

MEMORANDUM

TO: Todd Korchin
DPW Director
Town of Westwood
50 Carby Street
Westwood, MA, 02090

DATE: December 8, 2021

FROM: Elizabeth M. Oltman, PE

PROJECT NO.: T0913.02

RE: Pond Street and Clapboardtree Street – Westwood, Massachusetts

TEC, Inc. (TEC) has been retained by the Town of Westwood to provide preliminary engineering services to assess the existing vehicular traffic patterns, peak hour volumes, vehicle classification, and 85th percentile speeds along Pond Street and Clapboardtree Street to address resident comments and concerns. Anecdotal resident concerns include vehicle speeds along these roadways not in keeping with posted speed limits.

Several study locations were identified to best capture the daily and peak hour flow of traffic and 85th percentile speeds (speed at which 85% of the vehicles are traveling at or below) within the local roadway network. The counts were conducted in October and November of 2021 when school was in regular session. After reviewing the traffic volumes and speeds along the roadways, appropriate recommendations regarding the potential for adjusting speed limits can be provided.

Automatic Traffic Recorder (ATR) counts were conducted at the following locations:

- Pond Street north/east of Arcadia Road (Tuesday, October 26, 2021 through Thursday, October 28, 2021 and Tuesday, November 9, 2021 through Thursday, November 11, 2021)
- Pond Street south of Eastman Avenue (Tuesday, November 9, 2021 through Thursday, November 11, 2021)
- Pond Street north of Willow Farm Road (Tuesday, October 26, 2021 through Thursday, October 28, 2021)
- Pond Street north of Fisher Street (Tuesday, November 9, 2021 through Thursday, November 11, 2021)
- Clapboardtree Street west of Abbey Road (Tuesday, October 26, 2021 through Thursday, October 28, 2021)
- Clapboardtree Street east of Coach Lane (Tuesday, October 26, 2021 through Thursday, October 28, 2021)

Count locations are shown on Figure 1.



1" = 800'

PROJECT: Pond Street Evaluation
LOCATION: Pond Street
CITY/STATE: Westwood, Massachusetts
PREPARED BY: TEC, Inc.



LEGEND:
● Count Locations

Count Locations
Pond Street / Clapboardtree Street



There are three types of speed signage that may be found on the streets and highways of Massachusetts. Two are as defined by Massachusetts General Law (MGL Chapter 90, Sections 17 and 18) and one is governed by standard engineering design practice.

Regulatory Speed Limit

Regulatory speed limits are created by completing a thorough traffic engineering study, approval of a Special Speed Regulation by the roadway owner, the Registry of Motor Vehicles, and the Massachusetts Department of Transportation (MassDOT) and installing appropriate speed limit signs placed to clearly define the speed zones. These regulatory speed limits conform to MGL Chapter 90, Sections 18 and 18B. These signs are black lettering on a white background and are enforceable by the Police Department.



Statutory Speed Limit

Statutory speed limits exist in the absence of Special Speed Regulations. They are the background speed limit on roadways without posted speed limits and require that “drivers operate vehicles at a rate of speed that is not greater than reasonable and proper with regard to the use of the road and safety of the public” (MGL Chapter 90, Section 17, 17A and 17C). For example, undivided highways outside of a Thickly Settled residential or Business District have a statutory speed limit of 40 miles per hour (MPH) throughout Massachusetts. Special Speed Regulations will always supersede the statutory speed limit, except within School Zones. Statutory speed limits are not generally posted, except when a municipality has adopted a municipality-wide speed limit under MGL Chapter 90, Section 17C. In this case, the statutory speed limit must be posted on all roadways entering the municipality. These speed limits are enforceable by the Police Department.



Advisory Speed Signage

The necessity of advisory speed signage is determined based on an engineering study and engineering judgement for the geometry of a roadway in accordance with the standards found within the Manual on Uniform Traffic Control Devices (MUTCD). These signs are located in areas where a lower operating speed than the posted regulatory or statutory speed is recommended to ensure safe navigation of a roadway. These warning signs are typically seen on horizontal curves or ramps and are black lettering on a yellow background. These speed limits are not enforceable by the Police Department.



