

Wollaston Walk Assessment Quincy, MA

August 5, 2014

Massachusetts Department of Transportation
Bicycle and Pedestrian Safety Program

in partnership with Massachusetts Department of Public Health

MAKING MASSACHUSETTS MORE WALKABLE

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Report Scope and Purpose

WalkBoston conducted this walk assessment as part of the Massachusetts Department of Transportation Bicycle and Pedestrian Safety Program, in association with the Massachusetts Department of Public Health. WalkBoston is a pedestrian advocacy organization whose mission is to make walking safer and easier in Massachusetts to encourage better health, a cleaner environment and vibrant communities. The purpose of the walk assessment is to develop knowledge and awareness of the pedestrian environment at the state and municipal level.

This walk assessment report summarizes the observations made along the walk route and makes recommendations for improvements to the built environment. The observations vary from specific infrastructure deficits (e.g., faded crosswalk, uneven sidewalk) to general comments on traffic speeds or land use patterns (e.g., vacant storefronts). Likewise, the recommendations range from individual fixes (e.g., paint the crosswalk) to suggestions for further study (e.g., evaluate the feasibility of installing raised crosswalks). The assessment is not meant to be a complete inventory of infrastructure deficiencies, nor is it meant to provide specific designs for improvement.

WalkBoston leads these assessments as a means to build local capacity for improving the built environment for walking and not as a complete inventory of walking conditions. WalkBoston staff members are not licensed design or engineering professionals. This report may be used as a resource for municipal staff and for design professionals who may be engaged by municipalities to program and design infrastructure improvements.

Wollaston Walk Assessment

WalkBoston led a walk assessment at the Wollaston T station in Quincy, MA to evaluate pedestrian safety at the station and along the major road corridors and intersections leading to the T station. The assessment fulfilled several mutually beneficial goals by bringing together federal agencies, state agencies, municipal departments, and advocacy groups around the central issue of implementing built environment solutions to improve pedestrian safety.

In response to US Department of Transportation Secretary Foxx's launch of the Safer Streets Strategy, the Federal Highway Administration (FHWA), Federal Transit Authority (FTA), and National Highway Traffic Safety Administration (NHTSA) were tasked with identifying model walk assessment programs in several regions, including the Boston metro area.

The Massachusetts Department of Transportation (MassDOT), in conjunction with the Massachusetts Department of Public Health (MDPH), recently launched a multi-disciplined project to improve pedestrian and bicyclist safety in Massachusetts. One component of the MassDOT program is to conduct walk and bike assessments in 12 Massachusetts communities with clusters of pedestrian and bicycle accidents. Seeing the synergies between the federal and state transportation priorities, the federal agencies utilized the MassDOT pedestrian safety program as the mechanism to select a potential assessment location and conduct a model assessment.



Walk assessment participants gather outside the Wollaston T Station along Newport Avenue

FTA, the lead federal agency for the Boston area, identified Wollaston station as an opportunity to address "access to transit" issues, as well as the general safety of the pedestrian environment. Since Quincy is one of the MassDOT participating communities, and the City of Quincy was eager to participate given potential implementation dollars, Wollaston was selected and WalkBoston conducted the walk assessment on August 4, 2014.

Enhancements to the Wollaston T station area pedestrian infrastructure – or its walkability – will make larger contributions to the community than simply a safer pedestrian environment. Transit stations attract people and increase the development potential of the surrounding area. A high-quality walking environment - including safe street crossings, continuous sidewalks, trees and lighting - will increase the connectivity of the station to the business districts and residential neighborhoods of Wollaston Center.



Accessibility is the focus of the MBTA effort to re-design Wollaston Station

Study Area

The study area included the Wollaston T station and the walking routes transit riders typically use to access the station. These routes included:

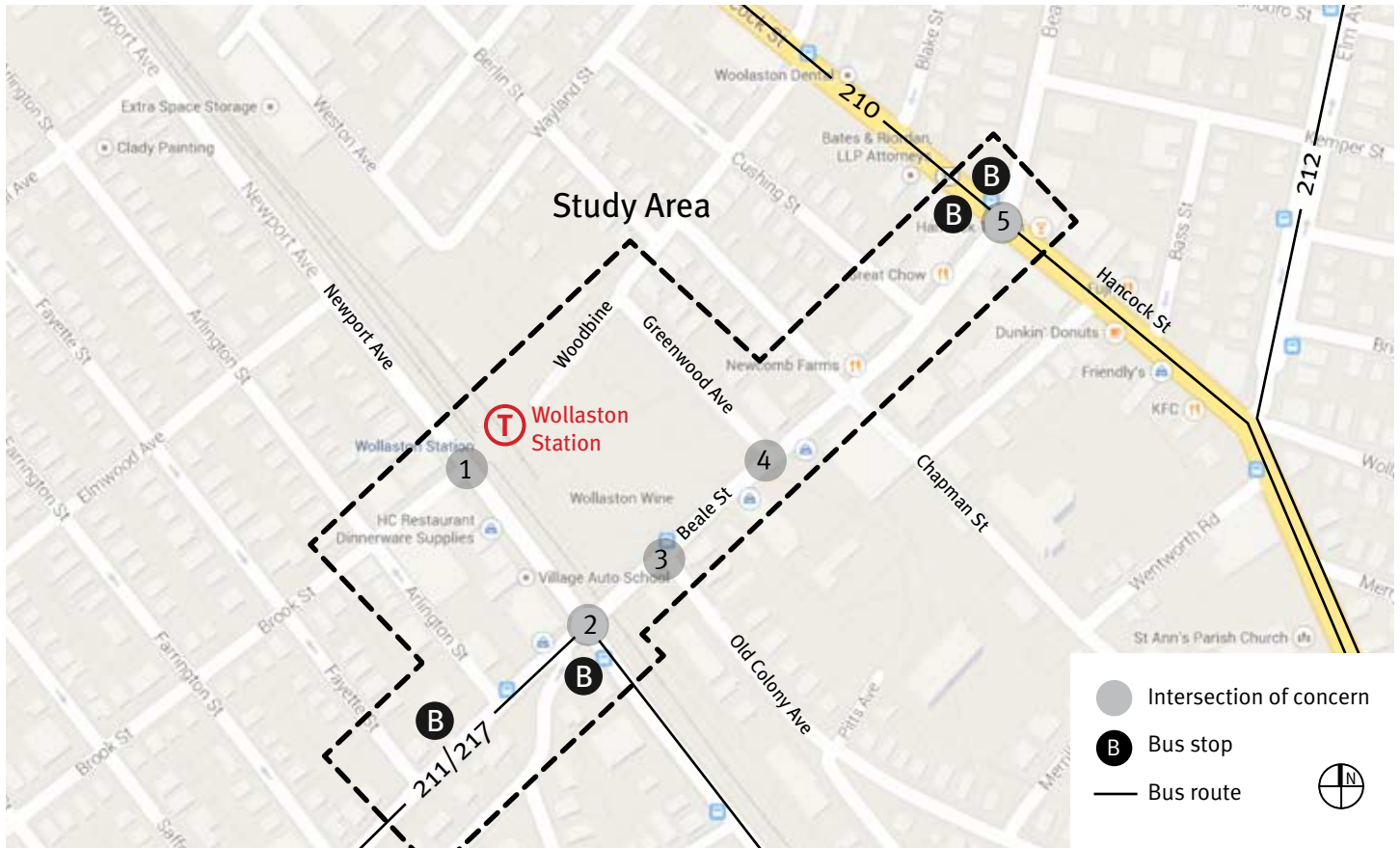
- MBTA surface lot and the auto-dominated entrance to the T station
- Woodbine Street between Hancock Street and the T station
- Greenwood Avenue
- Beale Street between Fayette Street and Hancock Street
- Newport Avenue between Brook Street and Beale Street
- Five intersections (labeled on the map as “intersections of concern”) identified prior to the assessment as hazardous based on crash data and noted infrastructure deficiencies:
 1. Newport Avenue and Brook Street
 2. Newport Avenue and Beale Street
 3. Old Colony Avenue and Beale Street
 4. Greenwood Avenue and Beale Street
 5. Hancock Street and Beale Street

