

Key Bus Route Improvement Program

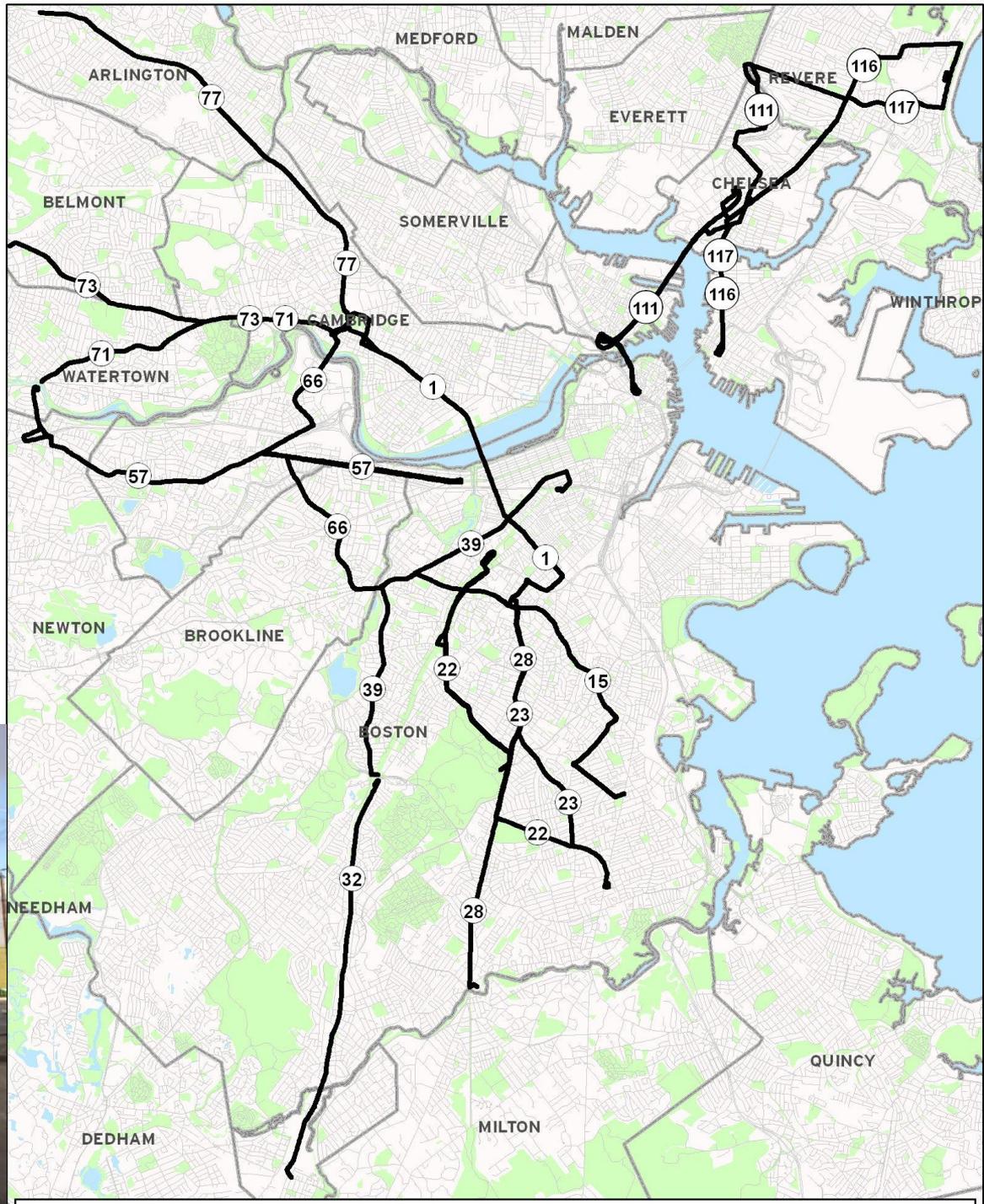
January 2014



FEB

15 Key Bus Routes

- 850+ bus stops
- Highest ridership & most frequent service
- Over 35% of stops serve minority/low income neighborhoods