Thickly Settled or Business District

MGL Chapter 90 Section 1 defines a Thickly Settled or Business District as:

"The territory contiguous to any way which is built up with structures devoted to business, or the territory contiguous to any way where dwelling houses are situated at such distances as will average less than two hundred feet between them for a distance of a quarter of a mile or over."

Pond Street

Pond Street is a north-south urban minor collector roadway under the jurisdiction of the Town of Westwood. Pond Street travels in a half-circle around Buckmaster Pond and Crouse Pond to intersect High Street (Route 109) to the north and south. Pond Street provides one travel lane in each direction with directional flow separated by a double-yellow centerline. The road has a cross-section of approximately 40 feet along its length. Traveling southbound, the speed limit along Pond Street is posted at 30 miles per hour (mph) just south of High Street, 35 mph just south of Fisher Street and 30 mph south of Eastman Avenue through until its intersection with High Street. Traveling northbound, the speed limit along Pond Street is posted at 30 mph just north of High Street, 35 mph just south of Martingale Lane and returns to 30 mph just south of Fisher Street.

Pond Street meets the definition of a Thickly Settled Area along its length.

Clapboardtree Street

Clapboardtree Street is an east-west urban minor collector under the jurisdiction of the Town of Westwood. Oak Street extends east from its intersection with Pond Street to Route 1A. Clapboardtree Street provides one travel lane in each direction with directional flow separated by a double-yellow centerline. The road has a cross-section of approximately 23 feet between Pond Street and Nahatan Street. The speed limit along Clapboardtree Street is posted at 30 mph eastbound and westbound between Pond Street and Nahatan Street.

Clapboardtree Street meets the definition of a Thickly Settled Area between Winter Street and Coach Lane.

Existing Speed Regulations

TEC obtained the existing speed zoning regulations on file with the MassDOT Traffic and Safety Engineering Section for the two streets. Special Speed Regulation 121 was found for Pond Street. No regulation was found for Clapboardtree Street; therefore, Clapboardtree Street is regulated by M.G.L. Chapter 90 Section 17 prima facie speed of 30 mph for Thickly Settled Areas.

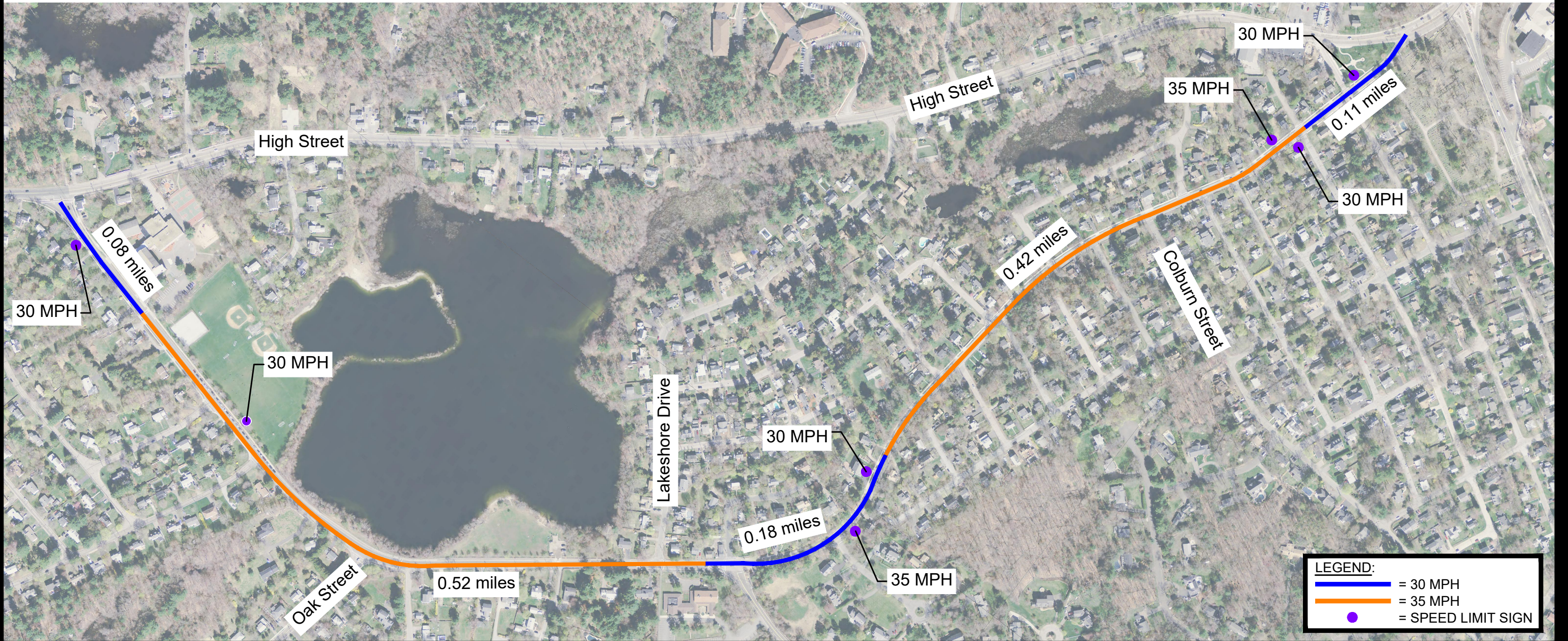
A graphical depiction of the Pond Street regulation is provided in Figure 2.

