



Evaluation of “Crosswalk and Lighted Crosswalk System”

Sunderland Road
September 18, 2023

Petition: Councilor George J. Russell on behalf of Gregory Wong request installation of flashing pedestrian crosswalk lights on Sunderland Rd. in the vicinity of Roosevelt Street School.

9e CC February 14, 2023

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

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 Sunderland Road in the vicinity of the Roosevelt School. 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%. 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. They typically cost between \$30,000 and \$40,000 to purchase and install, depending on the configuration and necessary components.

Sunderland Road is classified by the Massachusetts Department of Transportation (MassDOT) as an Urban Collector under City Jurisdiction. Sunderland Road connects Massasoit Road and Grafton Street, provides access to several neighborhoods and multifamily developments, and access to the Roosevelt School - a Worcester public elementary school.

The roadway is approximately 30 feet curb to curb and generally runs in an east-west direction in this segment. The road provides for two-way motor vehicle operations with one general purpose travel lane in each direction. On-street parking is not permitted on either side. The statutory (unposted) speed limit is 30 mph during non-school hours and posted 20 mph (School zone) during school hours. In addition to the school, land use along this section includes several large-scale multi-family residential developments. There is a sidewalk that links this crosswalk to the school property on the north side of the street, and a walkway internal to the private Sunderland Woods development to the south. Other than this, there are no sidewalks along Sunderland Road, and as a result, the other multi-family developments are not connected by pedestrian accommodations to this crosswalk.

This analysis focuses on the crosswalk located near Sunderland Woods, which was observed to have the majority of pedestrian activity and is staffed by a school crossing guard. A second crosswalk is located to the west of the subject site near the driveway to the Perkins Farm

condominiums. This crosswalk is connected to the school on the north side by a walkway on school property. There are no pedestrian accommodations connecting to the crosswalk on the southerly side of the roadway, meaning that any pedestrians using this crosswalk must walk in the street or along the unimproved grassy area behind the curb. This location would not be a candidate near-term for an RRFB due to the lack of adequate accommodations providing access to the crosswalk but should be considered in developing more comprehensive improvements to provide walking access to Roosevelt School and in this neighborhood generally as part of a future Safe Routes to School review.

