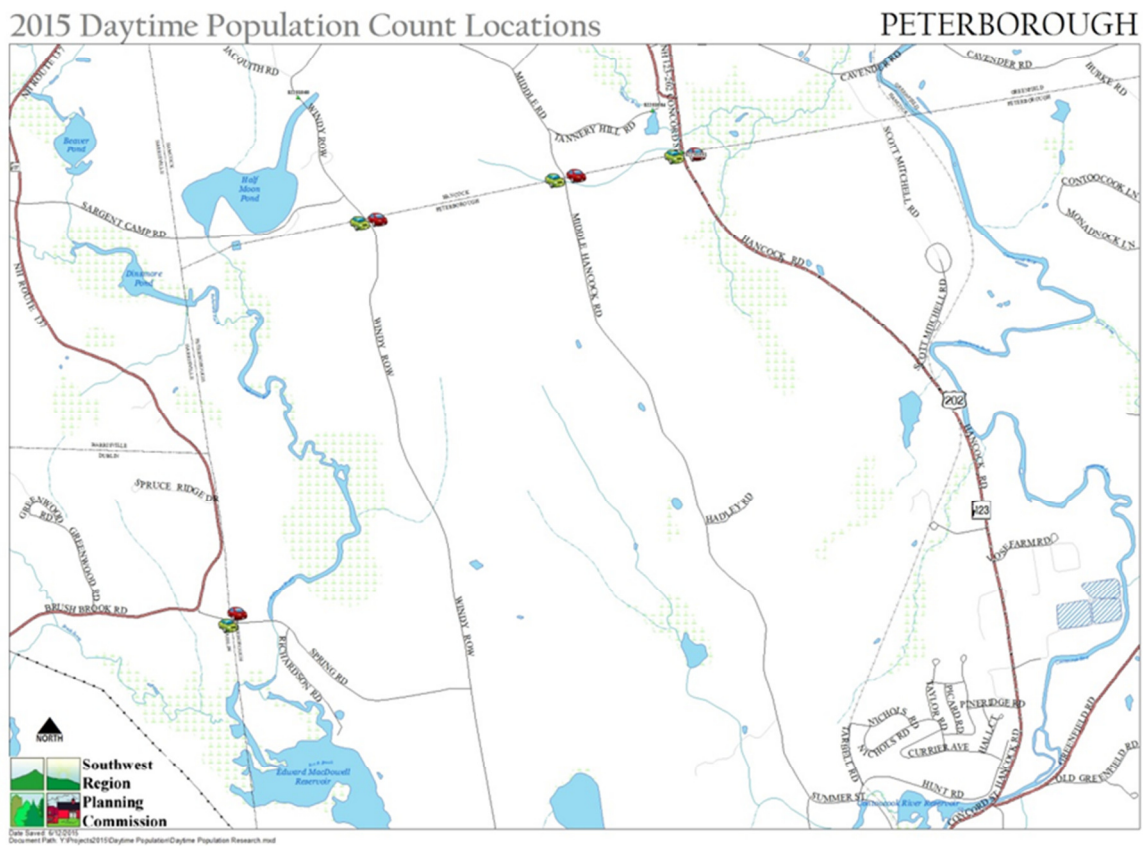


Daytime Population Estimate Findings for Jaffrey, Keene, New Ipswich, Peterborough and Swanzey

A Report Summarizing Results for Task 410 of the FY 2014-2015 SWRPC Unified Planning Work Program



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Introduction

Granite Staters, like most Americans, are a mobile people. Rarely do Granite Staters work, eat, sleep, shop, or recreate all in the same community. In addition to being a place of employment for some of their own residents, all communities host job to outside residents. Some communities may evolve into shopping areas where department stores, supermarkets, clothing stores attract outside residents. Still other communities may develop to become centers for medical services, restaurants and eateries, or a weekend destination. At the same time, many communities serve as “bedroom” communities, where people sleep and spend their leisure time, but spend their time someplace else during the daytime. The result of all of these complex mobility patterns is that populations within a geographic area can contract or expand depending on the time of day.

“Daytime population” is a concept that refers to the number of people who are present in an area during the daytime hours. This is in contrast to the “resident” population, which refers to people who reside in a given area and are typically present during the evening and nighttime hours. Information on the expansion or contraction of community populations during the course of the day can be utilized for various purposes ranging from disaster response planning, to economic development planning, to gauging the amount of pressure placed on local infrastructure to determine unmet development needs. Typically, the data source used to determine daytime population today is based on United States Census Bureau (US Census) data on people’s residences and workplaces. Unfortunately, this data does not account for the other trips that people may make on a daily or occasional basis when people commute to school, access services or go shopping, it sheds no light on youth or retiree travel patterns, and it neglects to count people traveling through the community. Using SWRPC’s vehicle traffic counting equipment, SWRPC has developed some new estimates which are designed to more accurately account for the daytime population. Daytime population ranges are presented in this report for our five largest member communities including Keene, Swanzey, Peterborough, Jaffrey and New Ipswich.

Estimating Daytime Population

Today communities around the United States depend on data collected by the US Census to estimate their daytime populations by analyzing residence and workplace data collected through the American Community Survey. The US Census recommends employing one of two different methods to determine daytime population.

- Method 1: Total resident population + (total workers working in area - workers who lived and worked in same area) - (total workers living in area - workers who lived and worked in same area) OR;
- Method 2: Total resident population + Total workers working in area - Total workers living in area.

