

Newport, NH Traffic Study

Traffic Volume and Turn Movement Counts



**Vicinity of Maple St, Bradford Rd, and
Cross St.**

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Prepared by:



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INTRODUCTION:

In response to community concerns about heavy truck traffic and vehicular speed, the Town of Newport asked UVLSRPC to conduct traffic counts and turn movement counts at various points along Maple Street in town. Several locations were chosen on Maple Street, Cross Street, and Bradford Road to take vehicle counts, including vehicular classification and speed. Turn movement counts were also conducted at the intersections of Main & Maple, Maple & Cross, and Maple St. & Bradford Rd.

TRAFFIC COUNTS:

Traffic counts were conducted at the following locations between Tuesday, November 1 and Sunday, November 6, 2022:

Location	AADT*	Avg. Speed	85 th percentile speed	99 th percentile speed	Top Speed Recorded
Cross St N of Maple St	1,997	n/a	n/a	n/a	n/a
Maple St W of Cross St	6,288	29	34	40	65
Maple St E of Emerald Ridge Rd	1,581	43	48	57	80
Maple St E of Paradise Rd	1,476	39	43	51	66
Bradford Rd, W of bridge at Trask Brook	2,686	39	44	53	78
Bradford Rd between Sunshine Ct and Brookline Way	2,422	38	45	54	93

* AADT = Annual Average Daily Traffic

NOTES:

AADT is an estimation of an average day of traffic at a particular location. AADT is estimated by collecting at least three consecutive days of traffic counts at the location, then applying seasonal and locational correction factors to produce the estimate.

Posted speed limits throughout the entire collection area were 35mph with the exception of the segment of Maple St. between Main and Cross St. where the posted speed limit was 30mph. However, this posting was only for westbound traffic; there was no sign indicating speed limit between Main and Cross St heading eastbound.

Percentile speeds compare the speeds of most vehicles with those on the extreme ends of the spectrum. For example, in the 85th percentile, 85% of vehicles go slower than the 85th percentile speed meaning 15% of vehicles are traveling faster than that speed.

All locations have class and speed data apart from Cross St, where only counts were requested. Attached to this report are the findings for each location with Class Averages, Speed Data Analysis, and Speed by Volume. Class Averages are the total number of

vehicles for each class during the study period. Speed Data Analysis looks at the average speed, the average pace, and the peak high and low speeds recorded in the study.



































Out of five locations that collected speed, four of them had average speeds faster than the posted speed limit. Maple Street near Cross Street had the lowest average speed as it was in a heavily residential area with narrow sightlines and more caution displayed by drivers. However, more than one vehicle passed through the counter at a speed of 60+ mph. In the other four locations, residents' complaints of high-speed vehicles have been verified with top speeds of 80 and 93 mph in two areas where the road is long and straight without curves. When traveling from Sunapee to Newport, the GPS route takes Route 11 as the preferred route. However, when going from Newbury to Newport or vice versa, the GPS route takes you on Bradford Rd (as expected).

Vehicles by class showed the traffic was mostly passenger cars and pickup trucks, with some box trucks and larger vehicles such as school buses. This is normal traffic that is to be expected on these roads. In response to the town's concerns about heavier classes of vehicles on the road, the following table shows the total number of each class from Class 5 and higher during the 6 day observation period.

Location	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12
Maple St W of Cross St	2353	30	4	189	11	7	3	2
Maple St E of Emerald Ridge Rd	1161	13	0	55	1	0	0	0
Maple St E of Paradise Rd	825	1	0	33	1	0	0	0
Bradford Rd, W of bridge at Trask Brook	1943	9	0	173	8	1	0	0
Bradford Rd between Sunshine Ct and Brookline Way	1188	10	2	94	8	4	0	0

Please see the classifications key on the next page.

CLASSIFICATIONS KEY:

Class 1 Motorcycles		Class 7 Four or more axle, single unit	
Class 2 Passenger cars			
			
		Class 8 Four or less axle, single trailer	
			
Class 3 Four tire, single unit			
		Class 9 5-Axle tractor semitrailer	
			
Class 4 Buses		Class 10 Six or more axle, single trailer	
			
		Class 11 Five or less axle, multi trailer	
Class 5 Two axle, six tire, single unit		Class 12 Six axle, multi-trailer	
			
		Class 13 Seven or more axle, multi-trailer	
Class 6 Three axle, single unit			
			
			

Source: FHWA

Note: Class 5 are commonly "dually" pick-up trucks with 2 axles but 6 wheels

This is a one-week sample size, but it does show that larger trucks are using these roads with some frequency.

TURN MOVEMENT COUNTS:

Three intersections were chosen for turn movement counts: Main St. and Maple St., Maple St. and Cross St., and Maple St. and Bradford Rd. These counts took place on Tuesday, 1/17/23; Thursday, 2/9/23; and Tuesday, 3/7/23, respectively. Each shift was 12 hours with two UVSLRPC staff members each taking 6-hour shifts.

Main and Maple

The intersection of Main and Maple Streets in Newport is one of the busiest in the area. This is a four-way intersection with Main Street running north-south, John Stark Highway going west and Maple St. going east. Primarily, traffic moved along the Routes 10/11/103 corridor, turning west from Main Street or north from John Stark Highway.

Maple St. and Cross St.

The intersection of Maple St and Cross St was observed primarily to determine how much traffic was moving from Maple Street out onto Cross Street. This intersection forms a T, with Maple Street running east-west and Cross St. going southbound into Maple. A majority of vehicles turned west from Cross onto Maple, or north from eastbound Maple to Cross.

