



South End Neighborhood Evening Walk Assessment Springfield, MA

November 16, 2016

MAKING MASSACHUSETTS MORE WALKABLE

Old City Hall | 45 School Street | Boston MA 02108 | T: 617.367.9255 | F: 617.367.9285 | info@walkboston.org | www.walkboston.org

Purpose of the Assessment

Springfield's South End neighborhood residents, business owners and other stakeholders have been working to improve safety and to increase investment in the South End for many years. Organizations, such as the Urban Land Institute, and federal programs such as Choice Neighborhoods and the Byrne Criminal Justice Innovation Program (BCJI), have funded efforts to engage community members, work with police, and improve the built environment. Five goals guide current efforts toward neighborhood revitalization and Counter Criminal Continuum (C3) policing strategies:

1. Create a safe and secure environment
2. Promote and foster community relationships and partnerships with local and state police, community leaders, government, and local organizations
3. Reduce criminal activity, drug activity, prostitution, and violence
4. Establish positive and effective youth/parental programs
5. Empower residents to self advocate for community change

Kelvin Molina, who works for the City of Springfield as the South End Public Safety Coordinator, invited WalkBoston to the neighborhood to conduct an evening walk audit to observe conditions along Main Street as they relate to pedestrian safety. The evening walk audit provided opportunities to observe lighting, sightlines/visibility, and entrapment sites, in addition to an analysis of safe crossings, sidewalks, traffic signals, and maintenance needs.



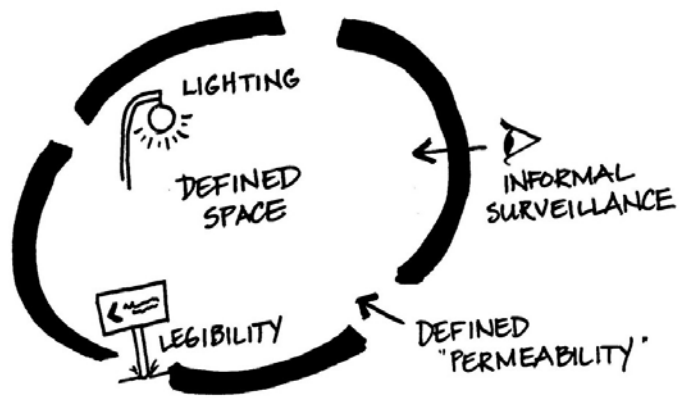
Walk audit participants meet to discuss CPTED strategies before going out onto Main Street

On November 16, 2016, WalkBoston staff led a group of 14 people on a pre-established route between 6:30 pm and 8:30 pm. This report is a summary of the group's observations and preliminary recommendations for improvements to the neighborhood's pedestrian environment.

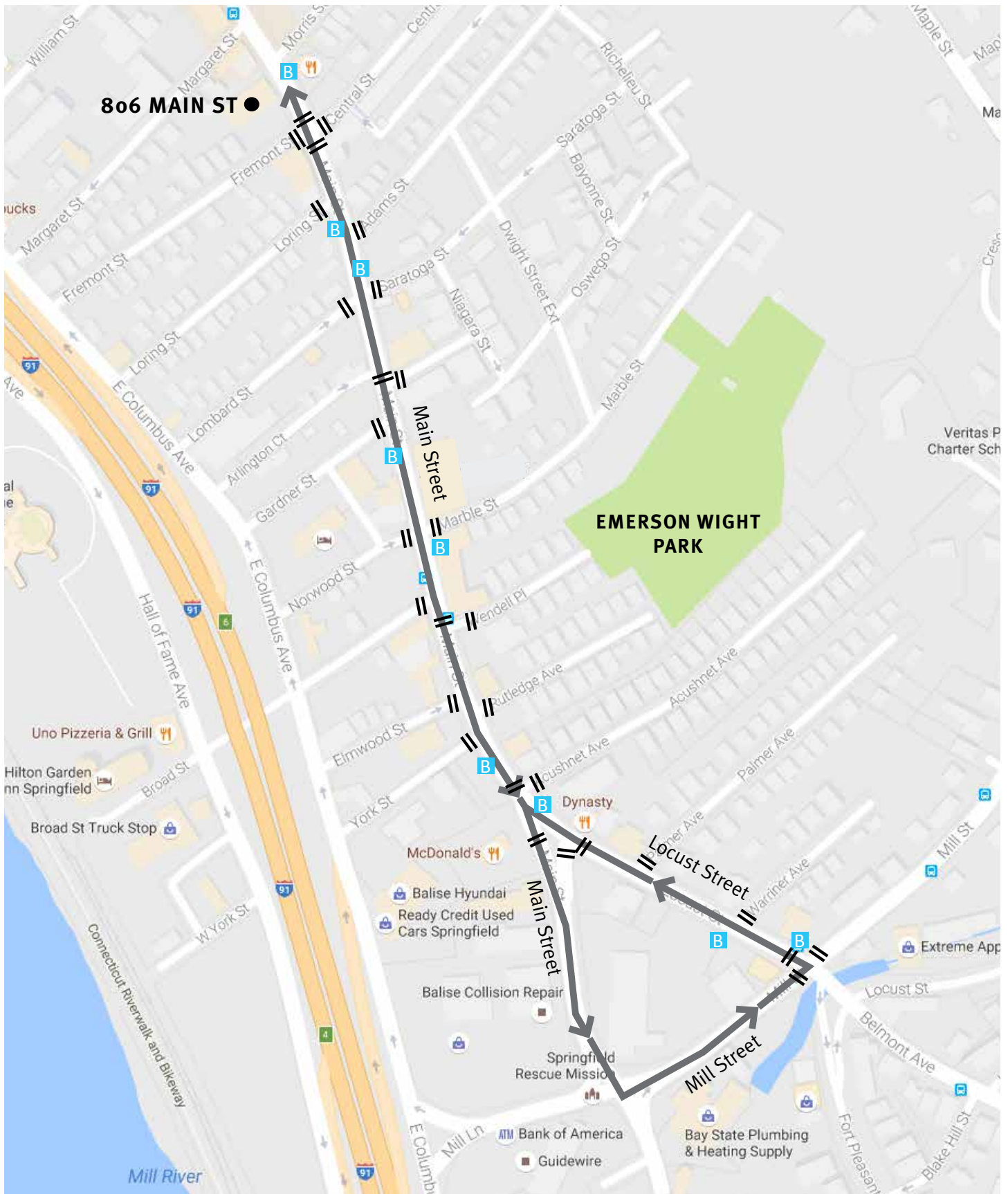
Before the walk, WalkBoston outlined the basic concepts behind the theories of Crime Prevention Through Environmental Design (CPTED) as a methodology for assessing the pedestrian environment along the walking route. CPTED includes four basic principles each with a specific goal:

1. See and be seen (*Natural Surveillance*)
2. Direct flow of people and clearly differentiate between public and private space (*Natural Access Control*)
3. Extend a sphere of influence so that users develop a sense of ownership that is noticeable to potential offenders (*Natural Territorial Reinforcement*)
4. Show community commitment to the neighborhood through regular trash removal, landscape maintenance, and repair of structures (*Maintenance*)

Rather than focus on the potentially charged terminology used to describe CPTED, all walk audit participants were asked to come together around the CPTED goals of safety and community engagement.



Principles of Crime Prevention Through Environmental Design (CPTED) (source: <http://keepcincinnatibeautiful.org/crime-and-the-built-environment/>)



