MaineDOT Bangor Transit Propensity Study
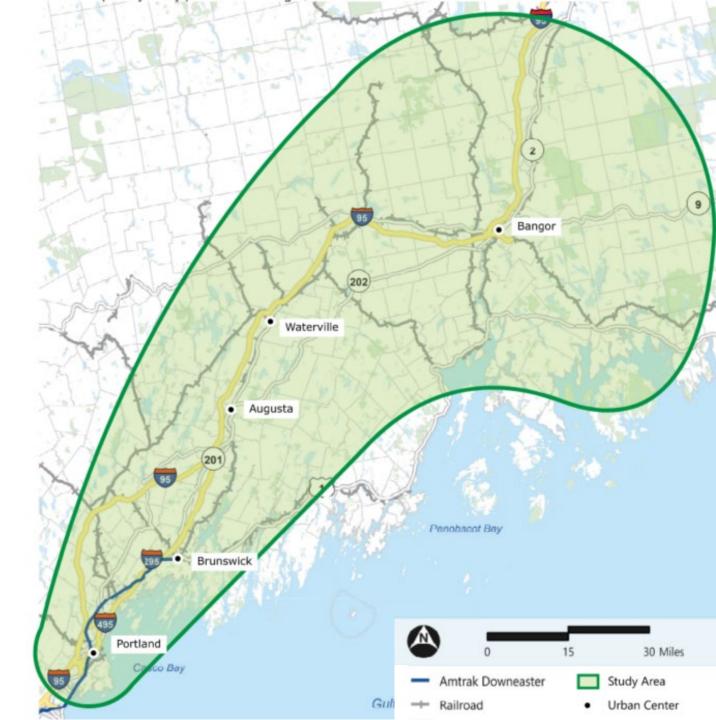
RUAC Meeting

February 2023

Agenda

- Project Overview

- High Level Conceptual Costs

- Transit Propensity

Project Overview

- To understand the travel and potential cost associated with enhanced transit service

- Study Area
  - 130-mile corridor from Portland to Bangor and surrounding areas
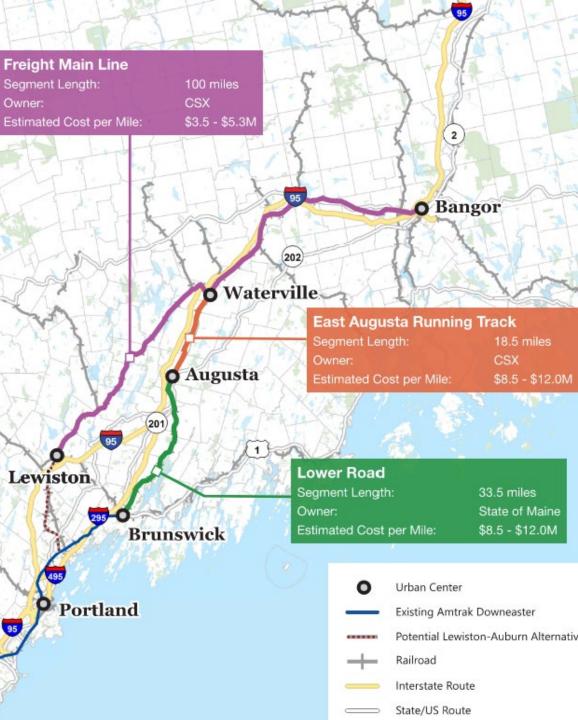
- Advisory Committee

MaineDOT   Waterville

Augusta   BACTS

Bangor   Concord Coach Lines

High Level Passenger Rail Conceptual Costs

- Applied comparable per mile/station unit costs from recent projects
  - $3.5M - $5.25/mile for FML
  - $8.5M/mile - $12.0M/mile for Lower Road, East Augusta lines
  - $1.235M/platform – assumed 3 for each alignment

- Assumptions
  - Condition was not assessed
  - Potential unknowns not included such as layover yard, vehicles, property acquisition, parking, station buildings

Alignment	Approximate Length	Low Estimate	High Estimate
Downeaster Extension from Brunswick	100 miles	$628M	$902M
L-A Extension from Lewiston	100 miles	$375M	$538M

Freight Main Line
Segment Length:	100 miles
Owner:	CSX
Estimated Cost per Mile:	$3.5 - $5.3M

East Augusta Running Track
Segment Length:	18.5 miles
Owner:	CSX
Estimated Cost per Mile:	$8.5 - $12.0M

Lower Road
Segment Length:	33.5 miles
Owner:	State of Maine
Estimated Cost per Mile:	$8.5 - $12.0M

Bangor
Waterville
Augusta
Lewiston
Brunswick
Portland

Legend:
- Urban Center
- Existing Amtrak Downeaster
- Potential Lewiston-Auburn Alternativ
- Railroad
- Interstate Route
- State/US Route

Corridor Transit Cost Considerations

- Rail Corridor Costs (130 miles)
  - Capital $400M-$900M depending on rail segment, conditions, number of stations

- Bus Corridor Costs
  - Coach, long distance buses ~$300,000-500,000/vehicle.

