

FUTURE MOBILITY IN CONNECTICUT:

Meeting the State's Need for Safe and Efficient Mobility

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

Executive Summary

Connecticut's extensive system of roads, highways, bridges and public transit provides the state's residents, visitors and businesses with a high level of mobility. As the backbone that supports the Constitution State, Connecticut's surface transportation system provides for travel to work and school, visits with family and friends, and trips to tourist and recreation attractions while simultaneously providing businesses with reliable access for customers, suppliers and employees. Connecticut must improve its system of roads, highways, bridges and public transit to foster economic growth, keep business in the state, and ensure the safe, reliable mobility needed to improve quality of life in Connecticut.

As Connecticut looks to rebound from the current economic downturn, the state will need to enhance its surface transportation system by improving the physical condition of its transportation network and enhancing the system's ability to provide efficient and reliable mobility for residents, visitors and businesses. With unemployment in Connecticut jumping from 4.5 percent in June 2007 to 8.8 percent in June 2010, making needed improvements to the state's roads, highways, bridges and transit could provide a significant boost to the state's economy by creating jobs and stimulating long-term economic growth as a result of enhanced mobility and access.

The federal government is an essential source of funding for the ongoing modernization of Connecticut's roads, highways, bridges and transit. While construction materials costs have stabilized somewhat during the current recession, a 33 percent materials cost increase over the past five years, coupled with declines in federal transportation revenues, has contributed to the difficulty all states face in maintaining and improving their surface transportation systems.

Approved in February 2009, the American Recovery and Reinvestment Act provided approximately \$302 million in stimulus funding for highway and bridge improvements and \$137 million for public transit improvements in Connecticut. This funding can serve as a down payment on needed road, highway, bridge and transit improvements, but it is not sufficient to allow the state to proceed with numerous projects needed to modernize its surface transportation system. Meeting Connecticut's need to modernize and maintain its system of roads, highways, bridges and transit will require a significant, long-term boost in transportation funding at the federal, state or local levels.

Congress is currently deliberating over a long-range federal surface transportation program. The current program, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), originally scheduled to expire on September 30, 2009, now expires on December 31, 2010 following five short-term extensions. The level of funding and the provisions of a future federal surface transportation program will have a significant impact on future highway and bridge conditions and safety as well as the level of transit service in Connecticut, which, in turn, will affect the state's ability to improve its residents' quality of life and enhance economic development opportunities.

The federal surface transportation program is an essential source of funding for the construction, maintenance and improvement of Connecticut's system of roads, highways, bridges and public transit.

- Federal spending levels for highways and public transit are based on the current federal surface transportation program, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), which was approved by Congress in 2005. Following a series of short term extensions passed by Congress, SAFETEA-LU, scheduled to expire on September 30, 2009, now expires December 31, 2010.
- Largely due to federal transportation funds, from 1998 to 2008, Connecticut has been able to complete numerous highway, bridge and transit projects that have improved safety and enhanced mobility and economic productivity. This report contains lists of statewide projects completed with federal funding.
- From 1998 to 2008, Connecticut received approximately \$5.2 billion in federal funding for road, highway and bridge improvements, and \$1.3 billion for public transit, a total of approximately \$6.5 billion.
- While construction materials costs have stabilized or even decreased during the current recession, a 33 percent materials cost increase over the past five years, coupled with declines in federal transportation revenues, will make it more difficult for Congress to authorize new federal surface transportation legislation that adequately funds needed improvements to the nation's roads, highways, bridges and public transit systems.

Without substantial federal funding, Connecticut will be unable to complete numerous projects to improve the condition and expand the capacity of roads, highways and public transit, hampering the state's ability to improve mobility and to enhance economic development opportunities in the state.

- Needed surface transportation projects in Connecticut that would require significant federal funding to proceed include the reconstruction of CT 15 from Fairfield to Trumbull, bridge replacements, improving interchanges and ramps on I-95 in Norwalk from US 7 to Exit 14, replacing the bridges and approach on I-95 in New Haven over the Quinnipiac River and New Haven Harbor, reconstructing and widening I-84 in Waterbury from Silver Street to Pierpont Road, and improvements to the New Britain – Hartford Busway. A full list of needed projects is included in the report.
- TRIP estimates that Connecticut's roadways that lack some desirable safety features, have inadequate capacity to meet travel demands or have poor pavement conditions cost the state's drivers approximately \$2.7 billion annually in the form of traffic crashes, additional vehicle operating costs and congestion-related delays.
- TRIP estimates that roadways that lack some desirable safety features, have inadequate capacity to meet travel demands or have poor pavement conditions, cost the average Hartford area motorist \$1,119 annually, while the cost to motorists in the Bridgeport and Stamford areas is \$1,270 and \$1,074 for the average New Haven area driver.

- To ensure that federal funding for highways and bridges in Connecticut and throughout the nation continues beyond the expiration of SAFETEA-LU, Congress needs to approve a new long-term federal surface transportation program by December 31, 2010.
- The American Recovery and Reinvestment Act (ARRA) provides approximately \$302 million in stimulus funding for highway and bridge improvements and \$152 million for public transit improvements in Connecticut.
- ARRA funding can serve as a down payment on needed road, highway, bridge and transit improvements, but it is not sufficient to allow the state to proceed with numerous projects needed to modernize its surface transportation system. Meeting Connecticut's need to modernize and maintain its system of roads, highways, bridges and transit will require a significant, long-term boost in transportation funding at the federal, state or local levels.

Despite the current economic downturn, population increases and economic growth in Connecticut over the past two decades have resulted in increased demands on the state's major roads and highways.

- Connecticut's population reached 3.5 million in 2009, an increase of seven percent since 1990. The state's population is expected to grow to 3.7 million by 2025.
- Vehicle travel in Connecticut increased 19 percent from 1990 to 2008 – from 26.3 billion vehicle miles traveled (VMT) in 1990 to 31.3 billion VMT in 2008.
- By 2025, vehicle travel in Connecticut is projected to increase by another 20 percent.
- From 1990 to 2008, Connecticut's gross domestic product, a measure of the state's economic output, increased by 33 percent, when adjusted for inflation.

Traffic congestion levels are rising as a result of population and economic growth, leading to increasing travel delays in Connecticut's urban areas.

- In 2008, 58 percent of Connecticut's urban Interstates and other highways or freeways were considered congested, carrying a level of traffic that is likely to result in significant delays during peak travel hours.
- The average rush hour trip in the Bridgeport - Stamford metro area takes approximately 25 percent longer to complete than during non-rush hour.
- According to a report by the Reason Foundation, by 2030, unless additional highway capacity is added, traffic delays in the Bridgeport - Stamford area will more than double, with the average rush hour trip taking 62 percent longer to complete than during non-rush hour. This level of traffic delay is equivalent to what is currently experienced in Atlanta and Chicago.
- The statewide cost of traffic congestion in lost time and wasted fuel is approximately \$724 million annually. Drivers in the Bridgeport-Stamford area lose \$727 each year due to congestion, while Hartford drivers lose \$415 and the average New Haven driver loses \$379 each year due to congestion.

In 2008, nearly half of major roads in Connecticut were in poor or mediocre condition, providing motorists with a rough ride.