Map of the South End neighborhood walking route

B BUS STOP
== CROSSWALK



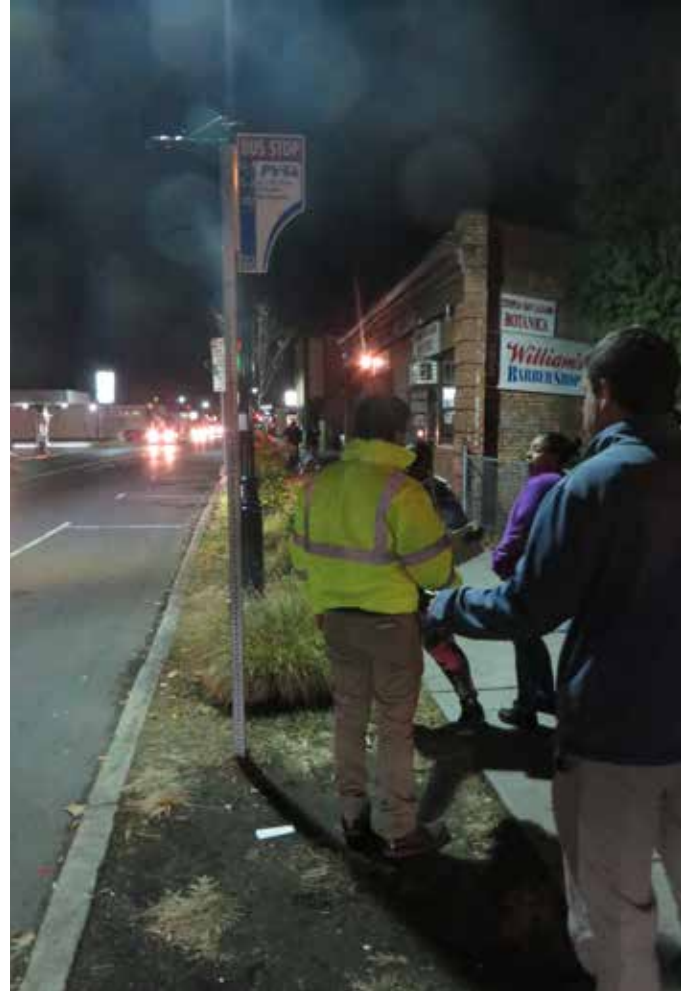
Study Area/Walk Route

The walk route followed the Main Street corridor between Central/Fremont Streets to Mill Street. Participants walked south down Main Street from the City of Springfield's South End C3 office at 806 Main Street. At the Main Street and Mill Street intersection, they turned east along Mill Street, then northwest along Locust Street to return to Main Street and the walk's starting point.

The study area focused on the Main Street corridor, an area identified by police, city staff and community members as known for illicit activities. While the route did not include walking into the residential sections of the South End between Main Street and Emerson Wight Park, participants discussed conditions along the streets leading to the park.

Participants

The experience of walking in an area with people with the shared goal of neighborhood improvement, but different perspectives, is one of an audit's greatest outcomes. Participants in this South End walk audit represented four City Departments (Public Safety, Parks, Health and Human Services, and Public Works), Caring Health Center, Eversource, DevelopSpringfield, and community residents.



Walk audit participants walking along Main Street

Kelvin Molina	South End Public Safety Coordinator, City of Springfield
Luz Bahamundi	City of Springfield, South End C3
Crystal Smith	City of Springfield, South End Promotores
Brian Beliveau	C3 South End Unit, Springfield Police Department
John Torres	C3 South End Unit, Springfield Police Department
John Zollo	C3 South End Unit, Springfield Police Department
Karen Pohlman	BayState Health
Kiah McAndrew-Davis	Springfield Dept of Health and Human Services
Melissa Anderson	Caring Health Center
Michael Tulley	Springfield Parks Department
Hector Velez	Springfield Dept of Public Works
Ashley Eaton	Pioneer Valley Planning Commission
Ken Garber	Eversource
Jay Minkarah	DevelopSpringfield
Stacey Beuttell	WalkBoston
Adi Nochur	WalkBoston

Key Issues and Recommendations

The walk assessment revealed 5 key issues that affect the safety and quality of the walking environment along the Main Street Corridor:

1. Inconsistent light levels and poor light quality along the Main Street corridor do not support the needs of people walking at night.
2. The crosswalks along Main Street in the South End feel unsafe due to poor lighting, compromised sightlines, and high traffic speeds. In addition, there are long stretches of Main Street where no crosswalks are present, but where high numbers of pedestrians cross to reach bus stops and other everyday destinations.
3. The land use and commercial development pattern along Main Street interrupts the pedestrian environment with driveways and parking lots. The Main Street corridor also has many undefined and ambiguous spaces with unclear ownership and no separation between walking areas and driving areas.
4. The lack of maintenance of building facades, parking lots, sidewalks, and planting areas detracts from the quality of the pedestrian environment and contributes to the perception that it is unsafe to walk along Main Street.
5. Three high volume intersections at the southern end of the study area, which functions as the gateway to the South End neighborhood, have complicated vehicular turning movements and inadequate pedestrian facilities: Main Street/Locust Street; Main Street/Mill Street; and Mill Street/Locust Street intersections.

Below are more detailed comments about the key issues and recommendations for short- and long-term improvements to the pedestrian environment.

In addition to infrastructure fixes, the formation of walking clubs can have a positive effect on the perception of safety in neighborhoods. Partnerships with Caring Health Center or other local groups could provide residents with opportunities to walk to improve their own health and the vitality of the neighborhood.

Inconsistent light levels and poor light quality along the Main Street corridor do not support the needs of people walking at night.

