

*Appendix*

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*State of New Hampshire's*  
**TEN YEAR TRANSPORTATION  
IMPROVEMENT PLAN APPENDIX SUPPLEMENT  
2013 – 2022**

SUBMITTED TO THE GOVERNOR,  
BY THE GOVERNOR'S ADVISORY COMMISSION ON  
INTERMODAL TRANSPORTATION (GACIT)

PURSUANT TO  
RSA 228:99 AND RSA 240 OF THE LAWS OF NEW HAMPSHIRE



PREPARED BY THE NEW HAMPSHIRE  
DEPARTMENT OF TRANSPORTATION



**June 11, 2012**

Rev 1.0

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## State Legislation

### Enabling Legislation:

CHAPTER 193

HB 1716 – FINAL VERSION

15Mar2012... 1171h

04/18/12 1613s

30May2012... 2352EBA

2012 SESSION

12-3049

06/09

HOUSE BILL *1716*

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

SPONSORS: Rep. Chandler, Carr 1; Sen. Rausch, Dist 19

COMMITTEE: Public Works and Highways

AMENDED ANALYSIS

This bill:

I. Adopts the 10-year transportation improvement plan for 2013-2022.

- II. Requires legislative approval for capital and operating budgets related to passenger rail service prior to any expenditures.
- III. Clarifies the management and disbursement of various donations for a public works employee memorial.
- IV. Provides that the commissioner of the department of transportation serve as a non-voting member of the governor's advisory commission on intermodal transportation.
- V. Deletes the Jennison Road bridge project, number 8342.
- VI. Advances the Belmont–Laconia project, number 2787 and the Concord–Loudon project, number 8341 contingent upon 100 percent financing.
- VII. Provides that New Hampshire's share of the costs of rehabilitating or reconstructing the Sarah Mildred Long Bridge be contingent upon the center lift span being of sufficient length to allow safe passage of the upcoming generation of cargo vessels.
- VIII. Deletes the Sutton-Bradford project, number 8340.
- IX. Authorizes the commissioner of transportation to acquire land and relocate certain transmission lines for the redevelopment of rest areas on I-93 in the town of Hooksett.
- X. Deletes the project Walpole-Charlestown from the Deferred Projects List.
- XI. Deletes the Salem to Manchester project of the I-93 widening project from the Deferred Projects List and adds it to the 10-year transportation improvement plan 2013-2022.
- XII. Permits the department of transportation to accept and expend federal or other funds for the I-93 exit 4A Derry/Londonderry project, number 13065.
- XIII. Makes the issuance of federal highway grant anticipation bonds contingent upon the availability of sufficient federal aid over the term of the bonds.

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.

15Mar2012... 1171h

04/18/12 1613s

30May2012... 2352EBA

12-3049

06/09

STATE OF NEW HAMPSHIRE

*In the Year of Our Lord Two Thousand Twelve*

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:*

193:1 State 10-Year Transportation Improvement Plan. The legislature hereby adopts the plan known as the “State of New Hampshire Ten Year Transportation Improvement Plan 2013-2022 Submitted by the House Public Works and Highways Committee as Part of the Legislative Process Pursuant to RSA 228:99 and RSA 240 of the Laws of New Hampshire” and encourages expeditious implementation of the projects shown therein.

193:2 Legislative Approval of Passenger Railroad Expenditures. Prior to the expenditure of any state or federal moneys by the state of New Hampshire, or its representatives, on the construction or reconstruction of any passenger railroad infrastructure, or the operation of passenger railroad service, the department of transportation and the New Hampshire rail transit authority shall first receive approval from the general court for both the capital and operating budgets related to passenger rail

service. Such legislation shall, pursuant to house and senate rules, be sent to the public works and highways and finance committees in the house of representatives and the transportation and finance committees in the senate, prior to its being acted on by the respective legislative bodies. This section shall not apply to federal money received or expended for planning purposes or studies related to passenger rail service.

193:3 Powers of Governor and Council; Public Works Employee Memorial. Amend RSA 4:9-j, II(b) to read as follows:

(b) The director of operations, subject to the direction and supervision of the commissioner of transportation, shall administer and disburse ~~to~~ **for** the committee established in RSA 4:9-j the moneys in the special account established under RSA 4:9-j. ~~[No money other than necessary expenses prior to construction shall be disbursed until the governor and council approve and award the contract for the construction of the public works employee memorial.]~~ ***The committee shall approve the expenditure of funds prior to payment by the director of operations.***

***(c) The director of operations, subject to the direction and supervision of the commissioner of transportation, may administer and disburse to the committee established in RSA 4:9-j, state owned salvaged materials, not otherwise allocated by the department, including but not limited to, granite curb granite blocks, pavement grindings, ditching material, and concrete products, to assist in the construction of the memorial.***

193:4 Committee Established; Special Account. Amend RSA 4:9-j, I and II to read as follows:

I. A committee is established to oversee the location, design, ~~and~~ construction, ***and maintenance*** of a public works employee memorial and to privately raise and expend all the funds necessary for its construction and maintenance. The governor is authorized to accept for the committee, in the name of the state, the gifts of money, which are donated to construct ***and maintain*** the memorial.

***Notwithstanding any other provision of law, except as provided by RSA 4:9-k, III, the committee may accept donated in-kind services, goods, and materials for the construction and maintenance of the memorial without governor and council approval.***

II. The gifts of money, which are donated to **contract, construct, and maintain** the memorial, shall be placed in a special nonlapsing account in the state treasury, to be expended for the purposes of the public works employee memorial. Any money remaining in the special account after construction of the memorial is completed shall be used for the care, maintenance, repair, and additions to the memorial, or for any other purpose deemed appropriate by the committee. ***Notwithstanding any other provision of law, except as provided by RSA 4:9-k, III, the committee may expend the money raised, once accepted as a gift and without the approval of governor and council, to contract for the construction and perpetual maintenance of the memorial.***

193:5 Committee Membership and Dues. Amend RSA 4:9-k, III and IV to read as follows:

III. The committee shall select the location and design for the public works employee memorial and oversee the construction and maintenance of the memorial. The award of ~~the~~ **any contract totaling greater than \$25,000** for the **design, construction, and maintenance** of the public works employee memorial shall be subject to the approval of the governor and council. The committee shall advise and inform the municipality in which the memorial is located as to the design, construction plans, and location for the memorial.

IV. The committee, through the New Hampshire public works community, shall privately raise all the money necessary for the planning, design, construction, and maintenance of the public works employee memorial. Notwithstanding [RSA 4:9-i, II(b)] **any other provision of law, except as provided in RSA 4:9-k, III**, the committee ~~[shall have the authority to]~~ **may** expend the money raised **for the purpose of the public works employee memorial** without the approval of governor and council.

193:6 Governor's Advisory Commission on Intermodal Transportation; Membership. Amend RSA 228:100 to read as follows:

228:100 Governor's Advisory Commission on Intermodal Transportation (GACIT) Established. There is established a governor's advisory commission on intermodal transportation. The members of the commission shall include the members of the executive council ~~[and]~~. The commissioner of the department of transportation **shall serve as a non-voting member of the commission.**

193:7 Jennison Road Bridge Project; Removal. The Jennison Road bridge project, number 8342, is deleted.

193:8 State 10-Year Transportation Improvement Plan; Belmont-Laconia; Concord-Loudon. The projects named Belmont-Laconia, project number 2787, and the project named Concord-Loudon, project number 8341 of the state 10-year transportation improvement plan 2011-2020 shall be advanced 2 years, contingent upon 100 percent private funding. The department of transportation may accept and expend private funds for the study, design, and construction costs associated with all or any portion of said projects.

193:9 Sarah Mildred Long Bridge. New Hampshire's share of the costs of rehabilitating or reconstructing the Sarah Mildred Long Bridge over the Piscataqua River between Portsmouth, New Hampshire and Kittery, Maine shall be contingent upon the center lift span being of sufficient length to allow safe passage of the upcoming generation of cargo vessels to assure the economic well-being of the port and the businesses utilizing this important shipping channel.

193:10 Sutton-Bradford Project; Removal and Deferral. The Sutton-Bradford project, number 8340, is deleted.

193:11 New Paragraph; Turnpike System; Authority Granted. Amend RSA 237:2 by inserting after paragraph VII the following new paragraph:

VII-a. Acquire land as required and relocate the high voltage transmission lines to support the redevelopment of existing rest areas located on Interstate 93 in the town of Hooksett to full service centers with food, state liquor stores, and other retail goods and services for the traveling public as may be required under 2009, 144:84 and SS 2010, 1:76.

193:12 Removal of Projects from Deferred Project List. The project named Walpole-Charlestown, number 14747, which consists of reconstruction from Main Street in Walpole to N.H. route 12A in Charlestown is deleted from the Deferred Projects List.

193:13 Interstate 93 Widening Project; Removal from Deferred Projects List. The project Salem to Manchester, number 14800, which consists of remaining priority improvements (13933I, 13933E,

13933H) which was included in the 10-year plan adopted under 2010, 231:1, is deleted from the Deferred Projects List and added to the Ten Year Transportation Improvement Plan 2013-2022.

193:14 Interstate 93 Widening Project; Salem to Manchester. The department of transportation may accept and expend any federal or other funds, with the approval of the governor and council, for the Interstate 93 widening project Salem to Manchester, number 10418c, 7560.

193:15 Interstate 93 Exit 4A; Derry/Londonderry. The department of transportation may accept and expend any federal or other funds, with the approval of the governor and council, for the Derry/Londonderry project, number 13065, 1816, for the construction of a new exit 4A on Interstate 93.

193:16 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 or repair of the Memorial Bridge and 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, not exceeding [~~\$195,000,000 for Interstate 93~~ ***\$445,000,000 for federally aided highway projects*** and \$45,000,000 for the replacement or repair of the Memorial Bridge and the Sarah Mildred Long Bridge. Debt service for federal highway grant anticipation bonds (Garvee bonds) for the bridges shall be paid from a portion of future federal bridge 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.

193:17 Effective Date. This act shall take effect upon its passage.

Approved: June 11, 2012

Effective Date: June 11, 2012

## **Federal Legislation**

### **Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU)**

In 2005, the United States Congress passed legislation to provide federal funding to states for the maintenance and improvement of the intermodal transportation system serving the state and the nation. The governing reauthorization bill was called the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) and continued the vision and initiatives of the previous authorizations. As the acronym suggests, this legislation had a major emphasis on safety. Additionally, the legislation was intended to provide flexibility, state and local decision-making, and improve project delivery, all in an effort to cost effectively address the nation's transportation needs. The SAFETEA-LU legislation expired in October, 2009, but with no new authorization legislation at hand, SAFETEA-LU authorization was extended several times, and now is in place until June 30, 2012.





## Public Hearing Schedule for 2013 - 2022 Ten Year Plan

**Executive Councilor**

<b><u>Executive Councilor</u></b>	<b><u>Date</u></b>	<b><u>Town/City</u></b>
District 1 – Councilor Raymond Burton	September 12	Charlestown
	September 12	Lebanon
	September 12	Haverhill
	September 12	Littleton
	September 12	Lancaster
	September 19	Wakefield
	September 19	Moultonborough
	September 19	Conway
	September 26	Laconia
	September 26	Plymouth
	September 26	Warren
	September 26	Lincoln
	September 26	Berlin
District 2 - Councilor Daniel St. Hilaire	September 15	Franklin
	September 28	Northwood
	October 03	Concord
	Co-hosted with District 5 October 06	Peterborough*
	Co-hosted with District 5 October 20	Keene*
	October 27	Rochester
District 3 - Councilor Christopher Sununu	September 22	Durham
	October 11	North Hampton
	October 13	Plaistow
	October 18	Salem
District 4 - Councilor Ray Wiczorek	September 21	Derry
	October 05	Manchester
	October 19	Bedford
District 5 - Councilor David Wheeler	September 29	Nashua
	October 06	Peterborough
	October 20	Keene

## 2013-2022 Ten Year Plan Approval Development Summary

**September – October, 2011:** 27 GACIT Public Hearings held on Draft Ten Year Plan (TYP).

**November 15, 30:** GACIT deliberations, modifications to Draft TYP.

- **Concord 12004** (Sewalls Falls Road Bridge) advanced from 2016 to 2014.
- **Walpole-Charlestown 14747** (NH 12 Reconstruction) add to Ten Year Plan in 2015 from deferred list.
- **Bedford 13953** (NH 101 widening) advanced from 2019 to 2015.
- **Jaffrey 16307** (Dog-leg reconfiguration) advanced design work to begin in 2017.
- **Dummer-Cambridge-Errol** (NH 16 reconstruction) advanced from 2021 to 2015.
- **Plaistow 10044G** (NH 125) advanced from 2018 to 2014.
- **Exeter 14090A** (bridge replacement) delay from 2014 to 2018.
- **Salem 16031** (Salem-Windham-Derry rail trail) delay from 2013 to 2018.
- **Statewide point of service transit operations for elderly and disabled** (STP Flex for 5310 funds) - add \$530K per year for all Ten Year Plan years.
- **Concord-Loudon** (NH106 improvements) add to Ten Year Plan with no funding and a note that funding would be contingent upon public/private partnerships or other financing.
- **Sutton-Bradford** (NH114 improvements) add to 2020 as a Betterment funded project.
- **Hampton River Bridge Study** added to the deferred list of the Ten Year Plan in 2013.
- **Milford, Jennison Road bridge project** added in 2013 as a State Aid Bridge project.

**December 14, 2011:** GACIT submits recommended TYP to Governor.

**January 14, 2012:** Governor submits recommended TYP to Legislature.

- **Manchester 14048:** Central Turnpike bridge over Black Brook, delay from 2014 to 2019 to coincide with Exit 6/7 study.
- Inflation to year of construction cost incorporated in project listings.

**March, 2012:** NH House passes HB 1716 (Ten Year Plan) with modifications by House Public Works Committee

- **Belmont Laconia, Concord-Loudon** (NH 106 improvements) advanced contingent on 100% private funding.
- **Sarah Mildred Long Bridge**, NH share of cost contingent upon lift span being of sufficient length for upcoming generation of cargo vessels.
- **Sutton-Bradford** (NH114 improvements), remove from TYP, address within Betterment program.
- **Salem-Manchester I-93**, remaining priority improvements, removed from the deferred projects list and added to the Ten Year Plan.
- **Salem-Manchester I-93**, unfunded capacity improvements, may accept and expend any federal or other funds.
- **Milford, Jennison Road bridge project:** Remove from TYP, address within SAB program



## Balanced Scorecard

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## Balances Scorecard

Goal	Objective	Measure	Units	2011 Actual	2012 Expected	2014 Projection	2014 Goal	2016 Projected	2016 Goal
<u>Customer Satisfaction</u>	<u>Increase Customer Satisfaction</u>	<u>Overall Customer Satisfaction</u>	percent satisfied	85%	85%	83%	100%	80%	100%
		<u>Customer Satisfied with Constituent Response</u>	percent satisfied	82%	82%	84%	100%	86%	100%
<u>Performance</u>	<u>Improve Asset Conditions</u>	<u>State Highway Pavement in Good or Fair Condition</u>	miles	2,695	2,611	2,526	2,695	2,440	2,695
		<u>Red Listed State Bridges</u>	number	149	152	161	149	174	149
		<u>Rail Lines Capable of Speeds of 40 mph</u>	miles	103	103	103	139	103	186
		<u>Airport Runway Surface Conditions</u>	average condition	good (4.0)	good (3.5)	good (3.2)	good (3.5)	good (3.1)	good (3.5)
		<u>Remaining Useful Life of Transit Buses</u>	% of vehicle life remaining	49%	49%	27%	40%	5%	40%
	<u>Increase Mobility</u>	<u>Transit Ridership</u>	# total riders	3,415,291	3,743,873	4,104,067	4,646,466	4,498,915	5,419,638
		<u>Rail Ridership</u>	# total riders	210,231	216,538	229,725	426,626	243,716	1,030,588
		<u>Air Ridership</u>	total enplanements and deplanements	2,831,673	2,831,673	2,831,673	2,917,476	2,831,673	2,976,117
		<u>Total Freight Shipped Via All Modes</u>	tons	68,667,213	68,667,213	68,667,213	69,353,885	68,667,213	71,455,377
		<u>Average Level of Service on Selected Highway Segments</u>	level of service	C (.68)	C (.68)	C (.66)	C (.65)	C (.62)	C (.60)
		<u>State Population with Access to Multimodal Transportation</u>	percent	24%	24%	24%	25%	24%	26%
	<u>Improve System Safety and Security</u>	<u>Highway Fatalities (Five Year Moving Average - Goal Towards Zero Deaths)</u>	number	122	118	110	0	102	0

## Facts and Figures

# Facts and Figures – Highway & Bridge System



## System Details

Over 28,500,000 vehicle miles of travel is estimated to occur each day over the State’s 4,559 miles of highway and 2,127 state owned bridges.

The State’s 16,125 public road miles are classified under RSA229:5 “Highway System Classification”. There are four State highway classes as shown in the table below.

Public Roads System	State Highway Systems	Legislative Class		Miles
		Primary State System	(Class I)	2,007
	Secondary State System	(Class II)	2,214	
	Recreational State Roads	(Class III)	48	
	Compact Town Roads	(Class IV)	290	
		<b>Total</b>	<b>4,559</b>	
Public Roads System	Town Roads	Town Roads	(Class V)	11,634
			<b>Total</b>	<b>16,193</b>

Note: Miles do not include the new construction of the air port access road, and of the Spaulding turnpike - exit 15.

Class IV (compact town roads) highways are part of the state system, which municipalities maintain. All the interstates and turnpikes are designated as Class I highways

The public road system includes 3,789 bridges (structures 10 feet or greater in length); 2,127 are State maintained, and 1,662 are maintained by municipalities or other agencies/owners.

System	Number of Bridges
State	2,138
Municipal	1,678
<b>Total</b>	<b>3,789</b>

## System Overview

### State’s Highways and Bridges

#### The System:

The highway and bridge network is the backbone of the transportation system moving people, goods, and services within the State of New Hampshire.

New Hampshire’s public road system consists of approximately 16,125 miles. The State highway system has 4,559 miles.

The state highway system is defined as all roads owned by the state, whether maintained by the state or maintained by other public authorities. This system included interstates, turnpikes, numbered highways, non-numbered highways, circles, and ramps.

Miles in this report are measured in system miles using Geographic Information Systems (GIS). System miles represent the centerline of each highway route system and include ramps. In instances where a turnpike and interstate run concurrent, all mileage is attributed to the turnpike. For example, the area in which the Blue Star Turnpike and I-95 are concurrent, all mileage is attributed to the Blue Star.

The Department maintains 3 highway classifications: 1) State Highway System classification, 2) National Highway System (NHS), and 3) Federal Functional Classification. These classifications are essential for determining ownership, use, funding sources, and priority.

### Condition & Performance:

#### Condition:

#### State Highways in Good/Fair Condition

Year	Miles	%	Trends
2011	2695	60%	
2016 Projected	2440	54%	↓
2016 Goal	2695	60%	→

Highway conditions are rated based on ride quality and physical condition ratings.

#### State Bridges on Red List

Year	# of	%	Trends
2011	149	7%	
2016 Projected	174	8%	↓
2016 Goal	149	8%	↓

Red List bridges are rated based on structural deficiencies and functional ratings.

#### Performance:

#### Average level Of Service (LOS) on selected highways

Year	LOS	%	Trends
2011	C (.68)	6%	
2016 Projected	C (.62)	6%	→
2016 Goal	C (.60)	6%	→

Congestion is measured is rated on a scale

A = No Congestions – F= Congestion

## Turnpike

The New Hampshire Turnpike System is part of the State's primary systems (Class I), which consists of 89 miles of limited access highway, 36 miles of which are part of the Interstate Highway System. The State's turnpike system is comprised of three limited-access highways: the Blue Star Turnpike (I-95) and the Spaulding Turnpike, which are collectively referred to as the Eastern Turnpike, and the F.E. Everett Turnpike, also known as the Central Turnpike

System	Turnpike System	System Miles
Mainline	Blue Star (I-95)	16
	F.E. Everett	40
	Spaulding	33
<b>Subtotal</b>		<b>89</b>
Other	Other	17
	<b>Subtotal</b>	<b>17</b>
<b>Total</b>		<b>106</b>

## NHS

The federal designated National Highway System (NHS) comprises 790 miles of the State's highway system including Interstates, Turnpikes and other priority highways. The NHS supports New Hampshire's mission-critical applications for public safety, emergency preparedness, and transportation as well as provides a network of highways across the country connecting population and economic centers and intermodal facilities by providing a continuous travel corridor from state to state.

NHS Mileage by Routes	
Route System	Miles
Turnpikes	89
Interstate	189
US Routes	164
State Numbered Routes	342
Other*	6
<b>Total</b>	<b>790</b>

\*Includes non-numbered state routes, local roads and traffic circles.

## Highway Safety - Number of Fatalities

Year	# of	Trends
2011	122	
2016 Projected	102	↓
2016 Goal	102	↓

*Highway safety is measured by the five year average number of fatalities that occurred on state highways system.*

## Federal Aid Roads

Functional classification is the basis for determining Federal funding eligibility. Often highways and roads with eligible classifications are referred to as Fed-Aid-Roads. Functional classification was developed in recognition that individual roads and streets do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads. Functional classification defines the nature of the logical channelization of vehicles by defining the part that any particular road or street should play in serving the flow of trips through a highway network.

Functional Classifications		
Classifications	Description	Miles
<b>Rural</b>		
01	Interstate Highways	211
02	Other Principal arterials	379
06	Minor Arterial	463
07	Major collector	1092
08	Minor collector	1007
09	Local Roads	7952
<b>Urban</b>		
11	Interstate Highways	152
12	Other Freeways & Expressways	99
14	Other Principal Arterials	247
16	Minor Arterial	497
17	Collector	503
19	Local Roads	3591
<b>TOTAL</b>		<b>16,193</b>

## System Overview

### Active Transportation

#### The System:

The New Hampshire Department of Transportation maintains over 4000 miles of paved highways and non-motorized multi-use paths that permit pedestrian and bicycle travel. The Department also encourages local municipalities to establish well-connected walking networks as well as bicycle facilities as an important component of livable communities.

Whenever amenable to local communities, the Department constructs paved shoulders that serve motor vehicles and cyclists by eliminating highway travel way conflicts. The Department constructs and rehabilitates sidewalks on new projects whenever local communities agree to perform both summer and winter maintenance on the new sidewalks and related pedestrian crossings of highways.



### System Details

#### Off-Highway System

In addition to providing on-highway pedestrian and bicycle facilities within various federal highway improvement program categories, the Department owns several corridors that provide developed multi-use transportation opportunities as shown below:

Municipality	Location	Miles
Concord I-393	East Side Drive to Portsmouth St.	1
Concord I-93	Fort Eddy Road to East Concord	1
Bow-Concord I-89	NH 3A to Bow Village	1
Concord I-89	Silk Farm Road to Stickney Hill Ave.	2
Enfield I-89	Laurie Lane to Old Route 10	1
Enfield I-89	Smith Pond Road to Eastman Hill Rd	2
	<b>Total</b>	<b>8</b>

#### Bike Paths:

The Department of Transportation constructed the 10-mile long Franconia Notch Recreation Trail within Franconia Notch State Park in 1988 as part of the Interstate 93 Franconia Notch Parkway project. The Department owns the Manchester & Lawrence rail corridor in Windham, which hosts a 4-mile paved rail trail. The Department maintains a pedestrian bridge connecting Portsmouth and the Pease Tradeport, and the General Sullivan Bridge, which gives non-motorized vehicles and pedestrians a connection between Newington and Dover Point. The state-owned Concord-Lincoln railroad corridor is host to the initial segments of the Winnepesaukee-Opechee-Winnisquam “rail with trail” in Laconia, Tilton and Northfield.

## Other Facilities

State and local jurisdictions manage a number of rail-trails for multiple uses. These include:

- Northern Rail Trail (Boscawen-Lebanon)
- Rockingham Rail Trail (Manchester-Newfields and Fremont-Derry)
- Nashua River Rail Trail (Nashua-Ayer, MA)
- Piscataquog Trailway (Manchester west side-downtown via “Hands Across the Merrimack” bridge)
- Derry Rail Trail (Windham-Derry)
- Winnepesaukee River Trail (Franklin-Northfield)
- Sugar River Rail Trail (Claremont-Newport)
- Cotton Valley (Wolfeboro) Rail Trail (Wakefield-Wolfeboro)
- Presidential Rail Trail (Jefferson-Gorham)
- Cheshire Rail Trail (Walpole-Fitzwilliam)
- Ashuelot Rail Trail (Keene-Winchester)
- Fort Hill Rail Trail (Hinsdale)
- Monadnock Rail Trail (Jaffrey-MA state line)
- Ammonoosuc Rail Trail (Littleton-Woodsville)

Off-Highway trail development has sometimes been funded through Federal Transportation Enhancement grants. The successful 2010 Transportation Enhancement grant round projects include:

<b>Town</b>	<b>Description</b>
Bristol	Pedestrian & Bicycle Improvements in Central Square
Plymouth	Pedestrian Improvements from South Main St. to Green St.
Whitefield	Pedestrian & Bicycle Improvements in downtown area
Goffstown	Rail Trail 4 project: improvement sites along rail corridor
Bennington	Pedestrian Improvements, sidewalks in village area
Salem	Rail Trail improvements in Derry, Windham, and Salem
Bradford	Bicycle & Pedestrian Improvements phase 1
Manchester	Trestle Rehab and approx 1,400 ft. of Rail Trail Improvements
Winchester	Approx 4,000 ft. of sidewalks and a Pedestrian Bridge
Exeter	Historic restoration of 1890 railroad baggage building
Northfield	Rail Trail Phase 2A: trail & bridge over Winnepesaukee River
New London	Bicycle & Pedestrian Improvements in Elkins Village
Nashua	Rail Trail improvements from Main St. to Quincy St.
Lebanon	Bicycle & Pedestrian improvements along NH 120
Somersworth	Pedestrian Improvements, sidewalks along Market St.
Dublin	Bicycle & Pedestrian Improvements to complete phase 1 concept plan
Newmarket	Pedestrian Improvements, bridge over NH 108

## Facts and Figures – Transit System



### System Overview

Transit offers a  
Transportation Choice

#### The System:

New Hampshire's public transit system provides many benefits to New Hampshire residents and visitors, including mobility for those who cannot or choose not to drive, and a transportation choice that can save money, relieve traffic congestion and reduce emissions from motor vehicles. In New Hampshire, eleven public transit systems provide local bus service to the public. These include two city-run systems in Manchester and Nashua, a system operated by the University of New Hampshire, the regional COAST system in the Seacoast and CART in the Derry-Salem region, and local bus systems operated by private, nonprofit organizations in Concord, the Upper Valley, Laconia, Berlin, Keene, and Claremont. Local bus service provides access to jobs, medical care, shopping or other services.

### System Details

#### Transit Systems

New Hampshire's rural transit providers serve areas with populations less than 50,000, and small urban transit providers serve areas with populations between 50,000-200,000. New Hampshire's rural transit systems are Advance Transit, City Express of Keene, Community Alliance Transportation Services, Concord Area Transit, North Country Transit, and Winnepesaukee Transit. New Hampshire's small urban transit systems are CART, COAST, Manchester Transit Authority, Nashua Transit System, and UNH Wildcat Transit.

<b>Public Transit Systems</b>	<b># Systems</b>	<b># Buses</b>
Rural Public Transit (FTA Section 5311)	6	82
Small Urban Transit (FTA Section 5307)	5	100
<b>Total</b>	<b>11</b>	<b>182</b>

New Hampshire's public transit system also includes support for intercity and commuter bus services in the form of state-owned coaches, park & ride lots, bus terminals, and funding to support new or expanded services.

<b>State Owned Bus Services</b>	<b># Coaches</b>
Intercity / Commuter Bus Service	34

Intercity bus services provide a lifeline for rural areas and an alternative to congested highways for Boston-bound commuters. The state has developed a partnership with private bus companies to support an extensive system of commuter and intercity bus services, using state-owned coaches and facilities, connecting New Hampshire and the Boston area. This intercity/commuter network includes seven state-owned bus terminals.

Most financial support for public transportation in New Hampshire comes from the Federal Transit Administration (FTA), which apportions funds by formula to states and urbanized areas within the states. Funding levels for FTA funds are determined in authorizing legislation and annual appropriations bills for USDOT. NH public transit receives approximately \$11.5 million a year of FTA formula funds. Required matching funds for those federal funds come primarily from local sources.

### **Condition & Performance:**

#### **Performance**

##### **Ridership**

Year	Riders	Trends
2011	3,415,291	
2016 Projected	4,498,915	↑
2016 Goal	5,419,638	↑

### **Park & Ride System**

New Hampshire has 26 state-owned park & ride lots located throughout the state, which provide intermodal connections to encourage shared-ride transportation. Seven lots, in Concord, Dover, Londonderry, Nashua, North Londonderry, Portsmouth, and Salem, have full-service bus terminals.

<b>Park &amp; Ride Lots</b>	<b># Lots</b>	<b># Spaces</b>
Park & Ride lots (no Bus Terminal)	19	1,520
Park & Ride lots with Bus Terminals	7	3,735
<b>Total</b>	<b>26</b>	<b>5,255</b>

### **Human Services**

More than 100 human services agencies provide transportation around the state to support services for seniors, persons with disabilities and others in need. The Department of Transportation supports these agencies with grants to purchase vehicles and support their services. The Department also supports better coordination of human services transportation services to improve the efficiency and effectiveness of these services.

# Facts and Figures – Railroad System



## System Overview

**Railroads: Provides Efficient Movement of Goods**

### The System:

New Hampshire’s railroad system includes regional and short line railroads. Railroads provide intermodal movement of goods by containers, or trailers, and transport of bulk commodities like coal, cement, lumber, sand, and gravel to New Hampshire businesses.

Private railroad lines include Pan Am Railways’ Main Line West, from Massachusetts to Maine, and New Hampshire Main Line to Concord; the St. Lawrence & Atlantic, through Berlin and Groveton; the New England Central in the Connecticut Valley; and the New Hampshire Northcoast, from Ossipee to Rollinsford. Other short line freight and tourist excursion railroads operate under contract on state-owned lines. Carriers range from small intrastate railroads to those hauling three million gross tons. New Hampshire has 443 miles of active railroad lines. The state is the largest owner with 202 miles of corridor purchased to preserve rail service to industry or to maintain connections to the national railroad system. Six freight railroads and two tourist excursion railroads own the balance of the state’s railroad mileage.

## System Details

### Active Rails

New Hampshire has 443 miles of active railroad lines. The state is the largest owner with 202 miles of corridor. New Hampshire owns over 300 miles of abandoned rail corridors preserved for future transportation use. Some have been converted to bike paths/multi-use paths

Active Railroads:	Miles
Privately Owned Railroad	248
State Owned Railroad	195
<b>Total</b>	<b>443</b>

Railroad Operators	# Of Operators
Private Railroads	7
State-Owned Railroad	6
<b>Total</b>	<b>13</b>

There are 9 connections that link New Hampshire’s railroads to the North American rail system transporting 4,700,000 tons (reported in 2009) of freight in or through the New Hampshire.



New Hampshire's rail system includes Amtrak passenger service on two routes: the Vermonter, operating daily between Washington, DC and St. Albans, Vermont, and the Downeaster, operating between Boston and Portland offering five daily round trips stopping in Exeter, Durham, and Dover. The State of Vermont supports the Vermonter and the State of Maine supports the Downeaster through its Northern New England Passenger Rail Authority. New Hampshire owns over 300 miles of abandoned rail corridors preserved for future transportation use. Some have been converted to bike paths/multi-use paths, while other miles are used for snowmobiling and other recreational purposes.

### Condition & Performance:

#### Performance:

#### Rail Line Capable of Speeds of 40 mph

Year	Miles	%	Trends
2011	103	23%	
2016 Projected	103	23%	→
2016 Goal	186	42%	↑

#### Ridership

Year	Passengers	Trends
2011	210,231	
2016 Projected	243,716	↑
2016 Goal	1,030,588	↑

### Railroad Passengers

Railroad Systems	Miles
NH Amtrak passengers 2010	204,108
Tourist Excursion passengers 2010	112,511
<b>Total</b>	<b>316,619</b>



## System Overview

### Airports- An Economic Engine

#### The System:

The public-use airport system of New Hampshire provides a safe and convenient air transportation link for the efficient connection of people, cargo, and services within New Hampshire as well as to the nation and the world. Besides the use of commercial aircraft for passengers and cargo, the New Hampshire Airport System facilitates access to rural areas of New Hampshire for safety, security, military and recreational purposes. An airport, regardless of its size, plays a critical role in supporting the network of airports within and outside New Hampshire. Many of the smaller airports relieve the larger airports from traffic from small aircraft. The loss of any airport will have a negative ripple effect on the ability to meet the capacity needs of the airport system.

## System Details

### Airports

There are 24 public use airports in the New Hampshire Airport System of which two are state owned, 13 are municipally owned, and nine are privately owned and operated. In addition to the 24 open to the public airports, the Department provides operational support for an ice runway on Alton Bay for approximately six weeks in the winter. The Department registers an additional 120 airports annually, which are privately owned, private use airports.

Airport Ownership	# Airports
State	2
Municipal	13
Private	9
<b>Total</b>	<b>24</b>

Within the New Hampshire Airport System there are 22 paved runways, and seven turf/gravel runways. Five airports have two runways. The New Hampshire Airport System also includes additional airport infrastructure such as taxiways, aircraft parking aprons, terminal facilities, and aviation navigational facilities.

Runway Types	# Of Runways
Paved	22
Unpaved	7
<b>Total</b>	<b>29</b>

The state owns, maintains and operates five aviation navigation facilities that provide critical navigational guidance for aircraft flying into the state. These navigational aids are located at Lebanon Municipal Airport, Mount Washington Regional Airport, Claremont Municipal Airport, and Skyhaven Airport (Rochester).

There are 12 public-use airports in New Hampshire that are in the National Plan of Integrated Airport Systems. The Federal Aviation Administration (FAA) has determined these airports to be of significant importance to national air transportation and thus eligible to receive federal grants for airport planning and development projects under the FAA's Airport Improvement Program.

### Condition & Performance:

#### Performance:

#### Airport Runway Surface Condition

Year	Condition	Trends
2011	Good	
2016 Projected	Good	→
2016 Goal	Good	→

Runway surface condition are rated good, fair or poor

#### Air Ridership

Year	Passengers	Trends
2011	2,831,673	
2016 Projected	2,831,673	↓
2016 Goal	2,976,117	↓

Air Ridership is based on total emplanements and deplanements. An emplanement is a passenger boarding an aircraft and a deplanement is a passenger disembarking an aircraft.





## **Performance Measures**

### **Improve Asset Conditions**

#### **Performance Measures Increase Mobility**

#### **Performance Measures Safety & Security**

### **Customer Satisfaction**



## Improve Asset Conditions

### State Highway Pavement in Good or Fair Condition

#### **Purpose:**

The Ride Comfort Index (RCI) has been used by the Department since 1995 to measure, report, and monitor the pavement condition of the 4,559 miles of state-maintained roadways. The RCI is a measure of the roughness of a roadway and is reported on a scale from 0 to 5, with 5 representing the smoothest roads. The RCI is calculated from the International Roughness Index (IRI), a numerical value that is measured by the Department's data collection vehicle, and provides a representation of what motorists feel as they drive down the road. The vehicle also collects other pavement condition data such as wheel path rutting and cracking which when combined with the roughness data is used to support the Department's software driven Pavement Management System. The Pavement Management System is an asset management tool that is used to forecast future pavement conditions, set performance goals, and develop funding levels to achieve those goals.

#### **Data:**

Limits have been established to categorize pavements into "Good", "Fair", and "Poor" condition levels with a RCI greater than 3.5 defining "Good", between 3.5 and 2.5 defining "Fair", and less than 2.5 defining "Poor". Statewide pavement condition maps are based on RCI and these threshold values are published biennially in the State's Ten Year Transportation Improvement Plan.

## Improvement Status

The "NH Pavement Condition" graph shows pavement condition for 1996 through 2016. The data for 1996 through 2010 is based on measured roughness data and shows that the mileage of roadways in good or fair condition reached an all time high of 3,064 miles in 2000 and has steadily declined reaching an all time low of 2,653 in 2008. The American Recovery and Reinvestment Act (ARRA) was utilized in 2009 and 2010 to boost funding for resurfacing and was able to stop the downward trend and stabilize the good/fair mileage at 2,695. The data for 2011 through 2016 represents the good/fair mileage as forecasted by the Pavement Management System and is predicted to decline by an additional 255 miles over this time period. This would represent a total decline of approximately 620 miles (approximately 14% of the total network) from the peak in 2000 to 2016. Pavement condition and forecasting condition is driven by interrelated factors: aging due to climate, deterioration and distress due to loading (traffic), construction/materials costs, miles resurfaced, and available funding.

The "Average Price of Asphalt Cement" graph illustrates the increased price of this key ingredient in hot mix asphalt (HMA) from 1992 to 2011. Since the last NH gas tax increase in 1991, the average price of asphalt cement (AC) has risen steadily from \$110 per ton in 1992 to \$590 per ton in 2011 (a 425% increase) with the majority of the increase (\$250 to \$590) occurring between 2005 and 2011. The price of AC has also been somewhat unpredictable and unstable over this same time period, reaching an all time high of \$600 per ton in 2008. The NH gas tax is set at 19.6 cents per gallon, the lowest of all the New England states.

The Department's goal is to resurface 500 miles of roadways per year that equates to resurfacing roadways once approximately every 10 years. As illustrated on the "NH Miles of Road Resurfaced" graph, the Department was consistently meeting, exceeding or coming close to this goal from 1992 to 2004. Given the marked cost increase in AC, resurfacing mileage steadily decreased from 2005 until reaching an all time low of 290 miles in 2008. The ARRA funding was utilized to increase resurfacing from 250 to 706 miles in 2009 and from 294 to 496 miles in 2010 effectively holding the good/fair mileage constant over this time period.

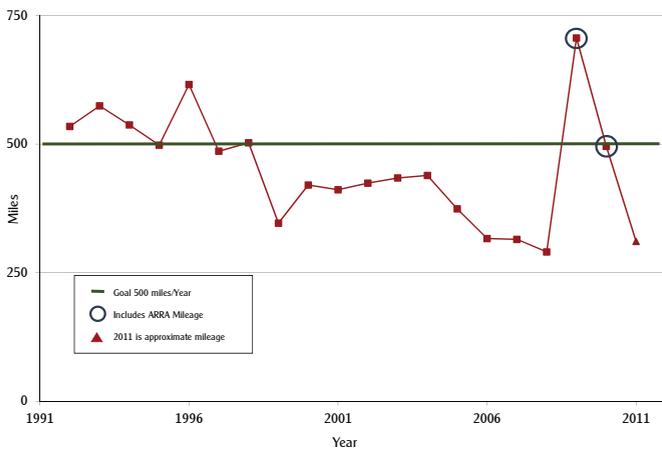
## The Future:

With the current funding levels, resurfacing mileage, and unpredictable cost of AC, it will not be possible to maintain the good/fair mileage at the current level. Based on the Pavement Management System, funding will need to be increased from \$57M to \$69M per year in order to maintain the current mileage of roadways in good/fair condition. If funding levels are not increased from the \$57M, a downward trend is expected as depicted in the “NH Pavement Condition” graph. If the roadway network continues to deteriorate, the cost of restoring roadways back to good condition increases exponentially. For example, periodic resurfacing of a roadway with a thin HMA overlay costs approximately \$40,000 per mile as compared to full depth reclamation and repaving with all new HMA at a cost of approximately \$400,000 per mile.

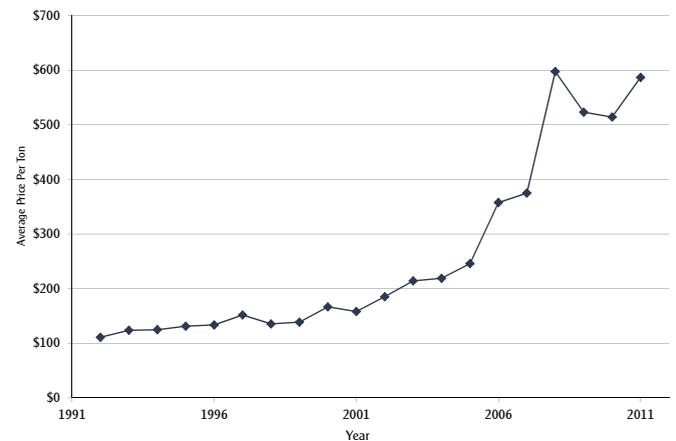
The Department’s roadway maintenance strategy is to focus resurfacing activities on higher volume roadways thus keeping them from deteriorating to poor condition. Less traveled roadways that are already in fair to poor condition will receive patching and HMA spot leveling treatments applied by Department forces in an effort to keep the roadway passable. Newer technologies and maintenance techniques that focus on pavement preservation will also be used to help counter network deterioration by increasing pavement service life while reducing life cycle costs.

While employing newer technologies and pavement preservation techniques will be effective in reducing the overall cost of maintaining pavements, there is a need to develop a permanent sustainable means to hold the existing condition level constant and prevent further deterioration of the network.

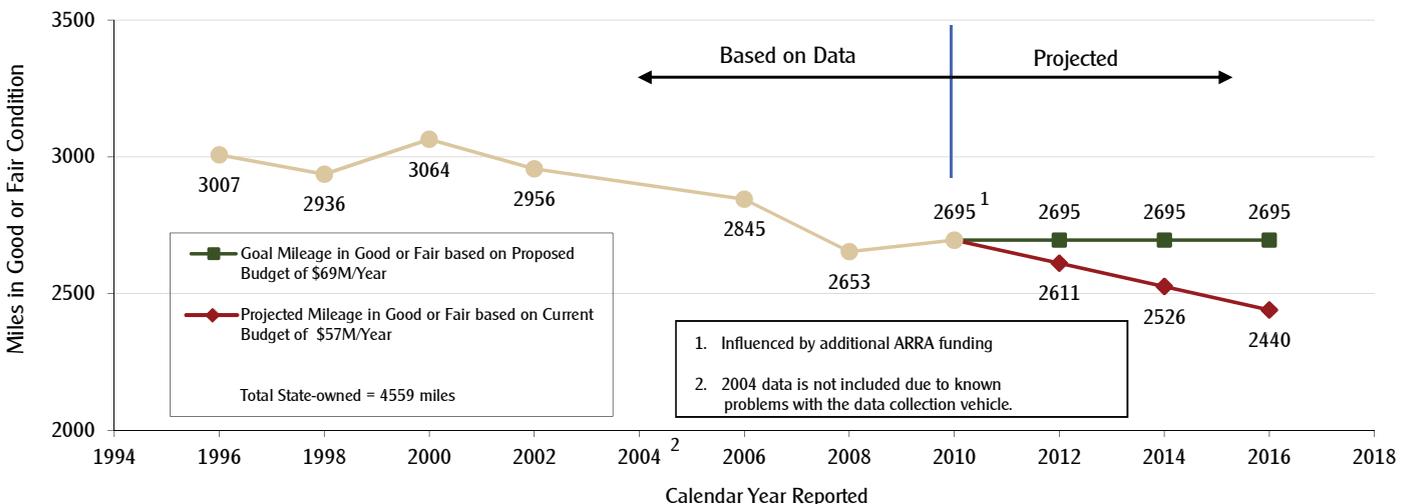
### NH Miles of Road Resurfaced 1992-2011



### Average Price of Asphalt Cement 1992-2011



### New Hampshire Pavement Condition 1996-2016





## Improvement Status

Since 2003, the Department has used a Bridge Priority List to prioritize work on the State's worst bridges. By doing this, the Department is better able to anticipate required bridgework and to focus on our commitment to reduce the number of Red List bridges. Currently there are 79 of these bridges in the 10-year plan (TYP) with an expected cost of \$684,390,000. Additionally there are 16 other bridges that need to be added to the TYP at \$31,250,000 for a total of \$715,640,000 or \$71,564,000 annually. Currently the Department expends approximately \$35,000,000 annually towards our bridge capital program.

In 2006 the Bureaus of Bridge Design and Bridge Maintenance estimated the annual bridge preservation needs of the Department at \$15M to 17.5M. This number has now increased to \$17M to 21M. The Department currently dedicates \$8M a year towards bridge preservation activities.

In addition to the capital program the Department's Bureau of Bridge Maintenance also has a big impact on both removing bridges from the Red List and preserving existing bridges to prevent them from being added to the list. In FY10 and FY11 Bridge Maintenance crews removed 30 bridges from the Red List (15 each year). In the current biennium the appropriation for Bridge Maintenance was reduced by 9% from \$8.9M to \$8.1M annually. As a result of these reductions, it is anticipated that 14 fewer bridges will be removed from the Red List by maintenance forces in FY12 and FY13.

Due to the current anticipated funding shortfalls, we expect that the number of bridges added to the Red List will remain stable, adding about 20 bridges per year and increasing slightly over time. Additionally, if all factors remain the same, we anticipate that the number of bridges removed from the list will remain the same at about 18 a year in the future. This difference will lead to an increased number of bridges placed on the Red List as time goes forward as shown on the chart.

More than 65% of the state's bridges are more than 40 years old, many of which were designed with a service life of 50 years and with lighter design vehicle standards. This statistic combined with current funding levels will

## Improve Asset Conditions

### Red Listed State Bridges

#### **Purpose:**

The Federal Highway Administration (FHWA) requires all states to report the condition of federal definition bridges within their state on an annual basis. The FHWA defines a bridge as a structure with a span greater than 20'. The state of New Hampshire further defines a bridge as a structure with a span of 10' or greater. In accordance with the National Bridge Inspection Standards (NBIS), the condition of the major structural elements of a bridge are rated on a scale of 0 to 9, with 9 representing excellent condition, 4 representing poor condition, and 0 representing failed or closed. In general, a bridge is considered to be **structurally deficient** when any of its major structural elements (deck, superstructure, substructure, or culvert) is rated as **4 (poor condition)** or lower.

The Department has established a bridge Red List that includes all federal and NH definition bridges with one or more major structural elements in poor condition or worse. The Red List also includes bridges that require weight limit postings. Currently there are 2,138 state owned bridges and 148 (6.9%) are on the Red List. The number of bridges on the Red List is a good indication as to how the Department is doing at addressing its bridges that are in the poorest condition.

#### **Data:**

The table below is a snapshot of the overall number and condition of all highway bridges in New Hampshire, including municipally owned bridges. The bridges that are on the Near Red List (also known

as the "Pink List") have one or more major structural elements rated as 5 (fair condition). In other words, there are 256 bridges that are just one step away from being placed on the Red List. This group of near red list bridges is 173% larger than those on the Red List and could greatly affect the list in the future.

### **NHDOT Bridges, 10' and greater**

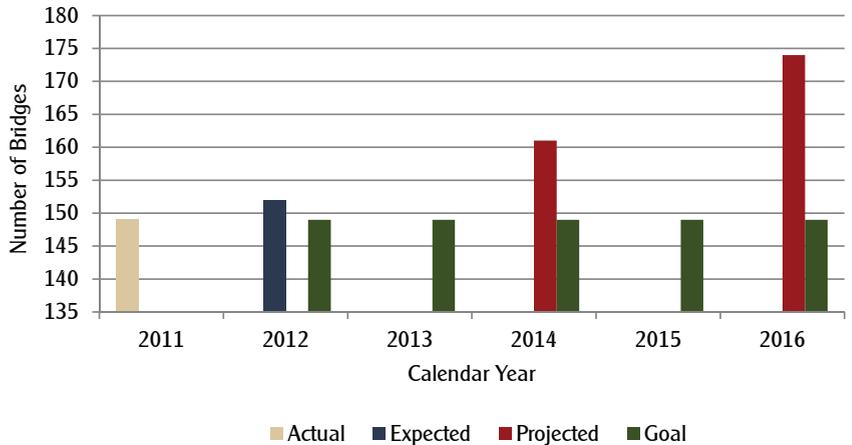
	State	Municipal and other	Total
Total	2138	1678	3816
Red List	148	359	507
Near Red List	256	292	548
Green List	1694	975	2669
Closed	40	52	92

The Department's Bureau of Bridge Design inspects all public highway bridges at least once every two years. State owned Red List bridges are inspected twice per year, and municipally owned Red List bridges are inspected once a year. FHWA requires NHDOT to submit our National Bridge Inventory (NBI) data to them annually, by April 1st each year. Based on the allotted 90-day reporting window for inspection review and processing, annual NBI data collected through December 31st 2010 is reported to FHWA on April 1st 2011. In an effort to maintain consistency with our FHWA NBI submission, the Department also summarizes its Red List data at the same time.

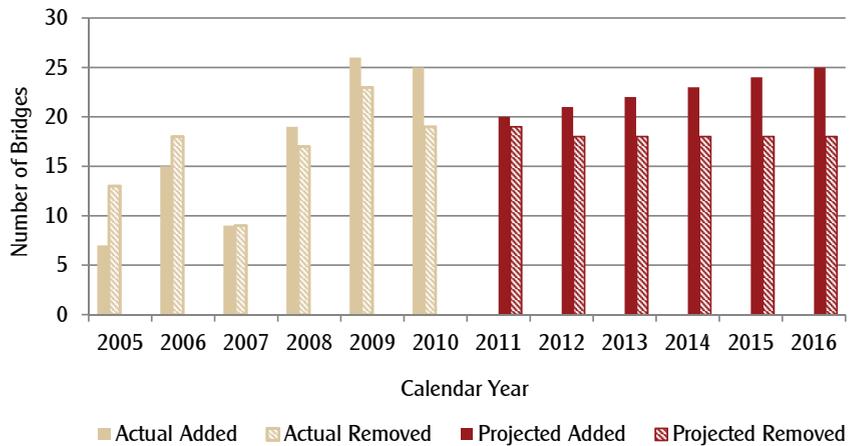
make it challenging to reduce the number of bridges on the Red List going forward.

The Department's current strategy is to continue to focus on rehabilitating and/or replacing Red List bridges and to efficiently preserve the remaining non-Red List bridges.

### New Hampshire Red List Bridges



### Bridges Added and Removed from Red List





## Improvement Status

In recent years, improvements in the condition of railroad lines have been attributable to upgrades in track funded by a variety of sources. For example, prior to initiation of the Downeaster Amtrak service in 2001, the Freight Main Line owned and operated by Guilford Rail System (now Pan Am Railways) was upgraded with new ties, ballast and continuous welded rail funded by the FRA. This line, with 35 miles in New Hampshire, has been primarily maintained at Class 3 since that time. The New England Central's Connecticut River line has been recently upgraded to Class 3 in part with a grant from the FRA, to allow the Amtrak Vermonter to travel at higher speeds and improve the performance of the line for freight as well. Portions of two other lines, the St. Lawrence & Atlantic and the New Hampshire Northcoast, have been upgraded to Class 3 with railroad funds and state and federal loan and grant funds.

It is not possible to anticipate future funding opportunities to complete upgrades of these and other rail lines. However, the Department has been working with the railroads to seek funding for certain upgrades, and the goals for 2014 and 2016 reflect the desire to complete these projects. Specifically, the St. Lawrence & Atlantic is aggressively seeking to upgrade its line in the North Country, in order to serve its customers in Maine, New Hampshire and Vermont with a line that has full clearance for double-stack containers and heavier weight limits now prevalent in the railroad industry. Completing the upgrade to this line is included as a goal for 2014. For 2016, it is a goal to upgrade the New Hampshire Northcoast line from Rollinsford to Ossipee, which handles heavy sand and gravel cars. Another goal is to complete an upgrade of Pan Am's New Hampshire Main Line through Nashua and Manchester. This would facilitate development of passenger service on the line as well as improve the railroad's ability to serve freight customers.

The graph below provides estimates of the miles of track maintained at Class 3 or above, reflecting changes if funding is available to complete improvements on the lines described above.

## Improve Asset Conditions

### Rail Lines Capable of Speeds of 40 mph

#### **Purpose:**

The approximately 450 miles of active railroad in New Hampshire are classified as to condition according to a system established by the Federal Railroad Administration (FRA). Track may be subject to slow orders due to local or temporary conditions, but in general, class of track is a measure that provides an indication of the general condition of railroad track infrastructure. FRA Class 3 track allows operation of freight rail at up to 40 mph and passenger rail at up to 60 mph. Track at this classification would provide satisfactory performance of both freight and passenger operations in nearly all cases. Establishing goals for the total miles of active track at Class 3 would provide an effective measure of overall condition of the railroads in the state, recognizing that track is maintained and repaired by private railroad companies primarily with private capital.

The New Hampshire Department of Transportation (NH DOT) and a consultant team are currently updating the state's rail plan, which will include an inventory of the state's railroads and their condition. The plan is also expected to provide goals for this measure in future years.

#### **Data:**

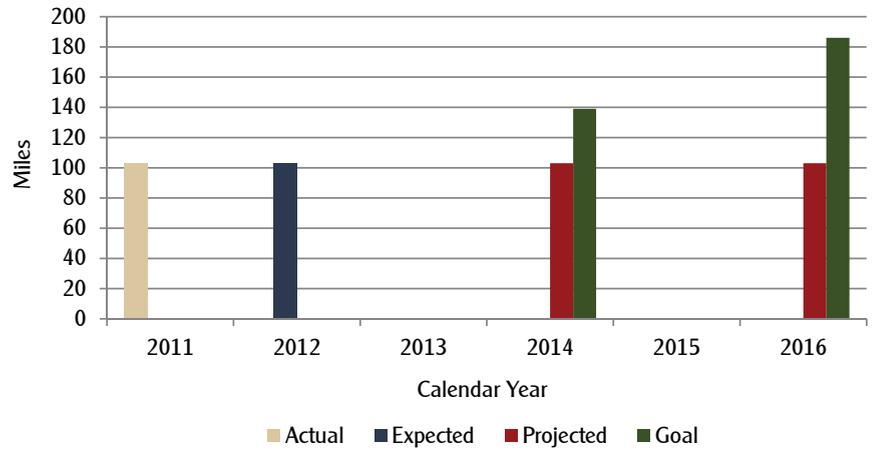
As noted above, railroads are responsible for the classification of track according to standards established by the FRA. The classifications are based on standards that define the level of maintenance needed for safe operation, and determine the

allowable speeds for freight and passenger trains according to the following table (mph):

Class	Freight	Passenger
1	10	15
2	25	30
3	40	60
4	60	80
5	80	90
6	110	110
7	125	125
8	160	160
9	200	200

The class of track is determined by the condition of rail, ties, stone ballast and other components, inspected and rated against quantitative measures published in FRA rules at 49 CFR Part 213.

### Class 3 Track Conditions





## Improvement Status

There are a total of 12 airports in the State that are in the National Plan of Integrated Airport Systems (NPIAS) which makes them eligible for Federal Aviation Administration (FAA) Airport Improvement Program grants. These FAA grants are utilized to effect improvements to the airports' facilities including runways. The remaining 12 airports utilize limited state, municipal or private funds to maintain and improve their facilities. Within the past 5 years, there have been 14 runways that have received runway surface improvements as a result of runway maintenance or rehabilitation projects. Of these, only 3 were at non-NPIAS airports. This clearly illustrates the scarcity of state, local and private funds for airport improvement projects. In fact, the current weighted overall average of the runway surface condition for the non-NPIAS airports falls well below the overall goal of "good" condition, with one runway rated in "poor" condition.

The Department works closely with each airport to develop a comprehensive 10-year Capital Improvement Plan. If an airport's runway condition warrants, its runway reconstruction or rehabilitation project is programmed into this plan. However, with the reduction in state and local funding and the uncertainty of future federal funding, it will be challenging to continue to improve upon the current overall runway surface condition of the state's public-use airports, especially for the non-NPIAS airports that are not eligible for federal funds. Based on this assumption, within the next 5 years, it is expected that the overall runway pavement condition for the state's public-use airports will fall from the current 3.99 overall weighted average condition of just above "four" condition. Individually, an additional 2 to 3 runways are anticipated to deteriorate to a "poor" condition.

The Department's current strategy for improving the runway surface conditions of the NPIAS airports in New Hampshire is to aggressively pursue federal funding for runway improvement projects. The strategy for improving the runway surface conditions of the non-NPIAS airports in New Hampshire is to continue to seek or establish additional or alternative sources of funding at the state, local and private levels, such as the creation

## Improve Asset Conditions

### Airport Runway Surface Conditions

#### **Purpose:**

The conditions of the runway surfaces at New Hampshire's public-use airports are currently measured in accordance with the established surface evaluation and rating standards of the Federal Aviation Administration (FAA) for pavement surfaces and in accordance with established FAA airport inspection guidelines for turf and gravel surfaces. A runway surface condition is rated as "Failed, Poor, Fair, Good or Excellent" with a corresponding numerical value from 1 to 5, with 5 representing a condition of "Excellent." The condition of an airport's runway surface is directly related to aircraft operational safety. Therefore, the purpose of this measure is to ensure the system of public-use airports in New Hampshire maintains a high standard of safety for the flying public.

#### **Data:**

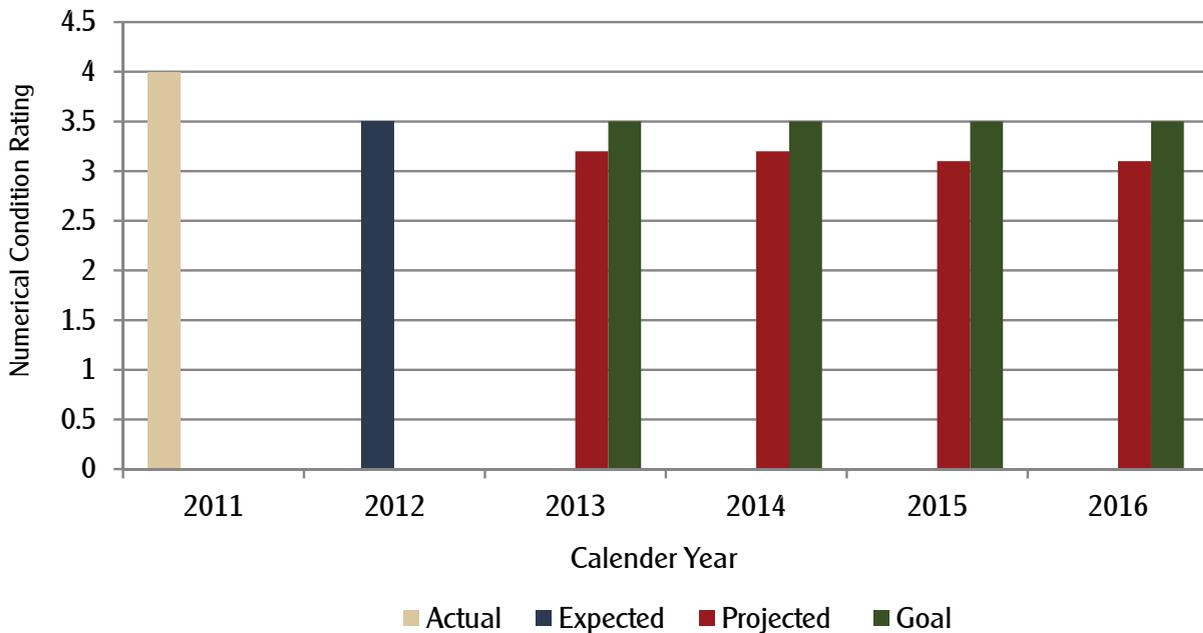
The New Hampshire Airport System consists of 24 public-use airports. At these airports, there are a total of 29 runways, 22 of which have a pavement surface and 7 of which have a turf or gravel surface. Five of the airports have 2 runways. The 29 runways in the New Hampshire Airport System comprise approximately 51.3 million square feet of runway surface. Approximately 44.5 million square feet of runway surface is paved and the remainder is turf or gravel.

For New Hampshire's runway surfaces, a "good" condition is defined as a runway with a rating of 4.0 or greater. Runway surface condition has historically been and is currently being monitored through

the FAA 5010 Airport Inspection Program whereby a State or FAA airport inspector will rate an airport's runway surface condition as an item of the airport's annual inspection. To compute the overall average condition, each runway is weighted utilizing the runway's condition rating and the runway's total square footage. Any runway surface rated below "fair" is identified as a runway of special concern and is prioritized for available funding.

of the new State Aeronautical Fund, with the priority of utilizing these funds for runway improvement projects. The success of this effort is critical to ensuring the preservation of the current airport infrastructure in the New Hampshire Airport System.

### Airport Runway Surface Conditions





## Improve Asset Conditions

### Remaining Useful Life of Transit Buses

#### Purpose:

The age of transit buses is one of the measures used by the Federal Transit Administration (FTA) to evaluate the overall condition of the nation's transit fleet. Transit buses have "useful life" thresholds that vary from 4 to 12 years, depending on the type of vehicle, and vehicle fleets are often mixed. Therefore, it is more effective to measure the average remaining useful life of buses in order to evaluate changes in the fleet's condition over time. Modernizing newer transit buses will improve the quality of transit service, attract more riders, and reduce maintenance costs. Newer buses also bring improvements in technology, emissions, rider amenities, and other factors that can improve the general level of service to riders.

#### Data:

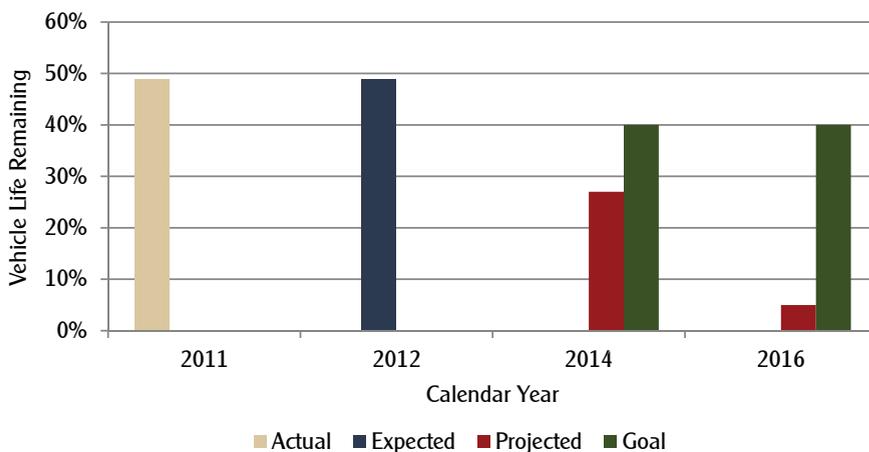
Transit buses in New Hampshire are purchased and maintained by transit systems and in some cases by the state or contractors to the state. The data presented here apply only to buses purchased by NHDOT or with funding from NHDOT (a total of 104 buses). Although this does not provide a comprehensive, statewide picture of transit bus condition, they do give an indication of the age of the transit bus fleet in New Hampshire. The NHDOT data include buses operated by rural transit systems as well as by contractors operating commuter and intercity bus service in the state.

It is important to note that FTA regulations require that buses reach the end of their useful life before they may be

## Improvement Status

The transit bus fleet in New Hampshire has been improved in recent years with the purchase of new buses for the I-93 commuter bus expansion project and with buses funded by the American Recovery and Reinvestment Act in 2009. This addition of newer buses (and coach buses with a longer useful life) has meant that the average remaining useful life of transit buses funded through NHDOT is relatively high. In future years, it can be anticipated that the average remaining useful life will be lower. This will have implications for maintenance costs. It will also be necessary to identify funding sources to replace buses so that the fleet includes new buses as well as those that were purchased in the past several years. Growth in transit ridership also means that additional buses will be needed to accommodate demand, and funding will be needed to allow transit service to keep pace with growth in population and ridership.

## Remaining Useful Life of Transit Buses



replaced. Therefore, the remaining useful life measure may fluctuate over time depending on the cycles of bus acquisition and grant availability and the types of buses purchased in a particular time period.

It is difficult to project future grant funding to replace buses in the transit fleets. Therefore, the projection represents a scenario in which no buses are replaced over this period. This is unlikely but represents a worst case.



## Improvement Status

Increasing ridership on transit is a challenge in a state with no large cities. Nevertheless, most transit systems in New Hampshire have seen their ridership increase. A number of factors are responsible, and these vary according to local circumstances. The University of New Hampshire (UNH) Wildcat Transit system has expanded its services, and has also gained ridership due to parking restrictions on campus that make taking the bus more attractive. Advance Transit has used local funding sources and partnerships to make its service fare-free, which has increased ridership tremendously. Changes to schedules to make them more convenient, new buses, and other improvements have increased ridership in Manchester and Nashua. Some of the newer systems in more rural areas have gained riders as they become more widely known in their communities.

It is difficult to anticipate future funding that will support transit improvements and in turn lead to increased ridership. New Hampshire is more reliant on Federal Transit Administration funding than most states, given a lack of funding at the state level. A prudent projection for future ridership is for modest gains as local systems are able to make incremental improvements, but goals for future years would be more ambitious. With additional funds, transit could be expanded to unserved areas, and the frequency and convenience of existing services could be improved, leading to larger gains in ridership.

## Increase Mobility

### Transit Ridership

#### **Purpose:**

Transit ridership is a common measure of the utilization of transit service nationwide. Ridership measures one-way trips, i.e. boardings on transit vehicles. Transit systems report ridership, among other measures, to the Federal Transit Administration through the National Transit Database. Increasing ridership shows that more people are riding on transit, either because existing systems are attracting more riders, or because the availability of transit is expanding with longer hours, greater frequency or geographical reach, or a combination of factors.

Although transit ridership numbers in New Hampshire are small when compared to those of large urban transit systems, ridership has shown significant growth in recent years. Establishing targets for future ridership will provide a measure of the progress the state and local transit systems are making in increasing the options people in New Hampshire have for personal mobility.

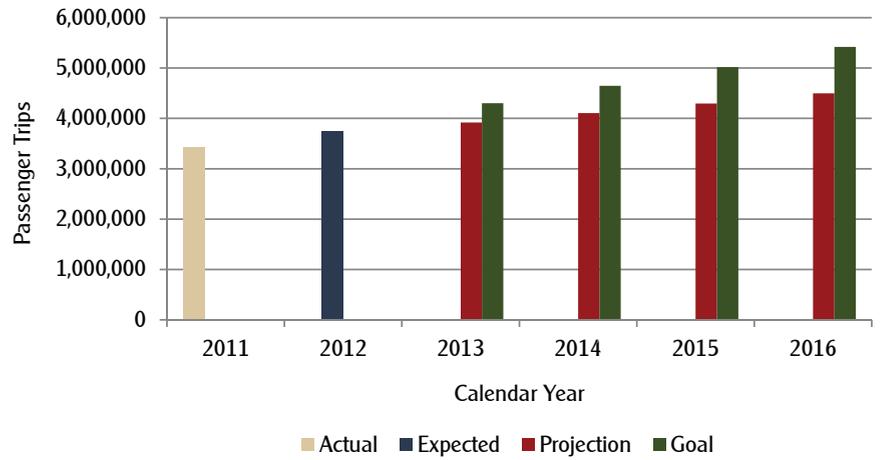
#### **Data:**

A variety of factors influence transit ridership. Some are positive factors, such as the availability of transit convenient to home and workplaces or other destinations. The frequency of service is a major factor, along with the service schedule – how early and late the transit service operates. Amenities such as bus shelters can be important in inclement weather, and passenger information in the form of schedules or even “next bus” arrival message signs can encourage the public

to ride. Overall, a perception that transit is safe, convenient and reliable is critical to building ridership. Negative incentives such as the cost of gasoline, and especially of parking at the destination can also be strong factors in influencing people to take transit.

In New Hampshire, local transit agencies are responsible for managing their systems. These can be municipal, legislatively established, or private nonprofit organizations. Decisions on routes and schedules, capital improvements and changes to service are made locally and are highly dependent on available funding.

## Transit Ridership





## Improvement Status

The State of Maine, through its Northern New England Passenger Rail Authority, and the Vermont Agency of Transportation are responsible for planning and managing the Amtrak Downeaster and Vermonter. Each state has worked with Amtrak and the host railroads (the freight railroads that own the lines on which Amtrak operates) to make track improvements, provide scheduling changes and in some cases add service in the form of additional trains. Both Maine and Vermont have undertaken planning efforts in the past to project future ridership trends and establish goals.

An annual growth rate of 3 percent is assumed in the projections for rail ridership. A number of changes will influence the actual growth in rail ridership in the next several years. The completion of an upgrade to the New England Central's line in New Hampshire and Vermont, where the Vermonter travels, will reduce train travel time and should increase ridership. Vermont and Massachusetts are working together to upgrade the "Knowledge Corridor," another existing freight line in western Massachusetts, for passenger service. When this is complete, the Vermonter is expected to alter its route and save additional time between St. Albans and New York. In Maine, a rail upgrade to provide an extension of the Downeaster to Brunswick is under construction. Ridership will increase when that expanded service opens.

Other projects that would significantly increase rail ridership in New Hampshire are in the planning stages. The New Hampshire Capitol Corridor is a proposed passenger service between southern New Hampshire and Boston through Nashua. If planning efforts are successful and funding is obtained, this service could be in operation by 2016. An extension of Massachusetts Bay Transportation Authority (MBTA) commuter service from Boston through Haverhill, Massachusetts to Plaistow has also been proposed and will be studied in 2012. This service could be in operation by 2014 if planning and engineering work lead to funding for construction. These two services are reflected in the graph in a scenario that projects possible ridership if they are in operation by 2014 and 2016. Ridership figures for the Plaistow and New Hampshire Capitol Corridor rail projects are estimates based on prior planning or grant application documents.

## Increase Mobility

### Rail Ridership

#### **Purpose:**

Ridership is a common measure of the utilization of transit service nationwide, including passenger rail. Ridership measures one-way trips, i.e. boardings. In New Hampshire, passenger rail service is provided by Amtrak on the Downeaster and Vermonter services supported by Maine and Vermont, respectively. Amtrak reports ridership on a monthly basis for these services. Increasing ridership shows that more people are riding on passenger rail, either because the existing services are attracting more riders, or because these services have expanded through additional trains, for example, or a combination of the two.

In New Hampshire, Amtrak serves four stops: Dover, Durham, and Exeter with the Downeaster and Claremont with the Vermonter. The Downeaster has five daily trains between Portland and Boston and the Vermonter one daily train between St. Albans, Vermont and New York and Washington. Ridership on both has shown significant growth in recent years. Establishing goals for future ridership will provide a measure of the progress this service is making in increasing the personal mobility of people in New Hampshire.

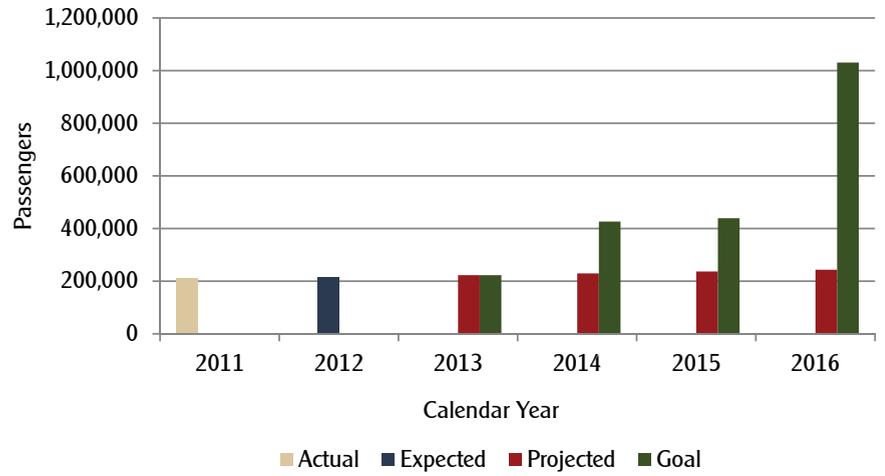
#### **Data:**

The data reported here represents the number of passengers who either board or disembark trains at one of the four New Hampshire stations. As noted above, ridership can fluctuate based on the availability or convenience of service, but also from events and larger trends.

For example, weather events that cancel train service significantly affect a month's ridership, and the national recession is also reflected in lower numbers of Americans making discretionary trips.

The data do not include New Hampshire residents who travel by bus or car to Boston and take Amtrak from there. They also do not include a sizable number of daily or frequent commuters who take MBTA commuter rail from Lowell, North Billerica, Haverhill, Newburyport or other Massachusetts stations. At some stations it is reported that one-fourth or more of the passengers are New Hampshire residents.

## Rail Ridership





## Increase Mobility

### Air Ridership

#### **Purpose:**

In New Hampshire (NH), there are three airports that have been traditionally served by the commercial airline industry, Manchester-Boston Regional Airport, Portsmouth International Airport at Pease, and Lebanon Municipal Airport. A passenger enplanement is a revenue passenger that boarded a commercial airliner. Similarly, a passenger deplanement is a revenue passenger that deplanes a commercial airliner. Individually, passenger enplanements are a measure of the health of each airport as they are directly related to airport revenue and airport economic activity. Collectively, passenger enplanements are a measure of the health of the airline industry in NH and of the overall economic activity of the region. In addition, passenger enplanement data is utilized by the Federal Aviation Administration (FAA) for calculating the apportionment of FAA Airport Improvement Program funding throughout the United States.

#### **Data:**

Each year, airports report their annual number of enplanements to the United States Department of Transportation (USDOT) for the previous calendar year period. The USDOT posts this data for the public view at the following website:

[http://www.transtats.bts.gov/DL\\_SelectFields.asp?Table\\_ID=293&DB\\_Short\\_Name=Air%20Carriers](http://www.transtats.bts.gov/DL_SelectFields.asp?Table_ID=293&DB_Short_Name=Air%20Carriers)

There are many factors affecting the number of passenger enplanements in NH such as the strength of the national and regional economy, the health of

## Improvement Status

The number of passenger enplanements at an airport is directly correlated to the number of flights departing from that airport. Generally, the more departing flights from the airport, the more passenger seats available, which result in more passengers that could board an airplane at that airport (enplanements) and vice versa for passenger deplanements. The airline industry is an extremely competitive market that drives the business decisions of the airlines, such as, determining how many daily flights per day, flight destinations, and the type of equipment that will be used for those flights.

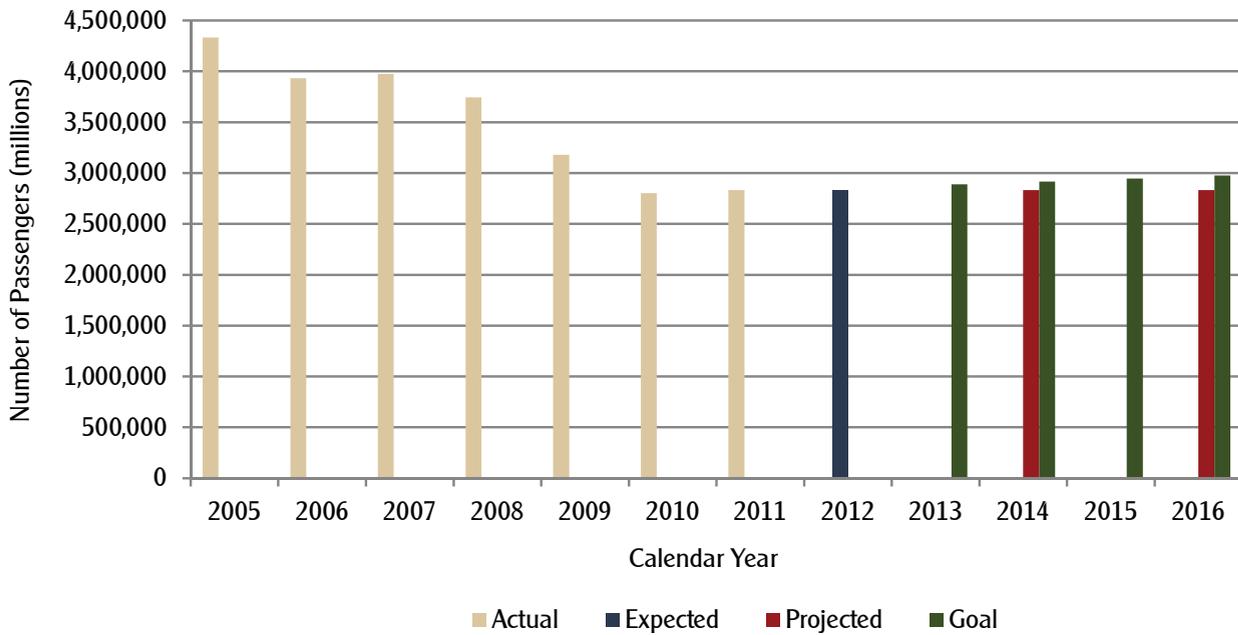
Over the last several years, passenger enplanements at the three NH commercial service airports have decreased primarily due to the most recent economic recession and rising fuel costs. All three airports have worked closely with the airlines to maintain and/or increase the existing flights and destinations available to New Hampshire citizens.

In 2007, Skybus Airlines began operations from the Portsmouth International Airport at Pease, but service ceased in 2008 due to high fuel prices. The Portsmouth International Airport at Pease is currently focusing on securing another airline to operate from of the airport. The Lebanon Municipal Airport currently has one airline, Cape Air that operates to the New York Metropolitan area and Boston Logan Airport. Manchester-Boston Regional Airport currently has six airlines serving the airport: Air Canada, Continental Airlines, Delta, Southwest, United Airlines and U.S. Airlines. Since 2005, passenger traffic at the Manchester Boston-Regional Airport has decreased, as a result of system wide airline capacity reductions.

The outlook for the airlines economically is uncertain, however passenger enplanement numbers will continue to fluctuate until the economy improves and/or the market changes. The NHDOT, Bureau of Aeronautics works closely with Manchester-Boston Regional Airport, Portsmouth International Airport at Pease, and Lebanon Municipal Airport in programming FAA and state funds to ensure their facilities meet or exceed the safety and capacity requirements expected by the airline industry and the flying public.

the airline industry, and the competition for passenger market share. The New Hampshire Department of Transportation (NHDOT), Bureau of Aeronautics does not have the capability to influence these factors. The NHDOT, Bureau of Aeronautics can influence the capital improvements funded for these airports and can provide outreach, especially to state agencies, to encourage more air ridership at these airports.

### Passenger Enplanements and Deplanements at New Hampshire Airports





## Improvement Status

The NHDOT will need to track what goods are being transported in the State of New Hampshire. There are four different trade flows of freight in New Hampshire:

- Inbound: freight originating outside of NH with a destination inside New Hampshire
- Outbound: freight originating in NH with a destination outside of NH
- Intrastate (within the State): freight that have both an origin and a destination in NH
- Travel through (the state): freight that have both an origin and destination outside of NH using the NH transportation infrastructure.

Currently, the NHDOT is researching a more standardized way to accumulate current freight data and the trade flows of freight in the State. For the purpose of this performance measure, the motor carrier data is obtained from the FAF, which does not include the numbers of the freight traveling through the state. The waterways and port data is obtained from the Pease Development Authority (PDA), Division of Ports and Harbors, and the air freight data is obtained from the Bureau of Transportation Statistics (BTS) website. The NHDOT is in the process of completing a Rail Plan for the State that will provide a chapter on Freight Transportation and Trends and Commodities that should be completed by June 2012.

As seen in the data collected (table on back) for 2009, NH relies heavily on truck transport for the shipment of freight. Freight shipped through the rail system is the second largest at over 4.7 million tons of cargo.

## Increase Mobility

### Total Freight Shipped Via All Modes

#### **Purpose:**

This measure includes four modes of transportation that move freight into, out of, within and through the State of New Hampshire (NH). Freight is shipped via air, rail, waterways and ports, and motor carrier. This measure indicates the overall freight, shipped, measured in tons, using New Hampshire's intermodal transportation system.

There are many factors affecting the number of tons of freight shipped in NH such as the strength of the regional and national economy, (i.e demand for goods) the availability and condition of transportation infrastructure, the health of the freight industry, and the competition within the freight industry. The New Hampshire Department of Transportation (NHDOT) impacts the movement of freight through timely planning and development of the infrastructure necessary to ship freight over the roads, rails and runways at airports. Our partner, the Pease Development Authority (PDA), Division of Ports and Harbors develop and maintain the ports, harbors and tidal rivers in the State of New Hampshire.

It is important to have accurate, comprehensive, and timely data to measure the movement of freight, into, out of, within and through NH. It is critical that the NHDOT and PDA make sound investment decisions to optimize the NH intermodal transportation system. The movement of freight plays an important role in the state's economic development.

#### **Data:**

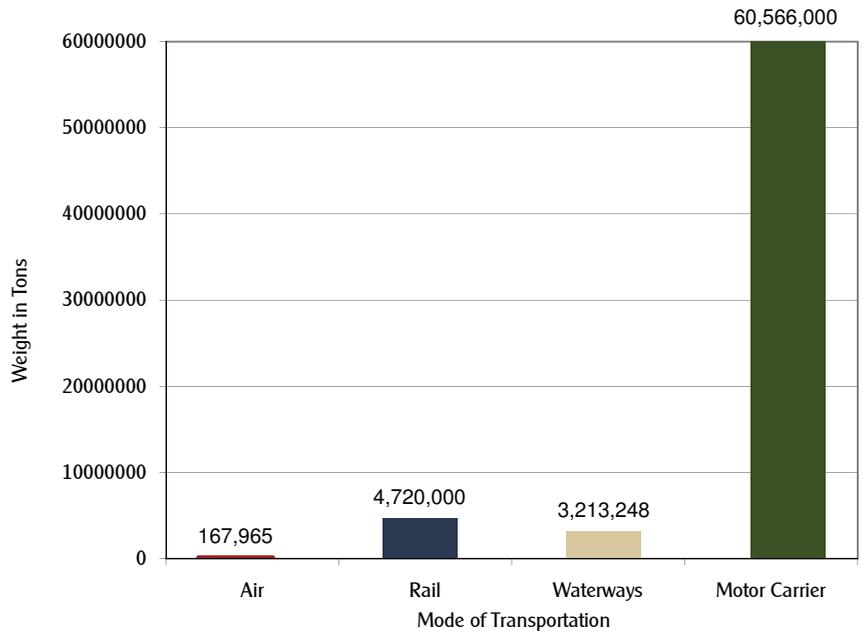
Comprehensive *current* freight data for New Hampshire does not exist at this

time. Determining the motor carrier data has proved to be the most challenging in calculating this measure.

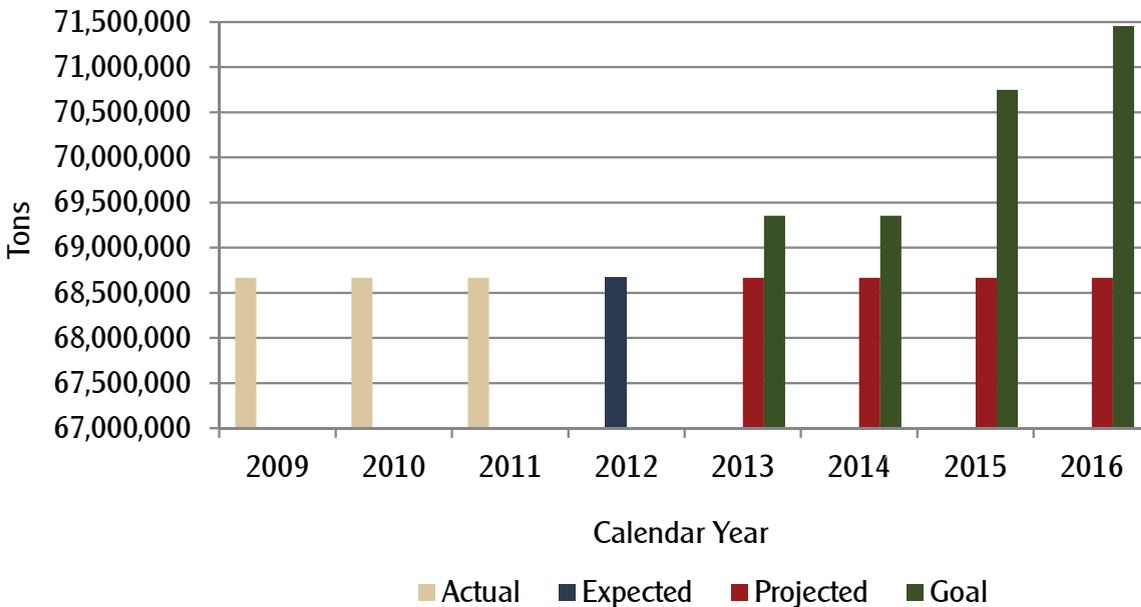
Freight data from calendar year 2009 is available for all modes of transportation in the Freight Analysis Framework (FAF). Since the 2009 data was collected and processed before the current on-going recession, this data is not a good representation of the freight movement in NH today. Typically, the FAF is updated once every 5 years. The air freight data is available from the air carrier reporting to airport management and from the Bureau of Transportation Statistics (BTS) website.

The waterway and ports data is available in the FAF and from the PDA. The PDA maintains a log of the vessels that utilize the NH Port system. The log provides information on the type of cargo and tonnage that pass through the Port.

### Freight Shipped Into, From, Within and Through New Hampshire



### Total Freight Shipped Via All Modes





## Improvement Status

**2011 actual:** Based on 2010 data collection the average level of service for roads included in this performance measure is a **C (0.68)**. (Rated on a scale of A, no congestion, to F, congestion).

**2012 expected:** Until delay data can be collected, the Department will continue to report mobility as LOS on the selected routes. The following are our expectations for 2012:

- **Congestion:** The Airport Access Road will be opened which will reduce congestion on I-293/NH 101 but could increase congestion to the FE Everett. There will be major ITS projects completed on I-95 and on the freeways around Manchester. These ITS devices should have a positive impact on weather and incident delays. With traffic volumes remaining constant or decreasing slightly, LOS should remain the same. C (0.68)
  - **Construction:** There are many large construction contracts underway on these corridors, I-93 Salem to Manchester, I-93 Hooksett Open Road Tolling, and Spaulding Turnpike Newington-Dover and Spaulding Turnpike Rochester all of which include a smart work zone to help manage construction related congestion. Delay due to construction is expected to remain unchanged from 2011.
  - **Weather:** Assuming an average winter, delay due to weather is expected to remain the same.
- Incidents:** Though incidents will likely still happen, there may be a slight reduction in the number of incidents due to weather if reduced speed limits due to weather become regulatory. Overall, delay due to accidents/incidents should continue to improve as the Department has taken an active role in reducing the time it takes to get traffic back to normal (clearance time).

**2014 projected:** Until delay data can be collected, the Department will continue to report mobility as LOS on the selected routes. The following are our projections for 2014:

- **Congestion:** During 2012 and 2013, the Rochester project along

## Increase Mobility

### Average Level of Service on Selected Highway Segments

#### **Purpose:**

Mobility on selected freeway sections provides a measure that is effected by traffic volume and number of lanes on the facility, accidents/ incidents, weather, and construction activities. This will provide a measure of mobility that can be compared yearly to identify needs and to measure the effectiveness of counter measures implemented: the added capacity on construction projects, implementation of Intelligent Transportation Systems (ITS), Smart Work Zones, and incident management procedures.

This measure will focus on the most highly traveled commuter routes:

- I-93 from Concord to Salem
- FE Everett Turnpike from Hooksett to Nashua
- NH 101 from Manchester to Hampton
- I-95 from Portsmouth to Hampton
- Spaulding Turnpike from Portsmouth to Rochester

#### **Data:**

Eventually, this measure will be tracked by travel time on the selected routes. Average speed data will be collected from a service provider or by NHDOT owned and operated instrumentation. Free flow speed data will be compared to average speed to determine congestion delay due to traffic volumes, accidents/incidents, weather or construction activities.

In the short term, mobility will be tracked by Level of Service [LOS] for the average peak hour of the peak month. Data for this measure is currently collected by the Department, Regional Planning

Commissions (RPC) and Metropolitan Planning Organizations (MPO) to support the traffic volume reporting requirements of the Federal Highway Administration.

The LOS measurement is based on the Average Annual Daily Traffic (AADT), the actual number of lanes (L) and the theoretical maximum flow per lane (F) for a freeway. This information, combined with a estimated peak hour factor (K) and directional distribution factor (D) calculates a volume to capacity ratio using the formula;

$$v/c = \frac{AADT \times K \times D}{L \times F}$$

The calculated v/c ratio is then assigned a LOS between A and F using the following criteria;

LOS	V/C	
A	0.00 – 0.30	} No Congestion
B	0.31 – 0.50	
C	0.51 – 0.70	} Moderate Congestion
D	0.71 – 0.90	
E	0.91 – 1.00	} Congestion
F	> 1.00	

The segments of interest will be measured and an average V/C and LOS will be reported in the Balanced Scorecard.

the Spaulding Turnpike will be complete. This project will decrease congestion in this area during morning and evening commutes and during the southbound Sunday visitor peak. Overall, LOS is expected to improve as a result of these projects and a reduction in vehicle miles traveled. C (0.66)

- **Construction:** Major projects will include I-93 Salem-Manchester, I-93 Hooksett Open Road Tolling [ORT], I-93 bridge replacement over I-89 in Concord and Spaulding Turnpike Newington Dover. Again, all of these projects will have smart work zones and it is the Department's goal to keep delay due to construction unchanged on the selected routes.

- **Weather:** Assuming an average winter, this measure is expected to remain the same.

**Incidents:** Incidents will likely still happen, but delay due to accidents/incidents should continue to improve as the Department has taken an active role in reducing clearance time.

#### 2014 goal:

Congestion, Construction, Weather, Incidents: A reduction in delay due to each of these reasons is the goal. Additional initiatives in each of these areas will help us improve on our projections. C (0.65)

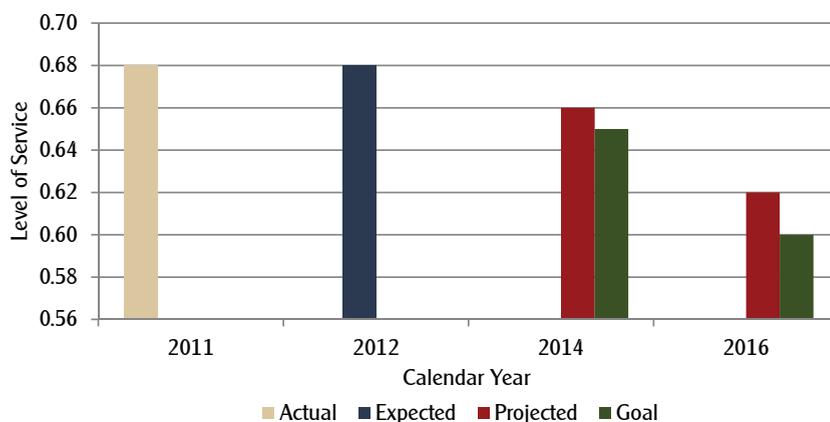
**2016 Projected:** Until delay data can be collected, the Department will continue to report mobility as LOS on the selected routes. The following are our projections for 2016:

- **Congestion:** During 2014 and 2016, the Newington-Dover project along the Spaulding Turnpike will be complete adding significant capacity to that corridor. Also, I-93 from Salem to Manchester will continue to reduce congestion on that corridor. Open road tolling in Hooksett and Bedford may be completed in this timeframe. Overall, LOS is expected to improve, will likely still be a C, but it will be in the middle of the C range as opposed to being almost an D. C (0.62)

#### 2016 Goal:

- Congestion, Construction, Weather, Incidents: A reduction in delay due to each of these reasons is the goal. Additional initiatives in each of these areas will help us improve on our projections. C (0.60)

### Average Level of Service





## Increase Mobility

### State Population with Access to Multimodal Transportation

#### **Purpose:**

Mobility is measured not only by travel by mode and total system usage, but also by access to transportation. This measure tracks the percentage of our State's population with access to transportation other than their personal automobile. The population measured includes both those with a driver's license who choose a transportation option as well as those who do not have a license or cannot drive due to a disability or poor health (currently approximately 22% of the population). As the percentage of New Hampshire's population over 65 continues to grow, the number of non-drivers is also likely to grow making access to medical services, shopping, and social activities problematic.

#### **Data:**

The data was compiled through a Geographic Information System (GIS) analysis. 2010 Census Data and the geographic location of multimodal terminals (bus stations, rail stations, park and ride facilities) were compiled in NHDOT's GIS database. Using the terminal locations as a basis, a 0.25 mile radius was used to determine the population of census tracts available to travel by non-motorized means this distance to a terminal. These totals were summed up and compared to the total State population to determine the percentage of population with access to multimodal transportation.

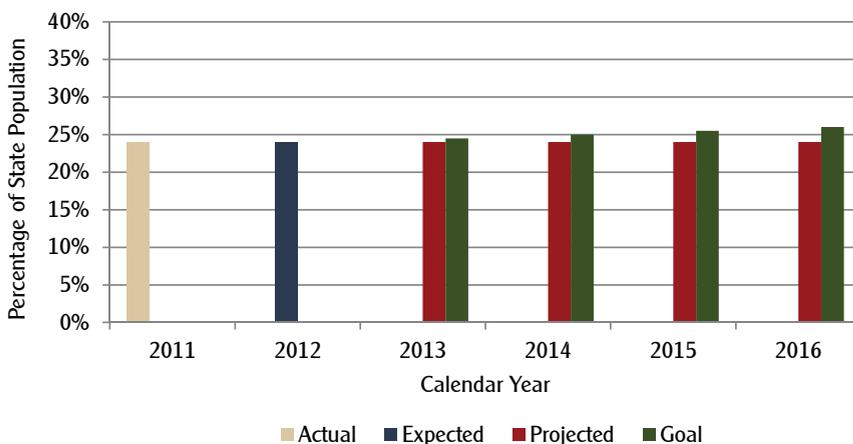
## Improvement Status

This measure addresses one element of access to multimodal transportation - geographic reach - the proximity of multimodal transportation to an individual's home. Based on 2010 Census Data, the total population of New Hampshire is 1,316,470. The GIS analysis indicated that the population located within 0.25 miles of multimodal facilities was 315,690 - equivalent to 24% of the state's population.

Though a good beginning indicator, other issues that may impact the attractiveness of multimodal transportation to riders are not addressed: frequency of service; service schedule - how early and late the service operates; proximity of multimodal options to an individual's workplace or other frequent destinations; or rider amenities - bus or train shelters or enhanced rider information for example. Actual multimodal ridership is tracked in the rail ridership and transit ridership performance measures.

Growth in access to multimodal transportation will occur with either an increase in population in proximity to existing multimodal terminals or the extension of rail or transit into other areas of the state. Growth in the ridership of rail or transit will also depend on the frequency and convenience of service.

## Percent of State Population with Access to Multimodal Transportation





## Improve System Safety and Security

### Highway Fatalities (Five Year Moving Average - Goal Towards Zero Deaths)

#### **Purpose:**

This performance measure tracks annual trends in fatalities resulting from traffic crashes on all New Hampshire roadways. The traffic crash data drives the development and focus of New Hampshire's Strategic Highway Safety Plan (SHSP). The SHSP is intended to clearly identify the State's critical safety needs and provide strategies to achieve significant reductions in fatalities and serious injury crashes on all public roads. This in turn guides the Department's investment of highway safety funds to focus on areas that achieve a significant benefit in safety for every dollar expended on infrastructure safety improvements. In addition, this data supports New Hampshire's Toward Zero Deaths initiative, which is a part of the SHSP, with a focus on measures to address the behavioral factors involved in traffic crashes. The SHSP has set a goal of reducing highway fatalities by 50% by 2030.

#### **Data:**

The New Hampshire Department of Safety receives crash record reports from state and local law enforcement as well as citizens. They enter each report into a crash database and deliver the results to the Department of Transportation annually on a calendar year basis. The Department of Transportation locates each crash on the state Geographic Information System (GIS) routes layer and analyzes the crashes to identify locations with the greatest promise for safety improvement.

## Improvement Status

Fatal accidents have decreased by approximately 23 percent from 2005 to 2010. In 2009 there were 110 highway fatalities, the lowest number since the early sixties. A national data comparison shows that New Hampshire is ranked 7th in the lowest number of crashes per capita in the nation in 2010. Fatalities and serious injury crashes are decreasing due in part to engineering enhancements such as paving roadway shoulders, improving guardrail, installing rumble strips, enhancing delineation, and making intersection safety improvements. Public education and increased law enforcement participation in statewide campaigns have also contributed to this decline.

One of the critical emphasis areas for the Department has been to address run-off-the-road crashes. Run-of-the-road crashes account for 50% of all fatalities on NH roadways. NHDOT has implemented various safety initiatives over the years to reduce run-off -the-road crashes. They include:

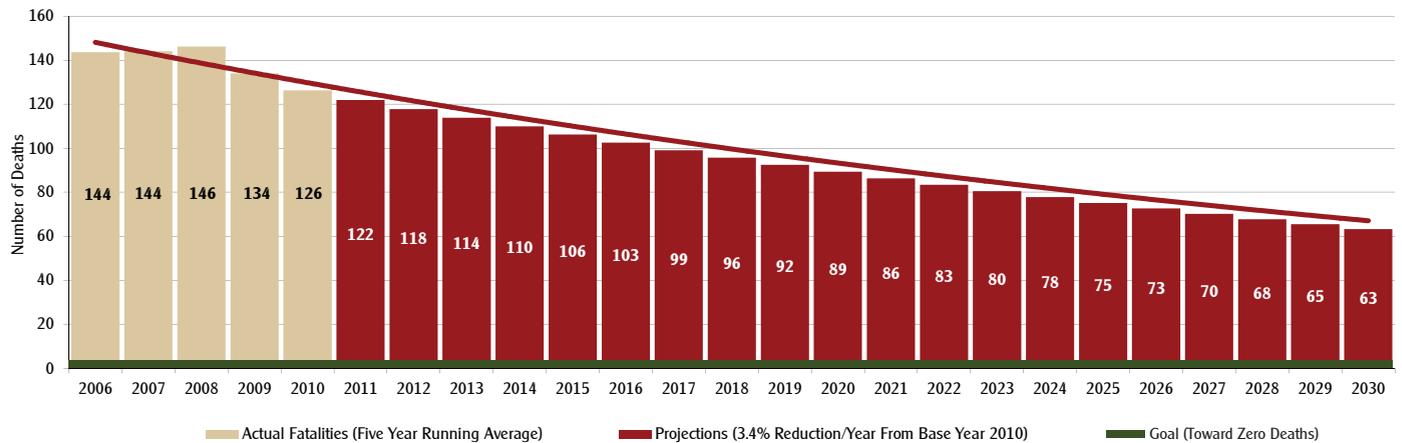
- **Shoulder rumble strips** - NHDOT installed 1260 miles of shoulder rumble strips since 2000.
- **Centerline rumble strips** - NHDOT installed 80 miles of centerline rumble strips since 2004. Both forms of rumble strips notify drivers that they are leaving their lane through sound and vibration.
- **Median barrier** - NHDOT installed approximately 20 miles (105,600 linear feet) of median barrier since 2009. These barriers were placed in locations with median widths of 50 feet or less in response to updated criteria and to reduce the potential for head-on collisions along divided highways.
- **Warning sign improvement solutions that address run-off-the-road crashes** - NHDOT works closely with towns to develop proposals for low-cost solutions that aim to address as many miles of the roadway system as possible with the funds available. This risk-based approach acknowledges that fatal and serious injury crashes tend to be more random in nature on town roads. This year NHDOT implemented improvements on local roads in nine (9) towns, targeting warning

This performance measure is based on a five (5) year moving average of the number of traffic fatalities, as each year the number of crashes can fluctuate significantly, and there is the need to determine a trend in crashes to evaluate if safety measures are making a difference.

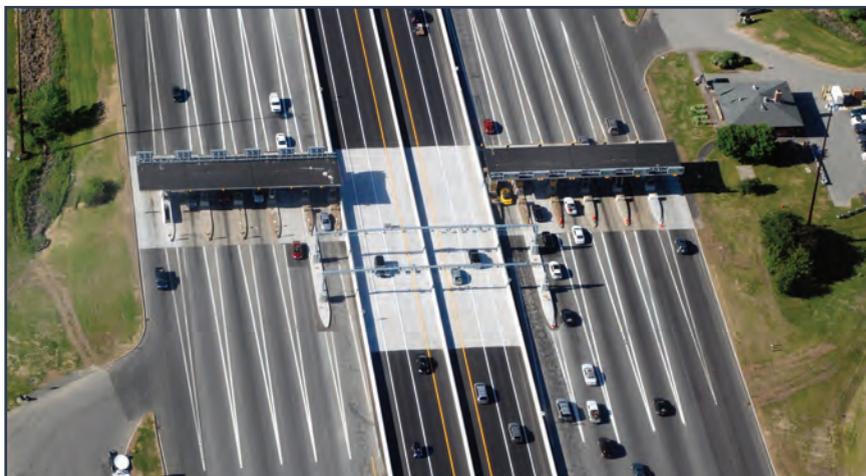
signs on horizontal curves, object markers and other warning signs and delineation.

- Pavement safety edge testing** - During the 2011 construction season, NHDOT will test a new pavement edge treatment that can help errant vehicles safely reenter the roadway. When vehicles leave the roadway where the pavement drops off steeply, drivers may overcorrect when reentering the roadway. The overcorrection may lead to the vehicle swerving into oncoming traffic or rolling over. The safety edge treatment is intended to address the sharp drop off. Studies in other states have found that the implementation of the pavement safety edge has minimal impact on project cost.
- Summary** - The goal for this performance measure is to reduce fatal crashes by 50 % over the next twenty years. This will require continued investment in infrastructure safety improvements both in spot location improvements and systemic improvements. In addition to the infrastructure improvements, the NHDOT is also investing a portion of its safety funding toward the behavioral side of crashes, looking at ways for outreach and education to bring awareness to the driving public about driver behavior issues and safety. Using this strategy and the current funding levels, it is anticipated a 3.4 % reduction per year in fatal crashes can be attained and the 50% reduction of crashes (from the 2010 five year running average base number) will be met in 20 years.

### NH Traffic Fatalities: Trends, Forecasts and Goals



# Customer Satisfaction - 2011



## Increase Customer Satisfaction

### Overall Customer Satisfaction

#### **Purpose:**

NHDOT's performance objectives are based on improving the condition of transportation assets, increasing mobility, improving system safety and security, improving Department efficiency, and identifying, communicating, and collaborating with partners. NHDOT's performance measure goals are set by Department subject matter experts based on national standards and a realistic allocation of resources. The ultimate outcome measured is whether the Department's performance satisfies its customers- those who depend on transportation for personal mobility, delivery of freight, or delivery of services. This measure tracks NHDOT's progress in satisfying our customers.

#### **Data:**

2011 is the first year in which NHDOT collected data for customer satisfaction with overall DOT performance. The data was compiled from responses to questions related to customer satisfaction included in a survey of NHDOT partners. Nearly 200 partners of NHDOT- municipalities, consulting firms, State, Federal, and Regional agencies, contractors, and transportation service providers completed the entire partner survey including the customer satisfaction component. Though respondents may have partnered with the Department intermittently, all are regular customers of our transportation system. In future years, NHDOT's customer survey will be guided from input on this year's survey and expanded to a full customer survey of randomly selected adult NH citizens.

## Improvement Status

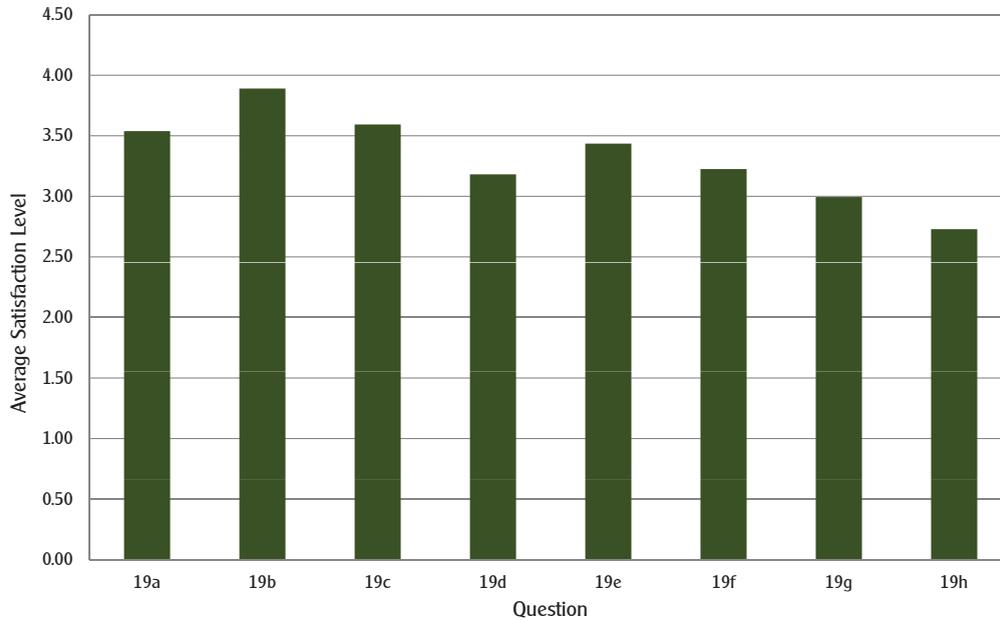
The percent of customers that were very satisfied, satisfied, or neutral with the Department is 86%. Of the 188 respondents, 40% represented cities and towns, 33% were from the consulting industry, 10% from federal agencies, 6% from state/ regional agencies, 6% from the contracting industry, 4% from transportation services, and 1% from materials suppliers. Individual satisfaction ratings ranged from 2.73/ 5.00 for "accessibility to alternative modes of transportation" to 3.89/ 5.00 for "snow/ ice removal and winter maintenance by NHDOT". The chart below depicts the results for each of the eight individual categories.

The survey also asked the respondents to prioritize seven selected transportation needs in order of importance. The maintenance and rehabilitation of highways and bridges to minimize long term costs was ranked first; reducing the environmental impact of transportation projects was seventh.

## Responses to Transportation Needs Priority

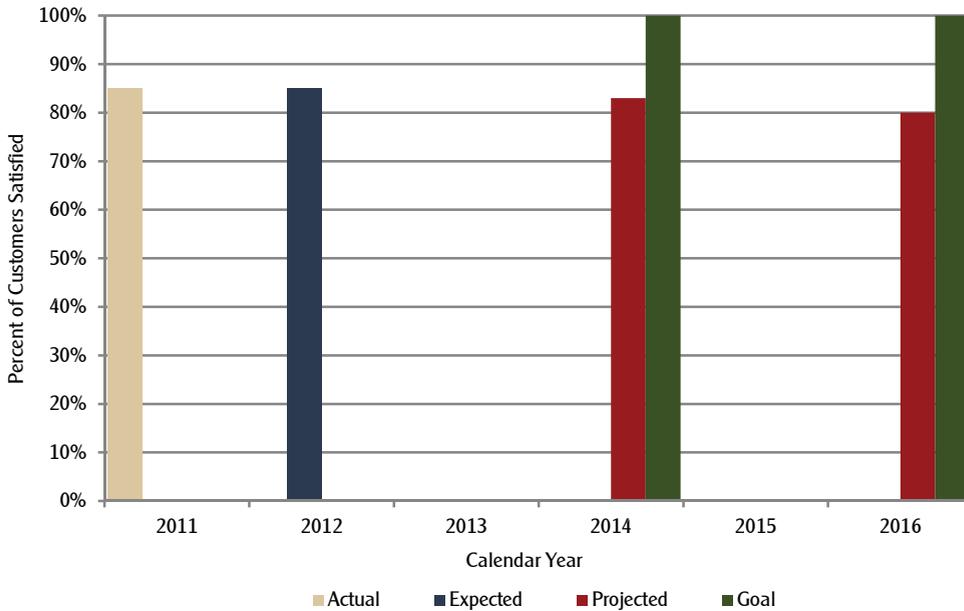
- 1st - Maintenance and rehabilitation of highways and bridges to minimize long term costs
- 2nd - Improving the safety of the state highways and interstates
- 3rd - Operating the system to maximize safety and efficiency
- 4th - Improving and expanding the capacity to keep people moving on the roads
- 5th - and expanding the capacity to keep freights and goods moving on the roads
- 6th - Expanding other modes of transportation
- 7th - Reducing the environmental impact of transportation projects

## Customer Satisfaction Comparison



- 19a - the overall condition of the state highways
- 19b - snow/ ice removal and winter maintenance done by NHDOT
- 19c - roadway surface, guardrail repair, and summer maintenance done by NHDOT
- 19d - effectiveness in communicating what NHDOT does and why
- 19e - timeliness in responding to the public and its needs
- 19f - timeliness of completing highway and bridge projects
- 19g - allocation of transportation funds by NHDOT
- 19h - accessibility to alternative modes of transportation

## Overall Customer Satisfaction





## Condition and Performance Maps



## Highway Finances

### Introduction

The Ten Year Plan is funded by estimated federal, state, and local revenue sources, which cumulatively amount to approximately \$2.43 billion, including turnpikes revenues. One of the most significant challenges in the preparation of the Ten Year Plan is to ensure that the projects selected can be fully funded within the revenues available.

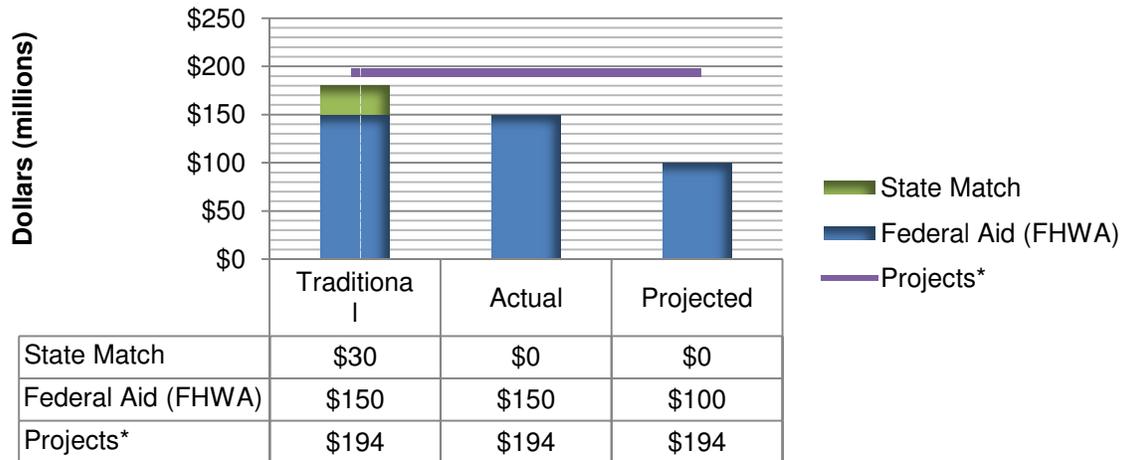
Anticipated federal aid revenues were conservatively estimated in the initial draft of the Plan at \$100 million, an approximate 33% reduction from the previously anticipated \$140 million. The entire state match for federal funds was converted to turnpike toll credits, which in effect reduces the federal aid program by an additional 20%. The conservative \$100 million a year funding estimate is based on:

- Uncertainly in federal gas tax revenues
- No long term highway fund reauthorization by Congress
- Potentially reduced federal aid

Historically, the Ten Year Plan has been built with the projection of the state funds continuing to be available to match the federal funds NHDOT receives (typically an 80/20 split). This is shown in the chart below as “Traditional” funding scenario for the Ten Year Plan. However, state matching funds have not been appropriated through the budget, which results in the “Actual: funding scenario for the Ten Year Plan as noted below. In both of these scenarios, NH has received approximately \$150 million per year in federal transportation funds.

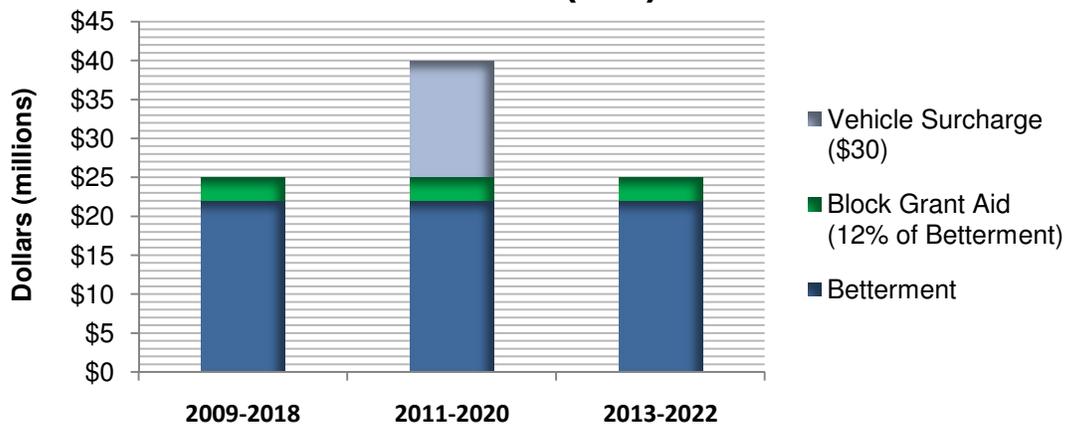
The “Projected” funding scenario shown below represents the \$100 million annual projection (33% reduction) that is anticipated to be available for the 2013-2022 Ten Year Plan. This update of the Ten Year Plan is based on the potential reduction of federal funding levels to approximately \$100 million, and continued use of turnpike toll credits in lieu of state hard match.

## 10-Year Annual Federal Aid Funding Scenarios



Anticipated state highway Betterment revenues were estimated at \$22 million down from \$37 million with the repeal of the \$30 motor vehicle registration surcharge in June 2011. Traditionally 3 cent (less 12% block grant aid to municipalities) of the State's gas tax goes to the Betterment Program.

