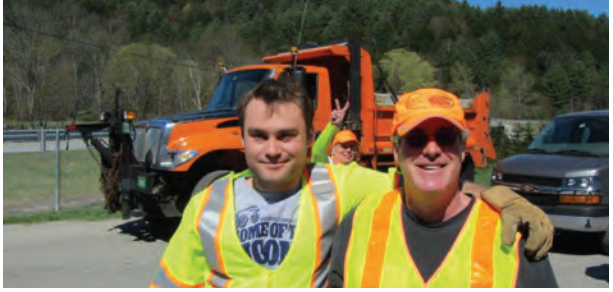
VERMONT AGENCY OF TRANSPORTATION

2015 FACT BOOK and Annual Report



Published January 15, 2015

VERMONT AGENCY OF TRANSPORTATION

2015 FACT BOOK
and Annual Report

Welcome

It is with great pleasure and pride that we present the VTrans 2015 Annual Report. I hope you will use this resource, along with our website, to learn more about the Vermont Agency of Transportation.

This has been a very busy year, which follows several years of historic investment in and progress along our Vermont transportation network. Our transportation system is the fabric that connects our communities and provides the backbone to our economy. Vermonters rely on VTrans to keep the system safe, enhance their mobility, and help grow our economy.

You will see in this report that our expanded investment in Vermont's transportation infrastructure has yielded results: more roads and bridges are in a state of good repair; fewer fatalities have occurred along our roadways; more people are traveling by bus or train; and more Vermonters are choosing to bike and walk.

This has also been a time of change within our organization. VTrans has embraced a new commitment to teamwork, partnerships and innovation. We have re-organized to accelerate the delivery of our projects, improve our connections between building and maintaining our system, and placed customer service at the forefront of what we do.

We are using technology to improve our communication with the public, expand traveler information services, and develop new techniques for managing traffic in and around construction work zones. We are also working more closely with municipalities to improve training, expand technical assistance and support revitalization in our downtowns and village centers.

Most importantly, Vermont continues to be served by a hard-working and dedicated VTrans workforce. When a storm comes or winter arrives, team VTrans is on the front lines ensuring safe travel and keeping Vermont connected.

We appreciate the continued support from the Legislature and the public as we strive to fulfill our mission. We know that keeping our roads safe and in a state of good repair is an essential government function and we work to use our resources wisely to address what mother nature may bring and to meet the future needs of Vermonters.

Sincerely,

Sue Minter
Secretary of Transportation

VTrans Working to Get You There Vermont Agency of Transportation

VERMONT

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About the Agency

Vermont has an extensive multimodal transportation system.

With oversight from the Vermont Legislature, the Vermont Agency of Transportation (VTrans) is responsible for planning, development, implementation and maintenance of a variety of transportation infrastructure including but not limited to roads, bridges, state-owned railroads, airports, park and ride facilities, bicycle facilities, pedestrian paths, public transportation facilities and services, and Department of Motor Vehicles operations and motor carrier enforcement. VTrans serves the entire population of the State of Vermont.

VTrans has more than 1300 employees organized in three divisions: Policy, Planning and Intermodal Development; Finance and Administration; and Highway. The **Department of Motor Vehicles** is also housed within the Agency of Transportation; it has a main office in Montpelier and ten satellite offices statewide.

VTrans interacts with all State agencies and agencies within the United States Department of Transportation as well as other federal agencies, numerous regional and state governments and international jurisdictions and cross-border organizations, local governments, transit agencies, airports, railroads and the other private and non-profit entities engaged in transportation-related activities.

The **Highway Division** of VTrans, which has the largest number of employees, is organized into five bureaus: Municipal Assistance, Construction and Materials, Maintenance and Operations, Project Delivery, and Asset Management and Performance, and the Office of Highway Safety. Together, the Highway bureaus handle year-round maintenance of the road network; provide oversight for construction projects; ensure the quality of materials; provide grants and technical support for municipal projects; procure and maintain the fleet of trucks; provide information to the traveling public on road conditions; inspect and maintain bridges, culverts, signs, signals; and is the lead entity on safety and training.

SOUTH BURLINGTON. US 7 accommodates a variety of transportation modes.

The **Division of Policy, Planning and Intermodal Development** (PPAID) oversees major non-highway transportation modes including state-owned rail lines, nine state-owned airports and public transit providers. In addition to providing statewide planning and policy support, the division works with Vermont's eleven Regional Planning Commissions and, in the Burlington region, the Metropolitan Planning Organization, to develop regional transportation plans and generate input on prioritizing transportation projects in the regions. The division's work is also supported by public input from the Rail Advisory Council, Aviation Advisory Council and the Public Transit Advisory Council. PPAID also is the lead on research, mapping, development review and public outreach.

The **Division of Finance and Administration** provides services across the agency to support the activities that deliver on the mission of VTrans including contract administration, information technology, accounting, budgeting, audit, civil rights, labor compliance and recruitment. As in all aspects of our work, state and federal statutes provide the guidance and boundaries for Finance and Administration's work.

The transportation budget is composed of Federal, State and Local funds. Federal fund sources come from the Federal Highway Administration, Federal Transit Administration, Federal Railroad Administration, Federal National Highway Safety Administration, and the Federal Aviation Administration. State funds are appropriated from the State Transportation Fund. The State Transportation revenues are derived primarily from three sources: the gas tax, the purchase and use tax and Department of Motor Vehicle fees.

To meet these various objectives, VTrans has established a set of five goals that act as guiding principles in everything the Agency does. These goals are:

- **Provide a safe and resilient transportation system that supports the Vermont economy.**
- **Preserve, maintain and operate the transportation system in a cost effective and environmentally responsible manner.**
- **Provide Vermonters energy efficient travel options**
- **Cultivate and continually pursue innovation, excellence and quality customer service.**
- **Develop a workforce to meet the strategic needs of the Agency.**

To achieve our vision, the agency's activities are focused on five strategic goals. Highlights related to each of these goals are provided below.

GOAL ONE

Provide a safe and resilient transportation system that supports the Vermont economy

Safety is paramount in everything VTrans does from maintaining safe bridges, roadways and work zones to reducing the number of crashes and fatalities on our roadways.

The Agency's leadership role in the Vermont Highway Safety Alliance (VHSA) has been instrumental in the effort to reduce crashes on our highways. The preliminary results for 2014 are noteworthy. Highway crashes and fatalities both dropped precipitously from 2013: 44 highway fatalities is the lowest number since World War II. We also know that nearly 50% of those fatalities were unbelted, 25% were drug or alcohol related and 25% were due to excessive speed.

VTrans and the VHSA are committed to strengthening the network of stakeholders that share in the mission of reducing these tragic events on our highways. In an effort to further unify these efforts, the Governor's Highway Safety Program is moving from the Department of Public Safety to VTrans in 2015. VTrans was the lead organization in coordinating public education on the new handheld cell phone ban in 2014 through the "Heads Up/Phones Down" campaign. Bringing more resources together in the newly-formed Office of Highway Safety will further enhance our effort to reduce crashes on our highways, and save lives.

WATERBURY/BOLTON. Reclaiming US 2 eliminated on-going maintenance issues by removing narrow concrete slabs that had been under the roadway for more than 50 years.

2013-14 was one of the biggest winters on record for VTrans with nearly 100 storm events for a total cost of over $27 million, compared with our five-year average of $20.6 million. Our drivers logged 367,078 hours behind the wheel, keeping travelers safe through the storms.

To enhance the resilience of our system, VTrans and the Agency of Natural Resources collaborated to develop a "Rivers and Roads" training that was administered to staff in Montpelier and the districts. Participants gained a better understanding of river dynamics, how roads, bridges and culverts are affected by rivers and steps that can be taken to minimize flooding risk. In 2015 the training will be made available to municipalities. We are also conducting an inventory of all state culverts and an analysis of further vulnerabilities to extreme weather.

ROCHESTER. Bridge 13 is designed with aquatic organism passage and storm resilience in mind.

GOAL TWO

Preserve, maintain and operate the transportation system in a cost effective and environmentally responsible manner

Preservation of the existing transportation system is a primary focus of VTrans' work and we have made great progress in improving on some of the most prominent measures of our system performance in recent years. Since 2008, we have reduced the number of structurally deficient bridges in our system from 494 to 193 bridges. In 2009, more than 34% of our roads were in "very poor condition." This year we reduced the percentage to 13%. Work also continues to maintain our runways, rail bridges and other critical pieces of infrastructure.

Moving forward, we will work to evaluate and measure how best to spend our limited funds while measuring our results. We are currently developing a Transportation Asset Management Plan (TAMP) that will guide

us in this process. It will be the foundation for much of our planning and a basis for prioritizing our funding and managing the performance of many aspects of how our agency functions.

Accurate budgeting and reporting for all transportation funds, and reliable compliance with state and federal mandates means better performance. This enhances our ability to secure more federal funds for critical projects. We are working to improve our internal business process to create more efficient systems within VTrans.

In the field, we continue to deploy and enhance innovative techniques such as Accelerated Bridge Construction. We are building more bridges in less time and at less cost and improving communication with our customers to ensure their mobility and awareness of our project impacts.

GOAL THREE

Provide Vermonters energy efficient travel options

VTrans supports options for energy efficient transportation to provide Vermonters with travel choices and to reduce our carbon footprint. We continue to invest in public transit and ridership is up, edging toward 5 million in 2014.

Ridership on new intercity service from Burlington, through Rutland to Bennington and on to Albany, NY via Vermont Translines has been robust, exceeding first year ridership projections in the first six months. Innovations like on-board ticketing add convenience and make the service even more attractive.

HARTLAND. Newly upgraded park and ride includes Level 1 Electric Vehicle charging.

ROYALTON. Track improvements and new routing have reduced travel time to New York City by nearly an hour on Amtrak's Vermonter.

Amtrak ridership in Vermont is up 6.8% and a realignment of the Vermonter line through the Pioneer Valley in Massachusetts will further reduce travel time to New York City. In 2014 we added another 7.5 miles of continuously welded rail to the Western Corridor in the effort to bring the Ethan Allen Express to Burlington.

Our park and ride system supports carpooling and ridesharing. An expansion and upgrade of the Richmond park and ride was completed in 2014 along with new park and rides in Putney and Rochester. The newly upgraded park and ride in Hartland features 12 Level 1 Electric Vehicle (EV) charging stations. Plans for a transit center in Burlington and a new park and ride in Williston are proceeding.

Increasing use of EVs will help reduce Vermont's carbon footprint and registration of EVs has increased by 85% since October, 2013. Vermont has joined many northeast states and California in a commitment to have 3.3 million EVs on the states' roads by 2025. Publicly available fueling infrastructure is part of the strategy to get more EVs on the road. VTrans is helping the traveling public locate EV charging sites by placing service symbols on the interstates and Level 1 charging outlets are being added as state park and rides are refurbished.

Our go! Vermont program launched the Capitol Commuters program in Montpelier last year. Designed to alleviate congestion and parking problems in the state capitol, it is serving as a model for the development of similar efforts to mitigate congestion in Vermont. Capitol Commuters rewards workers for biking, walking, or taking the bus to work at substantially less cost than building, managing, and maintaining a new parking garage.

Working with advocacy groups, regional planning and municipalities, we continue to grow bicycle and pedestrian facilities across Vermont. This year, we kicked off an effort to quantify where most cycling traffic occurs and where the public wishes it could, in order to begin development of a comprehensive on-road bike plan.

VTrans recognizes the transportation sector is a large contributor to greenhouse gas emissions, and seeks opportunities to improve efficiency of our operations by improving the energy efficiency of our buildings and better managing our energy consumption. Work continues to install solar panels at district garages and we are exploring installing additional solar capacity on VTrans-owned parcels throughout the state.

GOAL FOUR

Cultivate and continually pursue innovation, excellence and quality customer service

Quality customer service is becoming a hallmark of our Department of Motor Vehicles. Renewing your registration online is standard practice at the Department of

Motor Vehicles, but people still visit our offices and are consistently, pleasantly surprised at how short a visit can be. Our satellite locations are convenient to retail districts and we've recently renovated the front office of our main location in Montpelier. These days when you take a driver's test, the examiner will be holding a tablet, not a clipboard. In fact all testing is automated, allowing us to offer more languages and to update tests without having to print new forms.

VTrans is committed to being accountable and making our work transparent. Lines of communication with our customers have never been more open. In 2014, we conducted focus groups at 18 locations around the state to learn more about our customers' needs and expectations. Meeting with utilities, municipalities, contractors, advocacy groups and ordinary citizens, we are taking what we learned as part of a change management process to make customer service part of our culture, including gathering regular feedback on how we're doing.

VTrans is working in new ways to communicate with the public about activity on our roadway system. This past construction season saw the launch of an interactive paving project map and a bridge closures and detours map, but these were just the beginning of what is becoming VTransparency 3.0, a web portal that brings together information about planned work, the condition of our infrastructure and work completed to help develop a better picture of where we are. In addition to what we are presenting, the site also allows open access to the underlying data so that third parties can develop apps or do research.

COLCHESTER. Preschoolers visit the Chimney Corners garage to meet their adopted truck and driver.

HARTFORD. Rendering of "Lateral Slide" bridge replacement project on I-91. Sliding in completed structure reduces duration of lane closures.

Social media remains a major outlet for public information on road conditions with nearly 10,000 Facebook likes and 5,000 Twitter followers including most major media. With all the emphasis on technology, customer service still means meeting your customers where they are. Our popular "On the Road" radio series expanded to include a print edition last year and has become a popular regular feature in the Burlington Free Press and other papers around the state.

The Vermont Local Roads program is now part of the VTrans Training Center (VTTC). By bringing municipal training under the same roof as VTrans' training programs, we can move toward more consistency in the way all of Vermont's roads are safely built and maintained.

VTrans continues to explore innovation. Our maintenance districts are piloting the use of Automatic Vehicle Location (AVL) technology to better manage the deployment of resources. AVL allows districts to see where resources are deployed in real time and make better decisions about how to adjust as conditions change. The technology also provides data on how the vehicle is performing and rates of material application.

GOAL FIVE

Develop a workforce to meet the strategic needs of the Agency

Recognizing the value of retaining our existing employees and recruiting the best and brightest, VTrans has been developing a training program that is becoming a model for state government. An entry-level position at VTrans is the beginning of a rich career and we make that clear to our people in every stage of recruitment and orientation.

The VTTC serves the diverse training needs of the entire agency, helping to ensure compliance with Federal and State regulations and the Affirmative Action Plan (AAP), as it relates to training, and enables VTrans employees the opportunity to benefit from professional development and safety courses. In collaboration with the VTTC, Community College of Vermont now offers an associate degree in business with a focus on transportation.

In 2014 VTrans began working directly with the Vermont State Employees Association (VSEA) on a coordinated recruiting effort with cooperative advertising and consistent messaging. We have expanded our recruitment effort at job fairs on college and high school campuses and are working with the Department of Human Resources to make the recruitment process more user friendly.

Agency History

1892
The first state supervision of roads in Vermont came with the establishment of a Highway Commission.

1898
The Highway Commission was supposed to conduct a two-year survey of the state's roads, but it ended up as a six-year survey. As a result of the commission, Act 65 established a State Highway Commission, to supervise the state money to be paid out for permanent highway construction.

1921
Act 123 established the first State Highway Board, which operated through the Commissioner of Highways. The Board's members were the Governor, who served as the chairman ex officio, and two others appointed with the advice and consent of the Senate.

1923
Act 7 established the Department of Highways, which was administered by the State Highway Board (the Governor, at this point, was no longer a member of the Board). The Department was responsible for administrative details and policy information.

1960
Act 329 brought an organizational change, and the Department of Highways was now made up of the Commissioner of Highways, the State Highway Board, and the Board of Public Works.

1973
Act 259 established a Transportation Advisory Board, whose duty it was to assess the various organizations and financing alternatives for transportation within Vermont and to submit a ten-year plan to the 1975 general assembly.

1975
Act 120 established the first Agency of Transportation. It included four departments: Aeronautics; Highways; Motor Vehicles; and Bus, Rail, Waterways and Motor Carrier services. Attached to the agency was a seven-member Transportation Board that exercised functions of a policy making, regulatory, or quasi-judicial nature related to transportation.

1986
Act 269 established the current organization. The agency is under the direction and supervision of a Secretary who is appointed by the Governor along with the advice and consent of the Senate. It is comprised of the Department of Motor Vehicles; the Divisions of Policy, Planning and Intermodal Development; Highway; Finance and Administration; and all other boards, councils, committees, or components assigned to or created within the agency. All transportation and transit authorities established by law or executive order are attached to the agency for administrative support.

1988
Act 150 established that the agency shall also respond in writing to concerns raised during Transportation Board hearings and inform the Joint Transportation Oversight Committee of any anticipated loss or reduction of federal funding for transportation purposes.

1991
Act 175 granted the Secretary of the Agency of Transportation the power to create divisions within the agency, necessary to carry out laws. Directors appointed by the Secretary head each division.

The agency administers the provisions of Titles 5 (Aeronautics and Surface Transportation), 19 (Highways), and 23 (Motor Vehicles), as well as other related provisions of the law. The agency has the authority and administrative jurisdiction to develop, promote, supervise, and support safe and adequate transportation services. It exercises general supervision of all transportation functions.

Quick Facts

Infrastructure Inventory

- **16** Public-use airports
- **10** State-owned airports (included in total)

- **305** Miles of state-owned operating rail
- **295** Miles of privately-owned railroads
- **148** Miles of state-owned rail-banked trail facilities

- **29** State-owned/maintained Park-and-Ride facilities
- **1,380** Parking spaces at state-owned/maintained Park-and-Ride facilities
- **52** Open Municipal Park-and-Ride Facilities funded with state grants
- **960** Parking spaces at state-funded Municipal Park-and-Ride Facilities
- **375** Vehicles that provide public transit in the state

- **14,266** Miles of roadway (total)
- **746** Miles in the National Highway System (NHS)
- **2,707** Miles in the State Highway System (SHS)
- **139** Miles of Class 1 Town Highways (included in SHS)
- **1,051+** Miles of guardrail

- **2,729** Inventoried long bridges (over 20 ft. long)
- **1,089** Inventoried long bridges on SHS (defined as state-owned and maintained)
- **1,266** Short bridges (over 6 ft. but less than 20 ft.)
- **417** SHS bridges 31–50 years old (38.3%)
- **273** SHS bridges over 70 years old (25.1%)
- **65** SHS bridges classified structurally deficient (6.0%)

- **63,943** Signs under VTrans jurisdiction
- **2,375** Official Business Directional Signs (OBDS)
- **157** Traffic signals
- **1,029** Roadway lights

Infrastructure Maintenance

- **3,932** Linear miles of centerline applied
- **3,101** Linear miles of barrier and edge line applied
- **17,768** Linear feet of guard rail repaired, at the cost of $389,042
- **6,180** Tons of patching applied
- **16,393** Acres mowed at a cost of $1,425,000
- **249** Tons of trash collected at a cost of $796,300

- **64,188** Drainage structures maintained and inspected
- **14,869** Tons of material applied to protect banks and slopes
- **9,733** Linear feet of culverts installed at a cost of $2,929,600
- **6,843** Culverts maintained at a cost of $679,000
- **617** Bridges washed at a cost of $599,300

Featured Projects

Morristown Alternate Truck Route

The long-awaited Morristown Alternate Truck route opened for business this fall. The project, originally conceived in 1963 consisted of new construction of an approximately two-mile roadway connecting VT Route 100 to VT Route 15, providing an alternative route for large trucks and through traffic around the historic village of Morrisville. Additional major project components included a 545-foot span bridge over the Lamoille River, a single-lane roundabout at the intersection of the alternate truck route and VT Route 15, a pedestrian tunnel and a 178-foot-long bridge that allows the Lamoille Valley Rail Trail to traverse VT 100.

Rutland City Area Paving

Extensive work was completed on Rutland City US Route 4, US Route 7, US Business Route 4 and VT Route 3. This project, in addition to resurfacing the existing highway, contained components that improved safety and mobility. Work included roadway widening, sidewalk and curb replacement, installation of a shared-use path, storm and sanitary sewer improvements and relocation, and street lighting within the Class I portion of US Route 7. Additional work included drainage improvements, rehabilitation of at-grade rail crossings, installation of vehicle detection systems at existing signalized intersections, and construction of sidewalk ramps.

Waterbury Area Projects

The Waterbury area will be extremely active over the next few years. Several projects that will help prepare for managing traffic flow got underway this year including installation of a new traffic signal system at the intersection of VT Route 100 and the I-89 northbound off ramp, and a roundabout at the intersection of VT Route 100 and US Route 2. Work to improve the regional work zone and public notification system is also underway including the deployment of a Smart Work Zone, installation of fixed and portable changeable message signs, installation of trailer-mounted cameras, radar, communication system interfaces, and installation of a temporary traffic signal at the intersection of US Route 2 and VT Route 100 in Moretown. All of this will support major work on the I-89 bridges off-ramps and the much-anticipated Main Street Project.

Bridge In A Backpack

Bridge 48 on TH 30 in the town of Fairfield over Wanzer Brook was replaced with a new Rigidified Carbon Fiber Composite Tube Arch Bridge commonly referred to as the "Bridge in Backpack." This innovative composite bridge system, intended for low volume roads, lowers construction costs, extends structural lifespan up to 100 years and is a greener alternative to concrete and steel construction. This system uses fiber-reinforced tubes that are inexpensively transported to the jobsite, placed into position, filled with an expansive concrete and covered with composite decking. This hybrid composite-concrete bridge technology saves money though reduced upfront costs including materials, fabrication time, transportation, accelerated bridge construction time, and lifetime maintenance. The road was closed for twelve weeks to replace Bridge 48.

Rochester/Middlebury/Warren Bridges

Five bridges were replaced in record time using accelerated bridge construction methods and short-term road closures including Bridge 13 on VT 125 in East Middlebury; Bridges 13, 15, and 16 on VT 73 in Rochester; and Bridge 166 on VT 100 in Warren. All five projects required significant coordination of the closure periods and alternating detour routes. To ensure the traveling public was well informed, various public outreach strategies were utilized including project factsheets, pre-closure public information meetings, and a dedicated website and weekly email updates. Responses from a customer survey following the completion of the projects indicate that 83 percent of the 41 respondents were very satisfied with accelerated bridge construction and 74 percent were very satisfied with the information that they received about the projects during construction.

Deerfield Valley Transit Facility

The DVTA is building a $5.2 million 16,000 square-foot maintenance and administrative facility in Wilmington. The maintenance portion will feature five lift-serviced bays, a state-of–the-art bus wash and dry system, a sign and carpentry shop, and a parts room. The office wing will feature four offices, a conference room, kitchen, and work and filing rooms. There is exterior parking for up to 30 buses, a 12,000-gallon diesel fuel tank, parking for 35 cars, and the site includes Phase II of the Riverwalk – a recreational trail linking the village to Lake Whitingham, VAST trails, and the Valley Trail. The project is also a Brownfield remediation project, cleaning up an old 82,000 square-foot factory and adjacent soil contamination. There are nine funding sources, with major support by the Federal Transit Administration and VTrans.

Western Corridor Welded Rail

This year we started work on upgrading the rails between Rutland and Burlington along the Western Corridor to a higher grade, heavier weight rail that is continuously welded to remove all joints which will allow higher train speeds and a more comfortable, quieter ride. The project is being funded with $10 million dollars of Federal earmark, another $9 million from a TIGER V grant and also matching state funds. This project will span over 2014 and 2015 construction seasons and will upgrade approximately 19 miles of track.

Morrisville Airport

The Morrisville-Stowe Airport project cleared obstructions in the approach surface on the private property of the recently acquired aviation easements during the winter months. This concluded approximately five years of work by the Aviation Program to acquire the easements on 18 parcels that are located in the approaches. In May the reconstruction of the existing runway began which included a full-depth reconstruction of the runway and taxiways, installation of new lighting fixtures, electrical vaults, Precision Approach Path Indicators and, improvements to the Runway Safety Area. New pavement will also be placed on the existing aircraft apron.

Department of Motor Vehicles

The Department of Motor Vehicles (DMV) is responsible for issuing driver licenses, permits, motor vehicle registrations (including snowmobile and motorboat registrations), driver license suspensions and reinstatements, enforcement of motor-vehicle-related laws, and collecting motor fuel revenue for the state of Vermont. The department also manages several safety programs, including vehicle inspections, motor carrier safety, school bus safety and those related to motorcycle training. The Vermont DMV serves a resident population of over 626,000 as well as a significant number of nonresidents.

MONTPELIER. DMV main office.

Revenues FY2014 (fees, taxes and permits)

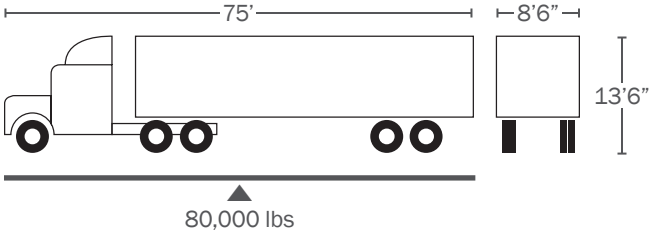
License Fees	$8,378,486.58
Registration Fees	$52,979,419.12
Gas Tax and Clean Up ($0.121/gal.)	$59,160,823.70
2013 Motor Fuel Assessment Fee	$19,935,364.76
Gas Infrastructure Assessment Fee	$18,799,950.91
Sales Tax (6%)	$1,089,180.13
Purchase and Use Tax (6%)	$66,417,968.27
Diesel Tax ($0.28/gal.)	$14,815,777.16
Diesel Infrastructure Assessment Fee	$1,715,993.25
Trucks up to 6,099 lbs.	$13,893,819.87
Trucks up to 25,999 lbs.	$6,814,831.03
IRP from other states	$429,506.41
IRP In-State	$4,403,594.45
Clean Air Fund	$610,996.80
Conservation Plates	$169,152.00
IFTA from other states	$1,346,027.05
IFTA Infrastructure Assessment	$148,810.36
Title Fees	$5,704,147.76
Inspection Fees	$2,961,775.25
Driving Records	$3,135,138.30
Oversize Permits	$2,811,061.61
Miscellaneous	$16,092,946.96
Total	$300,645,332.73

DMV Rates

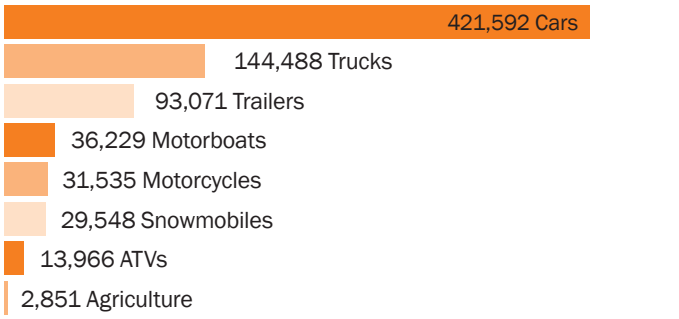
Gas Tax and Clean Up Fee	$0.121 and $0.01 and 2% of retail
Motor Fuel Transportation Infrastructure Assessment	2% of the average quarterly retail price
Motor Fuel Tax Assessment	$0.134 per gallon or 4% of the tax-adjusted retail price upon each gallon of motor fuel sold by the distributor not to exceed $0.18, whichever is greater
Diesel Tax, Clean Up Fee and Infrastructure Fee	$0.28 and $0.01 and $0.03
Sales Tax, Purchase and Use Tax, Motor Homes, Trucks up to 10,099 lbs	6%
Driver Training	$50 – $150
Clean Air Fund	$1/year
Conservation Plates	$23/pair, in addition to registration fee
Title Fees (Vehicle)	$33
Title Fees (ATV, Boats, Snowmobiles)	$20
Oversize Permits	$1 – $500
Survey Fee	$300 – $10,000

Truck Legal Size and Load Limits

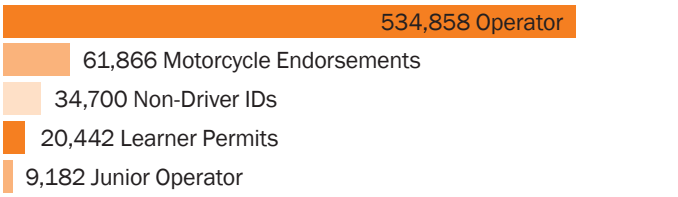
The maximum load on any vehicle axle shall not exceed a gross weight of more than 600 pounds per inch of tire width in conformity with the manufacturer's designated width. Axle weight must conform to federal bridge formula.



