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DEPARTMENT OF INFRASTRUCTURE ENGINEERING

TRAFFIC CALMING NEEDS ASSESSMENT

TO: Transportation Advisory Committee

FROM: Jason L. Mammone, P.E., Director of Engineering

DATE: July 30, 2018

SUBJECT: Traffic Calming Request #2018-001 – Lower East Street

Purpose

The Transportation Advisory Committee (TAC), at their 06/12/18 meeting, reviewed the Initial Evaluation for the traffic calming request for Lower East Street (#2018-001) submitted by Maureen Magane of 28 Lower East Street. Based upon the results of the initial evaluation, the TAC voted unanimously that the Lower East Street request for traffic calming merited further consideration and requested that the Engineering Department prepare a Traffic Calming Needs Assessment Report. This report summarizes the findings of the Engineering Department.

Study Area

The study area encompasses the entire section of Lower East Street in its entirety.

Lower East Street is a north/south thickly settled residential through street with a pavement width of approximately 24 to 27 feet. Lower East Street is approximately 1,600 feet (0.3 miles) in length extending from the Town Line to Washington Street. There are no continuous sidewalks on either sides of the roadway for its entire length. Some of the residents utilize Lower Street for on-street parking.

There is an existing “No Parking This Side” parking restriction on the westerly side of Lower East Street extending from Washington Street to 184 feet northerly of Washington Street. There were no vehicles parked within this area at any time observations were made as part of this study.

The prima facie speed limit on all roadways within the study area is 25 mph. A prima facie speed limit is a default speed limit that applies when no other specific speed limit is posted. According to Massachusetts General Laws (MGL), Chapter 90, Section 17 & Section 17c; unless

posted otherwise, your speed would not be reasonable and proper if a motor vehicle is operated in excess of:

- 20 mph in a school zone
- 25 mph in a thickly settled or business district
- 40 mph outside a thickly settled or business district
- 50 mph on a highway outside a thickly settled or business district

Lower East is a designated Emergency Response route for the Town’s Fire Department. Lower East Street also provides access to a couple of MBTA bus stops located on Washington Street.

The applicant and those that signed the traffic calming request as supporters acknowledged that the neighborhood desired to have a sidewalk where they could safely walk along Lower East Street. Currently, Lower East Street is without sidewalks and the residents in the neighborhood have to walk along the roadway and are always nervous to do so due to walking in close proximity to vehicles that are traveling above the speed limit.

Results from the Initial Evaluation indicated that there were a few pedestrian generators located within 1,000 feet. There is 1 park (Draper Field) and as mentioned earlier, a few MBTA bus stops.

Observations (Speed & Volume)

The Town of Dedham utilized a Jamar Radar Recorder to log the speed and volume of vehicles during the period beginning April 23, 2018 and ending April 27, 2018. The radar was setup on Lower East Street at the approximate midpoint of the straight away section between the Town Line and Washington Street. This radar was setup on a utility pole at Station 4+68 in front of #32 Lower East Street.

The volume of traffic expressed as average daily traffic (ADT) and the speed data collected on Lower East Street is shown below in the following table:

Table 1 – Traffic Data Station 4+68

| <i>Direction of Traffic</i> | <i>ADT</i> | <i>Peak Hour Volume</i> | <i>Peak Volume Time</i> | <i>Speed Limit</i> | <i>85th Percentile Speed</i> | <i>Average Speed</i> |
|-----------------------------|---------------|-------------------------|-------------------------|---------------------|---|----------------------|
| Southbound | 1370 (66%) | 170 | 4 - 5 pm | 25 mph ^a | 33 mph | 29 mph |
| Northbound | 691 (34%) | 59 | 4 - 5 pm | 25 mph ^a | 29 mph | 25 mph |
| Combined | 2,061 | 229 | 8 – 9 am | 25 mph ^a | 33 mph | 28 mph |

^a – Prima Facie Speed Limit

The combined average speed for both directions was found to be 28 mph for Lower East Street. The combined 85th percentile speed for both directions was found to be 33 mph for Lower East Street. The 85th percentile speed is the speed at or below which 85 percent of vehicles travel and is the national standard utilized to determine if the speed on a given roadway is in excess, at or below the speed limit. Based upon the data, approximately 70.5% of the vehicles were driving at speeds greater than 25 mph and 29.1% were driving at speeds greater than 30 mph.