Workplace commuting data is a key determinant for understanding fluctuations in population, so the data can be helpful for understanding daytime populations. New Hampshire is fortunate to be one of a handful

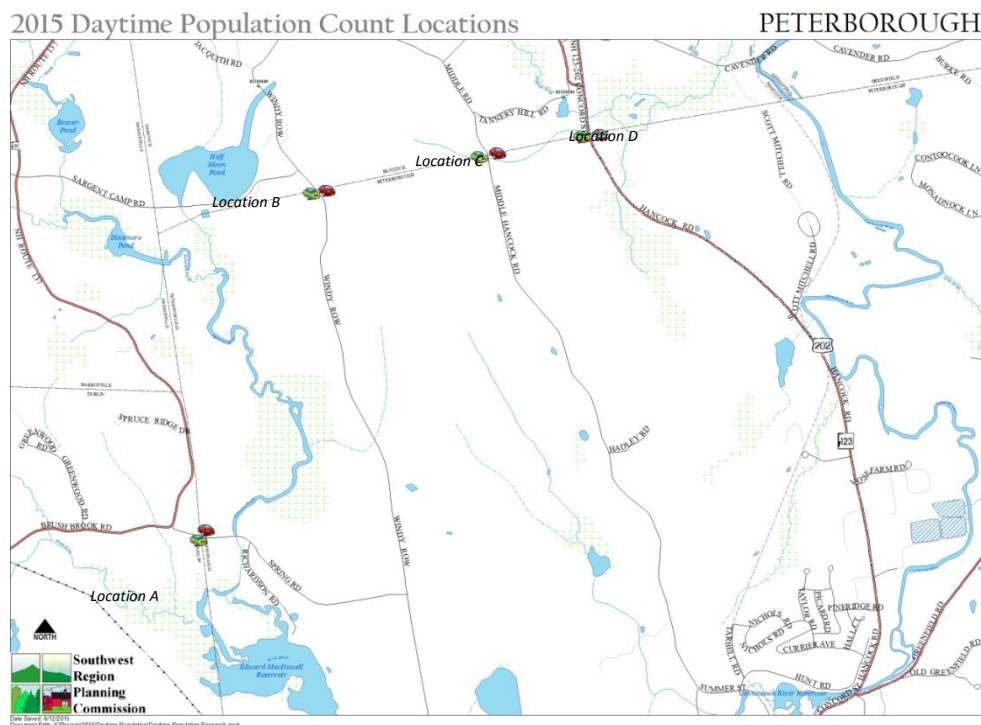
of states that collect residence and workplace data at the community level. Other parts of the country do not collect workplace data for geographies smaller than the county level. However, there are a significant number of assumptions that are used when employing the US Census data, not the least of which is that the data does not account for non-work trips.¹

In order to overcome this limitation, SWRPC developed an alternative methodology to estimate daytime population by gathering data that would estimate virtually all trips in and out of a community.¹ The methodology involves gathering data or estimating directional vehicle volume counts for every public road at a town boundary location.² Basically, the method can be described as the following:

- Method 3: Total resident population + (Hourly inbound traffic – Hourly outbound traffic at location A) + (Hourly inbound traffic – Hourly outbound traffic at location B), etc. for as many count locations that exist in the community.

The map in Figure 1 below helps visualize the data collection methodology. Green vehicles represent hourly inbound traffic and red vehicles represent hourly outbound traffic at all town line locations. In this case, the map shows the northwestern portion of the Town of Peterborough, but in order to account for Peterborough’s entire daytime population, the remaining town’s boundary locations would be counted as well.

Figure 1: Sample Map Showing Town Line Counter Locations in northwest Peterborough



¹ A closer look at the assumptions for the US Census and SWRPC methodologies are provided later in this section in Figure 4.

² Some count locations involved collecting volume data and applying a directional factor based on directional distribution of traffic at neighboring, similar count locations. A handful of dead-end locations were estimated using the Institute for Traffic Engineers Traffic Generation Manual estimates for single family homes based on the number of homes on the dead-end beyond the town boundary.

When each town line counter location is aggregated, the result is a numeric value that describes the net number of vehicles based on hourly vehicle inflow and outflow at that location. A running total of the hourly net vehicle inflow and outflow number is tabulated starting at 12 a.m. and completing the running total for a full 24 hours.

Figure 2 shows some data from an individual count location at Route 10 at the Swanzey/Winchester town line. The table below, which does not represent the full 24 hours of a count location, provides an hourly running total of vehicles based on the difference between inbound and outbound traffic for the Town of Swanzey for a portion of the day (12 a.m. to 6 a.m.).

Figure 2: Sample Calculation of Vehicle Change Based on Individual Traffic Location

	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM
Difference (Inbound - Outbound)	-2	-1	0	1	23	55	189
Running Total	-2	-3	-3	-2	21	76	266

Several factors were used to improve the relevance of the vehicle data as a population estimating tool. One vehicle hardly ever represents one person, so a *vehicle occupancy factor* was factored into the data. For this analysis, SWRPC used a vehicle occupancy factor of 1.67 for each car, meaning that each car represents 1.67 people on average. This number represents the average vehicle occupancy for all trips (not just work trips) as estimated by the 2009 National Household Travel Survey (NHTS).³ By applying this factor, vehicle numbers are converted to population numbers. An example of the hourly population numbers are shown in the bottom row of the table in Figure 2 using the data from Figure 1.

Figure 3: Sample Calculation of Hourly Daytime Population Change Based on Individual Traffic Location

	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM
Difference (Inbound - Outbound)	-2	-1	0	1	23	55	189
Running Total	-2	-3	-3	-2	21	76	266
Adjustment for Vehicle Occupancy Factor	-4	-6	-5	-3	35	127	444

In addition to the vehicle occupancy factor, SWRPC applied *seasonal correction factors* to further normalize the population data. The NH Department of Transportation uses seasonal correction factors to account for seasonal changes in vehicle travel and determine the average traffic volume for individual count locations. For example, many communities in the Monadnock Region experience heavier traffic volumes in the summer and lighter traffic volumes in the winter. Depending on when traffic volume data was collected, this data is adjusted to account for seasonal fluctuations and provide an average annual number. Though it depends on the count location, generally summer factors are less than a factor of one and winter factors are more than a factor of one.

