

Philip G. Coburn Elementary Walk Audit **West Springfield, MA**

April 25, 2016

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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Purpose

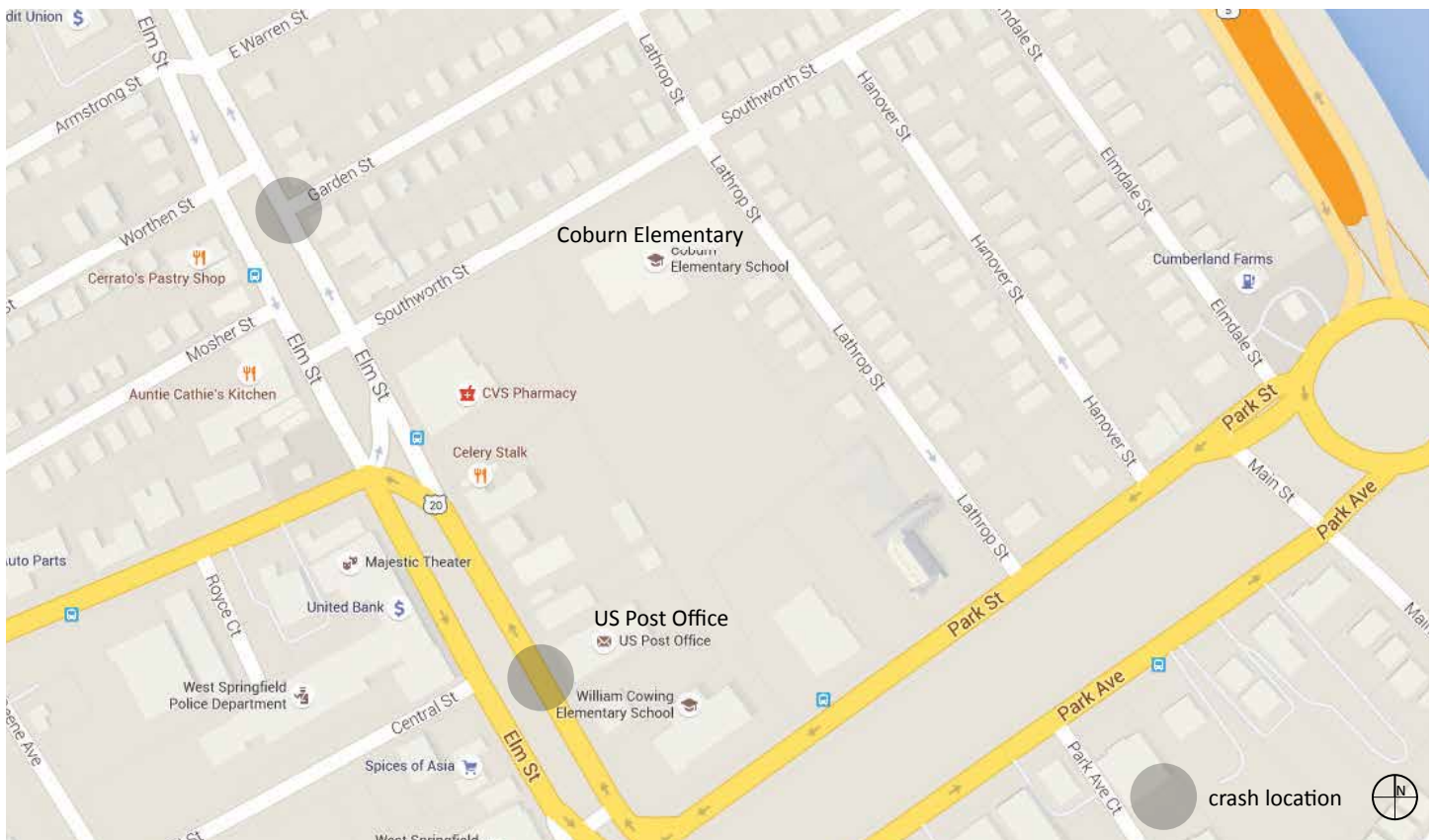
The safety of the walking environment is critical to both protect those children currently walking to school, and to promote the idea of walking to school to those students who live within walking distance. In December 2014, two crashes involving pedestrians crossing on Elm Street occurred on the same day. One crash killed a crossing guard at the Garden Street/Elm Street intersection just after she had safely stopped traffic for several students. The second crash occurred at the mid-block crossing in front of the US Post Office. These crossings are used regularly by Coburn School students and staff.

