

Portland North Alternative Modes Project

Project Overview
March 12, 2014

Key Goals

- Develop Broad Range of Alternatives
- Conduct Objective Process
- Solicit Considerable Public Input
- Identify Most Competitive Option for Small Starts Funding

Small Starts Parameters

- Capital costs associated with new fixed guideway systems, extensions, and bus corridor improvements
- Requests under \$75 million and total project costs must be under \$250 million
- In addition, Small Starts eligible if:
 - (a) meet the definition of a fixed guideway for at least 50 % of the project length in the peak period
 - (b) be a new fixed guideway project, or

Small Starts (cont.)

- (c) be new corridor-based bus project with all of the following minimum elements:
 - Substantial transit stations
 - Traffic signal priority/pre-emption, to the extent, if any, that there are traffic signals on the corridor
 - Low-floor vehicles or level boarding
 - Branding of the proposed service
 - 10 minute peak/15 minute off peak headways or better while operating at least 14 hours per weekday

FTA Small Starts Evaluation Criteria

- Cost Effectiveness (which is a combined measure of annual travel time savings and annualized cost)
- Total Cost compared to State and Local Financial Capacity
 - Capital cost (including highway or rail improvements including railroad bridge costs)
 - Operations and Maintenance (O&M) costs
- Transportation Measures (which would be roughly proportional to vehicular emissions)
 - Level of Service
 - Total System Vehicle Miles Traveled
 - Total System Vehicle Hours Traveled
- Land Use
 - Existing Land Use Patterns
 - Transit supportive plans and policies
 - Performance and impact of these policies
- Economic Development

Alternatives Analysis

PHASE 1

- Developed Initial Range of Alternatives
- Met with Stakeholder groups and communities
- FTA coordination
- Alternative refinement
 - Alignment
 - Station
 - Cost
 - Ridership
- Screened from alternatives 30 to 6 (with terminus options)

Phase 1 Service Area

- Three service alternatives

- Yarmouth
- Brunswick (Bath)
- South Auburn (Lewiston)

- Three route alternatives:

- Saint Lawrence and Atlantic Railway (SLR)
- Pan Am Railway
- Highways (Bus)

- Five Portland terminal alternatives:

- Bayside (SLR)
- India Street (SLR)
- Union Station (Pan Am)
- Center Street (Pan Am)
- Monument Square (Express Bus)

Phase 1 Operating Framework

- 22 Roundtrips per Weekday (Train/Bus)
- Service Headways
 - 30 minute peak
 - 60 minute off-peak
- First trip arrives Portland: 6:45 AM
- Last trip departs Portland: 10:55 PM
- Shuttle Bus Service in Portland from all but Center Street rail station

