



## CHAPTER 6: TRANSPORTATION

### INTRODUCTION

The Transportation Chapter's purpose is to provide a vision of the future and serve as a source of information related to local and regional transportation matters. This Chapter is based on an evaluation of the region's existing plans, transportation data, current challenges and an understanding of the potential for future growth and change in the region. This Chapter is based on the following important transportation principles:

- ➔ An integrated approach to transportation throughout the Central New Hampshire (NH) Region with particular attention given to transportation efficiency, safety, competitiveness, social inclusion and environmental sustainability;
- ➔ The region's principal transportation assets and strategically important travel corridors should be maintained, preserved and enhanced;
- ➔ Investment in the region's transportation infrastructure should be made in a sustainable and efficient manner in order to promote the economic well-being of the region and its populations;
- ➔ Future provision for transportation and infrastructure should involve regional coordination and be firmly integrated with multi-modal connections as well as the region's overall land use strategies.

#### CNHRPC Unified Planning Work Program

The Unified Planning Work Program (UPWP) is the agreement between CNHRPC and the New Hampshire Department of Transportation (DOT) that serves as a guide for transportation planning activities undertaken by the Commission over a two year period. The UPWP contains the outline of current CNHRPC activities related to the support of the CNHRPC Transportation Advisory Committee (TAC), the development of the regional transportation improvement program, the collection of traffic data, local and regional technical assistance, as well as participation in regional and statewide initiatives such as Commute Green NH and the NH Capitol Corridor Study.

### EXISTING CONDITIONS

The regional transportation system is made up of an interconnection of roads, highways, bridges, rail, public transit, non-motorized pedestrian and bicycle facilities as well as airports. This extensive system provides residents, visitors and businesses with a high level of mobility. The transportation system forms the backbone that supports the region's economy. The surface transportation system enables the region's residents and visitors to travel to work and school, and frequent tourist and recreation attractions while providing its businesses with reliable access to customers, materials, suppliers and employees.

## CONDITION OF THE REGION'S HIGHWAYS AND ROADS

The life cycle of the region's roads and highways is greatly affected by each municipality's road maintenance schedule and the DOT's ability to perform timely maintenance and upgrades to ensure that road and highway surfaces last as long as possible. Pavement condition measuring, reporting, and monitoring on state highways are based upon the Ride Comfort Index and additional pavement condition data. The 5.0-point scale Ride Comfort Index, or RCI, measures the roughness of a road traveled by a motorist. It has been used by the DOT since 1995.

"Good" is the equivalent of a score greater than 3.5 and requires no work; "Fair" is between 3.5 and 2.5 and requires some work; and "Poor" is defined as less than 2.5 and requires major work. Throughout the region, almost a third of state-maintained roads and highways have deficient pavements (see [Figures 6.1-6.4](#)). Currently 37% of New Hampshire's state-maintained roads and highways have pavement rated in poor condition. Another 44% of New Hampshire's state-maintained roadways are rated in fair condition, while regionally this percentage stands at 31% (See [Table 6.1](#))

**Table 6.1: Central NH Region Pavement Conditions**

Condition	CNHRPC	Statewide
Good	167 Miles (39% of Regional Network)	828 Miles (19% of State Network)
Fair	136.4 Miles (31% of Regional Network)	1,867 Miles (44% of State Network)
Poor	130 Miles (30% of Regional Network)	1,565 Miles (37% of State Network)

Source: DOT 2012 Pavement Condition Data

Roads rated poor show signs of deterioration, including rutting, extensive cracking and potholes. In some cases, poor roads can be resurfaced but often are too deteriorated and must be reconstructed. Roads rated in fair condition may show signs of significant wear and may also have some visible pavement distress. Most pavements in fair condition can be restored to good condition by resurfacing, but some may need rehabilitation or reconstruction to return them to good condition.

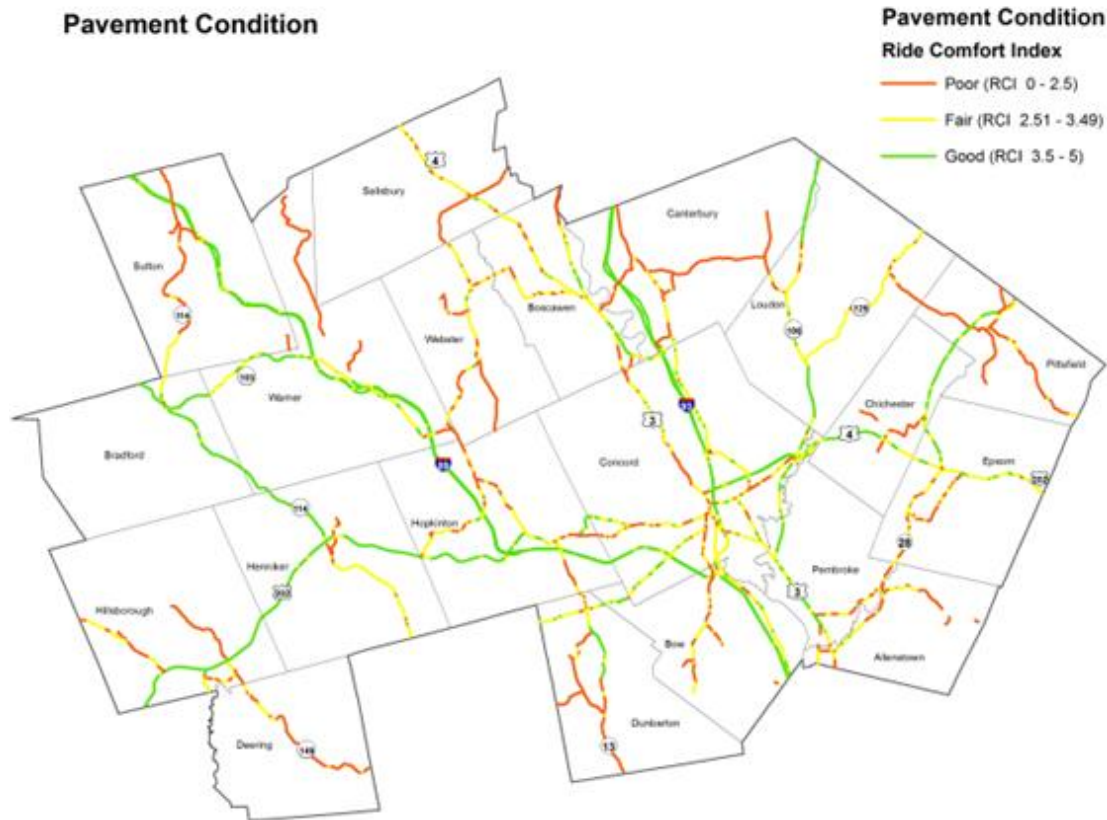
Pavement failure is caused by a combination of traffic, moisture and climate. Moisture often works its way into the pavement and the crushed gravel that forms the road's foundation. Road surfaces at intersections are even more prone to deterioration because the slow-moving or standing loads occurring at these sites subject the pavement to higher levels of stress. It is critical that roads are fixed before they require major repairs because reconstructing roads costs approximately four times more than resurfacing them. This is why roads in relatively good condition are often resurfaced to keep them from deteriorating.

**Figure 6.1: Poor Surface Condition – NH Route 127**



Source: CNHRPC

Figure 6.2: DOT Pavement Condition Map



Source: DOT 2012 Pavement Condition Data

Figure 6.3 and Figure 6.4: NH Route 114 (Sutton) Winter & Summer Conditions



Source: Emilio Cancio-Bello (Town of Sutton)



The Road Information Program (TRIP), a national transportation research group, calculated that the additional operating costs borne by New Hampshire motorists as a result of poor road conditions is \$333 million annually, or \$323 per motorist per year. When roads are in poor condition – which may include potholes, rutting or rough surfaces – the cost to operate and maintain a vehicle increases. These additional vehicle operating costs include accelerated vehicle depreciation, additional vehicle repair costs, increased fuel consumption and increased tire wear.

Additional vehicle operating costs have been calculated in the Highway Development and Management Model (HDM), which is recognized by the U.S. Department of Transportation and more than 100 other countries as the definitive analysis of the impact of road conditions on vehicle operating costs.

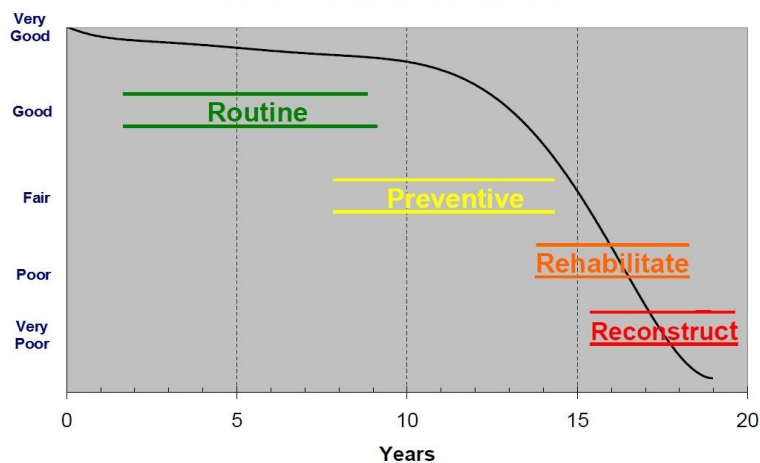
The HDM study found that road deterioration increases ownership, repair, fuel and tire costs. The report found that deteriorated roads accelerate the pace of depreciation of vehicles and the need for repairs because the stress on the vehicle increases in proportion to the level of roughness of the pavement surface. Similarly, tire wear and fuel consumption increase as roads deteriorate since there is less efficient transfer of power to the drive train and additional friction between the road and the tires.

### Road Surface Management System

The Road Surface Management System (RSMS) is a methodology intended to provide an overview and estimate of a road system's condition and the approximate costs for future improvements. RSMS provides a systematic approach for local officials to answer basic questions about their road system, to gauge current network conditions and to guide future improvement and investment in line with municipal Capital Improvement Programs.

The RSMS system is based on the Road Condition Decline Curve below, which illustrates that roads in good condition cost less to maintain than those in poor condition. Routine maintenance on roadways in generally good condition is often the most important strategy to consider. According to the American Association of State Highway and Transportation Officials (AASHTO), every \$1 spent to keep a road in good condition avoids \$6-14 needed later to rebuild the same road once it has deteriorated significantly. Investing too little on road repair increases these future liabilities.

**Figure 6.5: Road Condition Decline Curve**  
**Road Condition Decline Curve**



Source: RSMS 11

CNHRPC partners with member communities to put Road Surface Management Systems into action by providing training and assistance with data collection and database support. CNHRPC also works to integrate RSMS programs with the development and maintenance of Capital Improvement Programs which provide municipalities with a short-range planning schedule and financing plan.

## BRIDGE CONDITIONS IN THE CNHRPC REGION

The region's state and municipally maintained bridges form key links in the state's highway system, again providing communities and individuals access to employment, schools, shopping and medical facilities, and facilitating commerce and access for emergency vehicles.

**Table 6.2** shows that five percent (5%) of the DOT owned and 22% of municipally maintained bridges in the region are red listed (See **figure 6.6**). DOT defines the Red List as bridges that require more frequent inspections due to known structural deficiencies, poor structural conditions, weight restrictions, or the type of construction.

