VERMONT AGENCY OF TRANSPORTATION

2014 FACT BOOK and Annual Reports

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2014 FACT BOOK
and Annual Reports

Welcome

Welcome to this year's edition of the VTrans Fact Book. Traditionally, this has been the place people come to for quick answers to perennial questions as well as the place to find the right person to answer some of the more complicated ones.

Last year, we made some changes to the format and this year, we are taking it a step further, adding "Annual Reports" to the name. You will now find within these pages, several of the reports that have been published separately in the past, along with expanded content on some of the regular Fact Book subjects.

This is very much a work in progress and we look forward to hearing your thoughts on what ought to be in next year's VTrans Fact Book and Annual Reports.

Sincerely,

Brian R. Searles
Secretary of Transportation

Cover Photos

The following captions describe the photos on the cover, in descending order.

1. Newport: Veterans Memorial Bridge.
2. Westford: Operations bridge crew.
3. Burlington: A cyclist boarding a CCTA bus.
4. Bennington: Centerline rumble stripes on US 7.
5. Roxbury: The Amtrak® Vermonter℠

Contents

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 the development and implementation of a network 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, as well as the maintenance of transportation infrastructure, multimodal transportation planning, and Department of Motor Vehicles (DMV) operations and motor carrier enforcement.

VTrans has approximately 1,300 employees organized in four divisions: Program Development; Operations; Policy, Planning and Intermodal Development; and Finance and Administration. The DMV is also housed within the Agency of Transportation, and has a main office in Montpelier and ten satellite offices. The Operations Division of VTrans, which has the largest number of employees, is responsible for maintaining the state's transportation infrastructure and is organized in nine districts. There are 64 garages strategically located throughout the state and these employees plow snow in the winter and perform other roadway and bridge maintenance during the summer. The Operations Division employees are VTrans' front line workers and have a "service beyond self" work ethic, operating around the clock responding to emergencies and snow storms.

VTrans interacts with all state agencies and federal 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. In addition, Vermont's eleven Regional Planning Commissions and, in Chittenden County, the Metropolitan Planning Organization, develop regional transportation plans and provide input to VTrans in identifying and prioritizing transportation projects in their respective regions.

VTrans serves the entire population of the state of Vermont, maintaining nearly 3,313 miles of road and 2,655 bridges. Vermont owns 305 miles of rail lines throughout the state and nine state airports. There are three advisory councils to VTrans: Rail Council, Aviation Council, and the Public Transit Council.

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, 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 motor fuel tax, the motor vehicle purchase and use tax, and Department of Motor Vehicle fees.

COLCHESTER. Equipment on display in the yard of the District 5 Garage at Fort Ethan Allen.

Our Vision and Mission

The vision of the Vermont Agency of Transportation is a safe, reliable, and multimodal transportation system that promotes Vermont's quality of life and economic wellbeing.

Our mission is to provide for the safe and efficient movement of people and goods.

Our Values

Safety
Make safety a critical component in the development, implementation, operation, and maintenance of the transportation system.

Excellence & Innovation
Cultivate and continually pursue excellence and innovation in planning, project development, and customer service.

Planning
Optimize the movement of people and goods through corridor management, environmental stewardship, balanced modal alternatives, and sustainable financing.

Preservation
Protect the state's investment in its transportation system.

Environmental Stewardship
Build, operate, and manage transportation assets in an environmentally responsible manner.

The Year In Review

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 in an environmentally responsible manner

Safety is paramount in everything VTrans does and is reflected across all transportation modes this year. We design all projects with a focus on driver safety and strive to ensure safe work zones for our employees. We have upgraded a record number of railroad crossings to ensure safer interactions between trains and motor vehicles, deployed new signal technologies such as the Hawk crossing system on VT 15 in Colchester, and have doubled the funding available for bicycle and pedestrian projects around the state to build more sidewalks and shared-use paths, and to complete intersection improvements. At our airports, we are updating electronic navigation systems, expanding safety zones, adding backup power, and upgrading lighting.

BRATTLEBORO. Spanning VT 30 and the West River, this design/build project is currently under construction on I-91 and will replace two aging bridges with a single span.

VTrans continues to play a leadership role in the Vermont Highway Safety Alliance (VHSA), a public/private partnership of organizations united in improving the safety of the traveling public. The group developed Vermont's Strategic Highway Safety Plan this spring and is fast becoming a model for other states in how to address problems like distracted and impaired driving.

With an average of seventy deaths and hundreds of incapacitating injuries occurring on Vermont highways each year, more must be done to ensure the safety of our highways. VTrans and the VHSA are committed to strengthening the network of stakeholders that share in the role of reducing these tragic events.

VTrans recognizes the transportation sector is a large contributor to greenhouse gas emissions, and seeks opportunities to improve efficiency of the ways in which we operate. We are working closely with Efficiency Vermont and other partners to improve the energy efficiency of our buildings and better manage our energy consumption. This year we have installed solar panels to power some of our district garages and we are experimenting with new pavement mixes that produce fewer emissions.

VTrans staff works closely with the Agency of Natural Resources and other partners to ensure that we are building a more resilient infrastructure. A transportation network that functions in harmony with its environment is, by design, more resilient and safe. We continue to apply lessons learned from Tropical Storm Irene and subsequent storm events combined with the latest recognized best practices to improve our roads and bridges.

We are also playing an active role in the effort to establish the "Green Highway" between Montreal and Boston, a public/private partnership that will jump-start the deployment of electric vehicle charging stations and make electric vehicles a more convenient option for the traveling public.

MONTPELIER. Vehicles charge at a station near the Statehouse in Montpelier.

GOAL TWO

Preserve, maintain, and operate the transportation system in the most cost effective and efficient manner

VTrans continues to make progress in improving our aging inventory of structures.

Since 2008, we have reduced the number of structurally deficient bridges in our system from 494 to 226 bridges. We are using innovations to expedite project delivery. Accelerated Bridge Construction is our preferred approach to any project when feasible. Precast sections, standardized designs, and a combined design/build contracting process are all making projects happen faster. We can build in a weekend what once took weeks and measure in days what once took months.

In 2009, more than half our roads were in "poor" or "very poor" condition. Today, 21% of our roads are still considered "very poor," but we are making steady progress to move miles out of that category. With 2,700 miles of pavement to manage, we are experimenting with a variety of treatments to ensure we get the most life out of the pavement we have; but we are also going deeper, tackling subsurface problems that go back decades so that when we do invest in new pavement, it will sit on a solid foundation.

MONTGOMERY. Freshly paved stretch of VT 242.

RICHMOND. Passengers board the Montpelier Link Express as work continues on upgrades to the Richmond Park and Ride.

In this age of declining resources, we are dedicated to system preservation rather than expanding capacity. One example is the transformation of the decades old Circumferential Highway into a community driven process for prioritizing investment. After an extensive process of community engagement and stakeholder collaboration, the final group of Circ Alternatives was approved unanimously. This will spark a $100 million investment in Chittenden County that will mitigate congestion through 34 projects over 15 years.

Innovative approaches to issues like the Circ Highway led Smart Growth America to say, "Smart growth transportation strategies offer a wide range of transportation, economic, fiscal, community, and environmental benefits, and VTrans has a full set of policies and programs in place to implement smart growth transportation."

GOAL THREE

Provide Vermonters energy efficient travel choices/options

We cannot encourage people to change the way they travel if they do not have choices. Being a rural state with a small population provides a unique set of challenges, but necessity and interest are converging to create a set of Vermont-scale transportation solutions that are proving themselves through their successes.

The popularity of public transit is growing at a rapid pace. Ridership is up across the board—close to 5 million rides in 2013. Popular services like the Chittenden County Transportation Authority Link Express have added additional runs and the buses are running full. Plans for a transit center in Burlington are proceeding and the expansion and upgrade of the Richmond Park and Ride is underway. In addition, a new commuter service is now running between Northfield and Montpelier, and between Jeffersonville and Burlington. Service along VT 7 between Middlebury and Rutland has been enhanced.

This year, we laid the groundwork and awarded grants to establish new intercity service from Burlington, through Rutland to Bennington and on to Albany, NY. The grants will also help launch new services between Rutland and White River Junction, providing connectivity to New York City and Boston as well as connections to Amtrak's Ethan Allen Express and Vermonter trains.