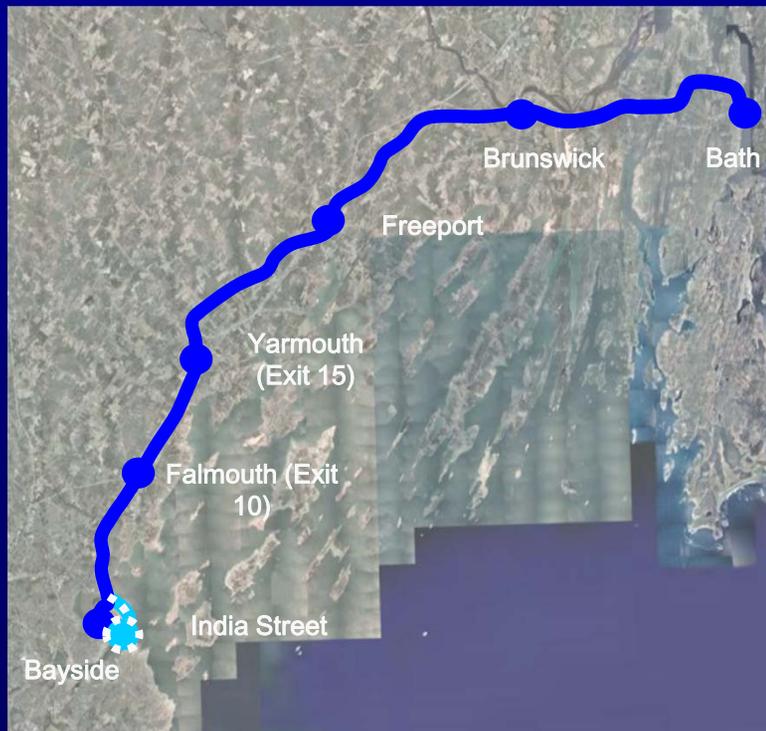
Phase 1 Terminus Options



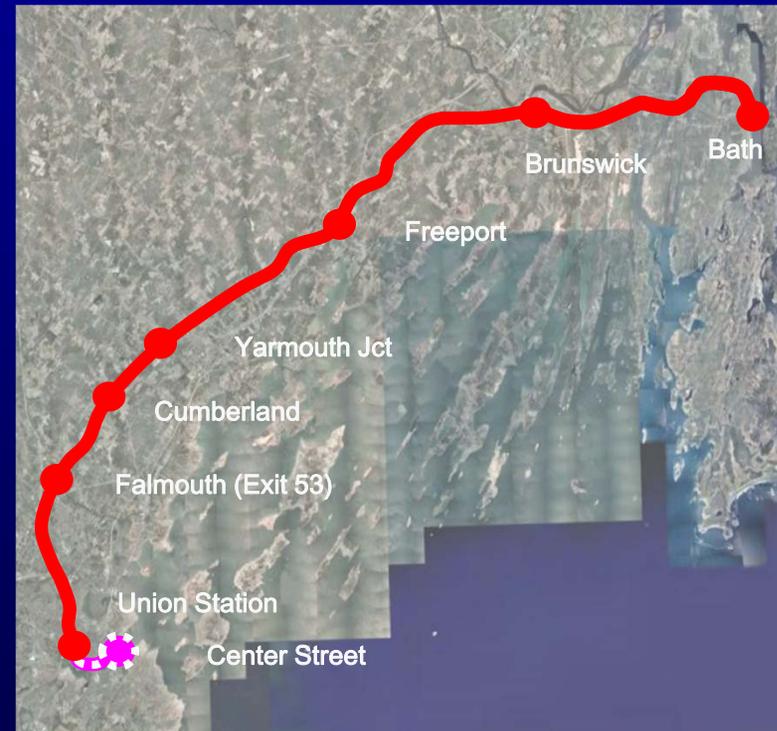


Brunswick Rail Service

SLR



Pan Am

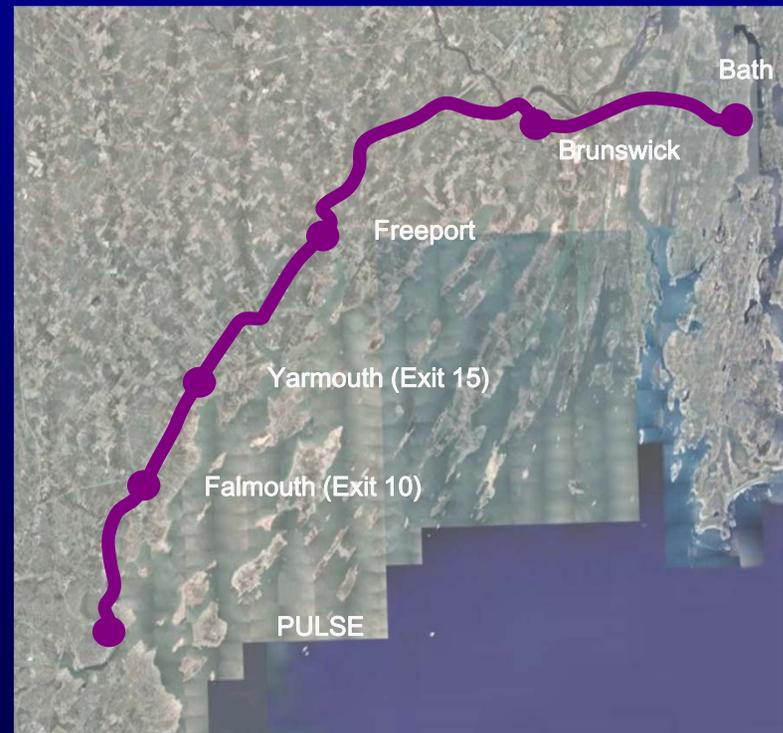


Brunswick Express Bus Service

Exclusive Bus ROW



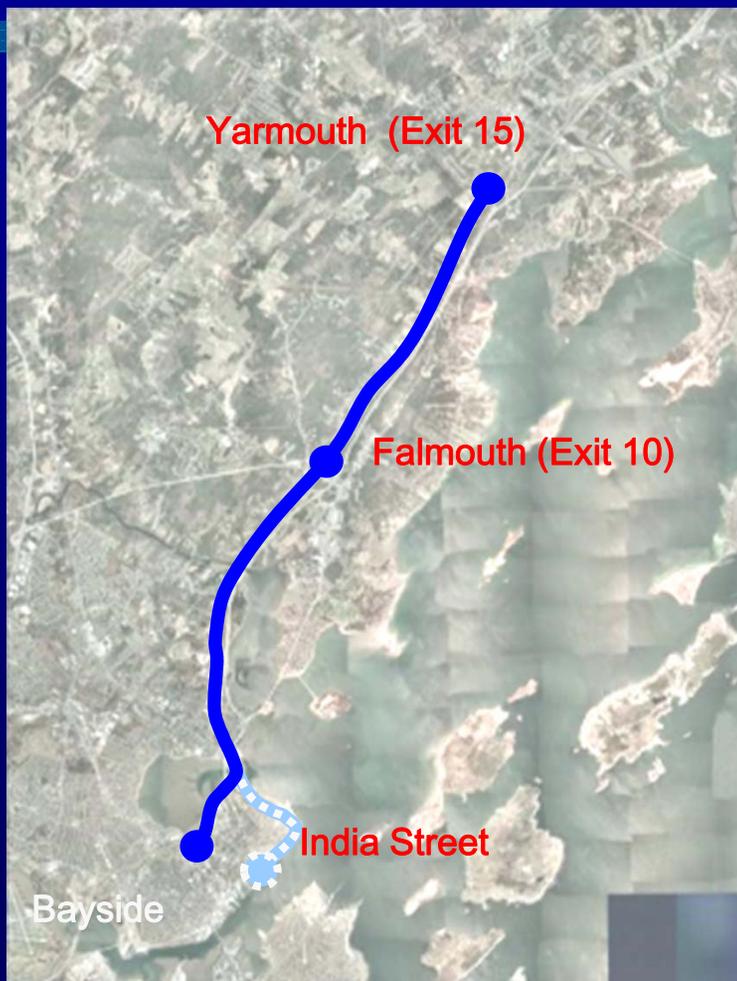
Highway Shoulder Running



Yarmouth Rail Service

SLR

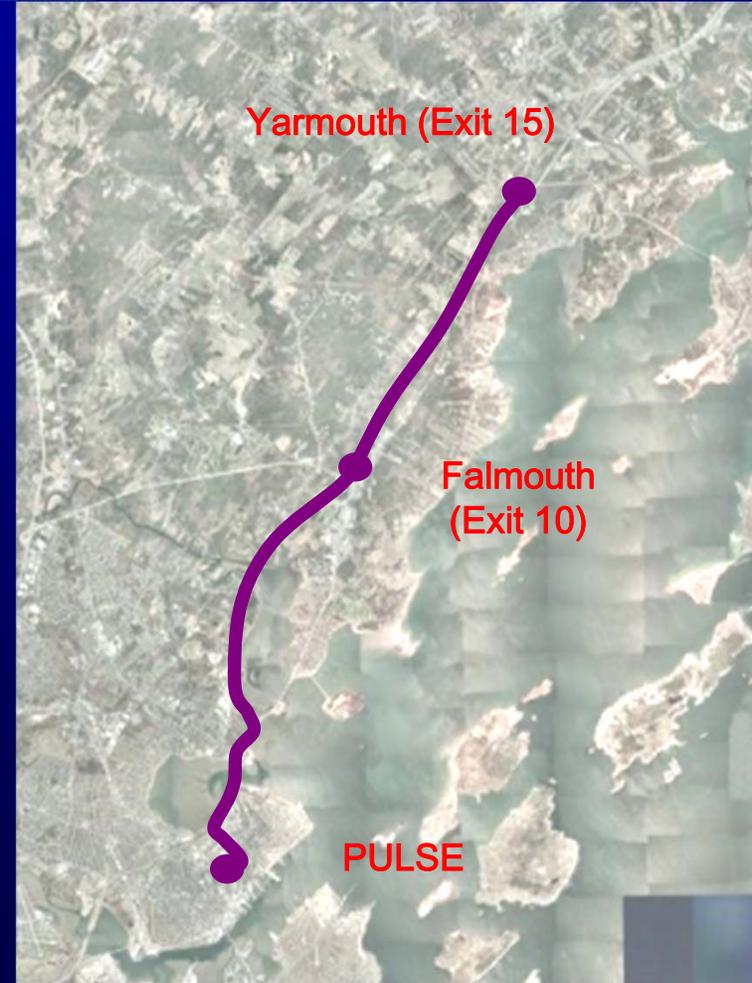
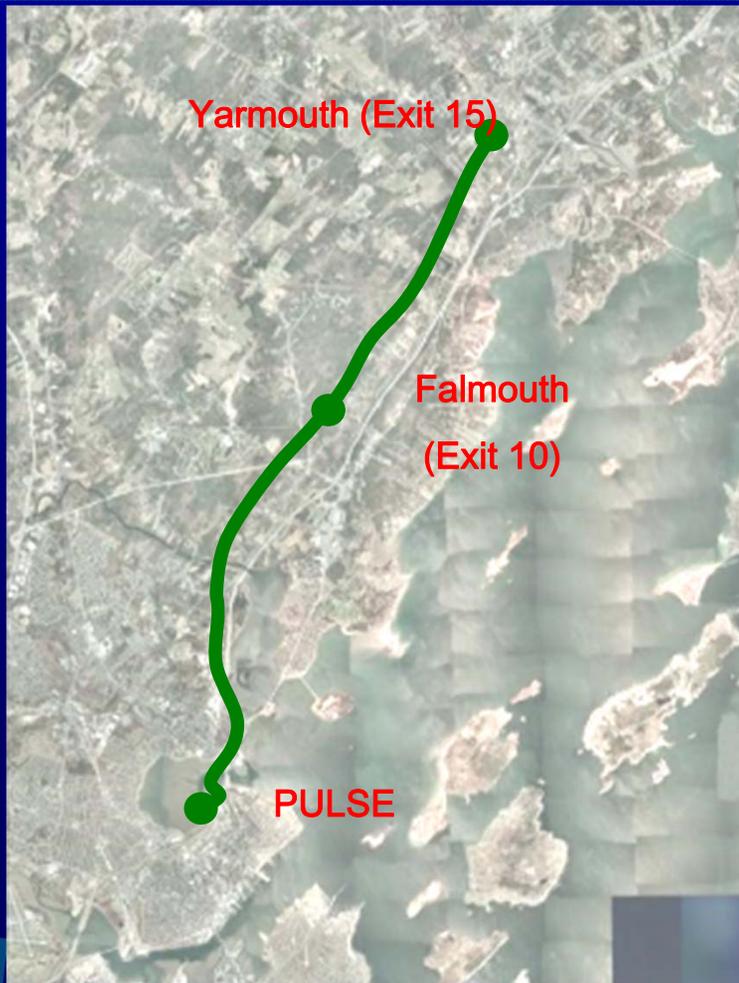
Pan Am