While bus ridership is relatively low in this section of Quincy, the assessment also reviewed the safety and convenience of the Beale/Newport Street and Beale/Hancock Street bus stops. Wayfinding signage to the bus stops from the T station was also evaluated.

The *Re-Envisioning Wollaston* study written by the Metropolitan Area Planning Council (MAPC) identified many of the area’s pedestrian safety issues and infrastructure deficiencies. The report proposed specific recommendations for several of the same intersections studied in this walk assessment and should be consulted in conjunction with this report.

One important finding of the MAPC report was the relatively high number of Quincy residents living within a mile of the Wollaston transit station who park in the MBTA surface lot (20% of all cars parked in the lot came from within 1 mile of the station). The surface lot has 550 spaces. Improving pedestrian connections to Wollaston could increase the number of people walking to the station, thereby reducing traffic congestion around Wollaston.

Quincy has a thriving Asian community near the Wollaston T Station. Since many of these Quincy residents do not read or speak English, bilingual signs should be considered in appropriate locations.



Map of the Wollaston study area

Wollaston T Station

The Wollaston T station redesign for accessibility currently underway by the MBTA presents a wonderful opportunity to re-think the role of the station as a place where the Quincy community can connect across the rail corridor. The train tracks separate the residential neighborhood southwest of Newport Avenue from Wollaston Center. A fully accessible, pedestrian friendly station with improved façades and entrances would assist in promoting ridership, re-energizing the economic conditions around the station, and facilitate walking connections between residential neighborhoods and Wollaston Center. This most critical and expensive element of the walking environment must be addressed by the MBTA as part of the station redesign. The time is right for the City to address walking issues near the station to fully realize the benefits of the MBTA project.

The walk assessment took place during the peak evening commute hours on a Tuesday. Observing the behavior of surges of pedestrians exiting the station revealed several important patterns that affect pedestrian safety.

At the east station entrance, transit riders exited the station and walked in four directions: (1) across the surface lot to the corner of Greenwood Avenue and Beale Street through a break in the wall surrounding the parking lot; (2) to cars parked in the lot where there are no delineated pedestrian zones, sidewalks, or planted medians; (3) along Woodbine Street, or (4) north through the parking lot toward Woodbine Street. Each of these routes would benefit from improved pedestrian infrastructure.



Stairs leading to the station are unevenly distributed and described as “tripping hazards”

Surface parking lot

Current infrastructure deficiencies:

- Stairs are unevenly distributed and described as “tripping hazards” by transit riders we spoke with during the walk assessment; slippery in winter
- Sidewalks do not have curb ramps or detectable warning strips
- Sidewalks located along parking lot edges are not used because they do not lead to desired destinations
- Signs for bus stops lead riders to the wrong location and promote walking along an unprotected route through the parking lot



Bus stop signs lead pedestrians through the parking lot to the wrong location

Recommendations:

- Redesign T station entrance using universal design principles of accessibility prioritizing the pedestrian experience
- Designate an accessible walkway leading from the station to Beale Street along pedestrian desire lines
 - » Short-term: Restripe parking lot, paint pedestrian zone and delineate with temporary barriers

- » Long-term: Redesign parking lot with sidewalk connecting to the small gathering space along Beale Street (former bus stop). If parking space requirement is lowered, then consider additional space for pedestrian connections to Wollaston Center



Proposed pedestrian connection to Beale Street



Sidewalks missing curb ramps at the parking lot entrance

- Relocate signs for bus stops – now at Beale/Hancock (210) and Beale/Newport (211/217)
- Improve light levels at night
 - » Short-term: assess light levels and determine if existing lighting can be supplemented
 - » Long-term: install new lighting as part of overall parking lot redesign

Woodbine Street Entrance

Current infrastructure deficiencies:

- Auto-dominated landscape at station entrance; excessively wide lanes (30'-40'wide); few street trees or pedestrian-scaled elements; lots of pavement
- Uncontrolled intersection at intersection with Greenwood Avenue - stop sign located only at parking lot exit on Woodbine
- No crosswalk across Greenwood Avenue
- Curb radii excessive; intersection oversized
- Sidewalks do not have curb ramps or detectable warning strips
- Lighting is insufficient according to local participants

Recommendations:

- Reduce scale of Greenwood/Woodbine intersection
 - » Short-term: use paint and/or temporary barriers to reduce curb radii length and narrow travel lanes; paint bike lanes
 - » Long-term: redesign Greenwood/Woodbine intersection to permanently narrow travel lanes, reduce curb radii; prioritize pedestrian crossings – possibly extend median and install pedestrian refuge islands; plant street trees
- Consider additional traffic control measures at the Greenwood/Woodbine intersection (e.g., additional signage or pavement markings)
- Paint zebra crosswalk across Greenwood Avenue and across Woodbine at Greenwood/Woodbine intersection
- Improve light levels at night
 - » Short-term: assess light levels and determine if existing lighting can be supplemented
 - » Long-term: install new lighting as part of overall streetscape redesign

Newport Avenue Entrance

At the west station entrance along Newport Avenue, transit riders were confronted with bumper-to-bumper traffic. Newport Avenue is four lanes at this location. Walkers were forced to walk between cars blocking the crosswalk after the drivers failed to clear the intersection before the traffic signal changed. Given the slowed traffic, several pedestrians took a chance at crossing without waiting for the WALK sign since traffic was at a standstill. Most walkers did not use the crosswalks on either side of Brook Street because they were located several feet from their desire lines.

