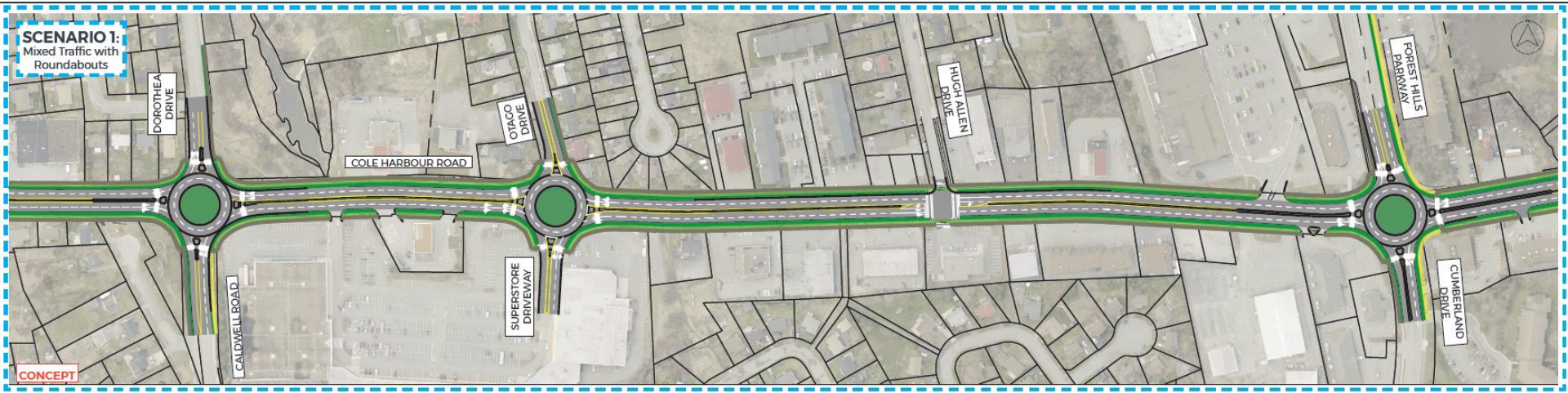
Concept Design Development

Portland Hills Terminal to Bissett

- Keeping 4-lane cross section
- Comparison of safety measures at intersections e.g. roundabouts

- Wide sidewalks, tree boulevards
- Protected unidirectional cycle lanes, connectivity to Cole Harbour trail network

Scenario 1: Mixed Traffic with Roundabouts



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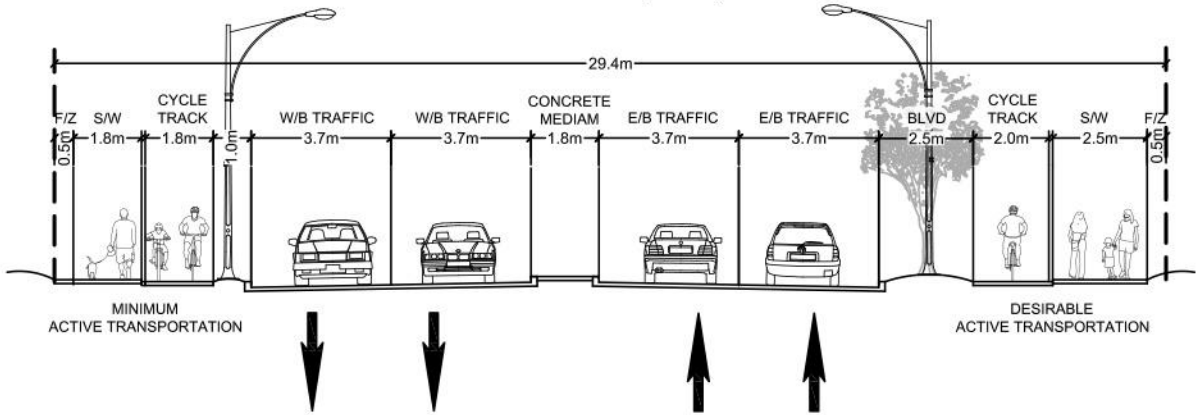
Scenario 1: Mixed Traffic with Roundabouts