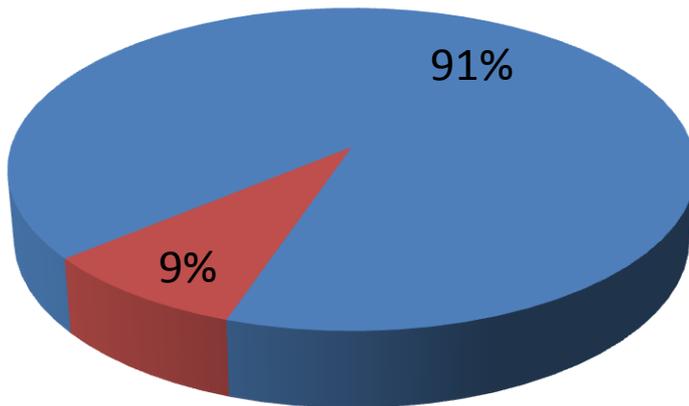


Key Bus Route Ridership

➤ 15 Routes Account for 33% of Bus Ridership

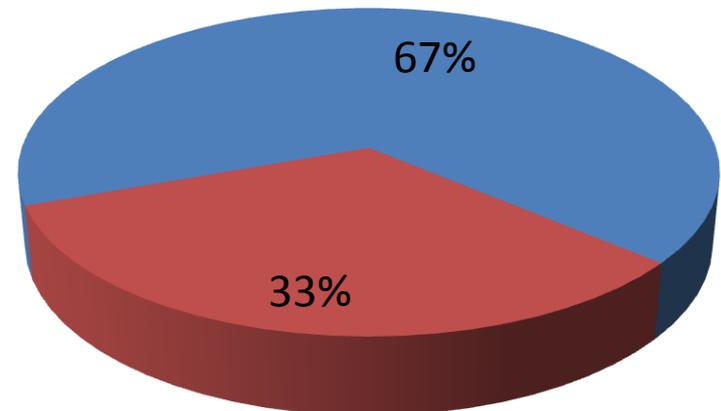
172 Weekday Routes

- 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

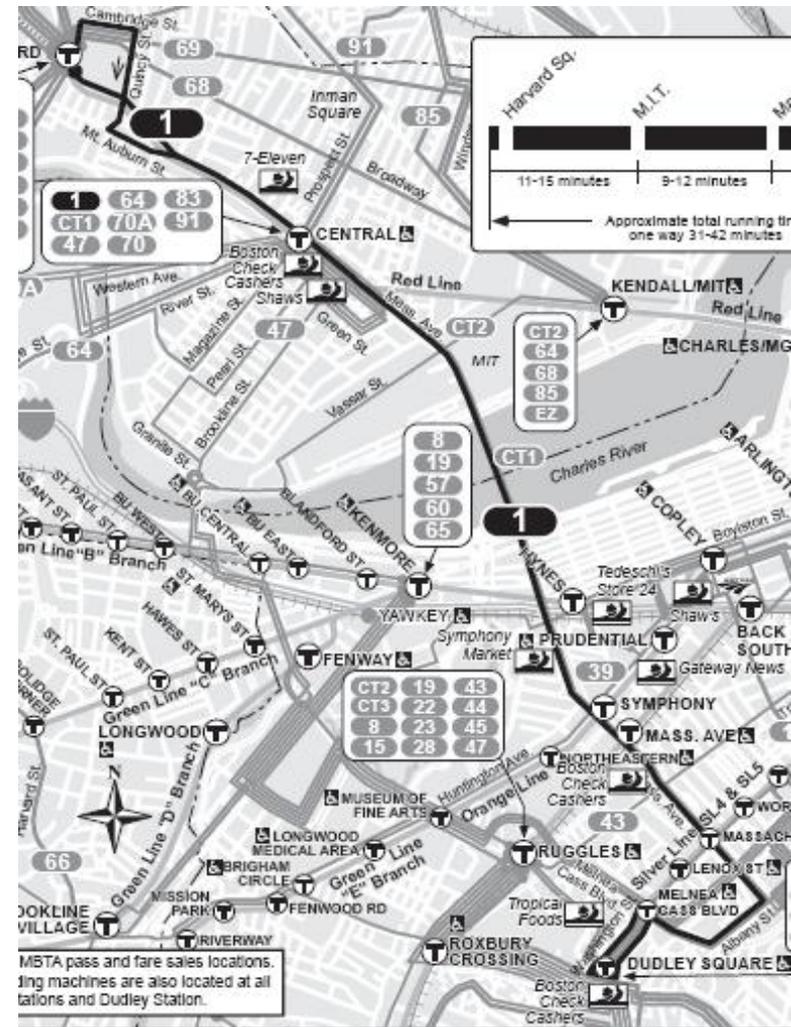
- **More reliable bus service**
 - less bus bunching & overcrowding
- **Faster trips**
 - fewer bus stops & reduced delays
- **Improved safety & accessibility**
 - for seniors and persons with disabilities
- **Enhanced passenger amenities**
 - shelters, benches, signage, trash receptacles



