15 Key Bus Routes

- 850+ bus stops
- Highest ridership & most frequent service
- Over 35% of stops serve minority/low Income neighborhoods
Key Bus Route Ridership

- 15 Routes Account for 33% of Bus Ridership

172 Weekday Routes

- All Other Bus Routes
- Key Routes

Average Daily Ridership

- All Other Bus Routes
- Key Routes
Program Implementation

- Key Bus Routes established in 2006
- Planning for improvements on two routes started in 2009
- $7 million in FTA Stimulus funds obtained in 2010
- Planning and design: 2011-2013
- Construction: 2013-14
Program Goals

- **More reliable bus service**
  - less bus bunching & overcrowding

- **Faster trips**
  - fewer bus stops & reduced delays

- **Improved safety & accessibility**
  - for seniors and persons with disabilities

- **Enhanced passenger amenities**
  - shelters, benches, signage, trash receptacles
<table>
<thead>
<tr>
<th>Route</th>
<th>Route Termini</th>
<th>Municipalities Served</th>
<th>Weekday Boardings</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>Forest Hills-Back Bay</td>
<td>Boston</td>
<td>14,876</td>
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<tr>
<td>28</td>
<td>Mattapan-Ruggles</td>
<td>Boston</td>
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<td>66</td>
<td>Harvard-Dudley</td>
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<tr>
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<td>4</td>
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<td>Boston/Newton/ Watertown</td>
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<td>Arlington Hts-Harvard</td>
<td>Arlington/ Cambridge</td>
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<td>Cambridge /Belmont</td>
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<tr>
<td>116</td>
<td>Wonderland-Maverick</td>
<td>Boston/Chelsea/Revere</td>
<td>6,054</td>
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<tr>
<td>71</td>
<td>Watertown-Harvard</td>
<td>Cambridge/Watertown</td>
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</table>
Route 1 Profile

- Harvard to Dudley Station via Mass Ave
- 13,214 daily boardings
  - 4th highest in system
- 5.3 miles long
- Headways: Peak/Off Peak = 8/14 minutes
- One way trip time: 31-42 minutes
- Total stops: 65
Route 1 Improvements

Service Reliability

- Eliminated 15 stops (23%)

- Average on-time performance (OTP) increased from 65% to 70%
- Average trip times reduced by 2-4%

NOTE: Further improvements to OTP and trip time reductions are expected as customers and operators continue to get used to the changes and final project improvements are completed.
Route 1 Improvements

Accessibility & Safety

• Lengthened 22% of stops for full curbside access
• All stops now accessible
• Installed 11 new ADA landing pads
• Reconstructed sidewalks at 11 stops
• New pavement markings at 41 stops
• New bus stop signage at all stops
Route 1 Improvements

Customer Comfort & Convenience

• 3 new shelters
• 11 new benches
• 15 trash receptacles
Route 77 Profile

- Harvard Square to Arlington Hts via Mass Ave
- 7,639 daily boardings; 10\textsuperscript{th} highest in system
- Headways: Peak/Off Peak-7/12 minutes
- One way average trip time: 32 minutes
- Total stops: 76 Length: 5.8 miles
Route 77 Improvements

Service Reliability

• Eliminate 12 stops (16%)
• Relocate 12 stops

– Arlington Mass Ave project underway Spring 2014
Route 77 Improvements

Accessibility & Safety
• Move 12 stops to safer locations
• Lengthen 25% of stops for full access
• All stops will be accessible
• 22 new ADA landing pads
• Reconstructed sidewalks at 17 stops
• New pavement markings at 49 stops
• New bus stop signage at all stops
Route 77 Improvements

Customer Comfort & Convenience

- 9 new shelters
- 22 new benches
- 8 new trash receptacles
- 1 new curb extension
General Impacts to Municipalities

• Fewer stops mean reduced traffic congestion from buses pulling in and out of stops

• Stop relocations often reduce congestion at intersections

• Project resulted in a slight decrease in street parking*

• New trash barrels and benches for pedestrians

• Reconstruction of deteriorated sidewalks at some bus stops

*The adverse street parking impacts caused by bus stop lengthening was significantly mitigated by the addition of parking spaces resulting from bus stop consolidation
Examples of Typical Improvements
Bus Stop Consolidation

Former Bus Stop  New Consolidated Bus Stop  Former Bus Stop

Existing Stop Spacing: 560’
Typical Bus Stop Relocation

**Relocated Stop**
- Better for bus operations due to traffic signal
- Space for amenities
- Safer street crossings

**Original Stop**
- Crosswalk safety issue
- More parking loss
- Limited sidewalk space
250 bus stops lengthened (Approx. 40%)

To enable both bus doors to be aligned with the sidewalk
150 stops with new sidewalks

To provide a landing pad & accessible path of travel throughout the bus stop

BEFORE

AFTER
190 New Accessible Landing Pads
Improved Path of Travel

To eliminate obstacles to bus stop accessibility
500 stops with new pavement markings
Parking Enforcement

• New law with increased fines enacted in 2009
• Increased MBTA Transit Police enforcement

<table>
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<tr>
<th>Time Period</th>
<th># of Citations issued</th>
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<tbody>
<tr>
<td>2008</td>
<td>290</td>
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<tr>
<td>4/2009-12/2009</td>
<td>1536</td>
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<tr>
<td>2010</td>
<td>2266</td>
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<tr>
<td>2011</td>
<td>1961</td>
</tr>
<tr>
<td>2012</td>
<td>1908</td>
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</table>
**New Queue Jump / Right Turn Lane**

**Existing**
- Bus stop is nearside
- Westbound bus gets delayed in traffic queue at signalized intersection

**With Queue Jump Lane**
- Bus stop moved to farside
- Bus bypasses most of queue by utilizing turn lane to go straight.
New Curb Extension

Existing
• Crowded sidewalk
• Difficult for bus to access

With Curb Extension
• Space for shelter & bench
• Bus can get both doors to the curb
Transit Signal Priority

• Improves reliability by giving buses running behind schedule a lengthened green signal

• Currently active at four locations on the Route 57 (as well as eight locations on the Silver Line)

• Will be implemented at up to 50 additional City of Boston intersections in 2014.
New Bus Stop Signs at 640 Stops

Replacement of front and back signs at ALL Key Bus Route bus stops
New Benches at 185 Bus Stops
New shelters at 60 Bus Stops

25 JCDecaux/City of Boston Shelters
35 MBTA Shelters
New Trash Barrels at 260 Bus Stops
Project Status

• 90% of project work is complete
• Remaining improvements to be completed by Spring 2014:
  – Installation of 20 JCDecaux shelters
  – Installation of new bus stop signs at approximately 200 stops
  – Minor stop location adjustments at approximately 10 locations
  – Implementation of TSP at additional Boston intersections (Summer 2014).
Key Bus Route Improvement Program

Phase II

• $19 million requested in FY15-19 CIP
• Will fund improvements to an additional 15 bus routes. Level of upgrades will exceed current program*
• Upon completion, the 30 upgraded routes will serve 50% of bus customers.
• Approximately 60-75% of bus stops systemwide will be accessible

*Due to projected funding shortfalls, several improvement elements were removed from Phase 1. They included additional queue jump lanes, traffic signal improvements, curb extensions and expanded bus stop accessibility
15 Key Bus Routes

- 850+ bus stops
- Highest ridership & most frequent service
- Over 35% of stops serve minority/low Income neighborhoods
Public Outreach & Community Participation

- 50+ Public meetings held
- Flyers, e-mail blasts, press releases, newspaper ads
- Project website
- Outreach to public and elected officials
- All meetings were accessible. Materials provided in accessible format