- In 2008, 13 percent of Connecticut's major roads were rated in poor condition and 32 percent were rated in mediocre condition. This includes Interstates, highways, connecting urban arterials and key urban streets that are maintained by state, county or municipal governments.
- Roads rated in poor condition may show signs of deterioration, including rutting, cracks and potholes. In some cases, poor roads can be resurfaced, but often are too deteriorated and must be reconstructed. Roads rated in mediocre condition may show signs of significant wear and may also have some visible pavement distress. Most pavements in mediocre condition can be repaired by resurfacing, but some may need more extensive reconstruction to return them to good condition.
- Roads in need of repair cost each Connecticut motorist an average of \$294 annually in extra vehicle operating costs – \$847 million statewide. Costs include accelerated vehicle depreciation, additional repair costs and increased fuel consumption and tire wear.
- In the Hartford metropolitan area, where 20 percent of major roads are rated in poor condition and 31 percent are rated in mediocre condition, driving on roads in need of repair costs motorists \$351 each year in extra vehicle operating costs.
- Fourteen percent of major roads in the Bridgeport / Stamford area are rated in poor condition and 25 percent are rated in mediocre condition, driving on roads in need of repair costs motorists \$280 each year in extra vehicle operating costs.
- In the New Haven metropolitan area, where eight percent of major roads are rated in poor condition and 29 percent are rated in mediocre condition, driving on roads in need of repair costs motorists \$233 each year in extra vehicle operating costs.
- The functional life of Connecticut'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. It is critical that roads are fixed before they require major repairs because reconstructing roads costs approximately four times more than resurfacing them.
- This report contains a list of needed roadway preservation projects in Connecticut that would require a significant increase in federal funding to be completed.

Thirty-four percent of bridges in Connecticut showed significant deterioration or did not meet current design standards in 2009. This includes all bridges that are 20 feet or more in length and are maintained by state, local and federal agencies.

- Nine percent of Connecticut's bridges were structurally deficient in 2009. 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 large vehicles, including commercial trucks, school buses and emergency services vehicles.

- Twenty-five percent of Connecticut's bridges were functionally obsolete in 2009. Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate clearances or poor alignment.
- This report contains a list of needed bridge rehabilitation and replacement projects across the state that would require significant federal funding to be completed.

Connecticut's rural traffic fatality rate is nearly double the fatality rate on all other roads in the state. Improving safety features on Connecticut's roads and highways would likely result in a decrease in traffic fatalities in the state. Roadway characteristics are likely a contributing factor in approximately one-third of all fatal and serious traffic accidents.

- Between 2004 and 2008, 1,443 people were killed in traffic accidents in Connecticut, an average of 289 fatalities per year.
- Connecticut's traffic fatality rate was .83 fatalities per 100 million vehicle miles of travel in 2008, lower than the national average of 1.25 fatalities per 100 million vehicle miles of travel.
- The traffic fatality rate in 2008 on Connecticut's non-Interstate rural roads was 1.47 traffic fatalities per 100 million vehicle miles of travel, which is nearly double the traffic fatality rate of .76 on all other roads and highways in the state.
- Several factors are associated with vehicle accidents that result in fatalities, including driver behavior, vehicle characteristics and roadway design.
- TRIP estimates that roadway characteristics, such as lane widths, lighting, signage and the presence or absence of guardrails, paved shoulders, traffic lights, rumble strips, obstacle barriers, turn lanes, median barriers and pedestrian or bicycle facilities, are likely a contributing factor in approximately one-third of all fatal and serious traffic crashes.
- Where appropriate, highway improvements can reduce traffic fatalities and accidents while improving traffic flow to help relieve congestion. Such improvements include removing or shielding obstacles; adding or improving medians; adding rumble strips, wider lanes, wider and paved shoulders; upgrading roads from two lanes to four lanes; and better road markings and traffic signals.
- The cost of serious traffic crashes in Connecticut in 2008, in which roadway design was likely a contributing factor, was approximately \$1.1 billion. Traffic crashes, in which roadway design was likely a contributing factor, in the Hartford area cost each driver approximately \$353. The annual cost for such crashes in the Bridgeport and Stamford to area drivers is \$263 annually, and these crashes cost each New Haven area driver an average of \$462 each year. The costs of serious crashes include lost productivity, lost earnings, medical costs and emergency services.
- 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.

Two congressionally appointed commissions and a national organization representing state transportation departments have recommended a broad overhaul of the Federal Surface Transportation Program to improve mobility, safety and the physical condition of the nation's surface transportation system by significantly boosting funding, consolidating the program into fewer categories, speeding up project delivery and requiring greater accountability in project selection.

- The National Surface Transportation Policy and Revenue Study Commission (NSTPRSC) and the National Surface Transportation Infrastructure Financing Commission (NSTIFC) were created by Congress to examine the current condition and future funding needs of the nation's surface transportation program, develop a plan to insure the nation's surface transportation system meets America's future mobility needs, and to recommend future funding mechanisms to pay for the preservation and improvement of the nation's roads, highways, bridges and public transit systems.
- The NSTPRSC concluded that it is critical to the future quality of life of Americans that the nation create and sustain the preeminent surface transportation system in the world, one that is well-maintained, safe and reliable.
- The NSTIFC found that the U.S. faces a \$2.3 trillion funding shortfall over the next 25 years in maintaining and making needed improvements to the nation's surface transportation system.
- The NSTIFC found that the use of motor fuel fees is not sustainable as a primary source of funding for the nation's surface transportation system because of the shift to a variety of fuel sources and more fuel efficient vehicles.

Key recommendations of the Commissions and the American Association of State Highway Transportation Officials (AASHTO) include:

Program format:

- Allocate funding through outcome-based, performance-driven programs supported by cost/benefit evaluations rather than political earmarking (NSTPRSC).
- Consolidate the more than 100 current transportation funding programs into 10 programs focused on key areas of national interest, including congestion relief, preservation of roads and bridges, improved freight transportation, improved roadway safety, improved rural access, improved environmental stewardship, and the development of environmentally-friendly energy sources (NSTPRSC).
- Speed up project development processes to reduce the excessive time required to move projects from initiation to completion by better coordinating the development and review process for transportation projects (NSTPRSC).
- Develop a future federal surface transportation program that would be accountable for results, would make investments based on community needs and would deliver projects on time and on budget (AASHTO).

- Provide a federal surface transportation program that is based on state-driven performance measures and is focused on six objectives of national interest: preservation and renewal, interstate commerce, safety, congestion reduction and connectivity for urban and rural areas, system operations, and environmental protection (AASHTO).

Funding:

- Shift the collection of federal surface transportation revenues from fuel taxes to mileage-based fees, which would charge motorists a fee based on the number of miles driven, with full deployment of a comprehensive system in place by 2020 (NSTIFC).
- Ensure that once implemented, mileage-based fees were indexed to inflation and that they and any other federal transportation charges were set at a rate that would provide enough revenue to provide adequate federal funding to ensure that the nation achieve an integrated national transportation system that is less congested and safer and that promotes increased productivity, stronger national competitiveness, and improved environmental outcomes (NSTIFC).
- Failure to address the immediate funding shortfall and provide adequate long-term funding for surface transportation will lead to unimaginable levels of congestion, reduced safety, costlier goods and services, eroded quality of life and diminished economic competitiveness (NSTIFC).
- In the short term, significantly boost the current federal motor fuel tax and index it to inflation to support increased federal surface transportation investment (NSTIFC).
- Expand the ability to use additional surface transportation funding sources including tolling, state investment banks and public-private partnerships as a supplement to primary sources of funding such as motor fuel fees and eventually a mileage-based fee (NSTIFC).

The efficiency of Connecticut’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. Expenditures on highway repairs create a significant number of jobs. Increases in the cost of highway construction materials have boosted the cost of road, highway and bridge repairs.

