



Grand Junction Transportation Study

December 8, 2011 – 6:30 PM

Kennedy – Longfellow School, Cambridge

Meeting Agenda

- Study Purpose and Need
- Study Background
- Existing Conditions
- Study Approach
- Analysis Results – Ridership, Impacts, Costs
- Study Findings
- Next Steps
- Discussion

Study Purpose and Need

- High demand for travel to Boston from Worcester and Metro-West
- Priority for public transit access
 - Reduce congestion, local and regional traffic
 - Reduce fuel use, greenhouse gas emissions (consistent with Global Warming Solutions Act)
- Congestion at South Station

Study Background

- Commonwealth purchase of CSX rail lines
- Opportunity to expand Framingham/Worcester commuter rail service
- Stakeholder meetings – Winter 2010/2011
- Major public meeting – June 16, 2011



Key Study Findings

- Demand for increased Framingham/Worcester commuter rail service is high
- Ridership, travel benefits of additional trains are comparable: Grand Junction to North Station vs. main line to South Station
- South Station expansion can support additional Framingham/Worcester trains
- Pending South Station expansion, MassDOT is not currently pursuing Grand Junction commuter rail service

Opportunity: CSX Rail Line Purchase

- Commonwealth purchased key rail corridors
 - June 2010 - \$100 million for four lines, including Grand Junction, South Coast Rail, South Boston
 - September 2012 – Boston Main Line
 - Freight rail to Worcester, double-stack railcars
 - 2 tracks between Worcester & Boston, MBTA control
- Public transit opportunities – South Coast Rail, Framingham/Worcester commuter rail, intercity rail
- MassDOT has purchased these corridors in order to use them for transportation purposes

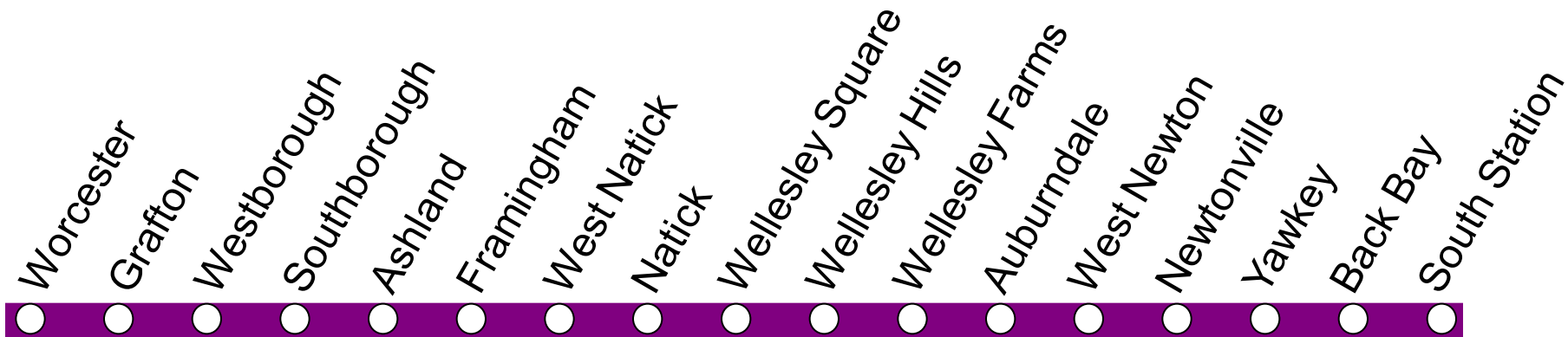


CSX Rail Line Purchase Map



Existing Conditions – Worcester Line

- 21 daily round trips from/to South Station
 - 13 to/from Worcester, 8 to/from Framingham
 - South Station congested, capacity constrained
- 17 station stops
- 6,700 daily inbound riders