1"=400'

PROJECT: Pond Street Evaluation
LOCATION: Pond Street
CITY/STATE: Westwood, Massachusetts
PREPARED BY: TEC, Inc.
SOURCE: Town of Westwood Speed Regulations



POND STREET



LEGEND:
— = 30 MPH
— = 35 MPH
● = SPEED LIMIT SIGN

Existing Speed Regulations
Pond Street



Summary of Findings

- Traffic counts conducted along Pond Street in November 2021 included Thursday, November 11, 2021, Veteran's Day, a Massachusetts State holiday, and schools and many offices were closed. The recorded daily volumes on this date were noticeably lower than the volumes recorded on Tuesday, November 9 and Wednesday, November 10. Therefore, the November 11, 2021 traffic volumes were not used in calculating the average daily traffic volumes along Pond Street discussed below.
- Pond Street north of Arcadia Road has an average daily traffic volume of 9,090 vehicles per day (vpd). The 85th percentile speeds in this location were recorded as 37 mph northbound and 38 mph southbound. The regulatory speed limit in this area is 35 mph, but is posted as 30 mph.
- Pond Street south of Eastman Avenue has an average daily traffic volume of 4,445 vpd. The 85th percentile speeds in this location were recorded as 37 mph northbound and 35 mph southbound. The regulatory speed limit in this area is 35 mph and is posted as 35 mph. The change in regulatory speeds between 35 mph and 30 mph is also within the vicinity of this count.
- Pond Street north of Willow Farm Road has an average daily traffic volume of 4,898 vpd. The 85th percentile speeds in this location were recorded as 38 mph northbound and southbound. The regulatory speed limit in this area is 35 mph and is posted as 35 mph.
- Pond Street north of Fisher Street has an average daily traffic volume of 5,450 vpd. The 85th percentile speeds in this location were recorded as 36 mph northbound and 35 mph southbound. The regulatory speed limit in this area is 30 mph and is posted as 30 mph. The change in regulatory speeds between 35 mph and 30 mph is at the Fisher Street intersection with Pond Street.
- Clapboardtree Street west of Abbey Road has an average daily traffic volume of 7,775 vpd. The 85th percentile speeds in this location were recorded as 34 mph eastbound and 35 mph westbound. The statutory speed limit in this area is 30 mph and is posted as 30 mph.
- Clapboardtree Street east of Coach Lane has an average daily traffic volume of 6,211 vpd. The 85th percentile speeds in this location were recorded as 41 mph eastbound and 44 mph westbound. The statutory speed limit in this area is 40 mph, as it is no longer a Thickly Settled Area, but is posted as 30 mph.
- In general, the recorded speeds along Pond Street are within 5 mph of the regulatory speed limits defined by the Special Speed Regulation. 85th percentile speeds within 5 mph of the posted speed limit is an industry standard acceptable range.
- The recorded speeds along Clapboardtree Street are within 5 mph of the statutory speed limits required by Massachusetts General Law.

- The study locations all exhibit 1.0% or lower total heavy commercial vehicle (Class 6 and above) volumes daily.
- Addition of Class 5 vehicles (delivery trucks and vans) increases the truck percentages to 10% on Clapboardtree Street and 7% on Pond Street daily.

