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TOWN OF DEDHAM

Commonwealth of Massachusetts



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DEPARTMENT OF INFRASTRUCTURE ENGINEERING

INITIAL TRAFFIC EVALUATION

TO:	Transportation Advisory Committee
FROM:	Jason L. Mammone, P.E., Director of Engineering
DATE:	October 5, 2021
SUBJECT:	Traffic Calming Request #2020-002 – Hillside Road

Purpose

The Transportation Advisory Committee (TAC), at their 05/11/21 meeting, reviewed the traffic calming request form (#2021-002) submitted by Ashley Schell of 25 Hillside Road. Based upon the information provided in the form, Ms. Schell's concerns are the speed at which vehicles travel and pedestrian/bicyclist safety. Based upon the Town's Traffic Calming Policy, TAC determined that this request met the eligibility criteria and warranted an initial evaluation on Hillside Road and requested that the Engineering Department investigate this matter. This report summarizes the findings of the Engineering Department.

Study Area

<u>Hillside Road:</u>

Hillside Road is an north/south thickly settled residential through street with a pavement width of approximately 20 to 22 feet. Hillside Road is approximately 1,300 feet (0.25 miles) in length extending from Needham Street to Vine Rock Street. There is a continuous sidewalk on both sides of the roadway that extends for the entire length. Some of the residents utilize Hillside Road for on-street parking.

The statutory speed limit on this section of Hillside Road is 25 mph. A statutory 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

Observations (Speed, Volume & Classification)

The Town of Dedham utilized a Jamar radar recorder to log the speed and volume of vehicles during the period beginning September 13, 2021, and ending September 17, 2021. The radar was installed on a utility pole in front of #25 Hillside Road at approximately Station 3+05 (See Attached Locus Map).

The combined average speed for both directions was found to be 22 mph for Hillside Road. The combined 85th percentile speed for both directions was found to be 27 mph. 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, the 85th percentile speed is 2 mph over the speed limit with approximately 27% of the vehicles driving at speeds greater than 25 mph and approximately 4% driving at speeds greater than 30 mph.

The volume of traffic expressed as average daily traffic (ADT) and the speed data collected for Hillside Road is shown below in the following table:

Direction of Traffic	ADT	Peak Hour Volume	Peak Volume Time	Speed Limit	85 th Percentile Speed	Average Speed
Northbound	254 (39%)	24	5 - 6 pm	25 mph ^a	26 mph	21 mph
Southbound	399 (61%)	34	7 - 8 am	25 mph ^a	28 mph	23 mph
Combined	695	52	2 - 3 pm	25 mph ^a	27 mph	22 mph

Table 1 – Traffic Data Station 3+05

^a – Statutory Speed Limit

Hillside Road does not experience a higher than normal volume of vehicles considering its location to a minor arterial roadway (Needham Street) and the volume of residential properties in the neighborhood. The observed ADT of 695 vehicles per day (VPD) is similar to those residential streets in Dedham with similar characteristics. Over the past few years, the Engineering Department has also performed traffic studies for Wentworth Street (933 VPD), Taylor Avenue (525 VPD) and Pratt Avenue (461 VPD).

Crash Data (Traffic Collisions)

The Engineering Department analyzed crash data utilizing the most recent 2018-2021 data available from the Dedham Police Department and MassDOT to determine if the subject area was experiencing a higher than normal rate of accidents.

Table	2 –	Crash	Data
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Road	Total # of Crashes	Crashes Per Year
Hillside Road	1	0.3

The one crash did not involve a pedestrian and/or bicyclist. The incident report also did not have any information on the cause of the accident. Based upon this data, there are no overriding roadway geometric safety issues.

GIS Data (Pedestrian Generators & Residential Density)

The Engineering Department utilized our latest Geographic Information System (GIS) data to collect the types of pedestrian generators and determine the residential density located within a 1,000 foot buffer of the study area.

Pedestrian generators are those facilities that are considered points of interest that pedestrians travel to, such as parks, community centers, Town/neighborhood centers, libraries, public transit stations, churches and public schools. Based upon the available data, there are three pedestrian generators (Riverdale School, Marie Louise Kehoe Park and Cutler Park) within the 1,000 foot buffer area.

Based upon the available data, the 1,000 foot buffer area has approximately 1 Apartment with over 8 units, 3 Apartments with 4 to 8 Units, 29 Condo Units, 26 Housing Authority Units, 2 Three-Family Dwellings, 21 Two-Family Dwellings and 443 Single-Family Dwellings.