Grand Junction Corridor

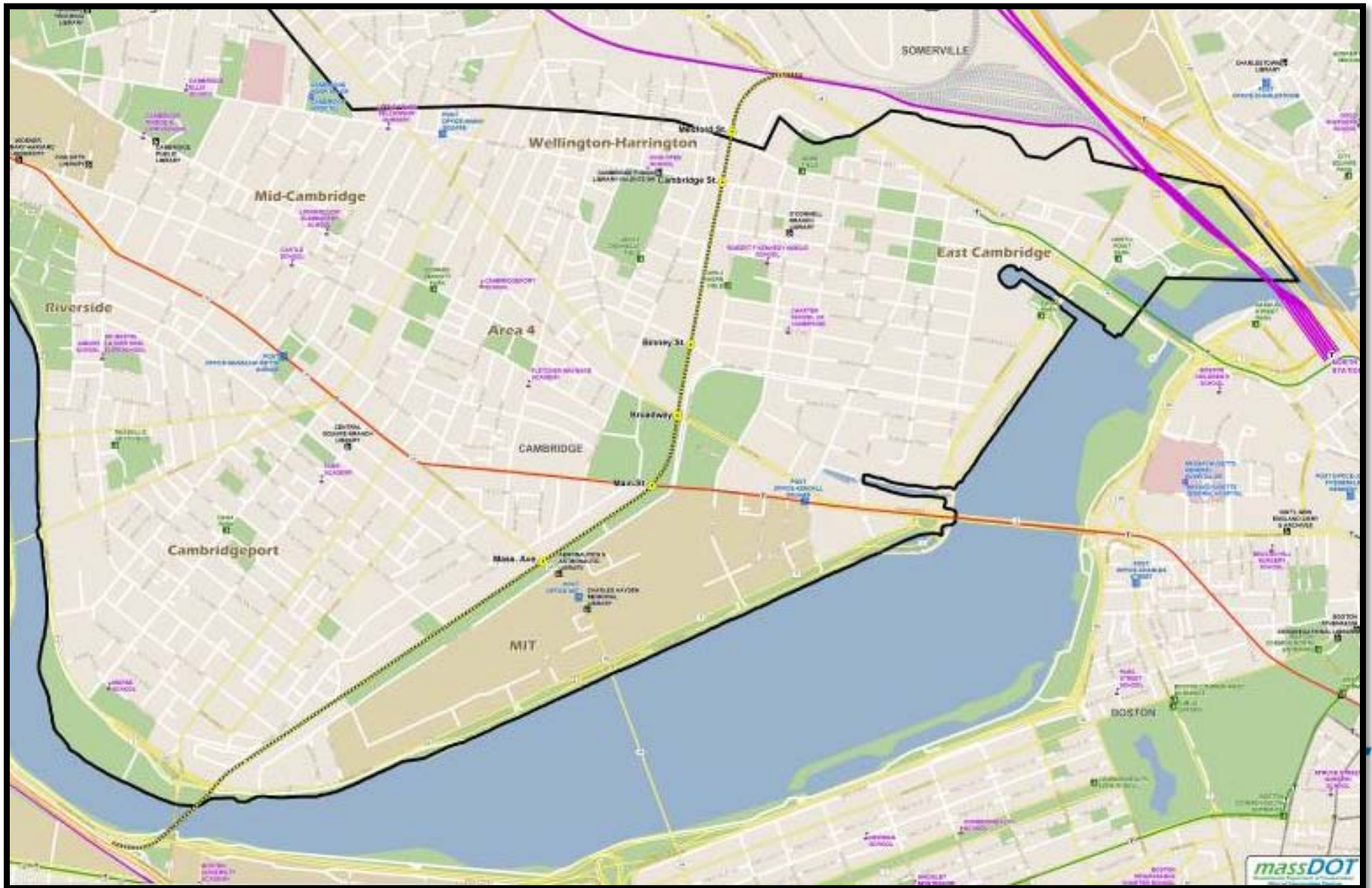
- Existing rail connection between Beacon Park and North Station
- Currently used for freight (daily fruit train to Chelsea), T and Amtrak deadhead moves
- Runs through dense neighborhoods with six at-grade crossings



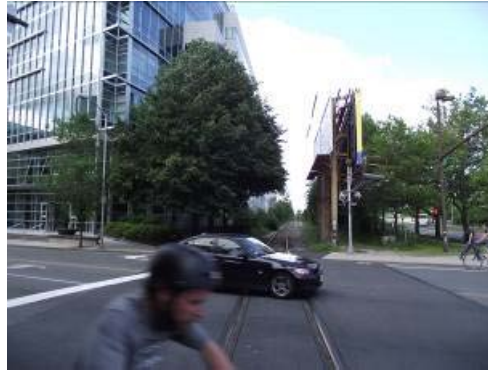
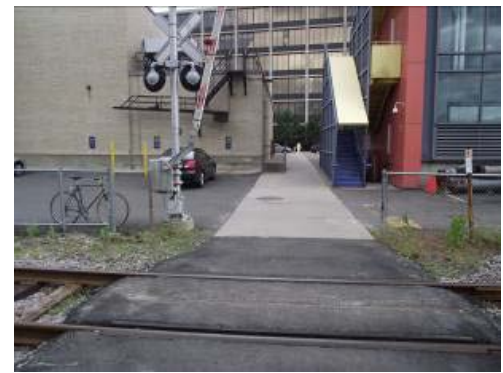
Grand Junction Corridor

- Commuter rail service on Grand Junction would use existing active rail in the same configuration
 - Single track
 - Six grade crossings
- MBTA expects to make safety improvements to Grand Junction, whether or not commuter rail service is implemented
 - Welded rail (noise reduction)
 - Signal system upgrades (fewer train stops, less idling)
 - Crossing system safety improvements (gates, lights)