The dream of connecting Downtown Burlington to Rutland and Midtown Manhattan took a giant leap forward this year when we secured a second TIGER grant of $9 million to fund welded rail along the western corridor north of Rutland.

Providing more travel options is part and parcel of our Go! Vermont Program, which, this year, saw the launch of a new rideshare matching system and the kickoff of the Capitol Commuters program in Montpelier, which is designed to alleviate congestion and parking problems in the state capitol. 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.

GOAL FOUR

Provide quality customer service

At the Department of Motor Vehicles, many transactions can now be handled online or on the phone and DMV continues to work to expand the types of transactions that can be handled online. As a result, customers find that wait times at DMV offices are now surprisingly brief. The Burlington and Bennington offices are now located in more convenient retail districts and we are extending operating hours at some locations for our Southern Mobile unit. DMV is constantly working to give customers easier access to our services.

We are committed to being accountable and making our work transparent. Lines of communication with our customers have never been more open. The Secretary and Deputy Secretary both led regional community meetings in partnership with regional planning commissions to learn more about what matters to Vermonters—our customers.

A major overhaul of our web presence has made information more accessible and upgrades are continuing. Social media has become a leading form of interaction with the public. In winter, media and travelers alike have come to rely on our Facebook page and Twitter feed in combination with our 511 system.

WESTFORD. VTrans Operations' Statewide Bridge Crew works to install a temporary bridge on Seymour Road in Westford. A dozen families were stranded due to the washout of the town road during the summer 2013 marathon of thunderstorms.

Recognizing the importance of mobile devices, we have developed a mobile version of our 511 online map and mobile access to essential project and construction information.

This year's construction season also saw an expansion of our "On the Road" radio series to include a weekly print edition that ran in a number of daily papers across Vermont.

WATERBURY. VTrans is working with Amtrak and bicycle advocacy groups to develop equipment to accommodate bicycles on the Vermonter and the Ethan Allen Express.

GOAL FIVE

Develop a workforce to meet the strategic needs of the agency

Recognizing the aging workforce and large number of employees reaching retirement age, we must have an eye to the future and a robust plan for recruiting and retaining our work force of tomorrow.

To improve employee retention and advancement, we established the VTrans Training Center (VTTC) in 2011 to serve the diverse training needs of the entire agency. This program ensures compliance with federal and state regulations and the Affirmative Action Plan (AAP), as it relates to training, and enables VTrans employees to benefit from professional development and safety courses.

The VTTC partnered with Community College of Vermont to accredit its Supervisory Leadership Program; employees who successfully complete the program receive three college credits. The VTTC plans to offer additional accredited courses in FY15.

As a result of collaboration with the VTTC, Community College of Vermont now offers an associate degree in business with a focus on transportation.

The VTTC established core curricula for the Employee Development and Safety branches in mid-2013. Trainings are taught by in-house or contracted experts, and incorporate best practices and hands-on exercises to ensure employees receive the knowledge they need to perform their duties in the safest and most effective manner.

We also maintain an active recruitment effort at job fairs on college and high school campuses and at other events throughout the state. This past summer, VTrans worked with the Federal Highway Administration and the University of Vermont to present the National Summer Transportation Institute, allowing the next generation of transportation officials to get hands on experience in everything we do.

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 following: the Department of Motor Vehicles; the Divisions of Policy and Planning; Finance and Administration; Operations; Program Development; 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

- **28** State-owned/maintained Park-and-Ride facilities
- **1,322** Parking spaces at state-owned/maintained Park-and-Ride facilities
- **68** Municipal Park-and-Ride Facilities funded with state grants (47 complete, 21 in progress)
- **750** Parking spaces at state-funded Municipal Park-and-Ride Facilities
- **392** Vehicles that provide public transit in the state

- **14,158** 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

- **2,716** Inventoried long bridges (over 20 ft. long)
- **1,089** Inventoried long bridges on SHS (defined as state-owned and maintained)
- **1,261** Short bridges (over 6 ft. but less than 20 ft.)
- **436** SHS bridges 31–50 years old (40%)
- **279** SHS bridges over 70 years old (25.6%)
- **72** SHS bridges classified structurally deficient (6.6%)

