



## Complete Streets Tier 2 Prioritization Plan: Town of Littleton



June 2016



# Safety Data Analysis

- Crash data reviewed as part of this Complete Streets Study were obtained from the MassDOT Crash Record System.
- Recent crash history for the Town of Littleton for the most recent three-year period available (2011-2013) were reviewed.
- 3 crashes involving Pedestrian & Bicycles:
  - King St (Rt 110) / Kimball St Intersection (Pedestrian)
  - King St (Rt 110) / Stevens St / Goldsmith St (Bicycle)
  - 8 Jennifer St; near intersection with King St (Bicycle)
- In addition to crashes involving Pedestrians & Bicycles “Hot Spots” were identified as any location experiencing 5 or more crashes per year throughout the most recent three year available period.
- The following 2 locations were identified as local “Hot Spots”:
  - Great Rd (Rt 119) / King St (Rt 110)
  - Ayer Rd (Rt 110) / King St (Rt 110)

# Windshield Survey Routes

## Procedure:

- Drive through each study corridor, passenger takes notes on roadway segment form.
- Separate form developed for roadway segments and intersections.
  - Midblock crosswalks used a roadway segment form.
- Measured roadway cross-sections.
- All intersections and midblock crosswalks were analyzed by walking.



## List of Streets Analyzed during Windshield Survey:

King St (Rt 2A/110)	Bulkeley Rd	Old Pickard Ln
Ayer Rd (Rt 2A/119)	Crane Rd	Shattuck St
Goldsmith St	Taylor St	Tahattawan Rd
Shaker Ln	Bruce St	Whitcomb Ave
Newtown Rd	Beaver Brook Rd	Oak Hill Rd
Nashoba Rd	Russel St	Powers Rd
Harwood Ave	Grist Mill Rd	
Harvard Rd	Hartwell Ave	
Foster St	Lawrence St	
	Spectacle Pond Rd	



# Roadway Improvement Projects

- **Reconstruction of Harvard Rd. – Green International Affiliates, Inc. (Green)**
  - Incorporation of “Complete Streets” design aspects.
    - Narrowed travel lanes to provide 3 ft. striped shoulders.
    - Installed “Share the Road” signs for pedestrian & bike accommodation.



**Harvard Road after reconstruction.**

- **Future reconstruction of Nagog Hill Rd. – Green**

- Improvements to roadway geometry.
- Incorporation of “Complete Streets” design aspects.
  - Installing “Share the Road” signs for pedestrian & bike accommodation.
  - Installing “Sharrows” along the roadway surface.



**Example of roadway with “Share the Road” signs & “Sharrows”.**



# Roadway Improvement Projects

- **Reconstruction of New Estate Rd. - Green**

- Currently under construction.
- Typical cross section with grass buffer between curb & sidewalk:
  - 10 ft. travel lanes (unmarked)
  - 1 ft. shoulders (unmarked)
  - 3 ft. grass buffer
  - 5 ft. sidewalk
- Typical cross section without grass buffer:
  - 10 ft. travel lanes (unmarked)
  - 1 ft. shoulders (unmarked)
  - 5 ft. sidewalk

- **Proposed sidewalk construction on Russell St. – Green**

- Construction of 5 ft. sidewalk on east side of Russell St.
  - Sidewalk construction starts at Delaney Dr. extending north, connecting to existing sidewalk on the south side of Great Rd. (Rt 119).
  - Pedestrian crossing provided across east leg of Great Rd. (Rt 119) at the signalized intersection with Russell St & Constitution Ave.



# Needs Improvement – Littleton Common

- Approximately 75 ft. crossing across King St (Rt 2A/110) at Goldsmith St.
  - One pedestrian crossing warning sign (W11-2) present at the north end of the crossing facing WB traffic.
  - No advanced warning signage provided.
- No bicycle accommodation throughout the Common, particularly from King St (Rt 2A/110) to Stevens St to Great Rd (Rt 2A/119), no bike racks present.
- No detectable warning panels installed on curb ramps at intersection of Meeting House Rd/Adams St/Stevens St/Great Rd.





# Needs Improvement – Foster St

- High pedestrian & bicycle interest due to Littleton / I-495 Commuter Rail Station.
- Identified by January 2016 StreetScan study as the #1 highest priority road in Littleton for roadway improvements.
- No pedestrian or bicycle accommodations south of Tahattawan Rd, including no sidewalk or crossing at the commuter rail station entrance.
- Roadway pavement is in poor condition, further hindering safe pedestrian & bicycle travel.



Typical section of Foster St, south of Tahattawan Rd.



## Needs Improvement - Taylor St

- Provides access to Foster St in vicinity of Littleton / I-495 Commuter Rail Station.
- Sidewalk along northern segment of Taylor St does not connect to Foster St.
- Approximate  $\frac{1}{2}$  mile gap in the sidewalk on the west side between house #119 and Route 2 overpass.
- Majority of roadway segment is too narrow to accommodate bicyclists (10 ft lanes per direction, no shoulders).



Typical section of Taylor St with no sidewalk.



# Needs Improvement – Great Rd (Rt 2A/119)



Segment of Great Rd from Littleton Common to Acton Toyota.



# Needs Improvement – Great Rd (Rt 2A/119)

- The 2002 Littleton Master Plan expresses interest in a bike path along Great Rd (Rt 2A/119) to allow residents living in the Town's southeastern areas safer access to the Town Common.
- The typical section of Great Rd east of Acton Toyota consists of 11.5 ft travel lanes and 3 ft shoulders.
  - No pedestrian or bicycle accommodations east of Acton Toyota.
- High travel speeds along this segment of Great Rd in addition to no sidewalks or bike lanes / wide shoulders result in unsafe travel conditions for pedestrians and bicycles.

# Needs Improvement – King St (Rt 2A/110) @ Great Rd (Rt 119)

- Curb ramps are shared and likely too steep on all corners of the 4-way signalized intersection.
- Detectable warning panels are not present on any of the curb ramps.
- Pedestrian push buttons are located far distances from the curb ramps on  $\frac{3}{4}$  corners of the intersection.
- No bicycle accommodation at the signalized 4-way intersection.





# Needs Improvement – King St & Rogers St in vicinity of Castles in the Trees Playground

- No detectable warning panels installed on the curb ramps at the crossing.
- Old MUTCD pedestrian warning signs (W11-2) installed at the crosswalk location do not include diagonal downward pointing arrow plaques (16-7P) mounted below.
- Advanced pedestrian warning sign (Old W11-2) with no “Ahead” plaque (W16-9P) provided for WB traffic only, no advanced warning signage provided for EB traffic.



# Needs Improvement – Russell St @ King St (Rt2A/110)

- Curb ramps are in poor shape, with a large pothole present at the transition from the sidewalk to the roadway surface at the northwest corner of the intersection.
- Detectable warning panels are not present on either of the curb ramps.
- No crosswalk across the Russell Street approach for pedestrians traveling along the sidewalk on the north side of King St.
- Sidewalk along north side of King St is in poor condition with trip hazards within the sidewalk path in vicinity of the intersection.





# King St (Rt 2A/110) Sidewalk

- Sidewalk is in poor condition when it transfers from concrete to asphalt west of the Castle in the Trees Playground.
- Curb ramps, where present, are in poor condition with deteriorating asphalt.
- Few detectable warning panels present (entire corridor).
- Trip hazards are present on the sidewalk due to deteriorating asphalt.



Sidewalk on north side of King St at Russel St.



Sidewalk on north side of King St just west of Castle in the Trees Playground.



# Inconsistent Use of Pedestrian Warning Signage

- Yellow background and fluorescent yellow-green background are both used approaching the crossing location.
- Redundant use of pedestrian warning signage at the crossing location, W11-2 sign in addition to S1-1 sign is unnecessary.



King St (Rt 2A/110) traveling WB approaching Littleton High School entrance.



# Lack of Detectable Warning Panels



Corner of King St (Rt 2A/110) / Russell St intersection.



Bank of America entrance off of Great Rd (R 2A/119).



Littleton Middle School entrance off of Russell St.



Pondside at Littleton Apartments entrance off of King St (Rt 2A/110).



# Curb Ramp Deficiencies



Walkway through grass area in Littleton Common.



Southwest corner of the Great Rd (Rt 2A/119) / Stevens St / Adams St / Meeting House Rd intersection.



Mid-block crossing at the Sunny Delight Beverages Co. factory.



Southwest corner of the King St (Rt 2A/110) / Great Rd (Rt 2A/119) intersection.



# Lack of Bike Racks in Key Locations



Bike locked to hand railing outside of Littleton Sub Shoppe.



Wide brick buffer between the curb and sidewalk on Stevens St.



Basketball Courts at Castle in the Trees Playground.



Shopping Plaza located on south side of Great Rd (Rt 2A/119).



# Two Brother's Trail





# Summary

## Common Types of Issues/Needs

- Sidewalk condition
- Lack of sidewalks / connectivity
- ADA compliancy
- Roadway surface / width condition
- Crosswalks
- Bicycle Accommodation
  - Storage
  - Signs / pavement markings