Study Area



Grade Crossings



Commuter Rail Study – Analysis Framework

- Analysis of ridership, traffic, air quality, costs for a 2035 forecast year
- Alternatives analysis
 - Existing
 - Future no-build (more trains to South Station)
 - “Build” alternatives: high vs. low speed, high vs. low frequency, with vs. without Kendall Station
- Other corridor proposals – shared-use path, Urban Ring
- Public outreach

Travel Demand Model Analysis

Build
Service
Plans

Variable	Service Plans	1	2	3	4	5	6	7	8
Speed	15 mph	✓	✓			✓	✓		
	30 mph			✓	✓			✓	✓
Frequency	6 trains/day	✓		✓		✓		✓	
	12 trains/day		✓		✓		✓		✓
Station	Yes	✓	✓	✓	✓				
	No					✓	✓	✓	✓

Travel
Time

	Worcester to North Station		Worcester to Kendall		Worcester to South Station
	Existing via Orange Line	Grand Junction	Existing via Red Line	Grand Junction	Existing
Travel Time	1:37	1:28-1:35	1:44	1:18-1:20	1:30
Savings		2 – 9 mins.		24 – 26 mins.	

Public comments from June meeting

- Concerns about environmental, traffic, noise, vibration and safety impacts
- Questions regarding benefits for Cambridge
- Concerns about other corridor proposals
 - Urban Ring
 - Shared-use path (“Rail-with-Trail”)

No-Build Ridership Results

(Projections without Grand Junction Service)

■ Train Round Trips:

- 2010: 21 Worcester + Framingham trains

- 2035: 30 Worcester + Framingham trains (33% increase)

■ Boardings

- 2010: 6,700

- 2035: 9,000 (34% increase)

■ Major increase in future no-build

- 33% service increase yields 34% ridership increase – no drop-off in demand

Build Ridership Results

(Projections with Grand Junction Service)

- Grand Junction service does not have a major effect on overall ridership
 - Future No-Build (30 South Station) = 9,000 riders
 - Future Build (18 South Station, 12 North Station) = 9,300 inbound riders
 - Kendall Station: 500 riders per day
 - 250 auto diversions per day (from I-90)

Key Ridership Results

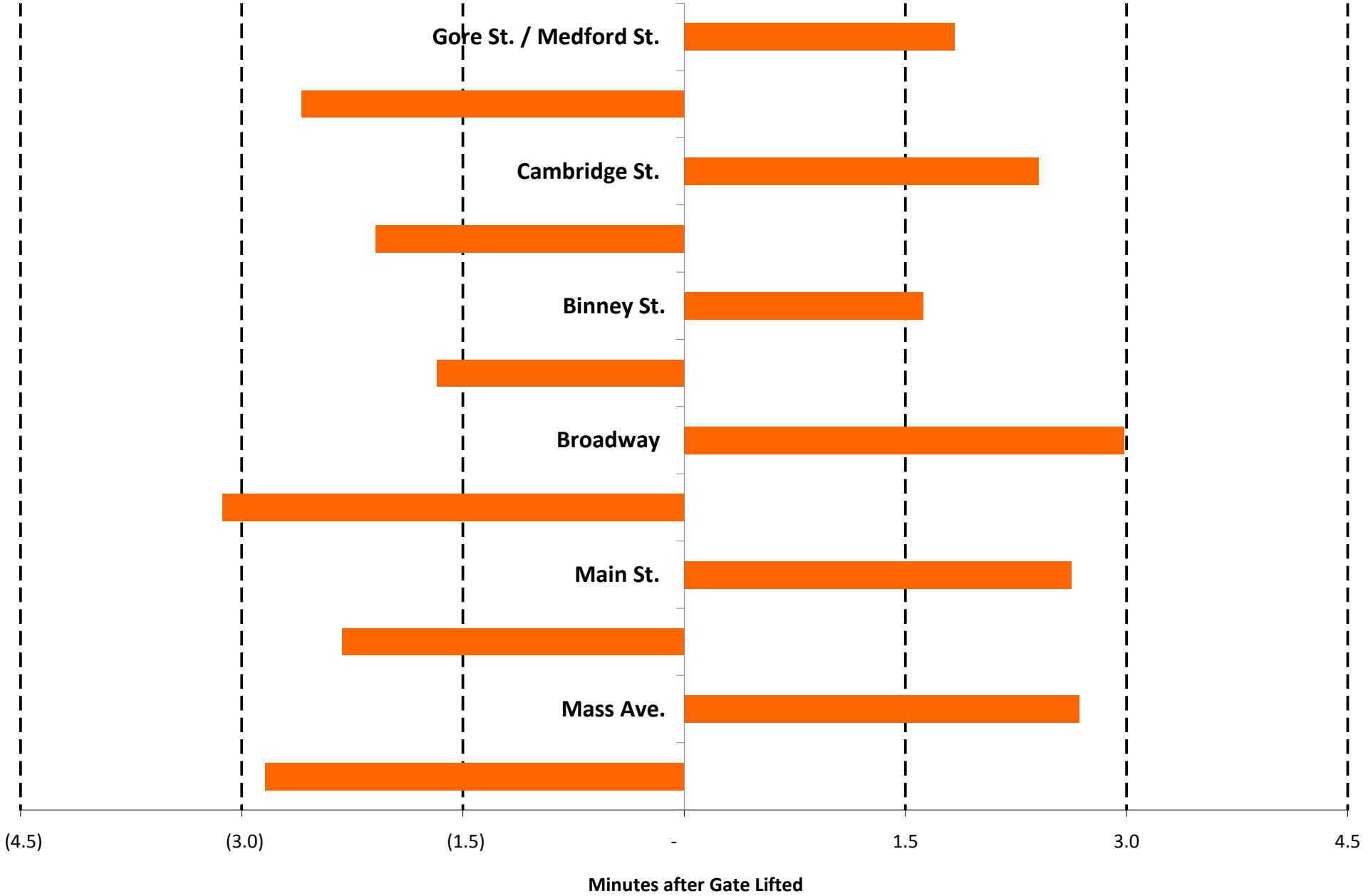
	Existing (2009)	No-Build (2035)	Build (2035)
Total Inbound Boardings	6,700	9,000	9,300
Kendall/MIT destined	5%	5%	6%
North Station destined	8%	7%	7%
South Station/ Financial District	35%	35%	35%