- **71,730** Signs under VTrans jurisdiction
- **2,437** Official Business Directory Signs (OBDS)
- **157** Traffic signals
- **1,029** Roadway lights

Infrastructure Maintenance

- **3,099** Linear miles of centerline applied
- **3,267** Linear miles of barrier and edge line applied
- **35,301** Linear feet of guard rail repaired, at the cost of $757,580
- **3,075** Tons of patching applied
- **15,254** Acres mowed at a cost of $1,200,000
- **246** Tons of trash collected at a cost of $771,500

- **5,103** Drainage structures maintained
- **18,169** Tons of material applied to protect banks and slopes
- **6,040** Linear feet of culverts installed at a cost of $2,145,000
- **9,783** Culverts maintained at a cost of $679,000
- **862** Bridges washed at a cost of $638,600

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 FY2013 (fees, taxes and permits)

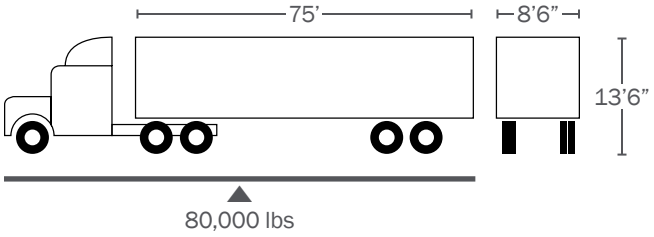
License Fees	$8,794,320.89
Registration Fees	$52,864,857.91
Gas Tax and Clean Up ($0.182/gal.)	$61,764,209.01
2013 Motor Fuel Assessment Fee	$1,836,586.08
Gas Infrastructure Assessment Fee	$19,173,168.61
Sales Tax (6%)	$1,089,740.22
Purchase and Use Tax (6%)	$60,071,615.01
Diesel Tax ($0.26/gal.)	$14,683,870.77
Diesel Infrastructure Assessment Fee	$1,622,465.05
Motor Homes	$483,879.61
Trucks up to 6,099 lbs.	$14,630,562.90
Trucks up to 25,999 lbs.	$5,111,496.06
IRP from other states	$119,414.87
IRP In-State	$4,541,111.84
Clean Air Fund	$614,642.00
Conservation Plates	$179,173.53
IFTA from other states	$1,239,815.16
IFTA Infrastructure Assessment	$143,030.62
Title Fees	$5,411,133.00
Inspection Fees	$2,889,277.88
Driving Records	$3,103,522.00
Oversize Permits	$2,438,478.32
Miscellaneous	$12,977,660.98
Total	$275,784,032.32

DMV Rates

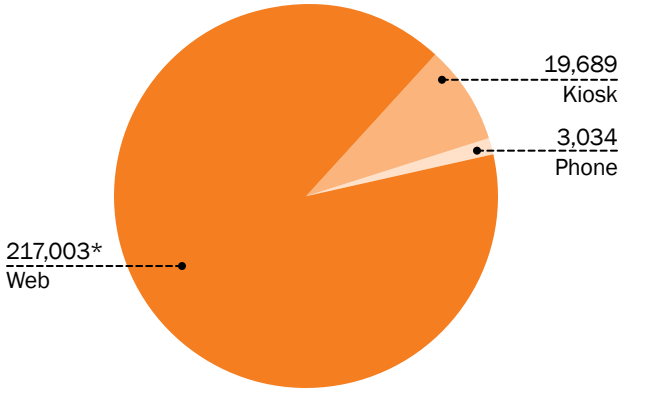
Gas Tax and Clean Up Fee	$0.182 and $0.01 and 2% of retail
Motor Fuel Tax Assessment	$0.067 per gallon or 2% of the tax-adjusted retail price upon each gallon of motor fuel sold by the distributor not to exceed $0.09, whichever is greater.
Diesel Tax, Clean Up Fee and Infrastructure Fee	$0.27 and $0.01 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 the underlying 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.