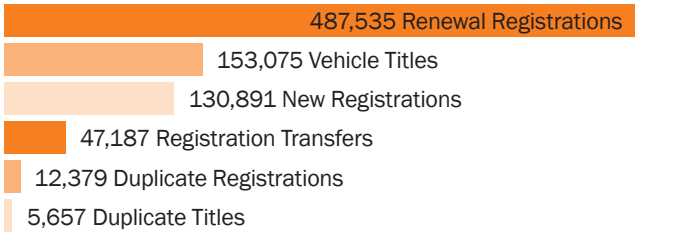
Vehicle Registrations



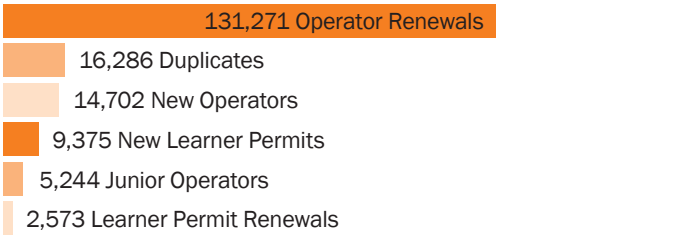
Vehicle Licenses



Vehicle Registrations Processed



License Transactions Processed



Vermont Rider Education Program

130	8	1,331	1,275	1,209	1,130	56
Courses Offered	Training Sites Available	Students Registered	Students Attending	Students Completing the Program	Students Passing the Program	No Shows

DMV Contact Information

Mobile Van Sites

St. Johnsbury
[current] 118 Western Avenue
[2015] 1998 Memorial Drive

St. Albans
[current] 44 Grice Brook Road
[2015] 27 Fisher Pond Road, Ste 3

Middlebury
7 Addison County Courthouse
Mahady Court, 2nd floor

Dummerston
AOT District #2 Office
US 5

White River Junction
VFW 97
97 South Main Street

Regional Offices

Montpelier
802-828-2085
802-828-2000
802-828-2050

Newport
802-334-3363

South Burlington
802-863-7292

Rutland
802-786-5815

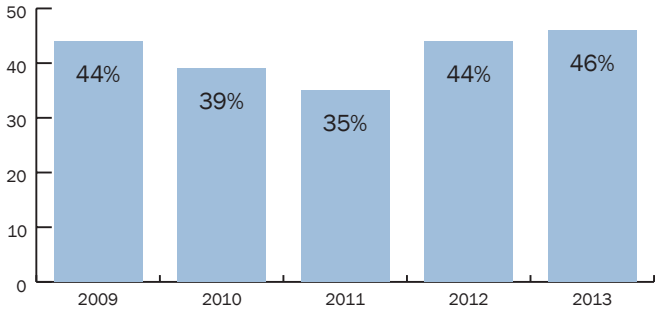
Springfield
802-885-5273

Bennington
802-447-2756

Highway Safety

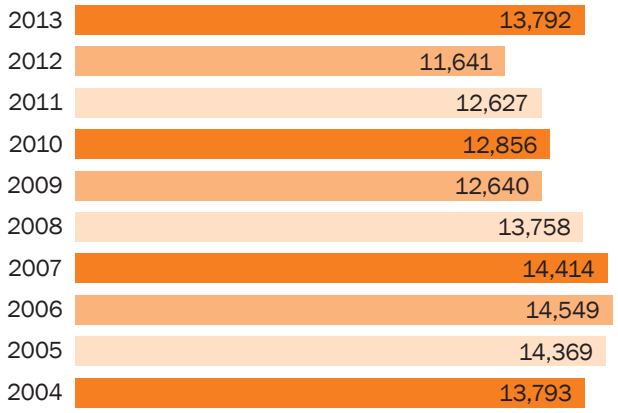
The Highway Safety Data Unit section collects and manages data-related to highway system conditions, collects highway video, reports highway sufficiency rating data, manages the Crash (highway accident) , Fatality Analysis Reporting System (FARS), and the VT Highway Performance Monitoring System data bases, and coordinates highway classification system reviews (both state and federal). Staff are actively involved in the Traffic Records Coordinating Committee and the Vermont Highway Safety Alliance and work closely with statewide law enforcement in the area of crash reporting.

Occupant Fatalities With No or Improper Restraint

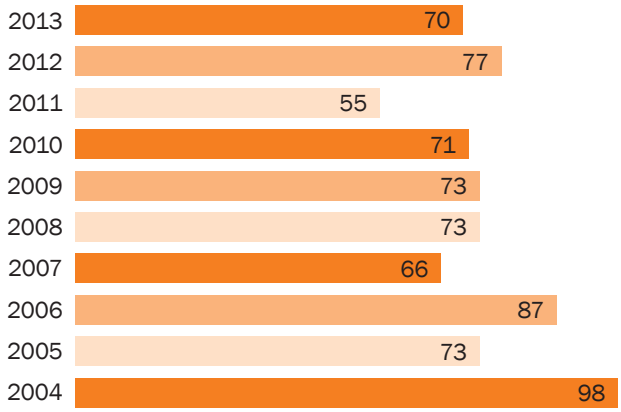


* Data source: VTrans in-house VCSG database or FARS. Data reflected as submitted by law enforcement. Where restraint is "NoneUsed" (VCSG) or "No" (FARS). Includes "Improper Use" and "Non-DOT Compliant Helmet."

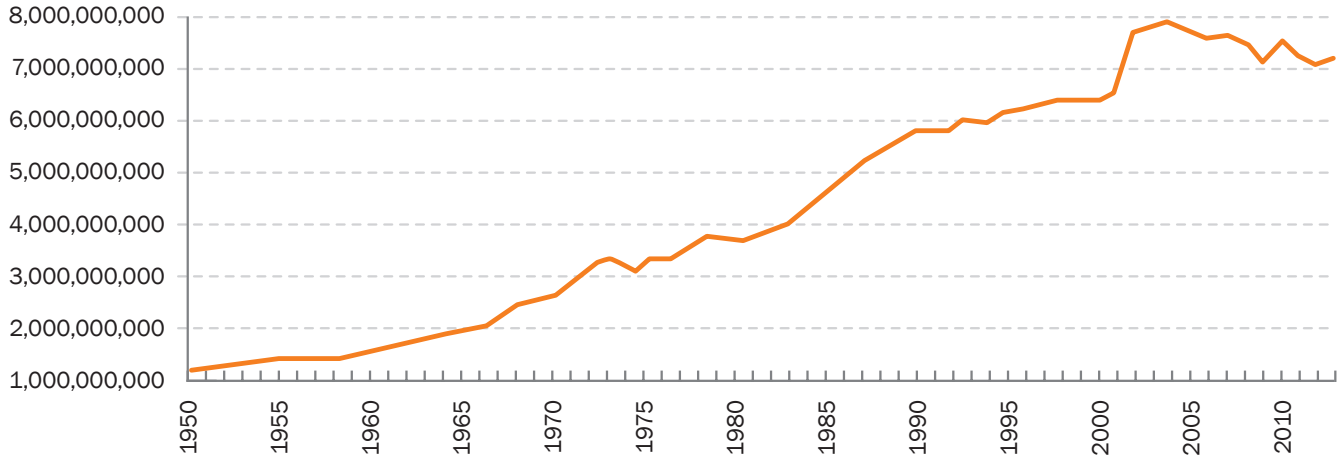
Crashes Reported, by calendar year



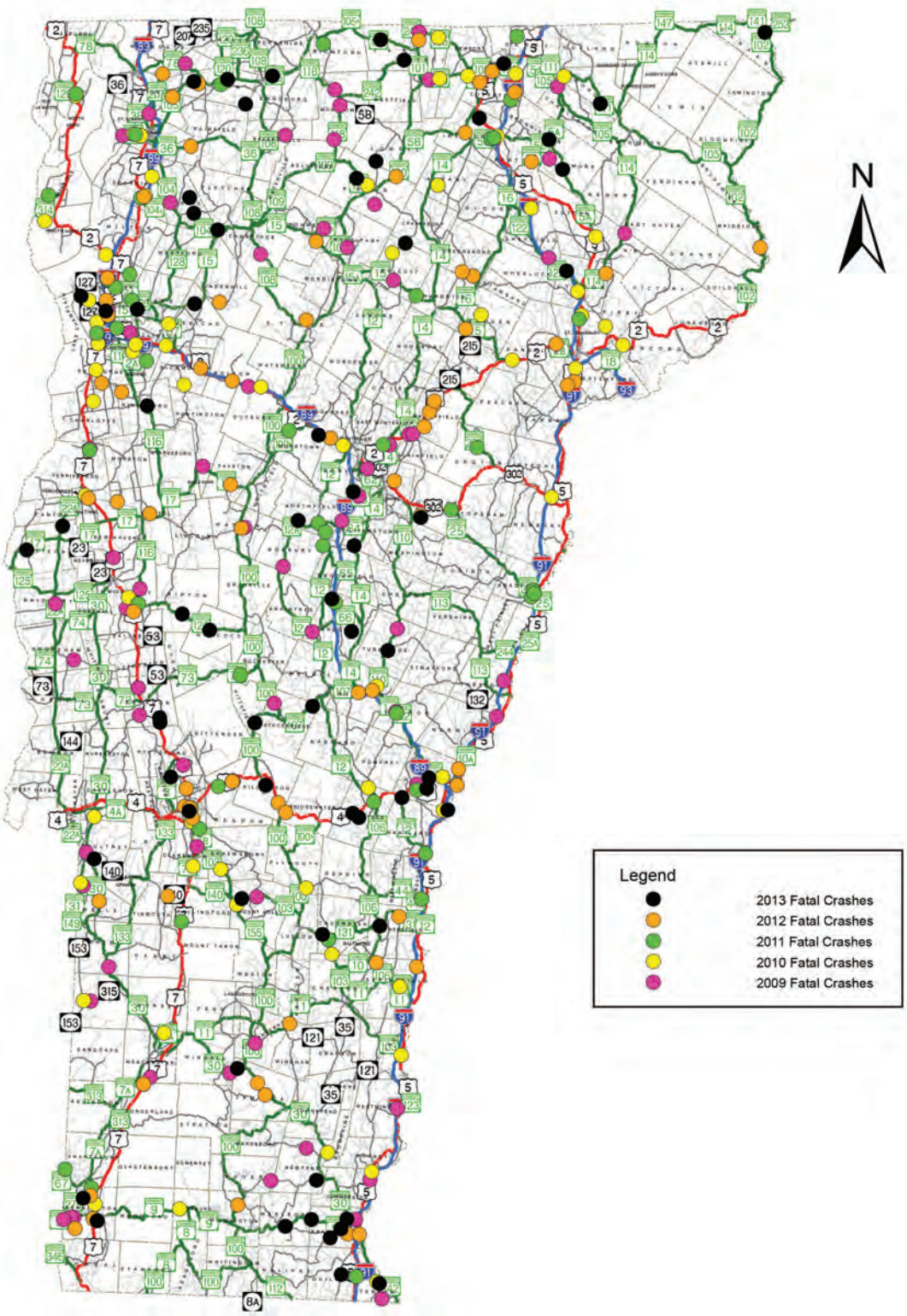
Fatalities, by calendar year



Vehicle Miles of Travel: 1950 – 2013



Fatal Crash Map, 2009–2013



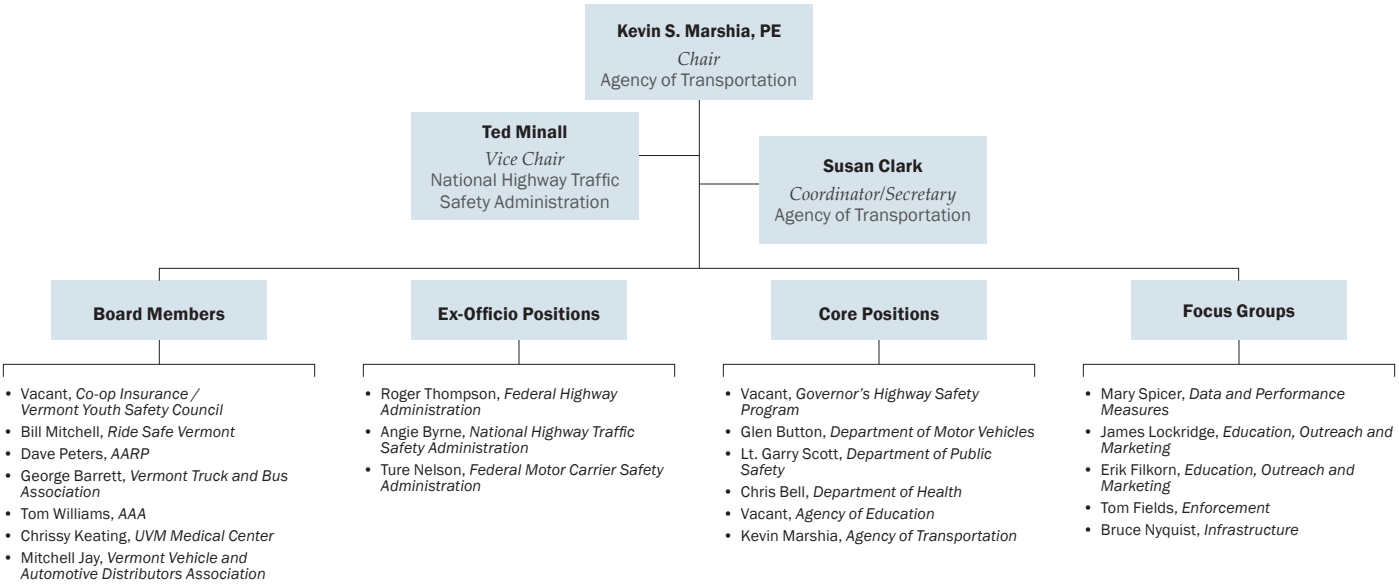
Vermont's Highway Safety Alliance

This second year of the Vermont Highway Safety Alliance (VHSA) has brought about significant accomplishments and results. The organization continues to grow and gain strength as it becomes a centralized highway safety resource for residents and visitors to Vermont. Progress is being made in reducing crashes. The unfortunate reality is that there are still too many deaths and injuries occurring. "One is Too Many" and with that in mind, the partners of the VHSA are working hard on many initiatives with a particular focus in three priority areas: Occupant Protection, Impaired Driving, and Distracted Driving.

A great deal of work has been accomplished in 2014. Actions have been broad based and far reaching. From the creation of the "OP 802" task force with a focus on occupant protection in the Northeast Kingdom, to installation of more centerline rumble stripes around the state, VHSA is making a difference. Initiatives have also included the creation of a Public Online Crash Data Query Tool and the strengthening of messaging to all users of our highways through the Education, Outreach, and Marketing Focus Group. Important connections have been made with victims of crashes. These are just a few examples of the great work of our partners.

One VHSA project worth noting is the effort that partners put forth in reducing crashes along US 4 from Bridgewater to Hartford. In the early months of 2013, this corridor experienced a number of tragedies and crashes were increasing. The communities reached out to the VHSA and a suite of strategies were developed that included targeted speed enforcement; an increase in outreach to local businesses, commuters and the communities at large; driver training programs; new pavement and installation of center line rumble stripes. A recent review of the before and after crash data along this corridor indicates a 58% reduction in injuries and a 60% reduction in all crashes. This effort is a great example of how the VHSA organization has clearly made a difference.

As of October, 2014, a new law came into effect that also represents a change to the culture of distracted driving, one of the top VHSA priorities. Through the hard work of many of our partners, and championed by our legislature, a law was passed restricting the use of hand held portable electronic devices while driving. .



Aviation

The Aviation Program manages 90 runway lane miles at 10 state-owned airports in Vermont, providing a safe environment for users of the system, preserving the publicly-owned infrastructure, promoting aviation-related activities, and expanding travel opportunities.

In 2014, Rutland Southern Vermont Regional Airport (RSVR) had 6,175 enplanements including regular passenger service offered via Cape Air. 484,004 pounds of cargo moved through RSVR in 2014 and 190,282 pounds moved through Knapp State Airport in Berlin.

NEWPORT. Newport Airport runway.

Airport Contact Information

MUNICIPAL AIRPORTS

Burlington International
Kelly Colling
(802) 863-2874

STATE AIRPORTS

Caledonia County
Peter Gage
(802) 626-3353

Edward F. Knapp
Jim Thompson
(802) 282-7372

Franklin County
Cliff Coy
(802) 868-2822

Hartness
Larry Perry
(802) 886-7500

John H. Boylan
Jim Thompson
(802) 282-7372

Middlebury
Brian Pinsonault
(802) 505-8479

Morrisville-Stowe
Tom Anderson
(802) 461-7299

Newport
Dan Gauvin
(802) 334-5001

Rutland Southern Vermont Regional
Chris Beitzel
(802) 786-8881

William H. Morse
Rob Luther
(802) 595-5830

PRIVATE AIRPORTS

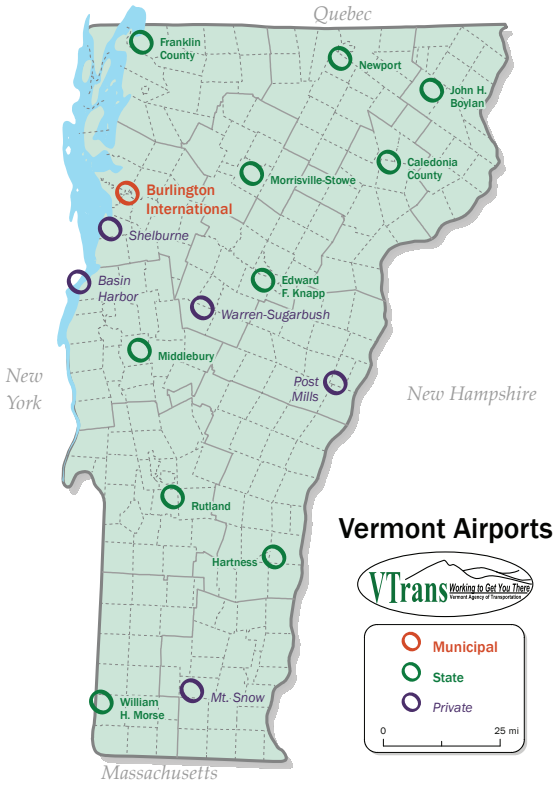
Basin Harbor
Robert Beach, Jr.
(802) 475-2311

Mt. Snow
Jim Barnes
(802) 457-3151

Post Mills
Brian Boland
(802) 333-9254

Shelburne
Ray Magee
(802) 985-2100

Warren-Sugarbush
Rick Hanson
(802) 496-2290



Rail

Passenger Rail Service

Vermont is a state partner with Amtrak, subsidizing rail service for Vermonters and visitors to our Green Mountain State. Departing at 8:58 AM from St. Albans, the **Amtrak Vermonter** operates on the New England Central Railroad (NECR/GWI) tracks through Vermont (passing briefly through New Hampshire), south to Palmer, MA and then continues through Springfield, MA, Connecticut, and down the Northeast Corridor to New York City and Washington DC. A second Vermonter departs Washington, DC and 8:10 AM Mon–Fri and 7:30 AM Sat–Sun and terminates in St. Albans in the evening.

January 1, 2015 brings with it a change in the route for the Vermonter service. The route in Massachusetts between Springfield, MA and East Northfield, MA will change over to the Knowledge corridor. This route change will reduce track miles and travel times as well as provide a much smoother ride over brand new rails. Although it will eliminate a Vermonter stop in Amherst it will allow for stops in Deerfield, Northampton and Holyoke. This change will also eliminate the reverse move that the train had to make in Palmer and the conflicts with the freight trains at that location as well. For more information on updated schedules or to purchase tickets go to: http://www.amtrak.com/vermonter-train

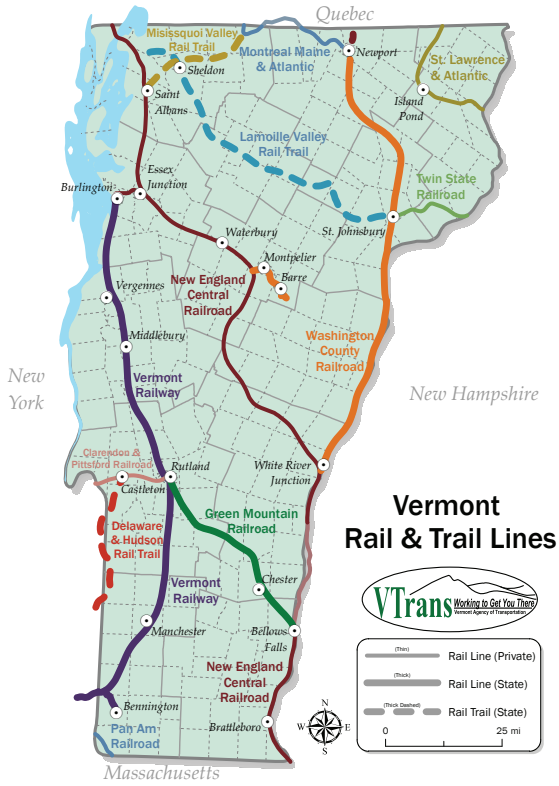
Amtrak's Ethan Allen Express runs on the Clarendon and Pittsford Railroad (CLP) from Rutland, VT to Whitehall, NY and from there continues south to Albany and on to New York City. To learn more, visit: http://www.amtrak.com/ethan-allen-express-train

For FFY 2014, the Vermonter total train ridership (89,640) is an increase of 6.6%, with revenues up by 10.0% ($5,531,708 total). The Ethan Allen Express total train ridership (52,755) was down 1.0% but with a revenue increase of 2.6% ($2,898,957 total).

For Reservations, contact: Amtrak@ 1-800-USA-RAIL (1-800-872-7245), or TDD/TTY (1-800-523-6590), or Visit www.AMTRAK.com

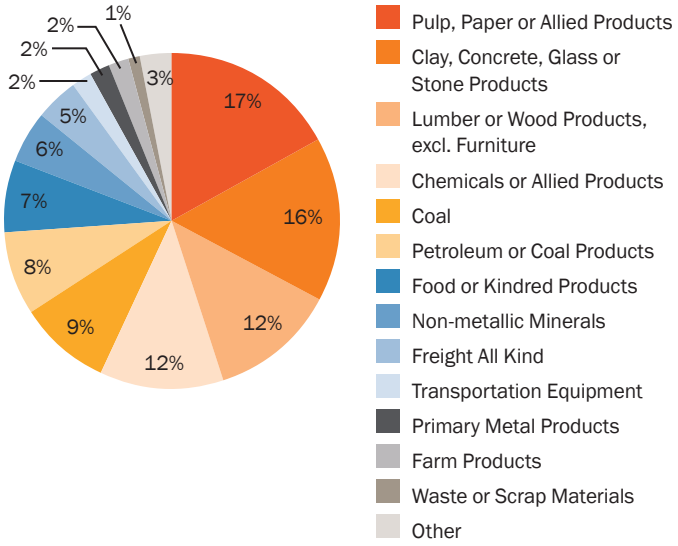
Freight Rail Service

Vermont's Western Rail Corridor, which runs along the western part of the State, has enjoyed significant investment. This year we started work on upgrading the rails between Rutland and Burlington to a higher grade, heavier weight rail that is continuously welded to remove all joints which will allow higher train speeds and a more comfortable, quieter ride. The project is being funded with $10 million dollars of Federal Earmark, another $9 million from a TIGER V Grant and also matching state funds. This project will span over 2014 and 2015 construction seasons and will upgrade approximately 19 miles of track.



Top Rail Commodities

2011 Weight, in thousands of tons



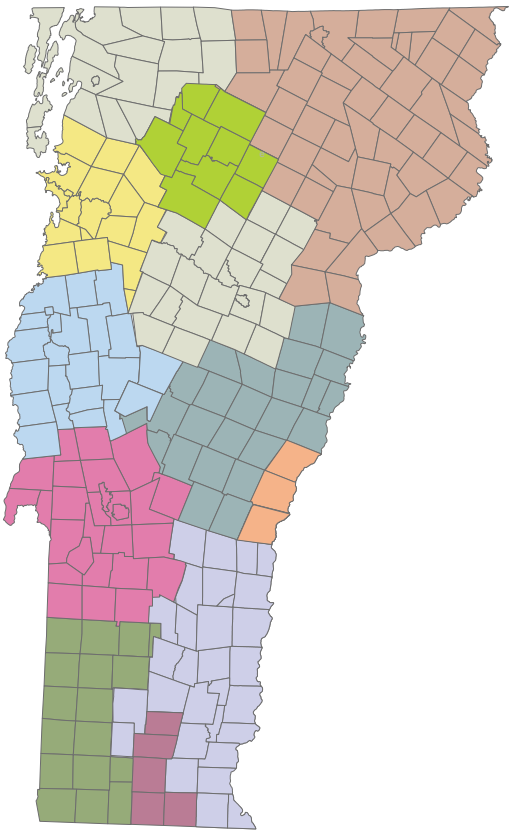
Public Transportation

The Public Transit Section is responsible for planning, administration and oversight of the statewide network of public transit providers. Transit providers operate multiple types of service ranging from traditional fixed-route bus services to special services for the state's elderly and disabled citizens.

Services provide access to employment, medical services, tourism destinations, and major employers. Commuter transit routes have seen a significant rise in ridership in recent years, and renewed interest and demand for intercity service had resulted in a revived intercity bus program which rolled out in 2014.

All services either provide or are coordinated with human service transportation providers that include elderly and disabled transportation as well as Medicaid transportation services.