**Table 6.2: CNHRPC Region Bridge Network (10 foot span or greater)**

	Statewide DOT Owned	CNHRPC Region DOT Owned	CNHRPC Region Municipally Owned
Total # of Bridges	2,138	242	168
Red Listed Bridges	147	12	38
% of Red Listed Bridges	6.9%	5.0%	22%

Source: 2014 DOT Bridge Summary

Deteriorated bridges can have a significant impact on daily life. Restrictions on vehicle weight may cause many vehicles – especially emergency vehicles, commercial trucks, school buses and farm equipment – to use alternate routes to avoid posted bridges. Currently there are eight (8) municipally owned bridges closed in the Central NH Region (See **figure 6.7**). Redirected trips generated by closed and restricted bridges can lengthen travel time, waste fuel and reduce the efficiency of the local economy.

The service life of bridges can be extended by performing routine maintenance such as resurfacing decks, painting surfaces, insuring that a facility has good drainage and replacing deteriorating components. But most bridges will eventually require more costly reconstruction or major rehabilitation to remain operable.

In 2012, the DOT identified 261 state owned bridges and 275 municipally owned bridges that were near red list status. The DOT estimates that each year more bridges will be added to the Red List than removed. Red list bridges see an average wait time of 8 years for repair, where previously it was 5 years. Those three additional years increase the cost of repair substantially. Funding constraints limit the amount of work that can be completed each year (see **Table 6.3**). At current funding levels, the number of structurally deficient, state maintained bridges is expected to increase by 15 percent by 2016.

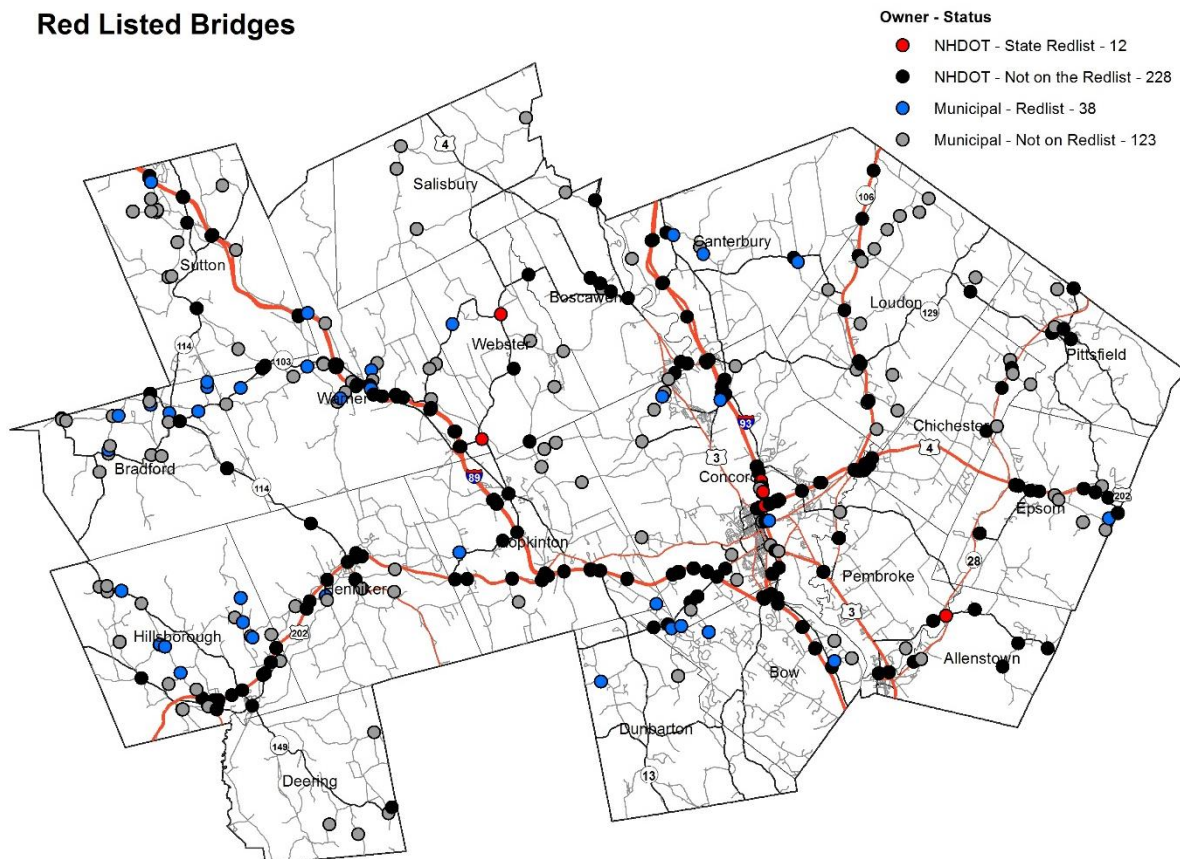
**Table 6.3: State Owned Red List Progress Chart**

Year	Year Start Total	Number Added	Number Removed	Year End Total
2004	153	10	17	146
2005	146	7	13	140
2006	140	15	18	137
2007	137	9	9	137
2008	137	19	17	139
2009	139	26	23	142
2010	142	25	19	148
2011	148	17	25	140
2012	140	27	22	145
2013	145	23	21	147

Source: 2014 DOT Bridge Summary

Figure 6.6: CNHRPC Region Bridge Network

## Red Listed Bridges



Source: DOT Bureau of Bridge Design

Figure 6.7: Closed Bridge, Western Avenue, Town of Henniker



Source: CNHRPC

## VEHICLE MILES TRAVELLED

One of the principal factors in determining Vehicle Miles Traveled (VMT) is the number of vehicles on the roads. DOT has 11 permanent traffic recording stations in the Central NH Region and 62 throughout the state. Looking at the past twenty years, the data suggests traffic is increasing at about 1.0% per year. In the same twenty year period, traffic in the Central NH Region has grown at a rate of about 1.25% per year. However, in the past ten years the traffic volumes have decreased statewide at a rate of 0.45% and regionally at a rate of 0.15%.

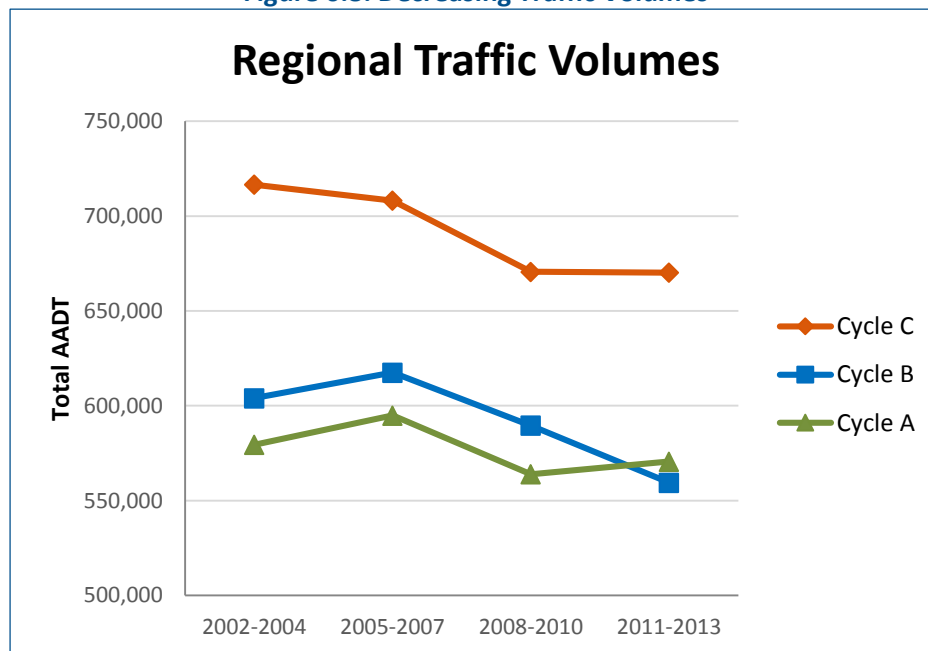
CNHRPC also conducts counts with automatic traffic recorders at over 350 locations on a three year cycle as part of the State's Highway Performance Monitoring System (HPMS). Looking at the total Average Annual Daily Traffic (AADT) between 2002 and 2013 the data shows an overall decrease in daily traffic throughout the region. The following table and graph display the total AADT from 2002 to 2013.

**Table 6.4: AADT Totals and % Changes for HPMS Locations**

Cycle A	2002	2005	2008	2011
AADT Total	579,443	594,867	563,885	570,597
%Change		2.59%	-5.49%	1.18%
Cycle B	2003	2006	2009	2012
AADT Total	603,976	617,526	589,537	559,420
%Change		2.19%	-4.75%	-5.38%
Cycle C	2004	2007	2010	2013
AADT Total	716,597	708,170	670,640	670,242
%Change		-1.19%	-5.60%	-0.06%

Source: DOT Traffic Volume Reports 2002-2013

**Figure 6.8: Decreasing Traffic Volumes**



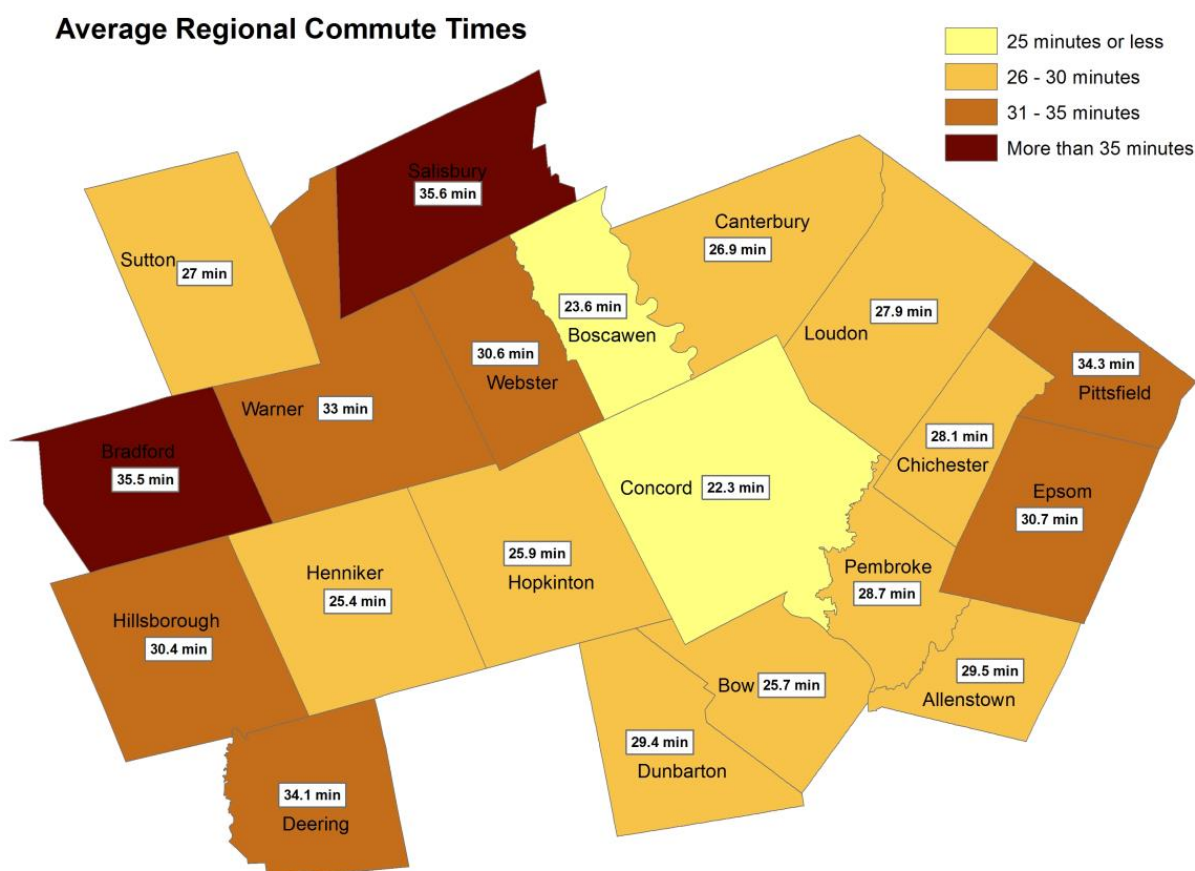
Source: DOT Traffic Volume Reports 2002-2013

Some of the underlying reasons for a decrease in traffic volumes over the past ten years include the change in driving patterns due to changing demographics, the price of fuel, a wavering economy and technologic advances that allow people to work and shop from home. With the economy recovering and population predicted to grow, albeit at a lower rate than in previous decades, it is possible VMT will rise over the next decade.

