



Lincoln Elementary School Walk Audit Springfield, MA

November 9, 2015

Centers for Disease Control and Prevention Division of Community Health/Community Transformation Grant

Mass in Motion, an initiative of the MA Department of Public Health



MAKING MASSACHUSETTS MORE WALKABLE

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Walk Assessment

On November 9, 2015, WalkBoston conducted a walk assessment of Chestnut and Dwight Streets in the vicinity of the Lincoln Elementary School in Springfield, in partnership with school and municipal staff and representatives from the Parent Teacher Organization, State Police, Baystate Medical Center and Pioneer Valley Planning Commission. Participants in the walk assessment included:

- Karen Pohlman, Baystate Medical Center
- Jacqueline Moya, Lincoln School Parent-Teacher Organization
- Kaelia Rosario, Lincoln School Parent-Teacher Organization
- Elaine Sepulveda, Lincoln School Parent-Teacher Organization
- Sharon Ralls, Lincoln School Principal
- Jeff McCollough, Pioneer Valley Planning Commission
- Mike Cufone, Massachusetts State Police
- Donna Losardo, Massachusetts State Police
- Kiah McAndrew-Davis, Springfield Department of Health and Human Services/Mass in Motion
- Matt Sokop, Springfield Department of Public Works
- Stacey Beuttell, WalkBoston
- Betsy Johnson, WalkBoston
- Adi Nochur, WalkBoston

The Lincoln School is located in the North End section of Springfield on Chestnut Street, which is a two-way arterial road in the immediate school vicinity. Dwight Street runs parallel to Chestnut Street on the opposite side of the school and is one-way, with lower traffic speeds and volumes in the immediate school vicinity compared to Chestnut Street. The school is set far back from Chestnut Street by a swath of green space and parking for school staff and from Dwight Street by additional parking and a fenced-in play area for students. The school is also directly across Chestnut Street from Baystate Medical Center, a large medical institution that serves as a major employment center and brings in a high traffic volume in the morning between 7:00 and 7:30, before the school day starts at 8:30. Aside from the medical center, the streets surrounding the Lincoln School are primarily

residential.

Approximately 400 students from kindergarten through 5th grade attend the school and nearly 80 percent of students live within walking distance. To facilitate student walking, Lincoln School officials are considering implementing parallel “Walking School Bus” routes, where adult chaperones help groups of children walk to school together, in the mornings along Chestnut and Dwight Streets. The proposed Walking School Bus routes would start about half a mile southeast of the school near Allandale Street. Along these routes, crossing guards are posted during school arrival and dismissal times at the corners Chestnut and Dwight Streets at Waverly Street, the corner of Chestnut Street at Jefferson Avenue and Montmorenci Street, and occasionally at the corner of Dwight Street at Jefferson Avenue.



Springfield-Lincoln Elementary School
Walk Assessment Map

November 9, 2015



The route for the November 9 walk assessment around Lincoln Elementary School, which aligns with the proposed parallel Walking School Bus routes along Chestnut and Dwight Streets.

Key Recommendations

- Enhance pedestrian connections and implement traffic calming measures in the immediate vicinity of the Lincoln Elementary School
- Create safe crossings and implement traffic calming measures along Chestnut Street
- Create safe crossings and implement traffic calming measures along Dwight Street

Enhance pedestrian connections and implement traffic calming measures in the immediate vicinity of the Lincoln Elementary School

Wide travel lanes on Chestnut Street that are greater than the Massachusetts Highway Department's recommended width of 11 feet for arterial roads contribute to high traffic speeds as drivers pass by the Lincoln Elementary School, creating unsafe conditions for pedestrians. In addition the school building is set far back from the through traffic on Chestnut Street, so it is not easily visible or obvious to drivers, despite the presence of flashing beacons and in-pavement markings indicating the presence of a school zone. Chestnut Street also lacks bike facilities, even though it is designated as having a "Very High" Level of Bicycle Compatibility along the proposed Walking School Bus route in Springfield's Complete Streets plan (pg. 48). Enhancing pedestrian connections, implementing traffic calming measures, and investigating potential bike facilities in the immediate vicinity of the Lincoln School will slow drivers and create safer conditions for Walking School Bus participants.

Recommendations:

1. Paint fog lines on Chestnut Street to arrow the width of the travel lanes to 11 feet as per Massachusetts Highway Department design guidelines
2. Upgrade crosswalks across Chestnut Street at Harriet and Cumberland Streets from standard to ladder design
 - Add in-street pedestrian crossing sign at Harriet Street crosswalk
 - Consider raising both crosswalks to enhance pedestrian visibility and slow traffic



In-pavement "SCHOOL" markings and beacons indicating a 20 mph speed limit in the school vicinity when flashing are present at the corner of Chestnut Street and Waverly Street. However these features are located over a block away from the Lincoln School, where the school is not visible to approaching drivers.