Total Ridership



Public Transit Providers

Addison County Transit Resources (ACTR)
Jim Moulton / jim@actr-vt.org
PO Box 532, 297 Creek Road, Middlebury, VT 05753
Phone (802) 388-1946 / Fax: (802) 388-1888

Advance Transit, Inc.
Van Chesnut / van@advancetransit.com
PO Box 1027, Billings Commerce Park, Wilder, VT 05088
Phone: (802) 295-1824 / Fax:(802) 295-3010

Chittenden County Transportation Authority (CCTA)
Karen Walton / kwalton@cctaride.org
15 Industrial Pkwy, Burlington, VT 05401
Phone: (802) 864-0629x16 / Fax: (802) 864-5564

Connecticut River Transit, Inc. (CRTI)
Rebecca Gagnon / rgagnon@crtransit.org
706 Rockingham Road, Rockingham, VT 05101
Phone: (802) 460-RIDE x201 / Fax: (802) 460-1004
Toll Free: (888) 869-6287

Deerfield Valley Transit Association (DVTA; Moover)
Randy Schoonmaker / randys@moover.com
PO Box 429, 100 N. North Commercial Ctr, West Dover, VT 05356
Phone: (802) 464-8487 / Fax: (802) 464-0164

Green Mountain Community Network (GMCN)
Donna Baker / dbaker@greenmtncn.org
215 Pleasant Street, Bennington, VT 05201
Phone: (802) 447-0477 x11 / Fax: (802) 447-2550

Green Mountain Transit Agency (GMTA):
Central Vermont, Franklin and Grand Isle
Karen Walton / kwalton@cctaride.org
6088 VT 12, Berlin, VT 05602
Phone: (802) 223-7287 / Fax (802) 223-6236
Franklin / Grand Isle Area Phone: (802) 527-2181

Marble Valley Regional Transit District (MVRTD; The Bus)
Minga Dana / minga@thebus.com
158 Spruce Street, Rutland, VT 05701
Phone: (802) 773-3244 / Fax: (802) 773-0840

Rural Community Transportation, Inc. (RCTI)
Mary Grant / marygrant.rct@gmail.com
1161 Portland Street, St. Johnsbury, VT 05819
Phone: (802) 748-8170 x301/ Fax: (802) 748-5275

Stagecoach Transportation Services, Inc. (STSI)
Jim Moulton / jim@actr-vt.org
PO Box 356, 1 L Street, Randolph, VT 05060
Phone: (802) 728-3773 / Fax: (802) 728-6232

Ridership Trends

Statewide public transit ridership has steadily increased in recent years. A significant portion of that increase is notably due to "choice" riders, or those with other transportation options that prefer the ease, convenience, safety, and economic savings achievable through use of public transit. In SFY2014, Vermont's public transit systems provided 4.84 million trips. Roughly ½ of those rides are attributable to the Chittenden County region, and the other half are spread throughout the rest of the State. There are a number of different types of public transit services, each oriented toward serving a specific market or need. The figure below illustrates ridership by service category. It should be noted that statewide transit ridership dropped slightly in 2014 from 2013 due to the drivers' strike at Chittenden County Transit Authority (CCTA). The trend outside of Chittenden County was upward and CCTA would have likely seen a ridership increase had it not been for the strike.

High Performing Routes

Overall, in SFY 2014, Vermont's transit services met the performance standards set by peer systems. Many routes are showing outstanding performance, in particular some of the Commuter routes serving Burlington and Montpelier, Small Town and Demand Response services in Rutland, Small Town and Express Commuter routes in the Upper Valley region, Tourism routes in the Deerfield Valley and Mad River Valley regions, and Rural Commuter routes in the Franklin/ Grand Isle and Deerfield Valley regions.

Small Town

Advance Transit's Orange route showed on average, a remarkable 26 boardings per hour, and Marble Valley Regional Transit District's (MVRTD) North and South routes showing 18 boardings per hour.

Rural

Deerfield Valley Transit Association's Wilmington-West Dover route posted an average of over 15 boardings per hour, and the Jay-Lyn Shuttle operated by Rural Community Transportation (RCT) showed over 10 boardings per hour.

Tourism

Tourism-oriented routes had a very strong showing with Deerfield Valley Transit Association's seasonal services associated with ski areas transporting over 45 passengers per hour on average and MVRTD's Killington Day and Night services serving an average of over 25 passengers per hour.

Rural Commuter

Rural Commuter routes including Green Mountain Transit Agency's (GMTA) Richford-St. Albans route and Green Mountain Community Networks' Brown route both showed an average of over 11 boardings per hour.

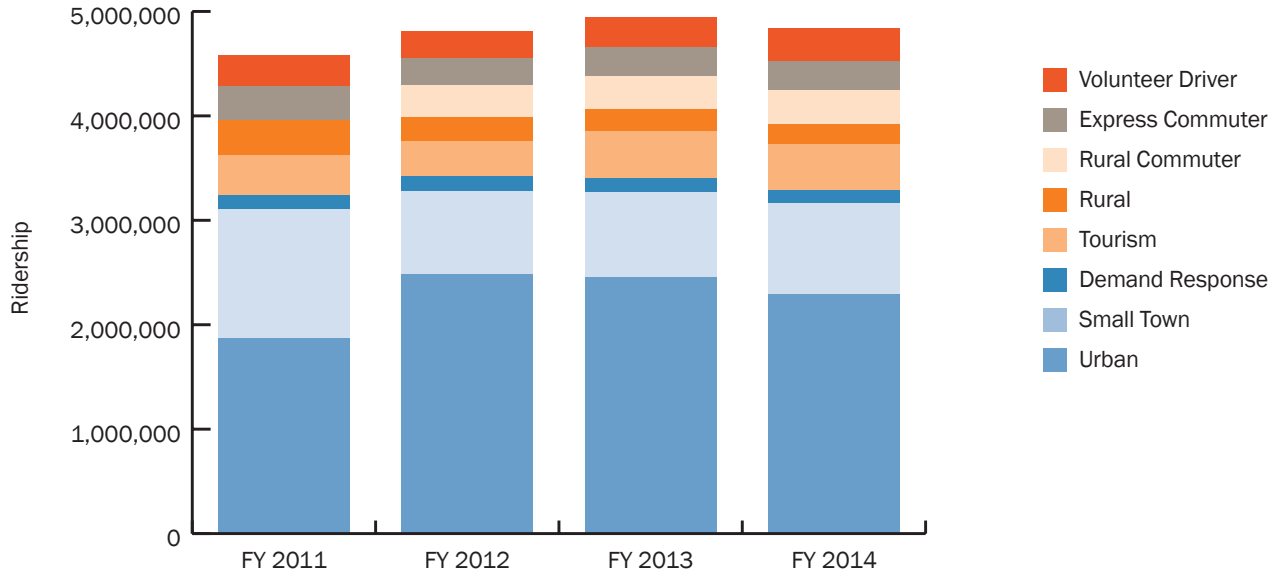
Express Commuter

In the Express Commuter category the Montpelier LINK Express continues to show remarkable service and growth, transporting over 500 passengers per day between the greater Burlington area and Montpelier. Many other Express Commuter routes including Connecticut River Transit's routes serving the Dartmouth / Hanover region continue to transport scores of employees to and from work daily.

Underperforming Services

A short list of routes and services were found to have issues with either productivity and/or the cost of operation

Statewide Transit Ridership by Service Category



as compared to their peers. Of more than 100 transit services evaluated across the state, only about a dozen did not meet the target thresholds for productivity and/or cost-effectiveness. A few of the Rural Commuter services are struggling to take root, and three Tourism routes showed low performance when compared to like routes. Routes that VTrans will be focusing on for improvement include the Morrisville Loop, the Mad River Glen and Snowcap Commuter services operated by GMTA, the Okemo Seasonal service operated by Connecticut River Transit, Inc., the Wilmington-Bennington service operated cooperatively by Deerfield Valley Transit Association (DVTA) and GMCN, and the 89er North commuter service operated by Stagecoach Transportation Services Inc. (STSI) The Morrisville Loop operated by GMTA was very close to meeting peer standards but fell just short for the second year in a row. The 89er North commuter route operated by STSI, showed a continued drop in ridership from previous years. STSI has hired a transit planning specialist to work on this and other routes in an effort to improve productivity. ACTR's demand response service saw a notable increase in cost per passenger this year, partly due to reduced ridership. VTrans continues to work with ACTR to identify the issues and implement improvements to reduce costs for next year.

Farebox Revenue and Local Share

VTrans has an established statewide goal of 20% local share funds for public transportation adopted as part of the 2012 Public Transit Policy Plan. Local funding includes fare revenue, private contributions, contracts with outside agencies, and payments from cities and towns. The figure below displays the local share of transit operating budgets statewide.

The local share analysis found that 28% of transit funding statewide comes from local sources including fares.

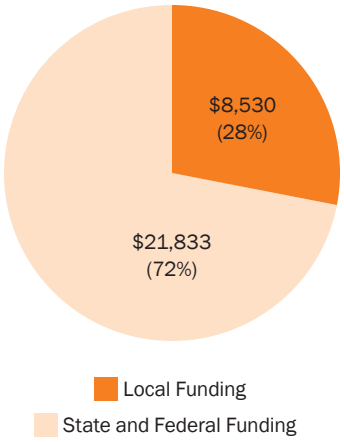
Of ten agencies in the state, seven charge fares on at least some routes (DVTA, RCT and AT charge no fares). Of 106 routes operated (excluding shopping shuttles and demand response services), 36 charge no fares. Excluding the no-fare agencies, 17 of 87 routes charge no fare. Total fare revenue collected statewide in SFY2014 was $2.965 million, the great majority of which was collected on routes operated by CCTA. Fare recovery ratios (fare revenue divided by operating cost) range from about 1% on a few rural routes to 67% on the Montpelier-Burlington LINK Express. The average among all routes that collect fares is 13%. Fare revenue makes up between 20% and 25% of the operating budget for CCTA.

Elders and Persons with Disabilities "E&D" Transportation Program

The Vermont "E&D" Transportation Program provides transportation for some of Vermont's most vulnerable citizens. In SFY2014, the total amount spent on the E&D program in Vermont was $4.735 million. The majority (80%) of this funding is federal and the 20% local match is generated locally by the transit providers through a variety of means including agreements with local human service agencies. This funding provided some 181,885 rides, for a cost per passenger trip of about $26. Approximately 40% of E&D-funded trips are provided by vans operated by the transit agencies. Some 14% of trips are provided on regular bus routes, 10% in sedans or taxicabs, and most importantly, 36% in private cars operated by volunteer drivers. The volunteer driver program accounts for over 40% of the cost of E&D overall and 84% of the miles driven. These trips are typically much longer distance than those provided by vans due to the special services are required. Volunteer driver trips are especially important in RCT's service area in the Northeast Kingdom where the population is thinly distributed over a very large area. RCT accounts for nearly 30% of the E&D-funded volunteer driver trips statewide. The high degree of cost-effectiveness of these trips is essential to allow for coverage of large rural areas.

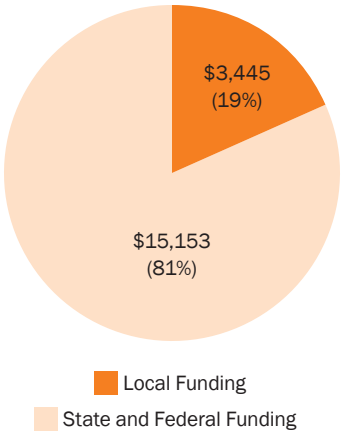
Local Funding Share Statewide

in $ thousands



Local Funding Share Statewide, Excluding CCTA

in $ thousands



go! Vermont

go! Vermont is a resource for Vermonters who want to reduce the cost and environmental impact of driving alone. Services provided through the go! Vermont program include automated matching for carpools, a public/private vanpool program, links to all public transit routes, and an emergency ride home service. In addition, we offer program development and transportation demand management (TDM) assistance to Vermont employers. Our one-click/one-call clearinghouse of transportation-related resources allows Vermonters to examine their travel options and make educated transportation choices.

VTrans' Public Transit Section administers the go! Vermont program in-house with the assistance of the ride matching software, Zimride, and the Vermont Energy Investment Corporation, which provides a call center service with live operators and a messaging service. In order to raise the profile of go! Vermont, VTrans is implementing an intensive statewide marketing plan, promoting efficient modes of transportation.

Capital Commuters

go! Vermont continues to expand its services through contracts with existing Transportation Management Associations to bring employer assistance to any interested employer in the state. An example of this is Capital Commuters, a pilot project for state employees commuting to Montpelier. The goal of this plan is to reduce the parking pressures in downtown Montpelier and provide incentives for efficient commuting options. Incentives include 50% discounted bus passes, preferential parking for carpools and vanpools, and bike/walk "rewards." All registrants are eligible for the Guaranteed Ride Home Program, where VTrans will reimburse an individual for up to $70 for alternative transportation (taxi, rental car, bus) home in the event of an emergency. Additional elements such as a car share membership and pre-tax contributions for bus and vanpool costs are planned for the next two years of the pilot project.

go! Vermont has also partnered with the Chittenden County Regional Planning Commission (CCRPC) to support efforts to form a regional program called "Go Chittenden County." Total funds of $482,625 ($386,100 federal, $15,000 state, $81,525 local) are being used to expand the fleet for the state's only not-for-profit Car Share service, CarShare VT, establish multi-modal transit hubs (accommodating bus, bike, and CarShare trips), provide employers with free bus passes for their employees, provide bike/walk workshops to interested groups, and provide a series of grassroots and focused outreach activities, all branded as Go Chittenden County. We anticipate this initiative will be a template or at least a case study for other regions in the state.

Ferries

Lake Champlain Transportation
(802) 864-9804
www.ferries.com

Lake Champlain Transportation offers three crossings: the Interstate Connection from Grand Isle, VT to Plattsburgh, NY; the Scenic Line from Burlington, VT to Port Kent, NY; and the Southern Crossing from Charlotte, VT to Essex, NY.

The Lake Champlain Ferries are easily accessible from all major highways via automobiles, motor coach, Amtrak trains and airlines.

Ticonderoga Ferry
(802) 897-7999
www.forttiferry.com

The Ticonderoga Ferry provides historic scenic seven-minute daytime crossings on Lake Champlain between Ticonderoga, NY and Shoreham, VT, connecting the Lake George and Adirondack regions of New York with the Middlebury and Central Green Mountain areas of Vermont. It is located on NY 74, just off NY 22 in Ticonderoga, NY and off VT 22A via VT 73 in Orwell, VT or VT 74 in Shoreham, VT.

Commercial Bus Services

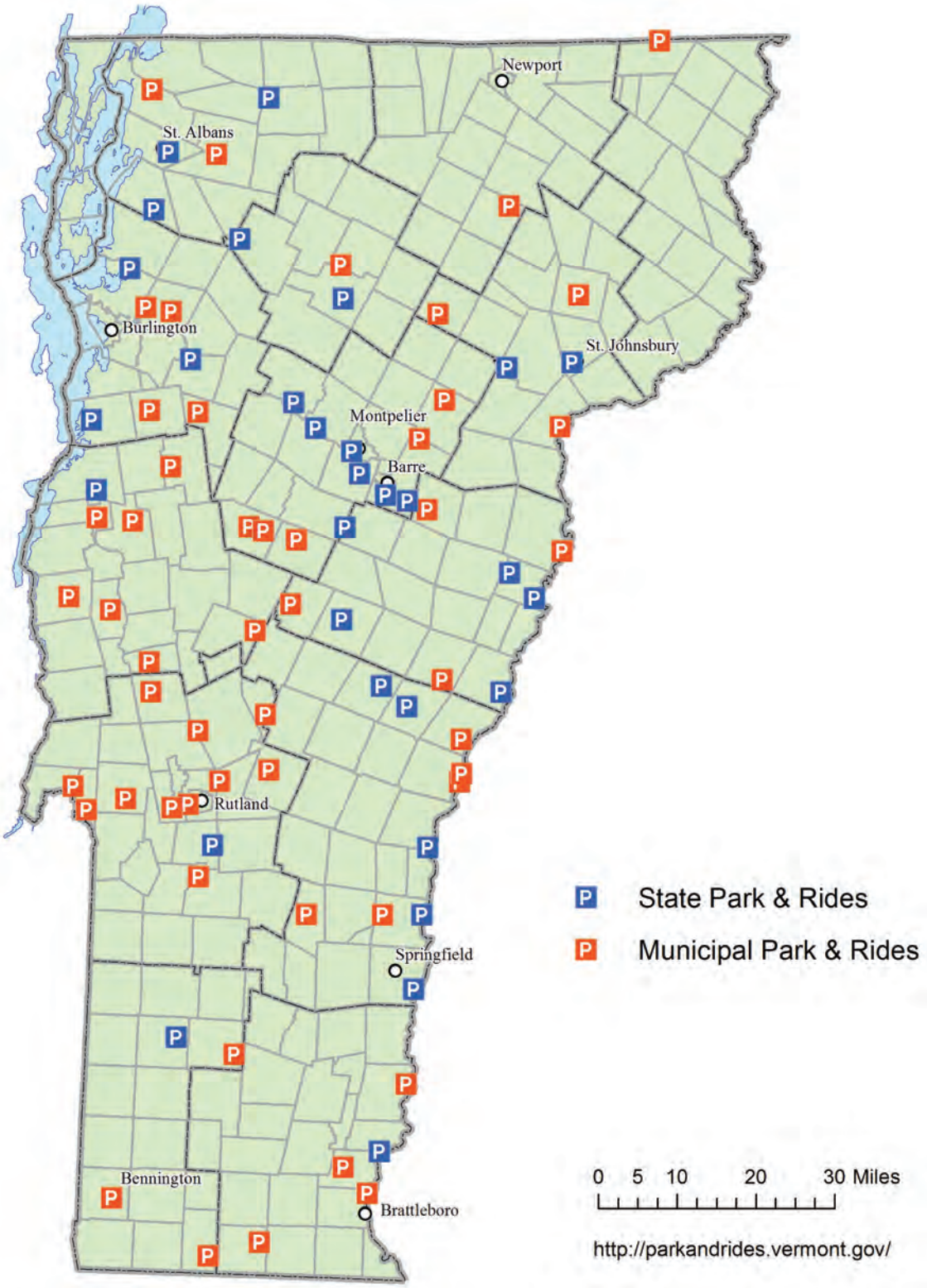
Greyhound Lines, Inc.
1-800-231-2222 (toll-free)
Service to communities throughout Vermont
www.greyhound.com

Megabus.com
Express service from Burlington to Boston, MA
www.megabus.com

Vermont Translines
Service from Burlington to Albany, NY; and Rutland to White River Jct/Hanover, NH
(844) 888-7267

Yankee Trails, Inc.
Service from Bennington to Albany, NY
www.yankeetrails.com/hoosick

Park and Ride Locations

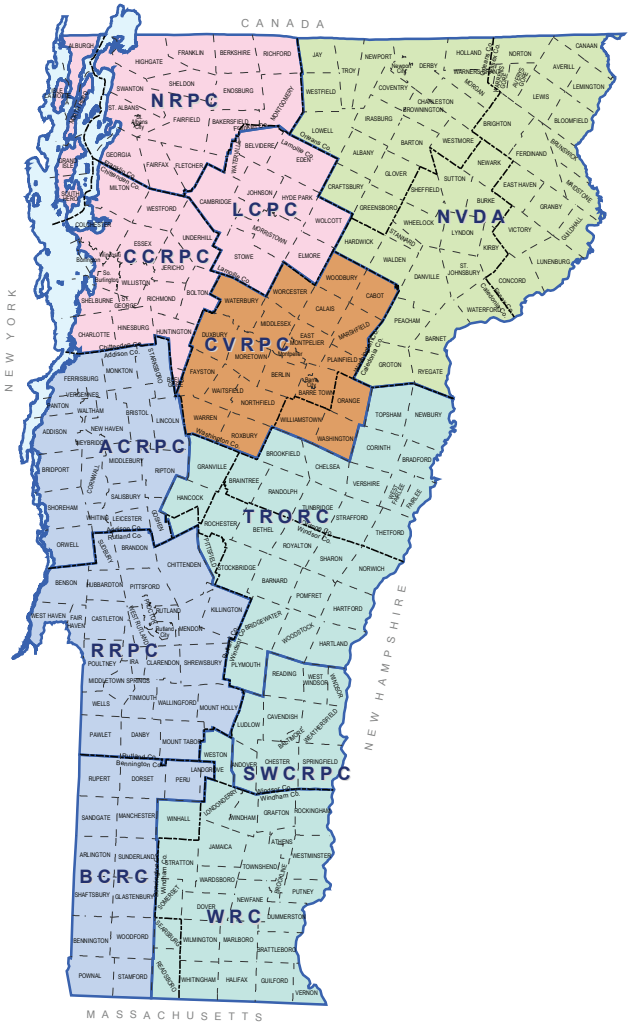


Regional Planning

Regional Planning

The Policy and Planning section coordinates and collaborates with all agency divisions, other state agencies, regional planning commissions, the public and other stakeholders as it considers all modes of travel in the context of broader economic, land use, environmental, energy and equity goals.

Through the Transportation Planning Initiative (TPI), VTrans provides grants to Regional Planning Commissions for transportation planning and to facilitate collaboration between municipalities and the agency.



Transportation Planning Coordinators

CCRPC, LCPC, NRPC
Amy Bell
Phone (802) 828-2678
amy.bell@state.vt.us
CCRPC: Chittenden County Regional Planning Commission
LCPC: Lamoille County Regional Planning Commission
NWRPC: Northwest County Regional Planning Commission

NVDA
Matthew Langham
Phone (802) 828-5578
matthew.langham@state.vt.us
NVDA: Northeastern Vermont Development Association

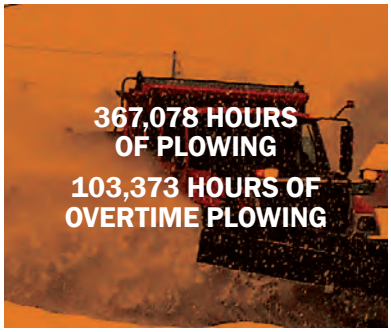
CVRPC
Scott Bascom
Phone (802) 828-5748
scott.bascom@state.vt.us
CVRPC: Central Vermont Regional Planning Commission

SWCRPC, TRORC, WRC
Jackie Cassino
Phone (802) 828-2758
jackie.cassino@state.vt.us
SWCRPC: So. Windsor County Regional Planning Commission
TRORC: Two Rivers-Ottauquechee Regional Commission
WRC: Windham Regional Commission

ACRPC, BCRC, RRPC
Sommer Bucossi
Phone (802) 828-3384
sommer.bucossi@state.vt.us
ACRPC: Addison County Regional Planning Commission
BCRC: Bennington County Regional Commission
RRPC: Rutland Regional Planning Commission

Winter Maintenance

2013–14 Data

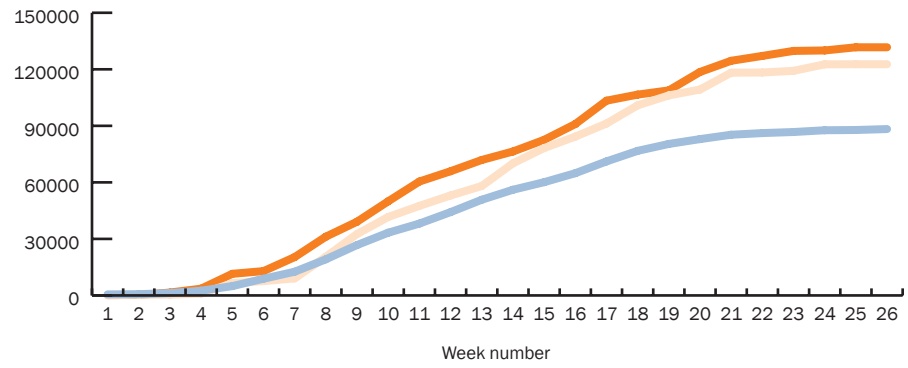


Four-Year Salt Price Comparison

Location	FY2012 Price	FY2013 Price	FY2014 Price	FY2015 Price
District 1	$61.10	$59.59	$53.79	$73.79
District 2	$62.71	$61.90	$58.65	$78.65
District 3	$63.68	$62.17	$54.02	$76.02
District 4	$64.77	$62.67	$56.52	$75.52
District 5	$62.18	$61.58	$58.73	$72.18
District 7	$65.46	$65.21	$60.16	$76.76
District 8	$63.70	$63.28	$61.67	$78.44
District 9	$67.29	$68.05	$67.95	$82.26

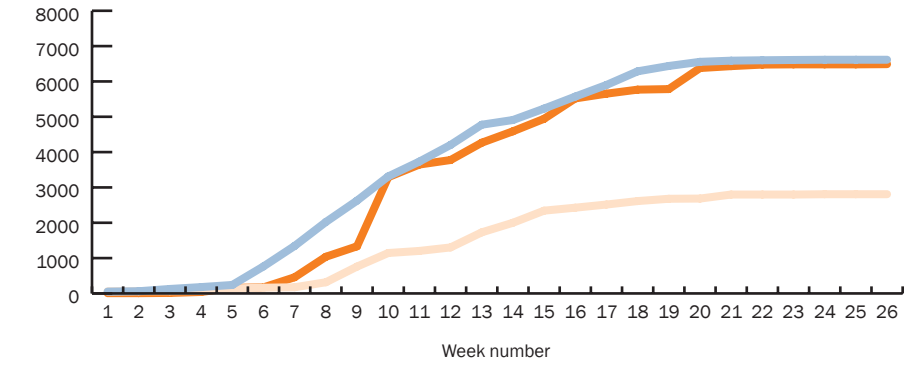
Salt Usage (in tons)

FY2014:	131,684
FY2013:	122,706
5-yr average:	88,286



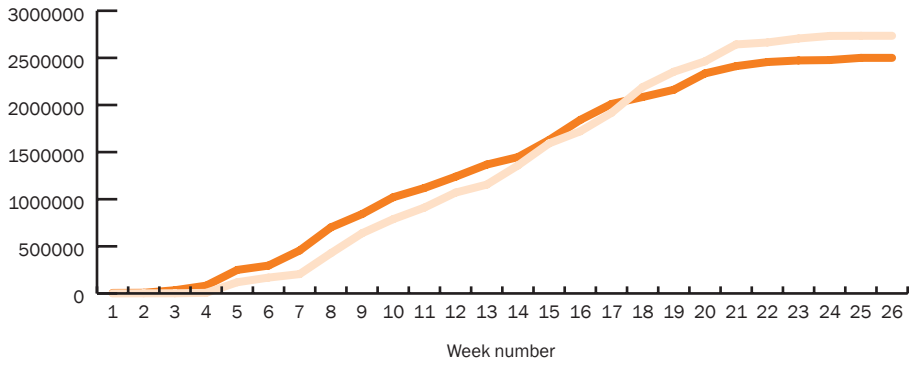
Sand Usage (in cubic yards)

FY2014:	6,489
FY2013:	2,808
5-yr average:	6,614



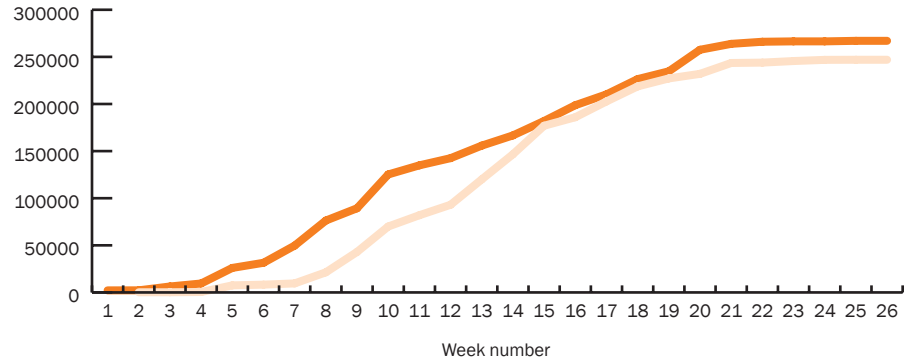
Brine Usage (in gallons)

FY2014:	2,500,165
FY2013:	2,734,508



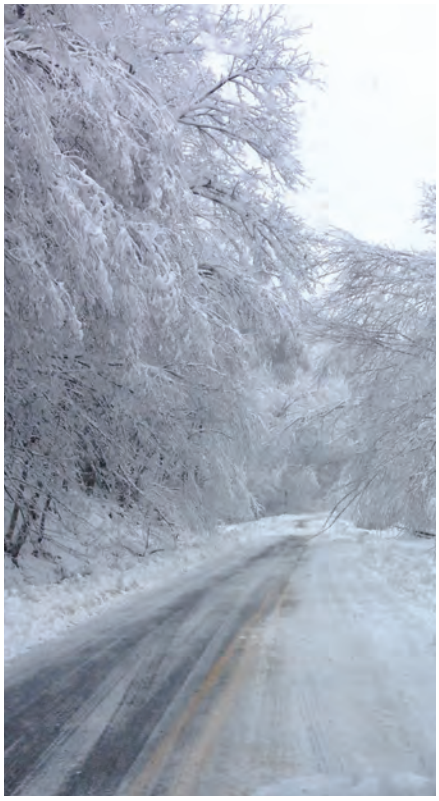
De-Icer Usage (in gallons)

FY2014:	267,036
FY2013:	246,492



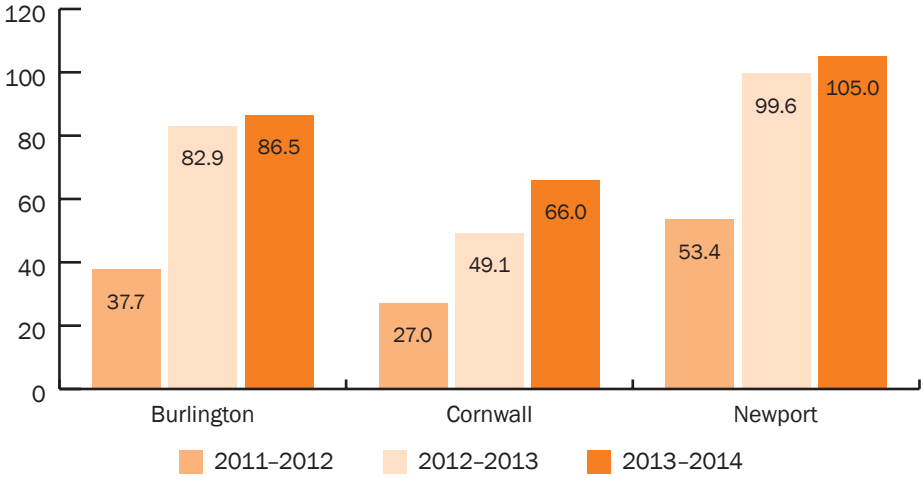
Winter Maintenance Events

A Winter Maintenance Event is defined as one in which three or more districts are engaged in winter maintenance activities requiring snow plowing, salting or sanding. These can last anywhere from a few hours to several days.