Based on 2010 data available from the U.S. Energy Information Agency (EIA), transportation makes up 26% of the total energy consumption in NH. 66% of the oil in NH goes to transportation and supplies 95% of the total energy used for transportation. The other 5% of energy consumed by the transportation sector comes from Natural Gas and Renewables. Automobiles are a significant contributor to air pollution and about 27% of greenhouse gas emissions in the US are attributed to the transportation sector.

The majority of Central NH Region residents make daily trips to work by car, and this percentage has increased in the most recent decades. Average growth of gasoline consumption per decade in NH is 35% while 80.3% of the region's residents drove alone to work (*American Community Survey 2007-2011*).

**Figure 6.9: Average Regional Commute Times**



Source: *American Community Survey 2007-2011*



## REGIONAL TRAFFIC SAFETY

As seen in [Table 6.5](#) there were a total of 161 fatalities from motor vehicle crashes on the region's roads and highways from 2002 through 2012, an average of 14.6 fatalities per year.

**Table 6.5: Motor Vehicle Fatalities by Year**

Year	Central NH Fatalities	NH Fatalities
2002	23	127
2003	20	127
2004	20	171
2005	15	166
2006	8	127
2007	10	129
2008	13	138
2009	11	110
2010	16	128
2011	15	90
2012	10	109
Average	14.6	129.3

Source: *NH Department of Public Safety, Department of Motor Vehicles Crash Reports 2002-2012*

Three major factors are associated with fatal vehicle crashes: driver behavior, vehicle characteristics and roadway features. It is estimated that roadway features are likely a contributing factor in approximately one-third of fatal traffic crashes. Roads with poor geometry, with insufficient sight distances, without turn lanes, having inadequate shoulders for the posted speed limits, or poorly laid out intersections or interchanges, pose risks to motorists, pedestrians and bicyclists.

At the state level, DOT has instituted a program entitled "Driving Toward Zero" in an attempt to reduce the number of traffic-related deaths in NH. Eliminating deaths on New Hampshire roadways is an important goal and the driving force behind the New Hampshire Driving Toward Zero campaign. The mission of Driving Toward Zero is to create a safety culture where even one roadway fatality is too many. It is also an important vision for all who travel on the region's roadways – by car, motorcycle, truck, bicycle and on foot – day and night, under all types of weather conditions. As part of the Driving Toward Zero campaign the state completed the *New Hampshire Strategic Highway Safety Plan 2012 – 2016*. The following nine (9) critical emphasis areas were identified in the plan:

- Impaired Driving
- Distracted Driving
- Speeding
- Vehicle Occupant Protection
- Adolescent Drivers
- Older Drivers
- Crash Locations
- Motorcycles and Vulnerable Roadway Users
- Comprehensive Safety Data Improvement

### **Highway Safety Improvement Program (HSIP)**

CNHRPC is currently actively assisting member communities in obtaining Highway Safety Improvement Program (HSIP) funding for safety related roadway and intersection improvements in the region. HSIP primarily deals with the Crash Location emphasis area of the *New Hampshire Strategic Highway Safety Plan 2012 – 2016*. CNHRPC fully supports the following HSIP objectives for safety on the region's roadways:

- Reduce the number of traffic fatalities and serious injuries
- Reduce the number and severity of crashes
- Decrease the potential for incapacitating and fatal injuries

The process for which a project receives funding from HSIP for a roadway segment or intersection is highly dependent on data. If data warrants further examination a Road Safety Audit (RSA) is typically the next step. The RSA is a collaborative approach to review safety issues and make recommendations for improvements. A cost/benefit analysis is used to determine the best solution for improving safety at the road segment or intersection.

**Figure 6.10: US202/NH9 & Old Concord Road Intersection Henniker/Hopkinton**



Source: CNHRPC

The severity of serious traffic crashes could be reduced through roadway improvements, where appropriate, such as adding turn lanes, removing or shielding obstacles, adding or improving medians, widening lanes, widening and paving shoulders, adding rumble strips, improving intersection layout, and providing better road markings and upgrading or installing traffic signals.

### **NON-MOTORIZED TRANSPORTATION**

Non-motorized transportation, including bicycling and walking, is increasingly being seen as a vital component to a transportation system and to healthy communities. The infrastructure, the presence and behavior of motor vehicle traffic, and the land use contribute to how conducive an area is to walking or biking. In the Central NH Region, sidewalks are primarily limited to town centers and villages where the land use is more favorable to walking for transportation. In New Hampshire, bicycles typically share the roadways with motor vehicles, and in some cases widened shoulders or bicycle lanes are provided. Most bicycling and walking infrastructure is funded by municipalities, or through federal transportation grants such as the Transportation Alternatives Program (TAP).

Although the private automobile is the predominantly used transportation choice in the region, CNHRPC continues to partner with many organizations from local Safe Routes to School (SRTS) committees to larger organizations like the NH Bike Walk Alliance to enhance bikeability and walkability in the Central NH Region. In line with the National SRTS organization, CNHRPC looks beyond just improvements to infrastructure by considering the 5 E's approach:

- Education - Teaching children and adults safe walking and bicycling habits
- Encouragement - Promoting events and activities based around safe walking and bicycling
- Evaluation - Collecting before and after data
- Enforcement - Partnering with local law enforcement to ensure safe roads for all users
- Engineering - Planning safe and convenient places to walk and bike

#### **NH Obesity Prevention Program**

According to the NH Obesity Prevention Program's 2011 Municipality Survey Report most residents don't have safe access to biking and walking infrastructure.

- Residents with sidewalks in their neighborhoods are 47% more likely to get regular physical activity.
- Nearly two out of three NH adults are overweight or obese
- One out of four NH high school students are overweight or obese

#### **Safe Routes to School**

In 2007 a community coalition led by Concord Hospital and supported by Concord School District assisted Conant Elementary and Rundlett Middle School to become the first schools in NH to receive a federal Safe Routes to School (SRTS) grant through the New Hampshire Department of Transportation to improve bicycle and pedestrian safety around the schools. Since then the federal SRTS program has awarded over 1 billion dollars around the country. New Hampshire alone received almost 10 million dollars for infrastructure projects dedicated to improving biking and walking for students accessing schools.

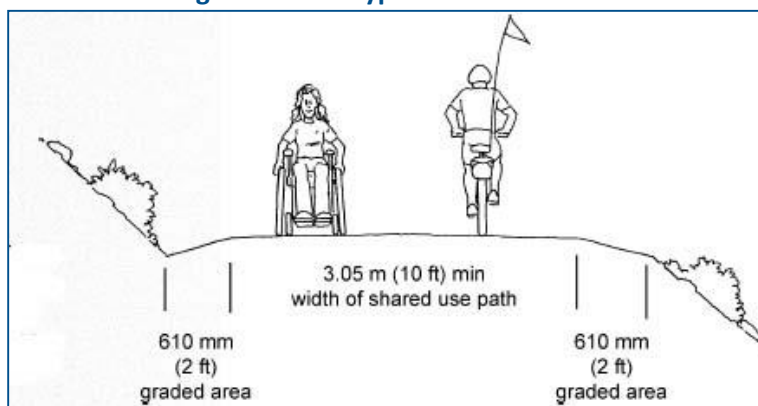
CNHRPC has worked with eleven of its communities to successfully administer SRTS grants ranging from small planning grants to the larger infrastructure grants. Local SRTS Task Forces comprised of school faculty, local officials, parents, business owners, emergency responders and supported by CNHRPC staff continue to educate, encourage and enforce safe walking and biking. Student, parent and teacher participation in walk and bike to school days has grown immensely in most of these towns. Several towns including Allenstown, Boscawen, Concord, Henniker, Hillsborough, Hopkinton, Pembroke, Pittsfield and Warner were awarded significant grants to improve pedestrian and bicycle infrastructure.

#### **Rails to Trails and Shared Use Paths**

In the Central NH region, shared use paths and rails to trails have become an increasingly sought after form of non-motorized transportation and recreation. Shared-use paths, typically 10 or 12 feet wide, with a paved or smooth hard packed gravel surface, are beneficial for safe bicycling and walking for people of all ages and abilities. Key characteristics include gentle grades, high accessibility (often Americans with Disabilities Act (ADA) compatible), and most importantly, separated from motor vehicle traffic. This expands the number of potential non-motorized transportation users by eliminating many of

the barriers to biking and walking. These facilities may also benefit economic development, health, and tourism.

**Figure 6.11: A Typical Cross Section**



Source: *CNHRPC & SNHRPC 2012 Regional Trails Plan*

Existing examples of shared use paths in the region include the Northern Rail Trail, which currently ends in Boscawen, the Warner Rail Trail, which is being completed in sections along the long-abandoned Concord to Claremont railroad, and a few short paths in Concord and Bow. Other projects in the region are in various planning and fund-raising stages. More details on the planned network of shared-use paths and rail to trails can be found in the “Regional Trails Plan 2012”, developed jointly by the CNHRPC and the Southern New Hampshire Planning Commission (SNHPC) and adopted by the Regional Trails Coordinating Council.

**Figure 6.12: The Warner Rail Trail near Bagley Field**



Source: *Joe Herr*

## PUBLIC TRANSPORTATION

Public transportation plays an important and growing role in addressing the mobility, accessibility, traffic congestion, and air quality issues facing the region. Ridership on all forms of transit has seen significant growth in response to rising fuel prices and growing transit dependent populations. Still, the majority of the twenty communities in the region are not served by regular public transportation, and significant challenges exist to expanding services, including funding availability, and low density development patterns making fixed route service inefficient in many towns.



### Concord Area Transit

Local public transit services are provided by Concord Area Transit (CAT), the City's local public transportation operator. CAT operates a combination of fixed-route and demand-responsive services locally within Concord. Demand response service also extends to local communities outside of the Concord city limits. Among these services, CAT operates three fixed routes on weekdays that are scheduled according to a downtown pulse model, wherein all three routes intersect at the State House/Eagle Square stop in the middle of downtown. As seen in [Table 6.6](#), even with a reduction in routes, the overall ridership for the CAT fixed route system has increased 2% over the last eleven years.

**Table 6.6: CAT Ridership FY 2004 - 2014**

Fiscal Year	Total Rides	% Change from Previous Year
2004	103,397	N/A
2005	93,831	-10.19%
2006	102,985	8.89%
2007	93,810	-9.78%
2008	99,612	5.82%
2009	102,489	2.81%
2010	88,286*	-16.09%*
2011	92,590	4.65%
2012	100,637	8%
2013	94,128	-6.92%
2014	105,610	10.87%

Source: [Concord Area Transit](#)

\*Elimination of the trolley service and shift from four to three route service.