3. Add in-pavement "SCHOOL" markings and flashing beacons indicating 20 mph speed limit in school vicinity at the corner of Chestnut Street and Harriet Street
4. Add more prominent signage on Chestnut Street between Harriet and Cumberland Streets to further highlight presence of school and pedestrians
5. Study feasibility of adding bike facilities on Chestnut Street, consistent with "Very High" Level of Bicycle Compatibility designated in Springfield's Complete Streets plan

Create safe crossings and implement traffic calming measures along Chestnut Street

For much of the proposed Walking School Bus route (including in the immediate vicinity of the Lincoln School), Chestnut Street is a two-way arterial street with one lane of traffic in each direction. Grassy verges provide buffers between the sidewalks and traffic on both sides of the road, but as previously mentioned, wide travel lanes on Chestnut Street contribute to high traffic speeds and create unsafe conditions for pedestrians. Standard crosswalks exist at all side street crossings along Chestnut Street, but there are no crosswalks across Chestnut Street between Harriet Street (immediately adjacent to the school) and Montmorenci Street – a distance of nearly a quarter-mile. In addition, there are no bike facilities on Chestnut Street.



A lack of crosswalks across Chestnut Street between Harriet and Montmorenci Streets often leads to risky pedestrian crossing behavior.



Wide travel lanes and turning radii and a lack of four-way stop signs at the intersection of Chestnut Street with Jefferson Avenue and Montmorenci Street create conditions for fast traffic that poses a risk to pedestrians.

Recommendations:

1. Paint fog lines on Chestnut Street to narrow the width of the travel lanes to 11 feet as per Massachusetts Highway Department design guidelines
2. Add new crosswalks with curb ramps and sidewalk extensions, detectable warning strips, ladder design, and in-street pedestrian crossing signs across Chestnut Street at Waverly, Alexander and Calhoun Streets
3. Narrow turning radii for traffic turning from Chestnut Street onto Jefferson Avenue using paint and plastic flexposts
4. Add stop signs with reflective poles on Chestnut Street to create a four-way stop at the intersection

of Chestnut Street with Jefferson Avenue and Montmorenci Street

5. Upgrade all existing marked crossings from the standard design to a ladder crosswalk design
6. Study feasibility of adding bike facilities on Chestnut Street, consistent with “Very High” Level of Bicycle Compatibility designated in Springfield’s Complete Streets plan

Create safe crossings and implement traffic calming measures along Dwight Street

In contrast to Chestnut Street, Dwight Street has a lower traffic volume and does not function as a major pass-through arterial in the Lincoln Elementary School zone. Parked cars and occasional grassy verges along Dwight Street provide buffers between pedestrians and traffic, and the parked cars also help reduce traffic speed. However, a lack of crosswalks and traffic calming measures along and across Dwight Street create safety hazards at several intersections.



A complete lack of crosswalks at the intersection of Dwight Street and Bancroft Street is emblematic of the broader lack of crosswalks along and across Dwight Street. At this particular intersection, the lack of stop lines on Bancroft Street and the lack of a stop sign on Dwight Street also create additional hazards.



Wide turning radii at the intersection of Dwight Street and Jefferson Avenue create conditions for fast-turning traffic that poses a risk to pedestrians. In addition, while this intersection has traffic signals, there are no pedestrian signals to indicate when it is safe for pedestrians to cross.

Recommendations:

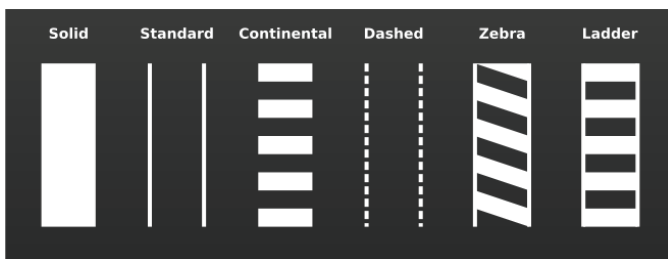
1. Upgrade Dwight Street intersections at Bancroft and Alexander Streets
 - Add new crosswalks with ladder design, curb ramps and detectable warning strips connecting all four corners at both intersections
 - Add stop signs with reflective poles on Dwight Street to create a three-way stop at Bancroft Street (Dwight Street is one-way at Bancroft Street) and a four-way stop at Alexander Street
 - Add stop lines before all new and existing stop signs at both intersections
2. Narrow turning radii to slow traffic at the intersection of Dwight Street and Jefferson Avenue using paint and plastic flexposts
3. Install pedestrian signals at the intersection of Dwight Street and Jefferson Avenue, with push-button activation and leading pedestrian intervals
4. Add new crosswalks with ladder design across Osgood and Brookline Streets at intersections with Dwight Street
5. Upgrade all existing marked crossings from the standard design to a ladder crosswalk design

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 in Woburn, MA

Curb Extension/Curb Bulb-out

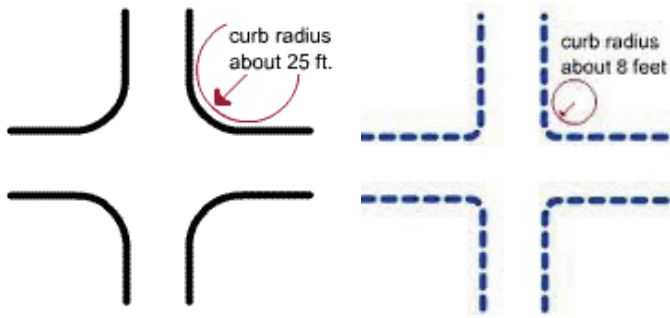
A sidewalk extension into the street (into the parking lane) shortens crossing distance, increases visibility for walkers and encourages eye contact between drivers and walkers.



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.

Fog Line

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



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