

PINE HILL AND PARMENTER ROADS

TRAFFIC & SAFETY CONCERNS

OCTOBER 15, 2019

OVERVIEW – ACCIDENT DATA

- ▶ Statistically speaking, Pine Hill & Parmenter Roads have some of the highest numbers of accidents in town
- ▶ Accident data from 12 years (2003-2015) showed:
 - ▶ A total of 72 accidents in the neighborhood
 - ▶ 14 of those at the intersection of Pine Hill & Parmenter
- ▶ At least 2 incidents at the intersection involved larger trucks that couldn't make the turn, damaging / taking down the telephone pole and wires, causing power outages and repair work.

CAR VS. MOTORCYCLE – JUNE 2015

- ▶ In 2015, there was a horrific accident at the intersection of Parmenter & Pine Hill Roads.
- ▶ It was a tough accident, car versus motorcycle, with intense fire at the beginning. Only bits of the motorcycle were left. It was not obvious that there even were 2 vehicles involved.
- ▶ The motorcyclist was launched from the impact and landed approximately 80' from the intersection. The driver of the RAV4 walked away (literally). The motorcyclist was taken to UMass by ambulance.



**Motorcyclist launched from
intersection to stretcher**



**This WAS a
motorcycle**

HISTORY

- ▶ While not a singular incident, the motorcycle vs. car accident was a catalyst for the residents to seek action from the town to improve safety at the intersection, as well as throughout the stretches of the two roadways.
- ▶ The response time to this area is quite lengthy compared to most of the rest of the town, given the distance from Police & Fire Departments. In addition, there are no hydrants along either road.
- ▶ In 2015, as a result of the accident and growing concerns about safety, residents of the Pine Hill and Parmenter Road neighborhood signed and submitted (2) petitions for the town to address traffic and safety concerns:
 - ▶ One to address safety at the intersection of Pine Hill and Parmenter Roads (57 signatures)
 - ▶ The second to address the traffic volume and speed issues along the lengths of the roadways (48 signatures)
- ▶ No one (that we can find) believes that enough has been done on either front. There is widespread agreement that the intersection is still dangerous and the speed and reckless driving on the lengths of the roadways must be addressed.



PART ONE

THE INTERSECTION

PETITION – THE INTERSECTION

- ▶ The first resident petition from 2015, signed by 57 residents requested that "...
the Board of Selectmen of Southborough, Massachusetts, investigate the present conditions of the aforementioned intersection, make recommendations, and implement measures that will improve the safety of this area."

While the investigation of the intersection was completed in 2015, and some recommendations were implemented, additional measures that effectively improve safety at the intersection are still sorely needed.

- ▶ The intersection is not markedly safer today than it was in 2015 when the petition was submitted - 4 years ago.

Taking a left turn from Pine Hill onto Parmenter Road is still treacherous. Drivers visibility is poor in both directions, given the topography/terrain and speed of traveling vehicles. The speed of vehicles on Parmenter is a serious problem.

Pedestrians and cyclists trying to access Callahan State Park also face safety challenges when trying to cross to the entrance gate at the top of Pine Hill Road.



STOP

STOP

nter Rd
Rd



Driver's View - top of Pine Hill, at stop line, looking left/west

Pine Hill Rd

Stop line



STOP SIGN CRITERIA – MUTCD

[HTTPS://MUTCD.FHWA.DOT.GOV/PDFS/2009R1R2/PART2B.PDF](https://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part2b.pdf)

Section 2B.07 Multi-Way Stop Applications

Support:

- 01 Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.

- 02 The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

Guidance:

- 03 The decision to install multi-way stop control *should be* based on an engineering study.