Traffic Analysis

- Gate Closures: 1-2 per hour
- Gate Downtime: maximum 90 seconds
- Average Delay per Vehicle (Peak Hour)
 - Existing: 15.7 Seconds
 - No-Build: 16.5 Seconds
 - Build: 19.2 Seconds
- Increased delay concentrated in a few, infrequent train crossings

**Impact of Grade Crossing Closure (AM Peak Hour)
Minutes for Queue to Clear (50th Percentile)**



Project Benefits

- Ability to provide additional public transit capacity, reduce auto trips
- Expanded mobility and choice for Worcester and Metrowest riders
- Ability to accommodate much-needed Framingham/Worcester service improvements without costly South Station expansion
- Improved commuter rail travel time to Cambridge
- Improved transit access to development in Kendall Square and East Cambridge
- Small improvement in regional air quality

Project Impacts

- Environmental impacts in Cambridge
 - Noise
 - Vibration
 - Emissions
- Delays at grade crossings for autos, pedestrians, buses, bikes
- Cost = \$30 million (plus \$13 million in maintenance program)
- Full parking lots and trains along Worcester Line



Capital Cost Breakdown

Regular Maintenance Program	<i>Cost (\$ Millions)</i>	North Station Service with Kendall Station	<i>Incremental Cost (\$ Millions)</i>
Track Work		Track Work	
Rail Upgrades	\$2.5	Signals	\$2.5
Signals	\$2.5	Traffic Signal Link	\$0.5
		Beacon Park Junction	\$3.5
Crossings			
Gates, Protection	\$3.5		
Crossing Surfaces	\$1.5		
		Station Construction	\$7.5
Design & Contingency	\$3.0	Design & Contingency	\$16.0
TOTAL	\$13.0	TOTAL	\$30.0



Coordination with Other Corridor Concepts

- Rail access maintained in all conditions
 - Rail-with-Trail
 - Urban Ring – environmental review suspended
- Commuter rail service requires identical rail footprint to today
 - Context for above projects does not change

Key Findings

- Demand for Framingham/Worcester Line is high
- Worcester – Boston corridor issues
 - Commuter rail parking capacity
 - Commuter rail train capacity
 - Terminal capacity
 - Other transit options – inter-city trains, express buses
- Service on Grand Junction to North Station vs. main line to South Station: no significant impact on ridership demand

Next Steps

- Grand Junction: track safety and operations improvements
 - Track – welded rails, signal system upgrade
 - Crossings – gates, lights and surfaces
- Completion of CSX track purchase (Boston Main Line, September 2012)
 - Allows for improvements to Worcester / Framingham Line schedule and service reliability
- South Station expansion
 - Currently in design
 - Necessary to meet current growth projections



Future Planning Issues

- Framingham/Worcester improvements
 - Schedule improvements
 - Demand for additional parking along line
 - Civic engagement in Worcester, MetroWest
- Potential options for Grand Junction line
 - Rail with trail
 - Bus rapid transit
 - Intercity rail service
 - Diesel multiple unit (DMU)
 - Commuter rail

Discussion



<http://www.mass.gov/massdot/grandjunction>

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