



Northern Tier Passenger Rail Study

Working Group Meeting #3

October 19, 2023



Zoom Controls

Drop down menu to check microphone and speakers



- Ask a question and share comments
- Raise your hand



 If you are unable to access the internet or are having technical problems, please call into the meeting at 646-931-3860, Webinar ID: 871 3449 5521

Closed captioning automatically generated by Zoom







If you have trouble with the meeting technology during the presentation, please call:

1-888-799-9666



Public Meeting Notes and Procedures

Notification of recording

- This virtual public meeting will be recorded. The Massachusetts Department of Transportation may choose to retain and distribute the video, still images, audio, and/or chat transcript.
- By continuing attendance with this virtual public meeting, you are consenting to participate in a recorded event.
- All recordings and chat transcript will be considered a public record.
- If you are not comfortable being recorded, please turn off your camera, keep your microphone muted, and refrain from chatting in the transcript box. Otherwise, you may choose to excuse yourself from the meeting.

Important notes

- Your microphone and webcam are automatically disabled upon entering the meeting.
- The meeting will be open to questions and answers at the end of the presentation.

All questions and comments are welcome and appreciated, however we do request that you refrain from any disrespectful comments.





Agenda

- **1** Study Overview
- 2 Public Workshop Review
- **3** Phase 2 Alternatives Development and Evaluation
- **4** Working Group Discussion
- **5** Public Comment
- 6 Next Steps







Study Overview

- Study initiated at the direction of the Massachusetts Legislature to conduct a feasibility study of rail access between the cities of North Adams and Boston
- Conceptual planning study to examine economic and environmental benefits, and identify all necessary improvements and any challenges







Study Process

3

5

- Public Participation
- Documenting Past Efforts
- Market Analysis
- Physical, Regulatory, and ROW Ownership
- Potential Service Plans and Alternatives
- Alternatives Evaluation and Cost Estimate
- Development of Recommended Next Steps

The steps in **bold** represent the current stage of the study process





Public Involvement Plan

Data Collection

Demographics, Land Use, **Current and Projected Future Travel Patterns**

Opportunities and Constraints

Develop Up to 6 Service Alternatives

Ridership Analysis, Benefit-Cost Analysis

Short-, and Long-Term **Recommendations**, Funding **Opportunities**, **Draft and Final** Report



Study Goals and Objectives

- Goal: Support economic development along the Northern Tier corridor \bullet
 - Improve connectivity and access to destinations (e.g., jobs and services, academic institutions, tourist attractions, etc.)
 - Support the advancement of relevant economic development-related policies, plans, and designations
 - Minimize impacts to freight rail operations
- **Goal: Promote transportation equity** \bullet
 - Increase mobility options between Western and Eastern Massachusetts
 - Improve connectivity and reliability
 - Enhance safety
- Goal: Minimize impacts on public health and the environment from transportation \bullet
 - Improve public health outcomes
 - Minimize air/noise pollution and greenhouse gas emissions
 - Minimize or avoid impacts to cultural or natural resources







Public Workshop Review

Two-Phase Alternatives Development Process





Phase 2 **Alternatives**

• Four Additional Service Alternatives



Phase 1 Service Alternatives Recap

Common Attributes	Lower Investment & Higher Inve
Service Type	One-seat ride from North Adams to
Number of Stations	4 (North Adams, Greenfield, Fitchbur
Frequency	5 trains daily (1 AM peak, 2 midday
Schedule Times	Schedule times selected for trip purposes; secondary bias Greenfield
Other uses of ROW	Assumes commuter schedules
Dwell Time at Stations	2 minutes (Amtrak Schedu
Equipment Type	Diesel trains with Amfleet passenger cars a
MBTA Infrastructure	No modification to MBTA

Unique Attributes	Lower Investment	
Track Infrastructure Improvements	Limited to signal improvements (including PTC) and upgrade of Class 1 track at PAS East Deerfield Freight Yard; some trackage additions to support meet-pass locations; no change in superelevation on PAS corridor	More supe capa trac



estment Alternatives

o Boston North Station

rg, Boston North Station)

1 PM peak, 1 evening)

toward connection with North-South Service at

s and freight trains

uling Standard)

nd same consist as Valley Flyer

infrastructure

Higher Investment

e track rehabilitation and improvements to support erelevation and increase in track class to fully use bability of the train to match superelevation; some ackage additions to support meet-pass locations