Route	Route Termini	Municipalities Served	Weekday Boardings	Ranking
39	Forest Hills-Back Bay	Boston	14,876	1
28	Mattapan-Ruggles	Boston	14,057	2
66	Harvard-Dudley	Boston/Brookline/ Cambridge	13,932	3
1	Harvard-Dudley	Boston/Cambridge	13,214	4
23	Ashmont-Ruggles	Boston	12,527	5
57	Watertown-Kenmore	Boston/Newton/ Watertown	12,059	6
111	Woodlawn-Haymarket	Boston/Chelsea/Revere	12,133	7
32	Wolcott/Cleary Sq-Forest Hills	Boston	11,020	8
22	Ashmont-Ruggles	Boston	8,655	9
77	Arlington Hts-Harvard	Arlington/ Cambridge	7,639	10
73	Waverly Sq-Harvard	Cambridge /Belmont	6,424	11
15	Kane Sq-Ruggles	Boston	6,308	12
116	Wonderland-Maverick	Boston/Chelsea/Revere	6,054	13
71	Watertown-Harvard	Cambridge/Watertown	5,548	14
117	Wonderland-Maverick	Boston/Chelsea/Revere	4,981	15 ₆

Route 1 Profile

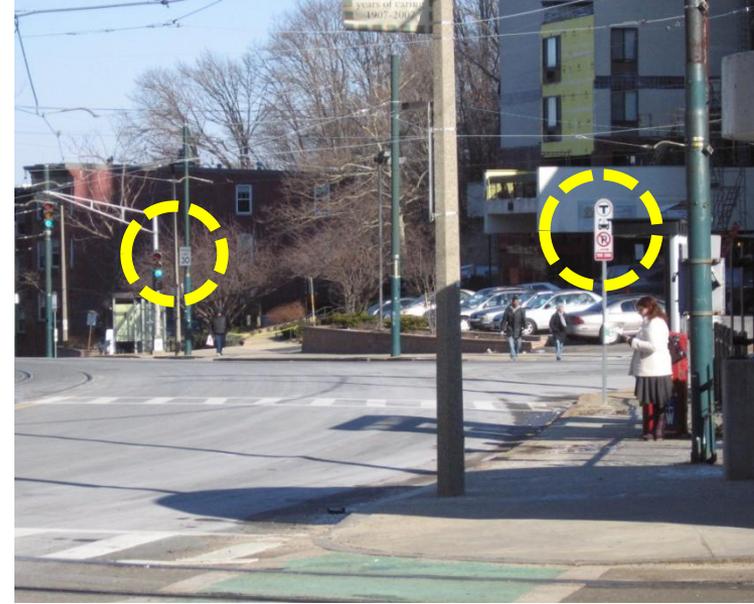
- Harvard to Dudley Station via Mass Ave
- 13,214 daily boardings
-4th highest in system
- 5.3 miles long
- Headways: Peak/Off Peak = 8/14 minutes
- One way trip time: 31-42 minutes
- Total stops: 65