Specialized transportation services are also available to specific population groups, including seniors and persons with disabilities. CAT operates two specialized transportation services:

- *Concord Senior Transit (CST)* provides specialized service to the City's senior citizens. This service is intended to provide on demand accessible transportation to and from medical appointments, shopping, social activities, and employment and education opportunities. CST operates Monday through Friday from 7:30 am to 3:30 pm. The regular fare for CST services is \$1.00 per ride.
- *Special Transit Service (STS)* provides specialized service to persons with disabilities. It serves as the complementary American Disability Act component for the fixed route system providing demand-response service anywhere within  $\frac{3}{4}$  of a mile of the CAT fixed route system. The fare for this service is \$2.50 per ride.

**Figure 6:13: Regional Transportation Services**

Source: [Concord Area Transit](#)

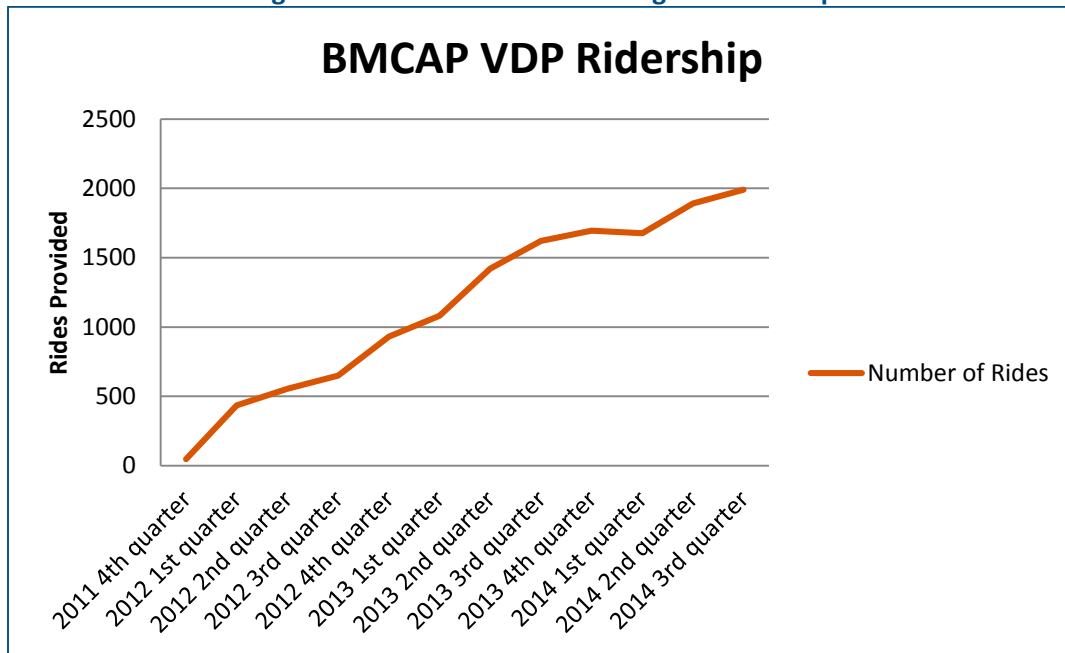
In addition to services provided directly by CAT, a number of community human service transportation providers also serve the Central NH Region. These services generally serve specific subsets of the general population, or offer services for certain trip purposes only, for example trips to and from essential social and human services. The need to provide transportation services to people who do not have access to reliable transportation options due to age, disability, income or other reasons has been identified as an issue in central New Hampshire for many years. In response to these issues, a Coordinated Transit & Human Services Transportation Plan was developed by the region's stakeholders in early 2010 with assistance from staff members from the CNHRPC.

This plan led to the formation of the Mid-State Regional Coordinating Council (RCC) for Community Transportation in 2010. One of the key roles served by the RCC is to increase coordination between transportation providers and users in the region. This coordination process is used to increase transportation services by building new community transportation services in the region.

#### **Mid-State Regional Coordinating Council Volunteer Driver Program**

Currently, the RCC, working closely with Community Action Program for Belknap-Merrimack Counties (BMCAP), coordinates an enhanced Volunteer Driver Program (VDP) in the region. The VDP augments and works with existing volunteer driver programs operating in and through these two counties to provide more extensive access to transportation. Volunteer drivers provide door-to-door service as well as feeder service to public transportation services and routes in the region. Since its inception in 2010 the VDP has continued to expand its vital role in providing essential services to the region's most transportation dependent populations. In 2014 the BMCAP enhanced VDP averaged over 600 rides per month and continues to grow.

Figure 6.14: Volunteer Driver Program Ridership



Source: *Belknap-Merrimack Community Action Program, Inc.*

### **Regional and Inter-City Public Transportation**

Several inter-city bus connections utilize the Stickney Avenue Station in Concord as a hub for transportation in the region. The Stickney Avenue station is a large multimodal facility with over 300 parking spaces that also serves multiple passenger bus operations.

- Concord Coach Lines operates inter-city buses with daily service between Concord and Boston (including South Station and Logan Airport), arriving/departing roughly every hour. Concord Coach Lines also operates two buses daily that connect Concord with northern New Hampshire cities and towns, including service to/from Berlin (via Conway and Meredith) and to/from Littleton via Plymouth.
- Boston Express coach bus line provides service connecting Concord with South Station and Logan Airport in Boston via North Londonderry and Salem. Service travels on I-93 and operates daily service to Concord with departures and arrivals.
- Peter Pan Lines/Greyhound operates inter-city buses to/from major cities in the northeast. There are few direct services from Concord, although many destinations can be accessed through the wider service network.
- Amtrak operates daily Thruway Bus services that connect Berlin, Concord, Manchester and Boston.

### Concord Express

In 2013 Central NH and Southern NH Regional Planning Commissions with support from DOT initiated the *Concord - Manchester Transit Feasibility Study* prepared by Steadman Hill Consulting, Inc. The impetus for the study was long known by local and legislative leaders who recognized the potential transit market between Concord and Manchester. The purpose was to develop a plan for proposed services that would effectively and efficiently meet the transportation/transit needs for residents in both regions. Funding was identified by Manchester Transit Authority and DOT to begin a pilot service for one year that involved twelve trips between downtown Concord, downtown Manchester and the Manchester Boston Regional Airport (MBRA).

Ridership grew steadily from 695 passengers in the first operating month of July 2013 to over 1,100 passengers in October 2013. It was noted that about 66% of riders were traveling just between downtowns. In February 2014 the route was augmented to better serve both downtowns by eliminating the MBRA stop but still offering the connection through a transfer. The demand for the intercity connection was documented in the Feasibility Study and recognized in the one year pilot study. Following the pilot service a continued service was funded that serves seven Weekday trips and three Saturday trips.

### A Look Ahead at Public Transportation

Several taxi companies also operate within the region offering an additional transportation option for residents. Taxis are often the most expensive option but provide a level of convenience most other options don't have, including 24/7 availability. The rapid growth for need of widely available on-demand transportation services has created an industry based on new information and communication technology known as ridesourcing. Companies such as Lyft, Sidecar and Uber have developed smartphone applications connecting riders with community drivers. The drivers are typically not commercially licensed and receive a portion of the fare which is often less than a conventional taxi. These services have recently begun operating in some NH cities. As a fairly new transportation option in New Hampshire, the effects of ridesourcing are yet to be determined.

A long term, sustainable transportation funding source for transportation infrastructure in the region is essential. Along with investment in traditional transportation infrastructure, investments in alternative travel modes and better coordination between transportation providers will be essential in the region moving forward. Nationally, New Hampshire ranks 42<sup>nd</sup> in state funding to public transportation while towns and cities have difficulty in raising the money required to match federal funds for transportation infrastructure.

### AIR TRANSPORTATION

The City of Concord owns and operates the 614 acre Concord Municipal Airport. The Airport was established in 1920 and functions as a general aviation airport and as a base for the NH Army National Guard 1159th Medical Company Air Ambulance on a 26 acre leased parcel. The Airport also serves as a base for the NH State Police Aviation Unit, the NH Civil Air Patrol, and a number of private airport related businesses. The Airport does not receive scheduled commercial air service which is primarily being provided from the Manchester Airport, 20 miles to the south, and Logan International Airport in Boston, approximately 70 miles south-southeast.



The Airport is anticipated to remain a general aviation airport for the foreseeable future. Total Annual Operations were 62,300 in 2004 and are forecast to grow to 85,400 by 2023. In 2004, a total of 92 aircraft were based at the Airport (including military). Of this total, 71% were small private single engine aircraft. The amount of locally based aircraft is expected to grow by 48% with a corresponding demand for hanger space and aircraft tie downs. The peak uses at the Airport are associated with NASCAR race weekends at the Loudon International Speedway and events at St. Paul's School in Concord.

The Hawthorne-Feather Airpark is located approximately three miles south of the town center of Hillsboro in the town of Deering. It is a private owned public use airport and has a single runway of 3,260 feet. The airport is a non-primary airport which is unattended and has limited services consisting of hangers, tie downs and a self-service fueling facility. The draft 2014 NH State Airport System Plan notes the airport is primarily used by local pilots for recreational use. The Federal Aviation Administration's Airport lists a total of 10 based aircraft and approximately 3,600 operations per year.

### EXISTING RAIL SERVICE AND RAIL CORRIDORS

Rail transportation has historically played an important role in regions transportation system. Freight railroads have transported goods to and from businesses for years and continue to do so today, albeit in smaller quantities. Historically, Concord was the hub of the northern New England passenger rail network, at the junction of lines heading to the Lakes Region, northern New Hampshire, Vermont, Boston, and Montreal. Rail continues to play an important role in the regional freight transportation system, primarily serving businesses in Bow and Concord. Rail in the region has the potential to play a larger role in freight and passenger transportation in the future.

The New Hampshire Main Line (NHML) extends from downtown Concord southward to Boston. The New Hampshire section of the NHML is 39 miles long, running between Concord and the Massachusetts state line, passing through Bow, Hooksett, Manchester, Merrimack, and Nashua. It is owned by the Boston & Maine Corporation and operated by the Springfield Terminal Railway Company and the New England Southern Railroad. Local freight service between Manchester and Concord is provided by the New England Southern Railroad. This segment of track is maintained to Federal Railroad Administration (FRA) Class 1 standards, which permits a maximum operating speed of 10 mph for freight trains and 15 mph for passenger trains. The condition of the track surface, ballast, and ties on the NHML in Concord appears to be fair.

The Concord-Lincoln Line extends from central Concord through Canterbury and northward to Lincoln, a distance of 73 miles. Two tourist services and one freight railroad operate over this line, which is owned by the State of New Hampshire. Sections of the line including bridges and track were rehabilitated in 1996 using both state and private funds. According to the New Hampshire State Rail Plan 2001, the condition of the track surface on the entire Concord-Lincoln Line was "Poor to Good," the condition of the drainage, ballast, and ties was "Fair to Good," and the condition of the undergrade bridges was "Good." This segment of track is maintained to Federal Railroad Administration (FRA) Class 1 standards, with some sections meeting FRA Class 2 standards (which permits a maximum operating speed of 25 mph for freight trains and 30 mph for passenger trains.)

The Northern Line extends from central Concord northwestward to West Lebanon, a distance of approximately 60 miles. A majority of the Northern Line is owned by the State of New Hampshire. The section from Boscaawen to Lebanon is currently a multi-use path primarily for bicycling and walking, and was purchased from the Boston and Maine Corporation in 1995. Two short segments of the line are in operation: a three-mile segment in West Lebanon and a six-mile segment in Concord.

The six-mile section of the Northern Line in Concord runs from Penacook to the junction with the NHML and the Concord-Lincoln Line. This segment is owned by the Boston & Maine Corporation and operated by the New England Southern Railroad. New England Southern currently has no freight customers on the line, but it is still considered active because it has not been abandoned. This segment of track is maintained to Federal Railroad Administration (FRA) Class 1 standards. The condition of the track surface, ballast, and ties on the Northern Line in Concord is poor, with many locations overgrown with vegetation.