Yarmouth Express Bus Service

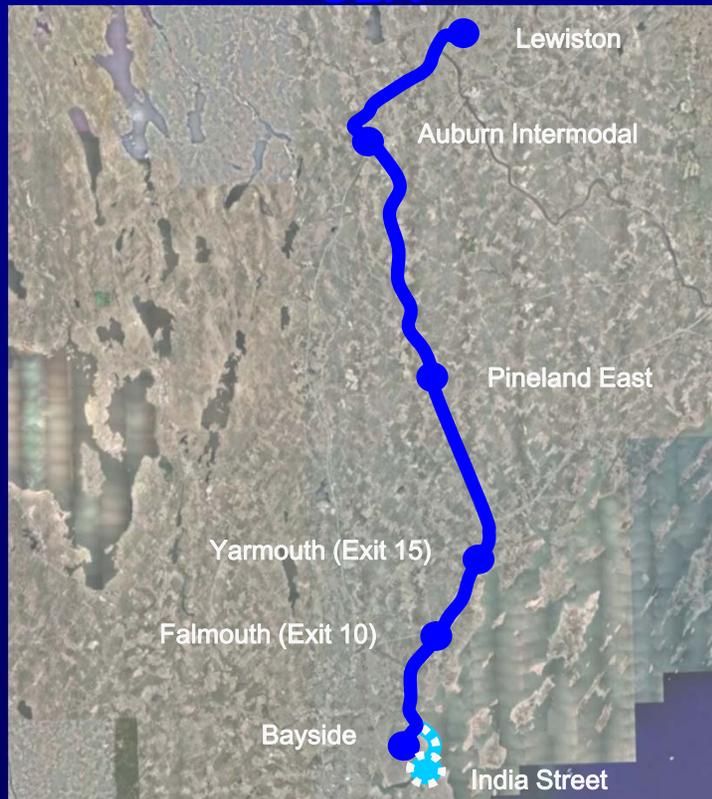
Exclusive ROW

Highway Shoulder Running



Lewiston Rail Service

SLR

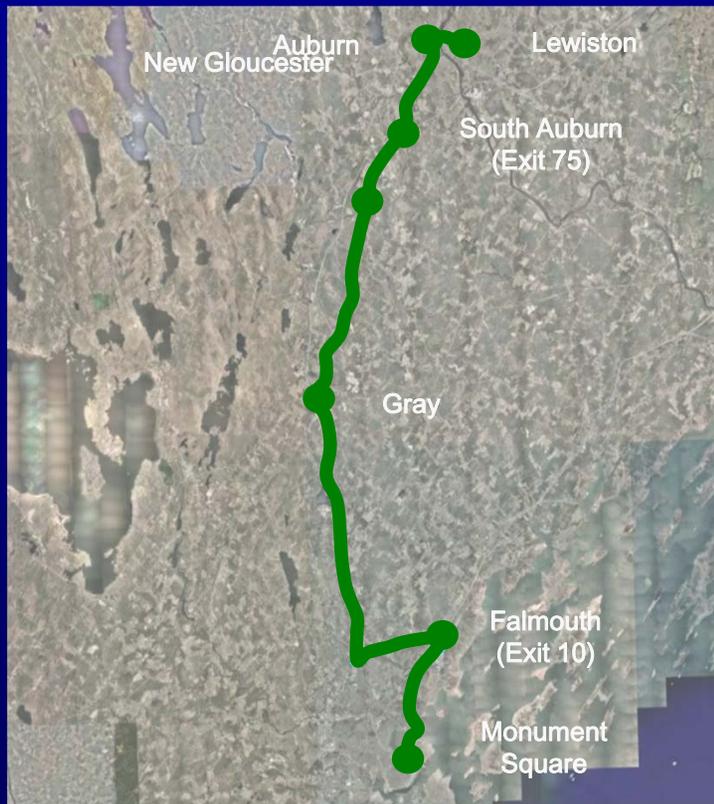


Pan Am

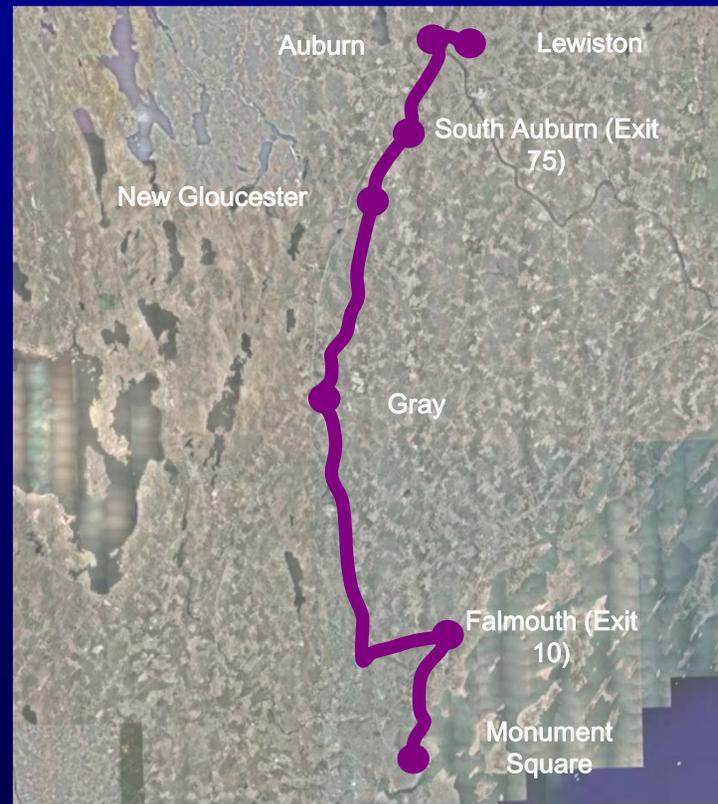


Lewiston Express Bus Service

Exclusive Bus ROW



Express Bus



Approach to Calculating Riders

We methodically examine key questions:

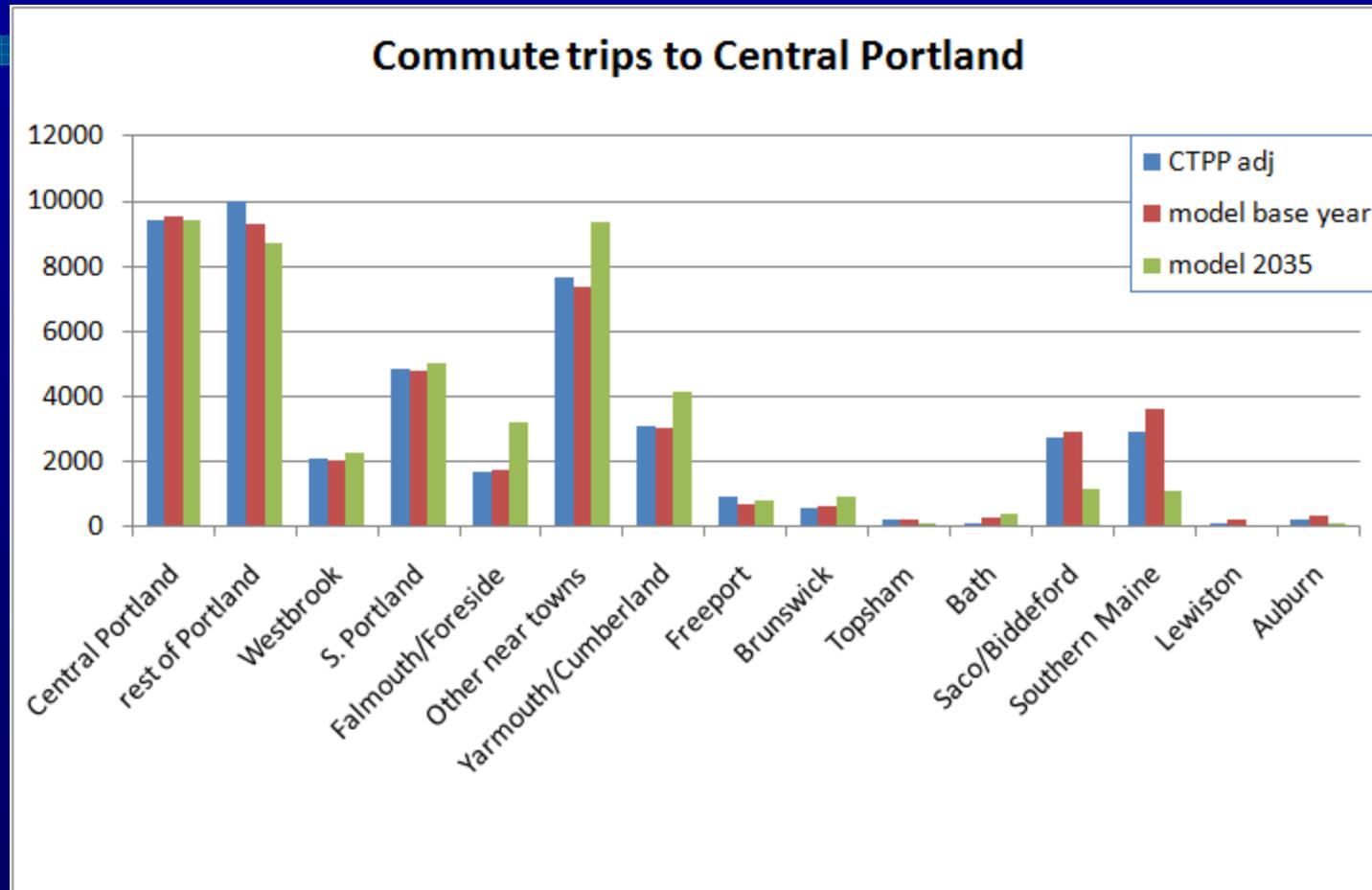
- For what purposes will people travel?
- Where would these trips begin?
- How many of these trips will people make?
- Where are the trips headed?
- What are the attributes of traveling by car or by transit that would affect mode choice?
- What would determine a motorist's choice of route?

Key Factors Affecting Behavior

- Strong preference for auto
- Increasing, non-linear penalty for walks over 10 minutes
- Direct service preferable to local bus connection
- Travelers “don’t drive backwards” to a park & ride
- “let someone else drive” more important with increasing distance
- No modeled preference for rail compared to bus