- Annually, \$82 billion in goods are shipped from sites in Connecticut and another \$87 billion in goods are shipped to sites in Connecticut, mostly by trucks.
- Seventy-five percent of the goods shipped annually from sites in Connecticut are carried by trucks and another 21 percent are carried by courier services, which use trucks for part of the deliveries. Similarly, 78 percent of the goods shipped to sites in Connecticut are carried by trucks and another 11 percent are carried by courier services.
- Commercial trucking in Connecticut is projected to increase 27 percent by 2020.
- A 2007 analysis by the Federal Highway Administration found that every \$1 billion invested in highway construction would support approximately 27,800 jobs, including approximately 9,500 in the construction sector, approximately 4,300 jobs in industries supporting the construction sector, and approximately 14,000 other jobs induced in non-construction related sectors of the economy.

- Over the five-year period from April 2005 to April 2010, the average cost of materials used for highway construction – including asphalt, concrete, steel, lumber and diesel – increased by 33 percent.

Sources of information for this report include the Connecticut Department of Transportation (ConnDOT), the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the National Surface Transportation Policy and Revenue Study Commission (NSTPRSC), the National Surface Transportation Infrastructure Financing Commission (NSTIFC), the U.S. Census, The Bureau of Transportation Statistics (BTS), the American Association of State Highway and Transportation Officials (AASHTO), the National Highway Traffic Safety Administration (NHTSA), the Reason Foundation and the Texas Transportation Institute (TTI). All data used in the report is the latest available.

Introduction

Connecticut's roads, highways and bridges form vital transportation links for the state's residents, visitors and businesses, providing daily access to homes, jobs, shopping and recreation.

With unemployment in Connecticut increasing from 4.5 percent in June 2007 to 8.8 percent in June 2010, the modernization of Connecticut's surface transportation system is crucial to providing safe and efficient mobility while improving the economic livelihood of the state and accommodating future growth.¹

As the nation looks to rebound from the current economic downturn, improving Connecticut's transportation system could play an important role in improving the state's economic well being by providing critically needed jobs in the short term and enhancing the productivity and competitiveness of the state's businesses in the long term.

While state and local governments are responsible for maintaining most of Connecticut's roadways, bridges and public transit systems, the federal government plays a significant role in funding the repairs and improvements to many critical sections of the state's surface transportation system. As Connecticut faces the challenge of preserving and improving its roadways, bridges and public transit systems, the future level of federal highway funding will be a critical factor in whether the state's residents, businesses and visitors continue to enjoy access to a safe and efficient transportation network.

This report examines the condition, use and safety of Connecticut's roads, highways, bridges and public transit systems, the role of federal funding in their maintenance and improvement, and the future mobility needs in Connecticut. Included in the report are lists of highway, bridge and transit projects that have been completed with the help of federal funding, and lists of needed surface transportation projects that will require significant federal funding to proceed.

Sources of information for this report include the Connecticut Department of Transportation (ConnDOT), the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the National Surface Transportation Policy and Revenue Study Commission (NSTPRSC), the National Surface Transportation Infrastructure Financing Commission (NSTIFC), the U.S. Census, The Bureau of Transportation Statistics (BTS), the American Association of State Highway and Transportation Officials (AASHTO), the National Highway Traffic Safety Administration (NHTSA), the Reason Foundation and the Texas Transportation Institute (TTI). All data used in the report is the latest available.

Population, Travel and Economic Trends in Connecticut

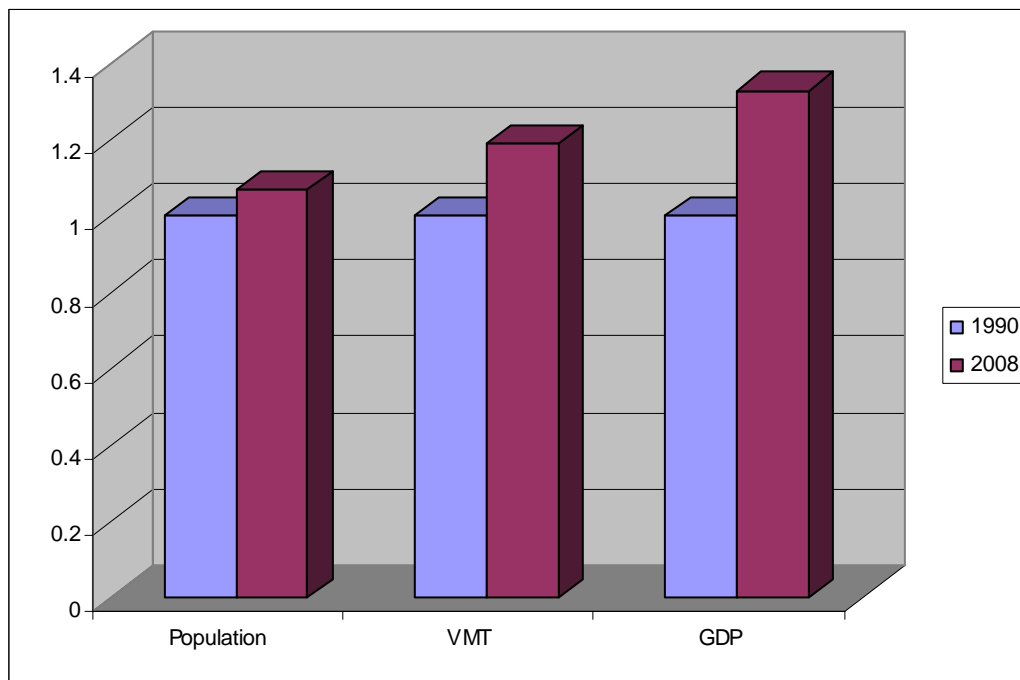
Connecticut residents and businesses require a high level of personal and commercial mobility. Despite the current economic downturn, population increases and economic growth in the Constitution State over the past two decades have resulted in an increase in the demand for mobility, resulting in an increase in vehicle miles of travel (VMT). To foster a high quality of life in Connecticut, it will be critical that the state provide and preserve a safe and modern transportation system that can accommodate future growth in population, vehicle travel and economic development.

Connecticut's population grew seven percent between 1990 and 2009, reaching approximately 3.5 million residents in 2009.² The population of Connecticut is projected to increase to 3.7 million by 2025.³

Connecticut also has experienced moderate economic growth since 1990. From 1990 to 2008, Connecticut's gross domestic product (GDP), a measure of the state's economic output, increased by 33 percent, when adjusted for inflation.⁴

From 1990 to 2008, annual vehicle miles of travel in Connecticut increased 19 percent, from 26.3 billion miles traveled annually to 31.3 billion miles traveled annually.⁵ Based on population and other lifestyle trends, TRIP estimates that travel on Connecticut’s roads and highways will increase by 20 percent by 2025, to approximately 37.6 billion miles of travel.⁶

Chart 1: Connecticut’s population, GDP and Vehicle Travel increase 1990-2008. 1 = 1990 level (Population figure is for 2009.)



Source: TRIP analysis of federal data

Condition of Connecticut’s Roads

The life cycle of Connecticut’s roads is greatly affected by the state’s ability to perform timely maintenance and upgrades to ensure that road and highway surfaces last as long as possible. The pavement condition of the state’s major roads is evaluated and classified as being in poor, mediocre, fair or good condition.