## Highway Betterment Revenue State Gas Tax (3%)



## Overview

Federal transportation legislation typically identifies funding levels available to states based upon expected federal revenues for a six-year period. The most recent Federal reauthorization was the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU), signed into law in 2005. It was the governing Federal legislation for the 2004 through 2009 authorization timeframe and is presently operating under a continuing resolution where existing authorization has been extended through the end of June 2012, at existing funding levels. This funding outlook is more optimistic when the update of the Ten Year Plan was initially developed in the summer of 2011.

Federal funding levels, or authorizations, generally establish upper limits for future funding and spending levels known as the apportionment limit. The actual amount of federal money that can be spent in a given federal fiscal year is called the limitation on obligations. NHDOT initially estimated \$100 million/year obligation limit for the 2013-2022 Plan. This limitation is established annually, based on actual revenues received. The amount of the limitation generally changes from year to year and it is usually less than the amount of apportionment that a state receives.

## Federal Aid Program

Federal funding authorizations are distributed to states through federal aid program funds, which can be described in two ways, as either mandated programs or flexible programs. Mandated program funds are designated to specific transportation areas, such as planning, safety, air quality and congestion, and distinctive niches of transportation, and have restricted flexibility in use. Flexible program funds are designated to general areas of transportation or infrastructure improvements and have a greater flexibility in use. In Addition, to best meet the New Hampshire’s transportation improvement needs, such as preservation and municipal support the Department of Transportation established State Designated Federal Programs. These programs are funded from one or more of the flexible programs, as described below.

Mandated Programs	Flexible Programs	State Programs
<ul style="list-style-type: none"> <li>• Planning</li> <li>• Congestion Mitigation &amp; Air Quality (CMAQ)</li> <li>• Transportation Enhancement (TE)</li> <li>• Recreational Trails</li> <li>• Forest Highways</li> <li>• Scenic Byways</li> <li>• Discretionary Programs</li> <li>• Highway Safety (HSIP)</li> </ul>	<ul style="list-style-type: none"> <li>• Surface Transportation Program (STP)</li> <li>• National Highway System (NHS)</li> <li>• Interstate Maintenance (IM)</li> <li>• Highway Bridge Program</li> </ul>	<ul style="list-style-type: none"> <li>• Federal Pavement Resurfacing/Rehab (PRR)</li> <li>• Interstate Pavement Resurfacing (IPPP)</li> <li>• Secondary Road Resurfacing/Rehab (SSRR)</li> <li>• Bridge Preservation Program (BRPP)</li> </ul>

As projects begin, funding from the federal programs or state designation programs are transferred to the specific project and the project is added to the Statewide Transportation Improvement Plan (STIP) as mandated by federal Highway, then added to the Department of Transportation current project list.

In addition to the noted programs, two additional state commitments have been made to fund the following costs with federal funds.

- 1) I-93 GARVEE bond debt services payments (\$20 million annually)
- 2) Direct billing of the Departments expenses for program administration (\$6.5 million annually)

### Federal Aid Programs – Mandated Programs

To help close the funding gap from the anticipated 30% reduction in federal funds, the Department of Transportation used the allowed one-third flexibility spending option of the CMAQ, TE, LTAP, SRTS, and HSIP programs to fund priority preservation, red list bridges, and I-93 projects.

The listed mandated federal programs have limited flexibility in the way funding can be used. Their funding amounts anticipated to be available are as follows:

<u>Code</u>	<u>Description</u>	<u>Total</u>
SPR #1	State Planning & Research, Part 1 Planning	\$1.91 M
SPR #2	State Planning & Research, Part 2 Research	\$0.69 M
MPO	Metropolitan Planning Organization Funding	\$1.27 M
CMAQ	Congestion Mitigation and Air Quality	\$3.33 M *
TE	Transportation Enhancement	\$1.33 M *
LTAP	Local Technical Assistance Program (LTAP) (UNH Technology Transfer Center)	\$0.30 M *
SRTS	Safe Routes to School	\$0.95 M *
HSIP	Highway Safety Improvement Program	\$2.04 M *
RTS	Recreation Trails (Administered by DRED)	\$1.24 M
SB	Scenic Byways	\$0.30 M
FH	Forest Highways	\$0.85 M
DBE	Disadvantaged Business Enterprises Compliance	\$0.09 M
		<b>\$14.30 M</b>

\* Have flexible spending up to one-third of program funds

### Federal Aid Programs – Flexible Programs

The listed flexible federal programs have varying degrees of flexibility in the way funding can be used for transportation purposes. These programs are used to fund the State designated programs and individual projects. Their funding amounts anticipated to be available are as follows:

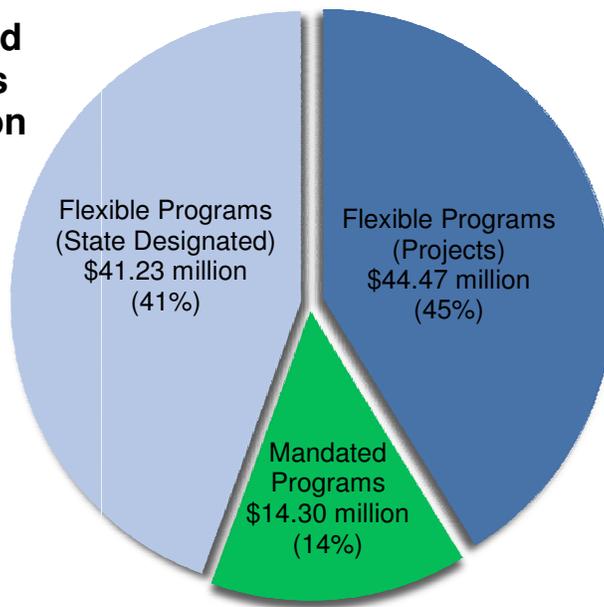
<u>Code</u>	<u>Description</u>	<u>Fed. \$</u>
IM	Interstate Maintenance	\$15.08M
NHS	National Highway System	\$30.00M
Bridge	Bridge Program	\$17.24M
STP	Surface Transportation Program	\$23.38M
	STP >200k Population	\$1.13M
	STP Flexible	\$8.77M
	STP < 5k Population	\$2.24M
	STP < 200k Population	\$11.24M
		<b>\$85.70 M</b>

### State Designated Programs

Additionally, State designated programs have been designated by the NHDOT but are not designated by Congress but are considered important for preserving and maintaining the State's Transportation System. Their funding is allocated from the flexible programs in amounts as follows:

<b>Code</b>	<b>Description</b>	<b>Fed. \$</b>
PRRCS	Federal Pavement Resurfacing / Rehabilitation	\$12.94 M
IMPPP	Interstate Pavement Preservation	\$5.42 M
SSRR	Secondary Road Resurfacing / Rehabilitation	\$2.40 M
FBRPI	Bridge Preservation Program	\$6.40 M
CRDR	Culvert Replacement / Rehabilitation	\$0.80 M
GRR	Guardrail Replacement	\$1.63 M
USSS	Signing Upgrades	\$0.41 M
PVMRK	Pavement Markings	\$3.10 M
MUPCA	Municipal Urban Projects (Compact Areas)	\$4.00 M
MOBRR	Municipal Bridges	\$3.46 M
RRRCS	Railroad Crossings	\$0.27 M
	Rest Areas	\$0.12 M
	Outreach to High Schools (TRAC Program)	\$0.02 M
TRAIN	Annual Training	\$0.11 M
UBI	Underwater Bridge Inspection	\$0.02 M
TSMO	Transportation Systems Management (CARS 511, ITS)	\$0.13 M
		<b>\$41.23 M</b>

### Federal Aid Programs \$100 Million



## **State Match to Federal Aid Programs**

State matching funds (hard match) for the Federal Aid Program (typically 20%) are not included in current financial projections. Instead, turnpike toll credits are being utilized. FHWA recognizes the state investment in transportation infrastructure and the robust turnpike program and allows a credit of that investment within the federal program, essentially allowing the use of federal funds at 100%, instead of the typical 80%, effectively reduces the overall funding available for capital projects by 15 - 20% (\$15 million - \$20 million) annually, depending on actual expenditures.

## **GARVEE Bonds**

To facilitate the construction of the Salem-Manchester I-93 reconstruction and improvement project, utilization of GARVEE (Grant Anticipation Revenue Vehicle) Bonds (bonds issued in anticipation of future federal revenue) are proposed as part of the financial planning for the Ten Year Plan.

Approximately \$195 million (the aggregate limit established under RSA 228-A:2) was approved in 2005 by the Legislator, bonding for I-93 is proposed. An additional \$250 million was approved in 2012 to provide funding for the remaining I-93 capacity improvement projects, which includes widening the mainline north of Exit 3 to the I-293 merge in Manchester. The total Legislative approved bonding limit is \$445 million. To date approximately \$195 million in bonding authority has been utilized. Two separate bond issues were advanced. \$80 million in bonds were issued in November 2010 and approximately \$115 million in bonds were issued in May of 2012.

The accompanying debt service for the \$195 million is approximately \$20 million annually is reflected in the Ten Year Plan. Debt service is anticipated to extend beyond the Ten Year Plan horizon.

In addition, approximately \$45 M (the aggregate limit established under HB 2010) bonding for the Portsmouth-Kittery Memorial Bridge and the Sarah Mildred Long Bridge has been authorized by the legislature. The accompanying debt service on this amount would be approximately \$7.5 M and will be reflected in the Ten Year Plan as necessary.

## **State Aid Funding Programs**

State funds make up 18% of the total Ten Year Plan funding (\$22 million). State funds are expended as described in the following programs:

### **Betterment Program**

The Betterment Program (established under RSA 235:23-a) approximately \$22 million/year in State gas tax revenues is designated to the Betterment program to support preservation and municipal transportation needs. Typically, Betterment funds are used to address relatively small (less than \$1.0 million) projects. Approximately \$14 million of Betterment Funds is allocated annually for pavement resurfacing as part of the District Resurfacing Program in the six highway maintenance districts. Other annual work programmed in the Betterment Program includes intersection improvements, bridge work, signal upgrades, and District force account work. Betterment Funds are also used to address emergency work (due to flooding, critical bridge damage, etc.). The programmed Betterment projects in this Ten Year Plan assume a \$22 million/year level of funding, but whether this funding level can be sustained is unknown at this time, as the revenues can vary due to gas tax revenues.

### **State Aid Highway (SAH)**

The State Aid Highway program was established under RSA 235:10-:21, and approximately \$1.7 million/year in State funds is designated to the State Aid Highway program to construct or reconstruct sections of Class I, II and III highways. The type of work typically includes improvements to sections of State secondary highways. These are often unnumbered, state-owned roads that function more as local roads. Of the total project funds, 2/3 is provided by the State and 1/3 of the funds are municipal matching funds, which represents a program total of about \$2.5 million/year. The communities need to raise matching funds before being enrolled in the program. Based on current municipal commitments, projects are programmed for funding into FY 2021.

### **State Aid Bridge (SAB)**

The State Aid Bridge program was established under RSA 234, and approximately \$6.8 million/year in State funds are designated to the State Aid Bridge program to construct or reconstruct municipal owned bridges on Class IV and Class V highways, as well as, municipally-maintained bridges on Class II highways. Structures having a clear span of ten feet or greater qualify for State Aid Bridge funds. Of the total project funds, 80% of the funds are provided by the State and 20% are municipal matching funds. The communities need to raise funds before being enrolled in the program. Based on current municipal commitment of funds, projects are programmed for funding into FY 2020.

## Turnpike Program

The Turnpike program consists of the maintenance and operation of the Turnpike System, a capital program, and retirement of debt service. The Turnpike System is a self-supported enterprise program, separate and distinct from the State Highway Fund. In FY 2011 toll transactions generated almost \$116 million in revenue. At the same time operational costs, including debt services, of approximately \$77.7 million were incurred. The Turnpike “Capital Improvement Program” is a multi-year program originally authorized by the New Hampshire Legislature in 1986 under RSA 237 to improve safety and expand the Turnpike System. The expansion and improvement projects in the Capital Improvement Program are designed to provide safety improvements to the existing Turnpike System and increase the Turnpike System’s capacity. In 2009, NH issued revenue bonds of \$150 million in support of the Turnpike Capital program. An additional \$67 million in refunding bonds was also issued for the purpose of refunding previous bonds to provide debt service savings in fiscal year 2011. Aggregate debt service payments are approximately \$33.7 million. The Bureau of Turnpikes has a legislative authority bonding capacity of \$766 million in Turnpike Revenue Bonds of which approximately \$545 million has been issued. A Turnpike Financial Model has been developed to track Turnpike revenues and expenditures, and highlight bond covenant requirements.

The 2013-2022 Ten Year Plan includes approximately \$320 million in priority Turnpike Capital Program and Investments. The Priority Turnpike Capital Program investments involve repairing / replacing all in-service Red List bridges on the Turnpike System and addressing a number of safety and capacity deficiencies. These improvements are facilitated by the toll increase implemented in October 2007. Further Turnpike Capital improvements beyond these identified in the Plan are problematic in terms of funding, and will need to be given further consideration in future Ten Year Plans. Most notably are the remaining project improvements at the Exit 6 interchange in Dover and rehabilitation of the General Sullivan Bridge. The Newington Dover project has been fully authorized however these segments are currently not funded and are dependent on a system wide toll increase.

The Turnpike Renewal and Replacement program is part of the Turnpike operational costs and is used in the preservation of the Turnpike infrastructure. Expenditures for resurfacing, bridge rehabilitation, bridge painting, high mast lighting, toll plaza maintenance, and life safety issues for toll operators are paid through this program. The State is financially responsible for spending sufficient funding (as established by the Turnpike’s Independent Engineer) for preserving the Turnpike infrastructure through the Renewal and Replacement Program. For Fiscal Years 2013 through 2022, the Turnpike System’s proposed Renewal and Replacement program is budgeted at approximately \$11 - \$12 million per year

(previously \$6 million per year) to maintain the turnpike infrastructure in good working condition in accordance with Bond covenants. The actual amount funded will be dependent on the inflation of construction costs. Individual projects brought forward under the Renewal and Replacement program are generally developed one to two years in advance of construction.

## **Department of Transportation Funding Models**

The Department relies on two financial models: 1) Highway Funds, and 2) Turnpike Capital Funds to evaluate anticipated revenues for financial constraint with the ten year plan.

### **Highway Fund Financial Model**

The programs in the Ten Year Plan that depend, in whole or in part, on State Highway Fund revenue (Federal Aid, Betterment, State Aid Bridge, and State Aid Highway Programs), have been evaluated for financial constraint through the Highway Fund Financial Model. The Financial Model is a comprehensive analysis tool that considers all capital and operating expenditures affecting the State Highway Fund applied against the anticipated available revenue resources. It takes into account all sources of funds and types of expenditures, as well as projected inflation, in order to better understand the full financial outlook.

The Highway Fund Financial Model is made up of two components, the operational component and the capital component. The operational component represents the overall day-to-day, year-to-year operating activities of the Department and is representative of the Agency's operating budget. The capital component represents the major improvements costs involved in the Ten Year Plan. In the accompanying model report, the operating component is the top half of the report and the capital component is the bottom half.

The Financial Model incorporates future inflation. The capital costs are correspondingly inflated in the model from the Ten Year Plan cost estimates (in current dollars) to year of expenditure cost estimates. The Financial Model assumes no growth for State Highway Fund revenue (gasoline road toll and vehicle registration fees). Department operational costs are projected to increase at recent rates of approximately 1% per year, which reflect increases in Department personnel and benefits costs, material costs, energy costs, and vendor costs.

## **Turnpike Capital Model**

Similar to the Highway Fund Financial Model, the Turnpike Capital Model is a comprehensive analysis tool that considers the capital and operating expenditures affecting the Turnpike Fund applied against anticipated revenues. The purpose of the Turnpike Fund Model is to analyze the flow of funds within Turnpike accounts to ensure sufficient funds for purposes such as debt service, operation and maintenance of the Turnpike System, and capital improvements like the Highway Fund Financial. The priority Turnpike Capital Program involves approximately \$400 million in Turnpike capital improvements, which are represented in the model. The model analyzes the cash flow and revenue stream to help determine the timing of procuring bond issuances to accomplish the program. The Model also considers the coverage ratios to ensure sufficient revenue versus expenditures and debt service in accordance with bond covenant