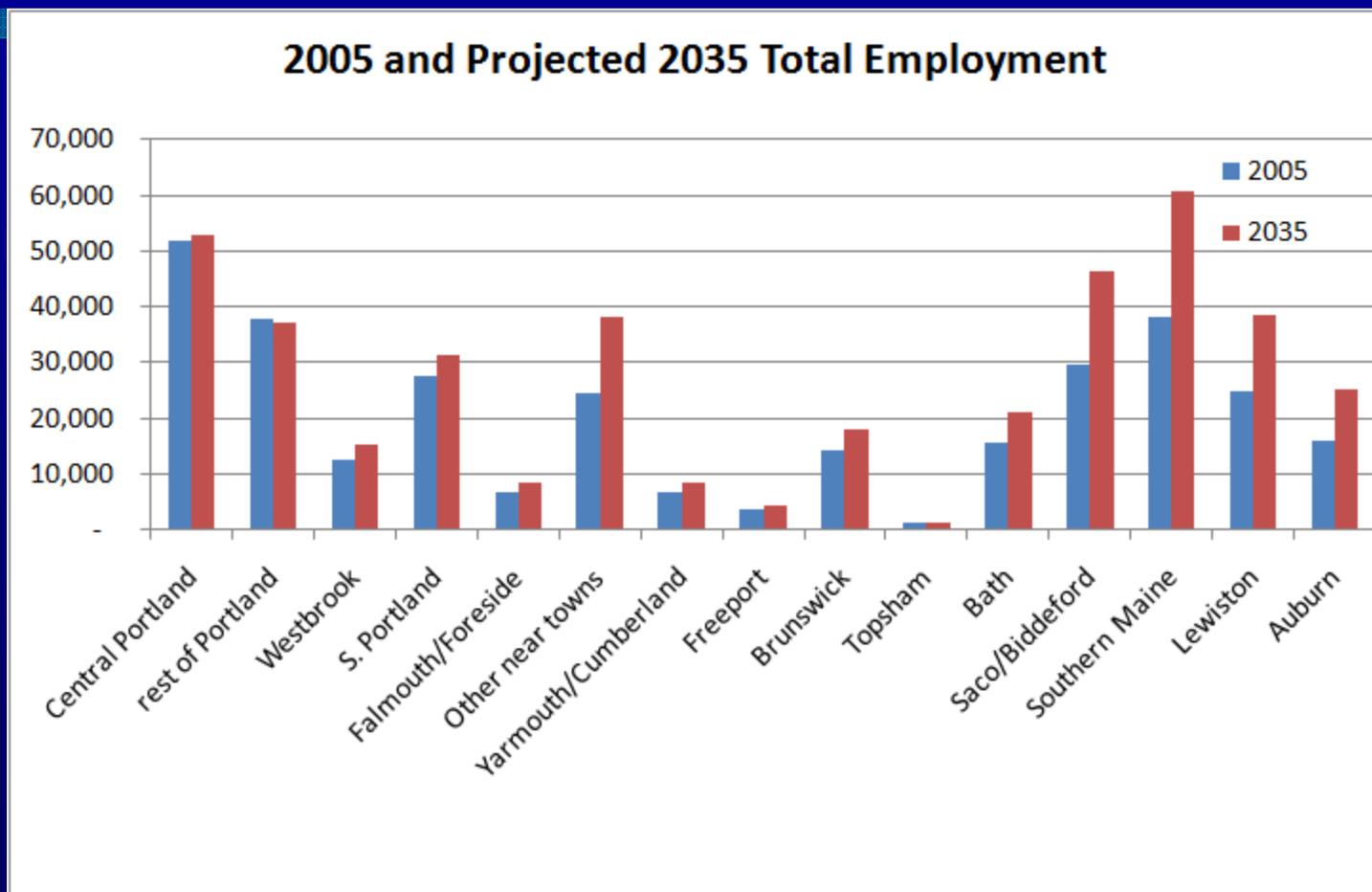
Forecasting to 2035

Trip origins of commuters to Portland

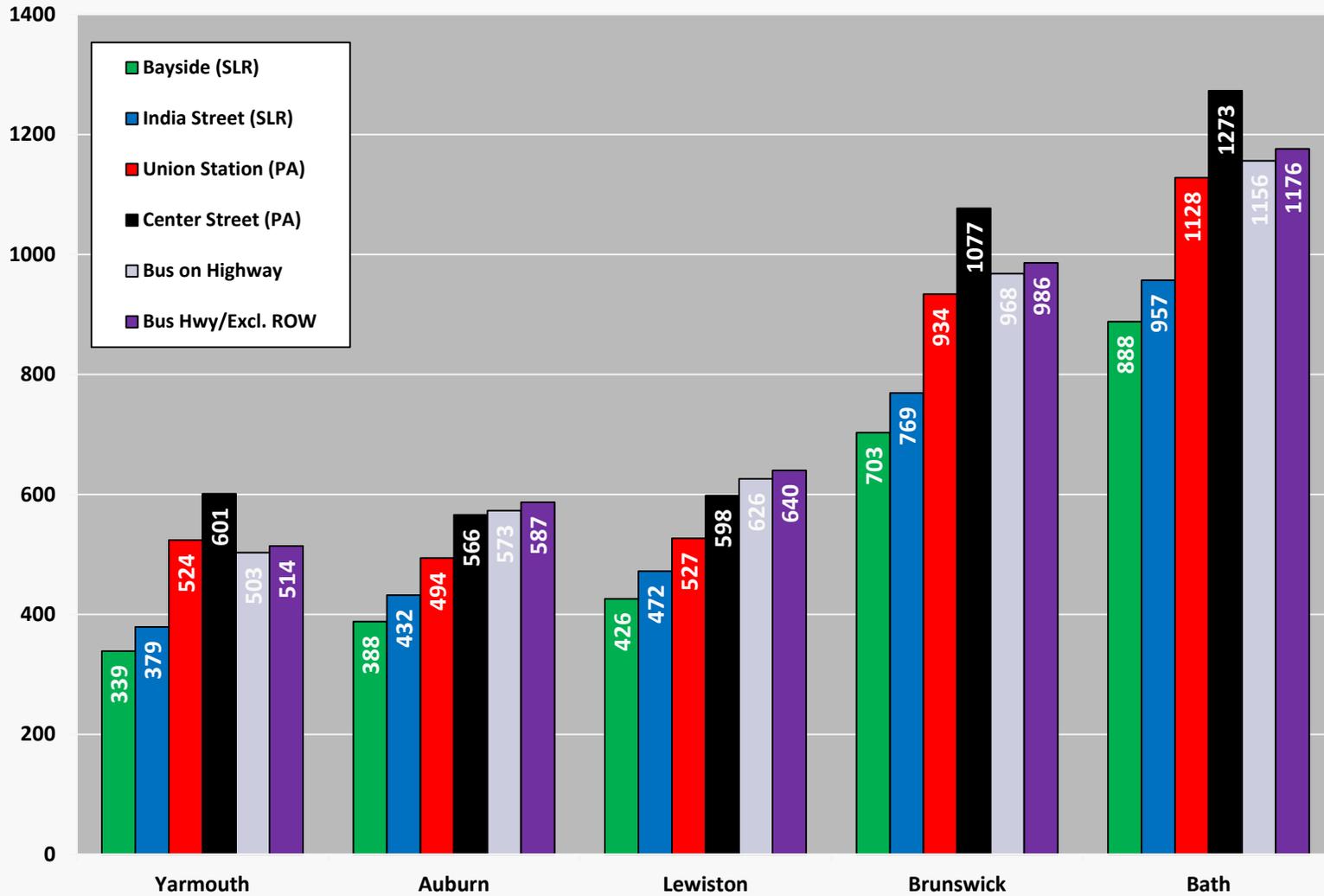


Forecasting to 2035

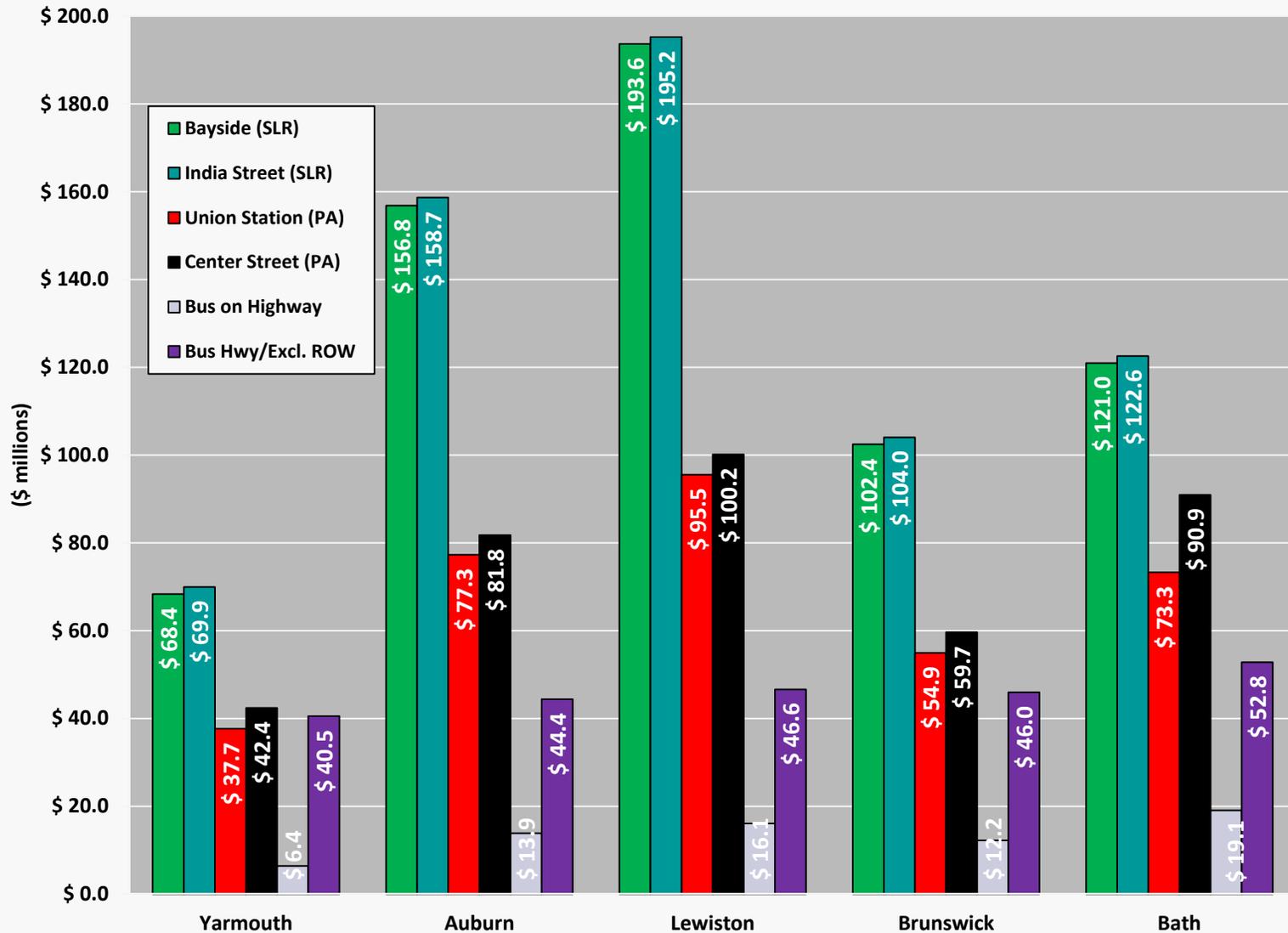
