



Liberty Heights Walk Assessment
Area around Carew Street/Liberty Street intersection
Springfield, MA

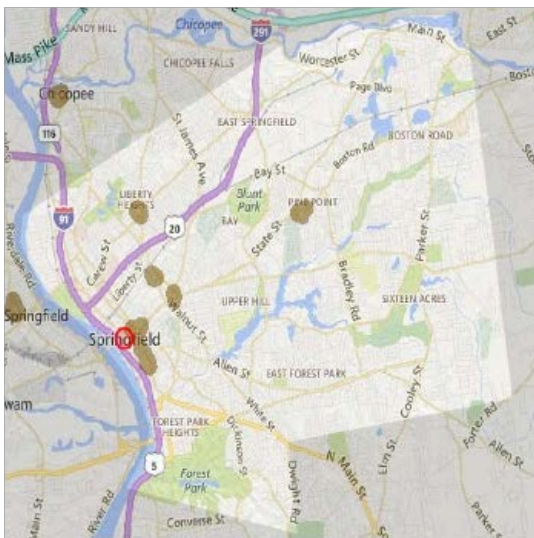
September 26, 2017

*Sponsored by the Massachusetts Executive Office of Public Safety and Security
Planning Initiative for High-Fatality Communities*

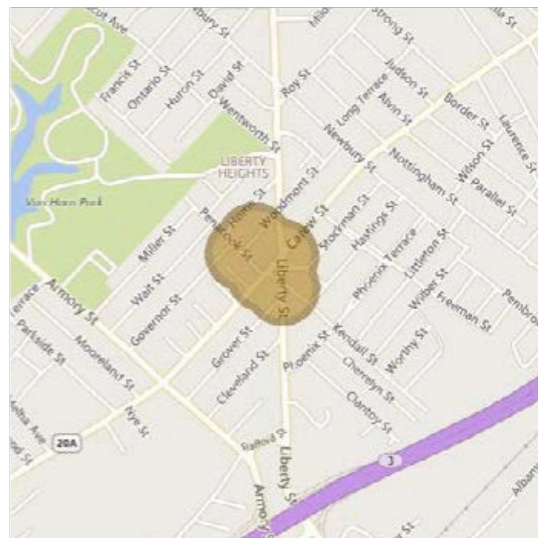
Walk Assessment Overview

On September 26, 2017, WalkBoston conducted a walk assessment in the Liberty Heights neighborhood of Springfield, with support from the Massachusetts Executive Office of Public Safety and Security (EOPSS) Pedestrian Safety Planning Initiative for High-Fatality Communities. The goal of the walk assessment was to recommend improvements to the local built environment that improve pedestrian safety.

WalkBoston consulted MassDOT's Highway Safety Improvement Program (HSIP) crash portal to determine potential locations for the walk audit. As shown below, the data show that Springfield has multiple pedestrian crash clusters that indicate potentially dangerous locations for people walking. After consulting with City staff and other stakeholders, the Liberty Heights neighborhood – specifically the Carew Street/Liberty Street intersection – was chosen as the walk audit location. While observing the intersection, walk audit participants also evaluated the safety of several smaller intersections in and around Brunton Terrace and the Hungry Hill Senior Center.



HSIP Pedestrian Crash Clusters - Springfield, MA
Data Source: MassDOT crash portal 2005-2014 data set