Phase 1 Service Alternatives – Initial Evaluation

Evaluation Criteria	Lower Investment				
Coverage Area and Populations Served	North Adams, Greenfield, Fitchburg and Boston North Station	No			
Environmental Impacts	Minimal potential environmental impacts				
Passenger Rail Impacts	Not expected to impact MBTA operations				
Travel Times	3 hours 55 minutes eastbound 3 hours 59 minutes westbound				
Economic Impacts	\$1,248,000 to \$3,293,000 transportation cost savings 2,964 construction jobs (year 1) \$424,000,000 construction output (year 1)				
Cost Effectiveness	\$7,358,100 capital cost per mile \$18,735 to \$49,472 capital cost per rider \$215 to \$568 annual operating cost per rider				
Freight Rail Impacts	10 minutes of average freight delay estimated				
Annual VMT Reduction	-2,313,821 to -6,105,127				



Higher Investment

rth Adams, Greenfield, Fitchburg and Boston North Station

Minimal potential environmental impacts

Not expected to impact MBTA operations

2 hours 48 minutes eastbound2 hours 58 minutes westbound

\$1,932,000 to \$5,193,000 transportation cost savings **4,912** construction jobs (year 1) **\$714,000,000** construction output (year 1)

\$15,403,875 capital cost per mile \$27,390 to \$73,107 capital cost per rider \$150 to \$401 annual operating cost per rider

10 minutes of average freight delay estimated

-3,754,257 to -10,128,225



Public Workshop Feedback – Phase 2 Alternatives

Consider additional stops (e.g., Shelburne Falls, Athol/Orange, Gardner, Porter Square)

Consider seasonal attractors



Evaluate a connection to Albany

Consider potential upgrades to support higher speeds



Public Workshop Feedback – Comments/Questions

Ridership

Projections Cost Estimation





Initial Ridership Estimation Process







Updated Ridership Estimation Process







Overview of Travel Purpose in the Corridor





Source: Streetlight Data, 2019



Station Catchment Areas for LBS Trips

Stations in Phase A Alts





Effect of Added Stations



Public Workshop Feedback – Clarifications: Cost Estimation

- Cost estimation is the process of forecasting the cost of building an infrastructure project
 - Considers factors such as materials, location, equipment, and labor
 - Process depends upon level of design
- Northern Tier is at pre-design stage
 - Contingency costs account for unknown, but expected elements of the project
- Cost estimates are based on material, equipment, and labor costs from recent railroad construction projects in Massachusetts and surrounding states





Public Workshop Feedback – Clarifications: Cost Estimation

Cost Categories





Civil System Contingency at 0% Design

Engineering and Permitting



Public Workshop Feedback – Clarifications: Cost Estimation

- Costs of track components were refined •
- The typical practice of recycling rail was incorporated
- Rolling stock estimates were updated with new assumptions on consists and recent rolling stock purchases
- Station estimates reflect accessible station features \bullet







Phase 2 Alternatives Development and Evaluation

Proposed Phase 2 Service Alternatives

Based on input received on the two initial alternatives, four additional service ulletalternatives are proposed:

Alternative 3 – Electrified Service

Alternative 4 – Full Local Service

Alternative 5 – Albany Extension

Alternative 6 – Northern Tier Rail Link





Proposed Phase 2 Service Alternatives Alternative 3 – Electrified Service



Cost of electrification for the corridor west of the MBTA Fitchburg Line



Service Type

- 5 Trains/day
- All Stops

Stations

- North Adams
- Greenfield
- Athol
- Fitchburg
- Ayer
- Porter
- North Station

- New double track in Charlemont
- Track upgraded to Class 3 and 4
- Overhead
 electrification
- Crossing renewals
- Bridge rehabilitation
- Signal replacement & Positive Train Control
- North Adams layover



Proposed Phase 2 Service Alternatives Alternative 4 – Full Local Service





Service Type

- 5 Trains/day
- All Stops

Stations

- North Adams
- Shelburne Falls
- Greenfield
- Athol
- Gardner
- Fitchburg
- Porter
- North Station

- New double track in Buckland
- Track upgraded to Class 3 and 4
- Crossing renewals
- Bridge rehabilitation
- Signal replacement & Positive Train Control
- North Adams layover



Proposed Phase 2 Service Alternatives Alternative 5 – Albany Extension







Service Type

- 5 Trains/day
- All Stops •

Stations

- Albany (NY)
- Schenectady (NY)
- North Adams
- Greenfield
- Fitchburg
- Porter
- North Station