    (Ex $1.2M – $2.0M for 4 vehicles)

- Existing Bus Service in Corridor
  - Serving many of the potential trips
  - Opportunities to partner with existing operators

Existing Travel Markets – Demographic Analysis

- The following four categories were used to identify the areas with the highest concentration of potential transit users:
  - Population density
  - Employment density
  - Median household income
  - Zero car household density

- Based on this review, Augusta, Waterville, and Bangor had areas within the Study Corridor with the highest concentration of these demographics
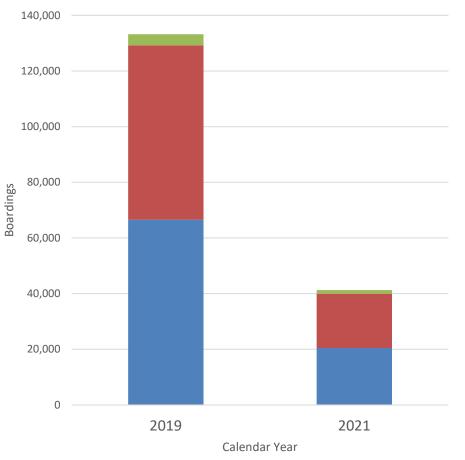
Existing Travel Markets –Bus Services

- Concord Coach Lines and Greyhound both offer bus service from Bangor to Portland and Boston

- Majority of existing bus trips beginning in the study area terminate in Portland or Boston

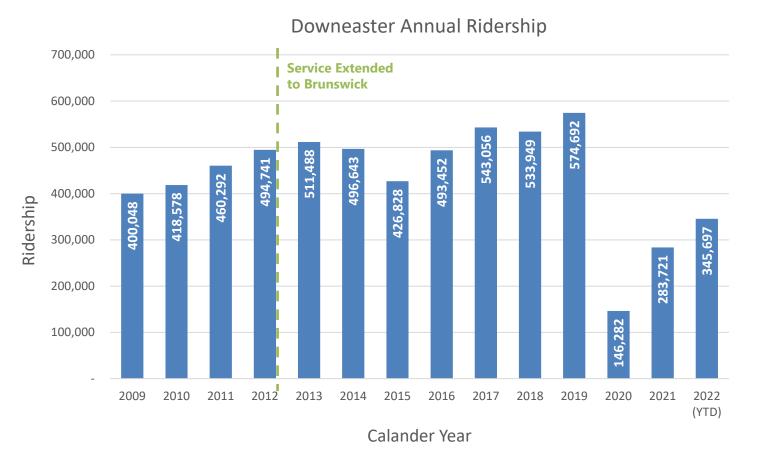| Service	Concord Coach Lines Bus	Greyhound Bus
Trip	Bangor to Portland to Boston	Bangor to Portland to Boston
2019 Round Trips Per Day	5	1
2022 Round Trips Per Day	4	1
2022 Ticket Price	$30 (to Portland) $47-50 (to Boston)	$15-21 (to Portland) $32-43 (to Boston)
2019 Ridership	130,000	19,000

Concord Coach Lines Bangor Corridor Ridership

Legend:
- Destined for Other (Local Trips)
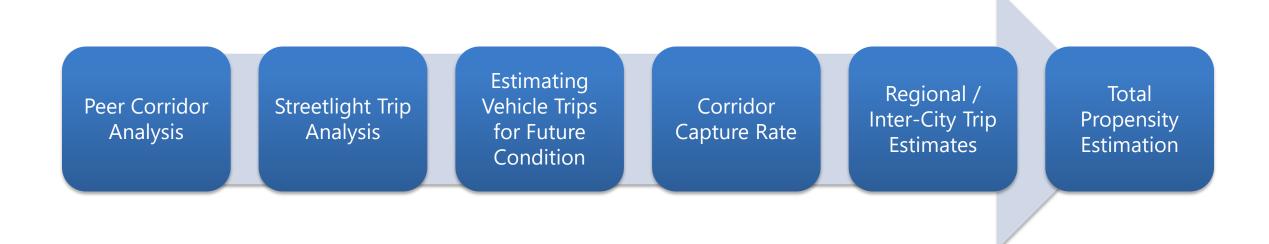- Destined for Boston
- Destined for Portland

Existing Travel Markets – Amtrak Downeaster Ridership

- Historic data shows a steady increase in Amtrak ridership each year since service began

- Ridership dropped during the pandemic, but 2021 data and 2022 YTD data shows that ridership is recovering

- From 2011 to 2019, ridership increased by approximately 114,000 riders,
  - Brunswick Extension began service in November 2012
  - Additional round trip

Downeaster Annual Ridership

Service Extended to Brunswick

Ridership

Year	Ridership
2009	400,048
2010	418,578
2011	460,292
2012	494,741
2013	511,488
2014	496,643
2015	426,828
2016	493,452
2017	543,056
2018	533,949
2019	574,692
2020	146,282
2021	283,721
2022 (YTD)	345,697

Calander Year

Note: The ridership value for 2022 is year-to-date (YTD), from January 2022-September 2022.