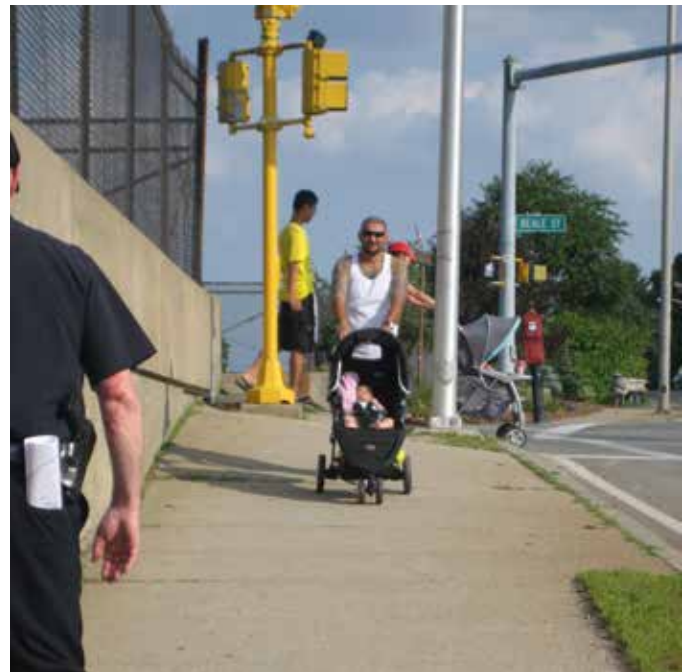


Pedestrian crossing Newport Avenue without waiting for the WALK signal

Current infrastructure deficiencies:

- Crosswalks are located outside the pedestrian desire line leading from the station exit/entrance to Brook Street; location in part due to traffic signal equipment and fire hydrants at the street corners
- Pedestrian phase of the traffic signal seems too short to allow adequate time to cross Newport Avenue
- Vehicles block crosswalks during pedestrian crossing phase – partially due to location of crosswalks, also due to driver behavior
- Traffic signals at Beale St/Newport Ave intersection and Brook St/Newport Ave intersection are not coordinated
- T Station sign is visible from Newport Avenue, but not from Brook Street; pedestrians presented with a blank wall with no indication of what is behind it
- T Station entrance is not accessible

- Road widens near T Station entrance with a drop off area or bus stop; MBTA bus no longer uses this stop and drop off at this location competes with fast-moving traffic on Newport Avenue
- Lighting is insufficient according to local participants
- The steeply graded Newport street sidewalks from the station entrance to Beale Street are unattractive for walkers, are filled with obstructions, and may discourage pedestrians who might access the station from the southwest
 - » The east sidewalk runs along the blank wall which forms the MBTA rail embankment
 - » The west sidewalk has a blank concrete wall between the sidewalk and the street edge which gives the sidewalk a trench-like feel



Pedestrians navigating the steep slope on Newport Avenue



Pedestrians crossing outside of the crosswalk on Newport Avenue

Recommendations:

- Evaluate location of crosswalks
 - » Short-term: repaint or expand crosswalks to reflect walking patterns
 - » Long-term: redesign entrance to the T station to align with Brook Street crossing; allow for adequate gathering space for pedestrians waiting for signal
- Evaluate the location of traffic signal heads; if placed over each lane, signal compliance by motorists may increase
- Assess traffic signal timing for compliance with Manual for Uniform Traffic Control Devices (MUTCD) standards; minimizing pedestrian wait times will increase compliance with signal
- Evaluate the feasibility of coordinating traffic signals at the Beale St/Newport Ave intersection with the traffic signal at Newport Ave/Brook St
- Consider use of “Don’t Block the Box” signs and / or paint box at the Brook Street/Newport Avenue intersection
- Consider posting “No Turn on Red” sign at the intersection eliminating right turn onto Newport Avenue from Brook Street; distance to crosswalk limits visibility of pedestrian to drivers making a right turn on red
- Consider changing paving material in the crosswalk and/or adding roadside crosswalk signs to increase driver awareness of pedestrian crossing
- Make station entrance accessible; station slated for accessibility improvements by MBTA
- Install Wollaston T Station signage that faces Brook Street as part of station entrance redesign
- Reduce the width of Newport Avenue at the T Station entrance
 - » Short-term: paint a edge line or horizontal stripes on pavement to narrow the perception of road width and discourage informal drop offs at this location
 - » Long-term: move curb and associated drainage infrastructure to narrow the travel lane as part of Wollaston T Station redesign; consider adding curb extensions, particularly at southwest corner of intersection
- Clear obstructions from Newport Avenue sidewalks which may include sign posts, traffic signal equipment, etc.



Gathering space for pedestrians is limited

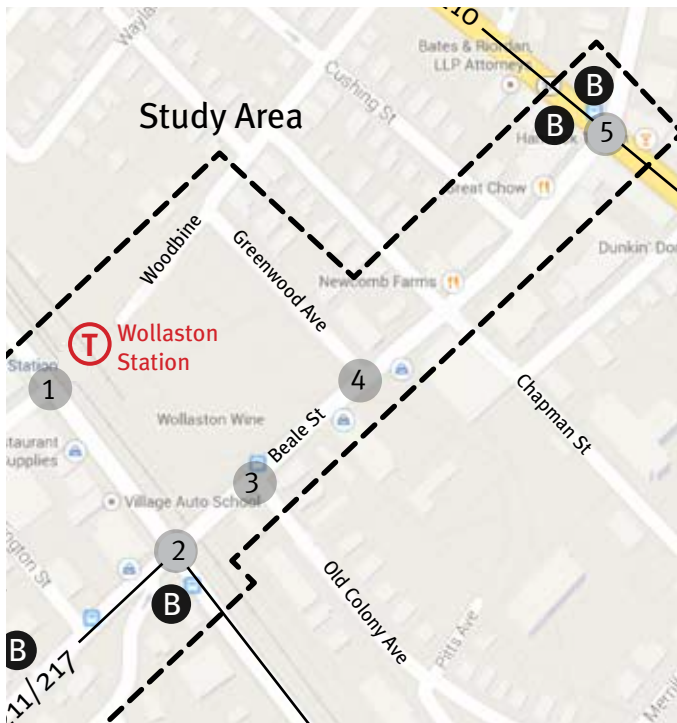


Wollaston signs face Newport Avenue, but there are none facing Brook Street. The sidewalk is narrow and has multiple obstructions which further limit its effective width. In the distance, the sidewalk ends providing no means of access for pedestrians.