Finally, *axle correction factors* were applied towards the raw data to account for mix of passenger vehicles, buses and trucks that typically drive on different classes of highways. Vehicle data is collected using computers with pneumatic sensors as well as hollow rubber tubes that detect the number of vehicle axles and the distance between axles passing over the tubes. The axle correction factors are designed to

³ SWRPC has collected its own vehicle occupancy data, but that data has been limited to peak commuting hours. The SWRPC collected vehicle occupancy data was somewhat lower than the 1.67 figure used by NHTS. However, the lower numbers are consistent with the NHTS numbers of average vehicle occupancy for work trips (1.13), which are the predominant type of trip during peak work commuting hours. NHTS data is statistically significant data. 1.67, the average number of people for all vehicle trips, represents 95% confidence interval.

make up for a small margin of inaccuracies that could be due to the miscalculation of axles by vehicle counting equipment.

The SWRPC methodology improves on some of the shortcomings of the US Census data-based methodology, not only in terms of accounting for non-work trips, but also potentially improving on how work trips are calculated. Figure 4 below compares the two approaches by explaining who is counted to determine daytime population and how they are counted.

Figure 4: A Comparison of the Census and SWRPC Approaches to Calculating Daytime Population

Problem	Census Approach	SWRPC Approach
Who are we counting?	Only counts workers. No students, tourists, shoppers, or other non-work related travel.	Counts all people entering and exiting a community using a vehicle. Does not count walkers or people entering/exiting communities from non-public ways.
How is population accounted for?	All workers are assumed to work the same 5 days a week and during the day. The data is based on where workers said they worked during the week prior to taking a survey.	Workers are not differentiated from other types of people traveling into or out of a community. People are counted based on a data sample ⁴ , but adjusted for seasonal changes in traffic.
	Workers are assumed to work at the same location for all 5 days.	Counts of workers and other individuals are limited to the duration of the data sample. Workers may or may not be working at same location. Data from days on or around holidays is not used.
	Everyone, when not working or commuting, is assumed to be in their place of residence.	People are not assumed to be in their workplace or at their residence.
	People traveling through an area during a day are not counted.	People traveling through an area during a day are counted.
	Workers are counted based on a survey sample that includes a margin of error.	Workers and others are counted based on raw data vehicle collection. Vehicle occupancy, seasonal correction and axle correction factors are then applied to the raw data.

As a final step, a subset of data from the vehicle-based calculations are extrapolated to describe the increase in activity that happens during the daylight hours. In this case, the hours of 8 a.m. to 5 p.m. were used as a description of the typical workday that the Census data describes.

⁴ The data samples used for this analysis are based on traffic on Tuesdays, Wednesdays and Thursdays, which is a data subset that NH DOT uses to determine average weekday traffic.

Although not perfect, the vehicle counting estimate methodology should provide reliable results as long as the vehicle occupancy, seasonal correction and axle correction factors are representative of local conditions. Even without these factors, the vehicle data on its own gives a good sense of hourly and running total inflow and outflow traffic patterns which are at least helpful indicators of hourly population change. More vehicles exiting a community than outside a community is a good indication that population is decreasing and vice versa.

Comparing Daytime Population Results

The US Census based methodology does not provide the option to examine different times of day like the vehicle based methodology, so comparing the data requires examining the vehicle data’s minimums, maximums, and average value of the daytime population are used to illustrate the comparison.⁵ The results from the SWRPC methodology are noticeably different daytime population estimates when compared to the US Census derived data. Although SWRPC staff expected that the new methodology would show daytime populations increasing because it would account for non-work trips, the weekday daytime population was actually a smaller change or negative change for each community.

Figure 5: Daytime Population Change Estimates for Five Southwest NH Communities

Communities	Resident Population	Change Based on Census	Change Based on Vehicle Data (8 a.m. to 5 p.m.)		
			Minimum Change	Maximum Change	Average Change
Jaffrey	5,440	1,980	-419	5	-297
Keene	23,444	11,742	6,125	10,870	9,476
New Ipswich	5,099	434	-1,200	-819	-1,071
Peterborough	6,342	3,172	-168	1,201	779
Swanzey	7,243	1,578	-3,069	-1,963	-2,706

The US Census data, which shows population gains for each of the five communities, appears to overstate daytime populations. Except for Keene, no other community experiences excess population growth throughout the daytime period. Jaffrey and Peterborough do experience some excess growth during the day, but also experience population loss. New Ipswich and Swanzey experience population loss throughout the day.

The resulting data seems to describe communities that have highly mobile populations, which involve their resident populations making many trips outside of their respective communities. It also appears to describe significant populations of workers that do not necessarily commute and stay in their place of employment (as they define to the Census) during the daytime hours. As expected, communities with more jobs, services and shopping opportunities per capita (Keene, Peterborough and Jaffrey) result in less out of town mobility, however, there is still considerable out-of-town travel for every community.

⁵ At the time of writing SWRPC discovered a new web based Census tool called DataFerrett which allows for the examination of hour by hour daytime population. However, the tool would still base its daytime population on worker trips only. All the same assumptions described in Figure 4 would apply to the DataFerrett tool, except that commute time of day data would be considered in the calculation.

Even taking the maximum population estimates from the vehicle derived data, the differences in population are substantial. Instead of Jaffrey growing its population by 36% as the US Census data suggests, the vehicle based data suggests it grows at the most by a fraction of 1%. Instead of growing by 50%, 9%, 50%, and 22% in Keene, New Ipswich, Peterborough and Swanzey respectively, the vehicle data suggests growth—or rather population change—is only as high as 46%, -16%, 19% and -27% in those same communities. Final daytime population results for both methodologies are presented below in Figure 6.

Figure 6: Daytime Population Estimates

Communities	Resident Population	Census Data Derived Daytime Population	Vehicle Derived Daytime Population (8 a.m. to 5 p.m.)		
			Minimum	Maximum	Average
Jaffrey	5,440	7,420	5,021	5,445	5,143
Keene	23,444	35,186	29,569	34,314	32,920
New Ipswich	5,099	5,533	3,899	4,280	4,028
Peterborough	6,342	9,514	6,174	7,543	7,121
Swanzey	7,243	8,821	4,174	5,280	4,537

Conclusions

As stated in the introduction, daytime population can be a useful statistic to understand daytime pressures on infrastructure such as roads, parking, sewer and water and the relative capacity of that infrastructure to accommodate daytime populations. It can also be useful for emergency planning, such as planning for evacuations, emergency public health interventions or other uses. In addition, the information can provide economic development planners about the relative size of markets in the daytime versus the nighttime. Daytime population data is likely to prove useful for understanding other community planning issues.