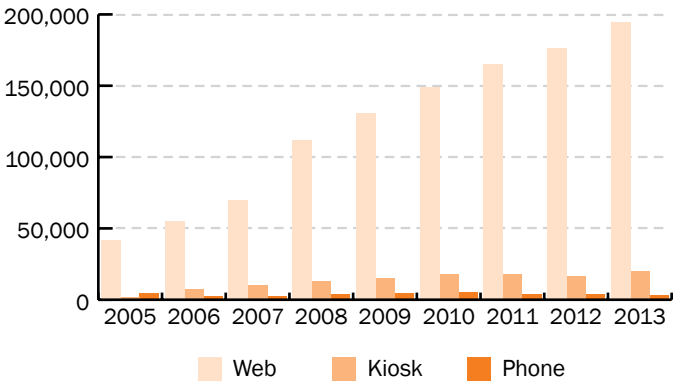


Electronic Transactions

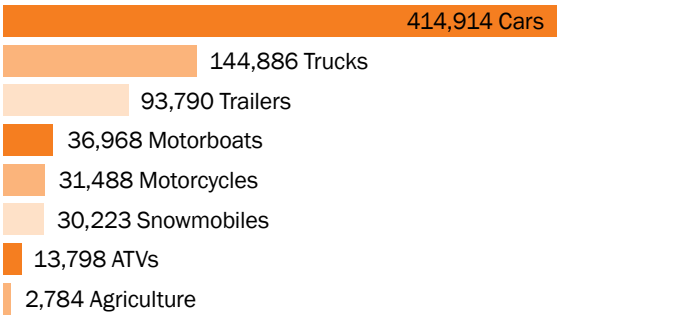


* Of these, 210,343 were electronic and 6,660 were electronic duplicates

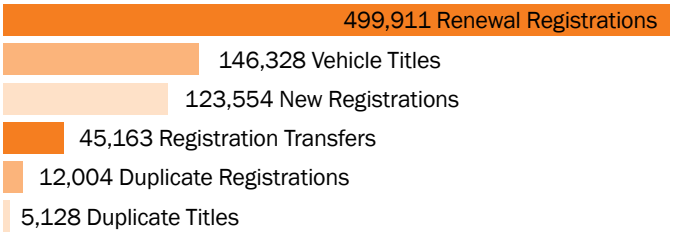
Electronic Transactions History



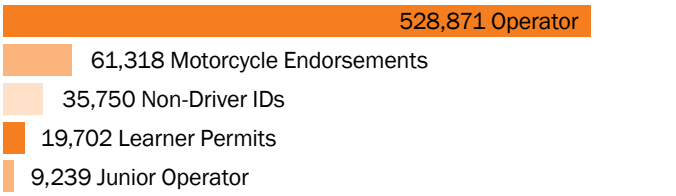
Vehicle Registrations



Vehicle Registrations Processed



Vehicle Licenses



License Transactions Processed

Vermont Rider Education Program

133	8	1,348	1,274	1,202	1,128	74
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
Elks Lodge
118 Western Avenue

St. Albans
Elks Lodge
44 Grice Brook Road

Middlebury
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

SOUTH HERO. As 17 year old Grace Emery was losing her battle with cancer, she asked that she be remembered by having her playhouse moved to Camp Ta-Kum-Ta. The Department of Motor Vehicles assisted as the playhouse was moved the 16 miles from its original location in Milton to its new home in South Hero.

BENNINGTON. DMV office lobby.

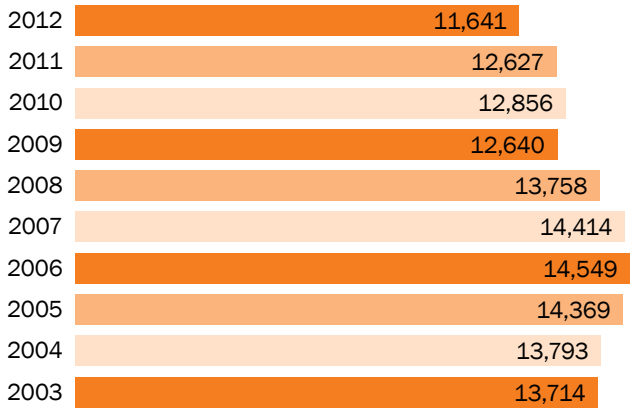
DMV ENFORCEMENT VEHICLE. Also a mobile weigh station!

RUTLAND. DMV office.