Blank concrete walk along Newport Avenue creates a stark pedestrian landscape

- Provide landscaping for Newport Avenue to improve streetscape quality
 - » Explore possibility of adding trees on the west sidewalk
 - » Explore addition of planters and benches on the east sidewalk and work with local merchants to help them add signs and façade treatments to enliven the sidewalk and draw customers to this portion of Newport Ave



Map showing intersections of concern

Intersections of Concern

The assessment focused on 5 intersections in the study area that are known to be hazardous to pedestrians. Crashes involving pedestrians have occurred in 4 of the intersections since 2009 based on MassDOT Crash Data. These numbers do not reflect near misses or capture all pedestrian injuries since the reporting of injuries is inconsistent. The following descriptions identify specific road design and infrastructure issues that affect the safety of these intersections and propose improvements. Note: The Newport Avenue and Brook Street intersection was described above in Wollaston T Station discussion.

Newport Avenue and Beale Street

According to the *Re-Envisioning Wollaston* study, the Newport Avenue/Beale Street intersection was identified as a major barrier to walking by residents from the neighborhoods south of Newport Avenue. The changes in grade where Newport Avenue meets Beale Street as it passes over the rail tracks make for treacherous slopes (particularly in winter) and awkward cross slopes. The fast-moving traffic on Newport Avenue also contributes to the feeling of danger for walkers.

Current infrastructure deficiencies:

- Sidewalk surfaces are inconsistent and full of obstacles, and do not have ADA-compliant curb ramps or detectable warning strips
- Sidewalk on the east side of Newport Avenue is narrow and right up against the curb; there is very little space at the Beale/Newport intersection to wait at the corner for the signal



Patched sidewalk with no curb ramps at the corner of Newport and Beale



Traffic moving through the Newport Ave/Beale St intersection

- Traffic signal equipment and lamp posts are positioned at the corners where walkers would logically gather to cross the street; one traffic signal head is blocked by lamp post so pedestrians can not see the signal
- Medians on Newport Avenue and Beale Street end either mid-way into crosswalk or before the crosswalk and do not function as an adequate pedestrian refuge islands; medians are narrow
- Pedestrian signal does not give sufficient time for pedestrians to cross four lanes of traffic based on observation

Recommendations:

- Reconstruct/replace sidewalks on Newport Ave repairing cracks and pitfalls, and install curb ramps and detectable warning strips; recapture as much of the right-of-way from the travel lanes as possible to separate sidewalk from traffic and provide additional sidewalk space at the corners
- Reorganize traffic signal equipment and street lamps to provide clear pathways to the crosswalks at the corners
- Extend the medians on Newport Avenue and install pedestrian refuge islands
- Evaluate pedestrian signals to ensure adequate time for crossing
 - » Short-term: Reprogram pedestrian signals if it is determined that time is not adequate to cross intersection
 - » Long-term: Install pedestrian countdown signals with leading pedestrian indicators (LPI)
- Continue to ensure crosswalks and stop lines are repainted as needed; consider using more durable materials to minimize need for maintenance
- Prioritize sidewalk for snow clearance

Old Colony Avenue and Beale Street

The Old Colony Avenue/Beale Street intersection has flashing yellow light beacons located on all three corners of the intersection, however these beacons do not stop traffic or assist pedestrians in crossing the street. The building located on the southwest corner of the intersection and the grade changes on both Beale Street and Old Colony compromise sight lines for drivers, forcing them to enter the crosswalk on Old Colony to see oncoming traffic and making it difficult to see pedestrians crossing Beale.



No crosswalk at the Old Colony/Beale intersection

Beale Street is four lanes wide at this intersection, and there is no crosswalk at Old Colony. There were many instances of quick acceleration out of Old Colony and through the Beale Street/Newport Avenue intersection in times of high traffic volumes. When combined with unexpected pedestrian crossings, the potential for crashes is high.

The City’s first reduced-parking TOD development is located on the south side of Beale Street in this area. In order to support this development and encourage further transit-oriented housing it is important for pedestrian safety and convenience to be given a higher level of priority in this location.

Current infrastructure deficiencies:

- No crosswalk painted across Beale Street – desire line for transit riders coming through MBTA surface parking lot and crossing to old Colony Ave (there are significant multi-family housing and commercial uses on Old Colony within easy walking distance of the T Station); no ADA-compliant curb ramps
- Wide travel lanes on Beale Street with few lane markers
- Yellow flashing beacon is generally overlooked and is no longer an effective traffic signal for vehicles or for alerting drivers to the possibility of pedestrians crossing
- Wide turning radii at the southwest corner of the intersection allows right-turning drivers from Beale onto Old Colony (who are coming downhill) to turn very quickly across the crosswalk
- Faded sign encouraging pedestrians to use crosswalks at nearest signal

Recommendations:

- Stripe a high visibility crosswalk (zebra, ladder or continental design) across Beale Street on the east side of Old Colony Avenue only; place an in-street pedestrian sign in the crosswalk on Beale Street; install ADA compliant curb ramps
- Paint pavement markings on Beale Street to define and narrow travel lanes
 - » Long-term: Reduce lane widths by installing curb bump-outs across Beale Street at the Old Colony intersection to correspond with redesign of bus stop as a new gathering space leading to redesigned sidewalk through MBTA surface lot (since parking is already allowed on Beale Street, addition of a bump out would not require changes in lane designations or traffic operations)
 - » Long-term: Tighten turning radii at intersection to slow turning vehicles

exclusive pedestrian phase, most people can make it across the intersection diagonally within the allotted time. However, given the number of driveways around this intersection, there are opportunities for crashes as both pedestrians and drivers behave unpredictably.

Current infrastructure deficiencies:

- Malfunctioning pedestrian countdown signal on northeast corner of Greenwood Ave/Beale Street
- Beale Street is wide and crossing distances are long
- Signal timing programmed with exclusive pedestrian signal which lengthens wait time and promotes crossing diagonally through the intersection
- Multiple driveways along the south side of Beale Street near CVS complicate pedestrian/driver interactions

Greenwood Avenue and Beale Street

The Greenwood Avenue/Beale Street intersection sees a constant flow of transit riders during the evening surge as they cross through the MBTA surface lot and exit through a break in the wall near the intersection. Few use both crosswalks to cross the street, instead choosing to cut diagonally from the west side of the Greenwood/Beale Street intersection to the CVS pharmacy parking lot. Since the traffic signal has an



Pedestrians cross diagonally through the Greenwood/Beale Street intersection



Malfunctioning pedestrian signal at Greenwood and Beale



Multiple driveways and the surface parking lot near CVS

Recommendations:

- Fix the pedestrian countdown signal on northeast corner of Greenwood Ave/Beale Street (immediate need)
- Consider reducing the travel lane widths on Beale Street
 - » Short-term: Paint pavement markings on Beale Street to define and narrow travel lanes
 - » Long-term: Install curb bump-outs into parking lanes to shorten crossing distances and widen sidewalks
- Consider concurrent traffic signal phasing with a leading pedestrian indicator (LPI).
- Evaluate the location and number of access points to the retail strip (e.g., CVS) and surface parking lot on the south side of Beale Street and close as many of them as possible and provide narrow, tight turning radii driveways for access



Children running through the exclusive pedestrian signal

Hancock Street and Beale Street

The Hancock/Beale Street intersection is at the core of Wollaston Center and has the best pedestrian infrastructure within the study area. Crosswalks are prominently painted, the sidewalks are wide, continuous and smooth, and have curb ramps. The travel lanes are well marked and parking stalls are painted. The traffic signals have an exclusive pedestrian phase. The bus stops are well marked at either side of the traffic signal, however the bus stop for buses traveling southeast on Hancock Street is on the nearside of the intersection rather than the farside, which is the preferred location.