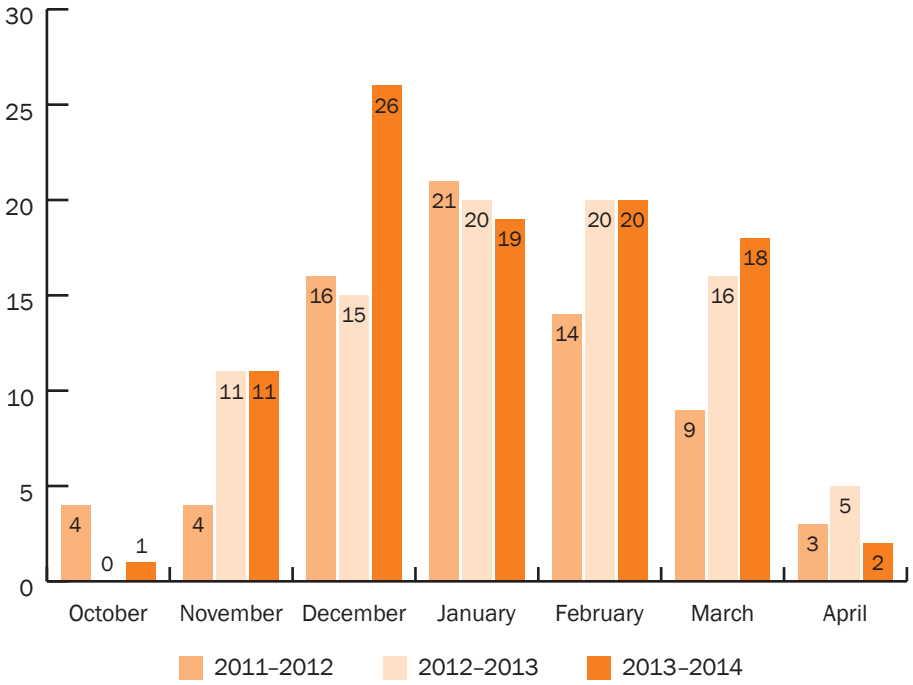


Total Winter Events, Three-Year Comparison

Total Snowfall, Three-Year Comparison (in inches)



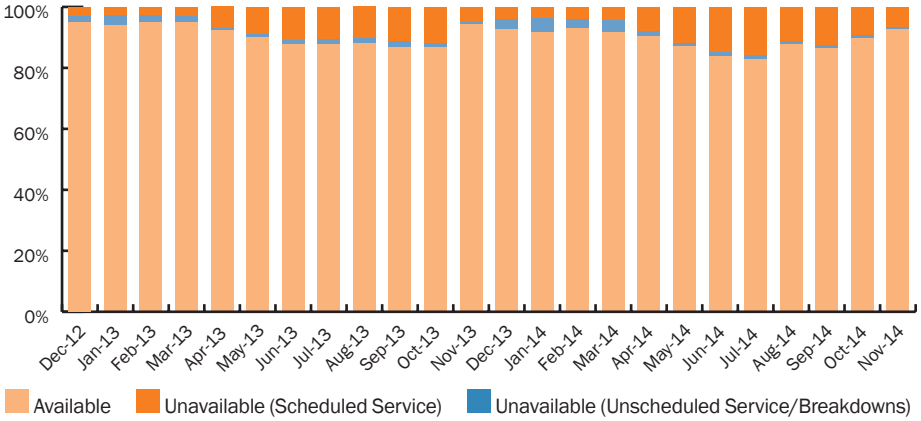
Average Winter Maintenance Event Days, Three-Year Comparison



Equipment Performance Measures

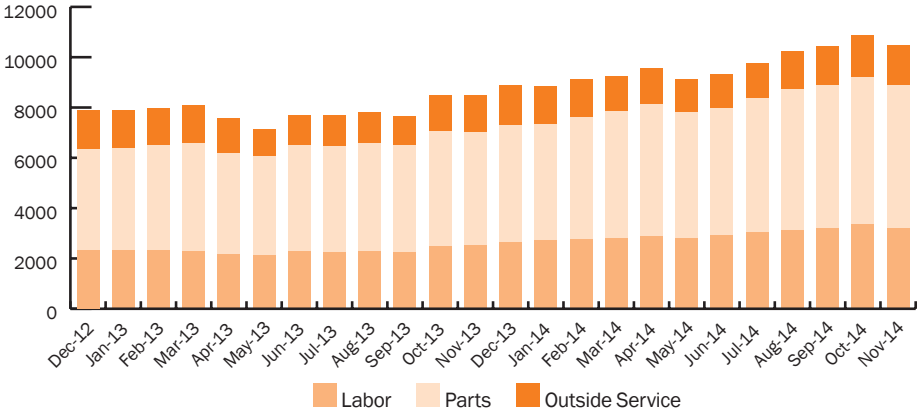
Plow/Dump Truck Availability

Target: ≥ 90% Available; ≤ 2% Breakdowns



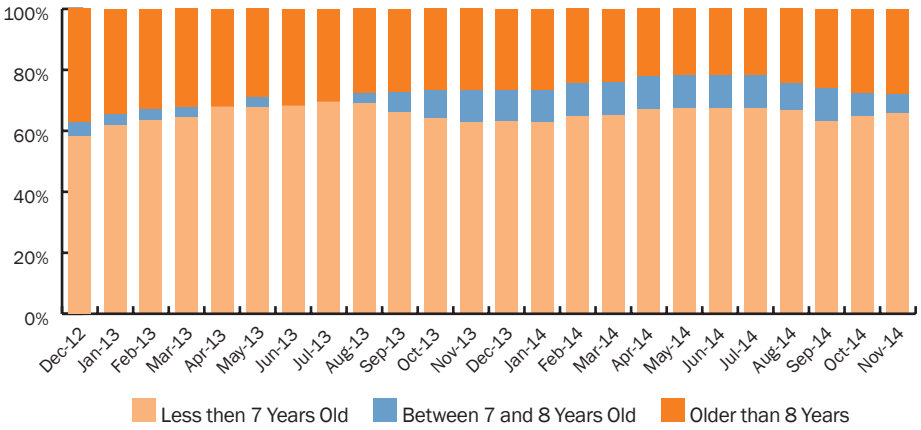
Plow/Dump 12-month Average Service Cost

Target: Minimize as practical



Plow/Dump Truck Age

Target: ≤ 15% Older than 8 years



Operations Statistics

BY DISTRICT

VTrans Maintenance Districts

District 1
Plow route
Rob Faley
359 Bowen Road, Bennington, VT 05201
Phone: (802) 447-2790 / Fax: (802) 447-2793

District 2
Plow route
Tammy Ellis
870 US 5, Dummerston, VT 05301
Phone: (802) 254-5011 / Fax: (802) 251-2000

District 3
Plow route
Rob Faley
61 Valley View Suite #2, Mendon, VT 05701
Phone: (802) 786-5826 / Fax: (802) 786-5894

District 4
Plow route
Tammy Ellis
221 Beswick Drive, White River Jct, VT 05001
Phone: (802) 295-8888 / Fax: (802) 295-8882

District 5
Plow route
David Blackmore
5 Barnes Avenue, Colchester, VT 05446
Phone: (802) 655-1580 / Fax: (802) 655-6642

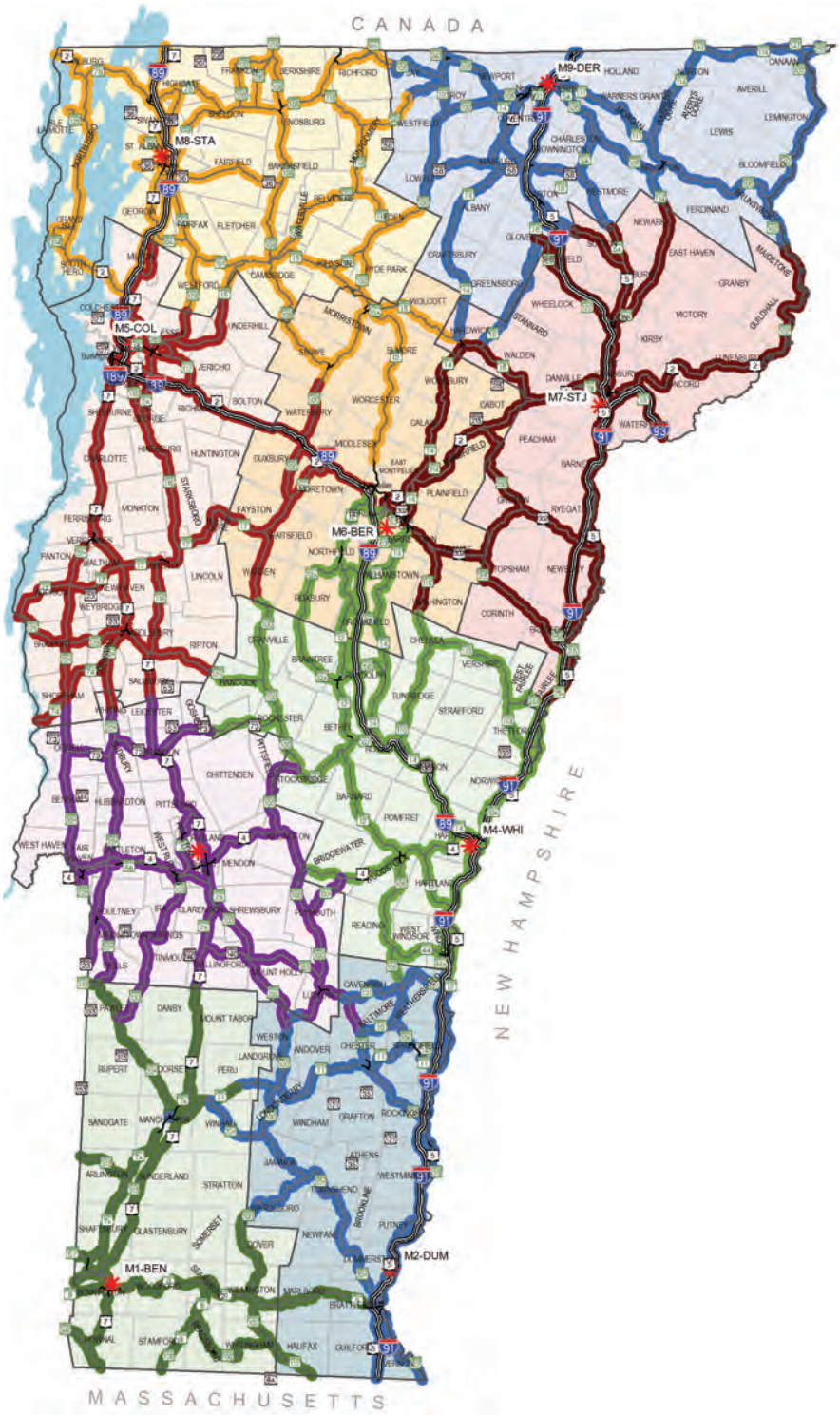
District 6
Todd Law
186 Industrial Lane Road, Barre, VT 05641
Phone: (802) 828-2691 / Fax: (802) 828-3530

District 7
Plow route
Dale L. Perron
1068 US 5, Ste 2, St. Johnsbury, VT 05819
Phone: (802) 748-6670 / Fax: (802) 748-6671

District 8
Plow route
David Blackmore
680 Lower Newton Road, St. Albans, VT 05478
Phone: (802) 524-5926 / Fax: (802) 524-7940

District 9
Plow route
Dale L. Perron
4611 US 5, Newport, VT 05855
Phone: (802) 334-7934 / Fax: (802) 334-3337

✳ District Headquarters



Southwest Region

District 1

359 Bowen Road
Bennington, VT 05201
Phone: (802) 447-2791

555 Lane Miles

District Transportation Administrator
Rob Faley

General Maintenance Manager
William Leach Jr.

Project Manager
Christopher Taft

Facility Locations
Bennington
East Dorset
Readsboro
Wilmington
Marlboro

42
FULL TIME POSITIONS

43
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

$2,251,944
WINTER MAINTENANCE COSTS

8,517

1,055

13,122

325,648

District 3

122 State Place
Rutland, VT 05701
(802) 786-5826

659 Lane Miles

District Transportation Administrator
Rob Faley

General Maintenance Manager
Bruce Nichols

Project Manager
Vacant

Facility Locations
Brandon
Castleton
Clarenden
Ludlow
Mendon
Rutland
Sudbury

48
FULL TIME POSITIONS

55
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

$3,345,817
WINTER MAINTENANCE COSTS

13,671

211

88,208

754,293

Southeast Region

District 2

870 US 5
Dummerston, VT 05301
(802) 254-5011

654 Lane Miles

District Transportation Administrator
Tammy Ellis

General Maintenance Manager
Joseph Ruzzo

Project Manager
Marc Pickering

Facility Locations
Ascutney
Chester
Dummerston
Jamaica
Londonderry
Marlboro
Rockingham
Springfield
Westminster

48
FULL TIME POSITIONS

51
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

$2,560,183
WINTER MAINTENANCE COSTS

14,029

82

6,717

4,600

District 4

221 Beswick Drive
White River Jct., VT 05002
(802) 295-8888

1,202 Lane Miles

District Transportation Administrator
Tammy Ellis

General Maintenance Manager
Trevor Starr

Project Manager
Chris Bump

Facility Locations
Fairlee
Randolph
Reading
Rochester
Royalton
Sharon
Thetford
Tunbridge
White River Jct.
Windsor
Williamstown
Woodstock

70
FULL TIME POSITIONS

82
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

$4,887,335
WINTER MAINTENANCE COSTS

26,239

229

46,817

80,633

Northwest Region

District 5

PO Box 168
Essex Jct., VT 05453
(802) 655-1581

937 Lane Miles

District Transportation Administrator
David Blackmore

General Maintenance Manager
Rejean Lafleche

Project Manager
Richard Hosking

Facility Locations

Bridport
Chimney Corners
Colchester
Essex
N. Ferrisburgh
Middlebury
New Haven
Waitsfield
Middlesex

64
FULL TIME POSITIONS

73
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

$4,117,657
WINTER MAINTENANCE COSTS

16,007

497

37,060

544,606

District 8

680 Lower Newton Road
St. Albans, VT 05478
(802) 524-7927

960 Lane Miles

District Transportation Administrator
David Blackmore

General Maintenance Manager
Ernie Patnoe

Project Manager
Jim Cota

Facility Locations

Cambridge
Eden
Enosburg
Georgia
N. Hero
Highgate
Montgomery
Morrisville
St. Albans

57
FULL TIME POSITIONS

71
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

$4,564,465
WINTER MAINTENANCE COSTS

18,169

435

65,331

752,035

Northeast Region

District 7

1068 US 5, Suite 2
St. Johnsbury, VT 05819
Phone: (802) 748-6670

965 Lane Miles

District Transportation Administrator
Dale Perron

General Maintenance Manager
Tom Lewis

Project Manager
Shauna Clifford

Facility Locations

Boltonville
Bradford
W. Danville
Lunenburg
Lyndon
Newbury
North Montpelier
Orange
St. Johnsbury

64
FULL TIME POSITIONS

66
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

$4,099,948
WINTER MAINTENANCE COSTS

22,287

2,688

7,862

13,137

District 9

4611 US 5
Newport, VT 05855
(802) 334-7934

695 Lane Miles

District Transportation Administrator
Dale Perron

General Maintenance Manager
Bill Jewell

Project Manager
Shane Morin

Facility Locations

Barton
Bloomfield
Canaan
Derby
Irasburg
Island Pond
Westfield
Westmore

52
FULL TIME POSITIONS

61
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

$2,964,078
WINTER MAINTENANCE COSTS

12,767

1,293

1,920

25,213

Statewide

District 6

186 Industrial Lane
Barre, VT 05641
(802) 828-2692

Maintenance Engineer
Todd Law

Garage Locations
Berlin
Vermont Learning Campus

11
FULL TIME POSITIONS

16
PIECES OF DISTRICT OWNED EQUIPMENT

District 6 provides administrative and technical support and oversight for statewide bridge, district paving, and maintenance operations of the other 8 districts.

Central Garage

US 302 #31756
Berlin, VT 05602
(802) 828-1776

Superintendent
Ken Valentine

Facility Locations
Berlin

39
FULL TIME POSITIONS

18
PIECES OF EQUIPMENT AT CENTRAL GARAGE

540
PIECES OF CENTRAL GARAGE OWNED EQUIPMENT

Traffic Shop

US 302 #31756
Berlin, VT 05602
(802) 828-1776

Traffic Operations Manager
Russell Velander

Facility Locations
Berlin
Colchester
Mendon

13
FULL TIME POSITIONS

21
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

Vermont's Bridge Population

In conformance with the National Bridge Inventory (NBI), Vermont maintains an historical record of all bridges subject to the National Bridge Inspection Standards (NBIS). These standards establish requirements for inspection procedures, frequency of inspections, qualifications of personnel, inspection reports, and both the preparation and maintenance of a state bridge inventory. The NBIS apply to all structures defined as bridges that are longer than 20 feet in length and located on public roads. These assets are commonly referred to as long structures. Short structures are those having a span length of greater than six feet up to or equal to 20 feet.

Vermont's "Highway" Structure Population (as submitted to FHWA in April 2014)

	Interstate	State Highway	Town Highway	Other	Totals
Long Structures	313	776	1,627	13	2,729
Short Structures	210	1,056	*	*	1,266
Totals	523	1,832	1,627	13	3,995

Long Structures

	Interstate	State Highway	Town Highway	Other	Totals
Above Ground	265	713	1,530	12	2,520
Buried	48	63	97	1	209
Totals	313	776	1,627	13	2,729

Short Structures

	Interstate	State Highway	Town Highway	Other	Totals
Above Ground	0	173	*	*	173
Buried	210	883	*	*	1,093
Totals	210	1,056	*	*	1,266

Vermont's "Off-Highway" Structure Population (as of December 2014)

	State Highway	Town Highway	Totals
Retaining Walls	239	**	239
Recreation Path Structures	0	113	113
Overhead Sign Support Structures	134	***	134
Totals	373	113	486

Long Structure
Bridges having a span length greater than 20 feet in length and located on public roads.

Short Structure
Bridges having a span length of greater than six feet up to or equal to 20 feet.

* VTrans does not maintain an inventory of or inspect town highway or other short structures.

Buried Structure
These structures include metal culverts, concrete box culverts, frames, masonry arches, and concrete arches.

Retaining Wall
Height greater than 3 feet

Recreation Path Structures
Span length greater than 6 feet

** VTrans does not maintain an inventory of or inspect municipally-owned retaining walls or overhead sign support structure bases.

*** This number is expected to change as inspection criteria are refined (i.e., minimum sign size, attachment, etc.).

Bridge Conditions

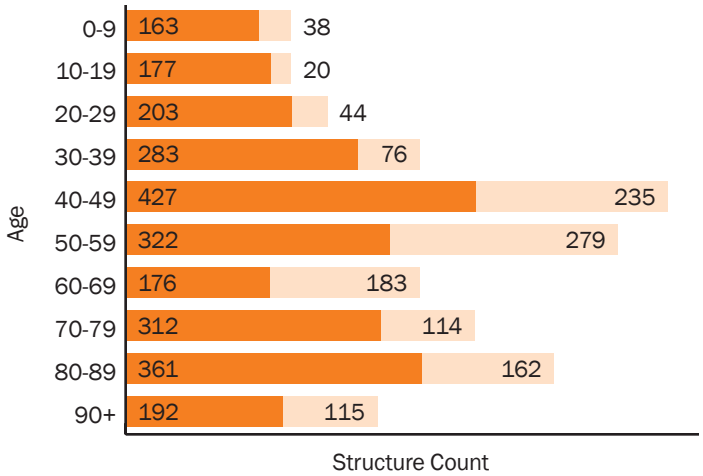
Aging Bridge and Culvert Inventory

With 1927 flood-era bridges now over 80 years old and nearing the end of their useful design life, as well as the 1958-to-1978 Interstate-era bridges around the 45 year mark and in need of repairs or rehabilitation, a wave of structures in need of major investment is quickly approaching.

- Interstate, State Highway, and Town Highway Long Structures
- Interstate and State Highway Short Structures

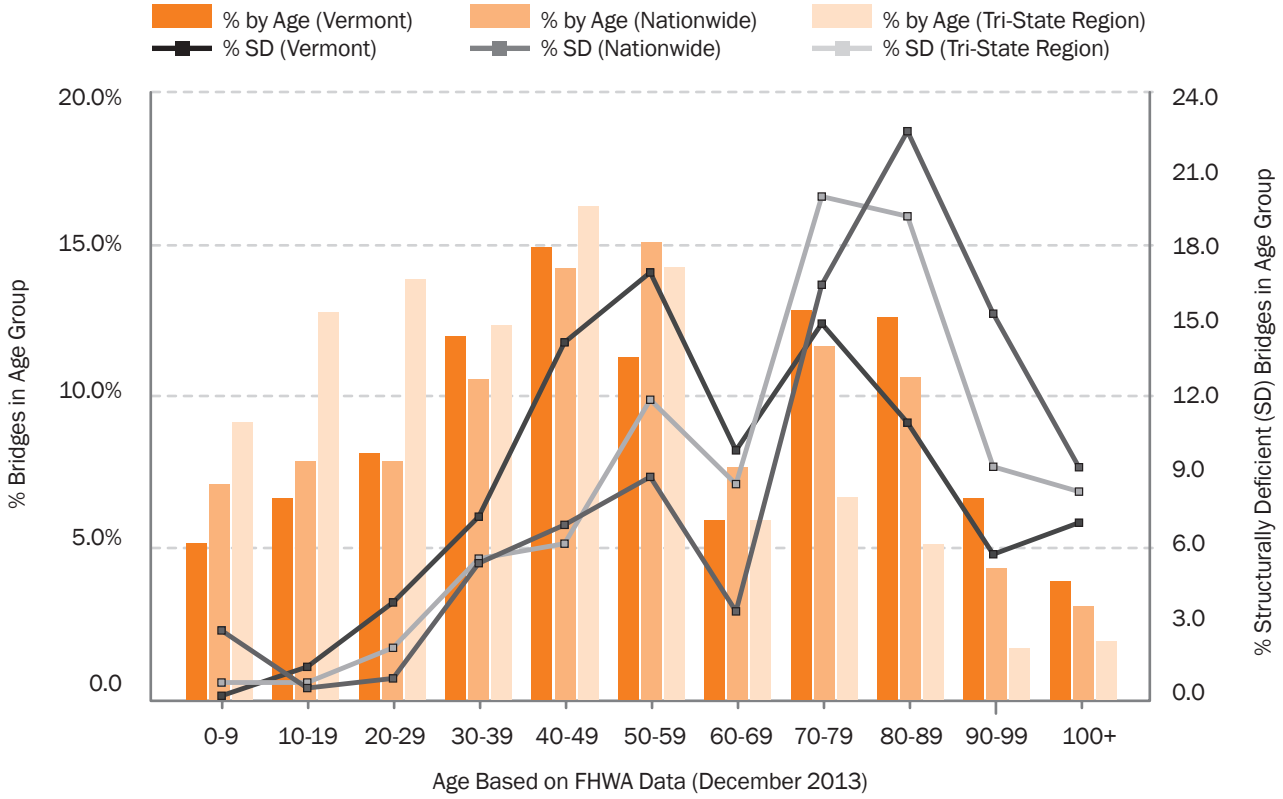
* Based on year of original build (as submitted to FHWA, April 2014). Does not include Division of Historic Preservation, rail or private bridges.

Age of Structures (in years*)



Age of Structures Compared

Vermont's bridges are similar to the other northern New England states, but are considerably older than the national average. Covered bridges, steel truss bridges and other historic structures contribute to our village centers and scenic character. These older bridges require regular maintenance and are a challenge to keep serviceable.



Bridge Inspection and Condition Ratings

The nation's current bridge inspection practice was established largely as a response to disasters involving bridge failures. With each failure, new facts were learned and new standards implemented. Here is a short list of some events that have dramatically influenced national inspection and maintenance practice.

- On December 15, 1967, the 2,235 foot Silver Bridge at Point Pleasant, West Virginia collapsed into the Ohio River killing 46 drivers and passengers. This tragic accident aroused national concern about bridge safety inspection and maintenance, and motivated Congress to enact improvements to the Federal Highway Act of 1968. Three years later in 1971, National Bridge Inspection Standards (NBIS) were created, setting national policy for inspection frequency, inspector training and qualifications, reporting formats, and procedures for inspection and rating.
- During the 1970s, similar attention was also directed to culverts after several collapses claimed more lives.
- In 1983, the Mianus River Bridge in Connecticut collapsed after one of its pin-and-hanger assemblies failed, leading to an emerging national emphasis on fatigue and fracture-critical elements.
- In April 1987 with the fall of the Schoharie Creek Bridge on the New York Thruway, new attention also was focused on underwater inspection of bridge foundations.
- And most recently, in August of 2007 the I-35W highway bridge over the Mississippi River in Minneapolis collapsed. Undersized gusset plates and the stress of 287 tons of stockpiled construction material were singled out in the National Transportation Safety Board (NTSB) Accident Report as reasons for the failure. Federal safety investigators said the collapse was unavoidable once gusset plates in the bridge's center span failed, dragging other sections and rush-hour commuters into the Mississippi River. The collapse killed 13 people and injured 145 others. This has led to an emphasis on gusset plate inspection and design.

