

MAKING THE GRADE IN NEW HAMPSHIRE:

An Analysis of the Ability of New Hampshire's Transportation System to Meet the State's Need for Safe and Efficient Mobility

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Prepared by:

TRIP
1726 M Street, NW, Suite 401
Washington, D.C. 20036
202-466-6706 (voice)
202-785-4722 (fax)
www.tripnet.org

Founded in 1971, TRIP® of Washington, DC is a nonprofit organization that researches, evaluates and distributes economic and technical data on highway transportation issues. TRIP is sponsored by insurance companies, equipment manufacturers, distributors and suppliers; businesses involved in highway engineering, construction and finance; labor unions; and organizations concerned with an efficient and safe highway transportation network

Executive Summary

New Hampshire's extensive system of roads and bridges provides the state's 1.1 million residents and visitors with a high level of mobility. As the backbone of New Hampshire's surface transportation system, roads and bridges play a central role in the state's economy. New Hampshire's extensive highway transportation system enables the state's residents and visitors to go to work, visit family and friends, move goods to market, and frequent tourist attractions.

It is critical that New Hampshire develops and maintains a modern transportation system that can accommodate future growth in population, vehicle travel, tourism and economic development. Improving and maintaining the condition of the state's roads and bridges, as well as modernizing New Hampshire's key highways, is critical in providing the state's residents with a high quality of life.

TRIP has assigned the following letter grades to the components comprising New Hampshire's highway system. An explanation of TRIP's grading scale and criteria can be found in Appendix A.

	GRADE	COMMENT
Roads	D	<i>Forty-seven percent of state-maintained roads in New Hampshire were in substandard condition in 2004 (the latest year for which data is available). This report contains a list of heavily traveled roads in New Hampshire that have significant deterioration and are in need of repair.</i>
Bridges	D	<i>Nearly one-third – 32 percent - of New Hampshire's bridges (20 feet or longer) are in substandard condition. Fourteen percent of New Hampshire's bridges are structurally deficient and 18 percent are functionally obsolete. TRIP has provided a list of structurally deficient, heavily traveled bridges in New Hampshire.</i>
Congestion	C	<i>Vehicle travel in New Hampshire has increased 34 percent since 1990, and the state's population has increased by 17 percent during that time. Nearly a quarter (24 percent) of New Hampshire's urban Interstates and other highways or freeways are considered congested, because they carry a level of traffic that is likely to result in delays during peak travel hours. Congestion in New Hampshire is likely to worsen in the future, as vehicle travel in the state is expected to increase 40 percent by 2025.</i>
Safety	C	<i>An average of 139 people have been killed annually in traffic accidents in New Hampshire between 2000 and 2004. The fatality rate on New Hampshire's rural, non-Interstate roads is more than twice as high as the fatality rate on all other roads in the state. Roadway safety features such as widened lanes, added or improved medians, improved intersection design, paved shoulders and added rumble strips can reduce traffic fatalities and serious accidents.</i>

Nearly half – 47 percent- of state-maintained roads in New Hampshire are in substandard condition.

- In 2004 (the latest year for which data is available), 47 percent of New Hampshire’s roads were rated in poor or mediocre condition.
- Nationally, a total of 34 percent of roads are rated in poor or mediocre condition.
- A desirable goal for state and local organizations that are responsible for road maintenance is to have 75 percent of major roads in good condition. Only 36 percent of New Hampshire’s state-maintained roads are in good condition.
- The following is a list of heavily traveled sections of road in New Hampshire that have significant pavement deterioration and are in need of repair:

Route Name	County or Closest City	From	To	Length (mi.)	Work needed	Average Daily Traffic
NH 3A	Hudson	Massachusetts St.Line	NH 102	5	Resurface	22,000
NH 9	Dover-Somersworth	NH 4	Maine State Line	5	Resurface	20,000
NH 28	Salem	Massachusetts St. Line	NH 111	6	Resurface	18,000
NH 16	Ossipee	NH 28	Pine River Road	3	Resurface	12,000
US 1	Portsmouth	US1 Bypass	Maine State Line	2	Resurface	11,000
NH 111	Exeter	NH 88	Stratham Town Line	1.5	Resurface	10,000
NH 88	Salem	I-93	NH 28	1.5	Resurface	10,000
NH 111	Exeter	Compact Limit	NH 27	2	Resurface	9,000
NH 3A	Litchfield-Manchester	Hudson Town Line	I-293	14	Resurface	7,000

Nearly one-third – 32 percent – of bridges in New Hampshire are in substandard condition. This includes all bridges that are 20 feet in length or more and are maintained by state, local and federal agencies.

- Fourteen percent of New Hampshire’s bridges were structurally deficient in 2005 (the latest year for which data is available). A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Structurally deficient bridges are often posted for lower weight or closed to traffic, restricting or redirecting commercial trucks and emergency services vehicles.
- Eighteen percent of New Hampshire’s bridges were functionally obsolete in 2005. Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate underclearances or poor alignment.
- Nationally, 13 percent of bridges are structurally deficient and 14 percent are functionally obsolete.
- The following is a list of the ten most heavily traveled bridges in New Hampshire that are also structurally deficient. An expanded, more complete list is included in the body of this study.

Closest City	Route Carried	Route or feature intersected	Average Daily Traffic	Built	Lanes
Salem	I-93 SB	Pelham Road	42,500	1961	2
Salem	I-93 NB`	Pelham Road	42,500	1961	2
Windham	I-93 SB	NH 111	42,000	1961	2
Windham	I-93 NB	NH 111	42,000	1961	2
Salem	I-93 SB	NH 38	42,000	1961	2
Salem	I-93 NB	NH 38	42,000	1961	2
Londonderry	I-93 SB	BMRR	35,000	1962	2
Londonderry	I-93 NB	BMRR	35,000	1962	2
Londonderry	I-93 SB	NH 28	33,200	1962	2
Londonderry	I-93 NB	NH 28	33,200	1962	2

Improving safety features on New Hampshire’s roads and highways would result in a decrease in fatal traffic accidents.

- An average of 139 people were killed each year in motor vehicle accidents in New Hampshire from 1999 through 2004.
- The traffic fatality rate on New Hampshire’s rural, non-Interstate roads is more than twice as high as the fatality rate on all other roads in the state. The fatality rate on New Hampshire’s rural, non-Interstate roads was 1.77 fatalities per 100 million vehicle miles of travel, which the fatality rate on all other roads in the state was 0.85 fatalities per 100 million vehicle miles of travel.
- While only 45 percent of travel takes place on New Hampshire’s rural, non-Interstate roads, 61 percent of fatalities occur on these roads.
- There are several factors associated with vehicle accidents that result in fatalities, including driver behavior, vehicle characteristics and roadway design. It is estimated that roadway design is an important factor in one-third of fatal traffic accidents.
- Highway improvements such as adding turn lanes, removing or shielding obstacles, adding medians, widening lanes, widening and paving shoulders, improving intersection layouts, providing better road markings, and installing or upgrading traffic signals could reduce the severity of serious traffic crashes.
- The Federal Highway Administration has found that every \$100 million spent on needed highway safety improvements will result in 145 fewer traffic fatalities over a 10-year period.

Increases in population and vehicle travel have placed additional stress on the state’s highway transportation system, resulting in growing traffic congestion. Congestion in New Hampshire is likely to worsen in the future, as the state’s population and rate of vehicle travel are both expected to increase.

- New Hampshire’s population reached approximately 1.1 million in 2003, an increase of approximately 17 percent since 1990. New Hampshire’s population is projected to increase another 27 percent by 2025, climbing to 1.4 million residents.
- Vehicle travel on New Hampshire’s major highways increased by 34 percent from 1990 to 2004 – rising from 9.8 billion vehicle miles traveled in 1990 to 13.2 billion vehicle miles traveled in 2004.
- TRIP estimates that vehicle travel in New Hampshire will increase by approximately 40 percent by the year 2025 to 18.5 billion miles annually.
- Nearly a quarter (24 percent) of New Hampshire’s urban Interstates and other highways or freeways are considered congested, because they carry a level of traffic that is likely to result in delays during peak travel hours.
- The following is a list of ten sections of roadway in New Hampshire that have the highest level of traffic congestion. A list of the most heavily congested sections of roadway in the state can be found in the body of the report.

Route	From	To	Length (mi.)	Level of Service ratings	Average Daily Traffic
I-93	Massachusetts State Line	I-293 in Manchester	18	E & F	80,000-100,000
I-293	I-93 in Manchester	FE Everett Tpk. In Bedford	3.5	E & F	92,000
I-93	I-89 in Bow	I-393 in Concord	3	E & F	74,000
NH 111	I-93 in Windham	Hudson	8	E & F	24,000
NH 108	NH 101 in Stratham	US 4 in Durham	11	E & F	23,000
US 302 & NH 16	NH 112 In Conway	Jct. US 302/NH 16 Bartlett	11	E & F	22,000
US 1	N. Hampton/Hampton TL	Portsmouth Circle	9	E & F	22,000
NH 101A	Nashua Town Line	NH 101 in Amherst	4	E & F	22,000
NH 101	NH 114 in Bedford	NH 31	23	E & F	20,000
US 1	Massachusetts State Line	NH 101 in Hampton	5	E & F	20,000

The efficiency of New Hampshire’s transportation system, particularly its highways, is critical to the health of the state’s economy. Businesses are increasingly reliant on an efficient and reliable transportation system to move products and services. A key component in business efficiency and success is the level and ease of access to customers, markets, materials and workers.

- Eighty-nine percent of the \$31 billion worth of commodities delivered annually from sites in New Hampshire are transported on the state’s highways.
- Commercial trucking is projected to increase 56 percent in New Hampshire by 2020.

- Increasingly, companies are looking at the quality of a region's transportation system when deciding where to re-locate or expand. Regions with congested or poorly maintained roads may see businesses relocate to areas with a smoother, more efficient transportation system.
- Every \$1.00 spent on street and highway improvements results in \$5.40 in benefits in improved traffic safety, reduced travel delays and reduced vehicle operating costs, according to the Federal Highway Administration.
- Businesses have responded to improved communications and greater competition by moving from a push-style distribution system, which relies on low-cost movement of bulk commodities and large-scale warehousing, to a pull-style distribution system, which relies on smaller, more strategic and time-sensitive movement of goods.

If transportation funding remains at current levels, many important improvements and projects will be delayed, and conditions and service will worsen, hampering New Hampshire's economic development.

- With an increase in transportation funding, New Hampshire would be able to move forward with numerous transportation projects that would help relieve traffic congestion and improve traffic safety. These projects are crucial to the state's ability to provide more efficient traffic flow for motorists and commercial truckers, which would help improve economic productivity and boost economic growth.

Sources of information for this study include the U.S. Department of Transportation, Federal Highway Administration (FHWA), the U.S. Census Bureau, the National Highway Traffic Safety Administration (NHTSA), the Texas Transportation Institute (TTI), the National Bridge Inventory (NBI), and the New Hampshire Department of Transportation (NHDOT).

Introduction

New Hampshire's system of roads and bridges provides the state's 1.1 million residents and visitors with a high level of mobility. As the backbone of New Hampshire's surface transportation system, roads and bridges play a central role in the state's economy, while enabling the state's residents and visitors to go to work, visit family and friends, move goods to market, and frequent tourist attractions.

The continued modernization of New Hampshire's roads, highways and bridges is crucial to providing a safer, more efficient transportation system, while improving the economic livelihood of the state and accommodating future growth. An increase in transportation funding would help New Hampshire undertake numerous critical road, highway and bridge projects to improve conditions and reduce fatal traffic accidents. These projects are designed to improve traffic flow and make driving safer, ultimately improving the state's level of mobility. As travel on New Hampshire's surface transportation system becomes more efficient, personal and commercial productivity will increase, boosting economic development statewide. A more efficient and well-maintained transportation system will allow for easier movement of commuters, goods, commodities and emergency response vehicles

This report looks at the condition, use, safety and funding of New Hampshire's roads and bridges, as well as the state's ability to meet future mobility and traffic safety needs. Sources of information for this study include the U.S. Department of Transportation, the New Hampshire Department of Transportation (NHDOT), the Federal Highway Administration (FHWA), the U.S. Census Bureau, the National Highway Traffic Safety Administration (NHTSA), the Texas

Transportation Institute (TTI), and the National Bridge Inventory (NBI). An explanation of TRIP's grading scale and criteria can be found in Appendix A.

Population and Travel Trends in New Hampshire

New Hampshire residents enjoy modern lifestyles that rely on a high level of personal and commercial mobility. An increase in the state's population and a significant increase in the miles traveled by the state's residents and visitors have created an increased demand on New Hampshire's key highways and roads. It is critical that New Hampshire develops and maintains a modern transportation system that can accommodate future growth in population, tourism, vehicle travel and economic development.

New Hampshire's population has increased by 17 percent since 1990, reaching approximately 1.1 million residents in 2004.¹ The population of New Hampshire is expected to increase to approximately 1.4 million persons by 2025.²

Steady economic growth and recent population growth in New Hampshire have resulted in a significant increase in vehicle travel in the state. From 1990 to 2004, annual vehicle miles of travel increased by 34 percent, from 9.8 billion annual miles of travel to 13.2 billion miles of travel.³ Based on population and other lifestyle trends, TRIP estimates that travel on New Hampshire's roads and highways will increase by another 40 percent by 2025, to 18.5 billion annual vehicle miles of travel.

Condition of New Hampshire's Roads

In 2004 (the latest year for which data is available), 47 percent of New Hampshire's state-maintained roads were rated in poor or mediocre condition.⁴ Roads rated poor may be badly cracked or broken. In some cases, poor roads can be resurfaced, but often are too deteriorated and must be reconstructed. Nationally, a total of 34 percent of roads are in poor or mediocre condition.

The lifecycle of New Hampshire's roads is greatly affected by the state's ability to perform timely maintenance and upgrades to ensure that structures last as long as possible. The pavement condition of the state's major roads are evaluated and classified as being in poor, mediocre, fair or good condition. A desirable goal for state and local organizations that are responsible for road maintenance is to keep 75 percent of major roads in good condition.⁵ In New Hampshire, 36 percent of the state-maintained highway system was in good condition in 2004.⁶

Pavement failure is caused by a combination of traffic, moisture and climate. Moisture often works its way into road surfaces and the materials that form the road's foundation. Road surfaces at intersections are even more prone to deterioration because the slow-moving or standing loads occurring at these sites subject the pavement to higher levels of stress. It is critical that roads are fixed before they require major repairs because reconstructing roads costs approximately four times more than resurfacing them.⁷

The following is a list of heavily traveled sections of road in New Hampshire that have significant pavement deterioration and are in need of repair.

Chart 1. Heavily traveled sections of road in New Hampshire that have significant pavement deterioration and are in need of repair:

Route Name	County or Closest City	From	To	Length (mi.)	Work needed	Average Daily Traffic
NH 3A	Hudson	Massachusetts St.Line	NH 102	5	Resurface	22,000
NH 9	Dover-Somersworth	NH 4	Maine State Line	5	Resurface	20,000
NH 28	Salem	Massachusetts St. Line	NH 111	6	Resurface	18,000
NH 16	Ossipee	NH 28	Pine River Road	3	Resurface	12,000
US 1	Portsmouth	US1 Bypass	Maine State Line	2	Resurface	11,000
NH 111	Exeter	NH 88	Stratham Town Line	1.5	Resurface	10,000
NH 88	Salem	I-93	NH 28	1.5	Resurface	10,000
NH 111	Exeter	Compact Limit	NH 27	2	Resurface	9,000
NH 3A	Litchfield-Manchester	Hudson Town Line	I-293	14	Resurface	7,000

Source: New Hampshire Department of Transportation

Bridge Conditions in New Hampshire

New Hampshire’s bridges form key links in the state’s highway system, providing communities and individuals access to employment, schools, shopping and medical facilities, as well as facilitating commerce and access for emergency vehicles.

In 2005, the latest year for which data is available, 14 percent of New Hampshire’s bridges (20 feet or longer) were rated structurally deficient.⁸ A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Bridges that are structurally deficient may be posted for lower weight limits or closed if their condition warrants such action. Deteriorated bridges can have a significant impact on daily life.

Restrictions on vehicle weight may cause many vehicles – especially emergency vehicles,

commercial trucks, school buses and farm equipment – to use alternate routes to avoid posted bridges. Redirected trips also lengthen travel time, waste fuel and reduce the efficiency of the local economy.

Approximately 18 percent of New Hampshire’s bridges (20 feet or longer) were functionally obsolete in 2005.⁹ Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate underclearances or poor alignment.

Nationally, 13 percent of bridges are rated as structurally deficient, while 14 percent are rated as functionally obsolete.¹⁰

Chart 2. Bridge Conditions in New Hampshire

BRIDGE CONDITION	NUMBER OF BRIDGES	PERCENTAGE OF BRIDGES
Structurally Deficient	320	14%
Functionally Obsolete	424	18%
Total Deficient Bridges	744	32%

Source: National Bridge Inventory

The following is a list of the most heavily traveled bridges in New Hampshire that are also structurally deficient.

Chart 3. The most heavily traveled bridges in New Hampshire that are also structurally deficient:

Bridge Name	Closest City	Route Carried	Route or feature intersected	Average Daily Traffic	Built	Lanes
Salem	Salem	I-93 SB	Pelham Road	42,500	1961	2
Salem	Salem	I-93 NB	Pelham Road	42,500	1961	2
Windham	Windham	I-93 SB	NH 111	42,000	1961	2
Windham	Windham	I-93 NB	NH 111	42,000	1961	2
Salem	Salem	I-93 SB	NH 38	42,000	1961	2
Salem	Salem	I-93 NB	NH 38	42,000	1961	2
Londonderry	Londonderry	I-93 SB	BMRR	35,000	1962	2
Londonderry	Londonderry	I-93 NB	BMRR	35,000	1962	2
Londonderry	Londonderry	I-93 SB	NH 28	33,200	1962	2
Londonderry	Londonderry	I-93 NB	NH 28	33,200	1962	2
Bow	Concord	I-93,FEE Tpk. NB	I-89, Turkey River	32,000	1957	2
Bow	Concord	I-93,FEE Tpk. SB	I-89, Turkey River	32,000	1957	2
Rochester	Rochester	Spaulding Tpk. SB	NH 125	18,000	1957	2
Rochester	Rochester	Spaulding Tpk. NB	NH 125	18,000	1957	2
Sarah Long Bridge	Portsmouth	US 1 Bypass	Piscataqua River	14,000	1940	2
Hampton	Hampton	NH 27	BMRR	13,000	1926	2
Plaistow	Plaistow	NH 121	BMRR, Little River Road	12,000	1940	2
Madbury	Madbury	NH 155	BMRR	12,000	1948	2
Hampton	Hampton	NH 1A	Hampton River	12,000	1949	2
Memorial Bridge	Portsmouth	US 1	Piscataqua River	11,000	1921	2
Warner	Warner	I-89 SB	Warner River	9,500	1966	2
Warner	Warner	I-89 NB	Warner River	9,500	1966	2
Allenstown-Pembroke	Allenstown	US 3	Buck St., Suncook River	9,000	1935	2
Holderness	Plymouth	NH 175A	Pemi River	8,000	1934	2
Rye	Rye	NH 1A	Seavey's Creek	5,200	1943	2

Source: New Hampshire DOT

Traffic Congestion in New Hampshire

Traffic congestion in New Hampshire is a growing burden, particularly in the southern area of the state. Increasing congestion in the state's key urban areas and threatens to impede economic development and quality of life in New Hampshire. Congestion on New Hampshire's urban highways is growing as a result of increases in vehicle travel and population. In 2004,

nearly a quarter (24 percent) of New Hampshire’s urban Interstates and other highways or freeways were considered congested, because they carry a level of traffic that is likely to result in delays during peak travel hours.

Congested urban highways often carry traffic volumes that result in significant rush hour delays. Highways that carry high levels of traffic are also more vulnerable to experiencing significant traffic delays as a result of traffic accidents or other incidents.

The region’s major highways and streets are rated based on their level of service using the letter grades A, B, C, D, E or F. Roads rated D, E, or F are considered moderately to severely congested. The following is a definition of each level of service designation:

Chart 4. Pavement level of service classification.

A	Free flow of traffic with operation of individual vehicles largely unaffected by presence of other vehicles
B	Stable flow of traffic with slight decline in freedom to maneuver
C	Stable flow of traffic, but vehicle operation is significantly affected by presence of other vehicles in traffic stream
D	Crowded roadway with some decline in speeds. Large number of vehicles restrict mobility and stable traffic flow
E	Unstable, slow traffic flow with virtually no gaps in traffic stream, subject to traffic flow breakdowns
F	Stop-and-go traffic with low speeds and little or poor maneuverability

The following chart lists state-maintained roadways that have the highest level of traffic congestion, based on their level of service (LOS) rating.

Chart 5. New Hampshire roadways with the highest level of traffic congestion, based on level of service rating:

Route	From	To	Length (mi.)	Level of Service ratings	Average Daily Traffic
I-93	Massachusetts State Line	I-293 in Manchester	18	E & F	80,000-100,000
I-293	I-93 in Manchester	FE Everett Tpk. In Bedford	3.5	E & F	92,000
I-93	I-89 in Bow	I-393 in Concord	3	E & F	74,000
NH 111	I-93 in Windham	Hudson	8	E & F	24,000
NH 108	NH 101 in Stratham	US 4 in Durham	11	E & F	23,000
US 302 & NH 16	NH 112 In Conway	Jct. US 302/NH 16 Bartlett	11	E & F	22,000
US 1	N. Hampton/Hampton TL	Portsmouth Circle	9	E & F	22,000
NH 101A	Nashua Town Line	NH 101 in Amherst	4	E & F	22,000
NH 101	NH 114 in Bedford	NH 31	23	E & F	20,000
US 1	Massachusetts State Line	NH 101 in Hampton	5	E & F	20,000
NH 25	Jct. Of US 3 & NH 25	Moultonbourough	8	E & F	19,000
US 4	Nottingham Town Line	Spaulding Tpk.	12	E & F	18,000
US 4	NH 28 in Epsom	Northwood	9	E & F	18,000
US 3 & NH 11	I-93 Exit 20	NH 106 in Laconia	8	E & F	18,000
US 3 & NH 25	NH 104 in Meredith	Jct. Of US 3 & NH 25	1	E & F	18,000
US 3 & NH 11	Franklin/Tilton TL	I-93 Exit 20	3	E & F	17,000
NH 104	NH 132 in Bristol	US 3 in Meredith	4	E & F	12,000
US 3	NH 11A in Laconia	NH 104 in Meredith	4	E & F	10,000

Traffic Safety in New Hampshire

There are three major factors associated with fatal vehicle accidents: driver behavior, vehicle characteristics and roadway design. It is estimated that roadway design is an important factor in one-third of fatal traffic accidents. In New Hampshire, an average of 139 people were killed annually in motor vehicle accidents from 1999 through 2004, according to the National Highway Transportation Safety Administration.¹¹ New Hampshire's traffic fatality rate per 100 million vehicle miles of travel is 1.29, lower than the national average of 1.44.

The traffic fatality rate on New Hampshire's rural, non-Interstate roads is more than twice as high as the fatality rate on all other roads in the state. The fatality rate on New

Hampshire's rural, non-Interstate roads was 1.77 fatalities per 100 million vehicle miles of travel, which the fatality rate on all other roads in the state was 0.85 fatalities per 100 million vehicle miles of travel. While only 45 percent of travel takes place on New Hampshire's rural, non-Interstate roads, 61 percent of fatalities occur on these roads.

Improving safety on New Hampshire's highway system can be achieved through further improvements in vehicle safety; improvements in driver, pedestrian, and bicyclist behavior; and, a variety of improvements in roadway safety features. Roadway improvements such as adding turn lanes, removing or shielding obstacles, adding or improving medians, widening lanes, widening and paving shoulders, improving intersection layout, and providing better road markings and upgrading or installing traffic signals could reduce the severity of serious traffic crashes. The Federal Highway Administration has found that every \$100 million spent on needed highway safety improvements will result in 145 fewer traffic fatalities over a 10-year period.¹²

Roads with poor geometry, with insufficient clearance along roadways, without turn lanes, inadequate shoulders for the posted speed limits, or poorly laid out intersections or interchanges, pose greater risks to motorists, pedestrians and bicyclists.

The following chart shows the average reduction in fatal accident rates experienced over a 20-year period on sections of roadways that had the following types of safety improvements installed.

Chart 6. Reduction in fatal accident rates after roadway improvements¹³

Type of Improvement	Reduction in Fatal Accident Rates after Improvements
New Traffic Signals	53%
Turning Lanes and Traffic Signalization	47%
Widen or Modify Bridge	49%
Construct Median for Traffic Separation	73%
Realign Roadway	66%
Remove Roadside Obstacles	66%
Widen or Improve Shoulder	22%

Source: TRIP analysis of U.S. Department of Transportation data

Importance of Transportation to Economic Growth

Modern business practices demand that areas have well maintained and efficient roads, highways and bridges if they want to remain economically competitive. The advent of modern national and global communications and the impact of free trade in North America and elsewhere have resulted in a significant increase in freight movement. Consequently, the quality of a region's transportation system has become a key component in a business's ability to compete locally, nationally and internationally.

Businesses have responded to improved communications and the greater necessity to cut costs with a variety of innovations including just-in-time delivery, increased small package delivery, demand-side inventory management and by accepting customer orders through the Internet. The result of these changes has been a significant improvement in logistics efficiency as

firms move away from a push-style distribution system, which relies on large-scale warehousing of materials, to a pull-style distribution system, which relies on smaller, more strategic movement of goods. These improvements have made mobile inventories the norm, resulting in the nation's trucks literally becoming rolling warehouses.

A 2002 report published by the University of California has found a critical shift is occurring in the logistic practices of American producers.¹⁴ The traditional model has featured plants located in large urban regions, with adjoining warehouses to store commodities prior to shipment. But with the significant increase in foreign trade, along with the increased difficulty of locating plants and warehouses in congested and more expensive large urban areas, businesses are moving to large distribution centers to process inbound and outbound shipments. These distribution centers are increasingly moving to regions where land is cheaper, sufficient labor is available and most importantly, a less congested system of highways is available. These large centers are responsible for quickly processing incoming commodities and preparing them for delivery on outgoing trucks. The high volume and time sensitivity of these transactions typically require more frequent movement of smaller loads by trucks, vans and planes.

The report found that “as better communications brings faster, more reliable, and more efficient handling and movement of goods, competition requires freight companies to be fast, flexible, precise and cost-sensitive.”¹⁵

A comprehensive 2002 Transportation Research Board report on the adequacy of U.S. freight movement capabilities found that a region's ability or failure to provide a transportation

system that minimizes traffic congestion and provides reliable freight movement has a significant impact on whether jobs are created locally or are shifted elsewhere. The report found that “workplaces and residences will move away from congestion within metropolitan areas and from more congested to less congested regions within the United States. Some production will move from the United States to other countries if congestion costs cause the United States to lose comparative advantage in some industries.”¹⁶

Highways are vitally important to continued economic development in New Hampshire. As the economy expands, creating more jobs and increasing consumer confidence, the demand for consumer and business products grows. In turn, manufacturers ship greater quantities of goods to market to meet this demand, a process that adds to truck traffic on the state’s highways and major arterial roads. An analysis of commodity transport by the U.S. Bureau of Transportation Statistics (BTS) and U.S. Census Bureau underscored the economic importance of New Hampshire’s road system. The BTS report found that in New Hampshire, 89 percent of the \$31 billion in products shipped annually from sites in the state are transported on highways.¹⁷

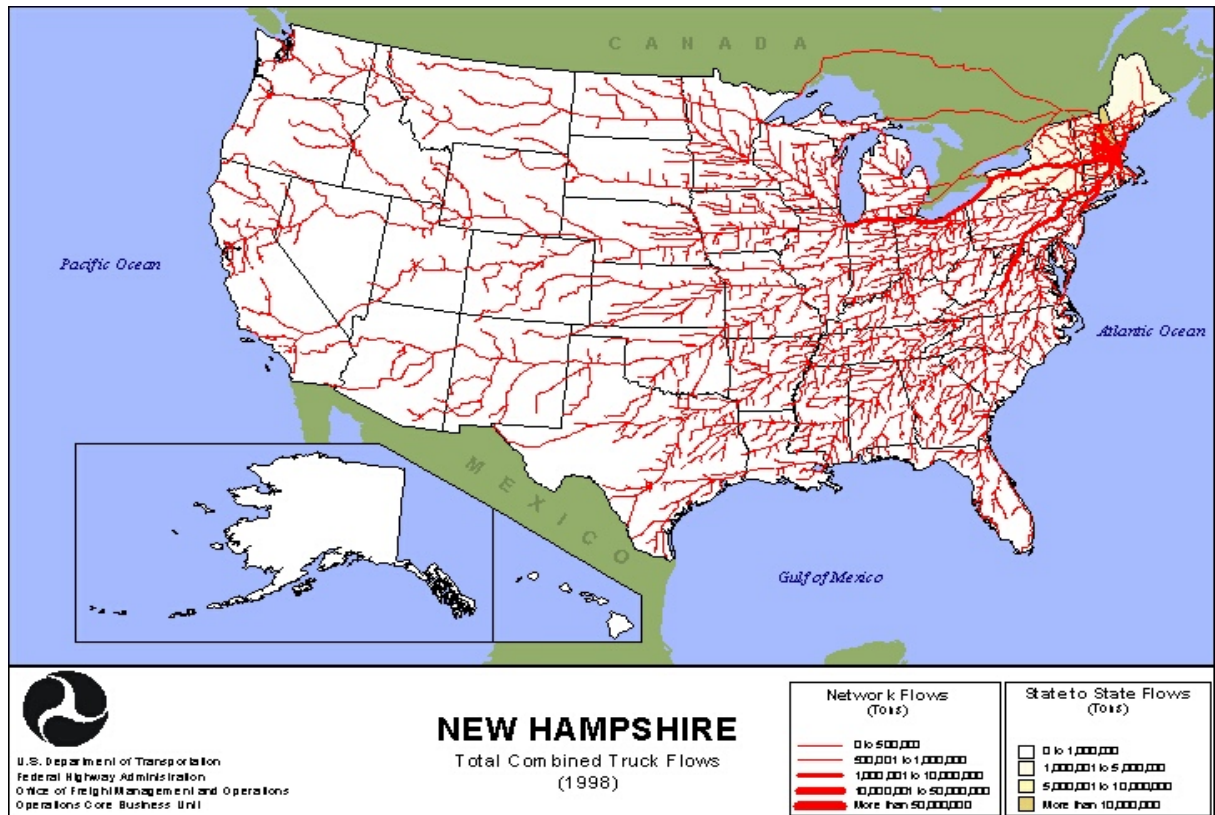
Trucking is a crucial part of New Hampshire’s economy, as commercial trucks move goods from sites across the state to markets inside and outside the state. Commercial truck travel in New Hampshire is expected to increase over the next two decades. Based on federal projections, TRIP estimates that commercial trucking will increase by 56 percent in New Hampshire by the year 2020.¹⁸

Expanding the current transportation system and improving roads and bridges also impacts the state's economy by providing jobs and helping to stimulate the local economy. The Federal Highway Administration estimates that every \$100 million spent on highway construction creates approximately 4,200 jobs.¹⁹ This includes both construction jobs and jobs in the related fields, such as engineering, design and construction materials production, as well as general jobs in the local economy as a result of the spending generated by the increase in local wages.²⁰

In addition, the Federal Highway Administration has found that every dollar spent on street and highway improvements results in \$5.40 in benefits, including improved traffic safety, reduced travel delays and reduced vehicle operating costs.²¹

The following map illustrates the truck freight traffic flows in New Hampshire, showing the volume levels along specific highways (indicated by the width of the route). The chart includes truck freight traffic flows for international and domestic freight movement, both imports and exports.

Chart 7: Truck flow to and from New Hampshire.



Source: U.S. Department of Transportation

Highway Funding in New Hampshire

With a significant increase in transportation funding, New Hampshire would be able to complete or accelerate the progress of needed highway transportation projects. These projects would help relieve traffic congestion, improve the condition of the transportation system and improve traffic safety. These projects are crucial to the state's ability to provide more efficient traffic flow for motorists and commercial truckers, which would help improve economic productivity and boost economic growth.

Conclusion

It is critical that New Hampshire develops and maintains a modern transportation system that can accommodate the state's growth in population, vehicle travel, tourism and economic development. Further modernization of New Hampshire's system of roads, highways and bridges is crucial to providing a safer, more efficient transportation system, while improving the economic livelihood of the state's residents.

A significant increase in transportation funding would help New Hampshire undertake numerous critical road, highway and bridge and public transit projects to relieve traffic congestion and reduce traffic fatalities. These projects are designed to improve traffic flow and make driving safer, and help the state accommodate increasing levels of travel. As travel on New Hampshire's surface transportation system becomes more efficient, personal and commercial productivity will increase, boosting economic development and providing the state's residents and visitors with increased safety, convenience and reliability.

Endnotes

¹ U.S. Census Bureau. Statistical Abstract of the United States, 2004. P. 21.

² Ibid.

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