The daytime population estimates established in this report should not necessarily replace the US Census data that has been used in the past. Rather it should be considered as another tool in the toolbox to estimate daytime population. Moreover, it should provide an example of the limitations of relying on residence and workplace data for understanding population fluctuations. While this new methodology is potentially useful, it requires a significant investment in field research to obtain the results.

The scope of work for this study focused on community weekday daytime populations in order to have an apt comparison to the US Census data based daytime population estimate. However, the data could be extrapolated to investigate many other questions. Communities like Keene or Peterborough, for example, may be interested in understanding their daytime populations on Saturdays, when they expect shopping and leisure trips to increase. Communities may want to consider collecting data on weekends, at least on major arterials and collectors entering the community to understand weekend populations. For abnormal influxes of population, such as Keene’s former Pumpkin Festival or Swanzey’s Cheshire County Fair, collecting data on those days may be helpful for future event planning.

Appendix: Hourly Population Change Tables (Running Totals)

From Data Collection Period	Seasonal Correction Factor	Axle Correction Factor	Functional Class	Town Boundary	Road	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM		
12:00 Monday, June 15, 2015 => 13:39 Monday, June 22, 2015	0.84	0.986	9	Dublin	Dublin Rd	0	1	1	1	1	2	4	5	4	6	3	3	2	1	1	-4	-10	-9	-10	-10	-10	-10	-10	-12		
Dublin Thorndike Pond Rd						<i>Unlikely to have significant traffic from Dublin. People more likely to use Page Road to access other better roads into Jaffrey. Class V road.</i>																									
12:00 Monday, June 15, 2015 => 13:50 Monday, June 22, 2015	0.84	0.985	8	Dublin	NH 137	1	4	4	1	5	12	22	23	4	5	0	-9	-5	-4	-2	-27	-51	-21	-2	-5	2	1	0	-6		
12:00 Monday, June 15, 2015 => 14:01 Monday, June 22, 2015	0.84	0.986	9	Dublin	Parker Rd	0	0	0	0	0	1	1	2	1	2	1	1	1	1	0	-2	-6	-5	-6	-6	-6	-6	-6	-6		
Dublin Turner Rd						<i>Unlikely to have significant traffic from Dublin. People more likely to use Parker/Perry Pasture Road to access other better roads into Jaffrey. Class VI road.</i>																									
Peterborough Sanders Rd						<i>Unlikely to have significant traffic from Peterborough. People more likely to use Old Jaffrey/Town Farm Road to access other better roads into Jaffrey. Class VI road.</i>																									
14:00 Monday, June 22, 2015 => 13:17 Monday, June 29, 2015	0.88	0.986	9	Peterborough	Town Farm Rd	0	-1	-1	-1	-3	-12	-35	-57	-65	-52	-30	-32	-41	-42	-41	-35	-31	-35	-31	-23	-18	-11	-7	-3		
10:00 Tuesday, June 16, 2015 => 12:46 Monday, June 22, 2015	0.86	0.983	16	Peterborough	US 202	30	27	1	1	-62	-195	-402	-400	-254	-228	-97	26	-1	-16	-36	126	322	323	237	116	116	123	116	56		
14:00 Monday, June 15, 2015 => 12:04 Monday, June 22, 2015	0.86	0.992	19	Peterborough	Hadley Rd	0	0	0	0	0	0	0	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1		
14:00 Monday, June 15, 2015 => 12:04 Monday, June 22, 2015	0.86	0.992	19	Sharon	Old Sharon Rd	0	0	0	0	0	0	1	4	5	7	7	7	7	8	7	6	2	3	4	4	3	3	2	2		
13:00 Monday, June 15, 2015 => 11:52 Monday, June 22, 2015	0.84	0.974	7	Sharon	NH 124	-2	-5	-6	4	2	-17	19	78	91	62	33	15	-2	16	-2	-80	-113	-30	37	7	-17	-38	-35	-31		
Rindge Annette Rd						<i>Unlikely to have significant traffic from Rindge, becomes Class VI road at Town Line.</i>																									
14:00 Monday, June 15, 2015 => 11:37 Monday, June 22, 2015	0.84	0.985	8	Rindge	Prescott Rd	-15	-16	-2	-7	13	74	169	179	130	81	26	2	-16	6	16	-90	-140	-91	-56	-32	-25	9	21	-41		
Rindge Sherman Hill Rd						<i>Unlikely to have significant traffic from Rindge. People would use Woodbound Rd to get to Jaffrey. Class VI road.</i>																									
14:00 Monday, June 15, 2015 => 11:19 Monday, June 22, 2015	0.84	0.986	9	Rindge	Woodbound Rd	-2	-2	4	4	1	9	31	55	31	-6	2	-4	-6	2	-23	-45	-41	-22	-12	-9	-12	-7	5	-1		
Dead end, estimated by # of single family homes June 17-19, 2014	1.00	0.986	9	Rindge	Michigan Rd	-1	-1	0	0	0	1	4	11	10	9	11	8	10	10	6	1	-3	-5	-6	-7	-9	-9	-8	-8		
Rindge US 202						29	33	27	28	1	-40	-196	-248	-306	-312	-328	-317	-342	-357	-365	-195	-115	-97	-72	-28	-20	0	-13	-2		
Rindge Mower Rd						<i>Unlikely to have significant traffic from Rindge. People more likely to reach Jaffrey by US 202. Class VI road.</i>																									
15:00 Monday, June 15, 2015 => 10:47 Monday, June 22, 2015	0.84	0.986	9	Rindge	Ingalls Rd	0	0	0	0	0	2	4	4	4	4	5	4	5	4	3	1	1	0	0	0	-1	-1	-1	-1		
Fitzwilliam Brigham Rd						<i>Unlikely to have significant traffic from Fitzwilliam. People more likely to use NH 119 or Fitzwilliam Road instead. Class VI road.</i>																									
Fitzwilliam Scott Pond Rd						<i>Unlikely to have significant traffic from Fitzwilliam. People would use NH 119 or Fitzwilliam Road instead. Class VI road.</i>																									
15:00 Monday, June 15, 2015 => 10:20 Monday, June 22, 2015	0.84	0.986	9	Fitzwilliam	Fitzwilliam Rd	-1	-1	-1	-1	-1	5	18	27	26	23	29	23	25	23	15	3	-4	-8	-10	-12	-16	-16	-14	-16		
Troy Old Mill Rd						<i>Class VI on Fitzwilliam side, Troy more likely to use NH 124/Monadnock Road to get to Jaffrey.</i>																									
Troy Troy Rd						<i>Troy Road traffic was coupled with NH 124 at Marlborough town line, by moving counter location just east of both intersections. See next line down.</i>																									
15:00 Monday, June 15, 2015 => 9:57 Monday, June 22, 2015	0.84	0.974	7	Troy	NH 124	-4	-3	0	2	13	33	42	-50	-103	-56	-52	-35	2	22	11	-36	-24	64	51	6	31	45	41	3		
TOTAL						37	38	25	31	-42	-159	-361	-318	-316	-399	-335	-270	-362	-346	-419	-341	-190	5	74	-4	-11	40	51	-69		

Keene

From Data Collection Period	Seasonal Correction Factor	Axle Correction Factor	Functional Class	Town Boundary	Road	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM
14:00 Monday, August 19, 2013 => 13:08 Monday, August 26, 2013	0.84	0.986	9	Chesterfield	Cady Lane	-1	-1	-2	-1	-1	0	4	10	14	15	17	17	16	18	17	13	5	-2	-5	-9	-11	-12	-14	-15
Tuesday, July 10, 2013 => Sunday, July 15, 2013	0.87	0.974	7	Gilsum	NH 10 North	-1	3	8	12	41	93	189	402	523	585	586	635	508	509	504	487	478	469	458	453	416	377	358	356
Estimated by # of single family homes	1.00	1.000	9	Gilsum	Belvedere Road	-2	-2	-2	-1	-1	0	5	13	19	20	22	22	21	22	22	16	6	-2	-6	-11	-13	-15	-17	-19
Estimated by # of single family homes	1.00	1.000	9	Gilsum	Gunn Road	-2	-2	-2	-2	-2	-1	1	4	6	6	8	8	7	9	9	7	-3	-6	-7	-12	-13	-14	-15	-16
17:00 Monday, August 03, 2009 => 10:01 Monday, August 10, 2009	0.82	0.977	8	Gilsum	Sullivan Center Street	-1	-1	0	1	2	9	28	71	91	101	102	114	75	76	75	72	64	61	58	54	43	32	25	24
Tuesday, August 7, 2012 => Sunday, August 12, 2012	0.89	0.966	14	Marlborough	NH 101 East	-1	-15	-13	-11	7	113	413	855	1289	1441	1443	1498	1510	1511	1483	1305	1296	985	857	852	718	659	656	654
Tuesday, June 3, 2014 => Sunday, June 8, 2014	0.93	0.949	2	Roxbury	NH 9 East	-1	-11	-9	-7	5	85	344	648	894	983	984	1015	1020	1022	1005	909	901	701	633	629	555	520	518	517
13:00 Monday, August 19, 2013 => 11:53 Monday, August 26, 2013	0.88	0.992	19	Roxbury	Branch Road	-1	-3	-3	-2	4	19	55	86	103	110	111	111	109	110	110	86	77	47	30	26	15	4	-2	-3
11:00 Monday, July 13, 2009 => 8:32 Monday, July 20, 2009	0.87	0.982	9	Roxbury	Roxbury Road	-1	-2	-2	-1	4	18	63	112	157	168	170	170	165	167	165	123	115	56	32	28	0	-29	-47	-49
12:00 Monday, July 13, 2009 => 9:02 Monday, July 20, 2009	0.87	0.982	9	Sullivan	Ferry Brook Road	-1	-2	-2	-2	-1	1	6	8	11	11	13	13	12	14	14	12	3	-1	-3	-7	-9	-11	-13	-14
12:00 Monday, August 19, 2013 => 11:38 Monday, August 26, 2013	0.84	0.986	9	Sullivan	Sullivan Road	-1	-2	-2	0	4	12	32	47	56	59	60	60	59	61	60	51	43	30	25	21	17	14	12	11
17:00 Monday, July 29, 2013 => 15:15 Monday, August 05, 2013	0.87	0.983	16	Surry	NH 12 North	-1	-11	-9	-8	9	97	314	570	796	893	895	929	936	938	921	819	810	620	546	542	468	429	427	425
Wednesday, May 1, 2012 => Sunday, May 5, 2012	0.99	0.959	7	Surry	NH 12A	-1	2	3	5	12	38	104	261	366	403	404	446	339	341	337	324	316	308	299	295	264	246	228	227
Wednesday, May 9, 2012 => Sunday, May 12, 2012	0.97	0.996	9	Surry	East Surry Road	-1	-3	-3	-1	1	7	17	28	42	45	46	46	44	46	45	25	16	-3	-12	-16	-22	-23	-24	-26
12:00 Monday, August 19, 2013 => 11:00 Monday, August 26, 2013	0.88	0.992	19	Surry	Old Walpole Road	-4	-6	-2	0	11	30	108	179	145	73	21	2	-5	3	6	-48	-119	-145	-104	-55	-48	-45	-36	-23
9:38 Friday, September 05, 2014 => 10:17 Friday, September 12, 2014	0.89	0.974	14	Swanzy	NH 12 South	-9	-22	-19	-17	8	126	499	1027	1465	1618	1712	1773	1786	1787	1756	1557	1270	908	768	632	499	440	437	405
17:00 Monday, May 06, 2013 => 9:00 Monday, May 13, 2013	0.89	0.983	16	Swanzy	NH 10 South	-15	-5	-1	2	33	108	339	483	654	760	811	846	829	810	731	606	449	255	154	87	-28	-100	-139	-170
16:00 Monday, July 09, 2012 => 9:07 Monday, July 16, 2012	0.87	0.991	17	Swanzy	NH 32	-1	1	2	5	16	44	85	189	231	255	257	285	214	216	214	207	198	194	189	184	161	140	129	128
14:00 Monday, August 19, 2013 => 12:43 Monday, August 26, 2013	0.88	0.969	17	Swanzy	Base Hill Road	-5	0	7	10	29	62	122	247	327	373	412	464	187	213	209	195	141	133	123	107	74	46	29	21
Estimate by Household Count	1.00	1.000	19	Swanzy	Joslin Road	-2	-2	-2	-1	-1	1	10	24	33	35	37	37	36	37	37	27	17	3	-4	-9	-13	-16	-20	-22
12:00 Monday, September 09, 2013 => 9:00 Monday, September 16, 2013	0.90	0.992	19	Swanzy	Matthews Road	-6	-16	-17	-11	4	49	142	359	479	536	541	528	541	534	549	512	452	343	276	243	197	170	166	153
13:00 Monday, August 19, 2013 => 12:00 Monday, August 26, 2013	0.88	0.992	19	Swanzy	Swanzy Factory Road	1	-8	-8	-8	-7	13	57	83	119	132	130	112	109	123	116	87	83	74	56	48	47	40	40	27
Tuesday, August 19, 2014 => Sunday, August 23, 2014	0.86	0.949	2	Westmoreland	NH 9 West	-1	-27	-21	-17	9	132	512	1027	1467	1644	1645	1714	1727	1729	1694	1490	1481	1097	945	940	778	709	706	704
12:00 Monday, August 19, 2013 => 10:00 Monday, August 26, 2013	0.84	0.986	9	Westmoreland	Hurricane Road	-1	-3	-4	-2	-1	-1	9	19	23	25	26	26	26	27	27	19	10	0	-5	-10	-15	-22	-27	-28
TOTAL						-64	-137	-101	-56	187	1057	3456	6753	9310	10292	10454	10870	10272	10323	10109	8900	8109	6125	5302	5013	4080	3538	3379	3269

New Ipswich

From Data Collection Period	Seasonal Correction Factor	Axle Correction Factor	Functional Class	Town Boundary	Road	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM		
14:00 Tuesday, June 23, 2015 => 9:20 Monday, June 29, 2015	0.88	0.974	7	Sharon	NH 124	5	2	3	0	6	5	1	-78	-133	-153	-185	-213	-217	-203	-176	-126	-106	-114	-120	-103	-87	-67	-66	-41		
10:00 Monday, December 15, 2014 => 9:30 Friday, December 19, 2014	1.19	0.974	7	Sharon	NH 123	10	9	6	6	7	3	-6	-37	-81	-117	-140	-159	-152	-141	-137	-141	-126	-122	-118	-112	-87	-77	-74	-64		
13:00 Tuesday, June 23, 2015 => 12:26 Monday, June 29, 2015	0.88	0.986	9	Temple	Boynton Hill Rd	0	0	0	0	0	2	3	3	3	3	2	2	2	1	1	-1	-4	-6	-8	-9	-9	-9	-9			
13:00 Tuesday, June 23, 2015 => 12:13 Monday, June 29, 2015	0.88	0.986	9	Temple	Temple Rd	0	0	0	0	2	3	5	5	5	5	5	-1	2	0	-4	-6	-11	-19	-25	-29	-31	-31	-31	-32		
12:00 Tuesday, June 23, 2015 => 12:01 Monday, June 29, 2015	0.88	0.985	8	Temple	NH 45	1	0	-1	0	6	24	26	9	-2	-4	2	-22	-15	1	-28	-28	-32	-57	-54	-42	-28	-11	-3	-3		
13:00 Monday, August 11, 2014 => 11:00 Monday, August 18, 2014	0.85	0.986	9	Greenville	Richardson Rd	0	0	0	1	1	0	8	15	22	23	24	23	23	23	23	16	13	6	4	4	3	4	3	4		
13:00 Monday, August 11, 2014 => 11:00 Monday, August 18, 2014	0.85	0.985	8	Greenville	NH 45	2	1	1	1	-2	-13	-38	-77	-82	-88	-93	-103	-94	-95	-84	-67	-35	-14	7	19	32	46	54	57		
12:00 Tuesday, June 23, 2015 => 11:18 Monday, June 29, 2015	0.88	0.986	9	Greenville	Greenville Rd	18	33	34	31	18	-90	-166	-287	-331	-381	-419	-434	-470	-487	-511	-533	-410	-331	-274	-231	-204	-172	-142	-142		
14:00 Monday, July 14, 2014 => 10:00 Monday, July 21, 2014	0.86	0.974	7	Greenville	NH 123	11	5	0	-5	-53	-89	-97	-84	-59	-54	-31	-32	-32	-24	-28	39	87	59	44	30	28	34	18	0		
11:00 Tuesday, June 23, 2015 => 11:01 Monday, June 29, 2015	0.88	0.974	7	Greenville	NH 124	-2	-4	-1	3	10	21	23	2	-11	-16	-21	-7	-3	-18	-19	-14	-34	-32	-24	-33	-34	-37	-20	-6		
13:00 Monday, August 11, 2014 => 11:00 Monday, August 18, 2014	0.85	0.986	9	Mason	Mason Rd	1	1	1	-1	-5	-22	-56	-71	-84	-90	-98	-102	-97	-102	-106	-99	-84	-64	-58	-47	-32	-22	-18	-14		
13:00 Monday, August 11, 2014 => 11:00 Monday, August 18, 2014	0.85	0.985	8	Mass SL	Ashby Rd	4	4	4	5	2	-18	-48	-72	-89	-101	-107	-104	-106	-107	-110	-96	-82	-47	-25	0	17	25	34	41		
13:00 Monday, July 14, 2014 => 14:00 Monday, July 21, 2014	0.86	0.985	8	Mass SL	NH 123A	1	2	0	-1	-2	1	-12	-33	-33	-19	-9	-8	-8	-1	0	-4	9	15	9	-1	6	13	9	10		
10:00 Tuesday, June 23, 2015 => 10:23 Monday, June 29, 2015	0.88	0.986	9	Mass SL	Page Hill Rd	2	2	2	1	1	1	-3	-12	-17	-18	-20	-21	-22	-20	-21	-21	-17	-15	-15	-16	-13	-11	-9	-8		
13:00 Tuesday, June 23, 2015 => 9:48 Monday, June 29, 2015	0.88	0.986		Rindge	W. Binney Hill Rd	1	1	0	0	-1	-1	-6	-7	-7	-9	-4	1	1	-2	0	5	10	9	0	-1	5	5	2	2		
				Rindge	Timber Top Rd	<i>Unlikely to have significant traffic from Rindge. People more likely to use Puse NH 119. Class V road, unpaved.</i>																									
				Rindge	Willard Farm Rd	<i>Class VI on Rindge side, Rindge more likely to use NH 119 to reach New Ipswich.</i>																									
				Rindge	Pine Rd	<i>Unlikely to have significant traffic from Rindge. People more likely to use Cathedral Road to reach New Ipswich. Class V road, unpaved.</i>																									
				Rindge	Hubbard Pond Rd	<i>Effectively an entrance to Annette Forest rather than a road to travel between Rindge and New Ipswich.</i>																									
				TOTAL		53	58	49	41	-9	-171	-367	-723	-897	-1018	-1095	-1179	-1186	-1174	-1200	-1075	-819	-729	-655	-570	-436	-311	-252	-206		

