



Evaluation of “Crosswalk and Lighted Crosswalk System”

14 Richards Street
September 18, 2023

Petitioner: Brian Underwood request installation of flashing crosswalk lights in the vicinity of Goddard School of Science & Technology, 14 Richards St.
9z CC June 8, 2021

Scheduled Committee Hearing: September 20, 2023 Traffic & Parking Committee, Item 4a

Prepared by: Todd M. Kirrane., Assistant Director

The petitioners have requested the installation of a Rectangular Rapid Flashing Beacon (RRFB) system for the mid-block crosswalk across Richards Street in the vicinity of the Goddard School of Science & Technology. RRFBs are a federal highway approved traffic control device that is designed to improve pedestrian safety and access at uncontrolled crosswalk locations by providing extra visual cues to the motorist that a pedestrian is within the crosswalk and crossing across their path of travel. Studies have shown that the RRFB can improve safety and access for pedestrians by reducing pedestrian related crashes by up to 47% and increase motorist yielding rates up to 98%. They typically cost approximately \$30,000 to \$40,000 to purchase and install and the Federal Highway Administration allows municipal jurisdictions to install RRFBs on City controlled rights-of-way provided that the municipality does so in full compliance with Interim Approval 21.

Richards Street is classified by the Massachusetts Department of Transportation (MassDOT) as a Local Road under City Jurisdiction. The roadway is approximately 30 feet curb to curb, generally runs in an east-west direction in this segment and provides a local connection between Cambridge Street and Main Street and the Goddard School, a Worcester public elementary school . The road includes two-way motor vehicle operations with 1 general purpose travel lane in each direction. On Street parking is permitted on both sides of the street within the study area. The statutory (unposted) speed limit is 30 mph during non-school hours and posted 20 mph during school hours. In addition to the school, land use along this section is single and multi-family residential. There are continuous 7-foot sidewalks along both sides of the street. The ramps at the crosswalk were recently constructed as part of an abutting private property project.



IMAGE 1: AERIAL VIEW OF LOCATION

In September, staff from DTM investigated the location to determine if it was an appropriate candidate for the installation of an RRFB system. identified safety issues include:

- **Traffic Volumes & Speed:** As a local roadway, Richard Street has a high volume of traffic in this segment. Using Streetlight Insight data, the average daily volume is 1628 vehicles. However, this higher-than-normal volume is a result of extra traffic generated by the school with vehicles arriving twice per day during arrival and dismissal. The average speed throughout the entire day is 16 mph and an 85th percentile speed of 23 mph. The average speed during arrival period is 17 mph and an 85th percentile speed of 24 mph. The average speed during dismissal period is 16 mph and an 85th percentile speed of 22 mph.
- **Pedestrian Sightlines:** Pedestrian sightlines for those pedestrians crossing in a northerly direction away from the school are 140 feet looking west and 180 feet looking east without parked vehicles present. The pedestrian sightlines for those crossing southerly toward the school are over 250 feet looking east and 170 feet looking east without parked vehicles present. The stopping sight distance needed for the approaching vehicle traveling at the 85th percentile speed is 121 feet.
- **Crosswalk Visibility:** Although the crosswalk is painted in the high visibility pattern of a ladder style, there are a lack of other visible queues to approaching drivers to expect a pedestrian in the roadway. There are no MUTCD compliant pedestrian in crosswalk signage at the crosswalk itself or in advance of the crosswalk.
- **Pedestrian Usage:** In order to observe whether or not the crosswalk generates a high usage to warrant the implementation of a RRFB system, staff observed the arrival, dismissal, and peak pm usage in September 2023. During arrival observation it was 55 degrees and sunny. The pedestrian usage of the crosswalk was 8, though there were 82

pedestrian crossings within the designated school zone that took place outside of the crosswalk. During dismissal observation it was 79 degrees and sunny. The pedestrian usage of the crosswalk was 25, though there were approximately 70 pedestrian crossings within the designated school zone that took place outside of the crosswalk. During the peak evening observation, it was 74 degrees and sunny. The pedestrian usage of the crosswalk was 0.