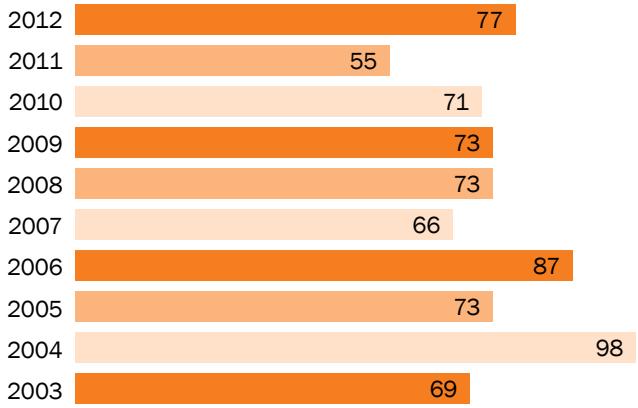
Highway Research

The Highway Research 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.

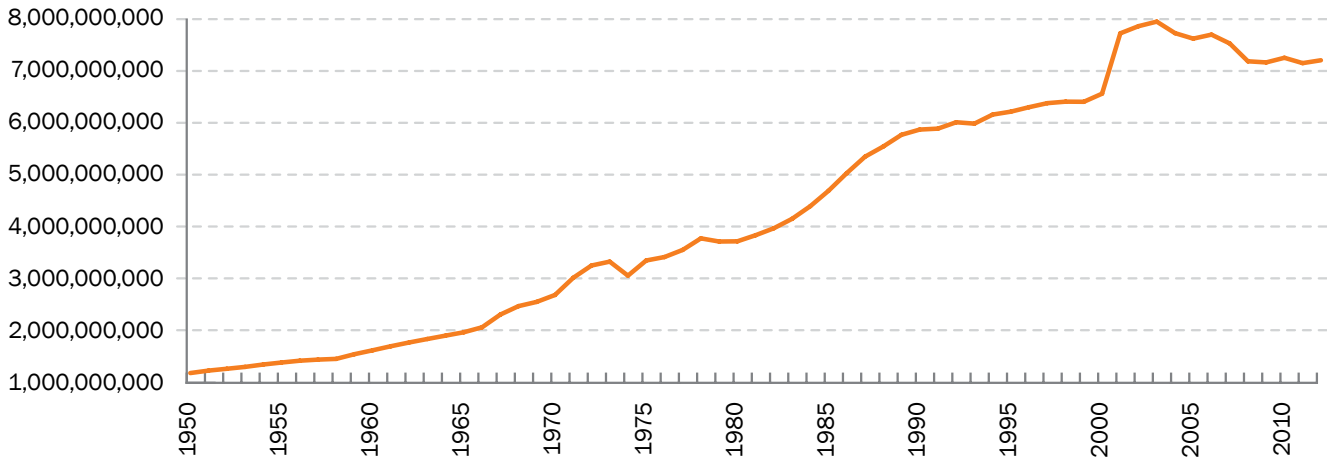
Crashes Reported, by calendar year



Fatalities, by calendar year



Vehicle Miles of Travel: 1950 – 2012



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 2013, Rutland Southern Vermont Regional Airport (RSVR) had 6,000 + enplanements including regular passenger service offered via Cape Air. Over 500,000 pounds of cargo moved through RSVR in 2013 and over 200,000 pounds moved through Knapp State Airport in Berlin.

RUTLAND. Rutland Southern Vermont Regional Airport.

Airport Contact Information

MUNICIPAL AIRPORTS

Burlington International
Heather Kendrew
(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
Chris Beitzel
(802) 388-2022

Morrisville-Stowe
Dave Whitcomb
(802) 888-7845

Newport
Dan Gauvin
(802) 334-5001

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

William H. Morse
Darren Loften
(802) 442-5503

PRIVATE AIRPORTS

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

Mt. Snow
Michael Mancusco
(516) 359-9948

Post Mills
Brian Boland
(802) 333-9254

Shelburne
Ray Magee
(802) 985-2100

Warren-Sugarbush
Rick Hanson
(802) 496-2290

Passenger Rail Service

Departing at 8:35 AM from St. Albans, the **Amtrak Vermonter** operates on the New England Central Railroad (NECR) tracks through Vermont (passing briefly through New Hampshire), south to Palmer, MA, and then continues through Massachusetts, Connecticut, and down the Northeast Corridor to New York City and Washington DC. A second Vermonter departs Washington, DC at 8:05 AM Mon–Fri, 7:30 AM Sat–Sun, and terminates in St. Albans in the evening. Funded by an ARRA economic stimulus grant, a continuous-welded rail upgrade on the NECR is now complete, shaving approximately 30 minutes off the running time through Vermont. The trains are moving more smoothly, quieter, and faster on the improved rail. Upgraded warning signals have been added, along with the track upgrades, for public safety.