### **Capitol Corridor Rail and Transit Study**

The New Hampshire Capitol Corridor Rail and Transit Study is defining and evaluating opportunities to address transportation needs and preferences that involve transit and rail options in the 73-mile corridor between Boston, MA and Concord, NH

While MBTA commuter rail service currently operates between Boston and Lowell, there has not been commuter rail passenger service north of Lowell since it was discontinued in 1967. A public-private partnership, supported by the State of New Hampshire, operates roughly 50 daily bus roundtrips within the corridor between New Hampshire and Boston; this service typically carries 1,800 passengers per day.

Increasing transportation demand and growing concerns about mobility, economic development and quality of life have led the citizens and officials in New Hampshire and Massachusetts to explore options to improve transit service along the northern end of the Capitol Corridor. The NH Capitol Corridor Study is evaluating a diverse set of rail and bus options for improving connectivity in the Capitol Corridor by leveraging existing transportation infrastructure, including Pan Am Railway, Route 3, and I-93.

## **HIGHWAY CLASSIFICATION AND TRANSPORTATION FUNDING**

The Federal Functional classification system identifies roads by the type of service provided and by the role of each highway within the state system based on standards developed by the US Department of Transportation. It reflects a highway's balance between providing land access versus mobility. The State-Aid classification system is the primary basis for determining jurisdiction in New Hampshire. Both classification systems are important for determining eligibility for funding.

Recognition of the principal function that a highway, road, or street is intended to serve can reduce potential conflicts between land use activities and traffic movements. The need for direct access to residential properties causes numerous left turn and crossover movements as well as ingress/egress movements, all of which slow and/or interrupt the smooth flow of traffic, while substantially increasing the potential for accidents to both pedestrians and vehicles.

In general, roads are classified as urban or rural based on US Census data, then as arterials, collector roads or local roads, based on function. The functional classification of the region's highways, roads and streets impacts the apportionment of federal funds. Roadways that are located on a Federal-aid Highway or that are designated as being part of National Highway System (NHS) are eligible for federal funds. Roads functionally classified as local streets or rural minor collectors are not part of the Federal-aid Highway System and are not generally eligible for Surface Transportation Program (STP) or NHS

funds. The NHS includes the Interstate Highway System as well as other roads important to the region's economy, defense, and mobility. In the Central NH Region, Interstates 89 & 93 are at the focus of the regional transportation network. Other important regional corridors such as I-393, NH Route 3A, NH Route 106 and US Routes 3 & 4 are also part of the National Highway System. Projects funded through these programs are generally initiated through New Hampshire's Ten Year Plan Process.

### **The Ten Year Plan (TYP)**

The New Hampshire Ten Year Plan identifies and prioritizes the critical transportation projects in New Hampshire in an ongoing effort to address transportation needs at the local, regional and statewide levels. The TYP is updated every two years – allowing transportation priorities to be revisited, existing projects to be removed as appropriate and allowing new projects including, roads, bridges, transit, rail and aviation projects to be added.

With the previous TYP as a starting point, the Plan process includes input from individual communities, development of regional Transportation Improvement Plans (TIPs) by the Regional Planning Commissions (RPCs), numerous public hearings by the Governor's Advisory Commission on Intermodal Transportation (GACIT) and review and approval by the Governor and Legislature before it is adopted.

Performance measures and conditions such as pavement condition, bridge ratings, congestion levels, safety issues, economic impacts, user surveys and available funding levels are considered in determining project need and prioritizing project implementation.

The process to prepare the Central NH Regional Transportation Improvement Plan (TIP) begins with the CNHRPC soliciting project requests from local communities, followed by an evaluation process by the Planning Commission's Transportation Advisory Committee (TAC) where new and existing projects are prioritized.

The Regional TIP update process gives a clear indication of the different transportation needs in the Central NH Region. Just as the TYP is established as the transportation project guide for the state,

### **Senate Bill 367: Highway Funding**



On May 20<sup>th</sup> 2014, Governor Hassan signed into law Senate Bill 367 (SB 367), a bill that increased the road toll or "gas tax" by \$0.042 (4.2 cents) effective July 1, 2014. The increase will generate approximately \$32-\$33 million per year that will be dedicated to Block Grant Aid, State Aid Bridge, bond debt service payments for I-93 and Betterment funds for the states secondary roads.

The funds will be distributed approximately like this:

#### **Fiscal Year 2015 additional funds**

- \$12M for secondary road reconstruction (Betterment)
- \$13M for secondary road resurfacing (Betterment)
- \$7M for existing State Aid Bridge projects to advance

#### **Fiscal Year 2016 additional funds**

- 12% of SB 367 revenue (about \$3.8M) in Block Grant Aid (BGA) to communities as required by State law. BGA is based on prior year revenue, so that is why there is no increase in Block Grant in Year 1
- \$13M for secondary road reconstruction
- \$8M for secondary road resurfacing
- \$7M for State Aid Bridge projects

#### **Fiscal Year 2017-2035 (or when bonds are paid off)**

- 12% (about 3.8M) in Block Grant Aid to communities as required by State law
- Bond debt service payments for I-93
- \$7M for State Aid Bridge projects

CNHRPC will utilize this regional TIP to full effect to plan for current and future transportation needs in the Central NH Region.

### **NH Route 114, Sutton**

The update to CNHRPC's Transportation Improvement Program (TIP) in accordance with the State's FY2013-2022 Ten year Plan (TYP) update began with a solicitation for projects throughout the region.

Each project was given a priority rank by the Transportation Advisory Committee (TAC) based on many factors. During this evaluation, NH Route 114, the main north-south thoroughfare through Bradford and Sutton, arose as the number one priority of all projects in the region. Due to its extremely poor condition and important role in the region, it remained the number one priority in the TIP's list of projects for inclusion in the TYP.

Due to the federal functional class of NH 114 through Sutton it was noted that the rehabilitation project was not eligible for Federal Aid funds, the main source of funds for projects in the TYP. The TAC continued to support its inclusion in the TYP and representatives from Sutton attended multiple Governor's Advisory Council on Intermodal Transportation (GACIT) hearings where testimony was provided. The result of this engagement between CNHRPC's TAC, DOT and GACIT did not result in the project being included in the FY2013-2022 TYP due to the highways functional classification. The activism did however raise awareness of the project and the increasing need for State Aid funds to complete similar projects on roads in dismal condition throughout the state. DOT District 2 responded to the regional concern by moving the project up on its paving schedule completing the worst sections of the roadway over the course of several years.

## **UNDERSTANDING TRANSPORTATION: CHALLENGES AND OPPORTUNITIES**

The region is impacted by national and global issues such as the price of fuel, changes in vehicle efficiency, national priorities and funding changes which are beyond the ability of a regional transportation plan to influence. The CNHRPC works to monitor these changes and suggest policies and actions that the municipalities, DOT, and the New Hampshire Legislature can enact and undertake in response to the broader universe of transportation. This section identifies areas where communities in the region and the state can improve its transportation system. This section discusses Transportation Demand Management (TDM) and the growing concern with Single Occupancy Vehicles (SOV), the interrelationship between Transportation, Land Use and Access Management, Complete Streets, regional demographic changes, key transportation funding issues for communities in the region including Urban Compacts and Highway Block Grants.

### **TRANSPORTATION ADVISORY COMMITTEE (TAC)**

The regional transportation planning process in the Central NH Region is driven by bottom-up community participation through the Planning Commission's Transportation Advisory Committee (TAC). The TAC is an advisory committee to CNHRPC and is comprised of representatives from all twenty (20) Central NH communities. TAC representatives vary from municipal staff, such as town planners and road agents, to municipal officials, such as planning board members and selectmen. CNHRPC and DOT



work collectively to inform all members of the TAC regarding transportation at the local, regional and state level. The members act as liaisons between CNHRPC, municipal and state officials as well as the general public.

TAC Members provide input on transportation related issues and the needs of the local and regional communities in Central New Hampshire. This is done partially by assisting CNHRPC staff with the development of transportation related plans and programs. CNHRPC staff also work with the TAC to solicit and provide guidance on local projects such as Road Surface Management Systems (Page 6.4) and Road Safety Audits (Page 6.10). A well informed, well represented Transportation Advisory Committee is essential in regional coordination and the success of CNHRPC transportation planning activities.

### **SINGLE OCCUPANCY VEHICLES/TRANSPORTATION DEMAND MANAGEMENT**

The prevalence of single occupancy vehicles (SOVs) increases traffic volumes, and places a greater demand on road infrastructure as the population grows. This pattern also means that individuals without access to an automobile can encounter serious mobility problems. According to the 2006-2010 American Community Survey, 81.6% of New Hampshire residents drove alone to work and only 8.2% carpooled to work. Looking to the future, there are ways in which local communities can work to reduce vehicle miles travelled and single occupancy vehicles throughout the region. Some initiatives include sidewalks, bike lanes, public transportation, ridesharing programs, and park and ride lots. These initiatives are typically known as Transportation Demand Management (TDM).

#### **Commute Green New Hampshire**

Commute Green New Hampshire (CGNH) is a partnership between the state's regional planning commissions, specific transit agencies, and several state agencies. CGNH is dedicated to encouraging and assisting people who wish to choose transportation options in place of driving single occupancy vehicles (SOVs). CGNH seeks to actively support the development and provision of strategies and policies to reduce travel demand across the state, and the provision of consistent and seamless services in the state's various regions.

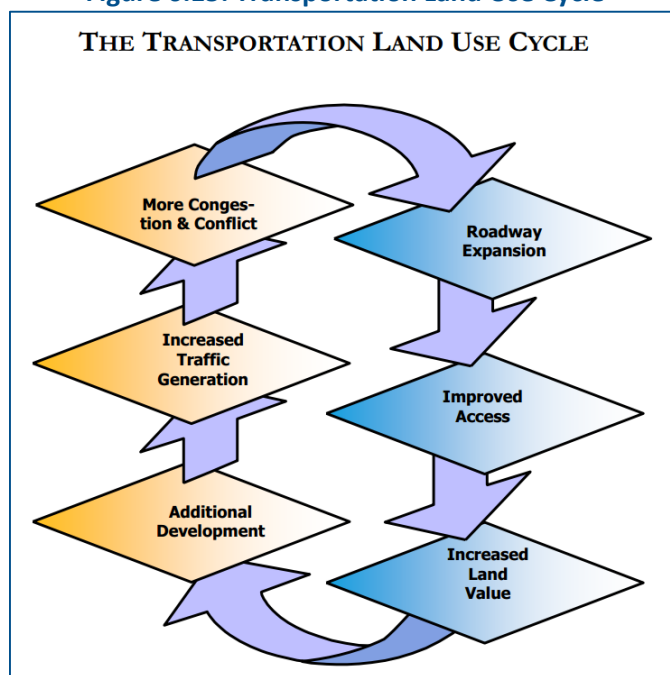
In 2013, CGNH received funding through the NH Charitable Foundation to undertake a strategic planning process. In addition to developing a model for working together to reduce the number of SOVs, priorities for the next couple of years were identified. These included assisting DOT with the management of its ride matching program and serving as a central source of information on TDM best practices and regional options. Additional TDM strategies can include vanpools, the development of bicycle related facilities such as bike storage areas, flexible work hours for larger employers and subsidizing the cost of transit fares.

More information on CGNH activities can be found at [www.commutegreenNH.org](http://www.commutegreenNH.org).