SEGMENT 4 Portland Hills Terminal to Bissett Road
Scenario 1: Mixed Traffic with Roundabouts (NTS)



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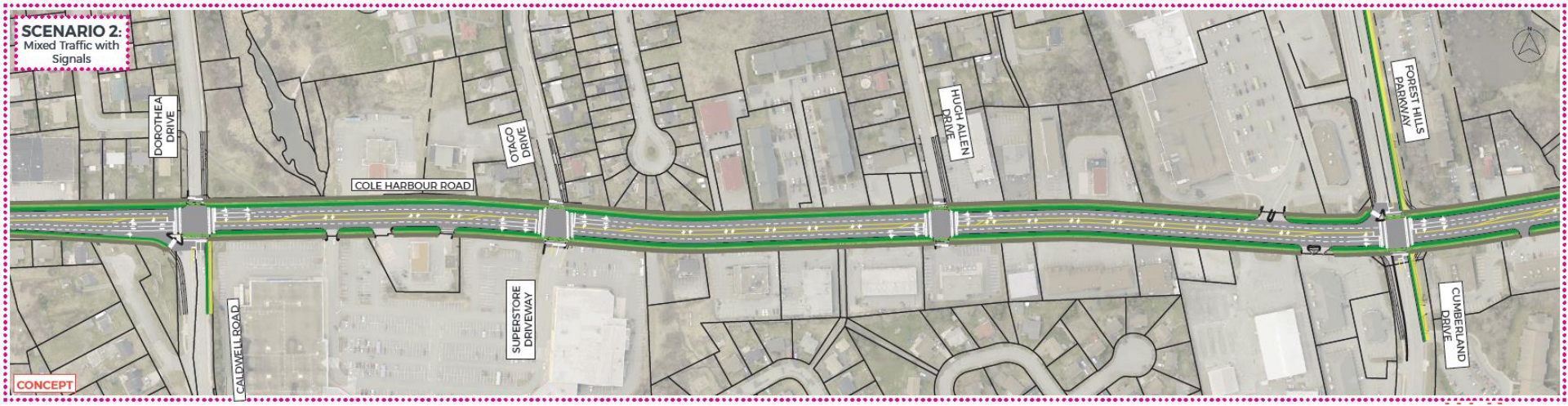
Scenario 2: Mixed Traffic with Signals



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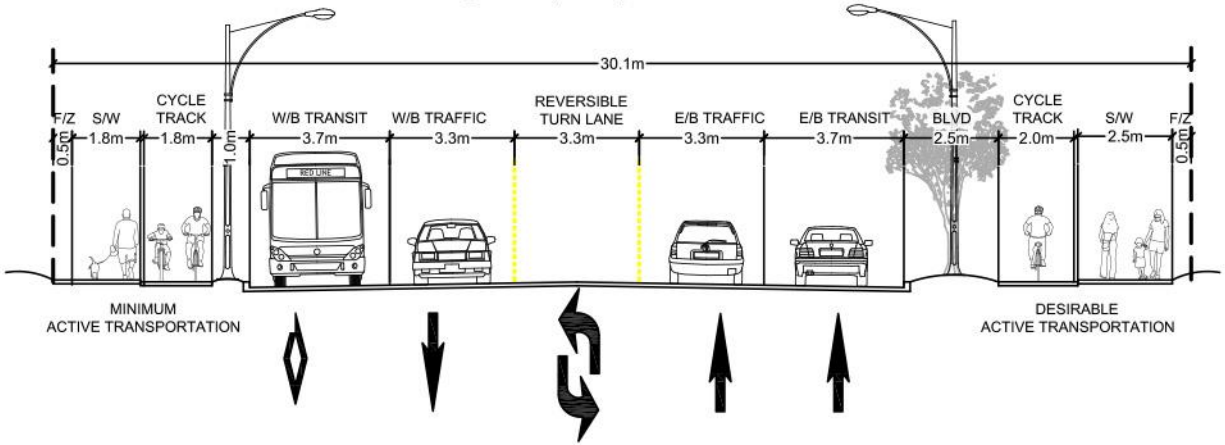
Scenario 2: Mixed Traffic with Signals