Crosswalks, curb ramps and pedestrian signals on Hancock Street

Cyclists were observed on the sidewalks rather than in the street. Cyclists on sidewalks can be dangerous to pedestrians. While there are currently no marked bike lanes on Hancock or Beale Street, cycling in downtown districts is not permitted by Massachusetts law.

Current infrastructure deficiencies:

- Traffic signals have exclusive pedestrian signal phase, which extends both pedestrian and vehicle wait times at the intersection. Ideally, pedestrian wait times should be less than 90 seconds to promote compliance with the signal rather than crossing when there is a gap in traffic.
- Crossing distances are relatively long
- Bus stop is on nearside of intersection for bus traveling southeast on Hancock Street

Recommendations:

- Consider concurrent traffic signal phasing with a leading pedestrian indicator (LPI).
- Redesign intersection with curb bump-outs to shorten crossing distances and provide greater visibility to and of pedestrians
- Evaluate whether the bus stop for the bus traveling southeast on Hancock Street can be moved to the farside of the intersection. Moving it would be safer for pedestrians, but should be balanced with the parking needs associated with the retail district in Wollaston Center

Bus Service

Bus riders (like most transit riders) are pedestrians at the beginning and conclusion of their transit trip and, therefore, need all of the elements of a pedestrian friendly environment such as safe street crossings, smooth sidewalks, and adequate snow removal. There are four bus stops served by three different bus routes within the study area (see walk assessment map). The following discussion identifies specific infrastructure issues that affect the safety of these bus stops and proposes improvements.

Hancock/Beale Street intersection (Route 210)

The bus stops at the Hancock/Beale Street intersection are well marked at either side of the traffic signal. The wide right of way allows the bus to pull over out of the travel lane when loading and unloading. However, the bus stop for buses traveling southeast on Hancock Street is on the nearside of the intersection rather than the farside, which is the preferred location. Crosswalks are in close proximity to the bus stops, which provide protected crossings in all directions. Both stops have adequate gathering space, benches and trees to provide shade while waiting for the bus.

Current infrastructure deficiencies:

- Nearside location for the bus traveling southeast on Hancock Street is not the location that is typically the safest for pedestrians

Recommendations:

- Reevaluate the location of this stop and balance the need for parking with pedestrian safety concerns. Since a fully accessible bus stop has to be 70-100 feet long, up to five parking spaces can be affected. These spaces could be replaced at the current bus stop location if the bus stop is moved

Beale Street/Newport Avenue and Beale Street/Fayette Street (Routes 211 and 217)

The bus stops serving bus routes 211 and 217 along Beale Street and Newport Avenue have crosswalks proximate to the stops and sufficient waiting space on the sidewalks. Both stops have bus stop signs. The rights of way are not wide enough to allow the bus to pull out of the travel lane. Each is on the farside of the respective intersection.



Nearside bus stop on Hancock Street

Current infrastructure deficiencies:

- No pavement markings to indicate the bus stop.
- No benches or shelters

Recommendations:

- Consider painting bus stop pavement markings on roadway
- Consider installing shelters and benches
- Install more prominent bus stop signage along route

Signage

As mentioned in the discussion of deficiencies at the Wollaston T Station, signage and wayfinding to the bus stops is inaccurate.

Current infrastructure deficiencies:

- Bus stop for Route 210 was recently moved, but the directional signage continues to route riders to the wrong location.
- Infrastructure (bus shelter, etc) still exists along Beale Street giving the impression that the bus still stops at this location

Recommendations:

- Install signs that direct transit users to the current bus stop locations
- Build a direct, pedestrian friendly route to ensure safety and promote ridership as part of the T station improvements

Appendix A. Summary of Issues and Recommendations

Wollaston T Station

Surface Parking Lot

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
Missing curb ramps and detectable warning strips; stairs are unevenly distributed	Redesign T station entrance using universal design principles of accessibility	Long-term	MBTA
Lack of sidewalks through parking lot	Designate an accessible walkway leading from the station to Beale Street		
	» Restripe parking lot, paint pedestrian zone and delineate with temporary barriers	Short-term	MBTA
	» Redesign parking lot with sidewalk connecting to the small gathering space along Beale Street (former bus stop)	Long-term	MBTA
Inaccurate signage for bus stop location	Relocate signs for bus stops now at Beale/Hancock (210) and Beale/Newport (211/217)	Short-term	MBTA
Low light levels at night	Improve light levels at night		
	» Assess light levels and determine if existing lighting can be repaired/ supplemented	Short-term	MBTA
	» Install new lighting as part of overall parking lot redesign	Long-term	MBTA

Woodbine Street Entrance

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
Missing curb ramps and detectable warning strips	Install curb ramps and detectable warning strips	Long-term	City of Quincy
Uncontrolled intersection at intersection with Greenwood Avenue - stop sign located only at parking lot exit on Woodbine	Consider additional traffic control measures at the Greenwood/ Woodbine intersection (e.g., additional signage or pavement markings)	Short-term	City of Quincy
Missing crosswalk across Greenwood Avenue	Paint zebra crosswalk across Greenwood Avenue and across Woodbine at Greenwood/ Woodbine intersection	Short-term	City of Quincy
Excessive curb radii and oversized intersection	Shorten curb radii and reduce scale of Greenwood/Woodbine intersection		
	» Use paint and/or temporary barriers to reduce curb radii length and narrow travel lanes; paint bicycle lanes	Short-term	City of Quincy/MBTA

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
	» Redesign Greenwood/ Woodbine intersection to permanently narrow travel lanes, reduce curb radii; prioritize pedestrian crossings – possibly extend median and install pedestrian refuge islands; plant street trees	Long-term	City of Quincy/MBTA
Lighting is insufficient	Improve light levels at night		
	» Assess light levels and determine if existing lighting can be supplemented	Short-term	City of Quincy/MBTA
	» Install new lighting as part of overall streetscape redesign	Long-term	City of Quincy/MBTA