Guided by federal requirements, all bridges in excess of a 20 foot span and located on public roads receive regular, biennial inspections by qualified personnel to ensure safety of the traveling public. Short structures, those greater than 6 feet and up to 20 feet in span length, located on either the interstate or state highway systems are inspected once every 60 months. Bridge safety is taken very seriously. If deemed necessary because of deteriorating conditions, bridges are inspected more frequently.

FHWA recently strengthened oversight of bridge inspections and maintenance with the introduction of a new bridge initiative using systematic, data-driven, and risk-based reviews and analysis to improve oversight of how states are performing their bridge inspections. This new process, using and reporting on key metrics, each linked directly to NBIS requirements, will help identify opportunities for improvement in achieving consistent compliance with the National Bridge Inspection Standards (NBIS).

The new process is based on objective, statistical data, providing for greater consistency in bridge inspections nationwide and more strategic approaches to identifying problem areas. Key metrics include inspection records; determination of bridge load limits; qualifications of inspection personnel; procedures for underwater, fracture-critical, and complex bridge inspections; and inspection frequency.

Through periodic safety inspections, data is collected on the condition of each structure's primary components. Condition ratings are collected for the following bridge components:

Deck
The portion of a bridge that provides a surface for vehicular or pedestrian traffic

Superstructure
The portion of a bridge above the substructure that supports the deck, including beams, girders, trusses, and bearing devices which support traffic and transfer the loads to the substructure

Substructure
The portion of a bridge below the bearing device, built to support the superstructure and transmit loads to the foundation

The culvert condition rating describes all structural elements of culvert designs which do not have a distinct deck, superstructure or substructure and are buried under fill. The channel and the channel protective system are also rated, describing the physical conditions of slopes, as well as the channel or water flow through the bridge.

Bridge inspectors utilize a point system from zero to nine, where nine indicates an excellent condition and zero indicates a failed condition. Inspectors visually assess the ratings based on engineering expertise, training, and experience. These ratings form the basis for assessing the structural condition of the bridge.

MILTON. Inspecting the I-89 bridges over the Lamoille River.

Recommendations for maintenance or repair needs, load restrictions, posting, or closure originate with, and are based on, inspection findings. Inspection provides a visual record of structural health—including deterioration—and the consequent determination of a structure's ability to continue to perform in a safe manner.

The challenges faced in the northeast—having an older and aging infrastructure, seasonal limitations on performing inspections, extensive use of deicing salts and accelerated corrosion rates—are among the more demanding and the importance of routine inspections cannot and should not be underestimated.

MILTON. Constructing a new bridge over the Lamoille River on I-89 between existing spans.

Restrictions

As VTrans searches for the most appropriate performance measures to help target which structures are in most need of repair or rehabilitation, it is important for the agency to understand how much ground is either being lost or gained in terms of keeping our assets open and unrestricted for public travel.

Restrictions—a limitation of or inability to use a structure—come in four basic categories:

Closed
Bridge closed to all traffic.

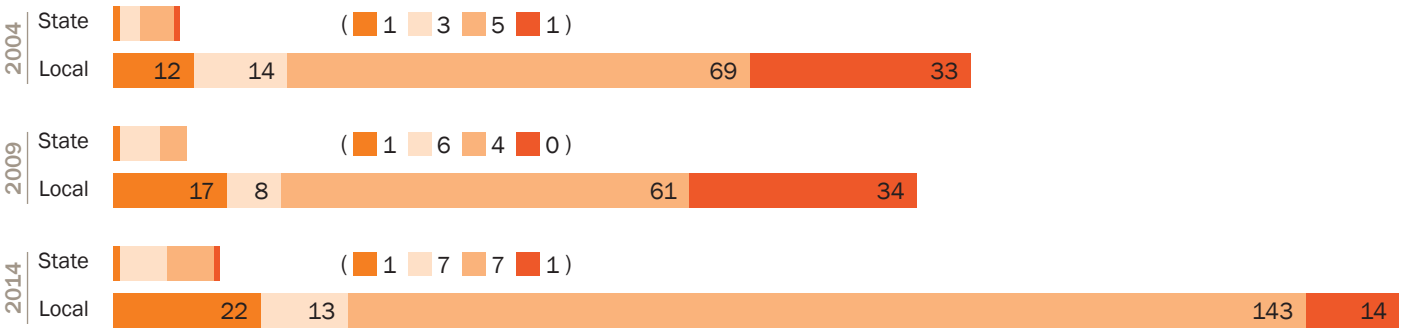
Temporary
Open but with a temporary structure in place to carry legal loads while original structure is closed and awaiting replacement or rehabilitation.

Posted
Reduced maximum allowed weight. Posted structures may include other restrictions such as temporary bridges which are load posted.

Restricted
Posted for other load capacity restrictions such as speed, number of vehicles, vertical clearance, etc.

Due to recent public attention on the condition of our bridges, many believe Vermont has more restricted bridges than it did 10 years ago. In fact, prior to 2012 (which showed an increase as a result of infrastructure damage caused by Tropical Storm Irene), the state trend had been decreasing. With an increasing frequency of large storms and an infrastructure that continues to age, downward trends will become more difficult to maintain in the future.

Restricted Structures (as submitted to FHWA April, 2014)



Structurally Deficient and Functionally Obsolete

The agency is evaluating a number of performance measures by which to judge how well we are maintaining our structure assets. Measures such as bridge health index; averaged condition; worst condition; numbers and deck area of structurally deficient and functionally obsolete bridges; and the number of restricted, posted, closed, or temporary bridges are all being considered.

For many years, the Federal Highway Administration (FHWA) has used structural deficiency and functional obsolescence measures. Similarly, VTrans has used percent bridges structurally deficient by system (interstate, state highway, and town highway).

Where do the terms structurally deficient and functionally obsolete come from and how are they defined? Both are terms FHWA uses to classify bridges "according to serviceability, safety, and essentiality for public use" to meet the requirements of Title 23 of the United States Code (23 U.S.C. 144). The technical definitions are as follows (source: 23 C.F.R. 650D).

Structurally Deficient (SD)

A bridge becomes structurally deficient when at least one of six items from the National Bridge Inventory (NBI) reaches a set threshold. The criteria are a Deck Condition Rating, Superstructure Condition Rating, Substructure Condition Rating, or Culvert Condition Rating of 4 (Poor Condition) or less, or a Structural Evaluation Appraisal Rating or Waterway Adequacy Appraisal Rating of 2 (basically intolerable, requiring a high priority of replacement) or less. Any bridge that is classified structurally deficient is excluded from the functionally obsolete category.

Functionally Obsolete (FO)

A bridge becomes functionally obsolete when at least one of five items from the National Bridge Inventory reaches a set threshold. The criteria are a Deck Geometry Appraisal Rating, Underclearances Appraisal Rating, Approach Roadway Alignment Appraisal Rating, Structural Evaluation Appraisal Rating or Waterway Adequacy Appraisal Rating of 3 (basically intolerable, requiring a high priority of corrective action) or less. Any bridge that is classified structurally deficient is excluded from the functionally obsolete category.

BROOKFIELD. Moving a new section of the "Floating Bridge" into place.

Highway bridges classified as functionally obsolete are not structurally deficient, but according to federal standards their design is outdated. They may have lower load carrying capacity, narrower shoulders, or less clearance underneath than bridges built to the current federal standard. Vermont, due to the historic nature of its bridges as well as environmental concerns associated with bridge widening, has established state standards that differ from federal standards. As a result, it is possible for a new bridge built in Vermont to be classified as functionally obsolete. Also, Vermont does not always "modernize" its functionally obsolete bridges. An example is the state's covered bridges, which are functionally obsolete, but no one wants them altered.

While functional obsolescence is not one of our performance measures, we report it here as a federal measure. It is important to note that when structural repairs are made to structurally deficient bridges the functional obsolescence count may rise.

The fact that a bridge is structurally deficient (SD) or functionally obsolete (FO) does not mean the bridge is inherently unsafe. The VTrans inspection unit takes bridge safety very seriously. If unsafe conditions are identified during an inspection, the structure will be restricted or closed.

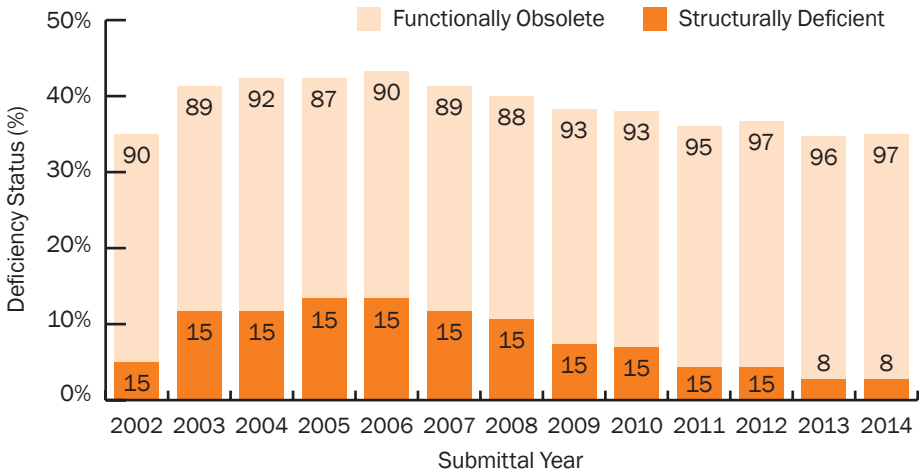
Functional Obsolescence/Deficient (FO) and Structural Deficiency (SD) Population

(as of or reported to FHWA, April 2014)

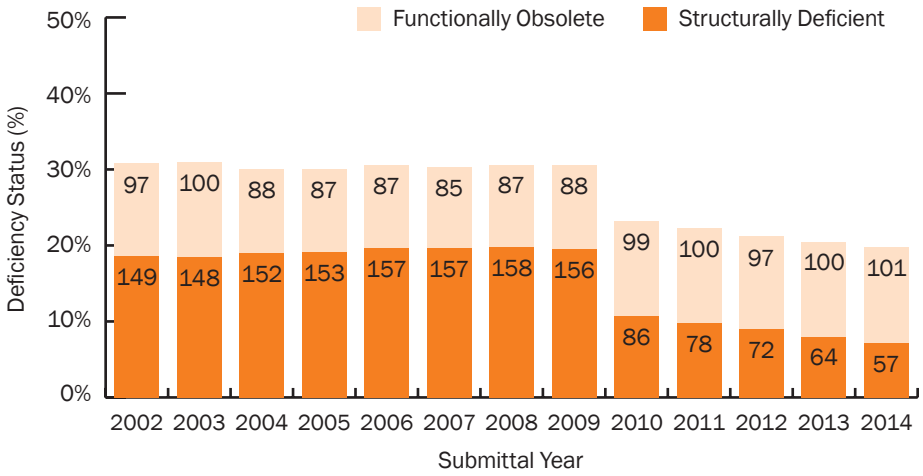
	FO	% FO	SD	% SD
Interstate "Long" Structures	97	30.99%	8	2.56%
State Highway "Long" Structures	101	13.02%	57	7.35%
Town Highway "Long" Structures	371	22.80%	128	7.87%
On-System "Short" Structures	N/A	N/A	86*	6.79%
System Total	569	—	279	—

* FO and SD are federal definitions not applied to "short" structures. This number represents "short" structures having a condition rating of poor or less.

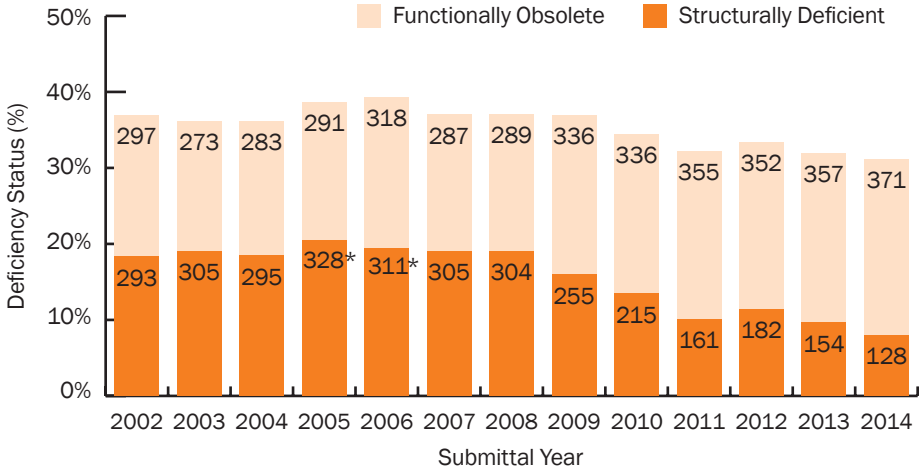
Interstate Trends



State Highway Trends



Town Highway Trends



* Corrected to reflect oversight in NBI inventory rating reporting format

BRATTLEBORO. Erecting the pier of the new "Bridge to Nature" on I-91.

BRISTOL. VT 116 Replacement project.

Performance Goals and Measures

In the past, VTrans relied on the Federal Highway Administration's measures of structural deficiency and functional obsolescence to evaluate bridge condition. Vermont, however, is evaluating new performance measures that VTrans believes better model the average condition of Vermont's bridge network. The federal measures do not do a good job evaluating a bridge's true condition, so VTrans is exploring the use of measures that better quantify critical conditions.

VTrans is not doing away with the federal measures and the agency will continue to supply FHWA data for these determinations.

With the passage of MAP-21, the federal transportation bill, government recognized the need for and created a performance measure stipulating in law a minimum condition level requirement that National Highway System (NHS) bridge deck area on SD bridges must not exceed 10% of total NHS bridge deck area for that state and, in addition, mandated that national measures, with targets set by the state, be established.

Still being used, the previous federal measures—Structural Deficiency and Functional Obsolescence—imply but do not really tell us anything about the bridge's overall condition, nor do they tell us how bad a particular bridge component is. The federal measures only indicate that one or more bridge components have deteriorated to a point where they are within a range that requires assessment. They may or may not need treatment.

For example, our interest in fitting bridges into the historic Vermont landscape—all covered bridges and many historic truss bridges are considered functionally obsolete—lead to the development of Vermont specific standards that allow us to design bridges narrower than the federal standards. Many of Vermont's new designs and rehabilitations are considered functionally obsolete though they function very well.

To better evaluate our structures, VTrans, together with Maine and New Hampshire, is working to develop and implement a more holistic approach to measuring the condition and performance of our structures. Although these efforts are still in development, Vermont and our partner states see promise in utilizing a condition index as an effective management tool that can be compared across state lines.

Bridge condition index (BCI), percent structurally deficient by deck area and the national deficiency comparison (number of SD/FO bridges) are all measures being used and evaluated at the tri-state level (Maine, New Hampshire, and Vermont). The goal is to develop a network measure which reflects the relative health of our bridge population.

As the agency moves to new performance measures, structural deficiency performance goals will continue.

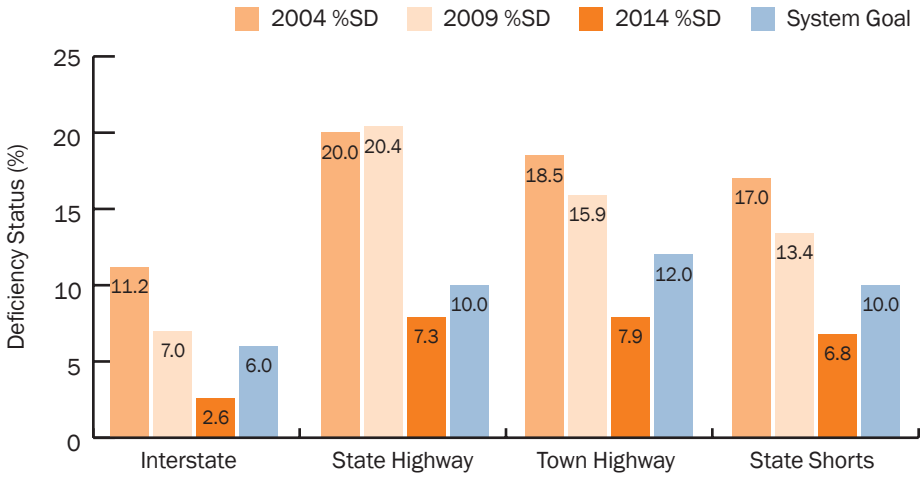
- 6% on the interstate system (18 bridges)
- 10% on the state highway system (77 bridges)
- 12% on the town highway system (195 bridges)
- 10% on interstate/state highway system culverts (126 culverts)

The following chart represents the change in percent of structural deficiency by system over a 10-year period.

JAMAICA. This bridge on VT 30 was developed and designed in 11 months through the ABP.

Structural Deficiency Over Time by System

* 2004, 2009 and 2014 represent year data submitted to FHWA



Bridge Program Highlights

Accelerated Bridge Program

VTrans implemented the Accelerated Bridge Program (ABP) in 2012. The focus of the ABP is to improve the condition of Vermont's Bridges while reducing costs through expedited project development, delivery and construction. The ABP is dedicated to expediting delivery and fostering an environment of innovation, collaboration and efficiency with an emphasis on customer service. The program continues to seek and implement strategies to acquire early and continued public and stakeholder support, standardize design and plan preparation, vet alternative contracting methods, and incorporate technologies to shorten project delivery and reduce impacts to the environment and public during construction. Through these initiatives, the VTrans ABP has become a recognized national leader.

Focus Customer Support

Project managers are seeking earlier involvement from the regional planning commissions, towns and stakeholders to obtain information about site conditions and community concerns to create a culture of collaboration, ensure productive working relationships and minimize impacts due to short term road closures such as avoiding closures during the school season, holidays and important events. We strive to exceed our customers' expectations throughout the project delivery process by communicating early and often through community questionnaires, public meetings and project factsheets. A bridge closure map has been created to showcase all the upcoming road closures. This interactive application provides information about the location and timing of bridge closures, detour routes and contact information. For higher profile projects, public outreach coordinators are brought in during the design phase to tailor outreach to the affected communities and traveling public.

Project Initiation and Innovation

The Structures Section reorganized in the fall of 2014 incorporating the Project Initiation and Innovation Team into the ABP, cultivating a greater emphasis on innovative bridge construction during the Project Initiation Phase. Co-locating the teams allows scoping engineers and designers to work side by side and vet bridge rehabilitation or replacement alternatives with a strong focus on the use of prefabricated bridge elements and systems. It also provides a valuable feedback loop of lessons learned during design and construction to ensure the continued advancement of innovative technologies through all phases of project delivery.

Innovative Contracting

The Structures Section successfully completed the first three Design-Build (D-B) projects including Bridges 33 North and Southbound on I-91 in Windsor. With a D-B project, design and construction overlap, allowing for fast track construction. Three more bridge replacement projects are underway in Brattleboro, Milton, and Ryegate representing $109.5 M in construction costs. Three additional projects were designated into the D-B program in 2014. A new contracting method known as Contract Manager/General Contractor (CMGC) was successfully implemented on two interstate bridge replacement projects in Hartford during the design phase and is moving to construction. The CMGC contracting method will also be used to replace Bridge 68 on VT 14 located at the intersection with US 2 to examine options to minimize traffic impacts during the replacement of the bridge and reconstruction of RT 2. By using CMGC and innovative bridge construction the 75 day closure will be reduced to 40 days.

Partnering with Operations

In September 2014, Structures created a Maintenance Program to work closely with the Maintenance and Operations Bureau supporting them with design and project management services for bridge maintenance efforts. The two groups are working together to create a Structures Preservation Program defining a process for cyclical and condition based maintenance to extent the useful life of our bridge structures while maximizing the economic efficiency of the our highway infrastructure.

Standardization

In an effort to standardize design details, the Agency seized the opportunity to pilot the SHARP 2 R04 Toolkit in February 2012. The Accelerated Bridge Construction Toolkit describes standardized approach to designing and construction complete bridge systems for rapid renewals. The standardized approach for "Work Horse" bridges dovetailed nicely with a similar goal of the ABP. Thus far, standardizing accelerated bridge construction details has been vital to reducing design time, gaining acceptance in the contracting community, and reducing construction costs. Several specifications were created for the program including material specifications to reduce closure periods and associated travel impacts and scheduling requirements to allow for increased coordination between the contractor and Agency staff.

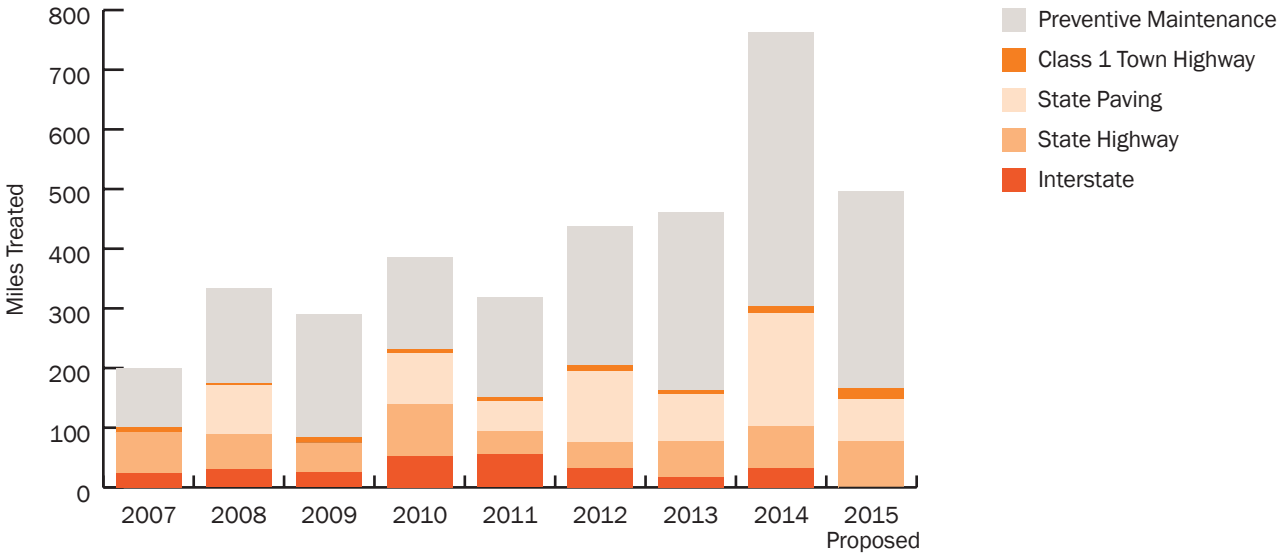
Celebration of Success

- 40 bridge replacement or rehabilitation projects were under construction in 2014.
- 31 projects were advertised in 2014 representing an 86% success rate of advertising on-time. Of the 31 projects advertised in 2014, 55% are state highway projects, 38% are town highway projects and 6% are interstate projects.
- 10 projects were designated into the conventional project delivery program over the past year.
- 10 projects were advertised in 2014.
- 13 bridge projects were under construction during the summer of 2014.
- 10 projects were designated ABP over the past year.
- 70% of the designated ABP are state bridge projects while the remaining 30% are town highway bridge projects.
- 6 ABP projects were advertised in 2014. Of the 6 projects, 100% (6 projects) were advertised within 24 months.

Paving Mileage Summary (Two-lane miles, rounded to the nearest mile)

Category	Construction Season								
	Proposed 2015	2014	2013	2012	2011	2010	2009	2008	2007
Interstate	0	33	18	32	55	53	25	30	24
Carried forward from previous year	0	0	31	0	6	0	0	0	12
Incomplete, to be carried forward	0	0	0	31	0	6	0	0	0
Rutfilling (single lane miles)	0	0	0	0	0	0	0	0	6
Surface Treatments	64	50	61	37	44	45	52	21	15
Carried forward from previous year	12	0	*	*	*	*	*	*	*
Incomplete, to be carried forward	0	12	*	*	*	*	*	*	*
State Highway	58	44	59	43	39	87	50	59	68
Carried forward from previous year	20	26	7	0	3	27	0	10	0
Incomplete, to be carried forward	0	20	26	7	0	3	27	0	10
Surface Treatments	0	48	25	85	12	26	7	14	0
Carried forward from previous year	5	0	*	*	*	*	*	*	*
Incomplete, to be carried forward	0	5	*	*	*	*	*	*	*
Class 1 Town Highway	11	11	6	10	6	8	9	4	9
Carried forward from previous year	7	0	0	0	1	0	2	0	0
Incomplete, to be carried forward	0	7	0	0	0	1	0	2	0
State Paving	70	189	80	120	51	84	0	82	0
Crack Seal	250	362	212	110	111	82	147	124	77
Carried forward from previous year	0	0	0	0	0	0	0	0	0
Incomplete, to be carried forward	0	0	0	0	0	0	0	0	0
Paving Project Total (items in orange)	166	303	201	205	161	259	86	185	113
Preventive Maintenance Total (items in gray)	331	460	298	232	167	153	206	159	98

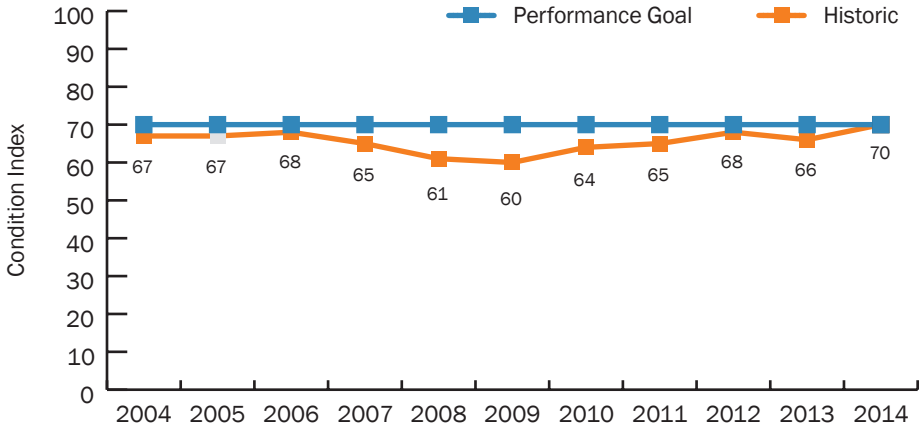
Paving Mileage Summary (as per table above)



Performance Measures

Automated surveys are conducted annually to determine pavement conditions across the state. Each segment of road is rated on a scale of 1 to 100 based on rutting, cracking, and roughness. These are then weighted by their respective traffic volumes. The VTrans goal for this performance measure is 70.

Travel Weighted Average Network Condition



Percent of Network in "Very Poor" Condition

While the "Travel Weighted Average Network Condition" graph measures VTrans performance for the majority of road users, the "Conditions Over Time, Unweighted" graph measures the agency's performance for all users, including those on low volume roads. The VTrans goal for the percentage of roads in very poor condition is no more than 25%.