SEGMENT 4 Portland Hills Terminal to Bissett Road
Scenario 2: Mixed Traffic with Signals (NTS)



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Portland Hills to Bissett: Evaluation

						$ $-$$$
SCENARIO 1: Mixed Traffic with Roundabouts	» Wide sidewalks with roadway buffer. » Two stage crossing of 1-2 lanes at a time across roundabout. » Longer travel distance and roundabout crossings. » Entirely separate from bicycles. GOOD	» Wide one-way bikeways with roadway buffer. » Roundabout crossings. » Multi-use pathway connections at Caldwell Road and Forest Hills Parkway. GOOD	» Conventional transit service (no BRT). » Buses in mixed traffic. » Potential maneuvering challenges for buses. » Retains potential for BRT extension in future. GOOD	» Less congestion and queueing than the existing corridor. » Less congestion and queueing than Scenario 2. » Increase in vehicle capacity at roundabout intersections. » Potential maneuvering challenges with roundabouts. BETTER	» No impact to emergency vehicle access. » Some property acquisition along the corridor for roundabouts and active transportation facilities. » Significant impact to utilities. » Opportunity for wider buffers, tree planting. GOOD	$$$
SCENARIO 2: Mixed Traffic with Signals	» Wide sidewalks with roadway buffer. » Entirely separate from bicycles. » More accessible at signals. » Greater potential delay at signals. GOOD	» Wide one-way bikeways with roadway buffer. » Multi-use pathway connections at Caldwell Road and Forest Hills Parkway. BEST	» Conventional transit service (no BRT). » Buses in mixed traffic. » Retains potential for BRT extension in future. BETTER	» Less congestion and queueing than the existing corridor. » More congestion and queueing than Scenario 1. » No impact to vehicle capacity. GOOD	» No impact to emergency vehicle access. » Some property acquisition along the corridor for active transportation facilities. » Significant impact to utilities. » Opportunity for wider buffers, tree planting. BETTER	$

EVALUATION SUMMARY

FULL LENGTH SCENARIO 1

- Benefits **people walking + rolling** by providing shorter crossing distances at intersections and an improved pedestrian streetscape.
- Includes protected bike lanes for **people cycling** along the study corridor between Bissett and Lakefront, with alternative routing to Shubie Greenway.
- Achieves high level of priority for **people taking transit** in dedicated bus lanes for most of the length with exception of Alderney to Gaston (queue jump lanes only).
- Provides reduced capacity for **people driving** in one through lane per direction. Some additional delay is experienced. However, some cars are taken off the road as a result of these transport options.
- **Most sustainable** scenario. Less carbon emissions from transportation. Sustainable transport modes are incentivized. Less asphalt and potential tree loss.

COST + FEASIBILITY

- Least expensive to build
- Least impact to adjacent landowners and property acquisition requirements
- Can be constructed more rapidly