### **LAND USE AND TRANSPORTATION**

Transportation and land use are intimately linked. A transportation infrastructure project such as expansion of a highway can improve access, stimulating housing and employment growth in the communities it serves. As shown in [Figure 6.15](#), The Land Use Cycle, an increase in population or employment due to a land use change in a sparsely settled area can overwhelm the existing road system and require major investment in new or expanded infrastructure. Better coordination between land use and transportation can help communities develop while still achieving or maintaining their desired community character, and avoid unnecessary transportation costs.

Figure 6.15: Transportation Land Use Cycle



*Source: NH Office of Energy and Planning*

In the Central NH Region the introduction of heavy commercial or industrial facilities in areas with poor access to the main transportation corridors has resulted in heavy truck traffic on local roads that are not designed for the heavy loads. This has created maintenance problems and impacted residential neighborhoods. Communities must be prepared to ensure that development occurs in places that best fit the infrastructure and the community's needs.

Rapid growth and development is not one of the primary challenges facing the region at this time, but the land use and transportation connection should be kept in mind to ensure that the desired community character is achieved and maintained. If transportation and land use policies are not appropriately matched, there can be additional costs associated with expanding roads, costs of expanded utilities, traffic congestion, additional energy requirements, loss of open space, increased air pollution, and limited access for those who do not drive. A well balanced land use and transportation plan can support healthy communities and permit the types and scale of transportation modes and infrastructure that are desired.

### **ACCESS MANAGEMENT**

Access management involves planning and coordination of the location, number, spacing and design of driveways and street connections from public roadways to adjacent land. Access Management programs can facilitate safe access for all users, reduce overall vehicle trips, preserve highway capacity, reduce travel delays and congestion, encourage compact development patterns, decrease energy consumption, improve access to adjacent land uses and preserve community character. In addition to aesthetics and environmental benefits, policies that encourage safer access to homes and businesses are more desirable to residents, costumers and business owners alike.

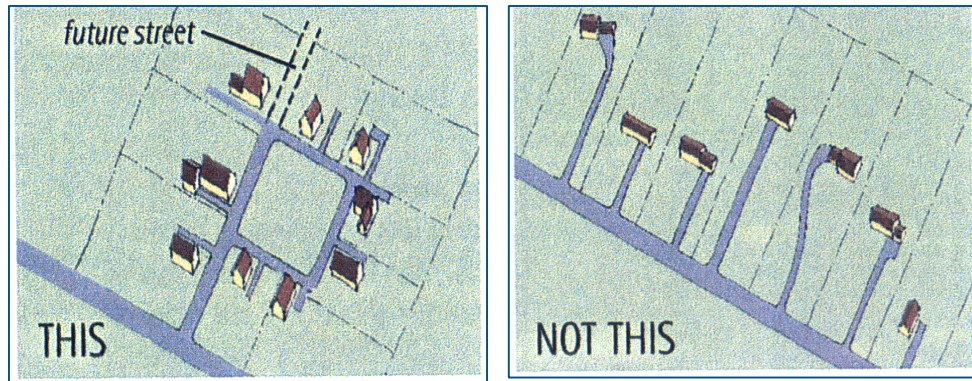
Subdivision regulations are an important step in creating a comprehensive access management strategy. Where the access management overlay district in a zoning ordinance may stipulate the minimum amount of frontage a parcel may have, the number of curb cuts a lot is entitled to, or the minimum

amount of acreage a lot must have, the subdivision regulations govern how the frontage will be arranged, where curb cuts will be located, and the configuration of new lots.

Access management principles that should be included in subdivision regulations include provisions for:

- **Shared / Common Driveways** - Shared driveways require multiple parcels to share a single access point, improving traffic flow and safety conditions on major roadways.

**Figure 6.16: Shared Driveway Subdivision**



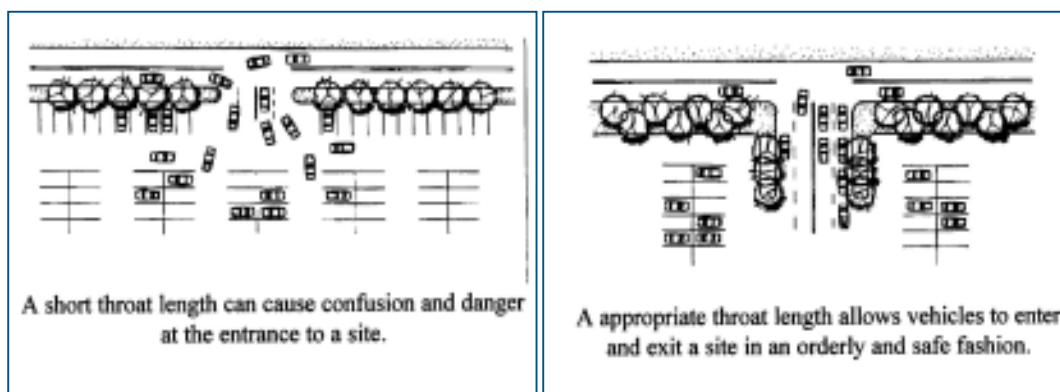
Source: *Northwest Regional Planning Commission "Access Management Guidebook" 1996*

- **Connectivity** - Planning Boards can require developers to make provisions to interconnect development to allow roadway users to travel between developments without accessing major roadways.
- **On-site Transportation Exactions** - Proposed developments should provide all warranted right-of-way, drainage, paving, widening, traffic signaling and other applicable roadway improvements to existing roadways in proportion to the impact of the proposed development.

Because access management is generally associated with large multifamily or commercial developments, the site plan review regulations, which govern development of such land uses, are a critical part of a comprehensive access management strategy.

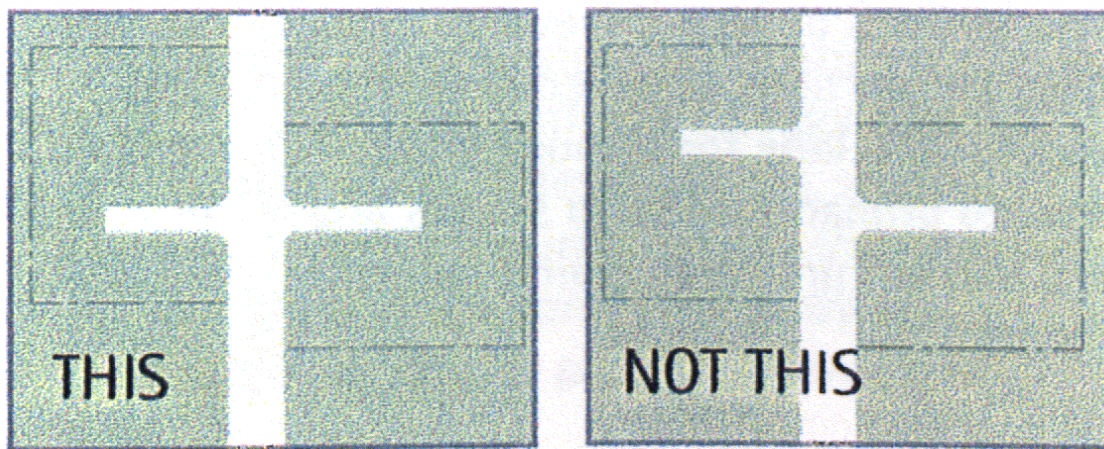
Access management principles that should be included in site plan regulations include provisions for:

- **Shared Access Points** - A simple strategy to reduce the number of driveways (curb cuts) along a roadway is to require abutting parcels to share access points.
- **Interconnecting sites** - Communities can require sites along major roads to provide rights-of-way or easements to interconnect sites thus serving to create parallel access roads
- **Parking Lot Design** - Locate parking on the sides or rear of the structure to improve the appearance of corridor. Planning board should consider environmental impacts as well as safety for pedestrians and cyclists when locating parking.
- **Driveway Throat Lengths** - It is important to define a minimum driveway throat length for commercial and large multifamily developments in order to help better define internal traffic movements

**Figure 6.17: Driveway Throat Length**

Source: *NH Route 16 Corridor Study*

- Medians and Turn Movement Restrictions - Medians and turn movement restrictions can help improve safety and reduce conflict by preventing vehicles from pulling out across multiple lanes of traffic.
- Corner Lots Access - By requiring properties located at intersections to access the road with a lower functional class, safety is enhanced and congestion and speed reductions associated with turning movements on the major roadway are reduced.
- Location and Spacing of Driveways - Communities should try to maximize safety and maintain traffic flow by using extensive spacing between curb cuts.
- Number of Curb Cuts per Lot - Communities should limit the number of driveways for parcels fronting major collector or arterial roadways.
- Sight Distance - Sight distance is crucial to ensure safe ingress and egress to properties fronting major roadways. Planning Boards should require the American Association of State Highway Transportation Officials (AASHTO) standards be applied for major driveway access.
- Driveway Alignment - Aligning driveways across from each other improves sight distance and reduces confusion. When alignment of driveways is not possible, then offset driveways at least 125 feet apart.

**Figure 6.18: Driveway Alignment**

Source: *Northwest Regional Planning Commission "Access Management Guidebook" 1996*



## COMPLETE STREETS FOR ALL ROADWAY USERS

A Complete Street is a street that is designed, maintained, and operated to accommodate all users of the roadway, including drivers, service vehicles, transit vehicles and users, bicyclists, and pedestrians of all ages and abilities. This approach is especially well suited for the region's town centers, villages, and more densely developed areas.

It has historically been common practice for roadways to be designed primarily for the efficient movement of automobiles. This sole focus on automobile mobility created various issues, including increasing auto dependence, an environment not conducive to other modes of transportation, and a deteriorated sense of livability. By considering all users, streets are safer, more accessible, better for public health, and communities more livable. The approach can be used as a catalyst for economic development and business growth, especially in town-center areas.

Taking a complete streets approach can result in any number of roadway configurations that will vary depending on the character of the roadway, the land use and any additional constraints. The complete streets concept focuses not just on individual roads but on changing the decision-making and design process so that all users are routinely considered throughout the planning, design and construction phases as well as during maintenance and operations of roadways.

**Figure 6.19: Fisherville Rd**



Source: CNHRPC

### Complete Streets, Fisherville Road (Rt. 3), Concord

Some of the key objectives of this road reconstruction project were to increase pedestrian and bicycle safety and access by updating existing and building new sidewalks while addressing safety concerns at key intersections. At the intersection with Sewalls Falls Rd. shown to the left, there is a bike lane as well as sidewalks with a crosswalk at the traffic signal. Other improvements to make Fisherville Road complete included adding bus stop pull offs along the road to accommodate transit, and five foot paved shoulders for bicycle travel. The success of this project contributed to the adoption of a city-wide complete streets policy in 2010, which helps guide the development and decision making of future transportation projects.

## DEMOGRAPHIC CHANGE

The region's residents and businesses require a high level of personal and commercial mobility. To foster a high quality of life and spur economic development, it will be critical that the region, in concert with neighboring regions and statewide activities, provide a safe and modern transportation system that can accommodate future growth in population, tourism, recreation and vehicle travel for all users. The region's population grew to 115,160 residents in 2010, a 7.4% increase since 2000. While the population in Central New Hampshire is growing, the pace is expected to be much slower in future decades. However, there are specific demographic shifts within the existing population that will have a major impact on the region.

The Central NH Region, like the rest of New Hampshire, is aging at a faster rate than other regions across the nation. The rapid growth of the senior population over age 65 will have significant implications for



the transportation system. This growth in the senior population is projected to continue in the next two decades, driven by the aging of the baby boom generation. An implication for the transportation system is that, according to the American Association of Retired Persons (AARP), an estimated 20% of Americans over age 65 do not drive, and require transportation assistance.