Newport Avenue Entrance

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
Newport Avenue crosswalks are located outside pedestrian desire lines when crossing to Brook Street	Evaluate location of crosswalks	Short-term	City of Quincy
	» Repaint or expand crosswalks to reflect walking patterns	Short-term	City of Quincy
	» Redesign entrance to the T station to align with Brook Street crossing; allow for adequate gathering space for pedestrians waiting at traffic signal	Long-term	City of Quincy/MBTA
Pedestrian phase of the traffic signal seems too short to allow adequate time to cross Newport Avenue	Assess traffic signal timing for compliance with Manual for Uniform Traffic Control Devices (MUTCD) standards; minimal pedestrian wait times will increase compliance with traffic signal	Short-term	City of Quincy
Vehicles block crosswalks during pedestrian crossing phase – partially due to location of crosswalks, also due to driver behavior	» Install “Don’t Block the Box” signs and /or paint box at the Brook Street/Newport Avenue intersection » Post “No Turn on Red” sign at the intersection eliminating right turn onto Newport Avenue from Brook Street » Consider installing roadside crosswalk signs or changing the crosswalk pavement material to increase driver awareness of pedestrian crossing	Short-term	City of Quincy
Traffic signals at Beale St/ Newport Ave intersection and Brook St/Newport Ave intersection are not coordinated	Evaluate the feasibility of coordinating traffic signals at the Beale St/Newport Ave intersection with the traffic signal at Newport Ave/Brook St	Short-term	City of Quincy

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
T Station sign is not visible from Brook Street	Install Wollaston T Station signage that faces Brook Street as part of T station redesign	Long-term	MBTA
T Station entrance is not accessible	Redesign entrance to meet accessibility standards as part of station redesign	Long-term	MBTA
Road width is excessively wide near T Station	Reduce width of Newport Avenue at T station entrance		
	» paint an edge line or horizontal stripes on pavement to narrow the perception of road width and discourage informal drop offs at this location	Short-term	City of Quincy
	» Long-term: move curb and associated drainage infrastructure to narrow the travel lane as part of Wollaston T Station redesign; consider adding curb extensions, particularly at southwest corner of intersection	Long-term	City of Quincy/MBTA
Sidewalk widths are limited by obstacles	Clear obstructions from Newport Avenue sidewalks which may include sign posts, traffic signal equipment, etc.	Mid-term	City of Quincy
Un-inviting sidewalk conditions along both sides of Newport Avenue near Wollaston T Station	Provide landscaping for Newport Avenue to improve streetscape quality » Explore possibility of adding trees on the west sidewalk » Explore addition of planters and benches on the east sidewalk and work with local merchants to help them add signs and façade treatments to enliven the sidewalk and draw customers to this portion of Newport Ave	Mid-term	City of Quincy

Intersections of Concern

Newport Avenue and Beale Street

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
Sidewalk surfaces are inconsistent and full of obstacles; no ADA-compliant curb ramps or detectable warning strips	Reconstruct/replace sidewalks on Newport Ave repairing cracks and pitfalls and install curb ramps and detectable warning strips	Long-term	City of Quincy

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
Sidewalk on the east side of Newport Avenue is narrow and right up against the curb; limited space at the Beale/Newport intersection to wait at the corner for the traffic signal	Recapture as much of the right-of-way from the travel lanes as possible to separate sidewalk from traffic and provide additional sidewalk space at the corners	Long-term	City of Quincy
Traffic signal equipment and lamp posts are positioned at the corners where walkers would logically gather to cross the street	Reorganize traffic signal equipment and street lamps to provide clear pathways to the crosswalks at the corners	Long-term	City of Quincy
Medians on Newport Avenue and Beale Street (south of the intersection) are too short to function as pedestrian refuge islands	Extend the medians on Newport Avenue and install pedestrian refuge islands	Long-term	City of Quincy
Pedestrian signal does not give sufficient time for pedestrians to cross four lanes of traffic based on observation	Evaluate pedestrian signals to ensure adequate time for crossing; signal timing may be designed for peds to cross in 2-phases	Short-term	City of Quincy
	» Short-term: Reprogram pedestrian signals if it is determined that time is not adequate to cross intersection; pedestrians do not want to wait for a 2-phased signal in this location	Short-term	City of Quincy
	» Install pedestrian countdown signals with leading pedestrian indicators (LPI)	Long-term	City of Quincy
Faded crosswalks and stop lines	Continue to ensure crosswalks and stop lines are repainted as needed; consider using more durable materials to minimize need for maintenance	Short-term	City of Quincy
Snow accumulation is problem at this intersection due to limited sidewalk widths	Prioritize snow removal at this location	Short-term	City of Quincy

Old Colony Avenue and Beale Street

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
Missing crosswalk across Beale Street – desire line for transit riders coming through MBTA surface parking lot and crossing to Old Colony Ave	Stripe a high visibility crosswalk (zebra, ladder or continental design) across Beale Street on the east side of Colony Avenue only; place an in-street pedestrian sign in the crosswalk on Beale Street	Short-term	City of Quincy
Wide travel lanes on Beale Street with few lane markers	Narrow travel lanes and tighten curb radii on Beale Street		
	» Paint pavement markings on Beale Street to define and narrow travel lanes	Short-term	City of Quincy

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
	<ul style="list-style-type: none"> » Reduce lane widths by installing curb bump-outs across Beale Street at the Old Colony intersection to correspond with redesign of bus stop as a new gathering space leading to redesigned sidewalk through MBTA surface lot » Tighten turning radii at intersection to slow turning vehicles 	Long-term	City of Quincy
Yellow flashing beacon is ineffective in alerting drivers to the possibility of pedestrians crossing	Consider addition of a pedestrian-activated HAWK signal for the Beale Street crosswalk	Long-term	City of Quincy

Greenwood Avenue and Beale Street

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
Malfunctioning pedestrian countdown signal on northeast corner of Greenwood Ave/Beale Street	Fix the pedestrian countdown signal on northeast corner of Greenwood Ave/Beale Street	Short-term	City of Quincy
Beale Street is wide and crossing distances are long	Consider reducing the travel lane widths on Beale Street		
	<ul style="list-style-type: none"> » Paint pavement markings on Beale Street to define and narrow travel lanes 	Short-term	City of Quincy
	<ul style="list-style-type: none"> » Install curb bump-outs into parking lanes to shorten crossing distances and widen sidewalks 	Long-term	City of Quincy
Signal timing is programmed for exclusive WALK signal which lengthens wait time and promotes crossing diagonally through the intersection	Consider concurrent traffic signal phasing with a leading pedestrian indicator (LPI)	Short-term	City of Quincy
Multiple driveways along the south side of Beale Street near CVS complicate pedestrian/driver interactions	Evaluate the location and number of access points to the retail strip (e.g., CVS) and surface parking lot on the south side of Beale Street	Short-term	City of Quincy
	Redesign remaining driveways to be narrow with tight turning radii	Long-term	City of Quincy