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 then to New York City. Thanks to track improvements on the CLP, the Ethan Allen has cut 15 minutes off its run from Rutland, VT to Whitehall, NY.

For FFY 2013, the Ethan Allen Express total train ridership (53,271) was down 2.0%, with a revenue decrease of only 0.10% ($2,825,134 total), and the Vermonter total train ridership (84,109) was up 2.5%, with a revenue increase of 5.6% ($5,029,712 total).

Both Vermont trains are now equipped with free Wi-Fi, and electronic online e-ticketing was rolled out in the spring of 2012. For Reservations, contact: Amtrak@ 1-800-USA-RAIL (1-800-872-7245), or TDD/TTY (1-800-523-6590), or Visit **www.AMTRAK.com**

Did you know?

Amtrak and the state of Vermont offer a special, Inside Vermont fare of only $12, for a one-way ride from any stop in Vermont to any other stop in Vermont, on the same line.

Here's how to get the discount:

To get a reservation number and pay cash when boarding:
The passenger should call a live agent at 1-800-USA-RAIL, (1-800-523-6590), keep saying "Agent" to Julie's requests (or press 0 for operator/agent), and when you get the agent, tell them you want the $12 Inside Vermont fare, and use the code, V-383. The agent will give you a reservation number, and when you board the train, present the reservation number, and have the cash ready. They would prefer a 24-hour notice, but usually you can book it the night before, and ride the train the next day.

To purchase a discounted e-ticket online:
The new Amtrak e-ticketing system does have the $12 fare programmed in, but only with a previous-day purchase. The customer can go to www.amtrak.com/insideVermont, purchase (with a credit card) the discounted ticket the day before, and print out a PDF ticket to present to the conductor upon boarding. To do this, click the blue Book It Now button on the right hand side of the page, select your travel itinerary and date, and upon reaching the fare page click Apply Discounts. In some cases, the regular fare could be less than the $12 discounted one.

Freight Rail Service

In 2013 the Vermont/Canadian border had over 40,000 loaded railroad cars cross over, moving over 5,260,000 tons of cargo to and from Canada.

Items delivered to or shipped from the state of Vermont included:

- Propane, fuel oil, and biomass for home heating and utility combustion;
- Lumber, plywood, panel products, crushed stone and cement for construction;
- Paper and paperboard for packaging;
- Road salt for winter driving safety and mobility;
- Feed ingredients and fertilizer for agriculture; and
- Non-metallic minerals such as talc, limestone, granite, and marble for industry.

If this cargo had moved via truck (assuming that were even economically feasible) it would have required about **150,000 trucks*** which, if parked end to end, would stretch along **1,900** lane miles** ... now **double that for the returning empty trucks!**

* Assumes 48,000 lbs cargo per truck
** Assumes 65' per semi-trailer and tractor

Rail Grants 2013

This year the Rail Section started construction on the TIGER IV grant project for freight improvements for 18.8 miles of railroad track between St. Albans, VT and the tracks of Canadian National at the Canadian Border. The upgrades will enable the track to carry the gross rail weight standard of up to 286,000 pounds, allowing more efficient movement of goods throughout the region and internationally. This will improve the competitiveness of the New England Central Railroad (NECR) freight rail by allowing heavier freight hauls. These improvements will also benefit Amtrak, with the capability to extend service to Montreal once again, and very importantly, it creates 145 construction-related jobs immediately, and an estimated 170 long-term regional jobs, as estimated by VTrans and NECR. This TIGER IV grant follows the 2012 completion of the Track I American Recovery and Reinvestment Act (ARRA) project on the NECR. The $75M project improved 190 miles of railroad—including 140 miles of new continuous-welded rail (CWR), safety upgrades at 52 crossings, and strengthening 50 bridges. Not only do these improvements benefit passenger rail with greater comfort and faster speeds, but freight service will also improve, as the entire line from St. Albans to the Massachusetts border is now rated at 286,000 lbs. for freight service, making Vermont competitive with other rail shippers nationwide. These two projects will complete 100% of the rail upgrades needed from the Canadian border to the southern border of Vermont on the NECR line.

