



WINDHAM COUNTY SHERIFF'S Office

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Background:

In the Summer of 2015 the Town of Grafton requested that the Windham County Sheriff's Office conducted a speed study of Vermont Route 121/35 Grafton in the now posted 35 MPH zone after receiving a concern raised by a Grafton resident to the present posted speed limit.

Methodology:

The Windham County Sheriff's Office followed the guidelines established with the Manual on Uniform Traffic Control Devices (MUTCD), Title 23 Vermont Statutes Annotated, and the Vermont Local Roads in assessing the current posted speed limit of 35 MPH on this section of VT 121/35,

The MUTCD guidelines under Section 2b. 13 is that posted limits should be within 5 MPH of the 85th Percentile Speed. Per the MUTCD additional factors can and should be considered. Additional factors for consideration are paced speed, roadside development, environmental sighting distance, curves, grade, construction type, parking practices, pedestrian activity, crash reports in a 12 month period.

All recommendations are based on the findings of the Office and aforementioned guidelines.

Modal Speed -- The speed at which the highest number of vehicles surveyed are traveling.

Average (Median) Speed -- The speed at which at least 50% of the vehicles are traveling.

85th Percentile- The speed at or below which 85 % of the sample vehicles are surveyed.

10 Mile Pace- Percentage of the total number of vehicles surveyed are within a 10 mile per hour block.

Speed Limit Range- The speed limit range has two numbers. It has a high number and a low number. The high number is the lower of the two numbers minus three. The numbers are 1.) The 85th Percentile, and 2.) The high number of the 10 Mile Pace. Choose the lower of the two numbers and subtract three from it. That is the high number of the speed limit range. Now the low number of the speed limit range is the low number of the 10 Mile Pace.

Findings:

Vt. Rt. 121/ 35 Grafton (35 MPH zone)

Vt. Rt., 121/35 Grafton, Windham County, Vermont 35 Mile Per Hour zone is four tenths of a mile running East to West and is an asphalt road. The road is standard 24 foot width without discernable shoulders. This section of road has 35 MPH signs posted at each end. To the East of this zone the road is posted at 40 MPH, to the West 25 MPH. The zone is densely populated residential and also includes the Grafton Fire Department.

This section of road was driven at various speeds from 25mph to 45 mph. A speed of 35mph was found to be most practical. A Speed of 35 mph or less required no breaking input. At 35 mph or less the vehicle experienced little to no body roll or stress on the driver.

A *Crash Report Review* was conducted for Vt. Rt. 121/35 Grafton 35 MPH zone from February 2015 through March 2016. No crashes were reported during this time period for this section of road.

The Windham County Sheriff's Office utilizing radar speed measuring equipment conducted a speed survey on Vt. 35/121 Grafton, Vermont in the now posted 35 MPH zone on March 17, 2016. A total of 100 vehicles were surveyed consisting of 47 Pleasure cars and 53 trucks. Speed data collection was recorded at the approximate midpoint of the 35 MPH zone (2/10 of a mile). Vehicle direction of travel was 47% West, 53 % traveling East. Utilizing the guideline calculations of the MUTCD and Vermont Local Roads Program analysis of the recorded speed revealed the following:

Vt. Rt. 121/35 Grafton (35 MPH zone)

100 vehicles surveyed

Modal Speed	35 MPH / 14 vehicles
Average (median) Speed	37 MPH
85 th Percentile Speed	85 vehicles/ 41MPH
10 Mile Pace	83% 32 MPH- 41 MPH
Speed Limit Range	32 MPH- 38MPH

Recommendation:

Based on aforementioned findings Vt. Rt.121/35 Town of Grafton, Windham County, State of Vermont 35 MPH zone is properly posted at the current posting of 35 MPH.

Submitted:

Captain Robert Lakin

Deputy Joseph McNary, Traffic Surveyor

Windham County Sheriff's Office

Traffic Study

Location: Grafton Fire 121 Date: 3/17/16

Road Conditions: wet, cloudy Time: 0700-0742

	Type:	MPH:	Direction:
1:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	46	East
2:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	43	West
3:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	34	East
4:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	32	East
5:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	44	East
6:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	39	East
7:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	42	East
8:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	32	East
9:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	35	West
10:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	38	West East
11:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	36	West
12:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	32	East
13:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	34	East
14:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	33	East
15:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	34	West
16:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	30	East
17:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	37	West
18:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	40	East
19:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	39	West
20:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	35	East
21:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	41	East
22:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	39	East
23:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	35	West
24:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	35	West
25:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	33	East

Windham County Sheriff's Office

Traffic Study

Location: Grafton Fire 121 Date: 3/17/16

Road Conditions: wet, cloudy Time: 0742-0808

	Type:	MPH:	Direction:
1:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	38	East
2:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	37	west
3:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	38	west
4:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	36	East
5:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	45	west
6:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	40	west
7:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	35	East
8:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	35	East
9:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	38	west
10:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	36	East
11:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	38	East
12:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	39	west
13:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	35	East
14:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	43	west
15:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	41	west
16:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	38	west
17:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	32	west
18:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	30	west
19:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	37	west
20:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	39	East
21:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	36	East
22:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	37	East
23:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	34	west
24:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	44	East
25:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	41	west

Windham County Sheriff's Office

Traffic Study

Location: Grafton Fire 121 Date: 3/17/16

Road Conditions: wet, cloudy Time: 0808 - 0828

	Type:	MPH:	Direction:
1:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	43	west
2:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	39	west
3:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	36	East
4:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	45	East
5:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	37	west
6:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	40	East
7:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	39	west
8:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	35	East
9:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	44	East
10:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	34	west
11:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	40	East
12:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	33	west
13:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	40	East
14:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	39	west
15:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	43	East
16:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	41	west
17:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	35	west
18:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	37	west
19:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	38	west
20:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	35	East
21:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	40	west
22:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	37	west
23:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	34	west
24:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	38	west
25:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	33	East

Windham County Sheriff's Office

Traffic Study

Location: Grafton Fire 121 Date: 3/14/16

Road Conditions: wet, cloudy Time: 0828 - 0925

	Type:	MPH:	Direction:
1:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	37	East
2:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	34	East
3:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	41	East
4:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	34	East
5:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	33	west
6:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	38	East
7:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	35	East
8:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	31	East
9:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	36	west
10:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	37	west
11:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	36	west
12:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	44	East
13:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	38	East
14:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	40	East
15:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	36	west
16:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	35	west
17:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	34	East
18:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	30	west
19:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	35	East
20:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	39	west
21:	<input type="checkbox"/> Car <input checked="" type="checkbox"/> Truck	35	East
22:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	53	East
23:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	38	East
24:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	43	west
25:	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Truck	36	west