- New double track:
 - Charlemont, •
 - Stillwater (NY)
 - Clifton Park (NY)
- Track upgraded to Class 3 and 4
- Crossing renewals
- Bridge rehabilitation
- Signal replacement & Positive Train Control
- Uses Albany layover •



Proposed Phase 2 Service Alternatives Alternative 6 – Northern Tier Rail Link





Service Type

- 5 Trains/day
- Connection to MBTA System at Fitchburg

Stations

- North Adams
- Greenfield
- Athol
- Fitchburg (for connections to MBTA Commuter Rail)

- Track upgraded to Class 3 and 4
- Rehabilitate siding in Fitchburg
- Crossing renewals
- Bridge rehabilitation
- Signal replacement & Positive Train Control
- North Adams layover



Proposed Phase 2 Service Alternatives

Total Project Cost Comparisons

Alternative or Project	Total Project Cost per Route Mile	Total Miles per Route
Alternative 1 – Lower Investment	\$ 6,187,280	142
Alternative 2 – Higher Investment	\$ 11,064,097	142
Alternative 3 – Electrified Service	\$ 20,609,150	142
Alternative 4 – Full Local Service	\$ 11,200,458	142
Alternative 5 – Albany Extension	\$ 8,803,744	223
Alternative 6 – Northern Tier Rail Link	\$ 10,969,819	142
Hartford Line	\$18,946,651	62
South Coast Rail	\$ 12,647,189	76





Proposed Phase 2 Service Alternatives Evaluation

Evaluation Criteria	Alt. 1 – Lower Investment	Alt. 2 - Higher Investment	Alt. 3 – Electrified Service	Alt 4 Full Local Service	Alt. 5 - Albany Extension	Alt 6. – Northern Tier Rail Link
Frequency	5 Trains per day	5 Trains per day	5 Trains per day	5 Trains per day	5 Trains per day	5 Trains per day
Coverage Area and Populations Served	North Adams, Greenfield, Fitchburg, North Station	North Adams, Greenfield, Fitchburg, North Station	North Adams, Greenfield Athol, Fitchburg, Ayer, Porter, North Station	North Adams, Shelburne Falls, Greenfield Athol, Gardner Fitchburg, Porter, North Station	Albany (NY) Schenectady (NY) North Adams, Greenfield, Fitchburg, Porter, North Station	North Adams, Greenfield, Fitchburg, MBTA Commuter Rail Stations (via Transfer at Fitchburg)
Eastbound Travel Times North Adams to Boston	3 hours, 48 mins	2 hours, 48 mins	2 hours, 50 mins	2 hours, 59 mins	2 hours, 49 mins	3 hours, 22 mins
Greenfield to Boston	2 hours, 31 mins	2 hours, 0 mins	2 hours, 4 mins	2 hours, 8 mins	2 hours, 2 mins	2 hours, 34 mins
Maximum Speeds	60 mph (PAS), 80 mph (MBTA)	60 mph (PAS), 80 mph (MBTA)	60 mph (PAS), 80 mph (MBTA)	60 mph (PAS), 80 mph (MBTA)	60 mph (PAS), 80 mph (MBTA)	60 mph (PAS), 80 mph (MBTA)
Environmental Impacts	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Passenger Rail Impacts	None	None	None	None	None	None
Freight Rail Impacts	Minimal delay estimated	Minimal delay estimated	Minimal delay estimated	Minimal delay estimated	Delays west of North Adams TBD	Minimal delay estimated
Community/Safety Impacts Grade Crossings Impacted	69 crossings	69 crossings	69 crossings	69 crossings	119 crossings	69 crossings
*The average time travel by car between North Adams and Boston is 2 hours and 48 minutes, between Greenfield and Boston 2 hours and 8 minutes * Schedules were built with the goal to minimize conflicts with freight rail convice and to create no conflict with MRTA convice						IASSDOT

* Schedules were built with the goal to minimize conflicts with freight rail service and to create no conflict with MBTA service