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

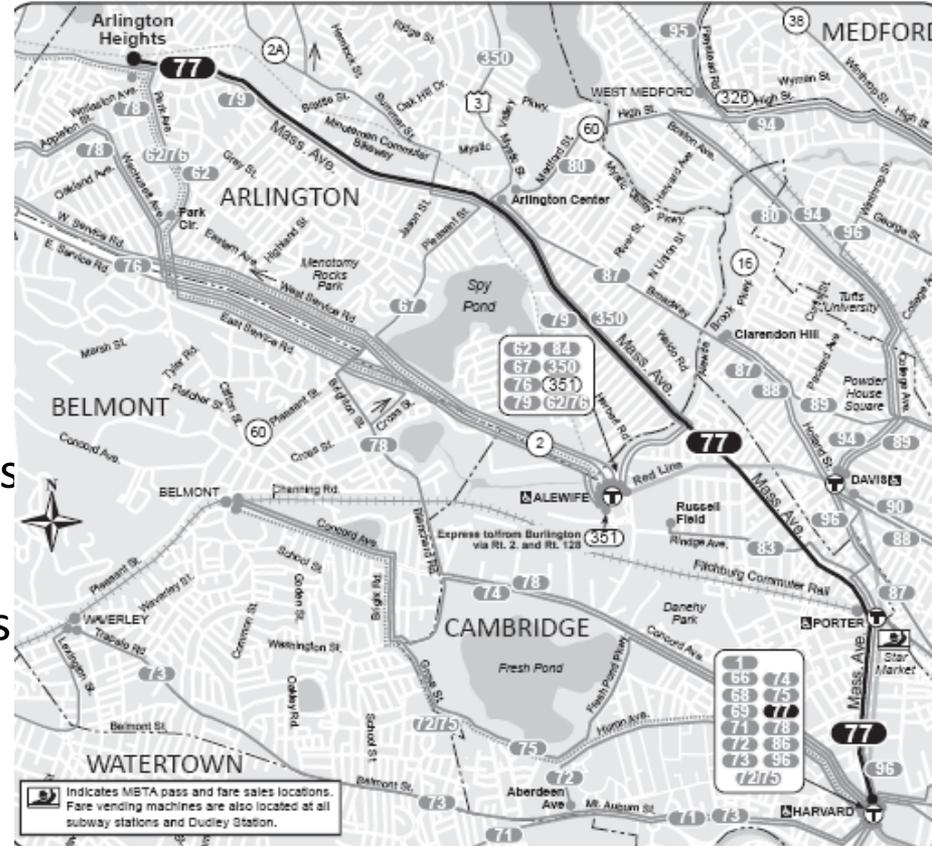
- 3 new shelters
- 11 new benches
- 15 trash receptacles



Route 77 Profile

- Harvard Square to Arlington Hts via Mass Ave
- 7,639 daily boardings; 10th 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 Arlington Heights - Harvard Station



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



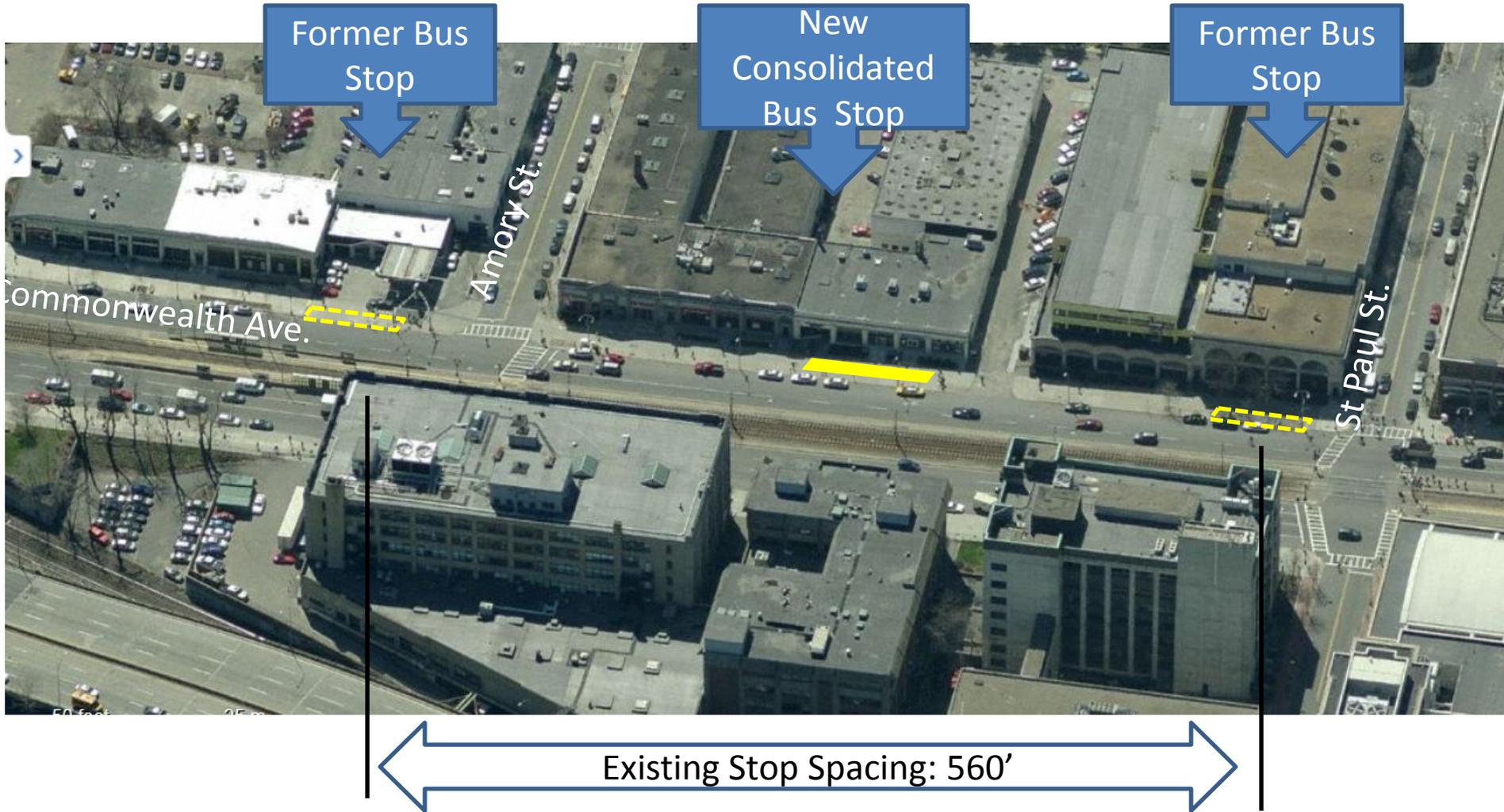
General Impacts to Municipalities

- 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



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%)