Establishing or Modifying a Regulatory Speed Limit

In accordance with the MassDOT Procedures for Speed Zoning on State Highways and Municipal Roads (September 2021), the 85th percentile speed is the basis for establishing speed zoning. This method assumes that most motorists will select a safe speed that they are comfortable driving on a particular roadway. Should the number of crashes along a section of roadway be unusual, the 85th percentile speed may be lowered up to 7 miles per hour.

Along Pond Street, 37 crashes have been recorded along the roadway during the past five years (2017-2021). A total of four crashes were identified as speed-related by the responding police officer. One pedestrian fatality was recorded in 2017. In general, the 85th percentile speeds along Pond Street are approximately 35-38 mph, or within the range that could be considered for lowering a speed limit. It is possible that MassDOT would favorably consider modifying the existing Special Speed Regulation to change the regulatory speed limit along the entirety of Pond Road to 30 mph. A more in-depth traffic analysis and formal report would be required to provide the exact information required by MassDOT for approval.

Along Clapboardtree Street, the existing 30 mph regulatory speed signs should be removed from the roadway, as there is no Special Speed Regulation recorded on this roadway with MassDOT. The statutory speed limit that would remain in effect is 30 mph for the Thickly Settled Area generally between Pond Street and Coach Lane and 40 mph to the east of Coach Lane.

Statutory Speed Alternative

The Town of Westwood has the option of adopting MGL Chapter 90, Section 17C on either a town-wide basis or street-by-street basis. MassDOT recommends the former as the messaging is consistent and less likely to create confusion.

“Thickly Settled or Business Districts, as defined in MGL c. 90 Section 1 have a default statutory speed limit of 30 MPH unless the municipality has adopted MGL chapter 90 section 17C, wherein the statutory speed limit in these areas is reduced to 25 MPH. However, if a Special Seed Regulation has been enacted on this section of roadway, the regulatory speed will govern.”

As previously indicated, MGL Chapter 90, Section 1 defines a Thickly Settled or Business District as “the territory contiguous to any way which is built up with structures devoted to business, or the territory contiguous to any way where dwelling houses are situated at such distances as will average less than two hundred feet between them for a distance of a quarter of a mile or over.” The Town of Westwood has many such areas, indicating that adoption of MGL Chapter 90,

Section 17C may be a viable option for adoption by the Town for those roadways within the Town that do not have established speed regulations on file with MassDOT.

Clapboardtree Street does not have an established speed regulation on file with MassDOT, making it eligible for the statutory speed alternative for the Thickly Settled Area generally between Pond Street and Coach Lane.

Pond Street has an established speed regulation. This roadway is generally all Thickly Settled Area. The Town could consider petitioning MassDOT to remove the Special Speed Regulation entirely along this roadway should MGL Chapter 90, Section 17C be adopted. In this situation, Pond Street would then be governed by the 25 mph town-wide statutory speed limit.

Pond Street / Clapboardtree Street / Circuit Street

Clapboardtree Street intersects Pond Street opposite Circuit Road to form a four-legged, unsignalized intersection under All-Way Stop-control. The Circuit Road eastbound approach consists of single general-purpose travel lane. The Clapboardtree Street approach consists of a shared through/left turn lane under Stop-control and a channelized right turn lane under Yield-control. The Pond Street northbound approach consists of a channelized right turn lane and a shared through/left turn lane, both under Stop-control. The Pond Street southbound approach consists of a single general-purpose travel lane under Stop-control. Sidewalks are provided along both sides of Pond Street and along the west side of Clapboardtree Street and Circuit Street. There are crosswalks along the west and east sides of the intersection.

TEC reviewed the requirements for an All-Way Stop-controlled intersection within the Manual of Uniform Traffic Control Devices (MUTCD), published by the Federal Highway Association (FHWA). Considering the volume of traffic on both Pond Street and Clapboardtree Street, as well as the sight distances on the westbound approach of Clapboardtree Street, TEC recommends that the existing YIELD sign (R1-1) on the westbound channelized right turn lane be changed to a STOP sign (R1-1). In addition, TEC recommends adding ALL WAY supplemental plaques (R1-3P) to all approaches under the existing STOP signs, where missing.