The West Springfield Mass in Motion Wellness Leadership Team (WLT) highlighted safe routes to school at the Coburn School as a priority in the community's Year 1 Mass in Motion (MiM) work plan. The MiM Coordinator reached out to the Coburn School in 2015 and conducted a work session with students mapping their routes to school and identifying any barriers to walking and bicycling. At the end of the school year, both the Principal and Vice Principal either retired or was reassigned.

In 2016, the MiM Coordinator reached out to the new Principal, Shelly St. George, who scheduled the walk audit.

Participants

Catherine Ratte	West Springfield Mass in Motion Coordinator
Stacey Beuttell	WalkBoston
Jeanne Galloway	City of West Springfield Health Department
Johanna Stacy	Pioneer Valley Planning Commission
Shelly St. George	Philip G. Coburn Elementary School Principal
Jim Czach	City of West Springfield Engineering Department



Walk assessment study area around the Coburn Elementary School

Philip G. Coburn Elementary School Profile

Philip G. Coburn Elementary School enrolls over 500 students from Kindergarten to Fifth grade. The Elementary School is currently in a former middle school building that will soon be demolished. A new, larger school will be built on the same site and house up to 625 students from both the Coburn and Cowing Schools.

Most students walking to Coburn come from neighborhoods north, east and west of the school. They cross Elm Street, Southworth Street, or Lathrop Street. All walkers cross with the assistance of a crossing guard at Lathrop/Southworth Street at arrival and dismissal. Walkers are dismissed first. The school staff spends a lot of time at the beginning of the school year educating parents and students about proper arrival/dismissal procedures. As a result, both students and parents comply with the rules.

Parent car drop off and pick up is on Southworth Street. The recent construction (within the last 5 years) of drop-off lane on Southworth Street has improved traffic flow for cars throughout neighborhood, according to the West Springfield engineering department. There have been far fewer complaints from neighborhood residents and parents. The Coburn Principal voiced no concerns about arrival and dismissal procedures, and stated that there have been no incidents reported.

Students coming from the south of the school tend not to walk for a couple of reasons. First, many students living in the Merrick-Memorial Neighborhood on southeast side of Park Avenue at Coburn are considered English Language Learners (ELL) and are eligible for yellow bus service automatically. Non-ELL students living in this neighborhood also ride the yellow bus despite being within 1-mile radius of Coburn School because the yellow bus is already there to serve ELL students. Second, Park Avenue is difficult to cross. Few (if any) students attempt it. If the Park Avenue and Park Street crossings were improved, students living in the Merrick-Memorial neighborhood would have a safer walking route to school.