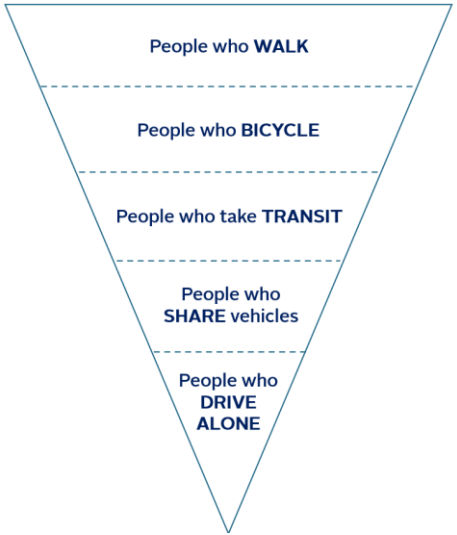
FULL LENGTH SCENARIO 2

- Some improvement for **people walking + rolling** in terms of sidewalk width and connectivity. However, requires seven lane crossing distance at intersections.
- Includes protected bike lanes for **people cycling** along the study corridor between Bissett and Lakefront, with alternative routing to Shubie Greenway.
- Achieves high level of priority for **people taking transit** in dedicated bus lanes for most of the length. Addition of inbound bus lane from Gaston to Alderney. Gap across Hwy 111 overpass.
- Maintains existing capacity for **people driving** in two through lanes per direction. Leads to less delay in the PM peak, but more delay in the AM peak as there are more cars on the road as a result.
- **Less sustainable** scenario. More carbon emissions from transportation based on two lanes of vehicle traffic. Sustainable transport modes are not incentivized. More asphalt and potential tree loss.

COST + FEASIBILITY

- Significantly more expensive to build
- Requires additional infrastructure + acquiring a wide swath of property for road widening
- Will take more time to buy property and build

Integrated Mobility Plan:
Complete Streets Multi-modal Hierarchy



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TRAVEL TIME

Scenario 1
Travel Time Estimates*

Existing Drive Time:	10 - 13 minutes
AM Peak Drive Time:	10 - 16 minutes
PM Peak Drive Time:	12 - 14 minutes

Scenario 2
Travel Time Estimates*

Existing Drive Time:	10 - 13 minutes
AM Peak Drive Time:	10 - 18 minutes
PM Peak Drive Time:	9 - 11 minutes

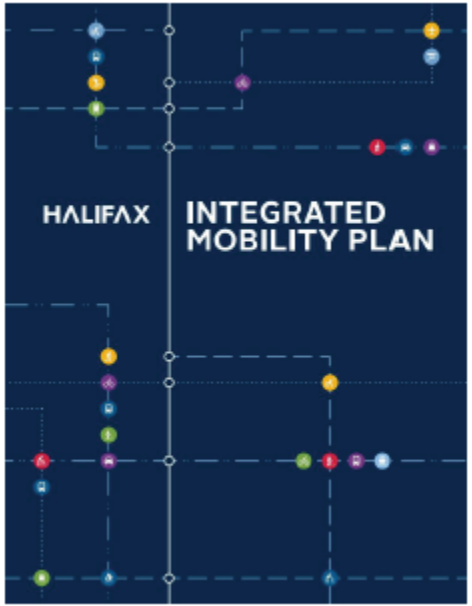
TRANSIT BEFORE:	15 - 23 mins (AM Inbound) 18 - 20 mins (PM Outbound)	**TRANSIT AFTER:**	10 - 11 mins ALL DAY Alderney to Portland Hills

* *Draft travel time simulation in VISSIM for Alderney to Portland Hills Terminal segments. Remaining segments are forthcoming.*

Shearwater Connector

- Connection from Baker Dr / Mount Hope to Caldwell Rd
- Potential to reduce *some* transportation pressures from the Portland Street - Cole Harbour Road corridor

HALIFAX



ACTION 124 of the Integrated Mobility Plan:

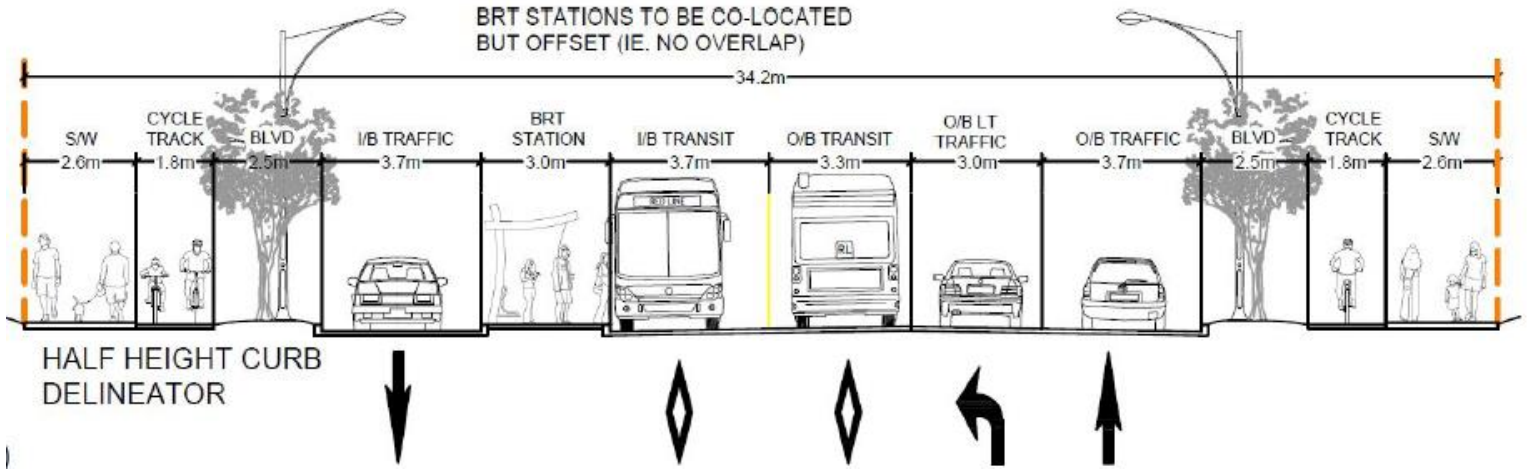
Where total corridor road capacity is increased through the construction or expansion of a parallel road, explore opportunities to give higher priority to active transportation or transit within that corridor.

Median Transit Lanes

- Opportunity to consider median transit as long-term treatment

- Key features:
  - Centre running way
  - Stops at signalized intersections
  - Minimal interaction with cars
  - Can be converted to light rail

Median Transit Lanes



HALIFAX

Median Transit Lanes

Curbside Transit Lanes:

- Easiest to implement
- Less property requirements
- Good reliability, transit priority
- Mixing with right turning cars at intersections and driveways
- Longer crossing distances

Median Transit Lanes:

- Best reliability, travel times, overall transit priority
- More infrastructure required, acquisition at intersections
- Enhances safety with fewer turning conflicts with traffic
- Multiple short crossings

Evaluation

- Describing and balancing complex trade-offs
- Cross-referencing long range policy objectives, integration with other plans
- Opportunity for public input

HALIFAX

Next Steps

	TIMELINE

• Phase 2 Public and Stakeholder Engagement
  • Present concept design scenarios
  • Evaluate trade-offs and preferences
	SPRING

• Functional Design
  • Refine and select preferred scenarios for 30% design
  • Finalize functional designs and consultant report
  • Develop staff report
	SUMMER & FALL

• Report to Regional Council via TSC	WINTER 24/25

HALIFAX

Discussion

Guiding Questions

- Do you have any feedback on a particular section?
- Which trade-offs are most important to you?
- What features should we pay most attention to in the 30% designs from the perspective of walking, rolling, and cycling?
- Do you have any feedback from an accessibility perspective on roundabouts, path separation, or median transit islands?

Guiding Questions

- Does the construction of the Shearwater Connector impact your view of how to allocate space on Portland Street and Cole Harbour Road?

- What sorts of travel time impacts for people driving and worth the additional benefits for people walking/rolling, cycling, and taking transit?

Thank you!

Additional materials are available at:

www.shapeyourcityhalifax.ca/portland-cole-harbour

Or email the Project Manager:

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