Measured by miles traveled, seniors over age 70 are more likely to be involved in fatal crashes than most other age groups. This trend is particularly pronounced among seniors age 85 and over. According to the U.S. Department of Transportation's Fatality Analysis Reporting System (FARS), seniors age 85 and over are more than twice as likely to die in an automobile crash as younger demographics.

Surveys of seniors at the state and national levels indicate that a vast majority prefer to stay in their homes for as long as possible (one comprehensive survey administered by the American Association of Retired People (AARP) found that 88 percent of seniors preferred to age in place). This preference, particularly in the face of the region's fast-growing senior population and the dispersed nature of settlement patterns, will challenge policymakers to adequately meet the transportation needs of seniors over time so that they may maintain their quality of life.

### **KEY REGIONAL TRANSPORTATION PLANNING AND FUNDING MATTERS**

As documented in the Regional Highways section of the TIP, the condition of a number of strategically important regional highways is of major concern. These roadways, typically falling outside of the classification for Federal Aid funding, are in extremely poor condition. Data on each of these roadways is readily available through DOT's Road Comfort Index as well as a number of Road Surface Condition Analysis completed by CNHRPC. Many communities are seriously impacted by the poor condition of the state's unnumbered state routes as well as sections of the states numbered routes such as NH 107, NH 114, NH 127, NH 132 and NH 149. Pavement conditions are extremely poor, and shoulders, in many areas, are non-existent.

#### **Bow-Concord Interstate 93 Planning Study**

The Bow Concord section of Interstate 93, from the interchange with Interstate 89 to Exit 16 off I-93, is marked by aging infrastructure and limited transportation options. The corridor is a vital link for statewide travel to the White Mountains and Lakes Region as well as an important local route within Concord and the Central NH Region. Currently the Bow-Concord I-93 Corridor neither meets the varied transportation and safety demands of interstate highway users, nor appropriately balances those demands with the interests of the Capitol Region communities.

The Bow-Concord I-93 Planning Study is a three phase study that aims to define existing problems, develop a range of alternatives for infrastructure improvements, prepare environmental documents, and design and construct the selected alternative. As part of Phase 2, CNHRPC is assisting Resource Systems Group with the development of a travel demand model using 2010 as a base year and developing transportation scenarios to compare to the "no build" alternative. This modeling effort extends beyond the I-93 corridor to cover the entire Central NH Region and will assist in the selection of the preferred alternative.

#### **Highway Block Grant Aid**

All communities in the Central NH Region are entitled to Highway Block Grant Aid funds. These funds are distributed by the State of New Hampshire on a yearly basis with partial disbursements made four times a year. The payments are made as follows: 30% in July, 30% in October, 20% in January and 20% in April with unused balances carrying over. The funds come from a portion of the total road toll and motor

vehicle registration fees collected by the State. The funds can only be used to fund or match funding for constructing, reconstructing or maintaining Class IV and V (town maintained) highways as well as equipment for maintaining local roads.

The funds are allocated from an annual apportionment of not less than twelve percent (12%) of the total highway revenues collected from the preceding year. Half of that total apportionment is distributed based on population and the other half is distributed based on Class IV and V road mileage. This comes out to approximately \$1,200 for each mile of Class IV and V highway and about \$11 for each person.

A second apportionment of funds is allocated from a sum of \$400,000. The formula for disbursement is based on the value of property and roadway miles. The formula is designed to give the greatest benefit to municipalities with low property values (on an equalized basis) and high road mileage.

To ensure each town receives the proper allotment it is crucial towns provide accurate information regarding Class IV and Class V road mileage. Highway Block Grant Aid distribution formulas do not take into consideration the condition of roads or the traffic on municipal roads.

**Table 6.7: Highway Block Grant Aid Allotments**

Town	FY12	FY13	FY14	FY15
Allenstown	\$ 98,000.50	\$ 76,842.83	\$ 77,185.42	\$ 77,754.91
Boscawen	\$ 83,939.91	\$ 73,283.93	\$ 73,364.39	\$ 73,679.73
Bow	\$ 217,036.75	\$ 185,999.03	\$ 188,115.42	\$ 189,662.50
Bradford	\$ 89,796.78	\$ 78,446.93	\$ 78,820.81	\$ 79,517.50
Canterbury	\$ 91,767.94	\$ 80,347.47	\$ 80,870.96	\$ 81,307.00
Chichester	\$ 89,634.48	\$ 77,564.18	\$ 78,285.71	\$ 78,797.71
Concord	\$ 858,256.71	\$ 750,129.30	\$ 752,607.48	\$ 757,385.02
Deering	\$ 96,117.87	\$ 81,467.77	\$ 82,117.54	\$ 82,617.75
Dunbarton	\$ 94,295.78	\$ 83,503.86	\$ 84,458.45	\$ 84,975.39
Epsom	\$ 126,514.53	\$ 108,573.97	\$ 110,728.57	\$ 111,641.17
Henniker	\$ 166,428.10	\$ 144,190.93	\$ 145,231.40	\$ 147,597.75
Hillsborough	\$ 170,730.32	\$ 149,560.75	\$ 150,437.55	\$ 150,855.11
Hopkinton	\$ 187,173.26	\$ 162,397.57	\$ 163,331.85	\$ 164,100.31
Loudon	\$ 168,604.45	\$ 146,429.16	\$ 147,183.49	\$ 148,971.39
Pembroke	\$ 166,211.58	\$ 141,835.66	\$ 142,321.65	\$ 143,173.27
Pittsfield	\$ 118,073.98	\$ 99,460.06	\$ 99,780.84	\$ 100,319.40
Salisbury	\$ 64,627.96	\$ 57,191.27	\$ 57,378.11	\$ 57,767.36
Sutton	\$ 108,648.62	\$ 94,108.97	\$ 94,595.25	\$ 95,235.94
Warner	\$ 128,259.64	\$ 110,107.73	\$ 111,038.24	\$ 111,657.54
Webster	\$ 69,330.67	\$ 61,810.52	\$ 61,463.41	\$ 61,803.74
Region Total	\$ 3,193,449.83	\$ 2,763,251.89	\$ 2,779,316.54	\$ 2,798,820.49
% Change		-15.57%	0.58%	0.70%

Source: *DOT Block Grant Aid Report*

As **Table 6.7** displays, a significant decrease in Highway Block Grant Aid has occurred in the region from Fiscal Year 2012 to Fiscal Year 2015. Although the funding dedicated to Highway Block Grant Aid will increase in the ensuing years due to Senate Bill 367 (Page 6.19).

### Urban Compact

Sections of certain roads within the City of Concord are designed as “urban compact” roads by the DOT. NH RSA 229:5 V designates twenty-seven communities within the state with which the Commissioner may establish compacts, and within the CNHRPC region, only Concord is so designated. The Urban Compact agreements usually delegate responsibilities for the highway between the community and DOT, wherein the community is often responsible for snowplowing, street sweeping, and perhaps certain ordinary maintenance and the issuance of curb cuts for new driveways.

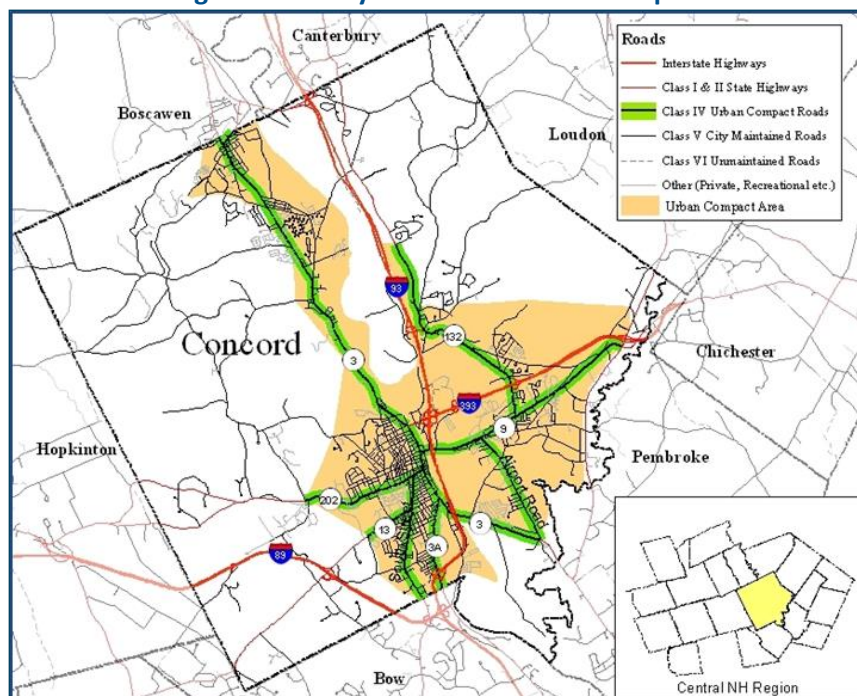
Currently, the City of Concord is responsible for maintenance of the following components of the National Highway System within the compact area:

- US Route 3
- US Route 3A
- NH Route 13
- NH Route 9
- NH Route 132
- US Route 202

Direct highway access to the NH State House, NH Office Park South and Hazen Drive are provided by the listed State and Federal Highways which are the responsibility of the City of Concord to maintain and improve. The City is also obligated to maintain access to State facilities on city streets including Storrs Street, Centre Street, Park Street, Capitol Street, Green Street, South Fruit Street, Airport Road, Pillsbury Street, Broadway and Liberty Street.

Projects within urban compacts are typically funded through the Municipal Urban Projects – Compact Areas (MUPCA) funds but may also be funded through other sources as best fits the project, such as CMAQ (Congestion Mitigation Air Quality improvement program), HSIP (Highway Safety Improvement Program) and Transportation Alternatives Program (TAP) being implemented through the Moving Ahead for Progress in the 21<sup>st</sup> Century (MAP-21) Federal Transportation legislation.

**Figure 6.20: City of Concord Urban Compact**



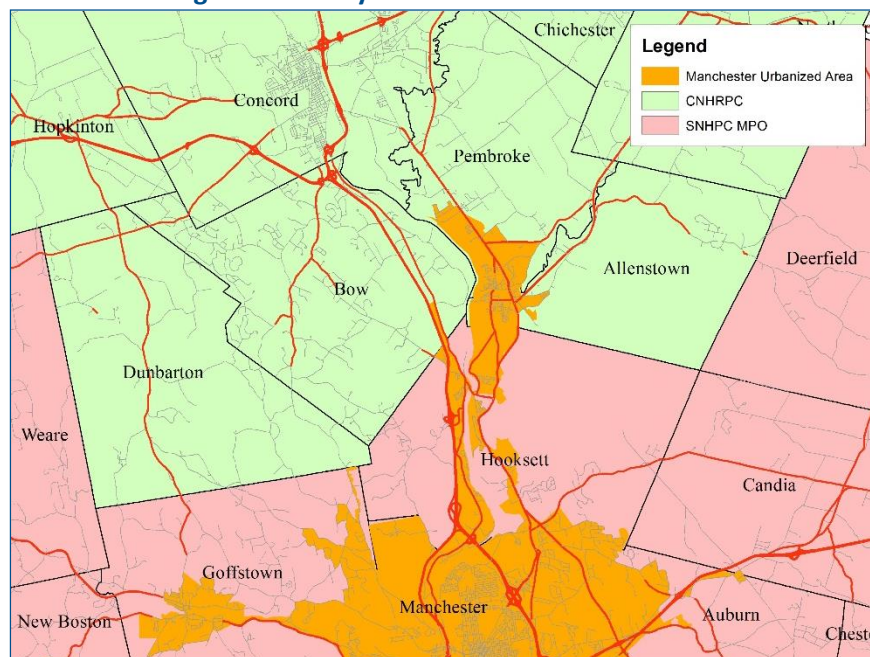
Source: *CNHRPC*

Due to their location within the urban compact, improvements to state and federal numbered routes are not eligible for Federal Aid funding through the State Ten Year Plan. When considered from a local, regional and statewide perspective these routes are a high priority and comparable efforts should be made to maintain and improve the functionality and performance of these roadways.