Hancock Street and Beale Street

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
Traffic signals have exclusive pedestrian signal phase, which extends both pedestrian and vehicle wait times at the intersection	Consider concurrent traffic signal phasing with a leading pedestrian indicator (LPI)	Short-term	City of Quincy

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
Crossing distances are relatively long	Redesign intersection with curb bump-outs to shorten crossing distances and provide greater visibility to and of pedestrians	Long-term	City of Quincy
Bus stop is on nearside of intersection for bus traveling southeast on Hancock Street	Evaluate whether the bus stop for the bus traveling southeast on Hancock Street can be moved to the farside of the intersection	Short-term	MBTA/City of Quincy

Bus Service

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
Hancock/Beale Street (Route 210)			
Nearside location for the bus traveling southeast on Hancock Street	Reevaluate the location of this stop and balance the need for parking with pedestrian safety concerns	Short-term	MBTA/City of Quincy
Beale/Newport and Beale/Fayette (Routes 211 and 217)			
No pavement markings to indicate the bus stop	Consider painting bus stop pavement markings on roadway	Short-term	City of Quincy
No benches or shelters; limited signage	Consider installing shelters and benches Install more prominent bus stop signage along route		

Signage

ISSUE	RECOMMENDATION	TIMEFRAME	RESPONSIBLE PARTY
Bus stop for Route 210 was recently moved, but the directional signage continues to route riders to the wrong location	Install signs that direct transit users to the current bus stop locations	Short-term	MBTA/City of Quincy
Infrastructure (bus shelter, etc) still exists along Beale Street giving the impression that the bus still stops at this location	Build a direct, pedestrian friendly route to ensure safety and promote ridership as part of the T station improvements	Long-term	MBTA/City of Quincy

Appendix B. Participant List

NAME	ORGANIZATION
Stacey Beuttell	WalkBoston
Anna Biton	USDOT
Kara Chisholm	City of Quincy
David Daddio	USDOT
Michelle Deng	MassDOT
Courtney Dwyer	MassDOT
Eric Halvorsen	MAPC
Dennis Harrington	City of Quincy
Barbara Jacobson	MassBike
Kristina Johnson	City of Quincy
Susan Karim	City of Quincy
Wendy Landman	WalkBoston
Yuan Liu	MassDOT
David Loutzenheiser	MAPC
Irene Lutts	Quincycles
Dan Minton	Quincy Police Dept.
Ben O'Brien	City of Quincy
Bonnie Polin	MassDOT
Lou Rabito	MassDOT
Fran Sandonato	City of Quincy
Lisa Schletzbaum	MassDOT
Erik Sheier	MBTA
Leah Sirmin	FHWA
Timothy Sorgi	Quincy Police Dept.
Joanne Waszczak	USDOT
David Watson	MassBike

Appendix C. Terminology

Below are images and definitions of the terms used to describe the walking environment in this report.

Crosswalk and stop line

Crosswalks can be painted in a variety of ways, some of which are more effective in warning drivers of pedestrians. Crosswalks are usually accompanied with stop lines. These lines act as the legally mandated stopping point for vehicles, and discourage drivers from stopping in the middle of the crosswalk.



Crosswalk patterns
Source: USFHA



Crosswalk and stop line
Source: http://safety.fhwa.dot.gov/ped_bike/tools_solve/ped_scdproj/sys_impact_rpt/images/fig16.jpg

Curb ramp and detectable warning strip

Curb ramps provide access from the sidewalk to the street for people using wheel chairs and strollers. They are most commonly found at intersections. While curb ramps have improved access for wheelchair-bound people, they are problematic for visually impaired people who use the curb as an indication of the side of the street. Detectable warning strips, a distinctive surface pattern of domes detectable by cane or underfoot, are now used to alert people with vision impairments of their approach to streets and hazardous drop-offs.



Curb ramp and detectable warning strip in Woburn, MA

Curb extension/curb bulb-out

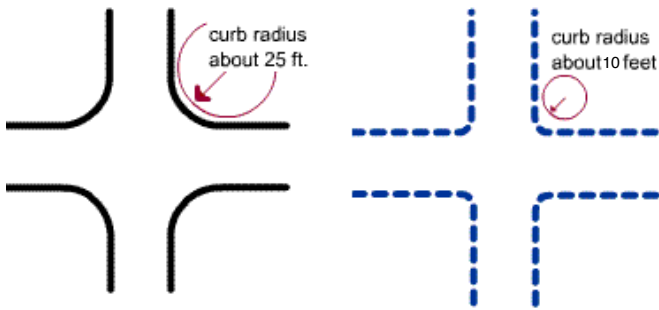
A sidewalk extension into the street (into the parking lane) shortens crossing distance, increases visibility for walkers and encourages eye contact between drivers and walkers.



Curb extensions are often associated with mid-block crossings

Curb radius

A longer curb radius (on the left in figure below) allows vehicles to turn more quickly and creates longer crossing distance for pedestrians. A shorter curb radius (on the right in the figure below) slows turning speeds and provides pedestrians shorter crossing distances.



There are two excellent examples of the shortening of curb radii in Woburn, MA. The first (A) is a low-cost solution using a gravel-filled zone between the original curb line and the newly established road edge. The second is a higher-cost solution using grass and trees and extending the sidewalks to the new curb. Both work to slow traffic.

Edge line

An edge line is a solid white line painted along the roadside curb that defines the driving lane and narrows the driver's perspective. Edge lines are most often used in suburban and rural locations, but may be appropriate in some urban conditions.



Edge lines delineate the vehicular driving zone on wide roadways.



(A) Gravel-filled curb extension



(B) Grass, trees and extended sidewalk in curb extension

In-street pedestrian crossing sign

In-street pedestrian crossing signs are used at the road centerline within crosswalks to increase driver awareness of pedestrians in the area. These signs are a relatively low-cost, highly effective tool in slowing traffic by the narrowing travel lanes. They are popular with road maintenance departments since they can be easily moved for snow removal.



Leading Pedestrian Indicator (LPI)

A leading pedestrian indicator gives pedestrians an advance walk signal before motorists get a green signal, giving the pedestrian several seconds to start walking in the crosswalk before a concurrent signal is provided to vehicles. This makes pedestrians more visible to motorists and motorists more likely to yield to them. Typical LPI settings provide 3 to 6 seconds of advance walk time.