Pavement Condition Descriptions

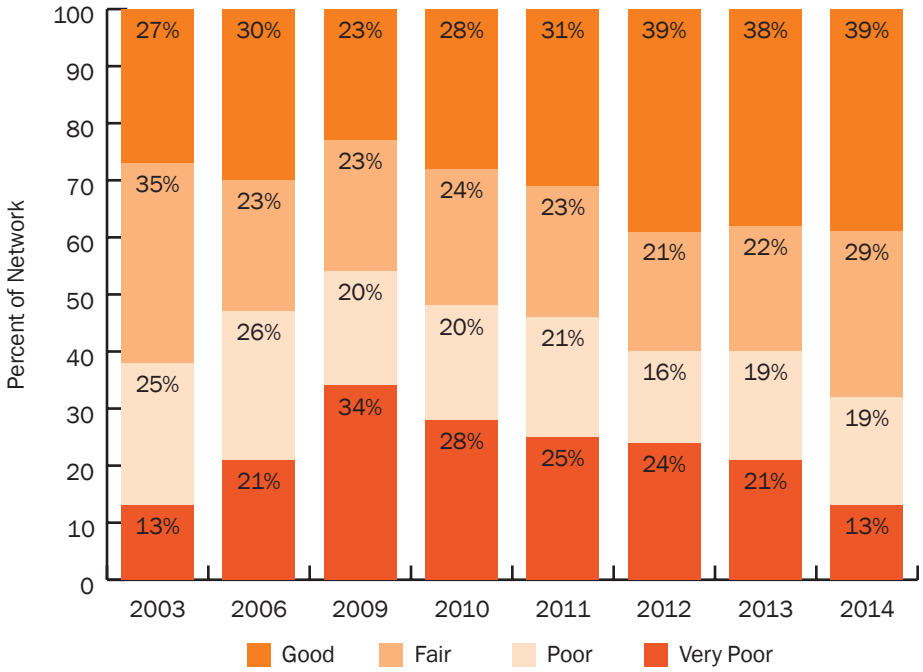
Good
Like new pavement with few defects perceived by drivers
Composite Pavement Condition Index 80-100

Fair
Slight rutting, and/or cracking, and/or roughness become noticeable to drivers
Composite Pavement Condition Index 65-79

Poor
Multiple cracks are apparent, and/or rutting may pull at the wheel, and/or roughness causes drivers to make minor corrections
Composite Pavement Condition Index 40-64

Very Poor
Significant cracks may cause potholes, and/or rutting pulls at the vehicle, and/or roughness is uncomfortable to occupants. Drivers may need to correct to avoid defects.
Composite Pavement Condition Index 0-39

Conditions Over Time, Unweighted



Network Pavement Structural Types

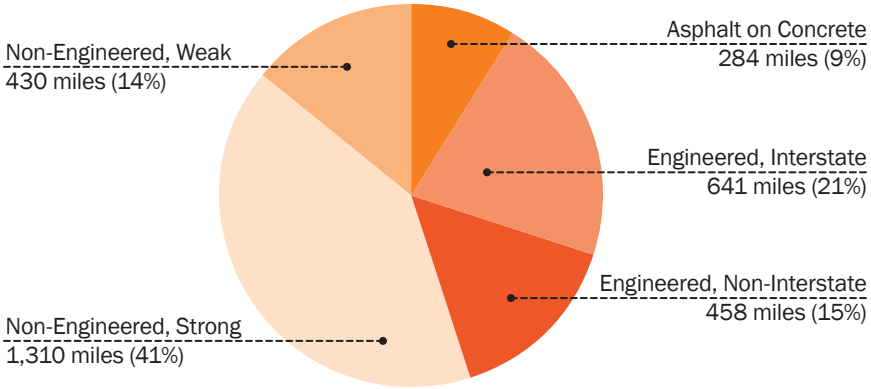
The "Pavement Type Distribution" chart represents the breakdown of the various pavement structural types a motorist will encounter throughout the agency's highway network. This information provides a sense of how the network structures vary, and how that can pose a challenge from a management perspective.

Interstate travel provides a motorist the best example of an engineered pavement/ highway. Engineered pavement is designed and constructed from the bottom up with the expectation that if maintained properly over time, the pavement will stand up very well to Vermont's harsh climate for 40 years or more. About 36 percent of the state's pavements are engineered, and it is these pavements which can be managed the most effectively, both in terms of cost and serviceability.

About 55 percent of the network is composed of non-engineered pavements. A non-engineered pavement is a structure that has been built-up over the years based on minor treatments and maintenance activities. The end result is a highway evolving from what may have once been a logging road into what is now a paved roadway. Some of these pavements perform reasonably well over time. Fortunately, 41 percent of the network's pavements respond in this manner and are considered non-engineered Strong. It is the remaining percent—the 14 percent of the network that is non-engineered weak pavements—that pose the greatest challenge to the agency. A significant investment is required to keep these pavements in good condition for a reasonable amount of time.

The last pavement structure classification is Asphalt on Concrete. These comprise 9 percent of the state highway network pavements, and they are a challenge to manage effectively. Often times they are discernible to the untrained eye where cracks reflect through the asphalt revealing the slabs beneath. While strong, problems exist where a lane has been widened beyond the slab's edge because the additional pavement will distress or settle differently creating a poor ride. Unfortunately, these structures are typically maintenance intensive and do not perform well with a conventional resurfacing treatment.

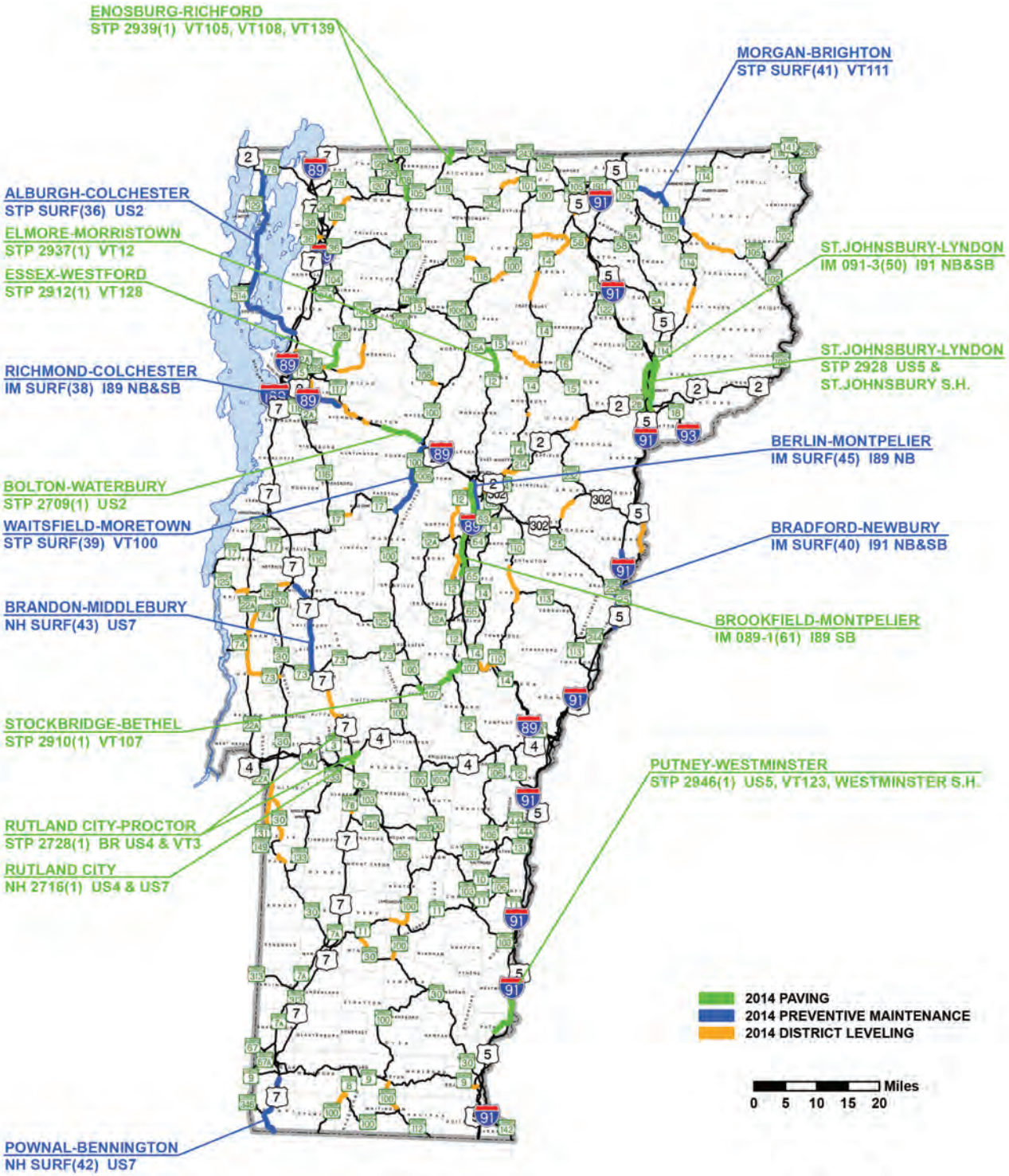
Pavement Type Distribution (Two-lane miles, percent of network miles)



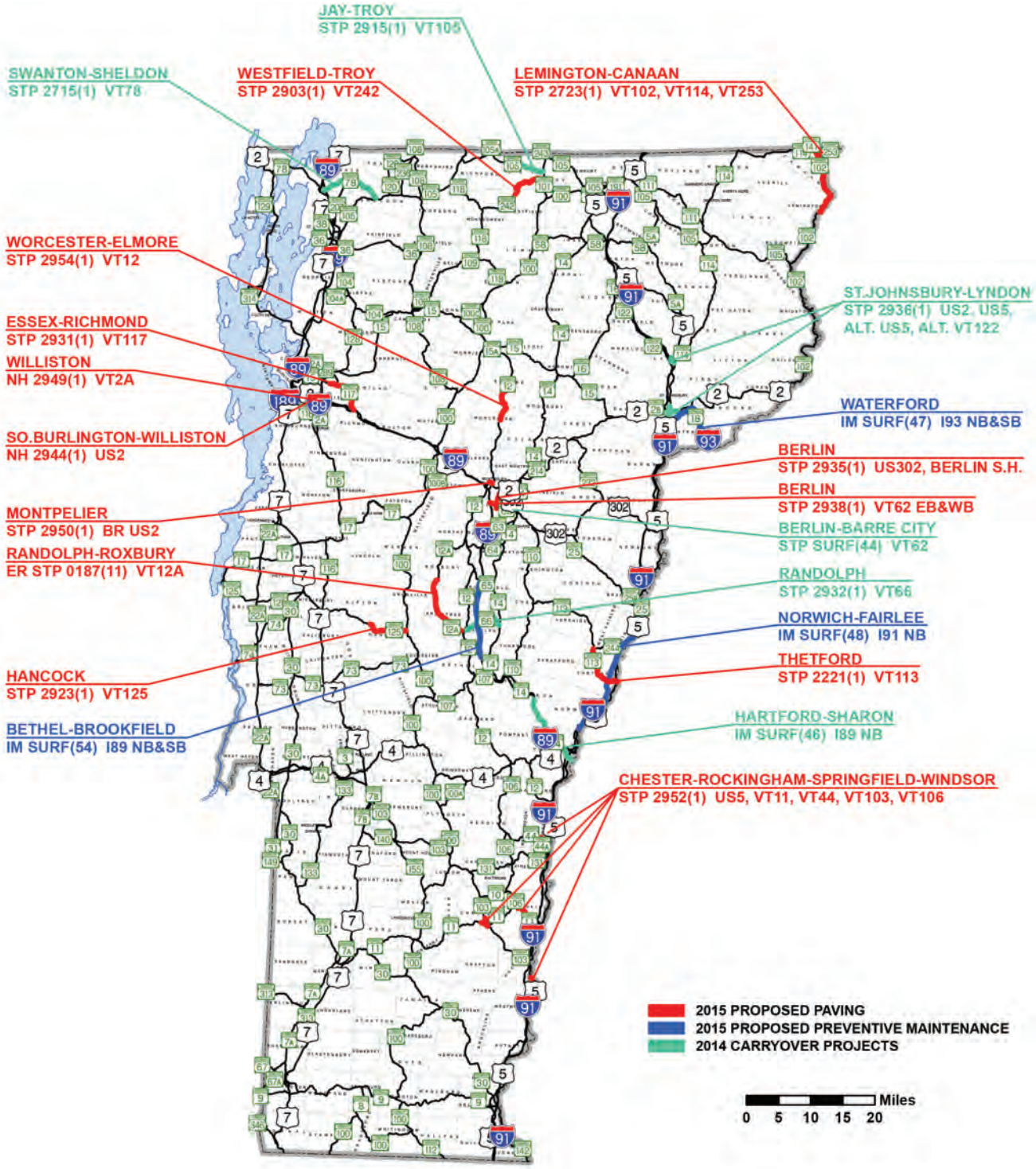
BENNINGTON. VT 279. An example of engineered pavement.

Testing material density.

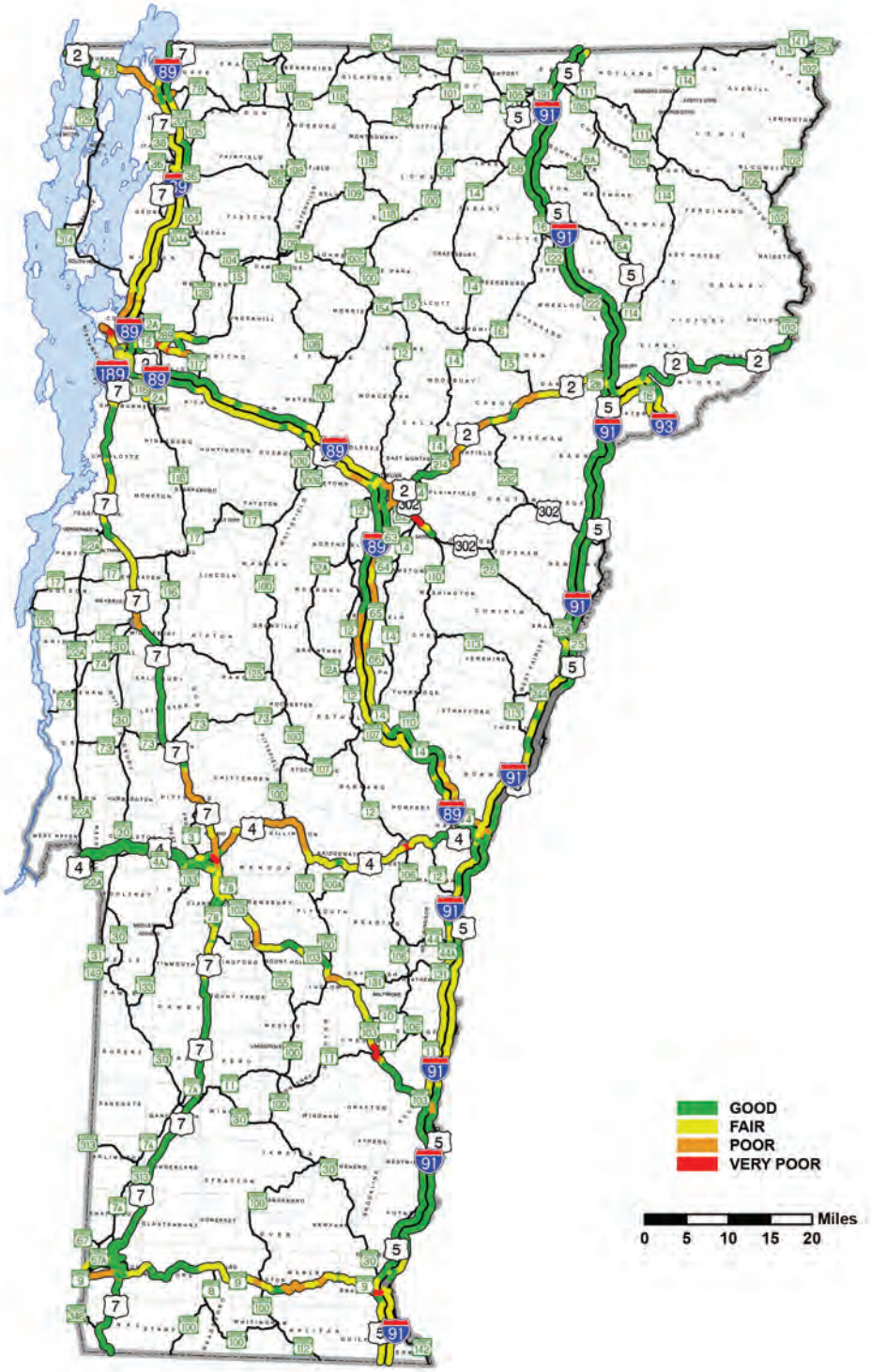
2014 Paving Accomplishments



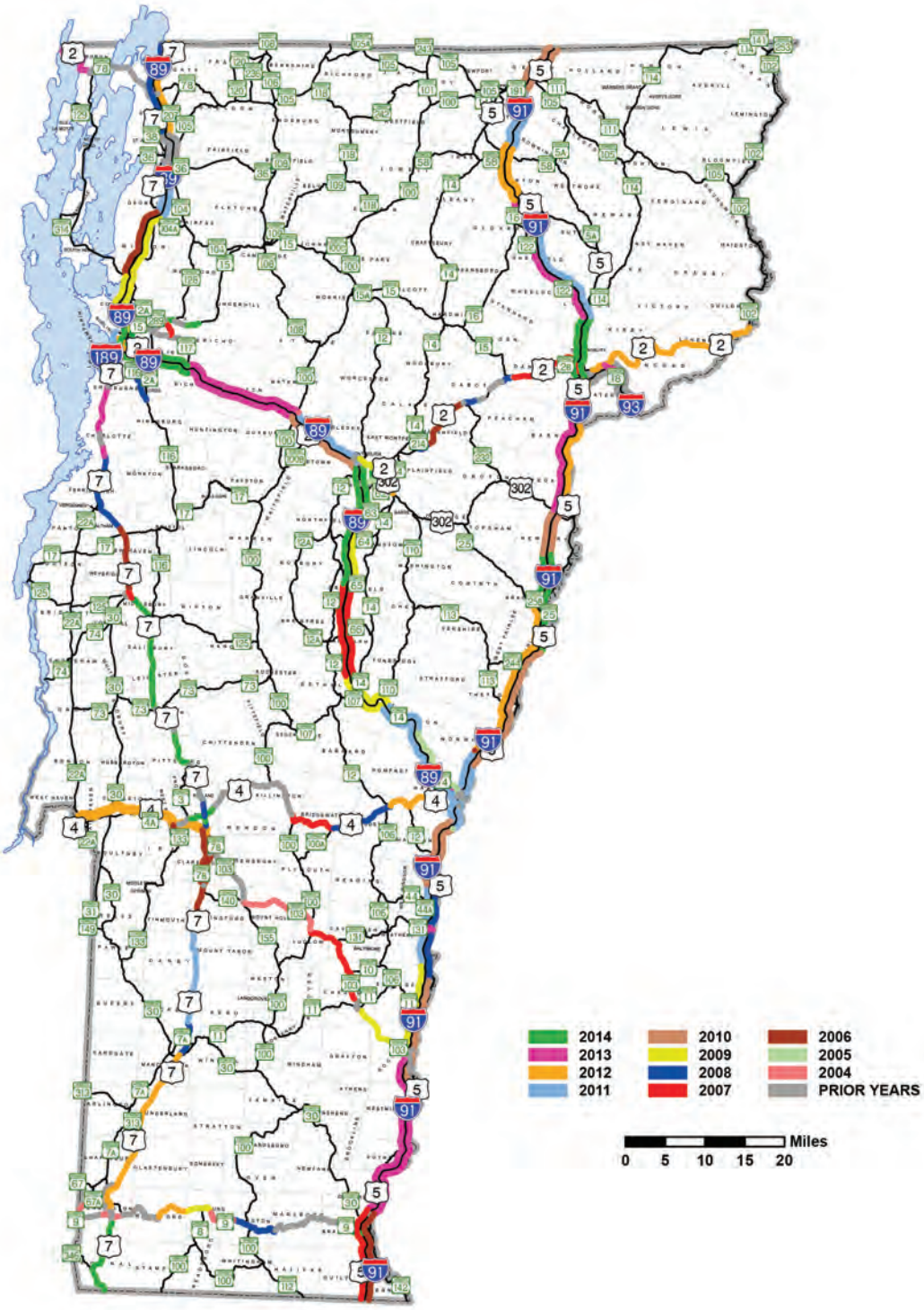
2015 Proposed Paving Program



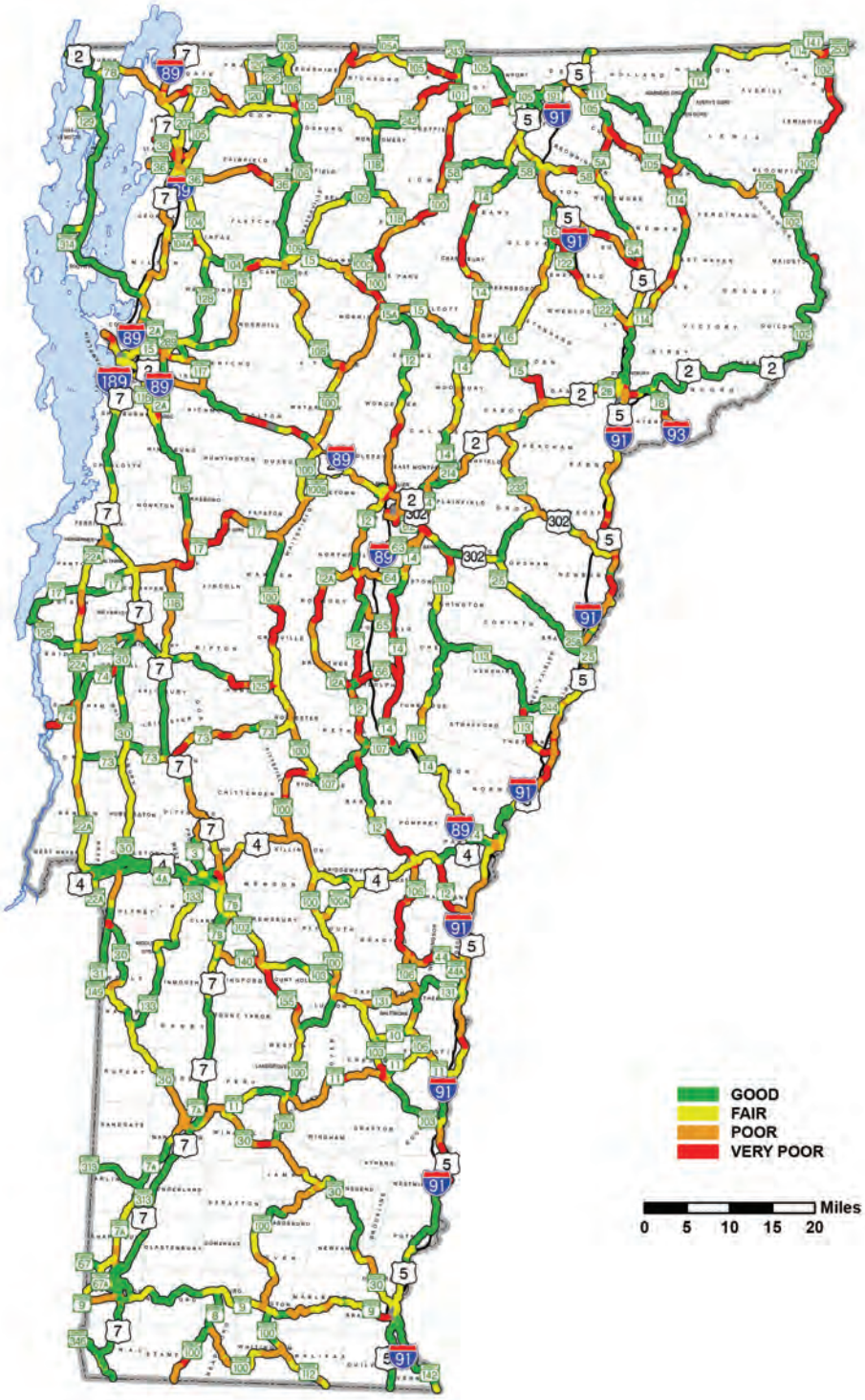
National Highway System Pavement Conditions



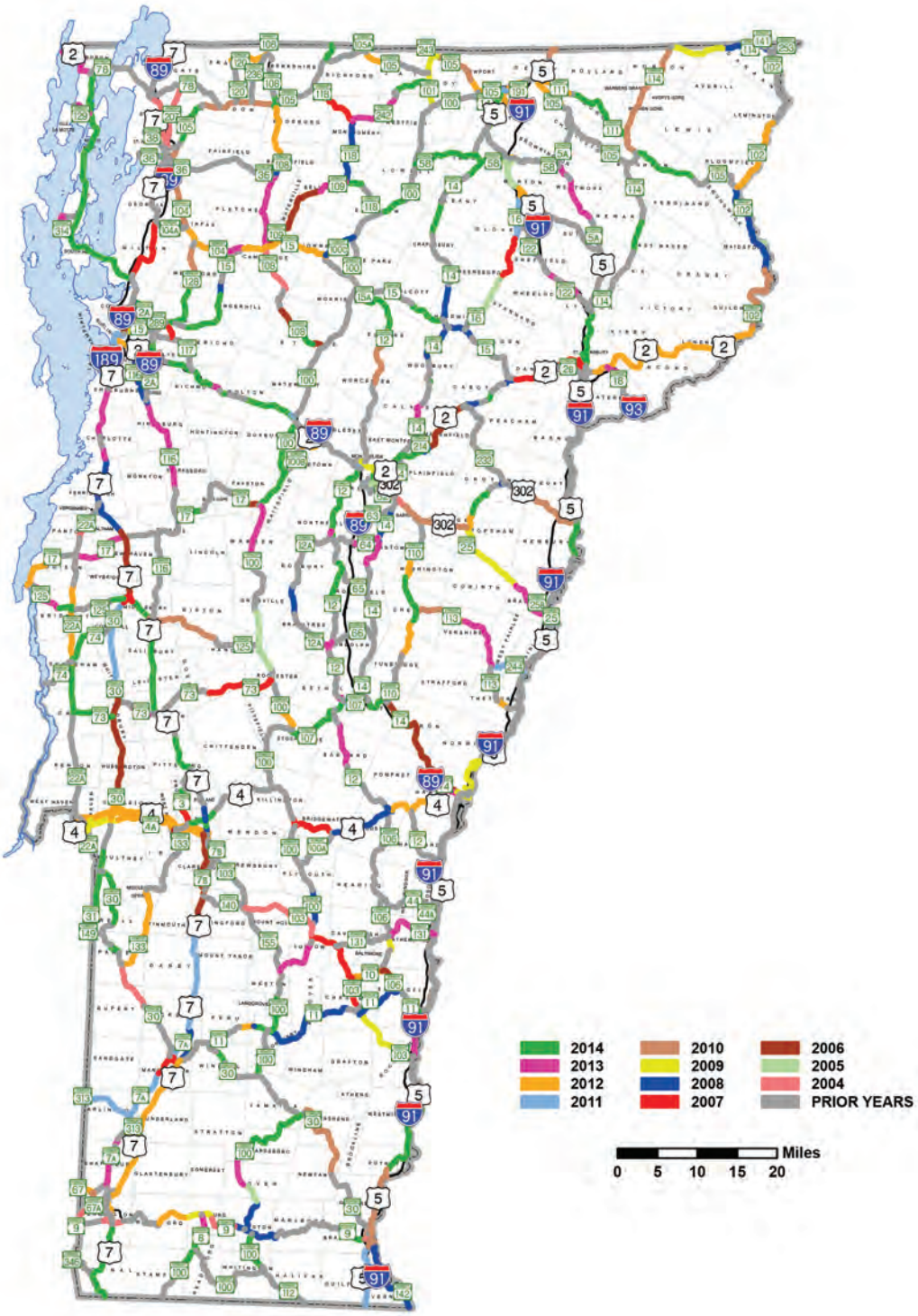
National Highway System Pavement History



State Highway System Pavement Conditions



State Highway System Pavement History



Asset Management

Introduction

Vermonters depend on VTrans to be good stewards of the State's transportation, environmental and financial resources. This trust is something that VTrans does not take lightly; VTrans has consistently and diligently worked hard to build accountability for its actions and gain credibility with the public and the Legislature. In 2013, the message to the Legislature was that VTrans has renewed its commitment to asset management and that "asset management was going to change how VTrans conducts its business"; these words were supported by actions as VTrans transformed the Project Development Division into the Highways Division, which now includes the Maintenance and Operations Bureau and the newly created Asset Management and Performance Bureau.