### **Manchester Urbanized Area**

As a result of the 2010 US Census, the Manchester Urbanized Area (UZA) boundary was extended to include areas in the town of Bow along NH 3A and into the towns of Allenstown and Pembroke along the US3/NH 28 corridor. The inclusion of these areas within the CNHRPC region has resulted in the necessity to modify the Southern NH Planning Commission Metropolitan Planning Organization (MPO) boundary to include those areas. The following provides some background on the issue and outlines the approach that will be taken to meet federal requirements that have been triggered as a result of the modified UZA boundary.

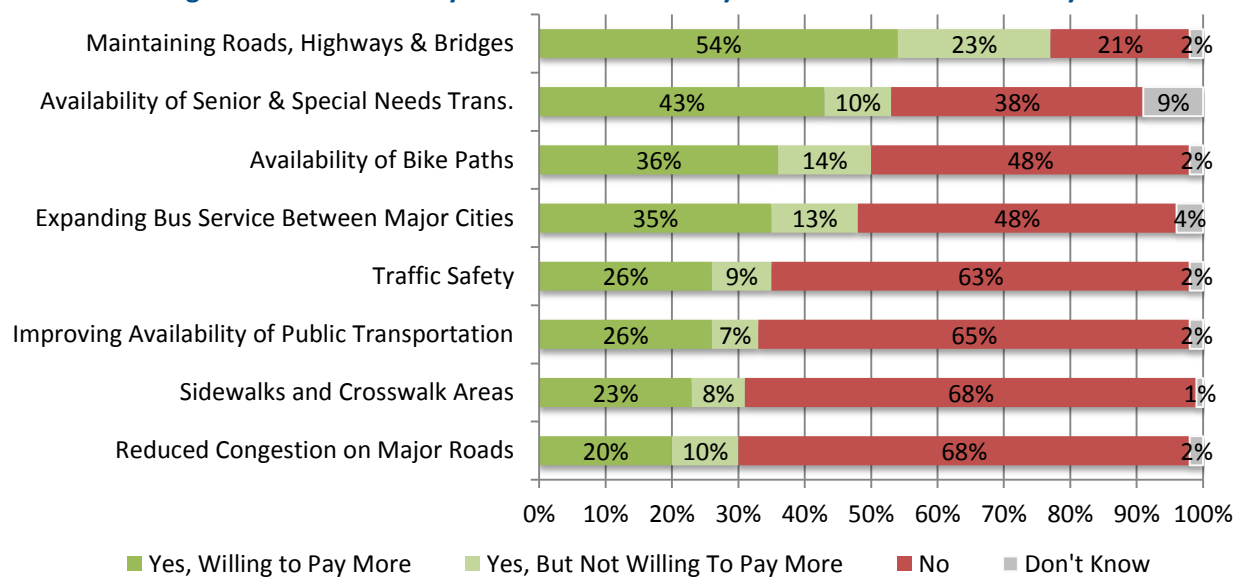
- Participation in the Metropolitan Planning Organization – The Southern New Hampshire Planning Commission (SNHPC) is the designated MPO for the Manchester Urbanized Area and the Central New Hampshire Regional Planning Commission is the Regional Planning Commission for the towns of Allenstown, Bow and Pembroke.  
  
Allenstown, Bow and Pembroke are to be designated as voting members of the SNHPC MPO in order to ensure that they are allowed every opportunity to actively participate in a 3-C (continuing, cooperative and comprehensive) planning process for the Manchester UZA. In addition, the three communities will be invited to become voting members of the SNHPC TAC in order to actively participate in the MPO planning process for the Manchester UZA. CNHRPC will continue as a non-voting member of the SNHPC TAC.
- Coordination related to Plans and Projects – Federally funded transportation improvement projects or other regionally significant projects located in those portions of the towns of Allenstown, Bow and Pembroke within the Manchester UZA will appear in both the CNHRPC and SNHPC Transportation Improvement Programs (TIP) and long-range regional transportation plans. Staff from each agency will communicate regularly, share information, and meet as needed to achieve the required level of cooperation and coordination. Particular regard to this coordination should be carried out for projects, plans and programs within or including the portions of the Manchester UZA in the towns of Allenstown, Bow and Pembroke.
- Air Quality Planning – Portions of the Southern New Hampshire area were designated as non-attainment for ground level ozone by the US Environmental Protection Agency in April of 2004. The area was re-designated as “unclassifiable/attainment” in May of 2012 taking effect in July, 2013. SNHPC currently maintains a regional travel demand model which is used for air quality planning in the SNHPC MPO area. In order to continue to utilize the SNHPC regional travel demand model for air quality planning, the model will be updated to incorporate at a minimum the towns of Allenstown, Bow and Pembroke

**Figure 6.21: City Manchester Urbanized Area**

Source: CNHRPC

## PUBLIC OPINION ON TRANSPORTATION IN THE CENTRAL NH REGION

A survey conducted by the University of New Hampshire Survey Center, published in July of 2013, surveyed a diverse group of almost 3,000 residents around the Central and Lakes Regions of New Hampshire. As seen in **Figure 6.22** more than three-fourths (77%) of respondents thought that policy makers should invest more money in maintaining roads, highways and bridges.

**Figure 6.22: UNH Survey - Where Should Policy Makers Invest More Money**

Source: UNH Survey Center



**Key Findings:**

- Households earning over \$90,000, households with children, those aged 30 to 39 and those who have completed postgraduate work are *more likely* to want investment in the availability of bike paths.
- Household with children and those aged 30 to 39 are *more likely* to want investment in sidewalks and crosswalk areas.
- Young people (18 to 29) are *less likely* to want investment in maintaining roads, highways and bridges and reducing congestion levels and improving senior and special needs transportation.
- 83% of residents support their community actively promoting safe places to walk or bike

**LOCAL MASTER PLAN PERSPECTIVE**

Each of the twenty municipalities in the Central NH Region have developed master plans with specific goals pertaining to transportation. The following transportation themes are prevalent throughout the region's master plans:

- Ensuring the community provides and maintains a transportation system that functions safely and efficiently
- To support non-motorized users through providing and maintaining safe walking and bicycling infrastructure
- To maintain and expand roads in such a way that the needs of the municipality are met yet do not detract from the character of the community
- To establish and maintain a program to review transportation infrastructure and to plan recommended improvements

**A VISION FOR THE CENTRAL NH REGION TRANSPORTATION SYSTEM**

The following vision for transportation is based on an extensive public outreach program involving the region's transportation users.

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*"A balanced, sustainable and diverse transportation system that is operated and maintained to ensure residents have safe, reliable choices for travel needs."*

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The challenges that the region faces – limited fiscal resources; changing weather patterns; the pursuit of greater economic stability and prosperity; mobility needs; an aging population and aging infrastructure; cultural and environmental resources at risk – require that transportation planning incorporate additional perspectives. Land use planning and regulation, public health, environmental protection, human service needs, and operation and maintenance approaches must be considered in the regional transportation planning process.

## GUIDING PRINCIPLES

The following goals are based on the guiding principles that build the foundation for the action items that are identified at the conclusion of this Chapter. The goals were developed with assistance from the CNHRPC Transportation Advisory Committee.

### General Regional Transportation Goals

- To assist in the development of a safe, efficient, accessible and coordinated multi-modal transportation system that provides for cost-effective movement of people and goods within and through the region.
- To contribute to the planning for a transportation system that promotes consistency between transportation improvements and state and local land-use, environmental and economic development initiatives.
- To promote long-range transportation improvements in the region while continuing to emphasize the importance of maintaining and preserving the existing transportation system.
- To assist CNHRPC member communities in identifying and providing access to available private and public sources of funding for transportation improvements while contributing to the achievement of regional transportation goals and objectives.
- To continue to explore and implement information and communication sharing technologies that help to maximize the efficiency of the transportation system.
- To encourage and facilitate public and private participation in the development of ridesharing, park and ride lots, Transportation Management Associations (TMAs) and other Transportation Demand Management (TDM) techniques.
- To continue to include stakeholders and interested parties in the transportation planning process by maintaining open and inclusive Public Involvement Procedures.
- To facilitate communication and coordination between communities both within and outside of the region regarding transportation related activities.

### Regional Highway Transportation Goals

- To contribute to the development of an accessible and efficient system of streets and highways that provide for the safe, efficient and cost-effective movement of motorized and non-motorized users throughout the region.
- To maximize the efficiency and safety of the region's roadway infrastructure by encouraging and assisting member communities to establish and enforce access management strategies and policies.
- To continue long-range highway planning on a region-wide scale to provide the framework for transportation program priorities, scheduling and funding.
- To promote a multi-modal approach to transportation planning in the region.
- To emphasize the importance of balancing the needs of local neighborhoods/communities with future development and overall transportation needs.

- To promote cooperation across town boundaries, with other regions and with the state in the development of prioritized transportation corridors.
- To assist member communities in planning for an integrated highway network by encouraging the establishment and use of consistent functional highway classification systems.

#### Regional Public Transportation Goals

- To continue to support Concord Area Transit in its efforts to provide efficient and cost effective bus services in the City of Concord and surrounding area.
- To investigate opportunities for and promote the expansion of public transportation services on a regional scale.
- To promote mobility, accessibility and quality of life for an expanding transportation dependent population by identifying sources of funding for public transportation services and assisting in the establishment of adequate sources of funding for public transit.
- To improve the coordination and efficiency of Community Transportation resources through continued participation with the Mid-State Regional Coordinating Council, neighboring Regional Coordinating Councils, and with the State Coordinating Council.
- To assist member communities in pursuing opportunities for land uses conducive to transit as well as other practices to encourage transit use.
- To support the growth of rail transportation as a viable option for the movement of people and goods in New Hampshire.

#### Regional Bike and Pedestrian Goals

- To encourage biking and walking as a viable transportation option in a region.
- To ensure that pedestrian and bicycle transportation components are properly incorporated into the design of transportation infrastructure improvements. When applicable, a complete streets approach to transportation improvements should be pursued.
- To continue to support trails committees and promote rail trails as a sustainable component to the entire transportation network.
- To support investment in, and assist member communities in pursuing funding for bike and pedestrian projects.

These guiding principles translate into the following actions items that also can be found in the Plan's Implementation Chapter.

#### ACTION ITEMS

- Continue to enhance Regional Planning Commission Transportation Advisory Committee (TAC) membership to extend beyond municipal representation and include private sector and legislative representation.
- Increase safety for all users of the transportation system at the Regional & Local levels in partnership with State & Federal Initiatives such as the Highway Safety Improvement Program (HSIP).

- Continue to support improvements to state-maintained regional highways in the CNHRPC region through existing advocacy avenues such as the CNHRPC TAC.
- To assist communities in the consideration of biking and walking components in the design of transportation infrastructure.
- To continue to evaluate the cost benefit outcomes of various rail and bus options for the Capitol Corridor.
- To assist communities in the development of corridor plans and implementation of access management practices.
- Encourage future development in the region to take place at locations where the primary road function is appropriate for the type of development proposed.
- Continue to support the Bow-Concord I-93 Improvements through assistance to the consultant team and outreach to CNHRPC member communities.
- Continue to support regional transit and volunteer driver services.
- Work with the City of Concord and DOT to explore alternative options for funding projects located within the Urban Compact.