The locations of the streetlight poles installed along Main Street do not provide adequate light at the Main Street crosswalks. The lights are often located in front of or behind the crosswalk, rather than on the crosswalk making it difficult for drivers to see people in the crosswalks. Bus stops, such as the bus shelter at the intersection of Main Street and Adams Street, are also poorly lit. In addition, the light bulbs in the streetlight fixtures seem to have different levels of brightness that are not coordinated with land uses or traffic patterns.



Low light levels along Main Street

In addition to the city's lights, the lighting in parking lots and on buildings along the Main Street corridor does not provide adequate light for people walking at night. Many buildings and parking lots along Main Street have light fixtures, but many were not turned on. Furthermore, many store windows are dark either because the store is closed or vacant. Some store windows are covered; other windows are small. Many of the store doorways are recessed and dark, and are potential places for people to hide.

A coordinated strategy and incentive program to encourage business owners to light the corridor could go a long way to make people feel more comfortable walking around at night. A consistent level of lighting along a roadway can enhance the ambiance of an area and the visibility of pedestrians by drivers.

Short-term recommendations

- Use reflective paint on roadways to increase visibility of pavement markings in low light conditions
- Survey the location of light poles and crosswalks within the Main Street corridor. Determine if light fixtures can be adjusted or light poles moved to better light marked crosswalks. Determine if light levels or brightness can be increased using different bulbs, or consider moving crosswalks to locations that have better lighting.
- Discuss lighting strategies and/or incentives for businesses and building owners to keep lights on at night, improve transparency of store front windows, and light dark spaces and parking lots

Long-term recommendations

- Consider hiring a lighting consultant to study current lighting conditions along Main Street and propose strategies to improve lighting with a goal of crime prevention and pedestrian safety
- Implement a lighting design that ensures pedestrian walkways and crosswalks are well lit with uniform light levels

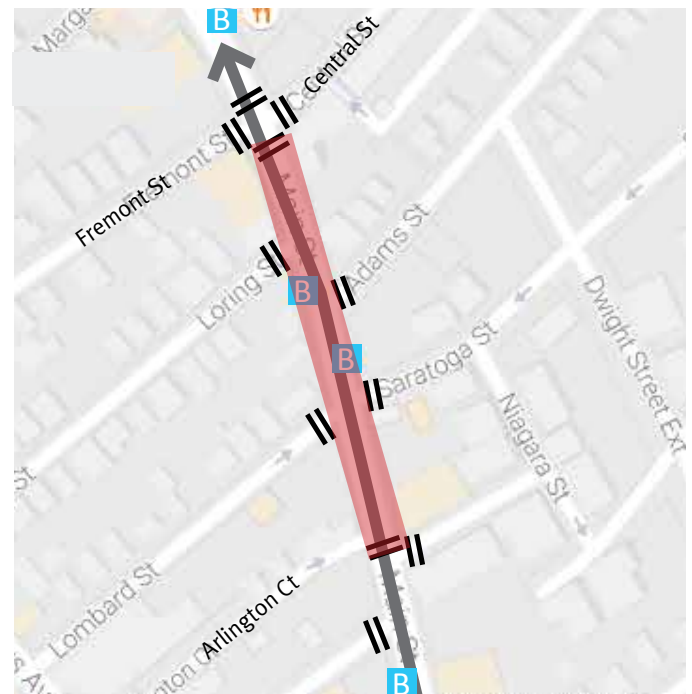
The crosswalks along Main Street in the South End feel unsafe due to poor lighting, compromised sightlines, and high traffic speeds. In addition, there are long stretches of Main Street where no crosswalks are present, but where high numbers of pedestrians cross to reach bus stops and other everyday destinations.

As discussed in the previous section, the street light poles do not adequately light the crosswalks on Main Street. The pole spacing causes a pattern of light and dark spaces that make pedestrians difficult to see.

Crosswalks on the streets that intersect Main Street are well marked with an inlaid thermoplastic pattern, as are those that cross Main Street. However, there are long stretches of Main Street without crosswalks with relatively high numbers of people crossing without a crosswalk (particularly between Central/Fremont Streets and Arlington Court). These high crossing locations include bus stops and businesses. While it is not prudent to mark crosswalks across Main Street at all intersections, additional crosswalks may provide safer ways for people to cross Main Street.



Dark parking lot in front of a well-lit building on Main Street



There are no marked crosswalks on Main Street between Central/Fremont Streets and Arlington Court

Walk audit participants described the crosswalk just north of Columbus Square as treacherous. It is located at the base of a hill after a blind curve in the road for northbound drivers. High traffic speeds and compromised sight lines make pedestrians difficult to see despite the well-marked crosswalk and crosswalk signs. Additional safety measures, such as advance crosswalk signage or a Rectangular Rapid Flashing Beacons (RRFB), may be warranted at this crossing. Curb extensions were planned in the most recent Main Street redesign to reduce crossing distances and slow traffic, but walk audit participants stated that residents opposed them over snow clearance issues.



Crosswalk across Main Street near the Acushnet Avenue intersection

Short-term recommendations

- Post advance crosswalk signage along Main Street at crosswalk near Acushnet Avenue and Main Street intersection (*see MUTCD Section 2B.11 Yield Here to Pedestrians signs*)
- Study vehicular traffic patterns and pedestrian crossing patterns on Main Street to determine if additional crosswalks are warranted and safe. Consider proximity to bus stops when selecting new crosswalk locations, such as between Adams and Saratoga Streets and Gardner Street
- Paint diagonal lines near crosswalks and post No Parking signs to discourage people from parking within 20 feet of the crosswalk

Long-term recommendations

- Reconsider adding curb extensions to shorten crossing distances. Snow removal and storage can be managed with curb extensions in place
- Install a Rectangular Rapid Flashing Beacon (RRFB) at the mid-block crosswalk near the Acushnet Avenue/Main Street intersection (or at the Main St/Locust St intersection, but not at both)
- Implement a lighting design that ensures pedestrian walkways and crosswalks are well lit with uniform light levels

The land use and commercial development pattern along Main Street interrupts the pedestrian environment with driveways and parking lots. The Main Street corridor also has many undefined and ambiguous spaces with unclear ownership and no separation between walking areas and driving areas.

Parking lots are a prominent land use along the Main Street corridor (see map on p.9). Some parking lots use walls, fences or vegetation to separate the sidewalk from the parking area (e.g., car wash parking lot at Gardner Street), but most have no separation. Furthermore, the wide driveways reaching these lots interrupt the sidewalk, forcing people walking to constantly look for cars turning in front of them. This compromises the quality and safety of the walking environment. The majority of the parking lots were empty, which may have been a function of the time of the walk audit. In general, parking lots do not enhance a neighborhood’s walkability.



Parking lots line the edges of Main Street in the South End



Surface parking is a primary land use along Main Street

In addition to parking lots, there are many spaces – both large and small – that are either vacant (cleared due to building fires or other reasons) or undefined. For example, the green spaces on both sides of Adams Street are large expanses of lawn with no obvious use. Arlington Court is a one-way street leading from Columbus Avenue to Main Street. It is not well lit, has very few cars on it, and tends to be used as a residential parking area. Walk audit participants described it as “creepy” and “a place to avoid.”

Other alleys and parking lot edges along Main Street also feel uncomfortable to walk by due to poor lighting and trash/dumpsters. Finally, there are several blank walls along the corridor (e.g., near Saratoga Street) that currently do not positively contribute to the neighborhood. These walls, along with many of the underutilized spaces, could be re-enlivened with murals, or as parks and plaza spaces, with minimal investment.

Short-term recommendations

- Organize programs to redefine and revamp spaces along the corridor, such as Arlington Court (i.e., place-making programs). Possible activities include: mural painting, sidewalk art, pop-up parks, parklets, or outdoor events that encourage people to use the spaces in a positive manner.
- Develop concept plan for neighborhood park on vacant land at Main Street and Adams Street
- Work with existing business owners to better define the edges of parking areas to improve the safety and quality of the walking environment

Long-term recommendations

- Consider amending zoning codes and/or site plan design review guidelines to limit the number of driveways and modify parking ratios for businesses along the Main Street corridor



Walk audit participants discuss observations on Main Street

The lack of maintenance of building facades, parking lots, sidewalks, and planting areas detracts from the quality of the pedestrian environment and contributes to the perception that it is unsafe to walk along Main Street.

Much of the Main Street corridor streetscape is in need of basic maintenance activities. Weeds and vegetation have overgrown planting areas. Trees have been cut down, but the stumps remain. According to walk audit participants, trash barrels are typically full and litter is often on the streets. A crew from the Sheriff's department had been working on Main Street earlier on the day of the walk audit so the street looked better than usual. Both trash pick up and trimming vegetation are relatively inexpensive operations.