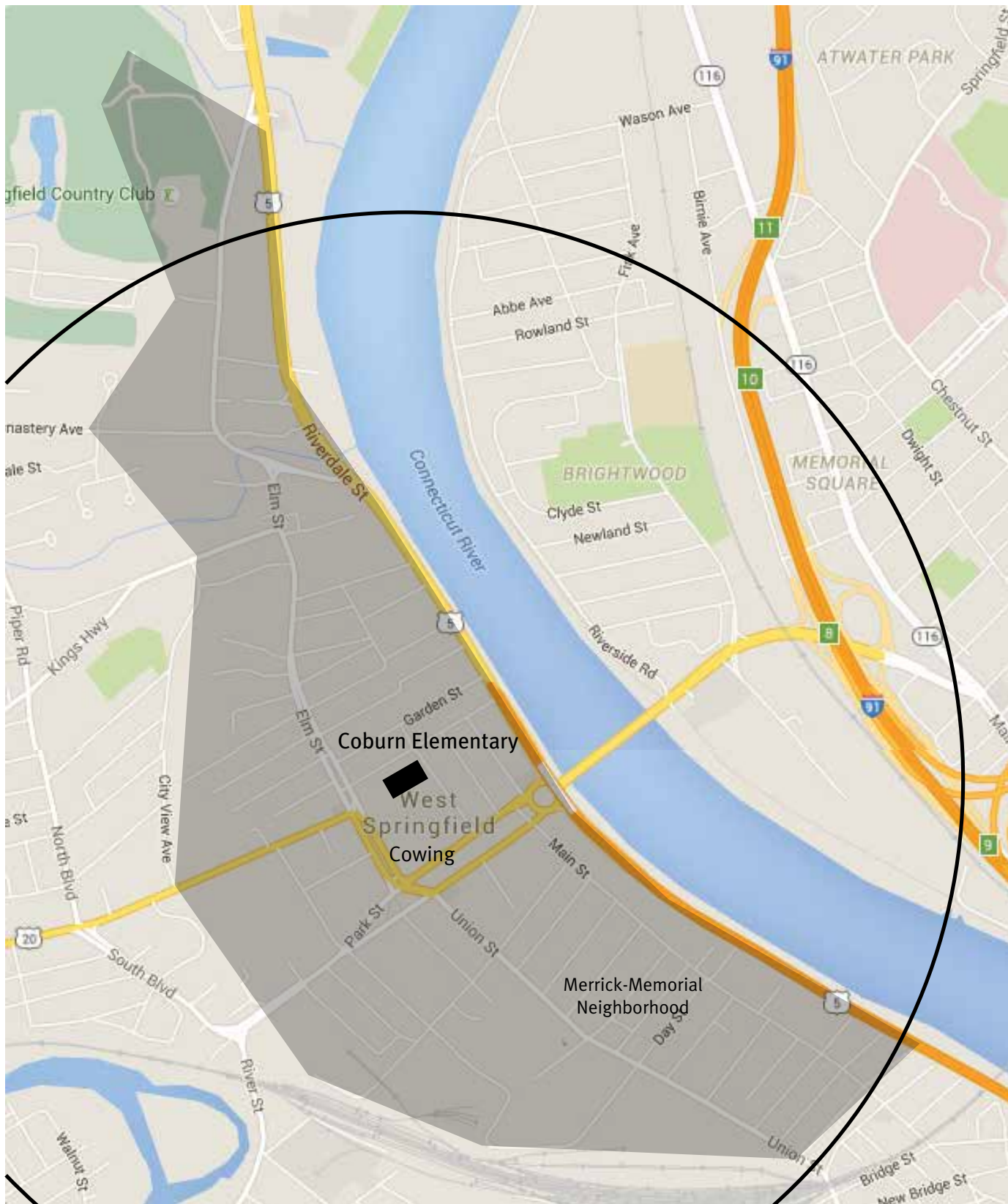
Crossing guards are posted at five locations assisting both Coburn and Cowing students:

1. Lathrop/Southworth Street intersection (Coburn)
2. Elm St/Garden St intersection (Coburn)
3. Lathrop/Park Street (Cowing)
4. At Cowing School on Park Street (Cowing)
5. Park Ave/Main Street (Cowing)

The new, larger elementary school planned for the Coburn site will house students from both schools so understanding the walking patterns of each is important.