Transit Demand Propensity – Methodology

Transit Demand Propensity – Peer Corridor Analysis

Peer Review Summary

Comparable Rail Corridor	2019 Average Daily Ridership	2019 Area Population [1]	2019 Capture Rate [2]
Amtrak Ethan Allen Express VT & Eastern NY	151	127,586	0.11%
Amtrak IL Corridors – Quincy to Chicago	565	127,785	0.44%
Amtrak IL Corridors – Carbondale to Chicago	1,045	244,905	0.43%
			Average Capture Rate = 0.33%

[1] "Area Population" refers to the population residing within station-area communities not including the major terminus (e.g., New York City, Chicago, and Milwaukee).

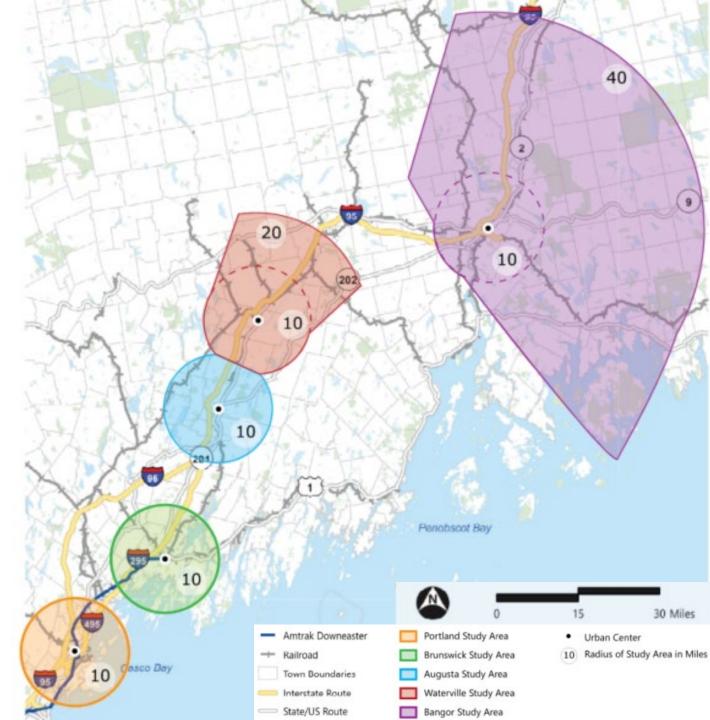[2] "Capture Rate" is defined as the 2019 average daily ridership divided by the "Area Population"

Streetlight Trip Analysis – Existing Trips

- Streetlight is a dataset that provides information on travel trip volumes based on cellular data, GPS location, and traffic counters.

- For the propensity analysis, Streetlight was used to approximate the traffic volumes travelling within the Study Corridor.

	Total Streetlight Trips in Study Corridor (2021)
Annually	2,219,000
Monthly	182,000

Transit Demand Propensity – Catchment Area Development

- Concentrated in activity centers along existing rail corridor within each municipality

- Origins
  - Directional demand area, with larger catchment area at potential end of line
  - Larger area to account for flexibility in future station placement

- Destinations
  - Smaller, 1-mile radius around dense area considering accessibility

Transit Demand Propensity – Results

- Considering both the peer analysis approach and the Streetlight analysis provides an estimated propensity range for the future condition year of 2040.

	Peer Corridor Analysis Propensity	Streetlight Trip Analysis Propensity
Annually	87,300	62,250 – 87,650
Monthly	7,200	5,150 – 7,250

- In 2019, total Downeaster ridership approximately 574,700.

Transit Demand Propensity – Result Considerations

- Trip purpose and frequency – available data provided total daily trips, not considering day of the week, time of day, or trip purpose

- Travel time for potential riders – length of the trip, potential speed, and parallel options, of car/bus services

- No assumed service plan, focused on need of travel trips

- Potential impacts to demand:
  - Alignments
  - Stations site selection and nearby economic development
  - Service plan

MaineDOT Bangor Transit Propensity Study

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How to Provide Comments

Contact Us:

https://www.maine.gov/mdot/ofps/portland-bangor-study/