



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

DATE: July 23, 2019

SUBJECT: MOTION OF 6/25/19 BY COUNCILOR MERCIER
REQUEST CITY MANAGER HAVE PROPER DEPARTMENT INSTALL ADDITIONAL
SPEED LIMIT SIGNS ON ANDOVER STREET

MOTION OF 04/09/19 BY COUNCILOR CONWAY/COUNCILOR ELLIOTT
REQUEST CITY MANAGER MEET WITH APPROPRIATE DEPARTMENT HEADS TO
EXPLORE THE FEASIBILITY AND APPROPRIATENESS OF DEVELOPING A
DECORATIVE MEDIAN STRIP FOR ANDOVER STREET

Safety and speeding traffic are ongoing concerns for Andover Street. The best and most important first step to understand and respond to concerns of speeding traffic on Andover Street is to perform a new speed study, which will identify the existing speeds on the roadway and determine how to set and enforce the speed limit moving forward. In addition to the speed study, which is the recommended next step, the best physical change options for lowering speeds on the road, which would also improve pedestrian and cyclist safety, are to undertake a “road diet” or traffic calming. There are both short-term and long-term recommendations included in this memo to implement traffic calming measures.

Facts about Andover Street:

- Andover Street is a roadway under City jurisdiction and is designated State Road 133.
- The legal speed limit on Andover Street between Nesmith Street and the Tewksbury Town Line in both directions is 40 mph (currently posted at 35 mph).
- NMCOG traffic count data indicates that the Average Daily Traffic is 18,009 (2013), which is a decrease from 19,300 (2006).
- Andover Street is 46 feet wide with two 5’ bike lanes, two 13’ travel lanes and a 10’ wide median turning lane.
- Andover Street doesn’t have any intersections listed in the Top 100 Intersection Crash List for the statewide list. For reference, Lowell has 15 intersections that are listed in the Top 200 Interstate Crash List for the statewide list.
- MassDOT and LPD crash reports indicate that there have been 4.5 crashes per year at Andover/Clark/Raven Road from 2001 to 2017, which is just below the warrant for a 4-way stop control.
- A previous analysis of the above intersection indicated that the 8-hour traffic count met the warrant for a traffic signal. It was decided not to install a traffic signal because it was anticipated that they would increase cut through traffic to and disrupt traffic flow on Andover Street.
- Andover Street has a reinforced concrete surface. Each panel is approximately 10’x30’ in size. Spot repairs in sizes of 10’x10’ were completed in 2017 to the concrete surface. The repairs were about \$500,000 for approximately 3% of the total roadway surface area. Andover Street is rated in fair condition and preventative maintenance such as the \$500,000 spot repairs will continue to be recommended every few years. There is some minor settlement between the panels or chipping away of the concrete at the edges of each panel. These minor deteriorations are noticeable while driving down Andover Street.

Short-Term Recommendations and Considerations:

1. Repaint the pavement markings – Summer 2019.
 - a. The yellow dashed and solid lines marking the center lane were repainted on June 27, 2019.
 - b. Consider striping with narrower lanes (11' vs. 13'). The solid white that delineate the bike lanes and fog lines will not be repainted until a decision is made regarding the appropriate width for the drive lanes.
 - c. Repaint the crosswalks.
2. Coordinate with MassDOT on conducting speed study to either confirm current posting of 40 mph or adjust depending on information received from the speed study.
3. Coordinate with LPD to continue to enforce speed limit
4. FY2020 Capital Project for improving sidewalks and implement traffic calming along Andover Street
 - a. \$200,000 in appropriated capital funding will upgrade pedestrian ramps and crosswalks along Andover Street so that they are ADA compliant. Utilize a portion of the \$200,000 appropriated capital funding to conduct a traffic calming study along Andover Street and tributary streets. Curb extensions and raised crosswalks across side streets will be evaluated and implemented in localized areas.
 - b. Study the impact adding a traffic signal at Raven Road/Clark Road, with the addition of a traffic signal at River Road and Andover Street.
 - c. Add Andover Street to the City's Complete Streets Project List. This is further explained under the Long-Term recommendations below to explain current projects that are already in the queue on the City's Complete Streets Project List.
 - d. A short term and quick build option for narrowing the roadway to slow traffic and provide cyclist protection is the use of flexible posts and pavement markings to create a buffered bike lane. See below for pictures of some examples of bicycle lanes separated with a painted buffer and flexible posts. One drawback for the installation of flexible posts along Andover Street is that each post creates a core into the concrete roadway surface, which creates a potential conflict with rebar and a potential weakening point within the concrete slab.

Long-Term Recommendations and Considerations:

1. The Andover Street crosswalk project is listed on the City's Complete Streets Project Prioritization Plan. The project description is the construction of a median refuge island on Andover Street from Draper Street to Douglas Road, with a cost estimate of \$1,000,000. It is number 13 out of 13 projects on the Prioritization list. Given that Andover Street currently has sidewalks and bike lanes on both sides, it is already a more complete street than many other streets in the City, but this is a potential funding source.
2. The City is developing a Neighborhood Traffic Calming Policy that would enable the City to identify streets that would benefit from traffic calming. A number of locations in the City have already been identified as in need of calming/road diet. Andover Street can be added to the list of potential streets to study. A funding source has not been identified to enact the recommendations that arise from this policy.
3. Upon review of a traffic study, appropriate design and construction funds for the implementation of a comprehensive traffic calming, such as a median strip or "road diet" streetscape. Below is a preliminary estimate of design and construction costs. Given the magnitude of costs to implement a holistic traffic calming corridor improvement along Andover Street, various sources of funding including capital, grant, MassDOT, and Complete Streets funding would have to be considered. Given that Andover Street has high maintenance costs and is not a high priority from a public safety perspective, it is not a good match for existing road improvement funding. New funding and/or grant sources should be pursued to undertake a corridor improvement.



Photo of flexible posts installation on Brookline Ave in Boston. Photo Credit David Read of Farber/Harvard



Photo taken from City of Cambridge Website. Installation of flexible posts on South Mass Ave in Cambridge.

Preliminary Cost Estimate for Comprehensive Streetscape and Traffic Calming Improvements along Andover Street	
Sidewalks, curbing replacement in current alignment, minor drainage/utility adjustments. See Note 1 below.	\$ 2,000,000
Concrete surface replacement (given extent of proposed work, extensive repairs to the concrete surface would be recommended). See Note 2 below.	11,000,000
Median Strip (curbing, landscape, hardscape, lighting)	1,500,000
Contingency for design, police details, construction (30%)	4,350,000
Total	\$ 18,850,000
Note 1: New curb alignments in lieu of a median strip to accommodate raised bike infrastructure would require additional drainage and utility coordination. Estimate an additional \$2 million.	
Note 2: Option to install hot mix asphalt overlay over the existing concrete roadway. Deduct \$9.5 million.	

NV/ns

cc: Natasha Vance, Transportation Engineer
Christine Clancy, City Engineer