Crash (Traffic Collisions) & Traffic Enforcement Data

The Engineering Department analyzed crash data utilizing the most recent 2015-2017 data available from the Dedham Police Department to determine if the subject area was experiencing a higher than normal rate of accidents.

Table 2 – Crash Data

| Road | Total # of Crashes | Crashes Per Year |
|-------------------|---------------------------|-------------------------|
| Lower East Street | 3 | 1.0 |

At least 1 accident occurred during inclement weather conditions and least one accident was a result of an operator under the influence. The low number of crashes per year on Lower East Street and Willis Street indicates there are no overriding roadway geometric safety issues. None of the crashes involved a pedestrian or bicyclist.

The Police Department issued a total of 173 speeding citations on Lower East Street over the past 5 years (7/1/13 through 6/30/18). The citations issued per year are shown in the table below.

Table 3 – Speeding Citations

| Timeframe | # of Citations Issued |
|------------------|------------------------------|
| 7/1/13 – 6/30/14 | 39 |
| 7/1/14 – 6/30/15 | 6 |
| 7/1/15 – 6/30/16 | 5 |
| 7/1/16 – 6/30/17 | 19 |
| 7/1/17 - 6/30/18 | 104 |

AFFECTED AREA

Traffic calming measures not only affect those that directly abut the public right-of-way where a measure is proposed to be installed, but can also potentially affect side streets that intersect the roadway where the measures are to be installed.

Certain types of traffic calming measures are more drastic in changing drivers driving habits than others. When traffic calming measures are severe, it can sometimes push traffic from the roadway that has the measures installed onto the side streets that intersect this roadway in an attempt to avoid the traffic calming measures. For this purpose it is important to also acknowledge these potentially affected areas and allow them the opportunity to comment on any proposed measures to be installed.

For Lower East Street, it appears that the potentially affected side streets would be Bonad Road, Winter Street, Willis Street and Sumner Street (See attached Locus Map). The Engineering Department recommends to the TAC that these roadways be considered the “affected area” as they proceed through the needs assessment process.

CONCLUSIONS/RECOMMENDATIONS

Based upon the information provided in this report and our study of Lower East Street and the affected area, we have development the following conclusions:

- Lower East Street is a viable candidate for traditional traffic calming measures.
- Lower East Street is an Emergency Response Route for the Town's Fire Department. Being any emergency response route, it is extremely important that the proposed traffic calming measures do not reduce the Fire Department's response time to emergencies.
- The 85th percentile speed based upon our study is approximately 8 mph over the prima facie speed limit of 25 mph.
- There is an obvious lack of sidewalks for pedestrians and neighborhood residents of the area to utilize to safely get around and/or through the neighborhood.

The Engineering Department recommends the following traffic calming measures to mitigate speeds on Lower East Street:

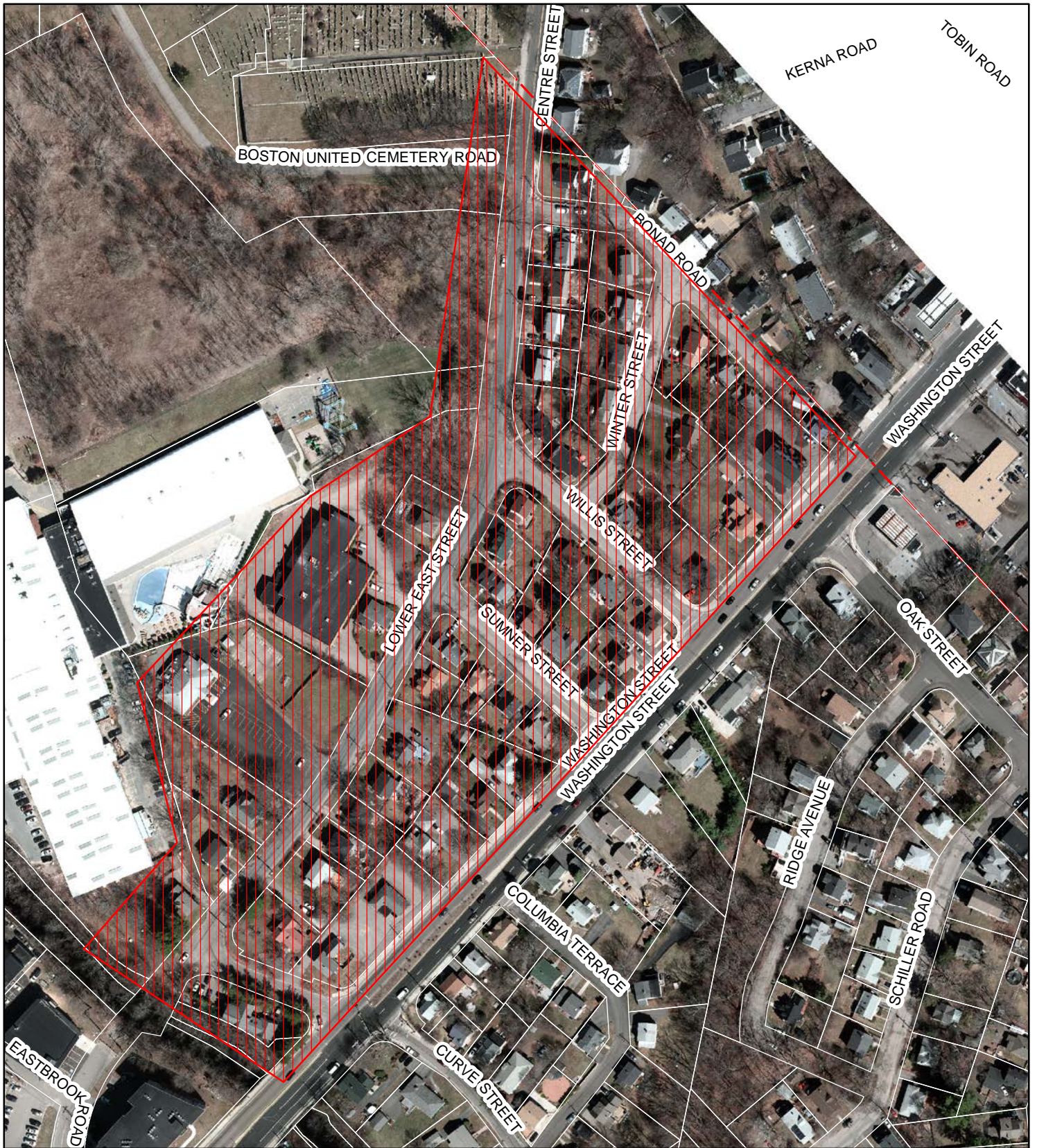
- Reduce the width of the roadway either physically or through striping. Reduction of roadway widths, confines the area for which a driver has to negotiate the corridor with the intent of making the driver slow down to safely negotiate the roadway. The recommended roadway width will be dependent upon the need for on-street parking. The ideal width for road narrowing is approximately 22 feet.
- Installation of sidewalks on both sides of the roadway. The installation of sidewalks not only creates a safe passageway for pedestrians, but can also serve to narrow the width of the roadway physically with the presence of some type of vertical curbing. The proposed sidewalks should also improve safety at the sharp corner at the southerly end of Lower East Street. The installation of sidewalks on both sides, striping and appropriate signage should better define the corner to approaching motorists (See attached Concept Plan, Proposed Sidewalks At Curve). We recommend the installation of vertical granite curbing with a 5' foot wide asphalt sidewalk. The vertical granite curbing will best define the roadway corridor with its vertical presence and will handle snow plows better than a bituminous product.
- Installation of realigned intersections at the intersection of Lower East Street with Bonad Road, Willis Street and Sumner Street (See attached Concept Plan, Realigned Intersection). Realigned intersections create changes in the horizontal alignment at the approaches at T-intersections. Curbed islands are utilized to convert straight approaches of the through street into a curving street within the intersection. Speed reduction is the major impact this type of measure is anticipated to provide and at the same has negligible effects on emergency response times. The disadvantage is that on-street parking is not allowed within the vicinity of the realigned intersection.
- Lower East Street was approved earlier this year for rehabilitation by the BOS in the Town's latest approved 3-year Road Program. Lower East Street is proposed for milling

& overlay in FY2020. The proposed traffic calming measures, if approved and funded, could be incorporated into the work already scheduled in FY2020. Therefore, only the funding for the traffic calming measures would be needed. Based upon unit costs for our existing Asphalt Paving and Resurfacing Contract, the cost estimate for the proposed traffic calming measures would be about \$275,000 and would be performed by the Town's contractor under this contract.

- The Engineering Department intends to perform the design in-house, however should other priorities arise that would prevent us from meeting schedule deadlines for construction, a consultant may need to be hired to aid us through the project.