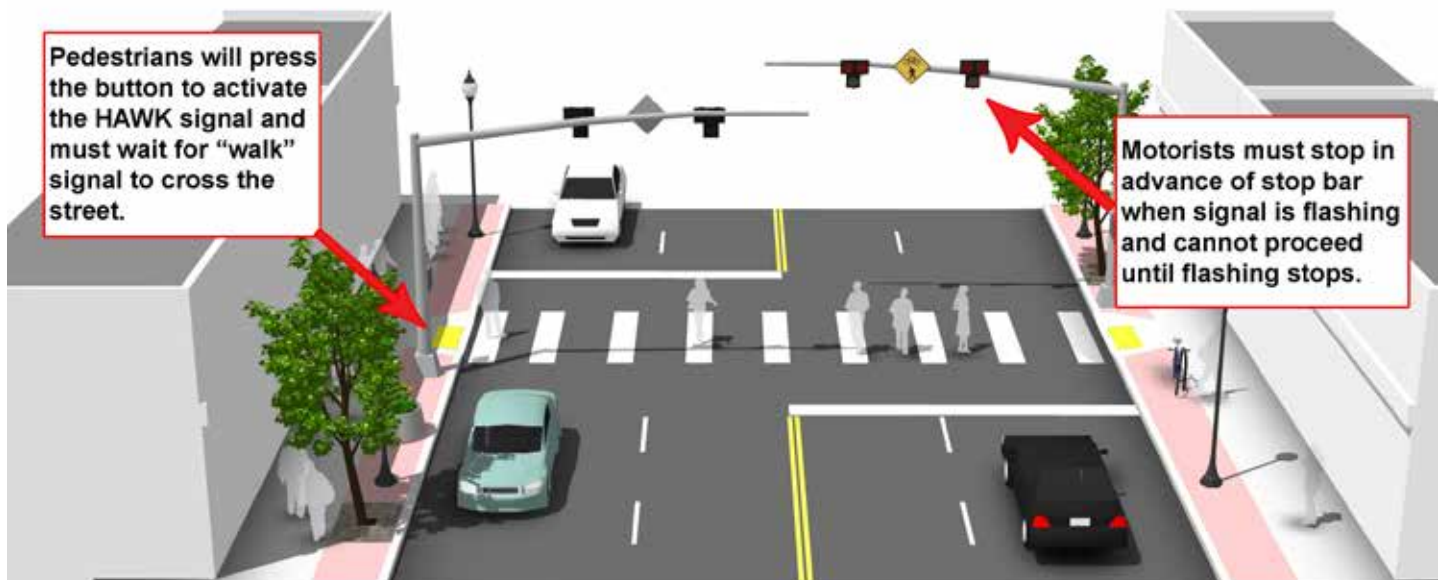
Source: http://safety.fhwa.dot.gov/ped_bike/tools_solve/ped_scdproj/sys_impact_rpt/images/fig34.jpg

High-Intensity Activated crossWalk (HAWK)

A HAWK beacon (High-Intensity Activated crossWalk beacon) is a traffic signal used to stop road traffic and allow pedestrians to cross safely. It is officially known as a Pedestrian Hybrid Beacon (PHB). The purpose of a HAWK beacon is to allow protected pedestrian crossings, stopping road traffic only as needed. Where standard traffic signal 'warrants' prevent the installation of standard three-color traffic signals, the HAWK beacon provides an alternative.



Source: <http://www.achdidaho.org/Projects/Images/NewHawkSignal092209%20014.jpg>



Source: <http://bloomington.in.gov/media/media/image/jpeg/13144.jpg>

Appendix D.

Transit/Walk Audit Assessment Tool



Transit Station

Station Name:

Issues at peak times (rush hour)	
<input type="radio"/> Drop off and pick up behavior	
Access to bus stops	
<input type="radio"/> Proximity to transit station?	
<input type="radio"/> Wayfinding/signage?	
<input type="radio"/> Obvious pathway/connection?	
<input type="radio"/> Protected crossings to reach bus stops?	
<input type="radio"/> Lighting?	
Safety within parking lots	
<input type="radio"/> Protected pedestrian crossings?	
<input type="radio"/> Sidewalks?	
<input type="radio"/> Delineation of pedestrian zones?	
<input type="radio"/> Wayfinding/signage?	
<input type="radio"/> Lighting?	
Accessibility	
<input type="radio"/> Elevators?	
<input type="radio"/> Accessible entrances on all sides?	
<input type="radio"/> Curb ramps and detectable warning strips on all sidewalks?	
<input type="radio"/> Smooth surfaces?	
<input type="radio"/> Slopes and cross-slopes of all sidewalks comfortable for wheelchair users?	

MAKING MASSACHUSETTS MORE WALKABLE

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Transit/Walk Audit Assessment Tool



Street Name/Intersection	
Date/Time	
Weather Conditions	
Neighborhood Character	
<input type="radio"/> Land use: residential, commercial, industrial or mixed use?	
<input type="radio"/> Community facilities: schools, parks, libraries?	
<input type="radio"/> Surface parking lots?	
<input type="radio"/> Buildings occupied?	
<input type="radio"/> Building facades – blank walls, engaging storefronts, sidewalk cafes?	
<input type="radio"/> Is there street activity?	
Street Description	
<input type="radio"/> Arterial or local	
<input type="radio"/> Number and estimated width of travel lanes – narrow, adequate, wide?	
<input type="radio"/> Parking – none, one or both sides?	
<input type="radio"/> Sidewalks – none, one or both sides?	
Vehicular Traffic	
<input type="radio"/> Posted speed limit signs	
<input type="radio"/> Estimated vehicle speeds	
<input type="radio"/> Volume	
Sidewalks	
<input type="radio"/> On both sides of the street?	
<input type="radio"/> Wide? Continuous? Smooth surface?	
<input type="radio"/> Curb ramps/detectable warning strips?	
<input type="radio"/> Buffered from traffic with landscape strips (verge)?	
<input type="radio"/> Minimal number of interrupting driveways? Narrow or wide driveways?	
<input type="radio"/> Are newspaper racks, outdoor seating organized?	

Transit/Walk Audit Assessment Tool



Street furnishings	
<input type="radio"/> Trees?	
<input type="radio"/> Benches?	
<input type="radio"/> Trash receptacles?	
<input type="radio"/> Bicycle accommodations?	
<input type="radio"/> Lighting?	
Crosswalks	
<input type="radio"/> Condition?	
<input type="radio"/> Design: 2 lines, zebra/ladder, stamped, pavers? Raised?	
<input type="radio"/> Marked and signed?	
Traffic signals	
<input type="radio"/> Pedestrian-activated? Countdown signals?	
<input type="radio"/> Timing – enough time to cross? Traffic stops in all directions? Traffic stops only in lanes pedestrian is crossing?	
<input type="radio"/> Right turn on red prohibited?	
Sight lines/Visibility	
<input type="radio"/> Obstacles – vegetation, light poles, parked cars?	
<input type="radio"/> Road design – curves, elevation change?	
Pedestrian Safety Countermeasures	
<input type="radio"/> Curb extensions?	
<input type="radio"/> Pedestrian refuge islands or medians?	
<input type="radio"/> In-street pedestrian signs?	
<input type="radio"/> Speed tables?	
Accessibility	
<input type="radio"/> Curb ramps?	
<input type="radio"/> Detectable warning strips?	
<input type="radio"/> Slopes/cross-slopes?	