Scoring

According to the latest version of the Town's Traffic Calming Policy, for a roadway to qualify for traditional traffic calming measures, the petitioned roadway must score more than 50 points utilizing the scores calculated from the 6 criteria including; Speed, Volume, Pedestrian Route, Traffic Collisions, Pedestrian Generators and Residential Density. The table below summarizes the scoring for each criterion.

Criteria	Score (Hillside Road)
Speed – Based upon how many mph the combined 85 th percentile speed is over the speed limit. 2 points awarded for each mph over the speed limit from 1 to 5 mph over the speed limit and 4 points awarded for each mph over the speed limit starting at 6 mph and greater over the speed limit	4
Volume – 1 point awarded for every 100 vehicles of average daily traffic (ADT)	6
Pedestrian Route – 10 points awarded if no continuous sidewalk exist on both sides of the roadway or 5 points awarded if there is only a continuous sidewalk on one side of the roadway	0
Traffic Collisions – 2 points awarded for each preventable collision in a 3 year period that occurred along the subject roadway. 8 points awarded if a collision involved a pedestrian or bicyclist.	0
Pedestrian Generators – 3 points awarded for every park, community center, library, public transit station or church located within 1,000 feet of the subject roadway. 10 points awarded for each public school within 1,000 feet of the subject roadway	16
Residential Density – 1 point awarded for every 50 dwelling units within 1,000 feet of the subject roadway	11
TOTAL SCORE	37

Table 3 - Scoring

S:\Transportation Advisory Committee\Traffic Calming Requests\2021\TCR 2021-002 Ashley Schell - Hillside Road\Initial Eval Hillside Rd 100521.docx

Conclusion

Traditional traffic calming measures are not recommended for Hillside Road since it did not score greater than 50 points based upon the criterion listed in Table 3 above.

Although Hillside Road is not recommended for traditional traffic calming measures, the collected data did show that there is a minor speeding issue present on Hillside Road. It is recommended that the Police Department perform sporadic traffic enforcement on Hillside Road to mitigate the speeding that occurs along this roadway. Utilizing the data collected, the best times for enforcement during the work week would be from 9 to 11 AM in the morning and from 2 to 4 PM in the afternoon.

The Engineering Department would also like to offer the following low-cost traffic calming measures that could be utilized and/or taken on by the concerned residents and neighbors.

 Purchasing a Step2 Kid Alert Visual Warning System – These can be purchased at Toys R' Us, Wal-Mart, Amazon.com and other similar retail and online stores for about \$25 to \$35. The Step2 Kid should be placed at the end of your driveway so it is visible to motorists. This should only be placed out during times when kids are actually outside playing in the yard. By having it out all the time, it will reduce its effectiveness. Studies have shown that when used properly, it usually aids in the reduction of vehicle speeds.



Photo of Step 2 Kid Alert

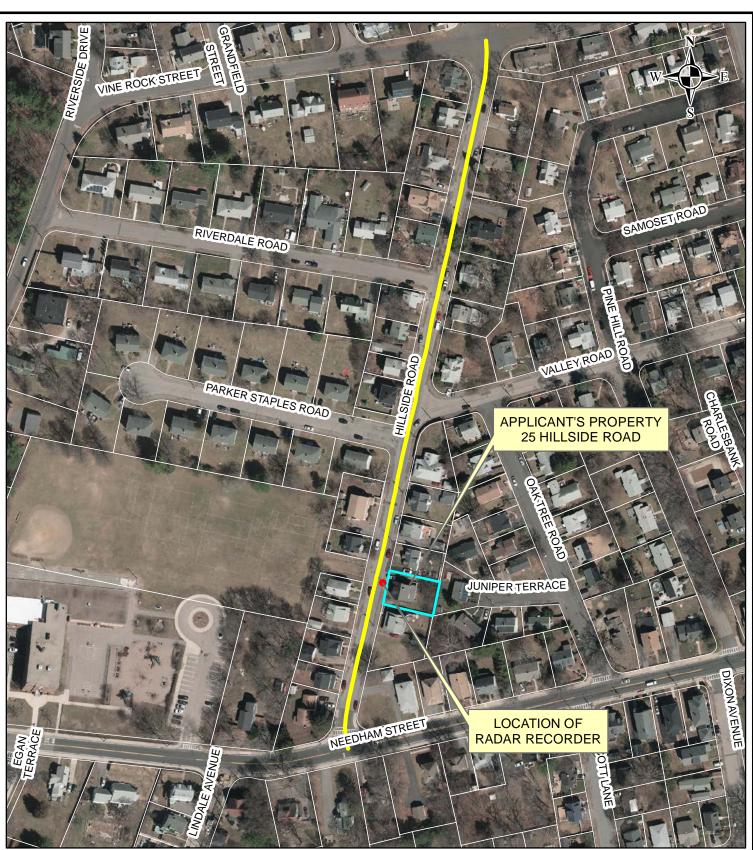
- Continue to work with your neighbors to park your cars on either side of the street in a staggered fashion as to reduce the openness of the roadway while still allowing for the safe passage of emergency response vehicles (i.e. Police, Ambulance, Fire Engine). This measure physically narrows the roadway making the motorist slow down to negotiate by the parked vehicles.
- The neighborhood could also reach out to the Police Department to see if they can place their mobile "Your Speed Is" indicator sign on Hillside Road Avenue a couple of times throughout the year.
- Cc: Select Board
- Attachments: Hillside Road Locus Map Hillside Road Neighborhood Buffer Map Combined Speed Statistics Report Traffic Volume Report