BEFORE



To enable both
bus doors to be
aligned with the
sidewalk

AFTER



150 stops with new sidewalks

BEFORE

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

AFTER



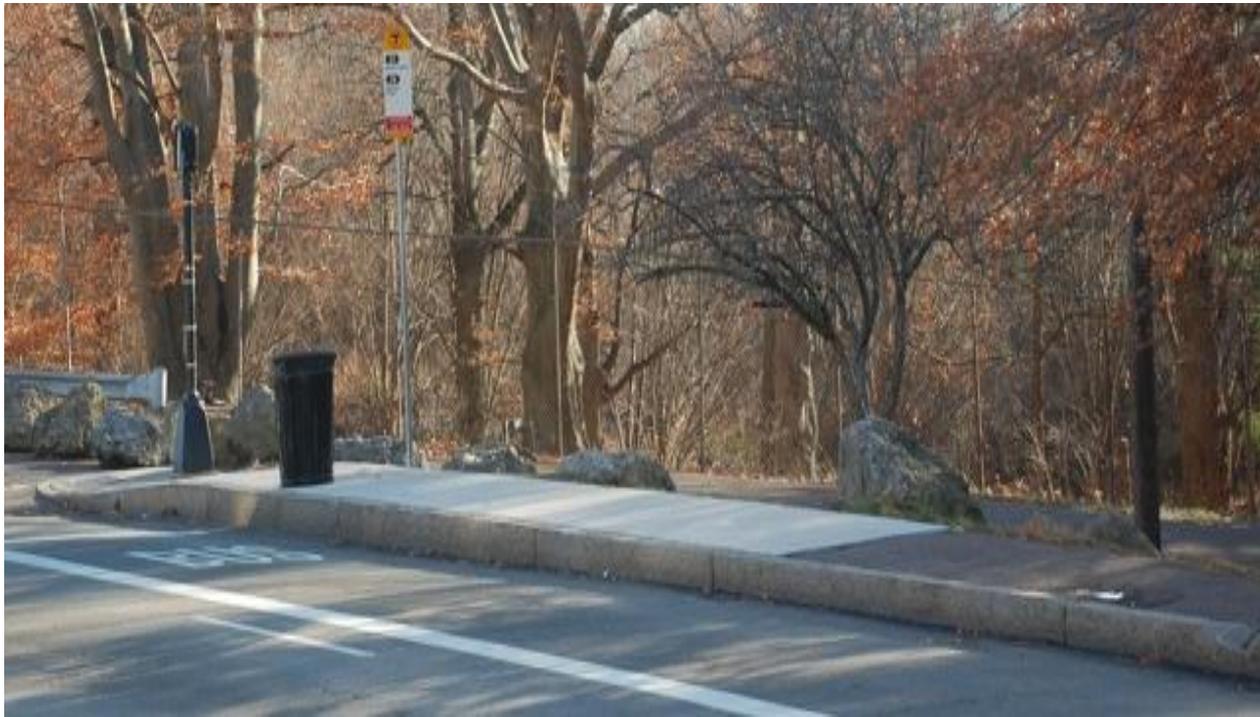
190 New Accessible Landing Pads



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

Time Period	# of Citations issued
2008	290
4/2009-12/2009	1536
2010	2266
2011	1961
2012	1908