- 04 The following criteria *should be* considered in the engineering study for a multi-way STOP sign installation:

- A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.
- B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.
- C. Minimum volumes:
 - 1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and
 - 2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but
 - 3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.
- D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

Option:

- 05 Other criteria that may be considered in an engineering study include:

- A. The need to control left-turn conflicts;
- B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
- C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and
- D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

ROADWAY CLASSIFICATION

- ▶ In 2015 traffic engineering report, Pine Hill and Parmenter were both classified as “rural minor collectors”
- ▶ In 2019 traffic count report, both roads were cited as “urban collectors” - why the difference?
- ▶ In 2015, the engineering report stated that the following (optional) criteria are satisfied for an all-way stop warrant:
 - ▶ The need to control left turn conflicts (sight line is currently 50 feet looking west)
 - ▶ Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop.
 - ▶ An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.
- ▶ 2019 - engineering report does not comment on the additional criteria that are met and are still part of the MUTCD

REQUESTS FOR THE INTERSECTION

- ▶ Removal of vegetation at the corner to improve sight lines (photo at right taken 10/15/19)
- ▶ Installation of a Three-way Stop Sign at the intersection of Pine Hill/Parmenter Roads, and installation of associated warning signage.

On September 27, 2019, neighborhood residents met with the traffic consultant (who conducted the original traffic study) and confirmed that the intersection meets many of the 7 MUTCD criteria - warranting a 3-way stop

- ▶ If a 3-way stop is truly something the town is unwilling to do, then installation of a speed table or other similar device that covers the entirety of the intersection at Pine Hill Road/Parmenter Road should be pursued. Or, other measures as recommended by the experts to increase safety at the intersection. More must be done.
- ▶ Installation of crosswalk for pedestrians to access Callahan State Park from Pine Hill Road



REFERENCE INFORMATION

SPEED HUMPS AND SPEED TABLES

A **speed hump** is a raised area in the roadway pavement surface extending transversely across the travel way. Speed humps are sometimes referred to as “pavement undulations” or “sleeping policemen”. Most agencies implement speed humps with a height of 3 to 3.5 inches (76 to 90 mm) and a travel length of 12 to 14 feet (3.7 to 4.3 m). Speed humps are generally used on residential local streets.

A **speed bump** is also a raised pavement area across a roadway. Speed bumps are typically found on private roadways and parking lots and do not tend to exhibit consistent design parameters from one installation to another. Speed bumps generally have a height of 3 to 6 inches (76 to 152 mm) with a travel length of 1 to 3 feet (0.3 to 1 m).

From an operational standpoint, speed humps and bumps have critically different impacts on vehicles. Within typical residential operational speed ranges, vehicles slow to about 20 mph (32 km/h) on streets with properly spaced speed humps. A speed bump, on the other hand, causes significant driver discomfort at typical residential operational speed ranges and generally results in vehicles slowing to 5 mph or less at each bump.

Speed tables are essentially flat-topped speed humps, and may have a textured material on the flat section with asphalt or concrete for the approaches. Speed tables are sometimes referred to as “trapezoidal humps” or “speed platforms”. If marked as a pedestrian crossing, speed tables may also be referred to as “raised crosswalks” or “raised crossings”. Most agencies implement speed tables with a height of 3 to 3.5 inches (76 to 90 mm) and a travel length of 22 feet (6.7 m). Speed tables generally consist of 10 foot (3.1 m) plateau with 6 foot (1.8 m) approaches on either side that can be straight, parabolic or sinusoidal in profile. **The longer lengths of speed tables provide a gentler ride than speed humps and generally result in vehicle operating speeds ranging from 25 to 30 mph (40 to 48 km/h) on streets depending on the spacing between speed tables. Speed tables are generally used on residential collectors, emergency routes or transit routes.**

Speed humps should be implemented only to address documented safety or traffic issues supported by a traffic engineering review. It is recommended that an engineering review be conducted to identify, quantify, and document the existing traffic issues on the street and in the neighbourhood. **Issues could include speeding, cut-through traffic, or safety.** It is important to review existing conditions and determine if there is a measurable problem, rather than a perceived problem (TAC 1998). Documented issues can then be used to support the implementation of speed humps, and to measure their effectiveness if implemented (Ewing 1999).

In the United States and Canada, speed humps are generally installed on roadways functionally classified as local streets and neighbourhood or residential collector streets as defined in AASHTO’s “A Policy on Geometric Design of Highways and Streets” (AASHTO 2004, pg 12; TAC 1998).

Speed humps are generally not recommended for use on bus routes or emergency vehicle routes (Ernish et al. 1998), or on streets that provide access to hospitals and emergency medical services. Speed tables may be more appropriate, and could be applied after consultation with representatives of the emergency services. The use of alternative traffic calming measures may also be considered for use on bus or emergency vehicle routes.

Speed humps are usually recommended only on streets where the speed limit is 30 mph (50 km/h) or less. Speed humps are generally not considered appropriate where the 85th percentile speed is 45 mph (70 km/h) or more.

Experience has shown that speed humps and speed tables are generally not damaged by snow plowing activities. Snow removal crews in Montgomery County (GA) reported minimal impact or cost associated with speed humps (Wainwright 1998). The City of Edmonton (AB) experienced some damage to parabolic speed humps from snow plows; however, in most cases there was no damage since snow plow operators do not plow down to the pavement on local streets where speed humps are located. For jurisdictions which experience substantial snowfall, it is recommended that snow plow operators be informed of all streets with speed humps before the winter season starts.

Speed humps and speed tables are two of several geometric design techniques that may be used to control vehicular traffic speeds along a roadway. Positive results in terms of reduced operating speeds and reduced traffic volumes have been documented after speed hump installation.

From a paper originally published in the conference proceedings of the CITE 2007 Conference held in Toronto, Ontario, Canada.

PART TWO

TRAFFIC VOLUME AND SAFETY ON PINE HILL & PARMENTER ROADS

PETITION – THE ROADWAYS

- ▶ The second resident petition from 2015, signed by 48 residents requested that *“the Board of Selectmen of Southborough, Massachusetts investigate the present conditions of the aforementioned roadways, make recommendations, and implement measures that will improve the safety of this area.”*
- ▶ While the investigation of the intersection and traffic count was completed in 2015, and some additional measures addressing traffic calming were voted and approved by the BOS at the September 17, 2019, the residents believe that more will be needed to address the concerns about safety on the lengths of the roadways.

PLANNED MEASURES TO ADDRESS TRAFFIC VOLUME AND SAFETY

- ▶ Painting of double yellow line on the lengths of both Pine Hill and Parmenter Roads

Voted for and approved by BOS September 17, 2019. Work is still pending.

- ▶ Dynamic driver feedback signs to calm traffic

BOS voted for and approved a total of \$48k for 6 dynamic driver feedback signs on September 17, 2019. Intention is for two dynamic feedback signs each on the uphill and downhill sides of Pine Hill Road, and, one each on the uphill and downhill side of Parmenter Road nearing the intersection (these 2 may not be needed if a 3-way Stop Sign is implemented at the intersection).

The placement of these kinds of signs needs to be carefully considered and planned by traffic engineers to have the greatest impact/benefit.

- ▶ Painting of fog lines on the lengths of both Pine Hill and Parmenter Roads

Not currently scheduled, due to issue that in some places, this would make the roadway too narrow.

Residents would like painting of fog lines to be considered for at least the sections of the roads that are wide enough.

ADDITIONAL REQUESTS – 1

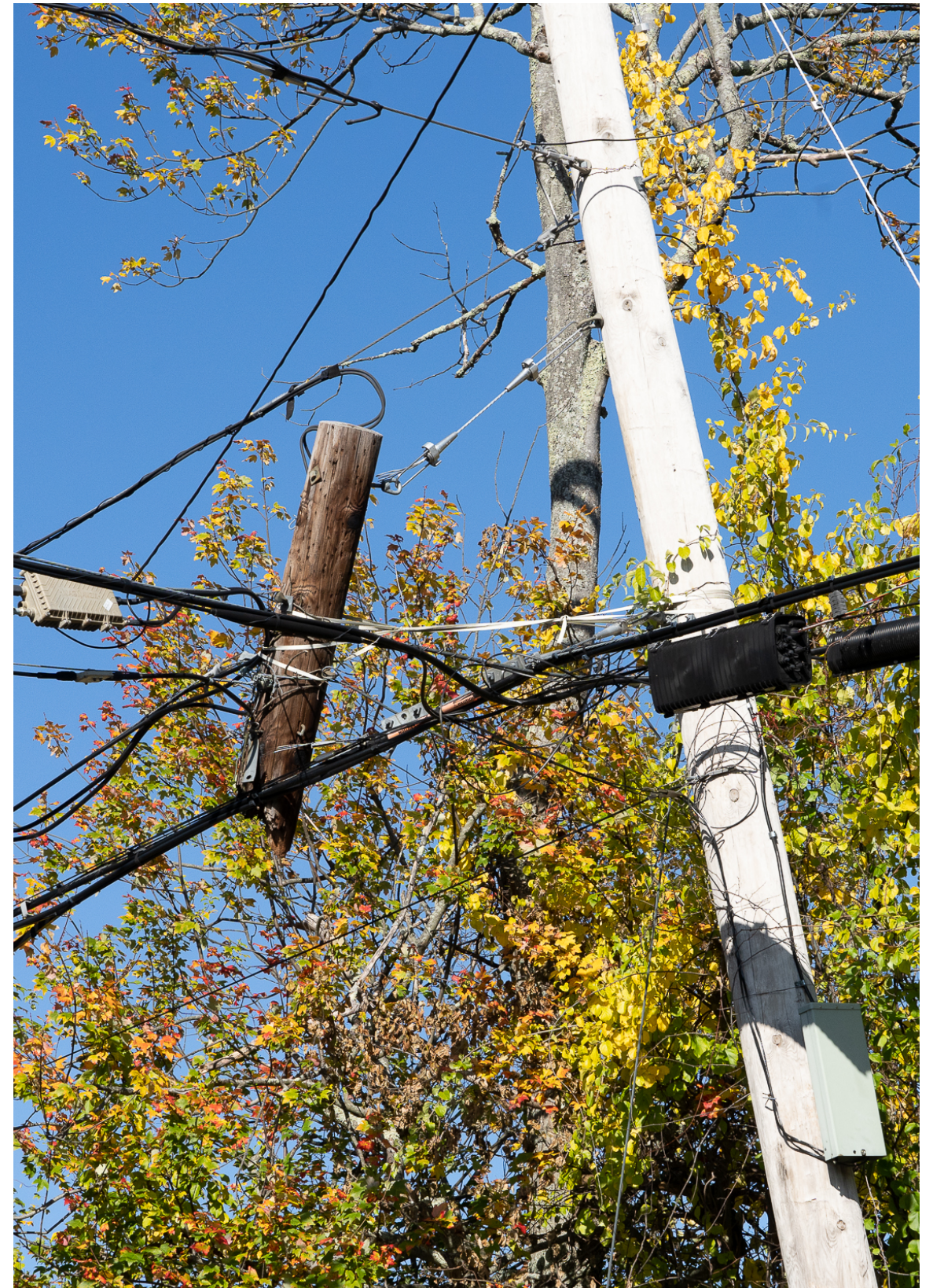
- ▶ Residents would like to see a traffic study conducted of the length of Pine Hill Road, with the goal of receiving expert advice on how to better manage the traffic challenges, and implementing the suggestions that make the most sense for the town

Most residents still believe that speed bumps/humps/pillows/cushions (optionally with gaps for DPW and public safety truck wheels) will be needed to truly, effectively, address the traffic speed issues. A traffic study will provide expertise and guidance on whether this, or other measures should be considered.

- ▶ DPW to collect and review traffic accident data from Southborough Police Department records (not via MassDOT records)
- ▶ Parking of landscaping and other trucks should not be allowed on Pine Hill or Parmenter Roads, particularly where the road width is too narrow to allow safe passage
- ▶ Passage of a 25 MPH speed limit ordinance throughout town. Roads that are appropriate for higher speed can be posted.
- ▶ If not already in progress, contact with City of Framingham to discuss options to mitigate construction (and operational) traffic from the Eastleigh development
 - ▶ Contact for Vicente Sederberg (representing Commonwealth Farm 1761 / Eastleigh Farm) is Becca Rutenberg, Director of Strategic Affairs (617) 934-2121 rebecca@vicentesederberg.com

ADDITIONAL – 2 / CONTINUE TO PURSUE HEAVY VEHICLE EXCLUSION

- ▶ Road is not wide enough in many places for larger trucks to stay on the right side of the road
- ▶ Intersection at Pine Hill & Parmenter is not wide enough for trucks to safely turn - there have been 2 separate incidents where trucks damaged the telephone pole and wires at the intersection of Pine Hill & Parmenter, causing power outages and repair work.
- ▶ On a regular basis, large trucks can be heard backing up trying to negotiate the turn through the intersection
- ▶ Historical character of the road (old stone walls, etc) would need to be dramatically changed if road had to be updated to support large/heavy vehicle traffic



DRIVER EXPERIENCES AND COMMENTS (ALL IN THE LAST 4 WEEKS)

- ▶ *I was mowing my lawn recently when I was nearly hit by a car coming from the wrong direction. This was something I had never seen before on our street: three cars came speeding around the bend, heading south on Pine Hill, jockeying for position just past Graystone. They were trying to drive THREE CARS ABREAST, which meant the two outside cars were partially off the road on either side, one on the grass in front of my house where I was mowing. Since they came from around the bend, I couldn't see them (and they couldn't see me) until they were right on my property. They continued weaving in and out at high speed until I couldn't see them anymore, over the hill heading to Nichols.*

Given our location, we do commonly see cars coming south past Graystone and speeding up for the straighter section of the road. I understand why some of my neighbors want to see a line down the middle of the road, and there may be parts of the road where a line would help. I also firmly believe that a line will not stop these dangerous speeding games. Only speed humps will make it physically impossible (or very uncomfortable) for drivers to use the road at these speeds. They have worked in the industrial park, and by our schools, and I believe we can get a safer road by putting them on Pine Hill. I also believe that they create an annoyance for cut-through drivers, who might be induced to find another route.

- ▶ *We as well had a similar incident the other day. We pulled out of our driveway and a car came speeding so fast behind us, swerving around our car at an incredible speed and then again in front of a second car turning onto Clemons St. They sped right through the flashing speed sign.*
- ▶ *At the bus stop (at the top of our driveway), drivers have passed the bus even while its stop sign was out and lights on. I can recall at least 4-5 incidents like this in the past 4-5 years. The bus driver was always alert and always beeped the horn very long and loud.*
- ▶ *I was driving up Parmenter at about 7:30am. In front of me was a small 4-door sedan, and in front of that, was a large pickup towing a box-truck-like white (enclosed) trailer. You could not see around it at all. We were all traveling 30-35mph mph. As we approached Metcalf, the sedan decided that was too slow, and sped up, going entirely over the line, heading into the downhill traffic lane of Parmenter and PASSED the truck & trailer --- as they approached the intersection of Pine Hill. This was truly horrifying to watch because the cars drive so fast up and down Parmenter and are not being particularly careful, even around the intersection, or watching for cars that may be pulling out of a driveway, pulling out of the Pine Hill intersection or may otherwise be in harm's way. That was one of the days that the equipment was setup that was measuring cars/volume/speed - if there was video on that camera, it should be available to see.*
- ▶ *I do think a solid yellow line down the road will make it completely clear it is a no passing zone. Without that line, if you go the speed limit, drivers will pass you, speed humps or not. In fact, the driver that passed me and then *hit* my car told the police officer I called that I was going too slow (30 MPH), that was it was safe to pass me. The officer told him it was a no passing zone - but that doesn't really help every other person who sees no line and decides to pass you for going at, or close to, the limit.*
- ▶ *This afternoon, heading north on Pine Hill Road, I rounded a corner and was faced with a SUV coming at me at a high speed and in my lane while passing another vehicle. I braked hard and the SUV swerved back into the oncoming lane after just passing the other vehicle and missing me by a couple feet. Apparently, the SUV was passing a 'slower' vehicle as there were two or three cars in the oncoming lane behind the vehicle that was passed. So, lesson learned - reducing posted speed limits (where ever they are?) may increase potential accidents. Physical speed reduction measures are needed.*

**DO MORE
ACCIDENTS NEED
TO HAPPEN . . .**

**before effective safety and
traffic calming measures
are implemented?**