Drop off and pick up zone along Southworth Street



Philip G. Coburn Elementary School District

1 mile radius from Coburn Elementary School



Key Issues and Recommendations

Overall, the pedestrian infrastructure immediately surrounding the Coburn School is safe and in good condition. Children have smooth, wide sidewalks to walk on and crossing guards regulate traffic at arrival and dismissal times. The areas of primary concern are road crossings on the southeast and southwest sides of the school. Below is a summary of the issues observed on the walk audit and preliminary recommendations that address these safety concerns.

1. Road crossings on Elm Street feel dangerous and provide no signal protection for walkers.

Elm Street/Garden Street crossing

Students walking from the west side of Elm Street to the Coburn School use the crosswalk just south of the Elm Street/Garden Street intersection. This intersection was the site of a pedestrian fatality in December 2014. Elm Street was recently converted from a four lane, median-separated road to a two lane, median-separated road with parking lanes on both sides. The crosswalks are well marked. Parking is prohibited within 20' of the crosswalk which improves the visibility of walkers to oncoming traffic. Pedestrian crossing signs are also present.



The crosswalk at Elm Street and Garden Street is a popular crossing point for Coburn students. A crossing guard monitors this area.

Recommendations:

- Install curb bump-outs at the crosswalk locations to reduce the crossing distances for pedestrians and further discourage drivers from parking near the crosswalks.
- Consider installing Rectangular Rapid Flashing Beacons similar to those found at the US Post Office crossing.
- Work with the police department and engineering department to monitor driving speeds and volumes at this crossing. If traffic speeds are an issue, then prioritize this area for traffic enforcement. If traffic volumes are low enough, continue to implement road diet strategies to reduce the width of the travel lanes and roadway.



The crosswalk in front of the US Post Office on Elm Street has a Rectangular Rapid Flash Beacon and curb bump-outs.

Elm Street/Westfield Intersection

The Elm Street/Westfield intersection poses danger to pedestrians, particularly those new to the area who do not understand the phasing of the traffic signal. Most students attending the Coburn School do not use this intersection to reach the school, but they may use it to reach other destinations before or after school. There are no pedestrian signals and it is difficult to anticipate when drivers will be given a green light. The City engineer mentioned that this intersection is under study and traffic counts are in process. This section of Elm Street has two travel lanes and two parking lanes on each side of the median. There is one marked crosswalk on the north side of Elm Street, and one marked crosswalk across Westfield Street.



View of the Elm Street crosswalk looking west toward Westfield Street



View of the mid-block crossing on Park Avenue leading to another mid-block crossing in front of the church on Park Street.

Recommendations:

- Institute “no right turn on red” for drivers turning right from Westfield Street onto Elm Street. Limiting these turns would allow walkers to feel more comfortable walking across Westfield when traffic is stopped at a red signal.
- Upgrade traffic signal equipment to include pedestrian countdown signals. (*Acknowledge that underground drainage pipes may make installation difficult).

2. Mid-block road crossings on Park Street and Park Avenue provide little protection for walkers.

Park Street is a 3-lane, one way street with traffic moving west from the North End Bridge and Route 5. Its one-way pair, Park Avenue carries traffic in three lanes moving east to the North End Bridge. A wide, linear park fills the space between the two streets. Festivals are held in the warmer months within the park.

There are three un-signalized crossings on Park Street: (1) at the senior center and (2) in front of the First Congregational Church, and (3) on the north side of the Main Street/Park Street intersection. PVTa has bus stops at the first two crosswalk locations. The crossings have crosswalk signs and arrows pointing to the crosswalk on both sides of the road. The crosswalks are painted with a zebra pattern. There is one mid-block crossing on Park Avenue with no crosswalk signs.

Recommendations:

- Install crosswalk signs and advance crosswalk signs on Park Street and Park Avenue to warn drivers of the presence of pedestrians in the crosswalks.
- Study the feasibility and safety of consolidating the un-signalized crosswalks on Park Street. Consider the path network in the park as it sets up desire lines for people to cross the street.
- Monitor traffic speeds on Park Street and Park Avenue to ensure drivers are not driving at excessive speeds. Traffic speed is the number one threat to pedestrians.