Maple and Bradford

The intersection of Maple St. and Bradford Rd. is complicated with Bradford Rd. approaching from the southeast and intersecting with Maple in a Y. There is no stop sign between Maple St. eastbound and Bradford Rd. northwest bound; only eastern Maple St. has a stop sign for westbound traffic. Traffic continuing east on Maple must navigate a short turn lane from Maple to Maple that allows oncoming traffic from Bradford Rd. to have the right-of-way. The road also faces a significant change in incline through the intersection, with western Maple St. at a lower elevation than the top of the intersection. Sightlines make maneuvering difficult, worsened by snowbanks during winter. Very few cars turn from Bradford Rd westbound to eastbound Maple (and vice versa) but about 38% of all traffic (734/1970) going east on Maple ended up continuing onto eastbound Maple at this intersection. A similar proportion of vehicles (868) moved from Maple St. on the east through the intersection and continued on Maple St. west.

Attached are the turn movement count diagrams and data charts detailing each intersection's turns for the 12-hour sample size.

FINDINGS AND RECOMMENDATIONS:

After observing the traffic counts and the intersections, UVLSRPC Staff has the following recommendations:

Maple St. between Main and Cross St.

- This short segment has the highest traffic counts of the entire road. Truck traffic coming from John Stark Highway has two signs with flags cautioning against truck usage, but as seen from the data, these are easy to ignore. Recommendations: designating this segment as one-way westbound from Cross St. to Main St. to keep trucks from attempting to use this segment from John Stark Highway, traffic calming measures such as better integration of sidewalks and on-street parking, and the use of a speed table in this stretch to keep traffic slow. Being a high-density residential neighborhood, any change to the existing traffic design should include input from residents in this area.

Maple St. and Bradford Rd.

- This intersection is the most dangerous in the study. With a sharp incline downhill from Bradford Rd, this traffic needs the most clearance, but a significant number of vehicles continue across Maple St. eastbound. Safety improvements such as signage and lights that should be considered to warn drivers of the intersection, particularly the turn lane from eastbound Maple St. continuing onto eastbound Maple St. as well as drivers westbound from Bradford Rd. that they are approaching a dangerous intersection. Turn lane striping is worn and hard to see. A more thorough study of this intersection is warranted to determine the best possible solutions, including one-way on parts of Maple St. east, full stops and signals, a rebuild of the intersection to prevent truck traffic from being able to move through, or an entire re-route of most traffic through this intersection and coming up with an alternative method for vehicles moving through Maple St.

Maple St. (east of Cross St.)

- Away from the downtown area, Maple St. is much less populated east of Parkview St. with wider sightlines and longer straightaways, causing drivers to speed up through this stretch. There are pockets of populated areas where slower speeds would help with safety. The portion of Maple St. between Emerald Ridge Rd. and Parkview St. narrows significantly with houses closer to the road, but the speed limit is not posted and presumed to still be 35mph. A posted speed limit of 30mph through this section, from the crest of the hill at the tree farm continuing west through the Bradford Rd. intersection to Main St., is recommended in order to slow traffic through higher-density residential areas. Consistent and accurate speed limits and radar-activated speed signs, combined with increased enforcement, would have a positive effect on speed through this segment.

Bradford Rd. (east)

- Bradford Rd. is also significantly less populated than west of the Maple St./Bradford Rd. intersection, but there are pockets of houses along the route. Similar to Maple St., Bradford Rd has straightaways that give drivers ample opportunities to speed through the area. Truck traffic was also higher in this area, so better signage/lights to prohibit large truck traffic entering from the Sunapee side would be in order. A speed hump on either side of the bridge near the Sunapee line would also slow traffic in this stretch. This bridge is one lane and is likely to be replaced in the future, so a better study of methods to slow traffic in this stretch would be beneficial.

Any further questions, please contact me at the UVLSRPC offices or at my email, tjosephson@uvlsrpc.org.

Respectfully submitted,

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Appendix:
Photos of Study Area

Attachments:
Map of Study Area

for each Traffic Count Location (except Cross St.):
Class Averages
Class Data Analysis
Speed Data Analysis
Volume x Speed

for each Turn Movement Count Location:
Diagram and Tables

Appendix

Counter location for Maple St facing west, between Cross St. and Main St.:



Counter location for Maple St facing east, between Cross St. and Main St.



Intersection of Maple St. and Cross St. (Turning Movement Count location)



Intersection of Maple St. and Bradford Rd. looking west from Maple St.:
(Turning Movement Count location)



Intersection of Maple St. and Bradford Rd. looking east towards Maple and Bradford:
(Turning Movement Count location)



Intersection of Maple St. and Bradford Rd., lane striping conditions:



Intersection of Maple St. and Bradford Rd. looking west, driver perspective from Maple St. (Turning Movement Count location):



Intersection of Maple St. and Bradford Rd. looking east, driver perspective from Maple St. (Turning Movement Count location):



Driver's view from Bradford Rd. facing northwest at Bradford Rd./Maple St. Intersection:



Counter location for Maple St., east of Paradise Rd. facing east



Maple St., town line of Sunapee/Newport. Note flagged signage:



Counter location, Maple St., East of Emerald Ridge Rd. looking west



Counter location, Bradford Rd. looking west, at bridge over Trask Brook



Bradford Rd at Sunapee/Newport town line, looking west. Newport's truck signs and flags are seen here:



Counter location, Bradford Rd. between Sunshine Ct. and Brookline Way:



Looking west on Maple St., E of Emerald Ridge Rd. Note the lack of visibility at the crest of the hill:



After the crest of the hill on Maple St. looking west, where denser housing begins:



Counter location, Cross St. facing north:



Cross St. facing south, looking at Maple St. intersection



Counter location for Maple St. between Main St. and Cross St.
Note lack of visibility at crest of hill



Intersection of Maple St., Main St., and John Stark Highway, looking east up Maple St.
(Turn Movement Count Location) Note flagged signs prohibiting truck traffic.