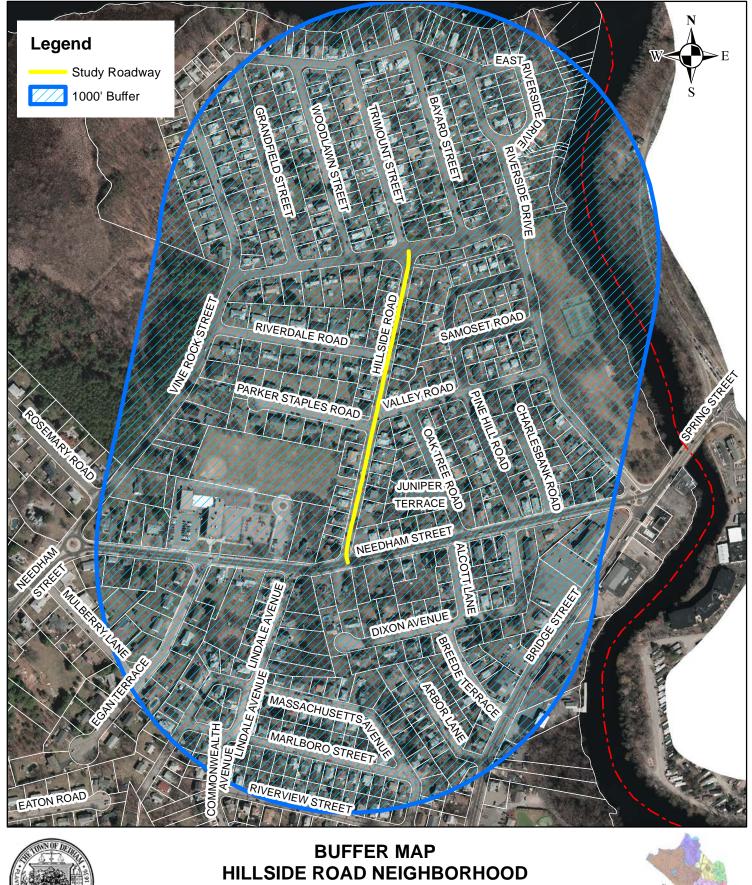
TOWN OF DEDHAM, MASSACHUSETTS



HILLSIDE ROAD REQUEST #2021-002 LOCUS MAP







HILLSIDE ROAD NEIGHBORHOOD SEPTEMBER 2021



TOWN OF DEDHAM, MASSACHUSETTS



Station ID: STA 3+05

Town of Dedham **Engineering Department**

55 River Street Dedham, MA 02026 781-751-9350

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	12:00 PM	1	6	13	11	0	0	0	0	0	0	0	0	0	31
	1:00	1	9	17	13	2	0	0	0	0	0	0	0	0	42
	2:00	2	5	17	22	2	0	0	0	0	0	0	0	0	48
	3:00	2	19	18	13	2	0	0	0		0	0	0	0	54
	4:00	3	9	24	13	3	0	0	0		0	0	0	0	52
	5:00	4	13	14	6	1	0	0	0		0	0	0	-	38
	6:00	4	11	15	12	2	0	0	0	0	0	0	0	0	44
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	8:00	3	5	15	8	0	1	0	0		0	0	0	0	32
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1	10:00	0	3	7	0	0	0	0	0	0	0	0	0	0	10
	11:00	0	1	3	0	0	0	0	0	0	0	0	0	0	4
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Comment 1:

Comment 2:



Station ID: STA 3+05

Town of Dedham Engineering Department

55 River Street Dedham, MA 02026 781-751-9350

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5:0		1	1	3	1	1	0	0	0	0	0	0		7
6:0		4	6	10	2	0	0	0	0	0	0	0	-	22
7:0		10	27	16	0	0	0	0	0	0	0	0	-	57
8:0	-	14	29	12	0	0	0	0	0	0	0	0	0	59
9:0		11	17	12	1	0	0	0		0	0	0		42
10:0		5	17	9	1	0	0	0	0	0	0	0		35
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2:0	0 5	10	26	14	1	0	0	0	0	0	0	0	0	56
3:0	0 4	12	19	18	0	0	0	0	0	0	0	0	0	53
4:0		12	21	8	1	0	0	0	0	0	0	0	0	44
5:0		20	13	7	2	0	0	0	0	0	0	0		46
6:0		17	18	7	0	0	0	0	0	0	0	0	v	47
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Comment 1:

Comment 2:



Station ID: STA 3+05

Town of Dedham Engineering Department

55 River Street Dedham, MA 02026 781-751-9350

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	3:00	0	0	0	0	0	0	0	0	-	0	0	0	0	0
	4:00	0	1	0	1	0	0	0	0	0	0	0	0	0	2
	5:00	0	0	2	1	2	0	0	0	0	0	0	0	0	5
	6:00	1	4	8	6	1	0	0	0	0	0	0	0	0	20
	7:00	2	10	19	14	2	1	0	0	0	0	0	0	0	48
	8:00	6	18	29	8	0	0	0	0	0	0	0	0	0	61
	9:00	2	11	13	9	0	0	0	0	0	0	0	0	0	35
	10:00	6	6	13	8	2	0	0	0	0	0	0	0	0	35
	11:00	4	16	14	5	0	0	0	0	0	0	0	0	0	39
12	:00 PM	5	7	9	10	5	0	0	0	0	0	0	0	0	36
	1:00	0	7	14	8	0	0	0	0	0	0	0	0	0	29
	2:00	1	13	27	17	1	0	0	0	0	0	0	0	0	59
	3:00	3	10	17	14	3	0	0	0	0	0	0	0	0	47
	4:00	1	10	23	16	2	0	0	0	0	0	0	0	0	52
	5:00	3	10	31	13	3	0	0	0		0	0	0	0	60
	6:00	4	12	33	21	1	1	0	0	0	0	0	0	0	72
	7:00	1	8	25	10	3	0	0	0		0	0	0	0	47
	8:00	0	9	14	4	3	1	0	0	0	0	0	0	0	31
	9:00	1	4	10	6	1	0	0	0		0	0	0	0	22
_	10:00	1	1	4	1	0	0	0	0	0	0	0	0	0	7
	11:00	0	6	5	1	0	0	0	0	-	0	0	0	0	12
	Total	41	164	311	173	29	3	0	0	0	0	0	0	0	721

Comment 1:

Comment 2:



Station ID: STA 3+05

Town of Dedham Engineering Department

55 River Street Dedham, MA 02026 781-751-9350

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	4:00	0	0	2	1	0	0	0	0	0	0	0	0	0	3
	5:00	2	0	1	0	1	0	0	0	0	0	0	0	0	4
	6:00	0	2	7	6	2	0	0	0	0	0	0	0	0	17
	7:00	4	3	27	13	3	0	0	0	0	0	0	0	0	50
	8:00	5	23	24	7	1	0	0	0	0	0	0	0	0	60
	9:00	2	16	15	4	1	0	0	0	0	0	0	0	0	38
	10:00	1	8	19	3	0	0	0	0	0	0	0	0	0	31
	11:00	2	13	18	2	0	0	0	0	0	0	0	0	0	35
	12:00 PM	4	6	18	13	2	0	0	0	0	0	0	0	0	43
	1:00	0	12	17	12	3	0	0	0	0	0	0	0	0	44
	2:00	2	11	16	16	0	0	0	0	0	0	0	0	0	45
	3:00	2	15	18	12	4	1	0	0	0	0	0	0	0	52
	4:00	2	15	27	14	0	1	0	0	0	0	0	0	0	59
	5:00	3	9	28	6	4	1	0	0	0	0	0	0	0	51
	6:00	2	12	20	8	2	0	0	0	0	0	0	0	0	44
	7:00	0	8	15	8	1	0	0	0	0	0	0	0	0	32
	8:00	3	10	13	7	2	0	0	0	0	0	0	0	0	35
	9:00	1	4	8	3	0	0	0	0	0	0	0	0	0	16
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Comment 1:

Comment 2:



Station ID: STA 3+05

Location 1: On Utility Pole In Front

Town of Dedham Engineering Department

55 River Street Dedham, MA 02026 781-751-9350

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3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	(
4:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
5:00	0	1	1	2	0	0	0	0	0	0	0	0	0	2
6:00	7	4	1	2	2	0	0	0	0	0	0	0	0	16
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	(
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	(
9:00	4	5	7	6	0	0	0	0	0	0	0	0	0	22
10:00	0	12	19	12	1	0	0	0	0	0	0	0	0	44
11:00	5	22	19	11	1	0	0	0	0	0	0	0	0	58
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11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	(
Total	17	49	60	39	4	0	0	0	0	0	0	0	0	169
Grand Total	171	656	1141	633	87	8	0	0	0	0	0	0	0	2696
Stats			Percentile Speed ed (Average)	15th 17.9 21.9	50th 22.9	85th 26.9	95th 29.9							

Mean Speed (Average)21.910 MPH Pace Speed16-25Number in Pace1793Percent in Pace66.5%

Number > 25 MPH728

Percent > 25 MPH 27.0%

Comment 1:

Comment 2:

Comment 3:



Town of Dedham Engineering Department

55 River Street Dedham, MA 02026 781-751-9350

Site Code: 000 Station ID: STA Location 1: On Location 2: Of Location 3: Location 4:	A 3+05 Utility Pole I														Latitud	Comment 1: Comment 2: Comment 3: Comment 4: e: 0.000000 e: 0.000000
9/13/2021	Mond	lay	Tues	day	Wednes	day	Thurs	day	Frida	ау	Weekday	Average	Satu	rday	Sun	day
Time	North, 1	South, 2	North, 1	South, 2	North, 1	South, 2	North, 1	South, 2	North, 1	South, 2	North, 1	South, 2	North, 1	South, 2	North, 1	South, 2
12:00 AM	*	*	2	0	1	0	1	0	3	2	2	0	*	*	*	*
1:00	*	*	0	0	0	0	1	0	1	1	0	0	*	*	*	*
2:00	*	*	0	0	0	1	0	3	0	0	0	1	*	*	*	*
3:00	*	*	0	1	0	0	0	0	0	0	0	0	*	*	*	*
4:00	*	*	1	1	1	1	1	2	1	2	1	2	*	*	*	*
5:00	*	*	1	6	0	5	0	4	0	4	0	5	*	*	*	*
6:00	*	*	6	16	5	15	3	14	11	5	6	12	*	*	*	*
7:00	*	*	9	48	5	43	4	46	0	0	4	34	*	*	*	*
8:00	*	*	16	43	22	39	21	39	0	0	15	30	*	*	*	*
9:00	*	*	14	28	14	21	10	28	10	12	12	22	*	*	*	*
10:00	*	*	8	27	10	25	3	28	17	27	10	27	*	*	*	*
11:00	9	18	13	21	14	25	10	25	18	40	13	26	*	*	*	*
12:00 PM	9	22	18	25	12	24	19	24	9	6	13	20	*	*	*	*
1:00	23	19	10	20	9	20	15	29	*	*	14	22	*	*	*	*
2:00	12	36	25	31	19	40	21	24	*	*	19	33	*	*	*	*
3:00	25	29	22	31	16	31	18	34	*	*	20	31	*	*	*	*
4:00	18	34	22	22	23	29	26	33	*	*	22	30	*	*	*	*
5:00	21	17	24	22	25	35	26	25	*	*	24	25	*	*	*	*
6:00	18	26	21	26	36	36	17	27	*	*	23	29	*	*	*	*
7:00	21	21	9	21	23	24	16	16	*	*	17	20	*	*	*	*
8:00	16	16	19	12	18	13	16	19	*	*	17	15	*	*	*	*
9:00	12	9	13	6	13	9	8	8	*	*	12	8	*	*	*	*
10:00	7	3	4	0	4	3	8	7	*	*	6	3	*	*	*	*
11:00	1	3	6	4	7	5	4	4	*	*	4	4	*	*	*	*
Total	192	253	263	411	277	444	248	439	70	99	254	399	0	0	0	0
Day	445	5	674	4	721		687	7	169		65	3)	()
AM Peak	11:00	11:00	8:00	7:00	8:00	7:00	8:00	7:00	11:00	11:00	8:00	7:00				
Volume	9	18	16	48	22	43	21	46	18	40	15	34				
PM Peak	3:00	2:00	2:00	2:00	6:00	2:00	4:00	3:00	12:00 PM	12:00 PM	5:00	2:00				
Volume	25	36	25	31	36	40	26	34	9	6	24	33				
Comb Total	445		674	4	721		687	7	169)	65	3	0)	()
ADT	1	ADT: 695	A	ADT: 695												

Comment 1: