ATTACHMENT 2

HB 2016 - AS AMENDED BY THE SENATE

10Mar2016... 0903h
10Mar2016... 0941h
05/12/2016 1832s
05/12/2016 1928s

2016 SESSION

16-2989
06/09

HOUSE BILL ***2016***

AN ACT relative to the state 10-year transportation improvement program.

SPONSORS: Rep. Chandler, Carr. 1

COMMITTEE: Public Works and Highways

AMENDED ANALYSIS

This bill:

I. Adopts the 10-year transportation improvement plan for 2017-2026.

II. Adds purposes for which the state may issue GARVEE bonds.

III. Modifies funding for projects on the central New Hampshire turnpike and the Spaulding turnpike.

IV. Authorizes the department of transportation to expend certain funds for the purchase of fleet vehicles, for the state bridge aid program, and for highway bridge and betterment district resurfacing and rehabilitation programs.

V. Transfers certain funds under the state aid highway program to the Littleton Saranac Street project.

VI. Deletes the Nashua-Manchester-Concord Capitol Corridor Rail project, project number 40818, from the 10-year transportation improvement plan 2017-2026.

VII. Advances the Milford safety improvements project, the Northfield-Tilton bridge rehabilitation project, and the East Kingston bridge deck replacement project to the 2016 transportation improvement plan.

VIII. Adds Salem-Manchester projects to pave a 4th lane along I-93 and to construct a 4th lane on I-93 to the state border to the 10-year transportation improvement plan 2017-2026.

IX. Modifies funding for the park and ride project in Windham and for the reconstruction of the intersection of NH 28 and NH 97.

X. Modifies provisions of projects to make improvements to Ocean Boulevard in Hampton, a railroad crossing upgrade in Portsmouth, and a highway intersection in Salem.

XI. Limits the use of toll credits to certain projects.

XII. Prohibits the department of transportation from expending any funds on the Dixville-Colebrook road project until all approvals for the Balsams project are complete.

XIII. Adds the study of a possible location for a wildlife crossing to the Jefferson-Randolph project, project number 13602.

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Explanation: Matter added to current law appears in ***bold italics.***
Matter removed from current law appears [~~in brackets and struckthrough.~~]
Matter which is either (a) all new or (b) repealed and reenacted appears in regular type.

10Mar2016... 0903h
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16-2989
06/09

STATE OF NEW HAMPSHIRE

In the Year of Our Lord Two Thousand Sixteen

AN ACT relative to the state 10-year transportation improvement program.

Be it Enacted by the Senate and House of Representatives in General Court convened:

1 State 10-Year Transportation Improvement Plan. The legislature hereby adopts the plan known as the "Ten Year Transportation Improvement Plan 2017-2026 Submitted by the Governor to the Legislature Pursuant to RSA 228:99 and RSA 240 of the Laws of New Hampshire" and encourages expeditious implementation of the projects shown therein.

2 Issuance of Revenue Bonds. Amend RSA 228-A:2 to read as follows:

228-A:2 Issuance of Revenue Bonds. The state may issue bonds under this chapter to be known as "federal highway grant anticipation bonds." The bonds may be issued from time to time for the purpose of financing project costs related to the widening of Interstate 93 from Manchester to the Massachusetts border, the replacement of the Sarah Mildred Long Bridge in Portsmouth, New Hampshire, and any other federally aided highway project hereafter authorized by the general court to be financed under this chapter. Bonds issued hereunder shall be special obligations of the state and the principal of, premium, if any, and interest on all bonds shall be payable solely from the particular funds provided therefor under this chapter. The issuing of bonds shall be contingent upon the availability of sufficient anticipated federal aid over the term of the bonds. The bonds shall be issued by the treasurer in such amounts as the fiscal committee of the general court and the governor and council shall determine, and shall not exceed $490,000,000. Debt service for federal highway grant anticipation bonds (GARVEE bonds) for the projects shall be paid from a portion of future federal funds. Bonds of each issue shall be dated, shall bear interest at such rate or rates, including rates variable from time to time as determined by such index, banker's loan rate, or other method as may be determined by the treasurer, and shall mature at such time or times as may be determined by the treasurer, except that no bond shall mature more than 15 years from the date of its issue. Bonds may be made redeemable before maturity either at the option of the state or at the option of the holder, or on the occurrence of specified events, at such price or prices and under such terms and conditions as may be fixed by the treasurer prior to the issue of bonds. The treasurer shall determine the form and details of bonds. Subject to RSA 93-A, the bonds shall be signed by the treasurer and countersigned by the governor. The bonds may be sold in such manner, either at public or private sale, for such price, including above or below par value, at such rate or rates of interest, or at such discount in lieu of interest, as the treasurer may determine. ***The state may further issue GARVEE bonds for the purpose of financing the project costs related to the replacement and/or rehabilitation of 2 Connecticut river bridges, located in Lebanon,***

New Hampshire and Hinsdale, New Hampshire, pursuant to the issuance process in this paragraph.

3 Turnpike System; Authority Granted. Amend RSA 237:2, VII(b) and (c) to read as follows:

(b) Plan [~~and~~]***, engineer, and construct*** improvements [~~to~~]***, and acquire land as necessary for*** the central New Hampshire turnpike, including, but not limited to the addition of a traffic lane or lanes in each direction from the junction of interstate 89 in the city of Concord to the northerly expansion joint of the Interstate 93 bridge over Loudon Road and N.H. Route 9 (bridge no. 163/106).

(c) Plan [~~and~~]***, engineer, and construct*** improvements [~~to~~]***, and acquire land as necessary for*** the central New Hampshire turnpike, including, but not limited to the addition of a traffic lane or lanes in each direction from exit 6 to exit 7 in the city of Manchester, as well as the reconstruction of the exit 6 and exit 7 interchanges.

4 Turnpike System; Funds Provided. Amend RSA 237:7, I(h) to read as follows:

(h) Improvements to central New Hampshire turnpike.

RSA 237:2, IV(h), VII, VII(b), VII(c), IX. [~~$574,900,000~~] ***$697,000,000***

5 Turnpike System; Funds Provided. Amend RSA 237:7, I(j) to read as follows:

(j) Study of exit 10 on Spaulding turnpike.

RSA 237:2 II-a. [~~$1,100,000~~] ***$3,500,000***

6 Department of Transportation; Transportation Infrastructure Finance and Innovation Act. In accordance with RSA 6:13-d, the department of transportation anticipates securing a loan of $200,000,000 through the federal Transportation Infrastructure Finance and Innovation Act (TIFIA), 23 U.S.C. sections 601-609, to complete the widening of Interstate 93 from Salem to Manchester. It is anticipated that the loan will be structured to require revenue collected under 2014, 17 (SB 367-FN-A), to be used for the improvement of approximately 1,160 miles of rural roads ($12,000,000 per year) and approximately 23 red list bridges ($8,000,000 per year) during the first 9 years of the loan. Subsequent to the ninth year, funds collected under 2014, 17 shall be used to make interest and principal payments on the loan. Consequently, the department will no longer be able to invest in rural roads and red list bridges at the same levels. The state 10-year transportation improvement plan sets forth projects to improve roads and bridges in accordance with the conditions of the loan.

7 Department of Transportation; Grants. If the department of transportation or any municipality is successful in obtaining additional grant funding (such as TIGER grants) for projects in the state 10-year transportation improvement plan, the department may modify and/or advance project funding, as practical, for such projects in order to leverage these additional grant funds.

8 Department of Transportation; Purchase of Fleet Vehicles. The department of transportation may expend up to $2,500,000 in excess funds from the winter maintenance accounting unit (2928) from fiscal year 2016 for the purchase of fleet vehicles. Eighty-five percent of said funds shall be appropriated for trucks and heavy equipment. Fifteen percent of said funds shall be appropriated

for light trucks and passenger vehicles. Said funds shall be appropriated from the undesignated highway surplus account and shall be continually appropriated and nonlapsing.

9 Department of Transportation; Expenditure for State Bridge Aid Program. The department of transportation may expend up to $2,500,000 in excess funds from the winter maintenance accounting unit (2928) from fiscal year 2016 for the state bridge aid program under RSA 234:5. Said funds shall be appropriated from the undesignated highway surplus account and shall be continually appropriated and nonlapsing.

10 Department of Transportation; Highway Bridge and Betterment. Pursuant to the intent of 2014, 17 (SB 367-FN-A), excess funds in highway maintenance accounting unit (3007) should be spent on roads and bridges. Notwithstanding any law to the contrary, any lapsing funds up to $4,000,000 in the highway maintenance accounting unit (3007) from fiscal year 2016 shall be appropriated to the department of transportation from the undesignated highway surplus account and shall be continually appropriated for use in class 400 in accounting unit 8910 for highway bridge and betterment district resurfacing and district rehabilitation programs. Said funds shall be nonlapsing.

11 Department of Transportation: Transfer of Funds: $200,000 of the undesignated programmatic funds under the State Aid Highway Program (SAH) in 2018 shall be designated to the Littleton Saranac Street project.

12 Department of Transportation; Nashua-Manchester-Concord. Funding for the Nashua-Manchester-Concord Capitol Corridor Rail project, project number 40818, is deleted from the "10-year Transportation Improvement Plan 2017-2026 submitted by the Governor to the Legislature Pursuant to RSA 228:99 and RSA 240 of the Laws of New Hampshire."

13 Department of Transportation; Milford; Northfield-Tilton; East Kingston. The following projects shall be removed from the 10-year transportation improvement plan 2017-2026 and shall be advanced to fiscal year 2016:

I. The project named Milford, project number 13692B, which consists of safety improvements to NH 101.

II. The project named Northfield-Tilton, project number 16147, which consists of bridge rehabilitation on I-93 over the Winnipesaukee River.

III. The project named East Kingston, project number 26942, which consists of bridge deck replacement and rehabilitation on NH 107A over the B&M Railroad.

14 Department of Transportation; Salem-Manchester. The following projects shall be added to the 10-year transportation improvement plan 2017-2026:

I. Salem-Manchester, project number 14633J, pavement of a 4th lane from Salem to Manchester along I-93, shall be funded with federal funds and remaining TIFIA funds, totaling $11,700,000.

II. Salem-Manchester, project number 13933A, construction of a 4th lane along I-93 at the state border, shall be funded with federal funds totaling $15,700.000.

15 Department of Transportation; Salem-Manchester. The funding for the project named Salem-Manchester, project number 10418H, for the I-93 exit 3 park and ride in Windham, shall be modified to fully fund the project under the federal Congestion Mitigation Air Quality (CMAQ) improvement program.

16 Department of Transportation; Hampton. The preliminary engineering for the project named Hampton, project number 40797, which consists of improvements to Ocean Boulevard, shall be advanced from the fiscal year ending June 30, 2022 to the fiscal year ending June 30, 2020.

17 Department of Transportation; Portsmouth. The project named Portsmouth, project number 40644, which consists of a railroad crossing upgrade, shall be relocated from Maplewood Avenue to Market Street.

18 Department of Transportation; Salem. The funding for the project named Salem, project number 12334, which consists of reconstruction of an intersection at NH 28 and NH 97, shall be modified to include $2,900,000 for right of way acquisitions (ROW).

19 Administration of Transportation Laws; Use of Toll Credits. RSA 228:12-a is repealed and reenacted to read as follows:

228:12-a Use of Toll Credits. The department may use toll credits as a match for federal highway funds solely for the funding of highway and road projects, projects concerning the travel of motor vehicles on such highways and roads, or the work of the regional planning commissions under RSA 36. Any other use of toll credits shall require approval of the joint legislative capital budget overview committee, established in RSA 17-J:1, prior to moving the project forward for approval.

20 Department of Transportation. The department of transportation shall not commence construction on the road project named Dixville-Colebrook, project number 40518, until such time as all approvals necessary for the road project are received and the financing required for commencement of commercial operations at the facility on the east side of NH 26 at the Balsams is secured. Project number 40518 shall be contingent upon an agreement between the towns and/or county to take ownership of the road prior to construction.

21 Department of Transportation; Jefferson-Randolph. The project named Jefferson-Randolph, project number 13602C, shall include the study of a possible location for a wildlife crossing on Route 2.

22 Effective Date.

I. Sections 8, 9, and 10 of this act shall take effect July 1, 2016.

II. The remainder of this act shall take effect upon its passage.

ATTACHMENT 3

ROCKINGHAM PLANNING COMMISSION

Attachment #3

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MEMORANDUM

To: MPO Transportation Advisory Committee

From: Dave Walker, Transportation Program Manager

Date: 3/16/2016

RE: Scenario Planning/ Regional Crash Data Analysis

Included with this memorandum are two draft documents that reflect progress on the scenario planning efforts and regional crash data analysis related to the update of the MPO 2040 Long Range Transportation Plan. No action is needed from the TAC regarding the documents but it is the hope that presenting the two pieces of analysis will lead to some discussion regarding areas to focus efforts, outputs that might be helpful for communities, and the depth of analysis desired.

Scenario Planning

The scenario planning effort leverages and extends the work on the Regional Master Plan in 2014 and 2015 through the creation of two new land use scenarios with the goal of understanding the impacts on the transportation system as well as the distribution of population and employment. An item to consider is that MPO staff is working with OEP on developing updated sub-county population projections and those should be completed in the next few weeks. From initial work so far, the indication is that the population change in the RPC region is likely to be greater than the "slow growth" scenario that was utilized as the basis for the scenario planning exercise last time. This raises of questions of how to best incorporate the latest planning assumptions for the conclusion of the current scenario planning exercise and the LRTP update.

Crash Data

While the basic work is largely complete on this as it applies to the Long Range Transportation Plan, a more in depth examination of bicycle and pedestrian crashes will help to guide recommendations for related infrastructure improvements. Also, as the Federal DOT has finalized at least some of the performance measures related to highway safety those can begin to be incorporated into the LRTP. Finally, some spatial analysis on the highway corridors in the region would be helpful to get to a better level of detail than each state highway as a whole.

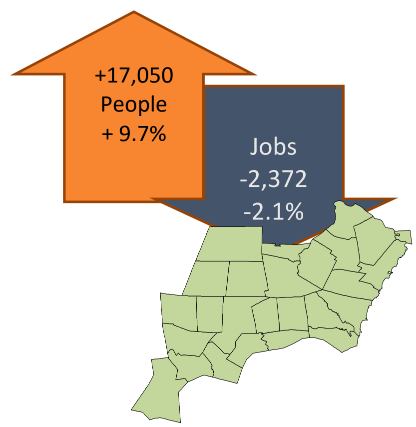
Scenario Planning for the Long Range Transportation Plan

Projections of slow population growth for New Hampshire and the RPC region by the State Office of Energy and Planning, and high employment growth projected by the Economic and Labor Market Information Bureau present somewhat conflicting pictures of the future RPC. If the assumption is that the population projections are the accurate gauge of the region's future, this would predict a smaller labor force and a smaller increase (or even a decrease) in employment in the region would be expected. If the assumption is that the employment projections are the accurate gauge of the future region, the population would need to increase much faster to provide the labor force to fill the jobs or commuting into the region from other areas would need to increase.

At the same time as the magnitude of growth is considered, the distribution of that growth can be examined as well. The modern pattern of development in the region has shown population increases occurring primarily in the more rural communities in the region while the majority of job growth remains in the larger centers. The impacts and benefits of continuing the current pattern or shifting into a more concentrated growth model are examined as part of this effort. In addition, a moderate population growth in the RPC region is combined with increased population in the SRPC region to simulate the impact of the strong job growth being filled by people who reside outside of the RPC region. All of these are considered against the 2010 baseline data that is available for the region of a starting population of 178,000, and 112,612 jobs. The paragraphs that follow describe the general vision presented by each scenario and this is supplemented by figures showing the change in population, and employment for each scenario.

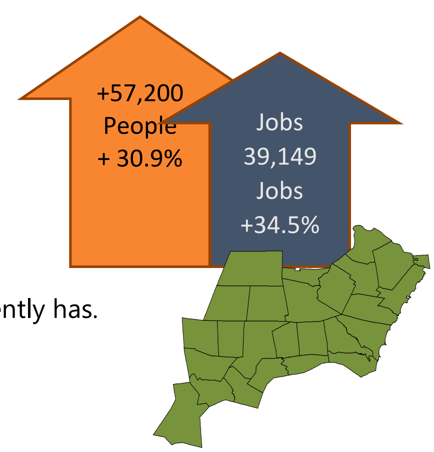
Scenario 1: Slow Growth

A future of slow population growth is anticipated by the population projections and the work force and employment are sized to fit that slow change. Under this scenario, the population projections from OEP and the RPCs are utilized and employment growth is reduced to levels supported by the expected available labor force. In this scenario, there is little land use growth and so the distribution and amount stay generally the same as exists in the 2010 baseline.

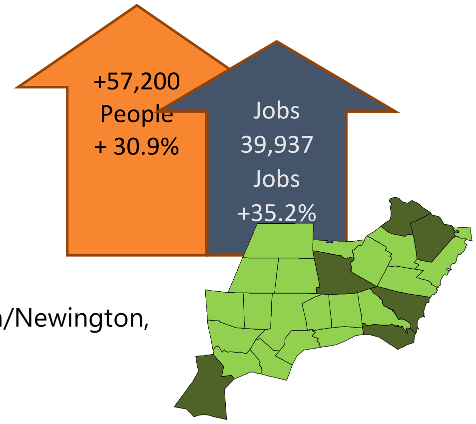


Scenario 2: Strong, Dispersed Growth

This concept moves towards the Regional Vision with strong population and economic growth. For this scenario NH Employment Security projections provide the employment growth rate and the population is increased to the point where the labor force is large enough to support the larger number of jobs. This scenario continues the current dispersed residential growth pattern and more rural communities grow faster than more urbanized ones. Employment is slowly diffused in some industry categories such as retail following current trends. In this growth pattern each community maintains roughly the percentage of regional population and employment that it currently has.



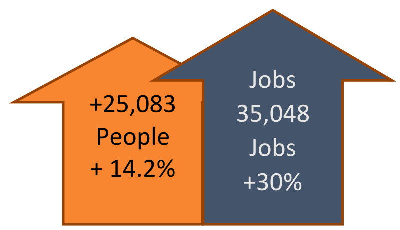
Scenario 3: Strong, Concentrated Growth



alternative that is compared to the 2010 baseline has similar population and employment as the dispersed growth scenario. It differs in that it concentrates residential growth into the largest employment centers in the region and further focuses employment growth in those same areas. These areas currently host just under 50 percent of the population in the region and 74 percent of the employment. To facilitate a change in distribution, 80 percent of the new population and 90 percent of new jobs are directed to the regional employment centers of Portsmouth/Newington, Salem, Exeter, Hampton, and Seabrook.

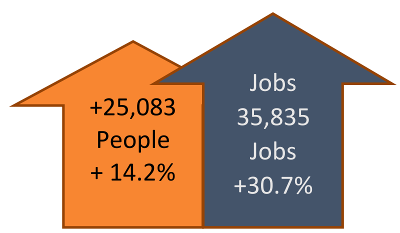
Scenario 4: Strong, Dispersed Employment Growth, Residential Growth Outside of Region

This alternative utilizes the strong employment growth of Scenario 2 dispersed around the region based on current distribution of jobs. This scenario adds about 22,000 jobs to the region's employment centers and another 13,000 jobs to the surrounding communities. Population growth is the same as in the strong growth scenarios (Scenarios 2 & 3) however 80% of the new population is assigned to communities in the SRPC region meaning that commuting increases to the employment in the region. For RPC towns, populations are slightly higher than in the "Slow Growth" of Scenario 1 with about 25,000 people added to the region over the 30 years.



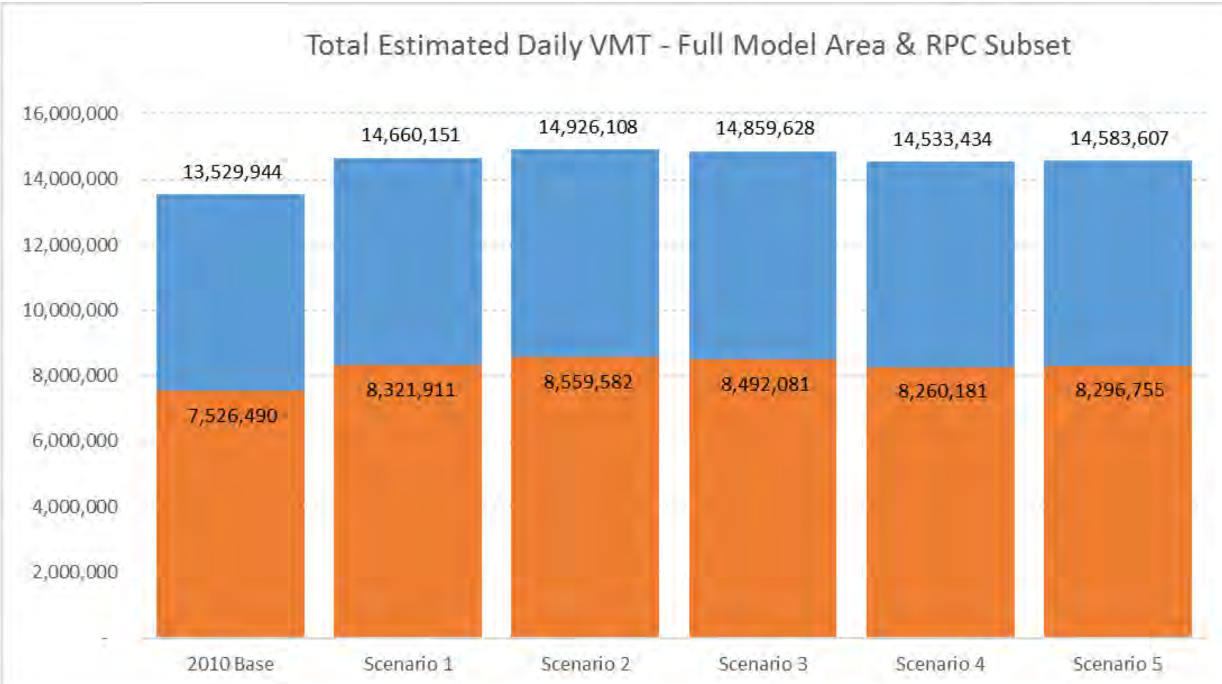
Scenario 5: Strong, Concentrated Employment Growth, Residential Growth Outside of Region

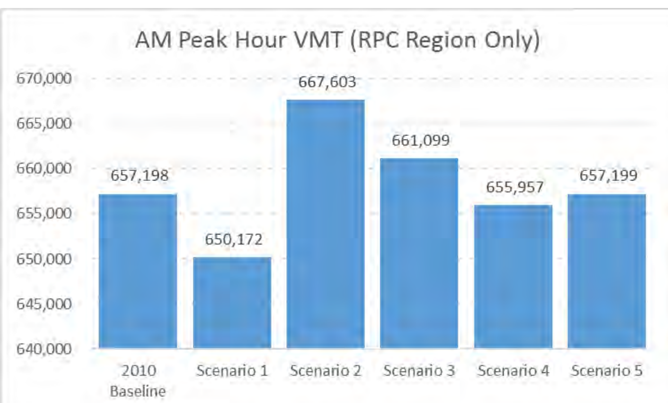
Similar to Scenario 4, the configuration of Scenario 5 utilizes the strong employment growth of Scenarios 2 and 3 with nearly 36,000 jobs added to the region however this time 80% of the new employment is concentrated into the regional job centers (similar to Scenario 3). Residential growth is the same as Scenario 4 in that the majority of it occurs outside of the RPC region and so commuting into the job centers increases.

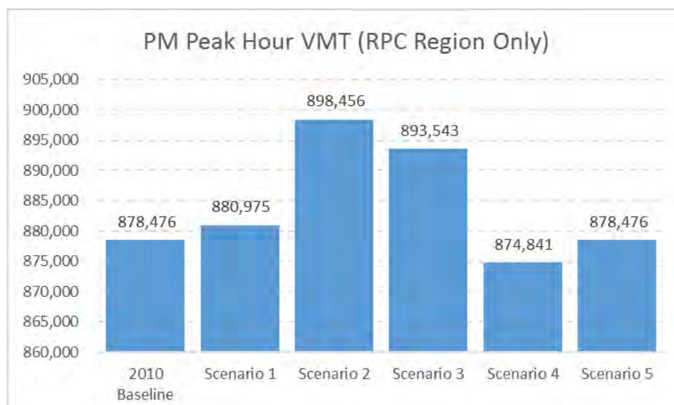


Preliminary Results

Initial Results indicate that Scenario 2 which predicts strong dispersed population and employment growth in the region produces the most traffic overall and that travel is about 10% greater in 2040 under that design. Scenario 3, which concentrates the employment and residential growth into regional employment centers creates slightly less overall traffic with a 9.8% increase in Vehicle Miles of Travel (VMT). That being said, it appears that the analysis for Scenarios 4 and 5 may need to be re-run as the VMTs would be expected to be closer to those of Scenarios 2 and 3 given the comparable levels of employment and population within the model region as a whole. Also, the AM and PM peak hour values Scenario 5 appear to be exactly the same as for the 2010 baseline values which would not be expected.







Work is still ongoing to evaluate the information provided by the regional travel demand model and will feed into the remaining work on the Long Range Plan. Further efforts will gauge the impacts on land use and transportation and will be reflected in many of the same outputs that were included in the Regional Master Plan scenario exercise.

Estimated Vehicle Miles of Travel by RPC Community
(Baseline = 2010, Scenarios = 2040)

Community	Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Atkinson	*181,485.41*	*198,215.37*	*204,051.98*	*201,096.12*	*195,630.12*	*197,301.45*
Brentwood	*194,180.30*	*232,498.60*	*250,563.77*	*236,996.98*	*220,948.80*	*219,711.05*
Danville	*107,624.29*	*116,763.85*	*118,724.30*	*115,371.81*	*109,318.84*	*108,444.28*
East Kingston	*91,290.68*	*109,360.22*	*113,297.05*	*110,218.61*	*99,674.07*	*100,934.79*
Epping	*287,313.69*	*319,481.46*	*332,988.93*	*323,410.67*	*318,835.27*	*316,195.85*
Exeter	*494,604.45*	*503,918.22*	*533,604.65*	*524,225.15*	*497,487.53*	*499,874.31*
Fremont	*103,416.77*	*127,523.26*	*131,410.86*	*125,968.07*	*116,614.97*	*116,698.30*
Greenland	*442,749.03*	*504,408.65*	*507,931.02*	*503,697.01*	*490,092.31*	*492,996.73*
Hampstead	*219,197.65*	*233,703.05*	*243,563.33*	*237,190.88*	*230,654.82*	*229,268.43*
Hampton	*549,780.96*	*607,791.05*	*608,363.67*	*614,704.83*	*616,603.93*	*617,506.26*
Hampton Falls	*338,399.90*	*399,264.62*	*404,642.50*	*404,235.60*	*397,137.52*	*399,154.96*
Kensington	*123,682.85*	*140,979.27*	*148,363.54*	*144,959.79*	*133,734.54*	*134,698.77*
Kingston	*322,568.44*	*337,810.56*	*345,303.99*	*337,602.26*	*321,177.21*	*319,784.57*
New Castle	*7,239.51*	*7,237.45*	*7,732.10*	*7,170.77*	*8,066.67*	*7,879.68*
Newfields	*61,440.32*	*63,680.42*	*67,559.94*	*65,067.95*	*63,863.82*	*63,430.67*
Newington	*191,644.49*	*169,809.53*	*198,385.88*	*198,736.96*	*188,838.01*	*191,729.50*
Newton	*86,838.22*	*102,602.38*	*105,657.32*	*103,497.57*	*98,720.03*	*98,247.19*
North Hampton	*480,620.69*	*557,727.52*	*559,507.92*	*555,010.44*	*547,665.18*	*547,413.88*
Plaistow	*247,508.34*	*264,630.10*	*271,169.28*	*265,294.88*	*261,721.69*	*259,625.15*
Portsmouth	*913,794.03*	*974,635.97*	*988,813.99*	*999,858.28*	*985,026.03*	*996,696.27*
Rye	*100,526.91*	*129,637.12*	*132,580.98*	*129,643.87*	*129,374.04*	*129,467.70*
Salem	*1,268,115.36*	*1,434,516.42*	*1,474,685.64*	*1,490,234.13*	*1,450,995.28*	*1,471,451.60*
Sandown	*73,584.40*	*98,559.64*	*104,898.81*	*99,046.44*	*92,780.96*	*92,203.12*
Seabrook	*413,187.90*	*438,433.96*	*441,553.76*	*443,752.59*	*439,844.44*	*441,761.39*
South Hampton	*35,869.01*	*39,303.94*	*39,911.93*	*39,712.80*	*37,448.53*	*37,773.69*
Stratham	*189,826.05*	*209,418.60*	*224,315.17*	*215,377.04*	*207,926.33*	*206,505.76*
RPC Region	7,526,489.66	8,321,911.23	8,559,582.32	8,492,081.50	8,260,180.94	8,296,755.35

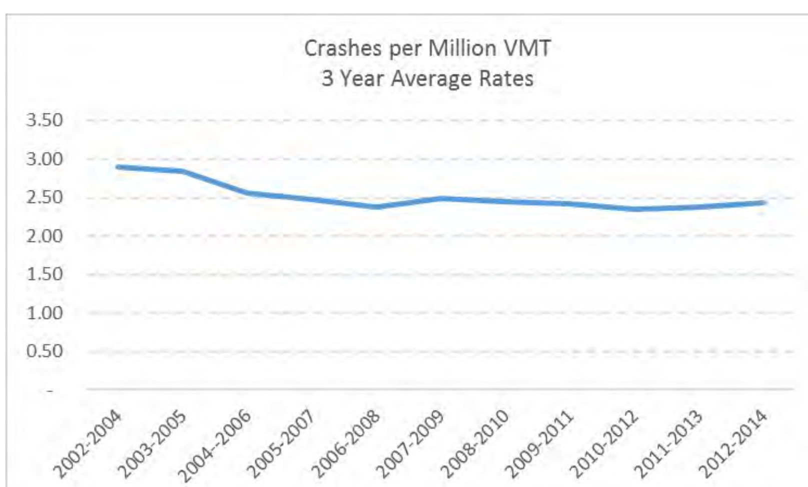
Regional Crash Data Analysis

An analysis of traffic crashes was conducted utilizing the state traffic crash records dataset with data from 2002 to 2014 available for the region. 2015 data was also available but was incomplete and so was not included in this analysis. Over the 2002-2014 period a total of 67,576 crashes were recorded in the region involving over 138,000 individuals throughout the 26 communities. Eighty percent of these crashes resulted in damage to property only and no injuries, but the remaining 13,429 crashes resulted in 186 fatalities, 1,146 incapacitating injuries and another 14,683 non-incapacitating and minor injuries.

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Fatalities	13	10	16	16	13	21	11	14	16	10	17	17	12
Incapacitating Injuries	141	103	114	110	86	93	67	67	84	67	78	65	71
Non-Incapacitating Injuries	799	829	795	830	750	776	591	681	683	676	722	655	796
Minor Injuries	481	507	417	470	359	420	370	408	321	266	306	299	476
Property Damage Only	4,509	4,819	4,409	4,552	3,413	4,113	4,178	4,152	3,997	3,944	3,597	4,085	4,379
Total Crashes	**5,765**	**6,112**	**5,582**	**5,744**	**4,489**	**5,224**	**5,053**	**5,127**	**4,927**	**4,813**	**4,567**	**4,962**	**5,211**

Crash Rates

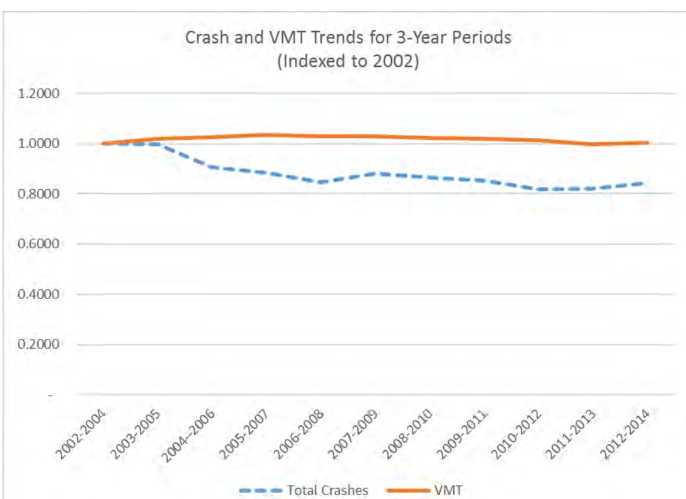
The crash rate (crashes per million vehicle miles of travel) was calculated for each year of the time period by first developing an estimate of the Vehicle Miles of Travel (VMT) for the region. This was accomplished by utilizing the regional travel demand model to develop an estimate for a single day in 2010 (the current base year of the model) and expanding that daily estimate into an annual number that was then inflated or deflated for the years before and after to match state trends. This analysis is somewhat limited in that it does not differentiate between crashes that occurred at intersections vs. along the roadway, but is intended to generally examine the overall trend regarding the number of crashes occurring in the region compared to the amount of motor vehicle travel that is occurring. Further, crash data analysis often utilizes 3-5 year averages to smooth the data and avoid policy decisions based on single year spikes or declines in crashes. The most recent 3 year period of data shows a rate of 2.44 crashes per million vehicle miles of travel in the region. This is up slightly from the previous period (2011-2013) rate of 2.38 crashes per million VMT however it is down from the first three year (2002-2004) average of 2.90 crashes per million VMT.



Using the travel demand model, individual crash rates can be derived for each roadway. While these again are not precise as the model aggregates data into estimates, they are calibrated to ground counts so they are reasonably close to actual values and can be utilized to provide a general crash rate for a corridor as a whole. This can give some insight as to roadways that have higher than expected numbers of crashes given the volume of traffic. For instance, in the table below, I-93, I-95, and NH 101 all show up in the listing of the top ten roadways when ranked by average number of crashes during the latest three-year period however none of them show up in the listing when the amount of traffic (exposure to risk) is brought into the equation. The full list of state route 3-year averages and crash rates can be seen in the table at the end of this document.

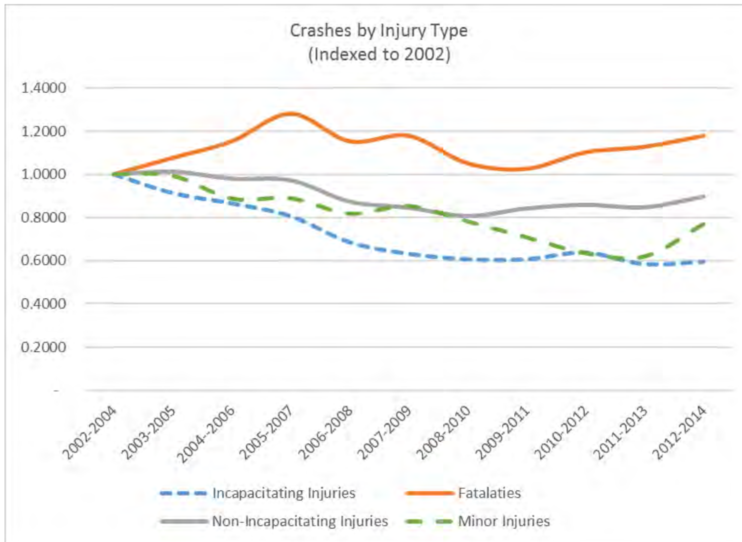
Top 10 Routes by Number of Crashes 20012-2014		Top 10 Routes by Average Crash Rate per Million VMT 2012-2014	
US Route 1	512.7	NH 38	8.66
NH 125	347.0	US 1 Bypass	8.32
I-95	244.7	NH 28	8.22
NH 28	242.7	US Route 1	6.91
NH 101	206.0	NH 97	5.61
NH 108	156.3	NH 101E	4.96
I-93	156.0	NH 27	4.08
NH 27	155.0	NH 1A	3.99
NH 111	154.3	NH 33	3.30
NH 1A	140.7	NH 125	3.09

Another way to track the trends in crashes is to create an index that allows comparison of trends across widely disparate numbers from a base value. In this case, crashes, VMTs, and injuries for the 2002-2004 period were set to equal 1. Subsequent periods are compared to the base period and a ratio is derived that shows the change from the base period. The figure below shows total crashes and VMT indexed to the 2002-2004 period as a starting point. From that, it can be seen that VMTs have both risen and fallen slightly but have generally hovered near the 2002-2004 value. Total crashes on the other hand have declined substantially from the 2002-2004 value and the most recent period had only about 85% of the total number of crashes that occurred in 2002-2004. Extending this index method to examining injury crashes, it can be seen that incapacitating, non-incapacitating, and minor injuries have generally declined over time while fatalities



Use of Safety Devices in Fatal Crashes
RPC Region 2002-2014

Safety Device Useage	#	%
Not Installed	2	1%
Restraint Not Used	**77**	**41%**
Restraint Used	38	20%
Helmet Not Used	**20**	**11%**
Helmet Used	21	11%
Clothing Dark	5	3%
Clothing Light/Reflective	3	2%
Air Bag Deployed	12	6%
Air Bag & Restraint Used	3	2%
Unknown	8	4%
Grand Total	189	

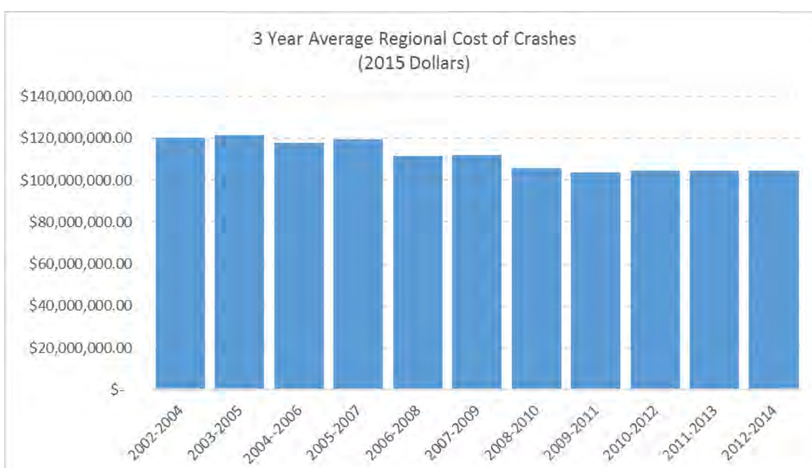


have consistently remained above the value seen during the 2002-2004 period. While most injury types are occurring less frequently now than they were during the 2002-2004 period, it also appears that these values are rising as all types of injury have shown increase during the last few 3-year periods.

Examining traffic related fatalities in the region brings into focus the difficulty in responding to safety concerns by addressing crash locations where a death has occurred. With advances in modern automobile safety and improvements in roadway design and construction, the locations that produced a pattern of fatal crashes mostly do not exist any longer, and the determination of whether a crash leads to a death is as much related to individual driver behaviors and to factors such as age and individual health. For example, 51% of people who died in traffic crashes in the region were not wearing a seatbelt or a helmet. At the same time, in crashes resulting in a fatality, 49% involved some sort of improper driving on the part of the vehicle that caused the crash, and about 46% involved a driver under some type of physical or emotional condition.

Cost of Crashes

Crashes can also be examined from an economic impact perspective. The Highway Safety Manual published by the American Association of State Highway and Transportation Officials (AASHTO) in 2010 utilizes the "Human Capital Cost" methodology to estimate the economic impact of traffic crashes based on a 2005 study by the Federal Highway Administration. Human Capital Cost is considered the monetary loses associated with



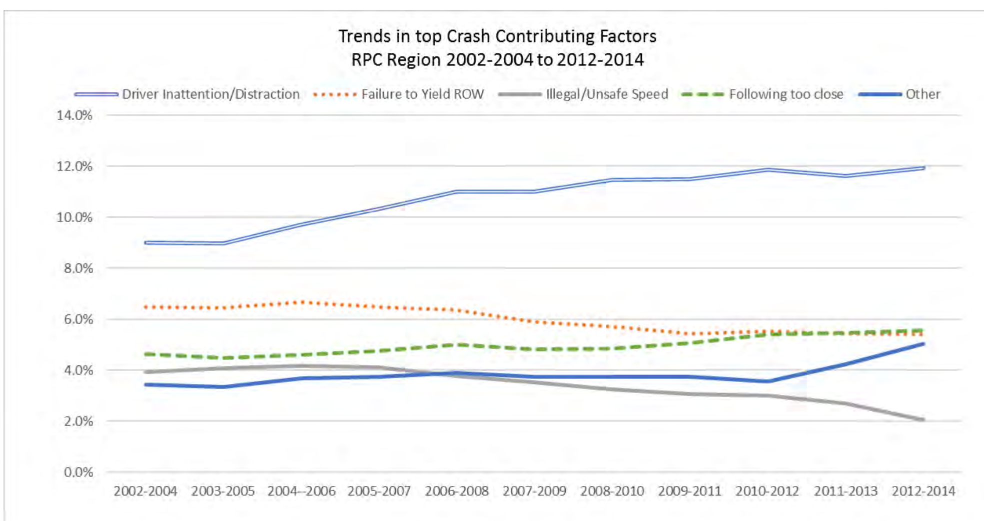
medical care, emergency services, property damage, and lost productivity, and ranges from $6,400 (2001 dollars) for a property damage only crash to just over $1.2 million for a fatal crash (2001 dollars). Aggregating the data to three year periods, the average impact of crashes on the region has been just under $111.5 million dollars per year (2015 dollars). Fewer crashes in recent years as well as a substantial drop in crashes that resulted in incapacitating injuries has seen the three-year average cost of crashes decline since the 2002-2004 period.

Contributing Factors

About 45% of the crashes in the region have at least one identified factor that contributed to the causation of the event. Driver inattention and distraction continues to lead the identified causes at about 12% of crashes, while “following too close”, “failure to yield”, and “other” each account for at least 5% of crashes. Other causes such as “unsafe backing” (2.8%), “illegal or unsafe speed” (2.1%), and “driver inexperience” (1.1%) all account for a small portion of the causes. Importantly, looking at the trend over time, “driver inattention/distraction” is the one of the few causative factors that is rising as a percentage of total crashes along with “other”. In the 2002-2004 period driver inattention and distraction was a prominent factor in about 9% of crashes but in the latest three-year period it has increased to 12%. The recent implementation of a hands-free law in NH may have some impact on this trend in the future, but it is too soon to tell.

First Unit Contributing Factors – Fatal Crashes Only
RPC Region 2002-2014

	#	%	Cumul %
Failure to Yield ROW	7	3.8%	4%
Illegal/Unsafe Speed	36	19.8%	24%
Following too close	1	0.5%	24%
Disregard Traffic Control Device	4	2.2%	26%
Centerline Encroachment	11	6.0%	32%
Improper Passing/Overtaking	2	1.1%	34%
Improper/Unsafe Lane Use	5	2.7%	36%
Improper Turn	2	1.1%	37%
Impeding Traffic	1	0.5%	38%
Skidding	4	2.2%	40%
Driver Inattention/Distraction	6	3.3%	43%
Pedestrian Violation/Error	1	0.5%	44%
Obscured Vision	2	1.1%	45%
Physical Impairment	8	4.4%	49%
Other	25	13.7%	63%
Unknown	51	28.0%	91%
No Improper Driving	16	8.8%	100%
	182		



Three Year Average Crashes by Route

Roadway	2002-2004	2003-2005	2004--2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014
Local Roads	2,269.7	2,248.3	2,033.0	1,967.0	1,878.0	1,949.7	1,890.0	1,836.7	1,704.3	1,684.0	1,688.0
US Route 1	519.0	530.7	493.7	506.7	496.7	522.0	494.3	468.0	451.0	485.3	512.7
NH 125	377.7	375.3	335.3	320.0	283.7	296.0	301.3	313.0	319.0	323.0	347.0
NH 28	332.3	313.7	260.3	245.7	240.7	257.0	261.0	264.3	257.3	244.7	242.7
I-95	296.3	306.7	282.0	276.3	259.0	269.0	264.3	263.3	254.7	244.7	244.7
NH 101	190.0	194.3	184.0	183.0	162.3	171.0	167.3	170.0	166.7	183.3	206.0
NH 111	189.0	193.3	183.3	169.3	159.3	152.3	153.0	150.3	156.7	153.3	154.3
NH 108	186.7	200.0	163.0	157.3	144.3	155.0	152.0	163.0	160.3	157.0	156.3
NH 1A	180.7	184.0	160.0	164.3	164.0	179.0	170.0	164.0	142.7	144.0	140.7
I-93	171.7	160.7	145.7	141.7	130.7	134.3	128.7	128.7	126.3	136.7	156.0
NH 27	142.0	141.0	128.7	127.0	133.3	140.7	138.0	138.0	143.0	147.7	155.0
NH 16	145.7	140.3	121.7	127.0	120.3	123.0	125.0	124.3	122.3	126.0	139.7
NH 33	128.7	122.7	115.7	117.3	115.0	113.3	110.7	116.0	115.0	111.0	108.3
NH 121A	125.7	122.3	114.0	114.0	111.7	118.3	120.7	119.7	121.3	109.3	107.3
US 1 Bypass	106.3	111.7	99.7	98.7	92.3	99.7	113.3	114.7	114.7	105.3	110.0
NH 97	110.3	110.3	105.3	92.7	93.0	96.3	101.3	97.7	98.7	95.7	90.7
NH 107	60.7	68.7	67.7	76.7	66.3	71.3	63.3	55.0	49.0	56.7	59.3
NH 38	44.0	56.3	60.7	59.7	62.7	69.7	66.7	62.7	63.7	65.7	77.0
NH 121	71.0	76.3	64.3	60.7	53.7	53.0	48.0	48.7	48.3	56.3	58.7
NH 111A	30.3	28.3	28.3	25.7	25.0	22.3	24.0	26.3	29.3	26.0	25.7
NH 85	26.0	22.3	22.0	19.7	19.3	17.7	18.7	17.3	21.0	21.7	25.3
NH 151	19.7	19.7	16.3	18.7	19.0	22.0	23.0	21.7	20.7	20.3	23.7
NH 286	18.7	12.7	15.7	21.3	21.3	23.3	23.3	20.3	18.0	15.0	14.0
NH 101E	18.7	21.0	20.3	17.0	16.7	18.3	20.7	19.7	19.3	17.0	17.7
NH 150	16.7	13.7	14.0	12.7	15.0	15.3	14.7	14.7	15.0	17.7	18.7
NH 88	11.7	10.7	10.3	9.0	11.0	13.3	11.3	11.3	10.3	12.3	9.0
NH 87	12.3	9.7	8.7	7.0	8.3	9.3	9.7	7.7	6.0	6.3	8.0
NH 84	7.7	7.7	7.0	5.7	4.3	4.3	4.3	4.3	3.3	4.0	6.3
NH 107A	3.0	2.7	3.7	3.7	6.3	8.7	8.3	7.0	5.3	6.3	5.7
	5,812.0	5,805.0	5,264.3	5,145.3	4,913.3	5,125.3	5,027.0	4,948.3	4,763.3	4,776.3	4,908.3

Three Year Average Crash Rates per Million Vehicle Miles of Travel by Route

Roadway	2002-2004	2003-2005	2004--2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014
Local Roads	4.61	4.48	4.02	3.85	3.70	3.85	3.75	3.66	3.42	3.42	3.42
US Route 1	7.01	7.04	6.51	6.61	6.52	6.86	6.52	6.21	6.02	6.57	6.91
NH 125	3.38	3.29	2.92	2.76	2.46	2.57	2.63	2.75	2.82	2.89	3.09
NH 28	11.29	10.47	8.63	8.06	7.95	8.50	8.66	8.82	8.64	8.32	8.22
I-95	0.72	0.73	0.67	0.65	0.61	0.63	0.63	0.63	0.61	0.59	0.59
NH 101	1.20	1.20	1.13	1.11	0.99	1.05	1.03	1.05	1.04	1.15	1.29
NH 111	1.66	1.67	1.57	1.43	1.36	1.30	1.31	1.29	1.36	1.35	1.35
NH 108	2.27	2.39	1.93	1.84	1.70	1.83	1.80	1.94	1.93	1.91	1.89
NH 1A	5.15	5.15	4.45	4.52	4.54	4.96	4.73	4.59	4.02	4.11	3.99
I-93	1.54	1.42	1.28	1.23	1.14	1.18	1.13	1.14	1.12	1.23	1.40
NH 27	3.75	3.65	3.31	3.24	3.42	3.61	3.56	3.58	3.73	3.90	4.08
NH 16	3.13	2.96	2.55	2.64	2.52	2.57	2.63	2.63	2.60	2.71	3.00
NH 33	3.94	3.69	3.45	3.47	3.42	3.37	3.31	3.48	3.48	3.40	3.30
NH 121A	3.48	3.32	3.08	3.05	3.00	3.19	3.26	3.25	3.32	3.03	2.96
US 1 Bypass	8.06	8.31	7.37	7.22	6.81	7.35	8.39	8.54	8.59	8.00	8.32
NH 97	6.85	6.73	6.38	5.56	5.62	5.82	6.15	5.96	6.06	5.95	5.61
NH 107	1.09	1.21	1.18	1.33	1.16	1.24	1.11	0.97	0.87	1.02	1.06
NH 38	4.96	6.24	6.68	6.50	6.87	7.65	7.34	6.94	7.10	7.42	8.66
NH 121	3.63	3.84	3.21	3.00	2.67	2.64	2.40	2.45	2.44	2.89	2.99
NH 111A	0.78	0.72	0.71	0.64	0.63	0.56	0.60	0.67	0.75	0.67	0.66
NH 85	1.78	1.50	1.47	1.30	1.29	1.18	1.25	1.17	1.42	1.49	1.73
NH 151	1.45	1.43	1.18	1.33	1.36	1.58	1.66	1.57	1.51	1.50	1.74
NH 286	2.10	1.40	1.72	2.32	2.33	2.55	2.56	2.25	2.00	1.69	1.57
NH 101E	5.26	5.81	5.59	4.62	4.56	5.02	5.69	5.44	5.38	4.79	4.96
NH 150	1.09	0.88	0.90	0.80	0.96	0.98	0.94	0.95	0.97	1.16	1.22
NH 88	1.16	1.04	1.00	0.86	1.06	1.29	1.10	1.10	1.01	1.22	0.89
NH 87	2.00	1.54	1.37	1.09	1.31	1.47	1.53	1.22	0.96	1.03	1.29
NH 84	1.10	1.08	0.98	0.79	0.61	0.61	0.61	0.61	0.47	0.58	0.91
NH 107A	1.16	1.01	1.39	1.37	2.39	3.27	3.15	2.66	2.04	2.46	2.19
Total	2.89	2.84	2.56	2.47	2.38	2.48	2.44	2.42	2.34	2.38	2.44

Three Year Average Crashes by Community

Community	2002-2004	2003-2005	2004--2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014
Atkinson	86.33	91.00	78.67	75.33	69.33	70.00	66.67	63.67	64.67	68.00	69.67
Brentwood	51.33	54.67	62.00	71.00	65.33	60.00	54.00	56.33	55.67	55.33	62.00
Danville	37.00	37.33	35.67	33.00	29.67	32.67	33.33	36.33	37.67	38.33	37.00
East Kingston	15.33	21.00	19.67	19.33	17.33	24.67	23.33	20.67	16.00	16.67	16.67
Epping	235.67	242.00	229.67	229.00	206.33	226.67	239.00	247.33	256.00	263.33	295.00
Exeter	350.33	334.67	301.00	292.00	289.67	302.67	304.67	316.00	319.67	318.67	313.33
Fremont	33.00	32.33	25.33	22.00	16.00	16.33	18.00	20.33	20.67	17.33	14.33
Greenland	162.33	163.67	150.33	159.67	157.67	153.00	142.33	146.00	143.33	139.67	133.67
Hampstead	182.33	181.33	177.67	170.33	171.00	165.67	177.00	188.00	191.33	179.00	177.00
Hampton*	615.00	615.00	552.00	525.00	520.00	570.00	581.00	567.33	524.67	523.33	526.67
Hampton Falls*	43.67	49.00	47.33	42.33	43.67	44.00	44.00	41.33	38.67	42.67	55.33
Kensington	39.33	38.00	37.67	36.33	35.00	39.00	41.00	42.33	37.67	39.00	40.00
Kingston	143.00	142.67	130.00	131.33	127.33	130.67	129.33	131.67	123.67	116.33	103.67
New Castle	2.67	2.00	2.00	1.50	1.33	1.33	1.33	1.67	1.67	1.67	1.50
Newfields	33.33	33.00	29.00	28.67	26.67	28.67	29.67	27.67	29.33	31.67	36.33
Newington	206.67	228.00	216.00	223.33	202.33	208.33	184.33	189.33	169.00	182.00	202.33
Newton	43.67	46.33	43.67	39.67	37.33	41.67	40.33	42.33	38.33	38.67	33.67
North Hampton*	189.00	195.00	169.00	164.33	155.33	166.33	162.33	153.67	147.67	146.00	153.33
Plaistow	398.33	393.67	351.33	322.33	284.00	288.00	283.67	285.67	280.67	285.00	288.67
Portsmouth	1,048.33	1,033.33	934.67	922.00	896.33	953.33	969.67	950.33	899.67	871.00	907.33
Rye	84.67	102.00	90.67	80.67	70.67	54.67	35.00	34.33	33.00	40.00	28.00
Salem	1,308.00	1,262.67	1,111.00	1,047.67	1,006.33	1,047.67	1,003.67	968.33	915.67	897.67	905.67
Sandown	63.67	59.33	60.00	63.00	64.33	58.00	62.67	60.00	65.67	59.33	60.33
Seabrook	261.67	265.00	256.67	303.67	289.33	298.67	264.33	223.00	224.67	268.00	288.33
South Hampton*	2.33	2.00	2.67	3.67	6.00	6.33	5.67	4.67	5.33	5.67	5.33
Stratham	182.67	188.33	158.67	145.67	133.67	146.33	139.33	137.33	128.67	136.33	158.67
Grand Total	5,819.67	5,812.67	5,271.67	5,152.33	4,922.00	5,134.67	5,035.67	4,955.67	4,769.00	4,780.67	4,913.33

* Many crash records for Hampton Falls, North Hampton, and South Hampton were coded for "Hampton". Many of these inaccuracies have been corrected however there are likely still records that are coded to the wrong community.