Changing work trip destinations



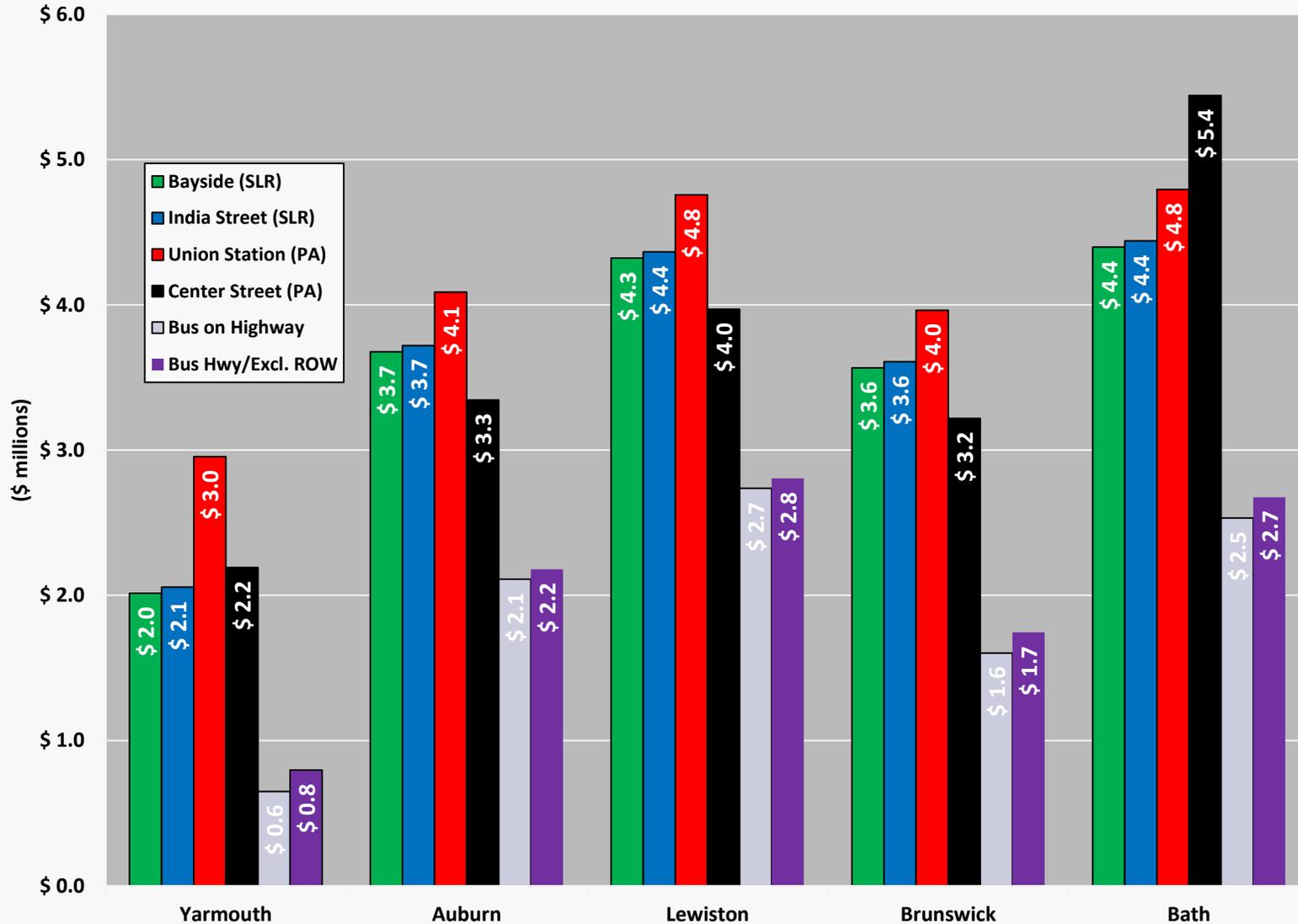
2035 Commute Trips



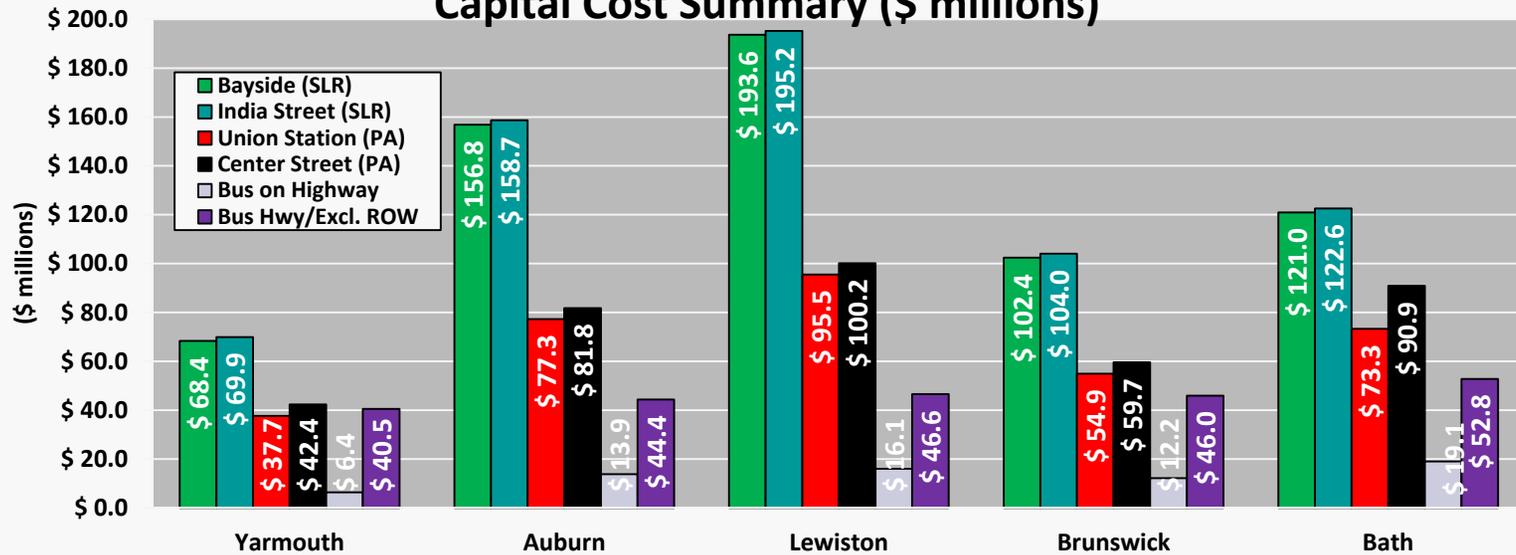
Capital Cost Summary (\$ millions)



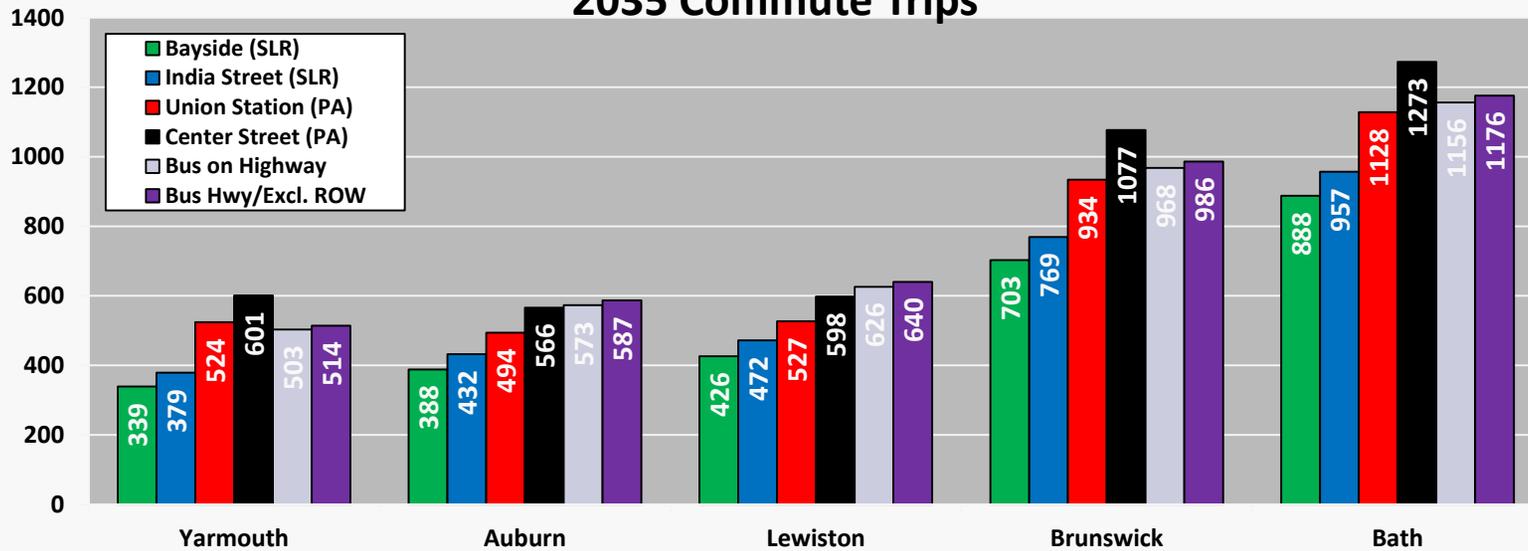
Summary of Annual Operating Costs (\$millions)



Capital Cost Summary (\$ millions)



2035 Commute Trips



Phase 2 Alternatives

- Rail:
 - Pan Am to Yarmouth
 - Pan Am to Auburn/Lewiston
 - Pan Am to Brunswick/Bath
- Bus:
 - Portland to Yarmouth on Highway and Shoulder
 - Portland to Auburn/Lewiston on Highway and Shoulder
 - Portland to Brunswick/Bath on Highway and Shoulder

Integrated Rail Option

- Amtrak
- Downeaster
- Proposed Commuter Rail



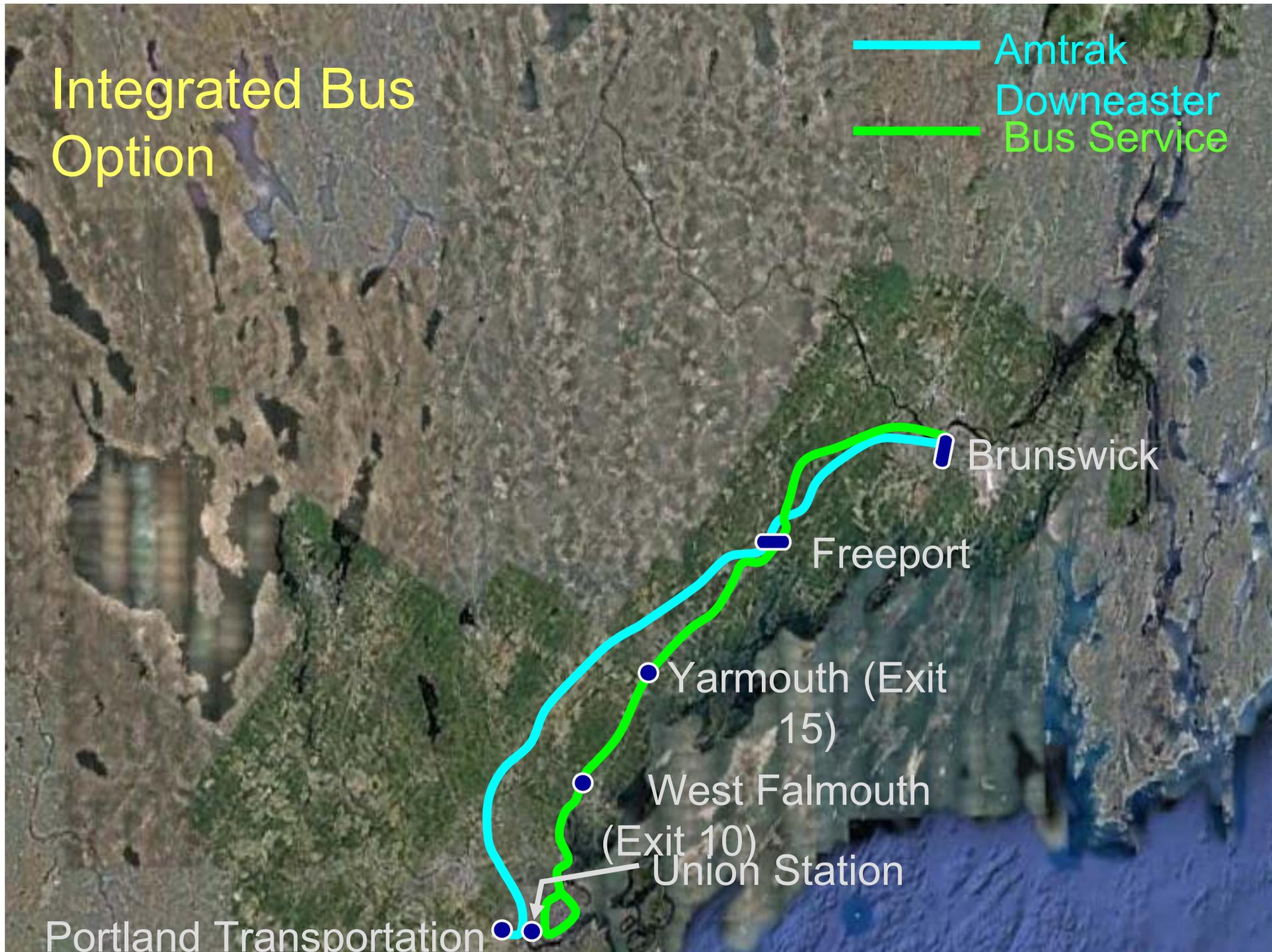
Phase 2 Alternatives

- **Integrated Rail:**

- Utilizes Proposed Amtrak Service
- Amtrak Deadhead Train Converted to Revenue Service
- Portland Union Station (for Amtrak and State Rail)
- Pam Am ROW
- Stations @ Yarmouth, Cumberland, Falmouth, Union Station, Center Street
- 7 Commuter Rail Round Trips
- 3 Amtrak Round Trips

Integrated Bus Option

Amtrak
Downeaster
Bus Service



Bus on Shoulder

- Minimum of 10' Lanes
- Maximum 35 MPH (or no more than 15 MPH > Mainline)
- On Shoulder Ops **Only to Avoid Congestion**
- Examples
 - Minneapolis/St. Paul
 - Virginia/Maryland
 - Columbus
 - Miami Dade (Pilot)
 - Ottawa
- Some Costs Vary with Funding Source

Phase 2 Alternatives

- **Integrated Bus:**

- Utilizes Proposed Amtrak Service
- Amtrak Deadhead Train Converted to Revenue Service
- Portland Union Station (for Amtrak Stop)
- I-295 ROW (including shoulder when congested)
- 295 Stations at Exits 10 and 15
- 12 Bus Round Trips
- 3 Amtrak Round Trips
- As Ridership Grows Trains Replace Buses

Non-Small Starts

- Transportation Systems Management (TSM) Options

TSM Alternatives

- **Option 1: Offline Falmouth and Yarmouth Stations**
 - No upgrades to existing road network
 - No travel on shoulders.
 - Bus operates in mixed traffic
- **Option 2: Offline Yarmouth (Only) Station**
 - No upgrades to existing road network
 - No travel on shoulders.
 - No Falmouth station

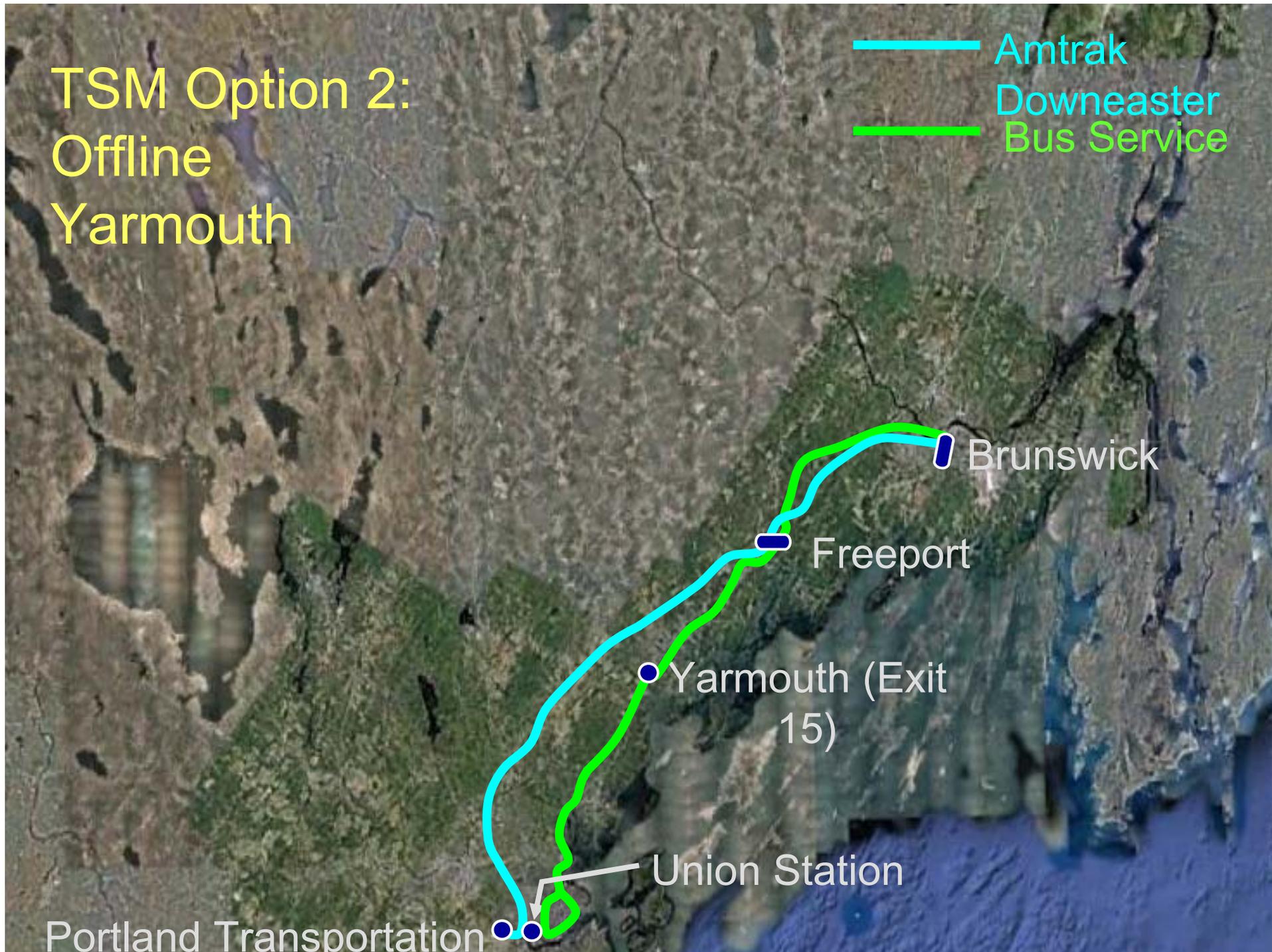
TSM Option 1: Offline Falmouth and Yarmouth

Amtrak
Downeaster
Bus Service



TSM Option 2: Offline Yarmouth

Amtrak
Downeaster
Bus Service



Portland Transportation

●

●

Yarmouth (Exit 15)

●

Freeport

●

Brunswick

Union Station

Alternative Comparison

Measure	Small Starts Integrated Bus	Small Starts Integrated Rail	Non Small Starts Option 1	Non Small Starts Option 2
Weekday Boardings	815	298	665	557
Annual Operating Days	254	254	254	254
Annual Boardings	207,010	75,692	168,910	141,478
Operating Costs	\$735,413	\$1,924,696	\$740,467	\$737,710
Capital Costs	\$52,229,462	\$26,353,472	\$9,791,448	\$8,551,378
Operating Costs/Boardings	\$251.87	\$25.43	\$4.38	\$5.31