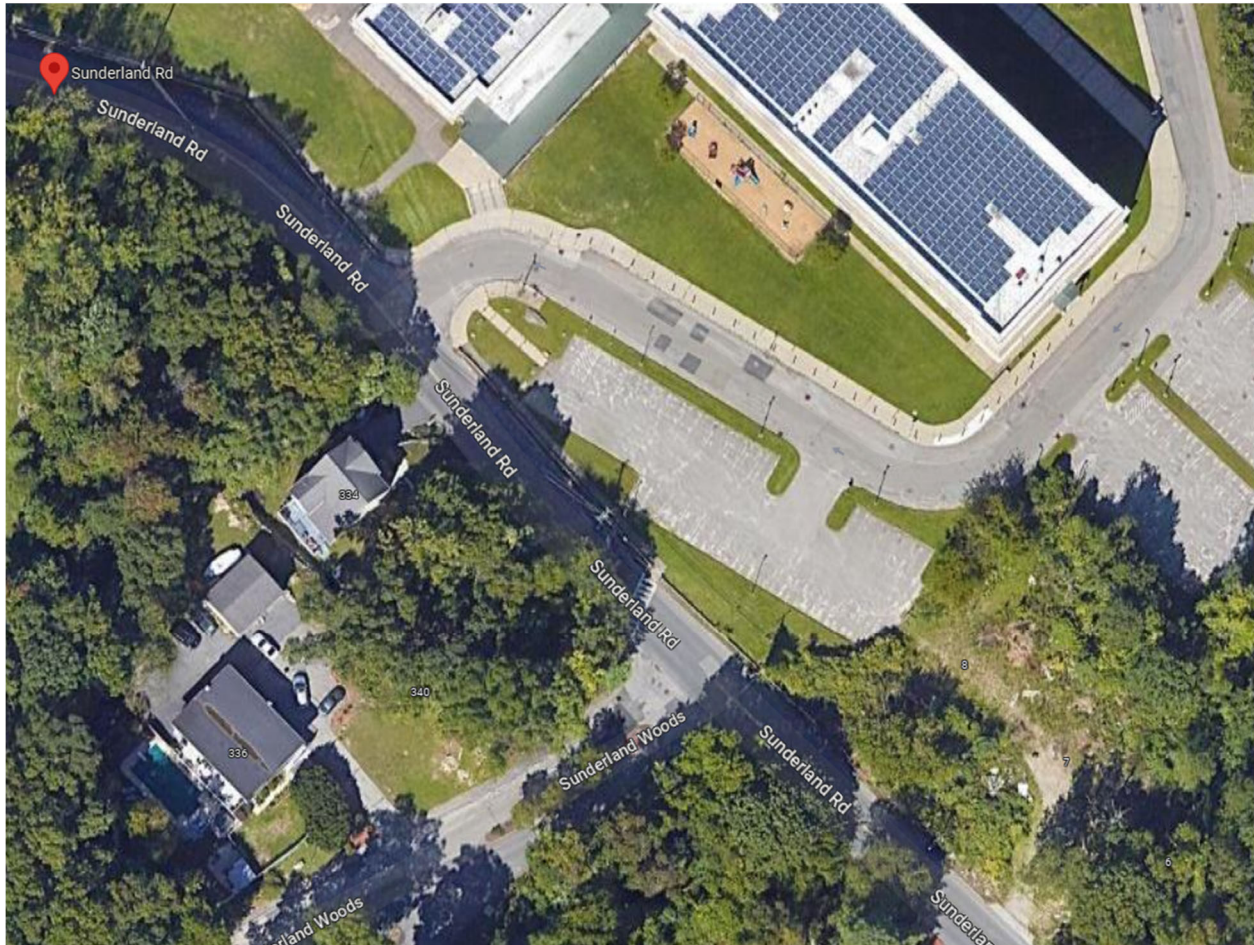


IMAGE 1: AERIAL VIEW OF LOCATION

In September, staff from DTM investigated the Sunderland Woods crosswalk to determine if it was an appropriate candidate for the installation of an RRFB system. Aspects that were evaluated include:

- Traffic Volumes & Speed: Sunderland Rd is classified as an urban collector roadway, meaning that a primary role of the street is to provide a connecting route between neighborhoods and the arterial street network. Using Streetlight Insight data, the average daily volume is estimated at 2,468 vehicles, which is typical of a collector roadway. The average speed throughout the entire day is 24 mph and an 85th percentile speed of 30 mph. The average speed during arrival period is 24 mph and an 85th percentile speed of 31 mph. The average speed during dismissal period is 23 mph and an 85th percentile speed of 30 mph. **These speeds indicate that traffic is not obeying the 20 mph limit that is in effect during school hours.**
- Pedestrian Sightlines: The pedestrian sightlines are 220 feet looking east and over 250 feet looking west. The stopping sight distance needed for the approaching vehicle

traveling at the 85th percentile speed is 160 feet, and therefore this location has adequate sight distance for a crosswalk.

- Crosswalk Visibility and Signage: 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 signs 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. A crossing guard was present throughout the entire arrival and dismissal period and was utilizing the STOP paddle. During arrival observation it was 64 degrees and sunny. The pedestrian usage of the crosswalk was 82 pedestrians during arrival with no crossings outside the crosswalk location. During dismissal observation it was 74 degrees and sunny. The pedestrian usage of the crosswalk was 55 pedestrians with no crossings outside the crosswalk location. During the early evening “pm peak” observation, which corresponds to the evening commute hours, it was 72 degrees and sunny. No pedestrians were observed using the crosswalk during this time period. In general, the crosswalk is heavily used during school arrival and dismissal, when a crossing guard is present, but experiences little use at other times.
- Arrival Observations: The arrival and dismissal operations of the school affect both Sunderland Road and Grafton Street. Crossing guards were visible at the primary crosswalks along both streets. The majority of those arriving and leaving school on Sunderland Road did so by personal motor vehicle who park on the driveways for Sunderland Woods. For arrival, parents were observed dropping their children off on both sides of Sunderland Woods in the vicinity of the school as early as 20 minutes before the beginning of school. Depending on the age, some parents stayed with their children and walked them onto the school property while others dropped and left. All crossings were done with the crossing guard controlling the location through stopping oncoming traffic and then notifying the pedestrians when it was safe to cross.
- Dismissal Observations: Similar to arrival, parents begin arriving for dismissal as early as 30 minutes before school is over. Many either sat in their vehicle or waited on the sidewalk and socialized with other parents or guardians. Staff from the Roosevelt Street School formed a walking school bus style operation and walked the children from the school property across Sunderland Road to their awaiting parents or guardians. All crossings were done with the crossing guard controlling the location through stopping oncoming traffic and then notifying the pedestrians when it was safe to cross.

Because crossing guards were observed effectively managing crossings at this location, and given the infrequent use off-hours, staff believes that an RRFB would not be helpful at this location at the present time. Instead, staff believes that safety and access for pedestrians in the vicinity of the school should be addressed by installation of MUTCD compliant signage at the crosswalk and the development of a coordinated plan to improve pedestrian access overall along Sunderland Road:

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 Roosevelt School on Sunderland Rd.

2. Sidewalks should be prioritized for installation on Sunderland Road as part of a future Safe Routes to School project to provide safe walking routes for children in nearby residences to access Roosevelt school. Given the right-of-way constraints and topographical challenges, this is not a trivial matter and will require study to determine the appropriate feasible design and dedication of funds to implement the work.

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, install the MUTCD compliant Pedestrian in Crosswalk signage at this location.
- Chair's Order requesting that the Commissioner of Transportation & Mobility, through the City Manager, in coordination with Worcester Public Schools and the Massachusetts Safe Routes to Schools program, review and upgrade School Zone signage along Sunderland Road in the vicinity of Roosevelt School.
- Chair's Order requesting that the Commissioner of Transportation & Mobility, through the City Manager, working in coordinating with the Department of Public Works & Parks and Worcester Public Schools, develop of a plan to address sidewalks and pedestrian accommodations comprehensively along Sunderland Road between Dalton Street and Grafton Street, with particular emphasis on the section between Perkins Farm Road and the westerly driveway of Redwood Hills.