Short-term recommendations

- Work with the City of Springfield to determine responsibility for maintaining streetscape; increase trash removal service
- Work with business owners and property owners on dedicating time and resources to maintaining storefronts, sidewalks and plantings

Long-term recommendations

- Apply for façade improvement grants or other programs that provide small business owners with funding to reinvest in their property



Weeds remain in the planting beds from the summer months



Facade improvement programs can help to maintain a building's appearance while in transition

Three high volume intersections at the southern end of the study area, which functions as the gateway to the South End neighborhood, have complicated vehicular turning movements and inadequate pedestrian facilities: Main Street/Locust Street; Main Street/Mill Street; and Mill Street/Locust Street intersections.



Main Street/Locust Street intersection

The Main Street and Locust Street intersection at the southern end of the study area forms a triangular pedestrian plaza with a statue of Columbus, several flagpoles, and attractive landscaping elements. High visibility crosswalks with ADA-compliant curb ramps and detectable warning panels lead to the pedestrian island across the two Main Street travel lanes and across Locust Street. However, these positive aspects of a walkable environment are undermined by high traffic speeds.

The most dangerous crossing is across Locust Street, where the sightlines, lighting, and parking patterns at the crosswalk make it difficult to see people walking in the crosswalk or waiting to cross the street. People driving northbound on Locust Street pick up speed as they drive downhill to Locust Street’s intersection with Main Street. Cars are parked directly adjacent to the crosswalk on the northeast side of the street blocking pedestrian visibility. The cobra-head style streetlight shines a bright light at the intersection of Palmer Avenue and Locust Street, leaving the crosswalk in darkness.

The sidewalk on the east side of Main Street south of the Main St/Locust St intersection ends within 100 feet of the intersection and is missing until Main Street’s intersection with Mill Street. There is a complete sidewalk on the west side of Main Street, but no crosswalk to reach the west side.

Walk audit participants agreed that traffic calming measures would enhance this area and help create a gateway to the South End for northbound road users on Locust Street.

Short-term recommendations

- Paint fog lines on Locust Street to narrow vehicular travel lanes and calm traffic.
- Install “No Parking” signs and paint diagonal lines within 20’ of the crosswalk to discourage parking adjacent to the crosswalk
- Add additional flex posts south of the triangular plaza on Main Street to block illegal U-turn movements. (Flex posts were installed here at one time)
- Consider moving the crosswalk across Locust Street north to intersect with the pedestrian triangle. Relocation would eliminate potential conflicts between drivers turning right onto Locust Street from Main Street; however, the crosswalk may be less visible on the curve of Main Street
- Add pavement markings, brick roadway patterns and/or planters to cue drivers to slow down, to beautify the walking environment, and to visually connect the triangular plaza with the broader streetscape



View of the crosswalk across Main Street leading to pedestrian plaza

Long-term recommendations

- Complete the sidewalk on the east side of Main Street between the Main St/Locust St intersection and the Main St/Mill St intersection
- Relocate street light pole or add second light pole to make pedestrians and crosswalks more visible at night
- Install a Rectangular Rapid Flashing Beacon (RRFB) at the Main St/Locust St intersection (or at the mid-block crosswalk near the Acushnet Avenue/Main Street intersection, but not at both)
- Study the possibility of raising the crosswalk across Locust Street to calm traffic and enhance pedestrian visibility

Short-term recommendations

- Paint fog lines on Main Street and Mill Street to narrow vehicular travel lanes and calm traffic
- Add high visibility, ladder crosswalks, and ADA-compliant curb ramps and detectable warning strips across all four sides of the intersection
- Install countdown pedestrian signals in conjunction with crosswalks and ensure that the signal phasing and timing prioritizes pedestrians

Long-term recommendations

- Study the traffic volumes on Main Street and Mill Street to determine if the intersection can be reduced in size, including the removal of the right-turn slip lanes
- Consider installing curb bump-outs/extensions to reduce crossing distances and slow traffic
- Enhance street lighting to make pedestrians and new crosswalks more visible at night



Main Street/Mill Street intersection

The Main Street/Mill Street intersection is very wide (including one slip lane on each side of the intersection for traffic turning right from Main Street onto Mill Street) and is surrounded by industrial uses and parking lots. The sidewalk network is complete, but interrupted by long curb cuts on the southeast edge of Main Street and the southeast edge of Mill Street. There are no marked crosswalks or pedestrian signals across any of the approaches. The lack of pedestrian infrastructure makes this intersection uncomfortable and potentially dangerous for people walking.



Mill Street/Locust Street intersection
(construction shown in this aerial view has been completed)

Mill Street/Locust Street intersection

The Mill Street/Locust Street intersection presents significant challenges for pedestrians. The Mill Street/Locust Street intersection, with Belmont Avenue and Fort Pleasant Avenue merging nearby, is part of an important corridor connecting the Main Street commercial district, the surrounding residential

neighborhoods, and Forest Park. Planters were located along the street edges, but were removed. High traffic volumes and speeds, confusing traffic patterns generated by the haphazard convergence of six roadway segments, long crossing distances, and a lack of crosswalks and pedestrian signals all create hazards for pedestrians at this location.

There are three crosswalks at the intersection, two cross Mill Street and one is marked on the north side of Locust Street. Additional crosswalks cross Belmont Avenue and Locust Street east of the major intersection, but there is no crosswalk on Fort Pleasant Avenue. All of the marked crosswalks consist of only two parallel lines.

In the long term, this intersection should be studied for the feasibility of a roundabout. In the more immediate term, WalkBoston recommends the following measures at this intersection, which can potentially function as an initial gateway to the South End for northbound road users.

Short-term recommendations

- Repaint crosswalks as high visibility, ladder crosswalks and construct ADA-compliant curb ramps and detectable warning panels on all approaches of the intersection
- Install pedestrian countdown signals in conjunction with crosswalks and ensure that the signal phasing and timing prioritizes pedestrians
- Consider painting fog lines to narrow travel lanes on all approaches
- Study traffic volumes and turning movements to determine the need for right turn lanes on the northern approach of Locust Street and both Mill Street approaches. If traffic volumes and turning movements do not justify the need for right turn lanes, consider installing curb bump-outs to shorten crossing distances



View of the Mill St/Locust St intersection looking southeast up Belmont Ave and Locust Street.

Long-term recommendations

- Study feasibility of reconstructing the intersection to include a round-about complete with bicycle and pedestrian facilities, or a realignment of the Fort Pleasant Avenue, Belmont Avenue and Locust Street approaches

Appendix A. 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

Curb Extension/Curb Bulb-out

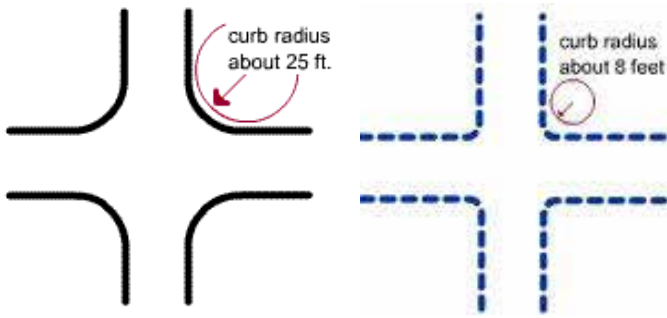
A sidewalk extension into the street (into the parking lane) shortens crossing distance, increases visibility for walkers and encourages eye contact between drivers and walkers.



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.

Fog Line

A fog line is a solid white line painted along the roadside curb that defines the travel lane. It narrows a driver's perspective and helps to slow traffic speeds. Fog lines are used in urban, suburban and rural locations.



Fog 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 Interval (LPI)

A leading pedestrian interval 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

Rectangular Rapid Flash Beacon (RRFB)

RRFBs are user-actuated flashing lights (amber LEDs) that supplement pedestrian warning signs at unsignalized intersections or mid-block crosswalks. They can be activated by pedestrians manually by a push button or passively by a pedestrian detection system. RRFBs use an irregular flash pattern that is similar to emergency flashers on police vehicles. RRFBs may be installed on either two-lane or multi-lane roadways.

Source: http://safety.fhwa.dot.gov/intersection/conventional/unsignalized/tech_sum/fhwasa09009/



Rectangular Rapid Flash Beacon (RRFB) in West Springfield

Safety Zone (Slow Zone)

A safety zone is an area in which the posted speed limit is 20 miles per hour. Safety zones can be established anywhere in a Massachusetts city or town with approval from the applicable departments. Safety zones were recently passed as part of the 2016 Municipal Modernization Bill - Sections 193 and 194.