Cc: Board of Selectmen

Attachments: Affected Area Locus Map
Proposed Sidewalks At Curve – Concept Plan
Realigned Intersections –Concept Plan



**LOCUS MAP
AFFECTED AREA
TRAFFIC CALMING**



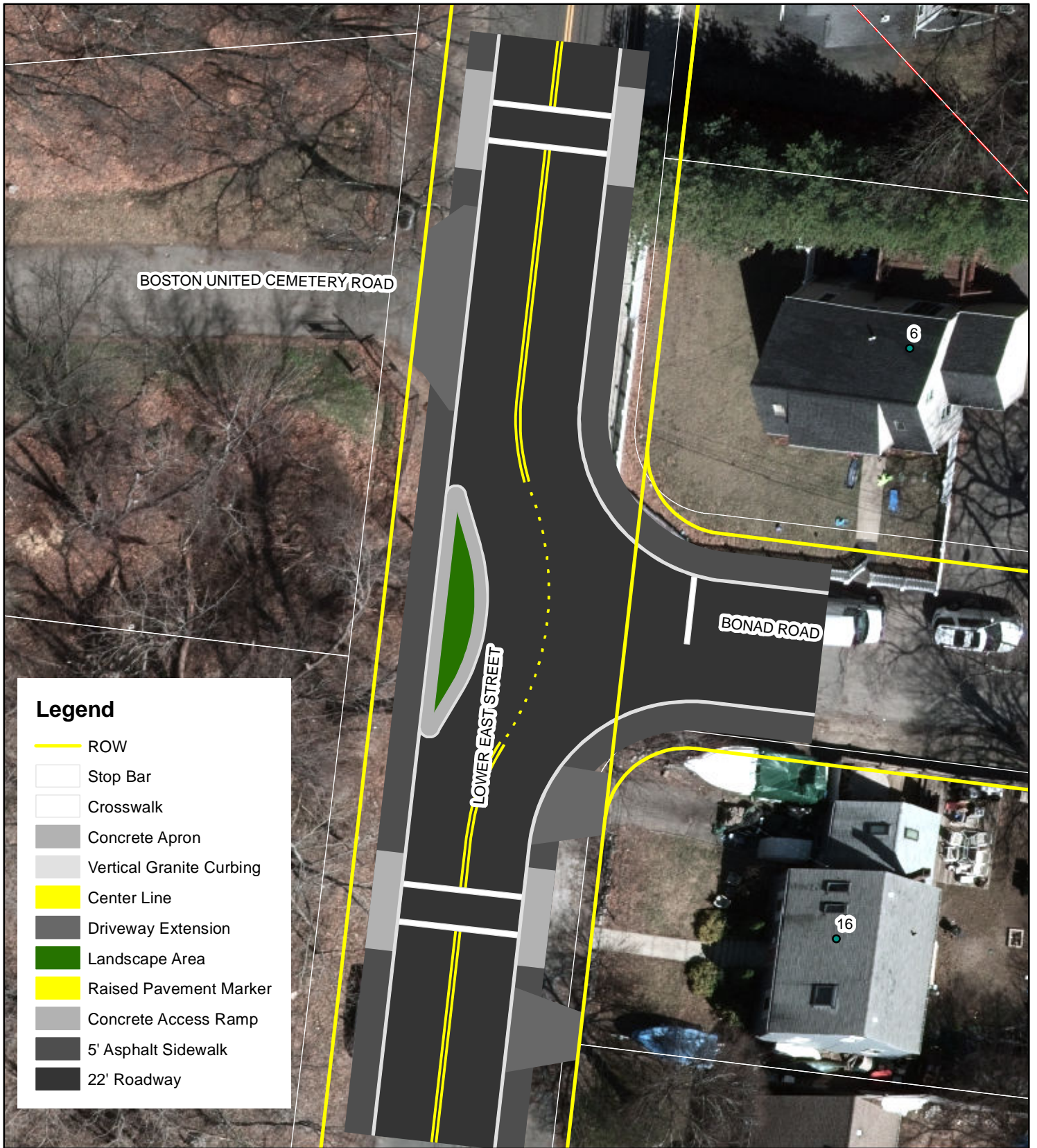
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**CONCEPT PLAN
PROPOSED SIDEWALKS AT CURVE
LOWER EAST STREET**



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**CONCEPT PLAN
REALIGNED INTERSECTION
LOWER EAST STREET**



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