



Diane Nichols Tradd
Assistant City Manager/DPD Director

Craig Thomas
Deputy Director

MEMORANDUM

TO: Eileen M. Donoghue, City Manager *EMD*

FROM: Diane N. Tradd, Assistant City Manager/DPD Director

SUBJECT: MOTION OF 9/12/17 BY COUNCILOR KENNEDY
REQUEST THE CITY MANAGER INSTRUCT THE TRAFFIC ENGINEER
TO PROVIDE RECOMMENDATIONS AIMED AT INCREASING THE
SAFETY OF THE CROSSWALK ON PAWTUCKET STREET BETWEEN
ARLINGTON STREET AND FANNING STREET

The Transportation Engineer conducted a field visit to the location. This crossing is located near Lord Manor, which provides housing for the elderly and disabled. In addition, the Franco American School is currently being renovated to provide housing, and there is additional potential development in this area, which may generate additional pedestrian traffic from the north side of Pawtucket Street at this crossing. It takes longer for slower walkers to clear the crosswalk and it is in the interest of pedestrian safety to make the crosswalk more visible.

The crosswalk is located at the intersection of Pawtucket Street with Arlington and Fanning Streets and does not have any traffic controls (stop signs, traffic signal). During peak hours, vehicles often queue through this intersection/crosswalk, forming two lanes of traffic. Currently the paint is faded and there are no high visibility neon green signs marking the crosswalk. In addition, the crosswalk is also not ADA compliant because there are no detectable warning panels and ADA compliant ramps. As part of our Complete Streets policy, the City needs to consider pedestrian safety and accommodations in any design efforts. The City is required to implement an ADA accessibility plan to bring public ways into compliance with the ADA.

There are several options that can be implemented to improve the safety of the crossing, which include the following:

- Repainting the crosswalk markings;
- Add high-visibility neon green signage at the crosswalk on both sides;
- Add flashing beacon/light at the crosswalk on both sides;
- Add detectable warning panels and ADA compliant ramps;
- Add curb bump-outs (dependent on review of impact to queuing traffic).

Note that the addition of curb bump-outs would eliminate the ability of vehicles to queue in two lanes past Arlington Street during peak hours for the School Street traffic signal along this section of Pawtucket Street. Curb bump-outs can also impact and/or eliminate parking spots.

COSTS

The Sign Division of the Lowell Police Department can repaint the crosswalk lines and can add any signage required at the direction of the Transportation Engineer at low to minimal cost (<\$300).

Adding a flashing beacon/light at the crosswalk is shown to greatly increase pedestrian visibility to drivers. A flashing beacon with a pedestrian push button that needs to be wired to the electrical grid can cost between \$20,000-\$30,000. There is a new solar flashing beacon available from Migma Systems that would cost approximately \$3,000. The device is Manual for Uniform Control of Traffic Devices (MUTCD) compliant and MassDOT final approval is pending. See attached.

Each ADA compliant ramp costs approximately \$1,200, which includes the concrete and the detectable warning pane. There would also be mobilization costs associated with that installation.

A curb bump-out improves visibility by allowing pedestrians to see more clearly down the road and allowing cars to see pedestrians before they step into the crosswalk. A bump-out would include concrete, curbing, pavement markings and ADA compliant ramps. Due to mobilization costs for a small project, the average cost of each bump-out would be \$5,000-7,000. If they were part of a bigger project, the cost would be closer to \$2,000-\$2,500.

Often, when a developer applies for site plan approval and the development will impact traffic (vehicular or pedestrian), Development Services and the Transportation Engineer make recommendations to the Planning Board that, as part of their project, the developer should make or fund improvements in the public right-of-way to the sidewalks, crosswalks and roadway. This may be an appropriate improvement in that context.



NV/ns

9/18/18

Attachment

cc: John Cooper, Sign Division
Natasha Vance, Transportation Engineer



Migma Distributed Sensing Flashing Beacon (DSFB)



Various studies have indicated that the continuously flashing beacons do not necessarily attract driver's attention because they are always on and drivers get used to them. In addition, they flash 24/7, day and night, even when there are no vehicles or pedestrians on the streets, which could also introduce the visual noises to the residents living nearby.

Migma Systems has developed an alternative product, Distributed Sensing Flashing Beacon (DSFB). The sensor receiver is embedded inside the housing of flasher, drawing power from solar panel or solar battery. Using solar-powered detector, it flashes only when vehicles or pedestrians are detected within certain distance (up to 1500 ft) to the flasher. Otherwise, it is off! As an economic solution, it can also be installed at midblock crossing to automatically trigger the flasher when pedestrians are waiting to cross, without any pushbuttons. If preferred, it can also be configured to flash continuously simply by flipping a switch.

Some vehicle drivers can be easily distracted by devices such as smart phones while driving. These distractions, caused by their devices, are well documented, rising cause of pedestrian and/or vehicle accidents and sometimes fatalities. Migma Distributed Sensing Flashing Beacon can make a difference! *(Patent pending for DSFB.)*

Specification

Beacon Flasher

- △ Diameter 12"
- △ LED Quantity 138
- △ Luminous Intensity ≥ 4000 cd
- △ LED Lifetime 5.5 Years
- △ Visual Distance ≥ 1600 ft
- △ Operating Time 10 rainy days after fully charged
- △ Dimension 15"x5"x14"
- △ Weight 14 lb.
- △ Enclosure Protection IP65
- △ Material UV-stabilized polycarbonate
- △ Flashing Mode Vehicle-activated or continuous

Solar Panel

- △ Solar Panel Power 10 W
- △ Battery Capacity 12 VDC & 7 aH lead-acid battery
- △ Solar Panel Size 9"x11"

Vehicle Detector

- △ Sensor PIR motion sensor
- △ Sensing Range 30 ft (sensor to vehicle)
- △ Comm Distance 1500 ft (sensor to beacon flasher)
- △ Sensor Quantity Up to 4 sensors simultaneously
- △ Sensor Power 3.5W solar panel and 18650 Li-battery



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Migma

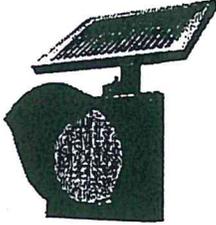


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Migma DSFB Price Sheet

(March 2018)

Product Name	Photo	System Cost	Description
Migma DSFB (Part No: MDSFB0218)		\$1095.00/each * plus shipping & handling & tax	Distributed Sensing Flashing Beacon (DSFB) which can flash continuously or activated by vehicle. Package contains: <ul style="list-style-type: none"> - housing - LED beacon - solar panel - battery - mounting bracket - installation manual
Vehicle Detector (Part No: MDSFB-D0218)		\$245.00/each (up to four sensors)	Vehicle detection sensor with capability of rejecting animals. Package contains: <ul style="list-style-type: none"> - bracket - solar panel - installation manual

* 10% discount on unit cost for two or more units shipped to same location

* Custom housing colors, please ask for quote

* Custom application or mounting, please ask for quote

* If vehicle detection sensor is not purchased, it will be continuously flashing. User can purchase the detection sensor later and make the flasher activated by vehicles.