Peterborough

From Data Collection Period	Seasonal Correction Factor	Axle Correction Factor	Functional Class	Town Boundary	Road	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM		
16:00 Monday, September 23, 2013 => 11:44 Monday, September 30, 2013.	0.90	0.986	9	Hancock	Windy Row Rd	-1	-1	0	0	0	0	-1	0	6	8	2	0	-5	-2	2	-2	-2	-1	-1	-3	-4	-4	-3	0		
16:00 Monday, September 23, 2013 => 11:34 Monday, September 30, 2013.	0.90	0.986	9	Hancock	Middle Hancock Rd	0	0	0	0	-1	-1	1	42	36	2	4	-6	-4	-3	-1	-10	-18	-35	-40	-17	-10	-7	-3	-3		
16:00 Monday, June 22, 2015 => 14:06 Monday, June 29, 2015	0.88	0.983	16	Hancock	US 202	-26	-30	-37	-37	-31	37	252	460	654	750	804	833	815	800	768	586	426	272	213	166	117	66	52	16		
Hancock						Scott Mitchell Rd						<i>Unlikely to have significant traffic from Hancock. People more likely to use US 202 to reach Peterborough. Class VI road.</i>																			
Greenfield						Burke Rd						<i>Unlikely to have significant traffic from Greenfield. People more likely to use Old Bennington Road to reach Peterborough. Class VI road.</i>																			
15:00 Monday, September 23, 2013 => 12:22 Monday, September 30, 2013.	0.90	0.986	9	Greenfield	Old Bennington Rd	4	-3	0	0	1	1	11	17	10	12	7	-2	-8	-3	0	-10	-14	-18	-17	-13	-12	-10	-6	-2		
17:00 Monday, June 22, 2015 => 14:43 Monday, June 29, 2015	0.88	0.974	7	Greenfield	NH 136	4	-9	-2	1	6	-2	8	64	65	49	41	-7	-31	-25	-28	11	32	-26	-29	-17	-27	-44	-17	10		
Greenfield						Gulf Rd						<i>Unlikely to have significant traffic from Greenfield. People more likely to use Old Greenfield Road to reach Peterborough. Class VI road.</i>																			
15:00 Monday, September 23, 2013 => 12:35 Monday, September 30, 2013.	0.90	0.986	9	Greenfield	Old Greenfield Rd	0	0	0	0	0	2	4	6	5	2	2	4	0	-1	4	0	-7	-6	1	1	-6	-8	-3	-1		
14:00 Monday, September 23, 2013 => 12:52 Monday, September 30, 2013	0.90	0.986	9	Greenfield	Sand Hill Rd	0	0	0	0	1	4	7	18	18	2	1	-2	-2	1	0	-5	-17	-8	6	1	-8	-7	-4	-1		
Temple						Miller State Park						<i>Although the road enters Temple, it is a road servicing Miller State Park.</i>																			
Duration: 16:00 Monday, July 30, 2012 => 12:52 Monday, August 06, 2012.	0.86	0.955	2	Temple	NH 101	32	43	68	81	83	83	53	-27	-16	-1	51	46	0	-14	-41	-70	-130	-235	-288	-333	-257	-180	-160	-117		
Sharon						Condy Rd						<i>Unlikely to have significant traffic from Sharon. People more likely to use NH 123 instead of Mountain Road to Condy Road to reach Peterborough. Class VI road.</i>																			
17:00 Monday, June 22, 2015 => 12:47 Monday, June 29, 2015	0.88	0.974	7	Sharon	NH 123	0	-5	1	1	0	10	52	99	111	79	34	16	16	5	-7	-47	-95	-98	-73	-36	-21	-30	-27	-9		
14:00 Monday, September 23, 2013 => 13:56 Monday, September 30, 2013.	0.90	0.986	9	Sharon	Old Sharon Rd	-1	-1	0	0	0	0	-2	-6	-13	-12	-9	-12	-20	-21	-22	-26	-26	-28	-21	-14	-14	-10	-7	-4		
16:00 Monday, June 24, 2013 => 12:00 Monday, July 08, 2013	0.90	0.992	19	Sharon	Sharon Rd	-3	-3	-3	-3	-4	0	2	8	10	14	20	32	15	18	29	22	12	8	15	12	5	-2	-2	-2		
14:00 Monday, June 22, 2015 => 13:17 Monday, June 29, 2015	0.88	0.986	9	Jaffrey	Old Jaffrey Rd	0	1	1	1	3	12	35	57	65	52	30	32	41	42	41	35	31	35	31	23	18	11	7	3		
11:00 Tuesday, June 16, 2015 => 12:59 Monday, June 22, 2015	0.88	0.992	19	Jaffrey	Community Rd	0	0	0	0	0	0	0	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1		
10:00 Tuesday, June 16, 2015 => 12:52 Monday, June 22, 2015	0.84	0.983	16	Jaffrey	US 202	-29	-26	-1	-1	61	190	393	391	248	223	94	-26	1	16	35	-123	-314	-316	-232	-113	-113	-120	-113	-55		
Jaffrey						Old Town Farm Rd						<i>Unlikely to have significant traffic from Jaffrey. People more likely to use Old Jaffrey Road. Class VI road.</i>																			
Dublin						Four Winds Farm Rd						<i>Unlikely to have significant traffic from Dublin. People more likely to use Valley Road to NH 101 instead. Class VI road.</i>																			
15:00 Monday, June 22, 2015 => 13:36 Monday, June 29, 2015	0.88	0.949	2	Dublin	NH 101	-17	-25	-13	-1	20	51	79	-31	-107	8	26	-22	16	50	59	-5	-38	77	114	12	-20	-41	-53	-13		
12:00 Monday, September 23, 2013 => 10:00 Monday, September 30, 2013	0.90	0.986	9	Dublin	Old Dublin Rd	-2	-2	-2	-2	-1	1	2	2	4	3	-1	-5	-10	-12	-10	-7	-11	-11	-16	-17	-16	-20	-19	-20		
12:00 Monday, September 23, 2013 => 10:00 Monday, September 30, 2013	0.90	0.986	9	Dublin	Spring St	0	0	0	0	3	6	7	7	8	8	6	5	4	3	4	4	3	3	1	0	1	-2	-2	-3		
TOTAL						-42	-65	12	40	140	393	903	1109	1105	1201	1116	887	829	855	835	353	-168	-386	-334	-348	-366	-409	-360	-198		