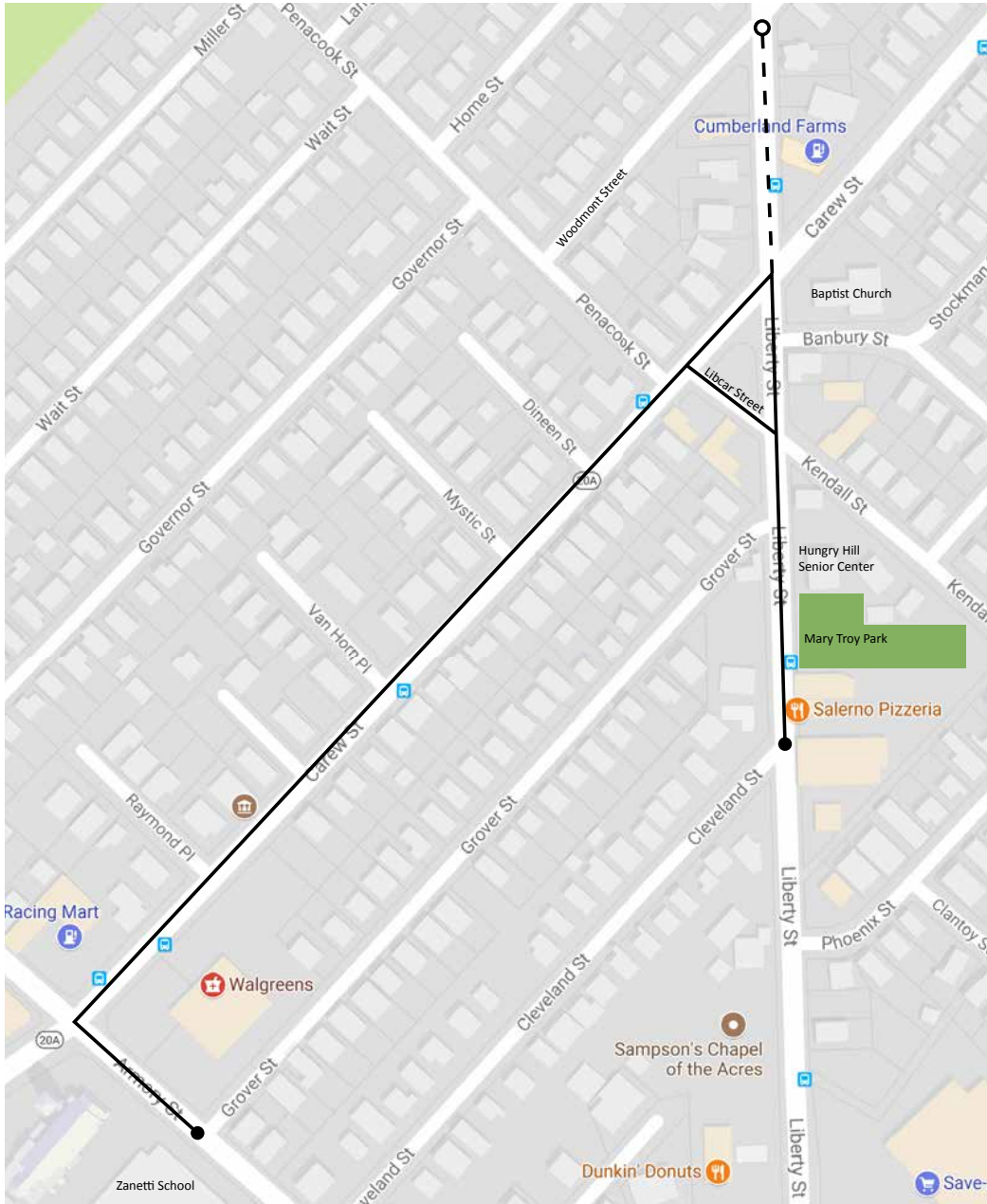


Liberty Height Neighborhood
Carew Street/Liberty Street intersection

The Liberty Heights neighborhood is home to several schools (Liberty School, Boland School, Zanetti School and others). Van Horn Park, Mary Troy Park, and Brunton Terrace provide open spaces and recreation opportunities for residents. There are many benches, shade trees and trash receptacles in the area that humanize the streets and help to make people feel welcome. Hungry Hill Senior Center and retail establishments along Liberty Street, Carew Street, and Armor Street generate moderate volumes of people walking. Safe walking connections are critical to increasing use of these spaces.

Walk Audit Route

The walk audit route began at the Zanetti School on Armory Street. Walk audit participants walked northeast on Carew Street to reach Brunton Terrace. The group then walked south on Liberty Street to the intersection of Cleveland Street to observe the unsignalized crossings and “yield-to-pedestrian” behavior exhibited by drivers. Walk audit participants are listed in Appendix A.



Liberty Heights Walk Assessment - Carew St/Liberty St Intersection
September 26, 2017

Key recommendations

- Adjust signal timing at the Carew Street/Liberty Street intersection and the Armory Street/Carew Street intersection to prioritize pedestrians
- Improve crosswalk visibility and shorten crossing distances of existing crosswalks at Carew St/Liberty St intersection and Liberty St/Cleveland Street crossing,
- Install crosswalk across Carew St at the Libcar St/Penacook St intersection
- Install a mid-block crosswalk on Carew Street at the Van Horn Place intersection to facilitate safe crossings at the bus stop.
- Narrow travel lanes and trim vegetation along Carew Street

Adjust signal timing at the Carew Street/Liberty Street intersection and the Armory Street/Carew Street intersection to prioritize pedestrians.

