PATI Overview

Identify all meaningful barriers to accessibility and develop a long-term plan for achieving an accessible system using priorities developed with community input.
PATI Key Objectives

• Identify Barriers
  › Catalogue all meaningful barriers to access within public facing assets

• Establish Prioritization Criteria
  › Develop a shared set of criteria for setting priorities based on community feedback
    » What improvements, if made, would have the biggest positive impact on accessibility?

• Long-Term Planning
  › Apply criteria/develop priorities
  › Draft strategic plan/capital funding recommendations
# PATI Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
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<tr>
<td><strong>February 2016</strong></td>
<td>PATI External Engagement Committee convened</td>
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<td>Bus Stop Survey Tool Development</td>
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<td><strong>September 2016</strong></td>
<td>Bus Stop Surveys - conducted through Fall/Winter 2016</td>
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<td><strong>January 2017</strong></td>
<td>Subway &amp; Commuter Rail Tool Development</td>
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<td>Bus Stop Surveys – remaining surveys through Feb. 2017</td>
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<td>Bus Stop – data cleanup, identify service and accessibility improvements within routes and corridors</td>
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<tr>
<td><strong>Summer 2017</strong></td>
<td>Subway &amp; Commuter Rail Surveys – conducted</td>
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<td>Finalize scoring criteria to identify priorities with engagement committee</td>
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<td><strong>Early 2018</strong></td>
<td>PATI long-term planning recommendations and capital funding strategy issued</td>
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Bus Stop Surveys

Developed tablet-based survey tool application, inspired by MassDOT’s curb ramp inventory tool.

Questions include assessments of:

› Landing pad
› Path of travel through stop and to nearest crossing
› Condition of nearest crossing/curb ramps/signals
› Amenities at stop (shelters, benches, etc.)
› Potential obstructions (trees, trash cans, etc.)

Two-person field crews conducted in-person assessment using tool and BlindWays app (see appendix for background)
Bus Stop Sample Survey Questions

CURB RAMP #1

What is the width of the ramp (in)?
   Answer: 60.0 Inches

What is the cross slope of the curb ramp?
   Answer: 0.6 Percent

What is the running slope of the curb ramp?
   Answer: 4.3 Percent

Is there a level landing area?
   Answer: Yes

What is the width of the level landing parallel to the curb (in)?
   Answer: 60.0 Inches

What is the slope of the level landing parallel to the curb?
   Answer: 0.4 Percent

What is the length of the level landing perpendicular to the curb (in)?
   Answer: 60.0 Inches

What is the slope of the level landing perpendicular to the curb?
   Answer: 0.5 Percent

What is the counter slope of the gutter perpendicular to the curb?
   Answer: 0.9 Percent

What is the vertical change at the ramp connection to the roadway (in)?
   Answer: 0.3 Inches

Is there a detectable warning panel?
   Answer: Yes
Bus Stop Web Management Tool
Bus Stop Survey – Current Status

7588 stops surveyed  
As of 1/30/17

Approx. 100 remain

172 routes surveyed  
141 routes 95% complete  
As of 1/30/17
Bus Stops Surveyed

7588 stops – as of 1/30/17
Out of 7588 stops surveyed…

- **49% (3749)** are within 25 ft of a crossing
- **13% (1002)** are located near a crossing with a missing curb ramp
- **12% (906)** are located near a crossing with a curb ramp with a running slope greater than 12%
- **7% (508)** are located on a sidewalk less than 36” wide
- **12% (916)** are missing a front sign
- **2% (129)** have amenities blocking sidewalk
- **8% (640)** have a shelter
- **7% (560)** have a bench present (outside shelters)
One issue of immediate concern and requiring action is that of “critical” stops, defined as—

- There is no accessible path to/from the stop
- Boarding/exiting in the street is required

2.75% (209) of 7,588 stops surveyed deemed critical

Issue for FMCB—decide between eliminating stops or modifying these inaccessible, potentially unsafe, stops

- Elimination would not be a service cut. Customers would have access to the same bus route at a nearby (<750ft) stop
Example of a Critical Bus Stop

#6716 Walnut St opp Birchwood Ave, Saugus
Example of a Critical Bus Stop

#1116 Cambridge St & Mass Pike Exit, Cambridge
Example of a Critical Bus Stop

#2878 Mystic Ave Opp Fellsway, Somerville
Critical Bus Stops

209 stops – as of 1/30/17
Elimination vs. Modification

Service Planning is reviewing the following factors:

- Ridership
- Proximity to adjacent stops
- Title VI considerations
- Proximity to hospitals/health clinics and other facilities that primarily serve vulnerable users *(On-going review)*

Out of the 209 reviewed: 133 candidates for elimination

- 99% are used by less than 10 customers per weekday, average 730’ to next stop
- 97% are used by less than 5 customers per weekday average 730’ to next stop
- 84% are used by less than 3 customers per weekday, average 730’ to next stop
- 50% are used by less than 1 customers per weekday
d  may be fractional if only observed on sporadic days), average 760’ to next stop
- 1% (1 stop) is used by greater than 10 customers per weekday (13 total) and is 280’ to the adjacent stop
Proposed Process for Stop Elimination

**Contact** - Impacted municipalities who generally own and maintain sidewalks or other areas where stops are located. Garner support for elimination and/or ideas for modification.

**Signage** – Post announcements on affected bus stop signs outlining proposed elimination and how to comment.

**Website** - Elimination plan to be posted online and allow for public comment.

- Service alerts/social media linking to website review.

Note: If approved bus stops would likely be recommended for removal during the Summer rating—June 24, 2017.
Addendum

Blindways App Information
& GIS Mapping of Sample Queries
Background on BlindWays App

How **BlindWays Works** | GPS technology helps users navigate to within 30 feet of their destination. BlindWays brings users within 4 to 5 feet of the bus stop with clues contributed by volunteers that describe permanent landmarks near the bus stop – a tree, a fire hydrant, a mailbox.

**Accessibility first:** BlindWays was built from the ground up with accessibility in mind, using VoiceOver audio output to help users navigate to bus stops.

**Navigational tips:** The app provides navigational clues based on permanent landmarks located near the bus stop and presented in a sequence aligned with the user’s direction of travel.

**Arrival information:** BlindWays offers predictive, location-based bus arrival information.

**Nearby Stops:** Identifies the three bus stops closest to your current location.

**Favorites:** Users can easily save their most-used bus routes for future reference.

**Add Clues:** Simply select from a list of easily recognizable descriptions of the bus stop sign, nearby permanent landmarks, and/or enter free form text clues.

Developed by Perkins via a Google grant.
Stops with Crosswalk within 25’

3749 stops – as of 1/30/17
Stops with Missing Curb Ramp

1002 stops – as of 1/30/17
Stops with Ramp Slope greater than 12%

906 stops – as of 1/30/17
Stops with Less than 36” Sidewalk

506 stops – as of 1/30/17
Stops without Front Signs

916 stops – as of 1/30/17
Stops with Shelter Present

640 stops – as of 1/30/17
Stops with Bench Present

560 stops – as of 1/30/17
Stops with Amenities Blocking Sidewalk

129 stops – as of 1/30/17