30

Proposed Phase 2 Service Alternatives Evaluation

Comparison to Other Services

Evaluation Criteria	Northern Tier Passenger Rail (MA-NY)	Pere Marquette (IL- IN-MI)	Piedmont (NC)	Downeaster (ME-NH-MA)	Vermonter (VT-MA-CT-NEC)
Service	North Adams - Boston Albany, NY - Boston	Chicago, IL – Grand Rapids, MI	Charlotte, NC – Raleigh, NC	Brunswick, ME – Boston, MA	St. Albans, VT – Washington, DC
Frequency	5 Trains per day	1 Train per day	3 Trains per day	5 Trains per day	1 Train per day
Distance	 142 miles (Boston – North Adams) 223 miles (Boston – Albany, NY) 	176 miles	173 miles	145 miles	308 miles (St. Albans, VT – New Haven, CT) 605 miles (St. Albans, VT – Washington DC)
Population of Service Area (within 25 miles)	6.7 million	6.5 million	4.9 million	5.1 million	33.8 million
Annual Ridership	3,900 -304,200	96,500	211,000	550,000	98,000

Northern Tier operates over a shorter distance than the other services with comparable populations. Ridership estimates are comparable





Phase Two Key Takeaways

- All alternatives estimated to provide connectivity, mobility, and choice
- All alternatives estimated to provide positive environmental and economic \bullet impacts
- Alternative 3 (Electrified Service) and Alternative 4 (Full Local Service) generate higher ridership levels and the measurements associated with them, including transportation cost savings and VMT reduction







Working Group Discussion

Summary of Proposed Alternatives

Evaluation Criteria	Alt. 1 – Lower Investment	Alt. 2 - Higher Investment	Alt. 3 – Electrified Service	Alt 4 Full Local Service	Alt. 5 - Albany Extension	Alt 6. – Northern Tier Rail Link
Frequency	5 Trains per day	5 Trains per day	5 Trains per day	5 Trains per day	5 Trains per day	5 Trains per day
Coverage Area and Populations Served	North Adams, Greenfield, Fitchburg, North Station	North Adams, Greenfield, Fitchburg, North Station	North Adams, Greenfield Athol, Fitchburg, Ayer, Porter, North Station	North Adams, Shelburne Falls, Greenfield Athol, Gardner Fitchburg, Porter, North Station	Albany (NY) Schenectady (NY) North Adams, Greenfield, Fitchburg, Porter, North Station	North Adams, Greenfield, Fitchburg, MBTA Commuter Rail Stations (via Transfer at Fitchburg)
Eastbound Travel Times North Adams to Boston	3 hours, 48 mins	2 hours, 48 mins	2 hours, 50 mins	2 hours, 59 mins	2 hours, 49 mins	3 hours, 22 mins
Greenfield to Boston	2 hours, 31 mins	2 hours, 0 mins	2 hours, 4 mins	2 hours, 8 mins	2 hours, 2 mins	2 hours, 34 mins
Maximum Speeds	60 mph (PAS), 80 mph (MBTA)	60 mph (PAS), 80 mph (MBTA)	60 mph (PAS), 80 mph (MBTA)	60 mph (PAS), 80 mph (MBTA)	60 mph (PAS), 80 mph (MBTA)	60 mph (PAS), 80 mph (MBTA)
Environmental Impacts	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Passenger Rail Impacts	None	None	None	None	None	None
Freight Rail Impacts	Minimal delay estimated	Minimal delay estimated	Minimal delay estimated	Minimal delay estimated	Delays west of North Adams	Minimal delay estimated





Working Group Discussion

 General comments or questions about the alternatives evaluation?

- What next steps would you recommend?
 - Which of these alternatives best address the goals and objectives of the study?
 - Are there additional items that could be further examined?









Questions and Answers

"Raise your hand" to be unmuted for verbal questions



• Submit your questions and comments using the Q&A button



Please state your name before your question •



Please share only 1 question or comment at a time, limited to 2 minutes, to allow others to participate



 To ask a question via phone, dial *9 and the moderator will call out the last 4-digits of your phone number and unmute your audio when it is your turn.

All questions and comments are subject to disclosure for public records. Please use these functions for project related business only.







Next Steps

Next Steps

3

5

- Public Participation
- Documenting Past Efforts
- Market Analysis
- Physical, Regulatory, and ROW Ownership
- Potential Service Plans and Alternatives
- Alternatives Evaluation and Cost Estimate
- Development of Recommended Next Steps





Public Involvement Plan

Data Collection

Demographics, Land Use, Current and Projected Future Travel Patterns

Opportunities and Constraints

Develop Up to 6 Service Alternatives

Ridership Analysis, Benefit-Cost Analysis

Short-, and Long-Term Recommendations, Funding Opportunities, Draft and Final Report