New Queue Jump / Right Turn Lane

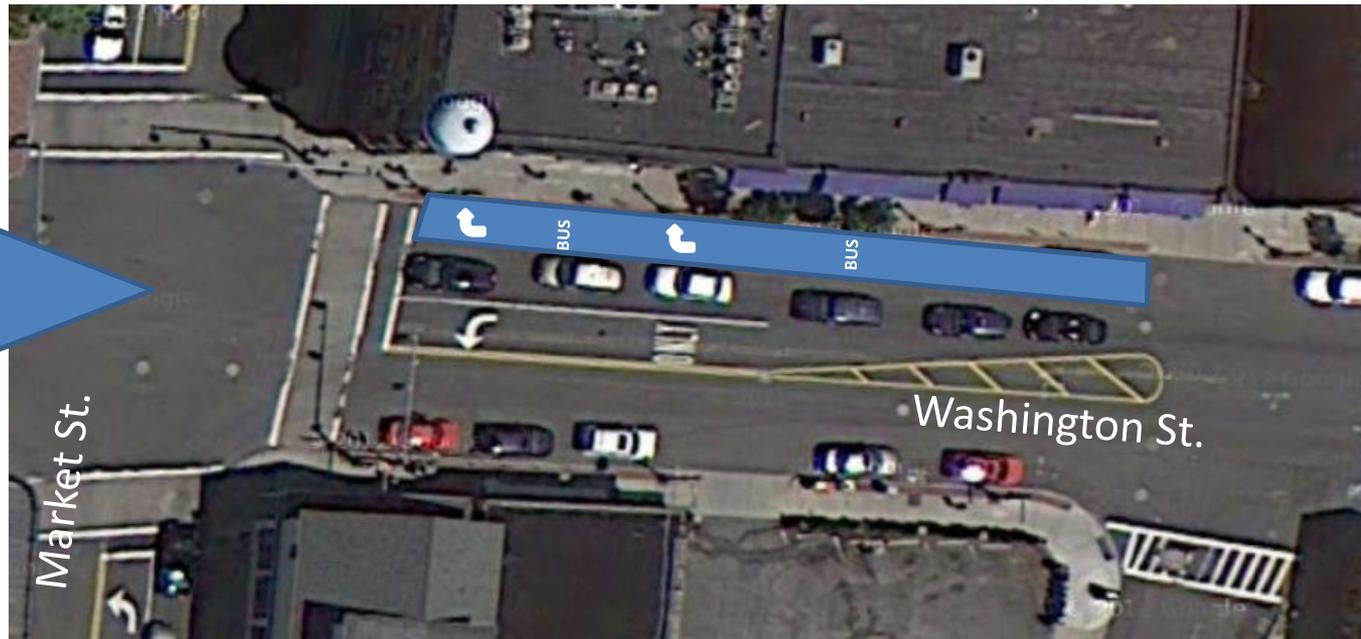
Existing

- 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

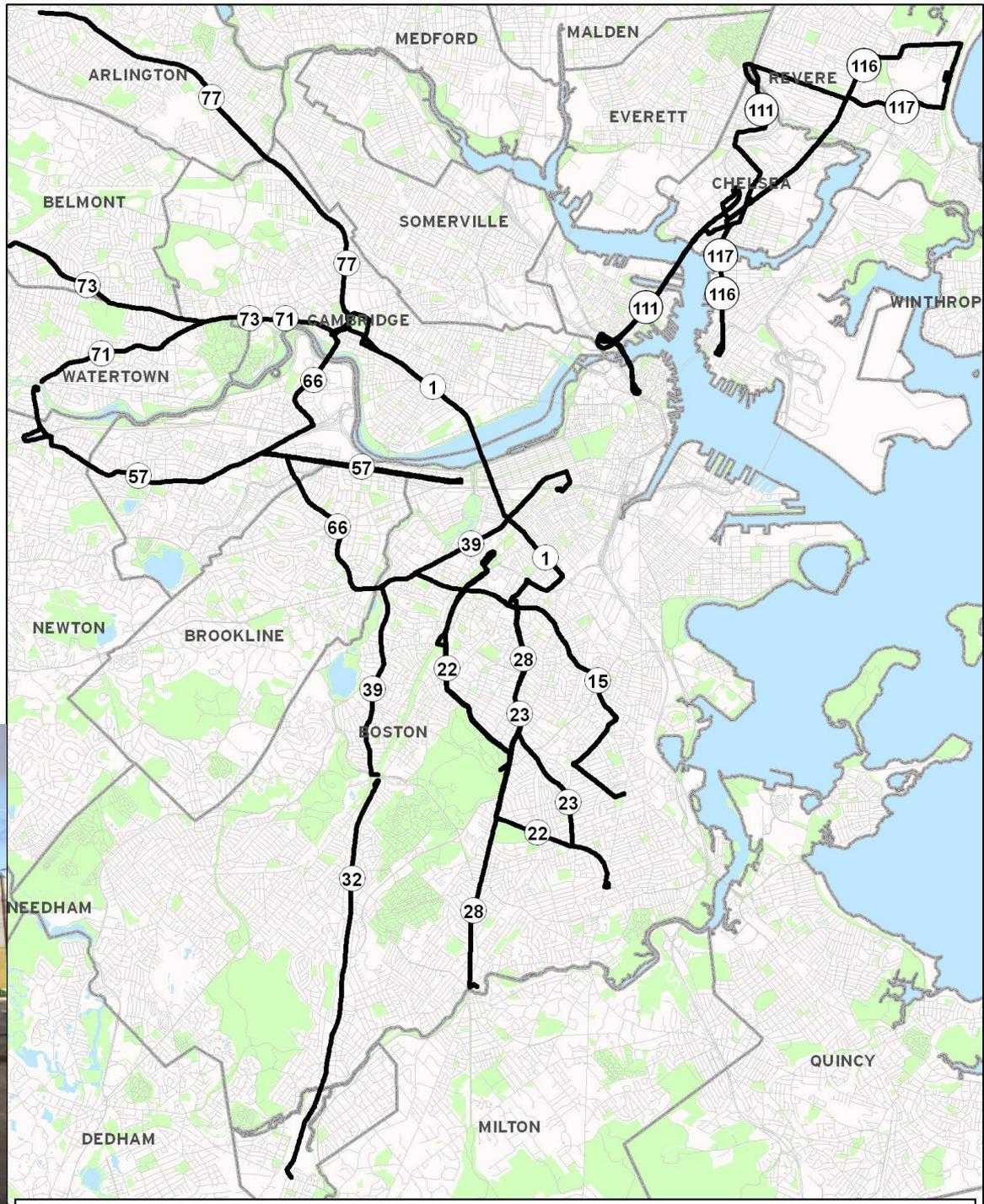
Phase II

- \$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

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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