Traffic volumes on Carew and Liberty Streets are relatively high, especially when school lets out and at rush hour. As such, the priority has been to move as many cars as possible through these two intersections to ease stress on drivers. As a result, people trying to cross the street must wait too long before getting a WALK signal. In general, people will not wait for more than a minute before looking for a gap in traffic and crossing against the signal.

Details on timing of the Carew Street/Liberty Street traffic signal

When the study team observed vehicle operations at Carew St/Liberty St intersection at 11 am on Friday, September 22, vehicles appeared to obey traffic signals and did not run red lights. The traffic signal cycle is very long, approximately 120 seconds. To receive a WALK signal, pedestrians must push a button and wait up to 115 seconds, which is almost two minutes for a WALK. The study team observed that many pedestrians did not wait for a WALK, but ran across the intersection with gaps in traffic.



Once the WALK signal is illuminated, the amount of time to cross one leg of the intersection is sufficient: 7 seconds of WALK time and 20 seconds of Flashing Don't Walk time. However, given the elongated nature of the diagonal crossing, there is not enough time for pedestrians to cross more than one leg of the intersection. Therefore, if someone wants to cross both legs of the intersection, it could take over four minutes.

View of Carew Street/Liberty Street intersection from southeast corner of Brunton Terrace

Both the Armory Street and Liberty Street intersections on Carew Street have pedestrian traffic signals that are actuated with pedestrian buttons and provide an exclusive phase – WALK signal is illuminated across all intersection approaches at the one time. An exclusive signal increases the overall signal phase, but it does provide pedestrians with the opportunity to cross when all traffic is stopped. Given the high volumes of traffic and high number of turning vehicles (both left and right turns), we would not recommend that the pedestrian signal phase be changed to concurrent.

Short-term recommendations

- Adjust signal phasing, possibly by shortening the signal cycle to 90 seconds, to prioritize the pedestrian phase to limit wait times for pedestrians; concurrent signals are not recommended given the high volumes of fast-moving traffic on Liberty and Carew Streets

Long-term recommendations

- Upgrade pedestrian signals to include countdown clocks and accessibility accommodations
- Consider moving the crosswalks back from the intersection to shorten crossing distances – would require construction of new curb ramps, repainting crosswalks, stop lines and right-turn lane arrows

Improve crosswalk visibility and shorten crossing distances of existing crosswalks at Carew St/Liberty St intersection and Liberty St/Cleveland Street crossing.

All the crosswalks in the study area were recently painted and are bright and visible. They do not reflect the new crosswalk standard – which is a continental, or piano keys design. The enhanced pavement markings would further improve the visibility of the crosswalks in the study area.

Carew Street/Liberty Street intersection crosswalks

Due to the diagonal alignments of Carew and Liberty Streets, the crossing distances are long, measuring between 77' and 92' on Google maps. Although the signal phasing provides adequate walk time to cross one leg of the intersection, efforts need to be made to shorten the distances. Both Carew Street and Liberty Street are bus routes, so shortening curb radii or adding curb bump-outs may be difficult.

It may be possible to move the crosswalks from their current diagonal alignment, to a parallel alignment and pulled back from the intersection. This would shorten crossing distances, however, the sightlines of oncoming traffic, particularly southbound traffic on Liberty Street turning right onto Carew Street, need to be studied.



Diagonal crosswalks increase length of crossing distances.

Short-term recommendations

- Repaint crosswalks with new City standard continental design with next scheduled maintenance

Long-term recommendations

- Consider moving crosswalks back from diagonal alignment of the intersection – shorten crossing distances. Add new curb ramps.

Liberty Street/Cleveland Street intersection crosswalks

The Liberty Street/Cleveland Street intersection is unsignalized with crosswalks across all three sides of the intersection. The crosswalks are painted to connect people with the businesses on both sides of the street. These crosswalks are unusual for Liberty Street – most urban arterials in Springfield do not have marked crossings at unsignalized intersections.

Cars are parked too close to the crosswalks, particularly on the east side of the street in front of the mini-mart. Drivers cannot see pedestrians that want to cross, and pedestrians cannot see oncoming traffic. Curb ramps and crosswalk signage are also missing from the Liberty Street crossings. Inexpensive improvements, such as pedestrian crossing signage and no parking signage and pavement markings, could enhance the safety of these crossings.



Pedestrians can't see oncoming traffic and drivers can't see pedestrians waiting to cross at the Cleveland Street intersection

Short-term recommendations

- Repaint crosswalks with new City standard continental design with next scheduled maintenance
- Install advance crossing signage and curbside crosswalk signage with arrows at crosswalk location
- Consider placement of in-street pedestrian crossing sign in crosswalk across Liberty St
- Install no parking signs
- Paint diagonal lines or install flex posts within 25' of crosswalk to discourage parking
- Install curb ramps where they are missing along Liberty Street

Long-term recommendations

- Install curb bump outs to shorten crossing distance and prevent cars from parking too close to the crosswalk

Install new crosswalks across Carew St at the Libcar St/Penacook St intersection and across Kendall Street parallel to Liberty Street.

Both of these locations see high numbers of people crossing despite the lack of crosswalks. People cross to reach the bus stops along Carew Street at the Penacook Street intersection and in Brunton Terrace, and to go to the package store on the corner. Given the long distances between crosswalks on Carew Street, people need a safer place to cross between signalized intersections.

One concern expressed about a crosswalk at this location is its proximity to the Carew St/Liberty St intersection. Drivers who have waited for a GREEN light may be speeding up and not be aware of people crossing in this location. While it may meet the distance requirement, sight lines and other factors should be examined before installing the crosswalk.

The Kendall Street crossing does not have a marked crosswalk. This may be due to the driveway that is close to the intersection. Painting a crosswalk may require adjusting the location of the stop line and stop sign, and potentially narrowing the curb cut leading to the surface parking lot.

Short-term recommendations

- Install crosswalks with the new City standard continental design at both the Kendall Street and Penacook/Carew Street crossing
- Install curb ramps at the Carew Street crossing
- Install curbside crosswalk signage with arrows at crosswalk locations

Long-term recommendations

- Consider moving crosswalks back from diagonal alignment of the intersection – shorten crossing distances

Consider installing a mid-block crosswalk on Carew Street at the Van Horn Place intersection to facilitate safe crossings at the bus stop.

Carew Street and Liberty Street are both urban arterials with high volumes of fast-moving traffic. Signalized intersections are far apart. For example, it is over .3 miles between Armory Street and Liberty Street intersections along Carew Street. There are no crosswalks between these two intersections, which means that people typically wait for a gap in traffic and cross unprotected from one side of Carew Street to another. Carew Street is along a bus route, so bus patrons are definitely crossing to catch the bus.

A mid-block crossing at Van Horn Place, adequately marked with enhanced pavement markings and curbside advance and crosswalk signage, would provide an option for people to cross more safely between signalized intersections.

Short-term recommendations

- Install mid-block crosswalk and required curb ramps at Van Horn Place across Carew Street; use new City standard continental design when painting crosswalk
- Install advance crossing and crosswalk signs with arrows at crosswalk location

Long-term recommendations

- Install Rectangular Rapid Flashing Beacons (RRFBs) at this mid-block location, if appropriate in this location

Narrow travel lanes and trim vegetation along Carew Street

Carew Street is a relatively wide street measuring approximately 40 feet wide using Google maps. The only pavement markings on Carew Street, other than the yellow centerline, are faded fog (or edge) lines along the curb. Parking is allowed along much of the corridor, except at bus stops, although there are no pavement markings indicating either bus stops or parking spaces. Narrowing travel lanes with paint is known to reduce traffic speeds. If the maintenance cost of painting the “Ls and Ts” of parking spaces along the corridor are too steep, using a solid line marking a 10 to 11 foot travel lane would delineate room for a parking lane and driving lane.



Carew Street corridor is a urban arterial with wide lanes and few pavement markings.

Carew Street has a wonderful canopy of shade trees on the eastern side of the street. The trees provide great separation from the street and shade in hot weather. Shade trees have been shown to slow traffic speeds along roadways by providing vertical elements on the side of the street that narrow the cone of vision of drivers. However, the trees need to be trimmed to allow people to improve visibility and to comfortably walk along the sidewalks.

Short-term recommendations

- Paint lines to narrow travel lanes and delineate parking areas on Carew Street
- Trim vegetation along Carew Street

Appendix A. Walk Audit Participants

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WalkBoston