3. Crossings distances at the Elm Street/Park Street intersection and the Elm Street/Park Avenue/Union Street are long.

The Elm Street/Park Street intersection is identified as a 2011-2013 HSIP crash cluster (31 crashes; no fatalities; 8 injuries), which means that this intersection is in the top 5% of crash clusters in the region between the years of 2011-2013 (as reported to the Pioneer Valley Planning Commission). Crossing Elm Street is a three-stage crosswalk where people walking must cross 5 lanes of oncoming traffic. Crossing Park Street involves one long crosswalk across three lanes of traffic. These long crossing distances can discourage people from walking to the park and the Merrick-Memorial Neighborhood.

The pedestrian signal equipment at the Elm Street/Park Avenue/Union Street intersection is a smaller version of a standard vehicular traffic signal. It is mounted at a pedestrian scale, but is confusing to drivers and pedestrians alike.

Recommendations

- Consider narrowing or eliminating travel lanes to tighten curb radii, construct curb bump-outs and slow traffic at both intersections
- Upgrade traffic signals at both intersections to include countdown pedestrian signals across both sides of the intersection.



Elm Street/Park Street intersection is a HSIP crash cluster zone



Park Avenue and Union Street intersection with long crossing distances and confusing pedestrian signal equipment

4. The Main Street/Park Avenue intersection presents long crossing distances and confusing traffic signal equipment.

Similar to the Elm Street/Park Avenue intersection, the lane widths and crossing distances at this intersection are long. There is a crossing guard at this location during school arrival and dismissal. There are marked crosswalks, but no pedestrian signals. Furthermore, there is a second crosswalk at the rotary entrance with a Rectangular Rapid Flash Beacon (RRFB) less than 100 feet from the traffic signal. The proximity of the RRFB to the traffic signal is potentially dangerous for pedestrians. Those walking would push the RRFB button and begin crossing, while drivers who just began to accelerate would have to hit their brakes. Drivers may not anticipate or see pedestrians at this location. If the RRFB is tied into phasing of traffic light, it would extend the wait time for pedestrians and the RRFB would not function as designed.

The mismatch of traffic signal equipment could be due to different jurisdictions. MassDOT designed and implemented the rotary improvements, while the traffic signal equipment is owned and operated by the City of West Springfield.

Recommendations:

- Install pedestrian countdown signals at the intersection
- Study the possibility of re-routing pedestrian traffic away from the rotary. Changes could include removal of RRFB, crosswalk and sidewalk network leading to the rotary. Any improvements done at this intersection should be coordinated with modifications to the Main Street/Park Street intersection as well (e.g., removal of RRFB, crosswalk, and sidewalk network).



Rectangular Rapid Flash Beacons installed at the rotary are within 100' of the traffic signal and may pose a danger to pedestrians.

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//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

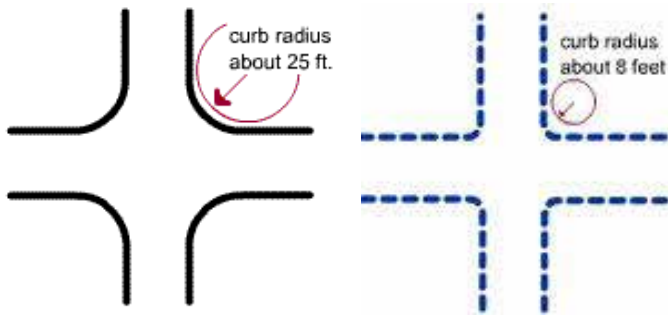
A sidewalk extension into the street (into the parking lane) shortens crossing distance, increases visibility for walkers and encourages eye contact between drivers and walkers.



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.



(A) Gravel-filled curb extension

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.



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

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.

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.



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/fhwasao9009/



Rectangular Rapid Flash Beacon (RRFB) in West Springfield