From Data Collection Period	Seasonal Correction Factor	Axle Correction Factor	Functional Class	Town Boundary	Road	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM		
14:00 Monday, August 19, 2013 => 12:43 Monday, August 26, 2013	0.88	0.986	9	Keene	Base Hill Road	5	0	-7	-11	-30	-63	-124	-251	-333	-379	-420	-472	-190	-217	-213	-198	-143	-135	-125	-109	-75	-47	-30	-22		
17:00 Monday, May 06, 2013 => 9:00 Monday, May 13, 2013	0.88	0.971	6	Keene	NH 10	3	5	1	-2	-34	-112	-350	-498	-674	-784	-837	-872	-855	-835	-754	-625	-463	-264	-158	-90	29	103	143	175		
12:00 Monday, September 09, 2013 => 9:00 Monday, September 16, 2013	0.90	0.986	9	Keene	Matthews Road	7	17	18	12	-4	-54	-157	-397	-531	-594	-599	-585	-599	-592	-608	-568	-500	-380	-306	-269	-218	-189	-184	-170		
16:00 Monday, July 09, 2012 => 9:07 Monday, July 16, 2012	0.86	0.991	17	Keene	NH 32	-1	-3	-5	-8	-19	-47	-88	-193	-236	-260	-258	-287	-215	-214	-212	-205	-214	-209	-204	-208	-185	-164	-153	-154		
9:38 Friday, September 05, 2014 => 10:17 Friday, September 12, 2014	0.94	0.974	14	Keene	NH 12	9	23	20	18	-8	-133	-523	-1077	-1536	-1697	-1795	-1860	-1873	-1874	-1842	-1633	-1332	-953	-805	-663	-523	-461	-459	-425		
13:00 Monday, August 19, 2013 => 12:00 Monday, August 26, 2013	0.88	0.992	19	Keene	Swanzy Factory Road	-1	8	8	8	7	-14	-58	-85	-121	-134	-132	-113	-111	-125	-118	-88	-85	-75	-57	-49	-48	-40	-41	-27		
Estimate by Household Count	1.00	1	19	Keene	Joslin Road	-2	-2	-1	-2	-2	-4	-13	-28	-36	-39	-37	-37	-36	-34	-34	-24	-34	-19	-13	-18	-14	-10	-7	-9		
11:00 Monday, September 08, 2008 => 13:13 Monday, September 15, 2008	0.94	0.958	2	Marlborough	NH 12	12	19	12	8	19	49	373	762	651	358	155	61	61	-26	-162	-260	-415	-534	-392	-232	-224	-206	-90	-25		
13:00 Monday, July 09, 2012 => 10:00 Monday, July 16, 2012	0.83	0.959	7	Richmond	NH 32	-1	0	0	1	4	9	59	130	157	175	176	182	186	188	173	153	145	104	85	81	55	35	35	33		
				Richmond	Taylor Hill Road	<i>Site Review and discussion with Swanzy resident confirmed that there is no traffic from Richmond. Class V road.</i>																									
				Richmond	Rabbit Hollow Road	<i>Site Review and discussion with Swanzy resident confirmed that there is no traffic from Richmond. Class V road.</i>																									
17:00 Monday, August 26, 2013 => 11:00 Monday, September 09, 2013	0.91	0.985	8	Winchester	Westport Village Road	0	1	0	1	-4	-12	-50	-86	-107	-112	-117	-111	-101	-96	-89	-60	-28	0	8	22	44	52	53	57		
17:00 Monday, May 06, 2013 => 9:53 Monday, May 13, 2013	0.93	0.971	6	Winchester	NH 10	-4	-5	-5	-3	32	115	401	641	803	924	990	1025	978	924	853	743	586	352	216	115	-39	-113	-162	-191		
					TOTAL	27	63	42	20	-41	-264	-530	-1083	-1963	-2540	-2874	-3069	-2755	-2901	-3004	-2764	-2483	-2114	-1751	-1421	-1197	-1040	-895	-756		