Although asset management now "has a home" within VTrans' organizational structure, asset management is and has always been tightly woven into the fabric that is VTrans' culture. Asset management encompasses the planning, programming, design, construction and maintenance phases of an asset's lifecycle and is supported by all Agency employees in one capacity or another.

Asset Management Philosophy

Asset management is the strategy that allows VTrans to invest the right amount of funds in the right asset at the right time. Asset management, when fully implemented, will allow the Agency to monitor asset status and condition, determine appropriate customer service levels performance and determine the level of unmet needs. The primary goal of VTrans Asset Management is to conduct effective and efficient decision-making processes based on a combination of quality data and information and well-defined performance objectives, enabling VTrans to effectively program construction and maintenance activities at strategic points in an asset's life.

Asset Management Best Practices

Asset Inventory	Customer Service and Continuous Improvement	Risk Management	Life Cycle Cost Management	Trade-off Analysis
Identify and prepare an accurate asset inventory database, graphically represented spatially on a GIS platform	Work with stakeholders to determine Customer Service Levels (CSLs). Identify performance measures and indicators to continuously monitor status.	Develop Agency risk registry. Identify, quantify and prioritize risks associated with asset management. Develop risk mitigation plans to reduce exposure.	Determine minimum life cycle costs for maintaining, rehabilitating and replacing assets to provide the highest levels of service over time.	Develop ability to predict asset condition over time and to use this information to establish long term funding strategies to maintain assets at sustainable CSLs.
EXAMPLES				
Interactive GIS map of asset locations with "pop-up" information of asset condition.	Condition Target: Maintain a minimum of 75% of pavements above a "Very Poor" Condition.	Analyze freight corridors for bridge restrictions and overall economic impacts. Strategies are developed to remove restrictions.	Apply the right treatment, using the right materials, at the right location and at the right time.	Manage customer expectations in a fiscally responsible and environmentally sensitive manner for present and future generations.

Asset management at VTrans represents a best practices approach to managing infrastructure performance that is both strategic and proactive. In addition, asset management seeks to identify risks across the Agency and managing these risks to reduce threats while increasing innovations and opportunities. Effective management of infrastructure risks increases the likelihood that the Agency will achieve its strategic goals and associated performance objectives.

Responsible Fiscal Management

Asset management is a collection of best practices targeted at utilizing available funding strategically and efficiently. VTrans asset management practices are performed with a "preservation first" principle rather than "worst first." The Agency applies this principle by optimally balancing regular preventive maintenance activities with construction of carefully planned and programmed rehabilitation and replacement projects. These activities are performed with the intent of increasing the asset's useful life. Typically, an asset with a long useful life requires multiple intervention points including a combination of repair and maintenance activities. The strategic timing of these intervention points effectively optimizes the balance between the asset's useful life and its overall lifecycle costs, thereby maximizing the value of the Agency's financial resources.

VTrans' Asset Management and Performance Bureau will be responsible for managing effective and realistic scopes, accurate cost estimates, and reliable schedules for these activities. The Bureau is committed to providing these services at an acceptable level of risk to the Agency and within current forecasted revenue projections while delivering customer service levels that the public expects and decision makers require. Maintaining our highways at a fair, good or very good condition is more cost-effective than allowing it to erode to a poor or very poor condition where replacement costs dramatically increase. VTrans utilizes asset management, performance management and risk management principles to effectively manage both the physical and financial condition of its assets to achieve its strategic

objectives. This renewed commitment and focus on asset management complements the Agency's desire to become more customer service oriented.

Customer Service Levels

Assets provide services to our customers by providing them with the ability to get where they need to go in a safe and timely manner. VTrans' customers are Vermont residents, businesses and visitors who rely on VTrans to manage the needs of our transportation system in a cost-effective, efficient, safe and sustainable manner. Through asset management and its commitment to the stewardship of public resources, VTrans manages the condition and performance of highway assets by minimizing life cycle costs through the timely programming of capital improvement projects and maintenance activities. Simply stated, VTrans is developing an initial asset inventory and documenting where it is located while at the same time assessing the asset's condition and understanding the financial costs required to maintain the State's infrastructure at an acceptable condition state to maintain the required level of customer service.

These actions form the foundation of VTrans' commitment to providing quality customer service, for both present and future customers. VTrans is currently engaging stakeholders in discussions of customer service levels. Recent progress in this area has resulted in the Maintenance and Operations Bureau collaborating with the Asset Management and Performance Bureau to develop customer service levels based on VTrans' current understanding of customer expectations and past policies.

Risk Based—Performance Driven

Asset management is risk-based and performance driven; driven by policy goals and performance objectives outlined in the Agency's Strategic Plan. Asset management represents an approach to managing infrastructure that is both strategic and proactive, and places a premium on quality data and information. Many of these objectives have time frames that span several years. Failure to acknowledge, measure and manage both short and long term uncertainties is to overlook obvious risks that affect the credibility and success of the Agency's decisions. Thus the effective management of VTrans' highway assets must rely on risk management to enhance its decision making processes.

VTrans is embarking on a journey during 2014 to develop an Agency-wide risk registry that will ultimately enhance its decision making processes by documenting internal and external risks that may affect its performance objectives. These risks will be identified at the enterprise level and across Agency programs, projects and activities. Both performance and risk management play an integral role in supporting asset management activities towards the achievement of the Agency's strategic goals

To summarize, the risks and challenges to manage transportation infrastructure assets in a fiscally responsible and sustainable manner has led VTrans to emphasize an asset management policy and incorporate business processes that ensure that quality decisions are made based on accurate data and analysis while mitigating identified risks.

Asset Management Framework and the TAMP

Currently there are significant efforts being expended to develop a transportation asset management plan (TAMP). The TAMP is the tactical plan for managing the Agency's assets and one of its primary objectives is to support the Agency's Strategic Plan. This effort is being coordinated through the Agency's Transportation Asset Management Plan Working Group (TAMP-WG). This group is comprised of 27 individuals representing asset management functions across VTrans; they are participating and leading 9 task forces that are focused on developing different parts of the overall plan.

The collective efforts of the TAMP-WG combined with the energy and on-going activities of the Asset Management and Performance Bureau team are synergistically developing an asset management framework to support the Agency's asset management efforts to comply with future MAP-21 requirements and Vermont State Statute 19 V.S.A §10k. The components of this framework reflect the recommendations of the Federal Highway Administration (FHWA), MAP-21 and best practices of the international community.

VTrans' asset management framework is designed to support the Agency's policies and goals related to accountability, mobility, resiliency, safety, sustainability and transparency. The proposed framework is envisioned to include a continuous cycle of asset condition and inventory, performance, and risk and cost assessments. These activities will provide data and information that asset managers can use to develop, implement and support the TAMP.

Conclusion

The Asset Management and Performance Bureau is in its infancy but is committed to measuring and monitoring the Agency's performance relative to its assets and provision of those assets to VTrans' customers. VTrans believes that through education and effective communication that it can provide its customers with a deeper understanding of the costs and benefits of individual functions (asset maintenance, resurfacing, rehabilitation and replacement) and how these costs impact overall Agency programs and budgets. In return, the customers (the public) can then use this information to communicate more clearly to the decision-makers (the legislators) the level of infrastructure investment, maintenance and condition they expect. The decision-makers can then use this information in partnership with VTrans to collaboratively make the decisions they believe reflect the best stewardship of the public resources.

In summary, VTrans is in the process of adopting asset management policies and processes consistent with internationally accepted best practices to maximize the value of its infrastructure assets and to guide its decision-making processes. VTrans is committed to responding proactively to Vermont's transportation needs and is responsible for ensuring that Vermont's transportation system remains in a state of good repair -regardless of its age.

Ancillary Asset Inventory

Sign Retroreflectivity Project

The Vermont Agency of Transportation is responsible for approximately 63,943 traffic signs, 1,458 of which can be classified as type B signs. For management purposes signs are classified as type A or type B based on the sign plaque square footage. Type A signs are those signs with sign plaques less than 20 square feet and type B signs are those signs with sign plaque areas equal to or greater than 20 square feet. The estimated replacement value of the statewide Type B signs is $14,489,000. As an important asset, VTrans seeks to ensure that the management method used will maximize in service useful life and thus reduce overall life cycle costs. As such, 2014 saw the initiation of the multi- year Statewide Type B Sign Retroreflectivity Project.

The Type B Sign Retroreflectivity Project, as stated above, seeks to minimize life cycle costs for this population through the realization of several goals such as the refinement of the sign sheeting retroreflectivity degradation curve. To do this a sample population of over 400 signs were used to field collect retroreflectivity readings and 15 critical attributes for each sign. Validation of field collected data was managed through a custom pop-up window within ArcGIS Online (AGO) developed from the custom attribute table designed within ArcMap to capture all Sign Attributes of interest. Disconnected Editing technology was used within the AGO Data Collector App, which allowed for collection of features outside of wireless service areas. Interactive Progress Tracking AGO map allowed for field collection monitoring.

HIGHGATE. Testing a sign on I-89 with a retroreflectometer.

The Overhead Sign Structure Project uses Geospatial Information Systems to link data and imagery to more effectively catalogue overhead signs.

Statewide Overhead Sign Structure Project

This project seeks to supplement existing VTrans overhead sign structure data with additional attributes and information required by Traffic Design personnel.

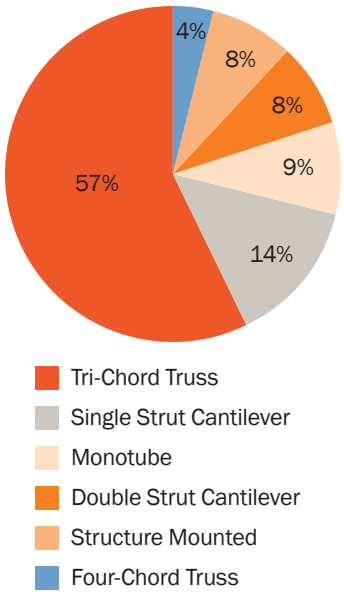
2014 saw the completion of the field inventory and inspection of 139 Overhead Sign Support Structures. Ground visual inspection of superstructure and foundation were given a condition rating based on methods used by NBIS. Additional attributes were verified during site visits to include, Structure Type, Span Length, Number of Signs and Installation Date. Methods and data collected will be used to develop a Field Inspection Manual and update a Geospatial Database in support of the life cycle management initiative for this asset.

Statewide Road Data Inventory

Roadway data is stored in many different sections and in several different forms throughout the Agency. The Asset Inventory and Inspection Unit is a partner in this management schema and as such helps in its maintenance.

2014 efforts include the initiation of a statewide roadway geometry extraction pilot for limited roadway features such as lane width, shoulder type and width and bike lane presence and width. This work will provide georeferenced data extracted from video imagery and is expected to be completed in 2015.

Overhead Sign Support Structure Types

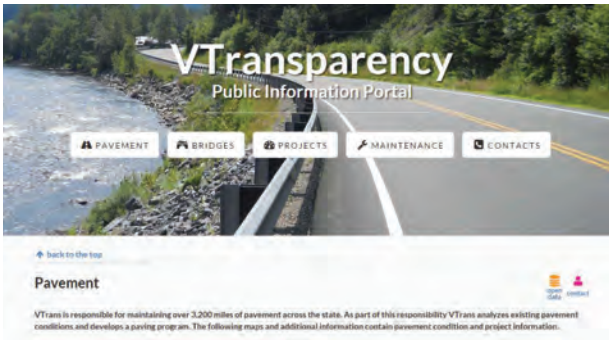


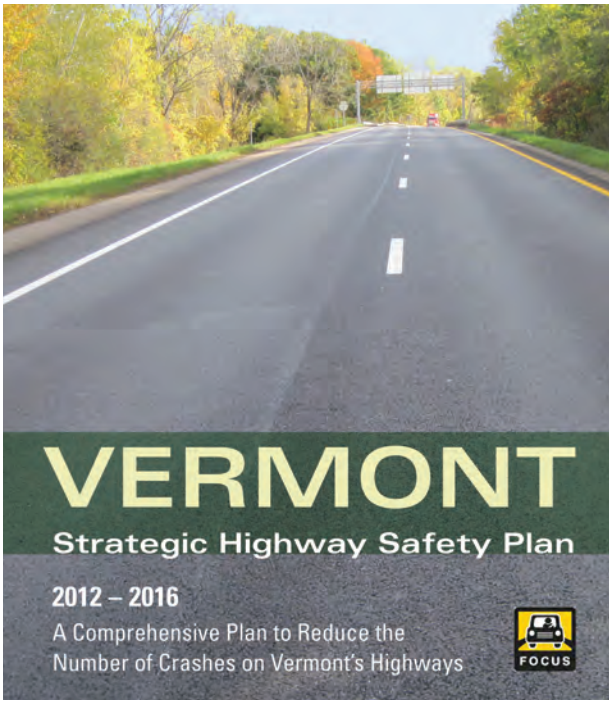
Resources

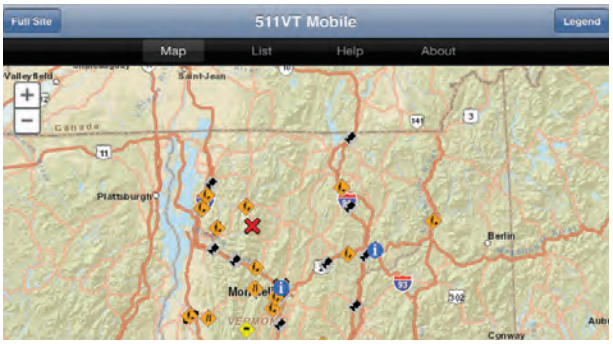
Additional reports available from the Agency of Transportation include:

Vermont Strategic Highway Safety Plan
Tri-State Performance Measures Annual Report
Public Transit Route Performance Reviews
Annual Report to the State Aviation Council

http://vtrans.vermont.gov/publications-maps/reports







Agency of Transportation Organizational Chart

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John Zicconi
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New Motor Vehicle Arbitration Board

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Robert Ide
Motor Vehicles Department
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- Driver License Exams/Issue
- Tax Collection Services
- Oversize/Overweight Permits
- Driver Improvement
- Branch Offices/Mobile Vans
- Driver Training
- Motor Carrier Safety
- Dealer and Inspection Stations
- Criminal Investigations
- Pupil Transport Oversight
- Commercial Vehicle Enforcement
- Vermont Rider Education Program (Motorcycle Training)

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- Engineering
- Roadway Programs
- Structures Program
- Construction / Materials
- Pavement Program
- Safety
- Municipal Assistance
- Environmental Permitting
- ROW & Utilities
- Survey
- Asset Management
- Maintenance Districts
  - Traffic Shop
- Central Garage
- Training Center
- Technical Services
  - Town,Highway, Bridge & Culvert Grants
  - Transportation Buildings
  - Emergency Management
  - Intelligent Transportation Systems (ITS)
  - Agency Safety Office
  - Environmental Services
  - Hazardous Materials
  - Landscape
  - Engineering Support
  - Transportation Operations Center

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- Transportation Mapping
- Community Outreach
- Aviation Program
- Rail
  - Property Management
- Public Transit Program
- Permit Services

Faith Brown
Finance & Administration Division
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- Information Technology
- Contract Administration
- Audit
- Budget Operations
- Financial Operations
- Civil Rights & Labor Compliance

Boards and Councils

Transportation Board

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Executive Secretary

Nicola Marro
Chair

William Tracy Carris
Wesley J. Hrydziusko
Robin Stern
James Fitzgerald
Vanessa Kittell
Thomas Dailey

Motor Vehicle Arbitration Board

Pauline Liese
Lemon Law Administrator
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Mitchell Jay, Chair
New Car Dealer Member

David Baker, Vice-Chair
Technician Member

David Curtis
Citizen Member

Peter Hood
Citizen Member

John Manahan
Citizen Member

Alternates
Stephen Carbone
Technician Member

Gina Germond
Citizen Member

Michael Loschiavo
New Car Dealer Member

Public Transit Advisory Council

Sue Minter
Secretary, Agency of Transportation
Michele Boomhower
Director of Policy, Planning & Intermodal Development (VTrans) is her designee

Mary Grant
Rural Community Transportation

Randy Schoonmaker
Deerfield Valley Transit Association

Jim Moulton
Addison County Transit Resources

Karen Walton
Chittenden County Regional Transit

Hal Cohen
Secretary, Agency of Human Services
Susan Bartlett is his designee.

Annie Noonan
Secretary, Department of Labor

Pat Moulton
Secretary, Agency of Commerce and Community Development
John E. Adams
Planning Coordinator for Department of Housing and Community Development (ACCD) is her designee.

Peter Johnke
Vermont Center for Independent Living

Sheila Burnham
Council of Vermont Elders
Usually represented by Lee Cattaneo, COVE

John Sharrow
Mountain Transit

Bob Young
Premier Coach

Susan Schreibman
Acting Executive Director, Rutland Planning Commission

Jonathan Williams
Vermont League of Cities and Towns

Gwendolyn Hallsmith
Citizen

Senator Jane Kitchel of Danville

Rep. Mollie Burke of Brattleboro

Aviation Council

Sue Minter
Secretary, Agency of Transportation, Chair

Russell Barr
Paul Carroccio
Kelly Colling
George Coy
Robert Flint
Janice Peaslee
Edward Peet
William Rozensky
Patricia Sears
Douglas White

Non-voting Board Members
Pat Moulton

Rail Council

Sue Minter
Secretary, Agency of Transportation, Chair

David Allaire
Christopher Andreasson
Arthur Whitman
Alan Cook
Joann Erenhouse
Carl Fowler
Charles Hunter
David Wulfson
Jan Eastman
Charlie Moore
Rick Moulton

Snow and Ice Control Plan

FOR STATE AND INTERSTATE HIGHWAYS

The Vermont Agency of Transportation (VTrans) is responsible for nearly 3,313 miles of roads and 2,655 bridges statewide, which equates to 6,626 snow-lane miles. Standing at the ready to battle winter weather are 275 dump trucks with plows and wings, 41 pick ups with plows, and 68 loaders and graders, along with 375 licensed department operators.

Purpose and need

The purpose of the Snow and Ice Control Plan is to define the operational procedures and best management practices (BMPs) for storing and utilizing snow and ice control materials, and for performing winter maintenance activities. It defines the levels of service that VTrans will strive to provide at our facilities and on our highways. This plan allows for and encourages improvement in operational efficiency in providing the desired levels of service. It also provides guidance to help minimize leaching of salt-laden and other winter maintenance material runoff from state-owned paved surfaces and storage facilities into the ground or into surface waters.

Since storms vary dramatically across the state and occur over a variety of paved surfaces and traffic conditions, this Snow and Ice Control Plan (SIC Plan) is intended to be flexible. It is a guide structured to fit average conditions, but able to accommodate the wide variety of conditions that will be encountered by maintenance crews who are working to maintain safe roads at safe speeds.

Level of service: General information

VTrans Maintenance District snow and ice control operations are limited by the resources (budget, personnel, equipment and materials) available for winter maintenance. Consequently, VTrans' SIC Plan calls for "safe roads at safe speeds," and not "bare roads." This means that roads during a storm are maintained to allow safe travel at safe speeds, but that drivers should expect to see snow on the roadway during a storm. Most travel takes place during the day, so the majority of VTrans resources are used between 4 am and 10 pm. During those hours, the average plow routes will be between 2 to 2-½ hours. However, motorists should anticipate reduced coverage and varying road conditions at night, and should drive accordingly.

Corridor priorities

Four color-coded levels of service have been established and are shown on the "Corridor Priority Map" (see page 28). Priorities were established based on winter traffic volumes, roadway classification, and expected truck traffic. Note that critical areas such as intersections, areas of extreme curvature and problem grades may have to be treated differently to retain proper mobility and safety regardless of the corridor designation assigned to the balance of the route.

Corridor priority 1

Interstate and limited access highways (orange roads)

Snow will be removed between 3 am and 10 pm. Equipment such as tow plows and graders will be utilized to facilitate snow removal activities. During off hours, resources will be shifted to prioritize coverage on these routes. Materials noted under Section E will be applied as needed to keep the roads open for traffic and provide a safe surface on which to operate, though road surface may be snow covered at times during the storm. After the storm has subsided, bare travel lanes shall be provided as soon as practical and on these roads before all others. In most cases, this will occur within 4 daylight hours. A bare pavement shoulder to shoulder will be provided as soon as practical. The suggested maximum travel speed during the storm for "Orange Roads" is 50 mph, or 10 mph below the posted speed limit, whichever is less.

Corridor priority 2

High traffic highways & truck routes (blue roads)

Snow will be removed between 4 am and 10 pm. During off hours a skeleton crew will be used as needed. Materials noted under Section E will be applied as needed to keep the roads open for traffic and provide a safe surface on which to operate, though road surface may be snow covered at times during the storm. After the storm has subsided, a bare pavement shoulder to shoulder will be provided as soon as practical. The suggested maximum travel speed for "Blue Roads" is 45 mph, or 10 mph below the posted speed limit, whichever is less.

Corridor priority 3

Medium traffic highways (green roads)

Snow will be removed between 4 am and 10 pm. During off hours a skeleton crew will be used as needed. Materials noted under Section E will be applied as needed to keep the roads open for traffic and provide a safe surface on which to operate, though road surface may be snow covered at times during the storm. During the next regular working day after the storm has subsided, a bare pavement shoulder to shoulder will be provided as soon as practical. The suggested maximum travel speed for "Green Roads" is 40 mph, or 10 mph below the posted speed limit, whichever is less.

Corridor priority 4

Low traffic highways (yellow roads)

Snow will be removed between 4 am and 10 pm. During off hours a skeleton crew will be used as needed. Materials noted under Section E will be applied as needed to keep the roads open to traffic and provide a safe surface on which to operate. Road surface may be snow covered during and immediately following the storm. During the next regular working day after the storm has subsided, one third bare pavement, in the middle of the road, will be provided as soon as practical. As soon thereafter as practical, a bare pavement

shoulder to shoulder will be provided. The suggested maximum travel speed for "Yellow Roads" is 35 mph, or 10 mph below the posted speed limit, whichever is less.

Performance measurement and program effectiveness assessment

Performance during and immediately following individual storm events will be periodically monitored by the District General Manager and the Area Maintenance Supervisors to ensure VTrans is providing safe roads at safe speeds and performing snow and ice removal in accordance with established priorities noted under "Corridor Priorities."

In addition, to monitor performance, the following information will be reviewed by the Director of Operations, the Maintenance Transportation Administrator (MTA) and the District Transportation Administrators ("DTAs") annually to gauge program effectiveness:

- Material application rates
- Vehicle speeds during and after storm events
- Condition of travel lanes and shoulders during and after storm events
- Storm data (precipitation, air temperature, road surface temperature, wind speed, etc)
- Plowing frequency

Overall performance during and following the winter season will be measured by monitoring material usage, labor costs, and equipment costs with respect to the number of lane miles maintained and the number of storm events addressed. Assessments will be made based upon consideration of the resources used versus the winter severity encountered, as well as through comparisons between adjacent and nearby geographical areas that have encountered similar winter conditions.

VTrans Operations Division will publish an annual report each spring which summarizes the previous winter, and VTrans' performance according to the above mentioned metrics.

Materials and application procedures

The materials in this section are those that are primarily used by VTrans for snow and ice control on highways throughout Vermont. This section describes the general purpose of each material, the typical use that is expected under normal conditions, and the application procedure. Choice of materials will depend on experienced consideration of the following variables: pavement temperature, nature of the particular snow and ice event, forecast storm conditions, air temperature and wind velocity, traffic volume, time of day/year, and the availability of resources.

Procedures for determining application rates and methods will be the responsibility of District Personnel based on this SIC Plan, available material application technology, and other factors that vary across the state from region to region.

Salt (NaCl)

Unless otherwise designated for specific routes, salt is the primary material used on the majority of roads maintained by VTrans. Salt is used to prevent the bonding of snow and ice onto the pavement surface, and to melt snow and ice that cannot be removed by plowing. Unless salt is pre-wetted with a liquid having a lower working temperature than sodium chloride, the lowest effective working temperature is approximately 15 degrees F.

Application Rates shall normally be selected from the "Salt Application Quick Reference Guideline" and shall be based

Salt Application Quick-Reference Guidelines *(**Double these rates for centerline applications**)*

Pavement Temp. Range	Application Rate (#/LM)	Pre-Wet Material	Comments
Above 32˚	0 to 100	Salt Brine or Blend	A little salt goes a long way when temperatures are near freezing.
25˚ to 32˚	100 to 200	Salt Brine or Blend	Salt is very effective here. Pre-wetting with a blend will allow lower application rates.
20˚ to 25˚	200 to 300	Salt Brine, Chemical, or Blend	Salt effectiveness is dropping off in this range. A blend or straight chemical will help.
15˚ to 20˚	300 to 400	Chemical or Blend	Pre-wetting is especially important. Liquids will provide the extra boost needed.
15˚ or Below	Snow is usually dry and blowing in this range. If no ice or pack exists, plow only—DO NOT APPLY MATERIAL.		If necessary, spot treat icy patches with abrasives. If glazing occurs on high-volume, high-speed, sand will not last and higher salt applications, with pre-wetting, will be needed.

General Notes

- Application rates should be on the lower end when temperatures are on the higher side of the range or remaining steady. Falling temperatures, and temperatures on the lower side of the range, will require applications on the higher side, and possibly in the next range if dropping rapidly.
- In any of the ranges, if the snow is dry and blowing off the roadway, do NOT apply material.
- Pre-wetting under wet storm conditions is not required. In cases where the only pre-wetting liquid available is a high-performance chemical, it is better to save those products for the drier and colder conditions.
- This is a guideline only. Application rates will vary based on climatic conditions experienced in the field, as well as corridor priority.

upon the pavement temperature, snow-ice conditions encountered, and anticipated trends. Initial applications should normally be 25% higher than the average rate indicated by the chart. Generally, salt will be used when the pavement temperatures are 15 degrees F or higher. When pavement temperatures are less than 15 degrees F and not rising, winter sand may be used when necessary for temporary traction. During cold storms, when the pavements are dry and the snow is blowing off the travel lanes, the application of salt or winter sand is to be avoided for as long as possible since it will hasten the formation of ice on the pavement. When ice does begin to form under these conditions, considerable judgment will be required on whether to use salt that is pre-wetted with liquid or spot applications of winter sand.

"Application Rates vs. Miles You Can Treat" is provided as a quick reference guide for maintenance workers and supervisors.