- Arrival Observations: The arrival and dismissal operations of the school takes place on both Richards Street and Freeland Street and appears to be divided by classes. Crossing guards were visible at the crosswalks along Main Street. The majority of those arriving and leaving school on Richards Street did so by personal motor vehicle. For arrival parents were dropping their children off on both sides of the street in the vicinity of the school as early as 20 minutes before the beginning of school. Students generally queued outside specific doors assigned by the classrooms at 3 different entry ways. Only 1 entrance way is in the vicinity of the crosswalk. Depending on the age, some parents stayed with their children while others dropped and left. Because of this the available curb never reached capacity, though the road was significantly narrowed when two vehicles were opposite each other. As expected from the number of pedestrians using the crosswalk during this time, the vast majority of those being dropped the opposite side of the school crossed at the location of their car and not the location of the crosswalk.
- Dismissal Observations: Similar to arrival, parents begin arriving for dismissal as early as 30 minutes before school is over. Those arriving by motor vehicle, the vast majority, park along both sides of the street and right up to the crosswalk. Many either sat in their vehicle or waited on the sidewalk and socialized with other parents or guardians. Because of this by the time dismissal took place the roadway was significantly narrowed to only 1 vehicle width. Under normal conditions this would be manageable as a 'yield street' where cars could pull off into the parking lane to allow others to pass. However, with the curbside at 100% capacity and some vehicles standing in driveways, the roadway became impassable and at one point a trades van that was traveling eastbound toward Cambridge Street had to back down the street over 400 feet back to Main Street. Additionally, those trying to crosswalk the street were not visible to motor vehicles until they stepped into the pathway of the vehicle.



Images from Dismissal from the west of the crosswalk location



Image of the van that had to back down the street because it could not pass



Image of the street following dismissal. Only vehicle left unrelated to the school was the white car behind the school bus

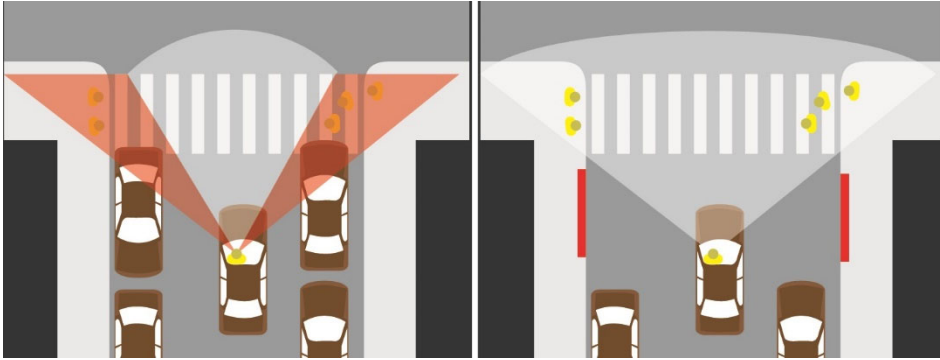
Based on staff observation and the recorded traffic characteristics of Richards Street in the vicinity of the crosswalk, staff does not believe that the installation of a RRFB system is warranted as it will not address the observed safety issues. Instead, staff believes that potential ways to improve the safety and access for pedestrians in the vicinity of the school are:

1. Installation of MUTCD Compliant Pedestrian in Crosswalk Signage.



This sign is used to notify drivers of a crosswalk so that they are made aware that they may encounter a pedestrian in the crosswalk within a designated school zone and will be more on alert. We recommend placement of these signs at the crosswalk in front of the Goddard School.

2. Improve Visibility of the crosswalk.



In order to prioritize the safety and access of pedestrians, especially school age pedestrians, we need to improve the visibility of pedestrians attempting to cross the street to motor vehicles on the roadway. This should begin with ordaining a NO PARKING ANYTIME/TOW AWAY ZONE 20 feet from the crosswalks on both sides of the street with considerations for hardening these zones as part of recommendation # 3.

3. Safety Audit through Safe Routes to School Program:

DTM staff have begun a working group with staff from the School Department, Public Health, DPW&P, Police and the Massachusetts Safe Routes to School program. The goal of the Statewide Safe Routes to School (SRTS) program is to increase the number of students who get to and from school by walking or biking by improving safety, access, and education. The program supports and encourages safe walking and bicycling to school in order to:

- Ease traffic congestion generally, and especially around schools during AM/PM peaks
- Improve air quality around schools
- Increase physical activity for students and realize cognitive and behavioral benefits
- Allow the continued growth of a sustainable community.

Rather than dictating solutions based on engineering standards, the SRTS program is a collaborative effort to improve safety, in part, by modifying the built environment to meet the needs of the school – not the other way around. As part of this program, DTM will ask the School Department to target the Goddard School for potential safety improvements through development of a plan that can be brought to the community and Council for review and approval.

Recommendation: Due to the identified safety and access concerns identified at this location, staff is recommending the following actions:

- Vote to FILE the request for installation of a RRFB system at this location
- Chair's Order requesting that the Commissioner of Transportation & Mobility, through the City Manager, to install the MUTCD compliant Pedestrian in Crosswalk signage at this location and to coordinate with the School Department to investigate ways to improve safety and access during the arrival and dismissal activities at the Goddard School of Science & Technology on Richards Street.