In 2008, 45 percent of Connecticut’s major roads were rated in poor or mediocre condition, providing motorists with a rough ride.⁷ Thirteen percent of Connecticut’s major roads were rated in

poor condition and 32 percent were rated in mediocre condition.⁸ Roads rated poor may show signs of deterioration, including rutting, cracks and potholes. In some cases, poor roads can be resurfaced but often are too deteriorated and must be reconstructed. Roads rated in mediocre condition may show signs of significant wear and may also have some visible pavement distress. Most pavements in mediocre condition can be repaired by resurfacing, but some may need more extensive reconstruction to return them to 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.⁹ In Connecticut, 35 percent of the state’s major roads were in good condition in 2008.¹⁰

Chart 2. Pavement conditions in Connecticut.

<i>Pavement Rating</i>	<i>Percentages</i>
Poor	13%
Mediocre	32%
Fair	20%
Good	35%

Source: TRIP analysis of Federal Highway Administration Data.

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.¹¹

As Connecticut’s roads and highways continue to age, they will reach a point where routine paving and maintenance will not be adequate to keep pavement surfaces in good condition and costly reconstruction of the roadway and its underlying surfaces will become necessary.

The following chart lists needed roadway reconstruction and improvement projects that cannot move forward without significant federal funding.

Chart 3. Needed road and highway reconstruction projects of regional or statewide importance that require significant federal funds to proceed.

Route	County/City	From	To	Length (Mi.)	ADT	Cost (Mil.)	Project Goal
CT 72	Bristol	CT 372	CT 229	2.12	19,600	74.7	Extend Expwy.
CT 9	Chester	CT 148	Middletown	9.4	32,800	19.9	Resurface Expwy.
I-84	Danbury	Exit 6	Exit 6	0.5	103,900	14	Reconst. Interchange
CT 34	Derby	Bridge St.	Ausonion Dr.	TBD	16,300	12	Reconst. Expwy.
CT 15	Fairfield, Trumbull	Congress St., Fairfield	CT 8, Trumbull	8.9	70,400	90.85	Reconst & Repl. 2 bridges
I-84	Farmington	CT 6 Int.	CT 9 Int.	1.8	103,300	125	Reconst 3 bridges
CT 2	Glastonbury	Glastonbury	Marlborough	TBD	48,300	23	Reconst Expwy.
I-95	Groton	Groton	Rhode Island	17.2	52,000	68.5	Safety Improvements
US 44	Manchester	I-84 Ramps	New State Rd.	0.75	13,900	14.3	Reconst Turning Rds.
US 7 / CT 15	Norwalk	US 7	CT 15	0.5	61,000	136	Reconst Interchange
I-95	Norwalk	US 7	Exit 14	1.5	147,000	78.8	Revise Interchange & Ramps
CT 82	Norwich	CT 82	I-395	0.5	24,000	17	Revise Interchange & Ramps
CT 15	Stamford	Stamford	New Cannan	6.5	68,200	35	Reconst. Expwy.
CT 25	Trumbull	CT 15	CT 111	5.5	37,600	27.3	Preservation/Safety
CT 15	Westport	CT 33	Congress St.	4.58	63,200	11.6	Preservation/Safety
CT 63	Woodbridge	Bradley Rd.	New Haven Town Line	TBD	15,100	18	Drainage Imp.

Source: ConnDOT response to TRIP survey. (ADT = Average Daily Traffic)

The Costs to Motorists of Roads in Inadequate Condition

TRIP has calculated the additional cost to motorists of driving on roads in poor or unacceptable condition. Roads in poor condition – which may include potholes, rutting or rough surfaces – increase the cost to operate and maintain a vehicle. These additional vehicle operating costs include accelerated vehicle depreciation, additional vehicle repairs, increased fuel consumption and increased tire wear. TRIP estimates that additional vehicle operating costs borne by Connecticut motorists as a result of driving on roads in poor condition is \$847 million annually, or approximately \$294 per motorist each year.

Driving on major roads in need of repair in the Hartford metro area, where 20 percent of major roads are rated in poor condition and 31 percent are rated in mediocre condition, cost local motorists an

additional \$351 a year. Fourteen percent of major roads in the Bridgeport / Stamford area are rated in poor condition and 25 percent are rated in mediocre condition, driving on roads in need of repair costs motorists \$280 each year in extra vehicle operating costs. In the New Haven metropolitan area, where eight percent of major roads are rated in poor condition and 29 percent are rated in mediocre condition, driving on roads in need of repair costs motorists \$233 each year in extra vehicle operating costs.

Additional vehicle operating costs have been calculated in the Highway Development and Management Model (HDM), which is recognized by the U.S. Department of Transportation and more than 100 other countries as the definitive analysis of the impact of road conditions on vehicle operating costs. The HDM report is based on numerous studies that have measured the impact of various factors, including road conditions, on vehicle operating costs.¹²

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

TRIP's additional vehicle operating cost estimate is based on taking the average number of miles driven annually by a motorist, calculating current vehicle operating costs based on AAA's 2010 vehicle operating costs and then using the HDM model to estimate the additional vehicle operating costs paid by drivers as a result of substandard roads.¹³ Additional research on the impact of road conditions on fuel consumption by the Texas Transportation Institute (TTI) is also factored into TRIP's vehicle operating cost methodology.

Bridge Conditions in Connecticut

Connecticut's bridges form key links in the state's highway system, providing communities and individuals access to employment, schools, shopping and medical facilities, and facilitating commerce and access for emergency vehicles. In 2009, a total of 34 percent of Connecticut's bridges (20 feet or longer) were rated as structurally deficient or functionally obsolete.¹⁴

Nine percent of Connecticut's bridges were rated as structurally deficient in 2009.¹⁵ 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.

Twenty-five percent of Connecticut's bridges were rated functionally obsolete in 2009.¹⁶ Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate clearances or poor alignment with the approaching roadway.

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

Over the past decade, Connecticut has been able to replace many bridges and undertake numerous preservation projects, but the state cannot initiate other, critically needed projects without substantial levels of federal funding. The following charts lists needed bridge rehabilitation or

replacement projects of regional or statewide importance that would require significant federal funding to proceed.

Chart 4. Needed bridge replacement projects that require significant federal funding to be completed.

Route	County/ City	Route or feature intersected	ADT	Improvements Needed	Cost (Mil.)
Amtrak	Branford	US 1	26,100	Replace Rail Bridge	78.3
CT 4	Farmington	Farmington Ri.	13,600	Replace Bridge	26.1
US 1	Groton	Mystic Ri.	11,800	Phase 2 Rehab	17.8
I-84 Ramp	Hartford	Lower Smith School Brook	n/a	Replace Bridge w/ at grade ramp	12.8
I-84	Hartford	Amtrak & City Streets	159,900	Rehab viaduct structure	132.5
Flatbush Ave.	Hartford	Amtrak	n/a	Replace at-grade crossing w/bridge	55
I-84	Hartford	Amtrak & City Streets	159,900	Short-term repairs to viaduct	34.4
I-95	New Haven	West Ri.	144,400	Rehab.	212.2
I-95/I-91/CT34	New Haven	City Streets	130,000	Reconst. Interchange Bridges	722.3
I-95	New Haven	Quinnipiac Ri./ New Haven Harbor	155,000	Replace Bridges and Approach	904.5
CT 2A	Preston	Thames Ri	12,400	Replace Bridge	115.2
CT 8	Shelton	Housatonic Ri.	69,900	Replace Bridge	36.5
I-95	Stratford	Housatonic Ri.	111,200	Replace Bridge	472.1
CT 190	Suffield	Connecticut Ri.	30,300	Replace Bridge	14.2

Source: ConnDOT response to TRIP survey. (ADT = Average Daily Traffic)

Traffic Congestion in Connecticut

Traffic congestion in Connecticut is a growing burden in key urban areas and threatens to impede the state’s economic development. Congestion on Connecticut’s urban highways is growing as a result of increases in vehicle travel and population.

In 2008, 58 percent of Connecticut’s urban Interstates and other highways or freeways were congested, carrying traffic volumes that result in significant rush hour delays.¹⁷ Highways that carry high levels of traffic are also more vulnerable to experiencing lengthy traffic delays as a result of traffic accidents or other incidents.

Traffic congestion in Connecticut’s largest urban areas is likely to worsen significantly unless the state is able to improve its transportation system. The average rush hour trip in the Bridgeport - Stamford metro area takes approximately 25 percent longer to complete than during non-rush hour.¹⁸

According to the Reason Foundation, by 2030, unless additional highway capacity is added, traffic congestion delays will more than double, with the average rush hour trip in the Bridgeport - Stamford metro area taking 62 percent longer to complete than during non-rush hour.¹⁹ This level of traffic delay is equivalent to what drivers currently experience in Atlanta and Chicago.

The statewide cost of traffic congestion in lost time and wasted fuel is approximately \$724 million annually. Drivers in the Bridgeport-Stamford area lose \$727 each year due to congestion, while Hartford drivers lose \$415 and the average New Haven driver loses \$379 each year due to congestion.²⁰

Projects needed to increase the capacity of the state’s major roadways to relieve traffic congestion, improve safety and support economic development cannot proceed without a significant boost in federal or state funding. The following chart lists needed capacity-enhancing projects that cannot proceed without significant federal funding.

Chart 5. Needed projects that require significant federal funding to be completed.

Route	County/City	From	To	Length (Mi.)	ADT	Improvements Needed	Cost (Mil.)
CT 202, Federal Rd.	Brookfield	White Turkey Rd.	CT 133	1.85	8,700	Widening & Resurfacing	14
US 7	Danbury	Ridgefield	Wooster Heights Rd.	2.6	27,200	Widening & Resurfacing	65.7
US 6	Danbury	Kenosia Ave.	1-84 Overpass	1.32	20,200	Widening & Resurfacing	18
CT 63, Whalley Ave.	New Haven			0.76	15,100	Widening & Resurfacing	17.1
US 7	Norwalk/Wilton	Grist Mill Rd.	CT 33	2	32,100	Widening & Resurfacing	22.8
I-95	Old Lyme	Baldwin Bridge	Rocky Neck Connector	13.6	69,400	Widening & Resurfacing	230
US 1	Orange	Milford	CT 114	1.6	25,400	Add operational Lane	13.2
I-84	Waterbury	Silver St.	Pierpont Rd.	2.75	99,500	Reconst. & Widen	336
I-84	West Hartford	Exit 40	Exit 42	1.64	127,400	Add operational Lane	48.5

Source: ConnDOT response to TRIP survey. (ADT = Average Daily Traffic)

While the state has made progress in furthering its multi-modal efforts, ConnDOT has identified the following needed projects in the state that would require an increase in federal surface transportation funding to be completed by 2015.

Chart 6. Needed rail and transit improvements that would require a boost in federal funding to proceed.

County/ City	Mode	Project Description	Cost (mil.)	Project Benefit
Hartford	Transit	New Britain - Hartford Busway	569	Econ. Dev.
New Haven	Rail	New Haven Yard Master Complex	990	Expansion
Fairfield County	Rail	Mainline Catenary Repl. - Section C1a	150	Safety
Norwalk	Rail	WALK Moveable Bridge Repl.	100	Safety
Westport	Rail	SAGA Moveable Bridge Repl.	100	Safety
Bridgeport	Rail	East Bridgeport Rail Yard Expansion	54	Expansion
Fairfield County	Rail	New Haven Line Substation Repl.	48	Safety
New Haven	Rail	New Haven Supply 1086	10	Safety
New Haven	Rail	New Haven Line Station Imp.	120	Preservation
Greenwich	Rail	Sound Beach Ave/Tomac Ave Bridges	25	Safety
Stratford	Rail	New Stratford RR Station Parking Garage	25	Econ. Dev.
Hartford	Transit	CT Transit Hartford Maint. Facility	20	Preservation
Waterbury	Transit	New Waterbury Bus Maint. Facility	60	Expansion
Fairfield County	Rail	Mainline Catenary Repl. - Section C1b	140	Safety
New Haven	Rail	New Locomotive Fueling Facility	25	Preservation
Fairfield County	Rail	Danbury Centralized Train Control	53	Safety
Fairfield	Rail	New Fairfield Metro Station	45	Expansion
Hartford	Transit	CT Transit System-wide Bus Repl.s	68	Safety

Source: ConnDOT response to TRIP survey

Traffic Safety in Connecticut

A total of 1,443 people were killed in motor vehicle accidents in Connecticut from 2004 through 2008, an average of 289 fatalities per year.²¹

Connecticut’s traffic fatality rate was 0.83 fatalities per 100 million vehicle miles of travel in 2008. The national average of fatalities per 100 million vehicle miles of travel is 1.25.²²

Chart 7. Traffic fatalities in Connecticut from 2004 – 2008.

<i>Year</i>	<i>Fatalities</i>
2004	294
2005	278
2006	311
2007	296
2008	264
Total	1,443

Source: National Highway Traffic Safety Administration

Connecticut's rural, non-Interstate roads have a fatality rate that is nearly double the rate on all other roads in the state. The traffic fatality rate in 2008 on Connecticut's non-Interstate rural roads was 1.47 traffic fatalities per 100 million vehicle miles of travel.²³ The traffic fatality rate per 100 million vehicle miles of travel on all other roads and highways in the state was .76 in 2008.²⁴

The cost of serious traffic crashes in Connecticut in 2008, in which roadway design was likely a contributing factor, was approximately \$1.1 billion. Such traffic crashes in the Hartford area cost each driver approximately \$353, while Bridgeport and Stamford area drivers lose \$263 annually due to these traffic crashes. Crashes, in which roadway design was likely a contributing factor, cost each New Haven driver an average of \$462 each year. The costs of serious crashes include lost productivity, lost earnings, medical costs and emergency services.²⁵

Three major factors are associated with fatal vehicle accidents: driver behavior, vehicle characteristics and roadway characteristics. TRIP estimates that roadway characteristics, such as lane widths, lighting, signage and the presence or absence of guardrails, paved shoulders, traffic lights, rumble strips, obstacle barriers, turn lanes, median barriers and pedestrian or bicycle facilities, are likely a contributing factor in approximately one-third of all fatal and serious traffic crashes.

Improving safety on Connecticut's roadways 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.

Where appropriate, the severity of serious traffic crashes could be reduced through 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.

Roads with poor geometry, with insufficient clear distances, without turn lanes, with inadequate shoulders for the posted speed limits, or those that have poorly laid out intersections or interchanges, pose greater risks to motorists, pedestrians and bicyclists.

The following chart shows the correlation between specific needed road improvements and the reduction of fatal accident rates nationally.²⁶

Chart 8. Reduction in fatal accident rates after roadway improvements.

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

Many industries have contributed to boosting the Constitution State's gross domestic product by 33 percent from 1990 to 2008 (when adjusted for inflation).²⁷ Connecticut's businesses are dependent on an efficient, safe, and modern transportation system that will foster continued business diversification and opportunity throughout the state. The new culture of business demands that an area have well-maintained and efficient roads, highways and bridges if it is 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 need 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 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.

Highways are vitally important to continued economic development in Connecticut. 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.

Every year, \$82 billion in goods are shipped from sites in Connecticut and another \$87 billion in goods are shipped to sites in Connecticut, mostly by trucks.²⁸ Seventy-five percent of the goods shipped annually from sites in Connecticut are carried by trucks and another 21 percent are carried by courier services, which use trucks for part of their deliveries. Similarly, 78 percent of the goods shipped to sites in Connecticut are carried by trucks and another 11 percent are carried by courier service²⁹

Trucking is a crucial part of Connecticut's economy. Based on federal projections, TRIP estimates that commercial trucking in Connecticut will increase by 27 percent between 2009 and 2020.³⁰

A 2007 analysis by the Federal Highway Administration found that every \$1 billion invested in highway construction would support approximately 27,800 jobs, including approximately 9,500 in the construction sector, approximately 4,300 jobs in industries supporting the construction sector, and approximately 14,000 other jobs induced in non-construction related sectors of the economy.³¹

The Funding of Connecticut's Surface Transportation System

The construction, repair and upkeep of Connecticut's roads, bridges, highways and public transit systems are paid for by local, state and federal governments.

Significant federal funding for highways and transit is provided to both state and local governments. Federal funding for Connecticut's highways and bridges comes from the Federal Highway Trust Fund, under funding levels and formulas determined by Congress. Federal spending levels for highways and public transit are based on the current federal surface transportation program, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), which was approved by Congress in 2005. The SAFETEA-LU program expires on December 31, 2010.

From 1998 to 2008, Connecticut received approximately \$5.2 billion in federal funding for road, highway and bridge improvements, and \$1.3 billion in funding for public transit – a total of approximately \$6.5 billion in federal surface transportation funding during the 10-year period.³²

As a result of this level of federal support, since 1998 Connecticut has been able to complete numerous projects on the state's highway system, rehabilitate deteriorated roadways and bridges, and expand transit and non-motorized resources and access to improve traffic safety, relieve traffic congestion and enhance economic development opportunities.

The following chart shows major highway rehabilitation projects completed in Connecticut since 1998 for which the federal government was a significant source of funding.

Chart 9. Connecticut highway rehabilitation/preservation projects completed since 1998, largely due to federal surface transportation funds.

Route	County or Closest City	From	To	Length (Miles)	Year Completed	ADT	Improvements Made	Cost (millions)
I-91	Hartford	Whitehead Hwy.	Bulkeley Bridge	1.00	1999	119,100	Reconstruct Hwy.	129.3
I-95	Bridgeport	EXIT 25, MP 27.05	Exit 28, MP 30.07	3.02	2005	134,500	Reconstruct Hwy.	457.9
I-84	West Hartford	Mayflower St.	Prospect St.	1.75	2002	113,800	Reconstruct Hwy.	22.7
I-395	Plainfield (Windham Co.)	MP 29.65 (CT 14A)	MP 35.1 (Killingly Town Line)	5.45	2000	23,100	Reconstruct Hwy.	6.4
I-84	West Hartford	MP 58.73 (Prospect St.)	MP 60.83 (Aetna Viaduct)	2.10	2001	113,800	Reconstruct Hwy.	31.8
I-395	Lisbon (New London Co.)	MP 18.26 (Norwich Line)	Plainfield	11.90	2001	29,900	Reconstruct Hwy.	11.2
CT 8	Trumbull	SR 711	Long Hill Ave, Shelton	6.95	2001	59,300	Resurface, Bridge & Safety	14.6
I-95	Orange	Int. 41	Int. 41	0.50	2001	125,000	Interchange Reconst	20
I-91	East Windsor	CT140 (E Windsor)	MA State Line	7.24	2001	94,500	Reconstruct Hwy.	16.2
I-84	Danbury	US 7 (West Jct.)	US 7 (East Jct.)	4.20	2002	91,800	Reconstruct Hwy.	16.6
I-91	New Haven	I-95 (New Haven)	Willow St.	2.77	2002	124,500	Reconstruct Hwy.	31.9
CT 9	Middletown	MP 18.93 (Haddam)	MP 24.47 (Middletown)	5.54	2001	41,300	Reconstruct Hwy.	18.7
SR 401	Windsor Locks	MP 1.14	MP 1.70	0.56	2002	15,900	Reconst. Airport Access Rd.	12.9
I-95	Branford	Exit 56	EXIT 56	1.20	2003	72,100	Reconst. Ramps	18.9
I-95	New Haven to Branford	Int. 50	EXIT 54	4.20	2009	84,800	Reconstruct Hwy.	241.8
US 7	Brookfield (Fairfield Co.)	MP 29.74 (End of Expy)	MP 31.58, Laurel Hill Rd.	1.84	2009	27,000	New Expy.	176.2
I-84	Cheshire	Manion Rd, Exit 29	W. Main St. Exit 30	2.63	2005	65,500	Reconstruct Hwy.	62.8
CT 2	East Hartford	Maple St.	Commerce St. Glastonbury	2.52	2008	63,900	Resurface, Bridge & Safety	26.5
CT 15	Greenwich	Byram Ri.	Stamford Town Line	5.39	2003	57,100	Resurface, Bridge & Safety	24.8
I-91	Hartford	Hartford Ped Bridge	Capen St. Windsor	5.40	2008	149,500	Reconstruct Hwy.	23.1
CT 14A	Plainfield (Windham Co.)	I-395	Sterling Town Line	2.95	2005	3,500	Reconst. Roadway	11.4
I-84	Southbury	Housatonic Ri.	Long Meadow Rd.	8.04	2004	67,300	Resurface, Bridge & Safety	28.5
I-95	Waterford	Cross Rd.	I-95	0.75	2004	61,800	Bridge & Interchange	15.5
I-95	West Haven	CT 162	I-95	1.00	2005	128,400	Reconst Interchange	33.9

Source: ConnDOT response to TRIP survey. (ADT = Average Daily Traffic)

Similarly, numerous major bridges have been rehabilitated due largely to federal transportation funding since 1998.

Chart 10. Major bridge projects completed in Connecticut since 1998 in which federal funds were a significant source of revenue.

Route Carried	Closest City	Route or feature intersected	ADT	Improvements Made	Cost (Mil.)	Completed
CT 2	Hartford	I-91 & Ct. River	27,100	Widen & Reconst.	39.7	1999
I-95	Bridgeport	Yellow Mill Pond	120,300	Replace Superstructure	56.8	1999
E. Washington Ave.	Bridgeport	Pequonnock Ri.	n/a	Replace Bridge	14.6	1998
US 1	New Haven	Quinnipiac Ri.	24,900	New Bridge	134.2	2003
CT 15	Milford/Stratford	Housatonic Ri.	54,100	Replace Bridge	117.7	2004
SR 661 (New Bridge)	Windham	Willimantic Ri. & RR	15,300	Construct New Bridge	20	2001
CT833 (Division St.)	Ansonia	Naugatuck Ri.	18,600	Replace Bridge	14.95	2003
US 1	Groton	Mystic Ri.	10,300	Major Rehab (2 phases)	3.7	2002
CT 184	Groton	CT 12	12,200	Repl.Bridge & Int. Revisions	11.1	2003
AMTRAK	Berlin	CT 372	17,800	Replace Rail Bridge	23.1	2006
I-95	Bridgeport	Howard Ave.	120,300	Replace Bridge (Fire Damaged)	10.9	2007
CT 151	East Haddam	Salmon Ri.	3,500	Replace Bridge	10.6	2009
CT 82	Haddam	Connecticut Ri.	3,000	Repair Swing Bridge	11.5	2006
I-84/CT2	Hartford	I-91 & CT Ri.	111,100	Reconst Hwy & Rep. 2 Bridges	37.4	2005
CT 8	Litchfield	Naugatuck Ri. & RR	23,700	Rehab Superstructure	11.4	2008
Ferry St.	New Haven	Quinnipiac Ri.	n/a	Replace Bridge	18.2	2007
CT 123	Norwalk	Norwalk Ri.	11,900	Replace Bridge	17.6	2008
US 7	Salisbury	Housatonic Ri.	2,300	Replace Bridge	17.1	2007
CT 68	Wallingford	I-91	21,400	Reconst. Bridge & Ramps	15.5	2004

Source: ConnDOT response to TRIP survey. (ADT = Average Daily Traffic)

Accommodating population growth and providing opportunities for economic development require transportation enhancements. The following chart shows major projects undertaken to provide additional capacity on Connecticut’s roadway system that were completed since 1998 and for which federal funds were a significant source of funding.

Chart 11. Connecticut highway capacity projects completed since 1998, largely due to federal surface transportation funds.

Route	County or City	From	To	Length (Miles)	ADT	Improvements Made	Completed	Cost (mil.)
I-95	Stamford	MP 8.3	MP 10.5	2.20	151,000	Operational Lane	2002	43.5
I-91	Rocky Hill	MP 28.0	MP 33.0	5.00	148,000	Reconst. & Widening	2000	24.1
US 7	Wilton	MP 6.39	MP 8.60	2.21	25,200	Reconst. & Widening	2009	78.2
I-84	East Hartford / Hartford	East Hartford	Founders Bridge, Hartford	5.22	136,300	Extend HOV to Hartford	2000	23.4
CT 10	Southington	MP 25.93	MP 27.54	1.61	29,600	Reconst. & Widening	2003	11.1
I-84	East Hartford	MP 63.63	MP 64.33	0.70	103,600	Widening	2006	10.7
US 44	Avon	CT 10	West Hartford Town Line	1.21	23,300	Widening, Safety & Op. Imp.	2009	24.7
US 6	Andover / Columbia	MP 84.1, SR 631	MP 87.81	3.71	12,500	Widening, Safety & Op. Imp.	2003	11.4
US 7	Danbury	MP 16.84 Vic Starrs Plain Rd.	MP 17.75	0.90	27,000	Reconst. & Widening	2007	25
CT 20	Granbury	Holcomb / Newgate	Center St.	0.50	18,300	Reconst. & Widening	2008	13.8
US 7	New Milford	US 7 Expwy	Old State Rd.	3.55	27,200	Reconst. & Widening	2007	37.2
US 7	New Milford	Lanesville Rd.	CT67 & CT202	2.80	28,600	Reconst. & Widening	2005	28.2
I-84/CT 72	Plainville	Woodford Ave.	Slater Rd.	2.20	86,600	Add Lane, Revise Ramps	2004	29.1
I-84	Waterbury	Pierpoint Rd.	Marion Rd./Cheshire	3.47	90,500	Reconst. & Widening	2007	79.6

Source: ConnDOT response to TRIP survey. (ADT = Average Daily Traffic)

Federal funding provided for public transit in Connecticut since 1998 was put to use on new or expanded transit and non-motorized projects undertaken to improve efficiency, foster economic development and improve safety. Chart 12 shows projects completed since 1998 for which federal funds were a significant source of funding.

Chart 12. Improvements with regional or statewide significance since 1998 for which federal funds were a significant source of funding.

County / City	Project Type	Project Description	Cost (mil.)	Completed
Bridgeport	Rail	Pecck Movable Bridge Replacement	140	1999
Greenwich	Rail	Arch Street Bridge Replacement	15.5	2005
Milford	Rail	Replacement of RR Bridges (River/High/Old Gate)	15.8	2006
Fairfield County	Rail	New Haven Line - Concrete Tie Program	22	2008
Greenwich	Rail	Construction of CP 248 Interlocking	19	2007
Fairfield County	Rail	Mainline Catenary Replacement - Section A	32	2005
Fairfield County	Rail	Mainline Catenary Replacement - Section D	43	2006
Stamford	Rail	Stamford Yard and Maintenance of Equipment	37	1998
New Haven	Rail	New Haven Line Car Storage Yard	74	2004
Stamford	Transit	CT Transit Stamford Maintenance Facility	17	2005
Stamford	Rail	Stamford Station Center Island Platforms	140	2003
Stamford	Rail	Stamford Station Parking Garage	30	2004
Hartford	Transit	CT Transit System-wide Bus Replacements	65	2003
New Haven	Transit	CT Transit New Haven Maintenance Facility	80	2009
New Haven	RAIL	State St. Station	7.8	2002
Simsbury	Ped/Bike	Rail to Trail Conversion, 3.3 Mi.	0.4	2000
Bridgeport	Ped/Bike	Rail to Trail Conversion, 1.2 Mi.	1.6	2002
Mansfield	Ped/Bike	Streetscape	0.4	2002

Source: ConnDOT response to TRIP survey

Future Federal Surface Transportation Program

To ensure that federal funding for highways and public transit in Connecticut and throughout the nation continues beyond the expiration of the current federal surface transportation program (SAFETEA-LU), Congress will need to approve new long-term federal surface transportation legislation by December 31, 2010.

The American Recovery and Reinvestment Act provides approximately \$302 million in stimulus funding for highway and bridge improvements and \$137 million for public transit improvements in Connecticut, a total of \$454 million. This funding can serve as a down payment on

needed road, highway, bridge and transit improvements, but it is still not sufficient to allow the state to proceed with numerous projects needed to improve and enhance its surface transportation system.

The crafting of a new federal highway and transit program is occurring during a time when the nation's surface transportation program faces numerous challenges, including significant levels of deterioration, increasing traffic congestion, a high number of traffic deaths, high construction costs and a decline in revenues going into the Federal Highway Trust Fund.

In addition to declines in federal surface transportation revenues, significant increases in the cost of transportation construction materials will likely make it more difficult for Congress to authorize a new federal surface transportation program that adequately funds needed improvements to the nation's roads, highways, bridges and public transit systems.

While construction materials costs have stabilized or even decreased during the current recession, over the five-year period from April 2005 to April 2010, the average cost of materials used for highway construction – including asphalt, concrete, steel, lumber and diesel – increased by 33 percent.³³

Recommendations for the Nation's Surface Transportation System

When Congress approved SAFETEA-LU in 2005, it recognized the tremendous challenge the nation would continue to face in maintaining and improving its highway and transit systems in order to meet the country's future mobility needs. The 2005 legislation stipulated that two national commissions be created to examine the condition of the nation's surface transportation system and its future needs, and to make recommendations about the future of the nation's surface transportation program.

The National Surface Transportation Policy and Revenue Study Commission (NSTPRSC) was created by Congress to examine the current condition and future funding needs of America's surface transportation program, develop a plan to ensure the nation's surface transportation system meets the nation's future mobility needs and examine funding alternatives for adequately funding the nation's future highway and transit needs.

Comprised of transportation officials, business leaders and members of academia, the Commission held numerous field hearings, was advised by a panel of transportation experts, commissioned numerous reports and held 12 executive sessions in preparing its report.

In January, 2008 the NSTPRSC released its findings. The Commission found that at the current level of investment in surface transportation in the U.S., the nation's highways and bridges would further deteriorate, traffic casualties would increase and traffic congestion would increase, jeopardizing the nation's economic leadership due to an erosion of transportation reliability.³⁴ The Commission concluded that it is critical to the future quality of life of Americans that the nation create and sustain the preeminent surface transportation system in the world, one that is well-maintained, safe and reliable.³⁵

The Commission recommended a broad overhaul of the Federal Surface Transportation Program that would significantly boost funding, consolidate the program into fewer funding categories, speed up the project delivery process, require greater accountability in project selection and expand the use of alternate funding sources.

Key recommendations of the Commission include:

- ✓ Allocate funding through outcome-based, performance-driven programs supported by cost/benefit evaluations rather than political earmarking.
- ✓ Consolidate the more than 100 current transportation funding programs into 10 programs focused on key areas of national interest, including congestion relief, preservation of roads and

bridges, improved freight transportation, improved roadway safety, improved rural access, improved environmental stewardship and the development of environmentally-friendly energy sources.

- ✓ Speed up the project development process to reduce the excessive time required to move projects from initiation to completion by better coordinating the development and review process for transportation projects.
- ✓ Significantly boost federal funding for surface transportation. Options for increasing federal surface transportation revenues include reduced evasion of federal motor fuel taxes, moving costs of exemptions from motor fuel fees to the general fund, indexing the motor fuel tax, increasing the motor fuel tax, additional tolling, congestion pricing, increased use of public-private partnerships and freight fees.

Similarly, the National Surface Transportation Infrastructure Financing Commission (NSTIFC) was created by Congress to re-envision the way the federal government funds and finances the nation's surface transportation infrastructure. Comprised of individuals from diverse backgrounds, including economics, finance, government, industry, law and public policy, the NSTIFC sought out the best ideas, the latest data and the strongest research before deliberating over a variety of potential financing options.

In February, 2009, the NSTIFC released its findings. The NSTIFC found that the U.S. faces a \$2.3 trillion funding shortfall through 2035 in maintaining and making needed improvements to the nation's surface transportation system.³⁶ The Commission found that failure to address the immediate funding shortfall and provide adequate long-term funding for the nation's surface transportation system will lead to unimaginable levels of congestion, reduced safety, costlier goods and services, and eroded quality of life and diminished economic competitiveness.³⁷

The Commission found that the current federal surface transportation funding structure, which relies primarily on taxes imposed on petroleum-derived vehicle use, is not sustainable. Instead, the Commission recommended that the nation's future surface transportation investment be funded largely by a charge on motorists based on the number of miles driven. The NSTIFC recommended that a full deployment of a mileage-based federal transportation fee be completed by 2020 and that the federal motor fuel tax eventually be phased out as revenue from a federal motor fuel fee was replaced by a mileage fee.³⁸ Once implemented, the NSTIFC recommended that mileage charges be set at a rate that would provide enough revenue to provide adequate federal funding to ensure that the nation achieve an integrated national transportation system that is less congested and safer and that promotes increased productivity, stronger national competitiveness, and improved environmental outcomes.³⁹ The NSTIFC also recommended that in the short term, the nation's federal motor fuel tax be boosted significantly and indexed to inflation to allow the federal surface transportation program to be funded at an adequate level until the transition to a mileage-based federal transportation fee.

Another organization that has presented a vision for the nation's future surface transportation program is the American Association of State Highway and Transportation Officials (AASHTO), which represents the nation's state transportation departments.

AASHTO has recommended that a future federal surface transportation program be developed that would be accountable for results, would make investments based on community needs and would deliver projects on time and on budget. AASHTO has also called for a federal surface transportation program that is based on state-driven performance measures and focused on six objectives of national interest: preservation and renewal, interstate commerce, safety, congestion reduction and connectivity for urban and rural areas, system operations and environmental protection.

Conclusion

Roads and bridges are the backbone of the Constitution State's transportation system. Today, Connecticut's surface transportation system is under multiple pressures from aging roads and bridges and increasing traffic congestion.

As it looks to enhance and build a thriving, growing and dynamic state, it will be essential that Connecticut is able to provide a 21st Century network of roads, highways, bridges and public transit that can accommodate the mobility demands of a modern society.

Without the federal surface transportation program, Connecticut would not have been able to fund key projects on major components of the state's surface transportation network. These projects have supported the state's economic development and created new opportunities for its residents. This progress may slow without a strong transportation program to take the place of SAFETEA-LU when it expires at the end of 2010.

Connecticut has an immediate need to move forward with numerous rehabilitation, expansion and transit projects, but without a substantial level of federal funding, the state will be unable to fund dozens of vital projects.

Enhanced federal transportation funding would permit Connecticut to upgrade important sections of its Interstate highways, improve traffic safety and expand transit services statewide. Preservation work, such as rehabilitation and maintenance, performed on Connecticut's surface transportation network will pay off in future years by protecting the state's past investment in transportation and extending the life of its aging infrastructure.

A modernized surface transportation system in Connecticut will help the state accommodate continuing population growth and offer congestion relief. Completing critical, unfunded projects

would increase mobility, better support commerce and tourism, enhance economic development, and improve traffic safety statewide, boosting the quality of life for residents and visitors alike.

As the nation looks to rebound from the current economic downturn, the U.S. will need to modernize its surface transportation system, improve the physical condition of its transportation network and enhance the system's ability to provide efficient and reliable mobility for motorists and businesses. Making needed improvements to Connecticut's surface transportation network could provide a significant boost to the state's economy by creating jobs in the short term and stimulating long-term economic growth as a result of enhanced mobility and access.

The federal stimulus package has provided a helpful down payment on an improved transportation system. However, without substantial federal surface transportation funding, numerous needed projects to expand capacity and upgrade the condition of Connecticut's surface transportation system will not move forward, hampering the state's ability to enhance not only mobility, but also economic development statewide. The future provisions and funding levels of the next federal surface transportation program will be a critical factor in whether Connecticut is able to reap the benefits of a modern surface transportation system.

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- ²⁵ TRIP estimate based on analysis of National Highway Traffic Safety Administration data.
- ²⁶ Highway Safety Evaluation System; 1996 Annual Report on Highway Safety Improvement Programs; U.S. Department of Transportation
- ²⁷ Source: TRIP analysis of Bureau of Economic Analysis data
- ²⁸ Bureau of Transportation Statistics, U.S. Department of Transportation. 2002 Commodity Flow Survey, State Summaries
- ²⁹ Ibid.
- ³⁰ TRIP estimate based on Bureau of Transportation Statistics, U.S. Department of Transportation.
- ³¹ Federal Highway Administration, 2008. Employment Impacts of Highway Infrastructure Investment.
- ³² TRIP analysis based on data obtained from the Federal Highway Administration and the Federal Transit Administration.
- ³³ Bureau of Labor Statistics, 2010. Producer Price Index Industry Data – Highway and Street Construction.
- ³⁴ National Surface Transportation Policy and Revenue Study Commission. Transportation for Tomorrow, December 2007. p. 3.
- ³⁵ Ibid., p. 7.
- ³⁶ Paying Our Way. February, 2009. The National Transportation Infrastructure Financing Commission. p. 3. Summary Findings.
- ³⁷ Ibid., p. 12.
- ³⁸ Ibid.
- ³⁹ Ibid., p. 12.