Salt Application Rates vs. Miles You Can Treat

Application Rate (Pounds Per Lane Mile)

Number of Tons	100	150	200	250	300	350	400
1	20.0	13.3	10.0	8.0	6.7	5.7	5.0
2	40.0	26.7	20.0	16.0	13.3	11.4	10.0
3	60.0	40.0	30.0	24.0	20.0	17.1	15.0
4	80.0	53.3	40.0	32.0	26.7	22.9	20.0
5	100.0	66.7	50.0	40.0	33.3	28.6	25.0
6	120.0	80.0	60.0	48.0	40.0	34.3	30.0
7	140.0	93.3	70.0	56.0	46.7	40.0	35.0
8	160.0	106.7	80.0	64.0	53.3	45.7	40.0
9	180.0	120.0	90.0	72.0	60.0	51.4	45.0
10	200.0	133.3	100.0	80.0	66.7	57.1	50.0

Lane Miles You Can Treat

Winter Sand

Winter sand shall consist of coarse, clean, sharp sand or other granular material. Sand is generally used to provide traction at intersections and corners during icy conditions. When conditions warrant, salt may be mixed with sand to break the bond between the ice pack and road surface.

Sand should generally be used in the following situations:

- On hills, curves and intersections where the supervisor determines that temporary traction is needed
- In situations where salt can not work fast enough (i.e. accident scenes involving excessive ice)
- When pavement temperatures are too low for salt to work properly
- When wet pavements exist on lower-volume corridors and falling nighttime temperatures may cause glazing

Liquids

A variety of liquids are used to either "pre-wet" solid materials that are applied from the plow trucks or to "anti-ice" the highways in advance of a storm event. Following are descriptions of the types of liquids used by VTrans, and descriptions of the "anti-icing" and "pre-wetting" process.

Salt Brine

Salt brine is a 23% solution of salt in water. It can be used to either "pre-wet" solid materials that are applied from the plow trucks or to "pre-treat" the highways in advance of a storm event. However, unless salt brine is mixed with additives, the effective working temperature is the same as salt in its solid form—approximately 15 degrees F or greater.

Chemical Additives

Chemical additives are used to pre-wet the solid materials that are applied by the plow trucks to lower the effective working temperature of salt and to help keep the solid materials on the road during the application process. Examples of such chemicals may include magnesium chloride ($MgCl_2$), calcium chloride (CaCl) and a number of proprietary products.

Liquid Chloride Blends

Liquid Chloride blends are used to stretch the working range of salt brine without incurring the full cost of a chemical product.

Anti-icing

For anti-icing with salt brine, the application rates per lane mile may vary when pavement temperatures during the storm are anticipated to be 15 degrees F or greater. Application will generally occur on designated routes 6 to 8 hours prior to the projected start of the storm, however, up to 12 hours may be permissible based on timing of the storm. Anti-icing may also be used to spot treat bridge decks and other problem areas located on any priority corridor whenever weather forecasts indicate the possibility of glazing. When anti-icing the roads with a blend, application rates may be cut back.

Pre-wetting

Pre-wetting is the application of liquids onto solid materials. In general, salt brine shall normally be used when the pavement temperatures are above approximately 15 degrees F and chemical additive or blend shall be used when below.

Equipment

Washing Equipment

Snow and ice control equipment are to be thoroughly washed during regular working

hours as soon after use as practicable. Particular attention is to be paid to the areas of equipment in contact with sand, salt and liquid chlorides. With heated power washers, truck washing will normally be accomplished outdoors in designated areas.

Overnight Loads

In general, trucks should not be left loaded overnight since it subjects the equipment to unnecessary wear. However, in the event that a winter storm is forecast at some point during the approaching night, a crew may load trucks to enable a quicker response to the storm. Such loading shall be in compliance with the following:

a) Load size shall not exceed a level-load;

b) If the storm does not occur, the truck(s) loaded in advance shall be unloaded and washed out the following working day.

Spreaders

Each spreading unit shall be calibrated annually, and after any spreader or hydraulic maintenance, to insure that selected rates of application are attained.

Operations

Mailboxes and Other Structures Within the Highway Right-Of-Way

Occasionally mailboxes or other devices are damaged by snow plowing operations due to poor visibility, the mailbox being buried in a snow bank or the weight/volume of the snow being plowed. This damage is not deliberate and in most cases is unavoidable. VTrans is not responsible for damage and does not repair, replace or re-erect boxes that are located within the highway right-of-way unless physically struck by a VTrans plow truck. In these cases, VTrans will replace the mailbox at no cost to the property owner with a generic United States Post Office approved box.

Widening or Pushing Back Snow Banks

Following storms with heavy snowfall or when several storms result in substantial snow bankings, VTrans will undertake a roadway widening procedure, which will push back the snow banks. This is generally done during normal working hours, and is a necessary operation because it accomplishes the following:

a) Provides room for future snow storage;

b) Reduces or prevents melted snow from running out onto the roadway pavement and creating icing conditions;

c) Increases safe sight distance at intersections and driveways;

d) Maintains a uniform line by eliminating protrusions at driveways and intersections.

Unfortunately there is no way to prevent depositing snow in previously cleaned driveways or walkways except to leave a hazardous projecting mound of snow. With thousands of driveways of all sizes and descriptions along our highway system it is impossible to clear these individual drives as the cost would be prohibitive.

Sidewalks

The maintenance of the sidewalks, including snow removal, is the responsibility of the local community. This is firm and longstanding statewide. In addition, in those communities where on-street parking is permitted, snow removal from the parking areas, including plowing and or hauling away, is a local responsibility.

Tow Plows

Tow plows will be used primarily on limited access facilities and interchanges to clear multiple lanes at the same time. An effort will be made to avoid impacts to traffic during morning and evening commute times.

State and federal regulatory oversight

Winter Maintenance Practices located within designated National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) areas, including Watersheds of Sediment Impaired Waterways, and in the Lake Champlain Watershed Basin

Winter maintenance activities in these areas have and will continue to be regulated and addressed under the VTrans MS4 Stormwater Management Plan. Please refer to the VTrans Operations Environmental Program web site for more information regarding the above referenced designations as they may change from time to time and for information regarding the VTrans MS4 Stormwater Management Plan.

Winter Maintenance Practices: Statewide Implementation and Jurisdiction

VTrans SIC Plan has and will continue to be implemented across the state and will not be subject to ANR jurisdiction outside the designated MS4 & Lake Champlain Basin areas. The Operations Environmental Program will forward to the state Agency of Natural Resources (ANR) the SIC Plan as often as updates are made.

Best management practices, tracking and reporting

Best management practices associated with winter maintenance activities in conformance with the provisions of the VTrans SIC Plan include, but are not limited to:

1. Normal winter maintenance will conform to the provisions of the current VTrans winter maintenance standards included in this SIC Plan.
2. VTrans shall disseminate the SIC Plan statewide to employees involved in the application and storage of winter snow and ice control materials and train such employees in the proper performance of these standards. The Operations Environmental Program Manager will ensure that this information is posted on the VTrans Web Site, kept current, and made available to ANR.
3. Low salt and no salt roads (zones) will be signed in the field accordingly.
4. Weekly internal reporting of salt/sand usage will be completed by Operations Division staff commencing on the first week of November and terminating 26 weeks later, typically with the last week of April. VTrans shall make note of any single de-icing salt application

in excess of 800 pounds per two-lane mile and report such incidents as part of the weekly reporting. The Director of Operations will make this information available to ANR upon request.

5. VTrans shall fully cover with impervious material all bulk salt storage areas under their control to reduce the amount and concentration of salt to the runoff of stormwater from these storage areas. All bulk salt storage shall be situated on an impervious material so as to minimize leaching of salt-laden runoff into the ground.
6. VTrans shall locate sand piles at District Maintenance Facilities in areas that will not result in sediment-laden runoff into surface waters. If sand piles are located in close proximity to surface waters then VTrans shall install adequate erosion prevention and sediment control practices to ensure sediment-laden runoff will not impact surface waters.
7. When it is desirable to charge sand piles with salt to prevent freezing (resulting in mixes or blends), the percentage of salt in the pile shall not exceed 5%.
8. VTrans will implement these activities on a statewide basis in accordance with the protocols and best management practices established within the MS4 and Lake Champlain Basin areas for seamless operational efficiencies across the state and to support the stated purpose of this SIC Plan. The Operations Environmental Program will report on these tasks as a part of each annual MS4 report to ANR.
9. VTrans will plan, organize and conduct an annual public outreach campaign associated with safe winter driving, as funding allows.
10. Nothing in this SIC Plan shall preclude the agency from utilizing experimental and new technologies to achieve higher efficiency in a cost effective and environmentally sensitive manner. VTrans actively supports innovation and promotes the idea of finding new and better ways to reach our goals.

Corridor Priorities (Effective November 2014)

Structures Prioritization

In compliance with H.523 legislation, a priority ranking system for existing long structure projects, rehabilitation and replacement was developed based on the following factors:

Bridge Condition
30 points maximum

Remaining Life
10 points maximum

Functionality
5 points maximum

Load Capacity and Use
15 points maximum

Waterway Adequacy and Scour Susceptibility
10 points maximum

Project Development and Momentum
5 points maximum

Regional Input and Priority
15 points maximum

Asset—Benefit Cost Factor
10 points maximum

Points are then summarized for each program, with the highest score receiving the top ranking. Rankings will change from year to year as projects are completed, as bridges change in condition, or as regional planning commissions' priorities change. These priorities are used in developing the capital program, help in deciding which bridges to advance next, and have enabled us to clear a backlog of projects in a defined, documented, and efficient manner.

Selection for proposed rehabilitation and reconstruction projects will continue to utilize the priority system. To become a project and have design initiated, the bridge will need to be among the highest ranked.

The bridge priority system, which is used to rank major bridge replacement and rehabilitation projects, will continue to be used for project selection and determining funding needs. However, this system is not inclusive as it does not rank short structures or maintenance needs, both preventive and routine.

Bridge replacement and rehabilitation projects progress through the VTrans Project Development Process. With its current reorganization, the Structures Section is aggressively looking for opportunities to streamline project delivery while reducing project scope, impacts and costs.

Scope reduction can be achieved by various methods: reducing approach work, minimizing or eliminating enhancements, phased construction or road closures. Although inconvenient for a community, the elimination of a temporary bridge reduces timelines, cost, need for significant right-of-way acquisition and resource impacts. Swiftness of construction and improved safety conditions are benefits of road closures.

Where appropriate, accelerated bridge construction (ABC) and materials are utilized. The technique minimizes traffic disruptions and congestions, improves work-zone safety, and lessens environmental impacts. Additionally, prefabrication can improve constructability, increase quality, and lower life-cycle costs.

The establishment of the bridge maintenance program gave us a start, enabling us to perform much-needed preventive maintenance on a limited number of bridges, but it was just the beginning. Preventive maintenance is not a high-profile activity; if done on a routine schedule, however, its benefits will be obvious as it will extend service life and delay the rate at which our bridges become structurally deficient. The agency has substantially grown the program from its origins and has now integrated it into the regular program.

Focusing efforts toward preventive maintenance activities will slow, but not reduce, the number of bridges becoming structurally deficient. Preventive maintenance does not correct existing structural deficiencies, but instead retards deterioration so that a bridge's lifespan can be extended, thus preventing the structure from becoming structurally deficient. To this end, preventive maintenance is essential to slowing the rate at which structural deficiencies evolve over time.

The value of preventive maintenance will be appropriately demonstrated in the future through new performance measures that evaluate a bridge's overall core unit condition or network health.

WARREN. VT 100 Bridge before replacement.

Roadway Prioritization

The "Pavement Management Prioritization Category Scores and Weights" chart illustrates the weighting and scoring of the components built into the Pavement Management Section's project prioritization system. Each component is defined in terms of its respective characteristics and the effect of the measure on a project's overall rating. The system was developed in 2005 and continues to play an integral role in the development of our annual programs.

Asset Condition (PCI)

Pavement Condition Index

- Combination of; Ride, Rut, Cracking
- Scoring structured to recognize need to address roads in very poor condition regardless of traffic

Project Economics (Benefit Cost)

Benefit Cost Ratio

- Benefit compares condition difference between the selected treatment and doing nothing on the project section over the lifespan of the treatment
- Benefits are weighted by traffic volume
- Cost is present value financial cost to the state
- Measures the "Bang for the buck" amongst candidate projects

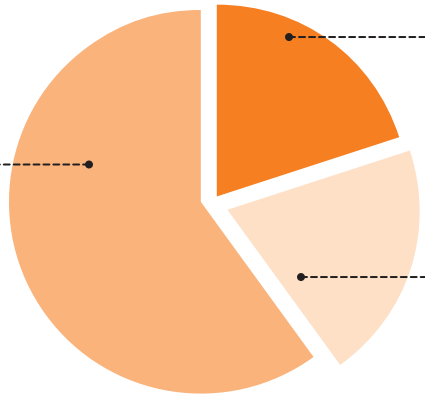
Regional Planning Commission (RPC) Rank

Regional Importance

- Allows RPCs to address socio-economic, cultural/local importance and impact on local economy of candidate projects
- Scoring structure helps create a geographically distributed program

STOCKBRIDGE / BETHEL. Paving project.

Pavement Management Prioritization Category Scores and Weights



Asset Condition (PCI)
20%

PCI		Score
0–29	=	20
30–34	=	16
35–39	=	12
40–44	=	4
45–100	=	0

Benefit Cost
60%

B/C Score

$$\frac{B/C - B/C\ (min)}{B/C\ (max) - B/C\ (min)} \times (60)$$

RPC Rank
20%

RPC Rank		Score
1	=	20
2	=	18
3	=	17
4	=	16
5	=	15
6	=	14
7	=	13
8	=	12
9	=	11
10	=	10
11	=	9
12	=	8
13	=	7
14	=	6
15	=	5
16	=	4
17	=	3
18	=	2
19	=	1
20	=	0

Rail Projects

Standard and Emergency Projects Completed 2014

Project Name & Number	Line	Asset	Description
Rockingham RREW12J	GMRC - Bellow Falls	Bridge 110	New Bridge Approach and Rock Stabilization
Rutland-Burlington VTRY(2)	Vermont Railway - Northern	Track	7.57 Miles CWR rail purchased
Rutland-Burlington VTRY(3)	Vermont Railway - Northern	Track	Installing 7.57 Miles of CWR rail
Newport-Richford STP 2030(7)	MM&A	Five Crossings	2 in Newport, 2 in Troy, and 1 in Richford
Dorset WCRS(8)	Vermont Railway - B&R	Bridge 79	New Superstructure and New Substructure
Clarendon WCRS(10)	Vermont Railway - B&R	Bridge 95	New Superstructure and New Substructure
New Haven WCRS(18)	Vermont Railway - Northern	Bridge 242	New Superstructure and Substructure Rehab.
Rockingham GMRC (18)	GMRC - Bellow Falls	Bridge 111	Emergency bridge repair
Fairlee RRE4178A	WACR	Culvert	Emergency culvert repair
Mount Holly STRB1501	GMRC - Bellow Falls	Bridge 140	Emergency repair - Shotcrete stone arch
Ferrisburgh STRB1502	Vermont Railway - Northern	Bridge 252.3	Emergency repair - Shotcrete stone arch and grouting
North Bennington RRCUL(1)	Vermont Railway - B&R	Xing 851-165W	Drainage pipe installation

Public Crossing Maintenance Projects Completed in 2014

Project Name & Number	Line	Asset	Description
Wallingford	Hartsboro Rd (south)	851-234C	Completed
Wallingford	Hartsboro Rd (north)	851-241M	Completed
Wallingford	Alfrecha Rd	851-269D	Completed
Wallingford	Elm St	851-247D	Completed
Wallingford	Maple St	851-248K	Completed
Mount Tabor	Depot Rd Ext	851-230A	Completed
Montpelier	Bailey Ave	837-321W	Completed
Montpelier	Granite St	837-326F	Completed
Burlington	Harrison Ave	837-098V	Completed
Burlington	Home Ave	851-418C	Completed
Montpelier	US 2	837-330V	Completed
Barnet	Comerford Dam Rd	857-596J	Completed
Clarendon	Walker Mountain Rd	851-257J	Completed

Construction Projects

Regular Projects Substantially Completed in 2014

Project Name & Number	Route Number	Description of Work
ALBURGH NH SURF(35)	US 2	Paver Placed Surface Treatment
ALBURGH-COLCHESTER STP SURF(36)	US 2	Paver Placed Surface Treatment
ALBURGH-COLCHESTER STPG SIGN(45)	US 2	Install New Traffic Signs
BARNARD ER BRF 0241(39)	VT 12	Replace Bridge 25
BARTON-COVENTRY IM BPNT(11)	I-91	Bridge Painting
BERLIN-MONTPELIER	I-89	Paver Placed Surface Treatment
BOLTON-WATERBURY STP 2709(1)	US 2	Reclaim and Resurface
BRAINTREE ER STP 0187(12)	VT 12A	Replace Bridge 6
BRANDON-MIDDLEBURY NH SURF(43)	US 7	Paver Placed Surface Treatment
BRATTLEBORO BRO 1442(35)	TH 12	Replace Bridge 7
BRISTOL BRO 1445(32)	TH 15	Replace Bridge 31
BROOKFIELD-MONTPELIER IM 089-1(61)	I-89	Resurfacing
CAMBRIDGE BRF 027-1(4)	VT 108	Replace Bridge 21
CAMBRIDGE STP 030-2(27)	VT 108	Construct new Round-About
CASTLETON-RUTLAND BHF MEMB(37)	MULTIPLE BRIDGES	Bridge Membrane
CASTLETON-RUTLAND BHF MEMB(38)	VT 4A	Bridge Membrane
CAVENDISH ER BRF 0146(13)	VT 131	Replace Bridge 1
CLARENDON WCRS(10)	VTR	Replace Bridge 95
DANVILLE BHF MEMB(36)	US 2	Bridge Membrane
DORSET WCRS(8)	VTR	Replace Bridge 79
ELMORE-MORRISTOWN STP 2937(1)	VT 12	Reclaim and Resurface
ENOSBURG BRO 1448(40)	TH 2	Replace Bridge 48
ENOSBURG-RICHFORD STP 2939(1)	VT 105	Resurfacing
ESSEX WESTFORD STP 2917(1)	VT 128	Reclaim and Resurface
FAIR HAVEN-RUTLAND BHF BPNT(10)	US 4	Bridge Painting
FAIRFIELD BRO 1448(38)	TH 30	Replace Bridge 48- Bridge in a Backpack
FAIRLEE CULV MP 18.61	WACR	Culvert Extension and Slope Repair
FAIRLEE-NEWBURY IM SURF(40)	I-91	Paver Placed Surface Treatment
GUILFORD BRO 1442(36)	TH 10	Replace Bridge 65
GUILFORD IM IR 091-1(25)	I-91	Modification of parking area for DMV Inspection
HARTFORD IM 089-1(60)	I-89	Deep Soil Injection Roadway Stabilization
HARTFORD-RANDOLPH ER 0147(21)	VT 14	Culvert Replacement and Slope Stabilization
HARTLAND BHF BPNT(12)	US 5	Replace Bridge 62A
HARTLAND CMG PARK (25)	US 5	Reconstruct Park and Ride
HYDE PARK STP CULV(26)	VT 15	Replaced existing failed culvert with new bridge
JAMAICA ER BRF 015-1(23)	VT 30	Replace Bridge 30
LYNDON BF MEMB(39)	US 5	Bridge Membrane

Project Name & Number	Route Number	Description of Work
MIDDLEBURY RS 0174(8)	VT 125	Replace Bridge 13
MONTGOMERY BHO 1448(27)	TH 3	Replace Bridge 36
MONTPELIER BF BPNT(17)	GRANITE STREET	Bridge Painting
MONTPELIER NH 028-2(9)	I-89	Rockfall Hazard Mitigation
MORGAN-BRIGHTON STP SURF(41)	VT 111	Hot-in-place recycling and paver placed surface treatment
MORRISTOWN STP F 029-1(2) C/1	VT 100	New Bridge over Lamoille River on the Alternate Truck Route
MORRISTOWN STP F 029-1(2) C/2	VT 100	Construct New Alternate Truck Route and roundabout
NEW HAVEN WCRS(18)	VTR	Replace Bridge 242
NEWPORT-RICHFORD STP 2030(7)	MULTIPLE LOCATIONS	Replace railroad grade crossing and signal
PAWLET RREW12L & RUPERT RREW12M, 12N, 12O, 12P	D&H RAIL TRAIL	Bridge Rehabilitation
PITTSFIELD ER BRF 022-1(23)	VT 100	Replace Bridge 124
PITTSFORD STP 2033(21)	TH 8	Replace railroad grade crossing
POWNAL-BENNINGTON NH SURF(42)	US 7	Paver Placed Surface Treatment
PUTNEY-WESTMINSTER STP 2946(1)	US 5, VT 123 & WSH	Resurfacing
RICHMOND CMG PARK(31)	US 2	Reconstruction of existing park and ride facility
RICHMOND STP 0284(17)	US 2	Road widening & signal improvements
RICHMOND-COLCHESTER IM SURF(38)	I-89	Paver Placed Surface Treatment
ROCHESTER BRF 0162(16)	VT 73	Replace Bridge 15
ROCHESTER BRF 0162(17)	VT 73	Replace Bridge 16
ROCHESTER STP BRF 0162(19)	VT 73	Replace Bridge 13
ROCKINGHAM GMRC (18)	GMRC	Emergency superstructure repairs
ROCKINGHAM RREW12J	GMRC	GMRC bridge 110 over Williams River rock achoring
RUTLAND CITY BRF 3000(18)	TH 13	Replace Bridge 14
RUTLAND CITY NH 2716(1)	US 4 & US 7	Resurfacing
RUTLAND CITY STP 019-3(57)	US 4, US 7 & BR US4	Resurfacing
RUTLAND CITY-PROCTOR STP 2728(1)	BR US4 & VT3	Resurfacing
RUTLAND-BURLINGTON VTRY(3)	VTR	Install continuous welded rail
SEARSBURG NH 010-1(48)	VT 9	Slope Stabilization
ST. JOHNSBURY-LYNDON IM 091-3(50)	I-91	Resurfacing
ST. JOHNSBURY-LYNDON STP 2928(1)	US 5	Resurfacing
STATEWIDE HES RMBL(2)	MULTIPLE LOCATIONS	Install centerline rumble stripes
STATEWIDE IMG MARK(114)	INTERSTATE	Pavement Markings
STATEWIDE NE REGION STP HRRR(16)	MULTIPLE LOCATIONS	Install New Traffic Signs
STATEWIDE NORTH HES MARK(402)	MULTIPLE LOCATIONS	Pavement Markings
STATEWIDE NW REGION STP HRRR(17)	MULTIPLE LOCATIONS	Install New Traffic Signs and guardrail
STATEWIDE SE REGION STP HRRR(18)	MULTIPLE LOCATIONS	Install New Traffic Signs and guardrail
STATEWIDE SOUTH HES MARK(403)	MULTIPLE LOCATIONS	Pavement Markings
STATEWIDE STP CRAK(32)	MULTIPLE LOCATIONS	Crackfilling
STATEWIDE STP SDWK(11)	MULTIPLE LOCATIONS	Sidewalk handicap ramp replacement
STATEWIDE STP SWRT(1)	MULTIPLE LOCATIONS	Install new traffic signs

Project Name & Number	Route Number	Description of Work
STATEWIDE SW REGION STP HRRR(19)	MULTIPLE LOCATIONS	Install new traffic signs and guardrail
STOWE BRF 029-1(17)	VT 100	Replace Bridge 208
SWANTON IM 089-3(70)	I-89	Bridge Membrane
WARREN BRF 013-4(14)	VT 100	Replace Bridge 173
WARREN BRF 013-4(32)	VT 100	Replace Bridge 166
WATERBURY NHG SGNL(43)	VT 100	Install new traffic signal
WILMINGTON STP 013-1(14)	VT 100	New Box Culvert
WINDSOR IM 091-1(64)	I-91	Replace Bridges 33N & 33S, Design Build

Municipally Managed Projects

Scoping Projects Substantially Completed in 2014

Danville STP BP13(9)	Scoping study for pedestrian improvements
Jericho STP SRIN(41)	Scoping study for school crosswalk locations
Brattleboro STP BIKE(59)	Scoping study for bicycle and pedestrian improvements along VT 9
Ludlow STP EH12(9)	Scoping study for shared use path
Middlebury – Weybridge STP EH10(5)	Scoping study for sidewalk near Pulp Mill Bridge
Rutland Town TAP TA13(10)	Scoping study for pedestrian improvements
Rutland City STP BP13(21)	Scoping study for pedestrian improvements
Springfield STP BIKE(53)	Scoping study for shared use path
Rutland City STP BIKE(60)	Scoping of Segment 5 of Rutland Creek Path

Construction Projects Substantially Completed in 2014

Rutland City STP EH12(2)	Segment 2 of the Rutland Creek Path
South Hero STP EH08(17)	Local Motion Bike Ferry docks improvements and new Ferry Boat
Bristol 021-1(27)	Prince Lane Pedestrian improvements
Hartford STP HTFD(1)	Reconstruction of the underpass on TH2 (Bridge Street), removing the center pier and improving clearance and drainage
Northfield STP EH11(9)	Sidewalk along Depot Square
Waterbury STP EH10(20)	Sidewalk along Stowe Street
Stowe STP 0235(10)	Rehabilitation of Barnes Camp
Windsor TCSP TCSE(008)	Streetscape and sidewalk improvements
Waitsfield STP SRIN(34)	Improvements to the VT 100/Old County Rd intersection
Waitsfield STP SRIN(37)	Sidewalk along VT 100
Crossroad of VT Byway SB VT12(4)	Installation of byway trail signs and interpretive material
Brandon NH 019-3(496)/C1	Waterline work along US 7 in advance of NH 019-3(496) project
Hyde Park STP EH05(26)	Streetscape improvements on Depot Street
Bethel STP EH07(6)	Sidewalk along North Main Street
Hinesburg STP SRIN(24)	Sidewalk along VT 116
Middlesex STP EH09(8)	Gateway improvements
Poultney STP EH12(1)	Pedestrian improvements
Swanton – St. Johnsbury STP LVRT(1)	Improvements to the LVRT beginning at the intersection of VT Route 15A and the LVRT in Morristown and extends easterly 17.42 miles to the intersection of the LVRT and VT 109 in Cambridge.
Swanton – St. Johnsbury STP LVRT(3)	Improvements to the LVRT beginning at Bridge 13 over Mount Vernon St in St. Johnsbury and extending westerly 15.35 miles to the intersection of the LVRT and Channel Drive in Danville.
Waterbury STP SGNL(18)	Roundabout at intersection of US 2 and VT 100
South Burlington STP 5200(18)	Improvements along US 2 near Exit 14
Williston STP BIKE(52)	Sidewalk along South Brownell Road
Winhall ST PRDP(128)	New Park-and-Ride Facility
West Haven ST PRDP(135)	Improvements to existing park and ride facility
Cornwall ST PRDP(132)	Improvements to existing park and ride facility
West Rutland ST PRDP(110)	New park and ride facility
Pittsfield ST PRDP(118)	New park and ride facility
Weathersfield ST PRDP(126)	New park and ride facility
Newbury ST PRDP(121)	New park and ride facility
Better Back Roads projects	Municipal mitigation projects at various locations statewide

We hope you've enjoyed this year's edition of the Fact Book. There's always something new happening here at VTrans. For all the latest on what's going on, we encourage you to visit our website where you can download many other reports, statistics, maps and other information about Vermont's transportation network at http://vtrans.vermont.gov.

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