SOUTH ROYALTON. New England Central locomotive in new Genesee and Wyoming colors.

RUTLAND. Vermont rail systems.

ST. ALBANS. Newly completed crossing upgrade.

In 2013 VTrans received a TIGER V grant for track upgrades from Rutland to Leicester on the Vermont Railway line (VTR). This will allow for 9.8 miles of new ties, ballast and continuously-welded rail (CWR) to be installed which will increase freight speeds and improve efficiencies through this section of track. Design for this project has begun and construction is anticipated to start in 2014. This will also help to achieve the state's long-term goal of restoring Amtrak service from Rutland to Burlington along the Western Corridor.

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 coming 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.

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 / vchesnut@advancetransit.com
PO Box 1027, Billings Commerce Park, Wilder, VT 05088
Phone: (802) 295-1824 / Fax:(802) 295-3010

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

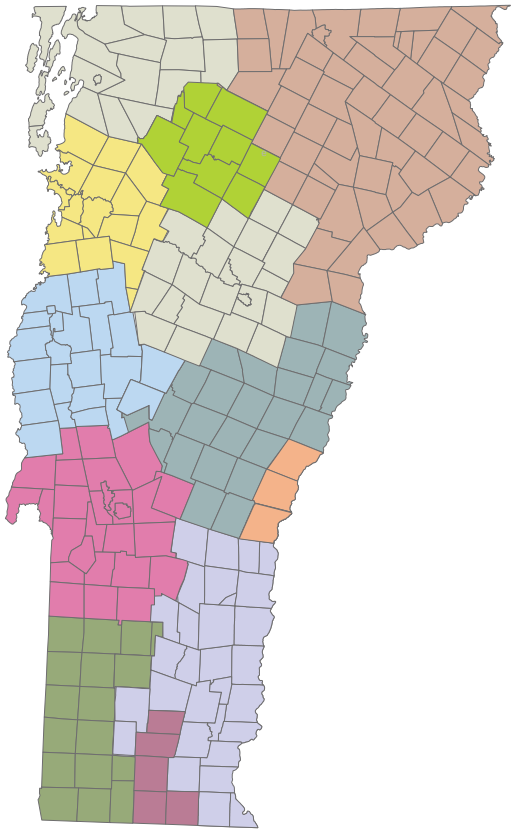
Connecticut River Transit, Inc. (CRTI)
Rebecca Gagnon / rgagnon@crtransit.org
706 Rockingham Road, Rockingham, VT 05101
Phone: (802) 460-RIDE x201 / Fax: (802) 460-1004
Toll Free: (888) 869-6287

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
Bill Watterson / bwatterson@cctaride.org
6088 VT 12, Berlin, VT 05602
Phone: (802) 223-7287 / Fax (802) 223-6236
Franklin / Grand Isle Area Phone: (802) 527-2181

Total Ridership



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 / rct@kingcon.com
1161 Portland Street, St. Johnsbury, VT 05819
Phone: (802) 748-8170 x301/ Fax: (802) 748-5275

Stagecoach Transportation Services, Inc. (STSI)
PO Box 356, 1 L Street, Randolph, VT 05060
Phone: (802) 728-3773 / Fax: (802) 728-6232

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

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

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

Policy and Planning

The Policy and Planning Section supports and informs the agency's decision making by conducting research and analysis of transportation issues and trends, preparing planning documents that identify needs and solutions, and evaluating the opportunities and consequences to Vermont of national and international legislation and policy initiatives. 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.roefaro@state.vt.us
ACRPC: Addison County Regional Planning Commission
BCRC: Bennington County Regional Commission
RRPC: Rutland Regional Planning Commission

Operations Annual Report

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 (MgCl2), 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

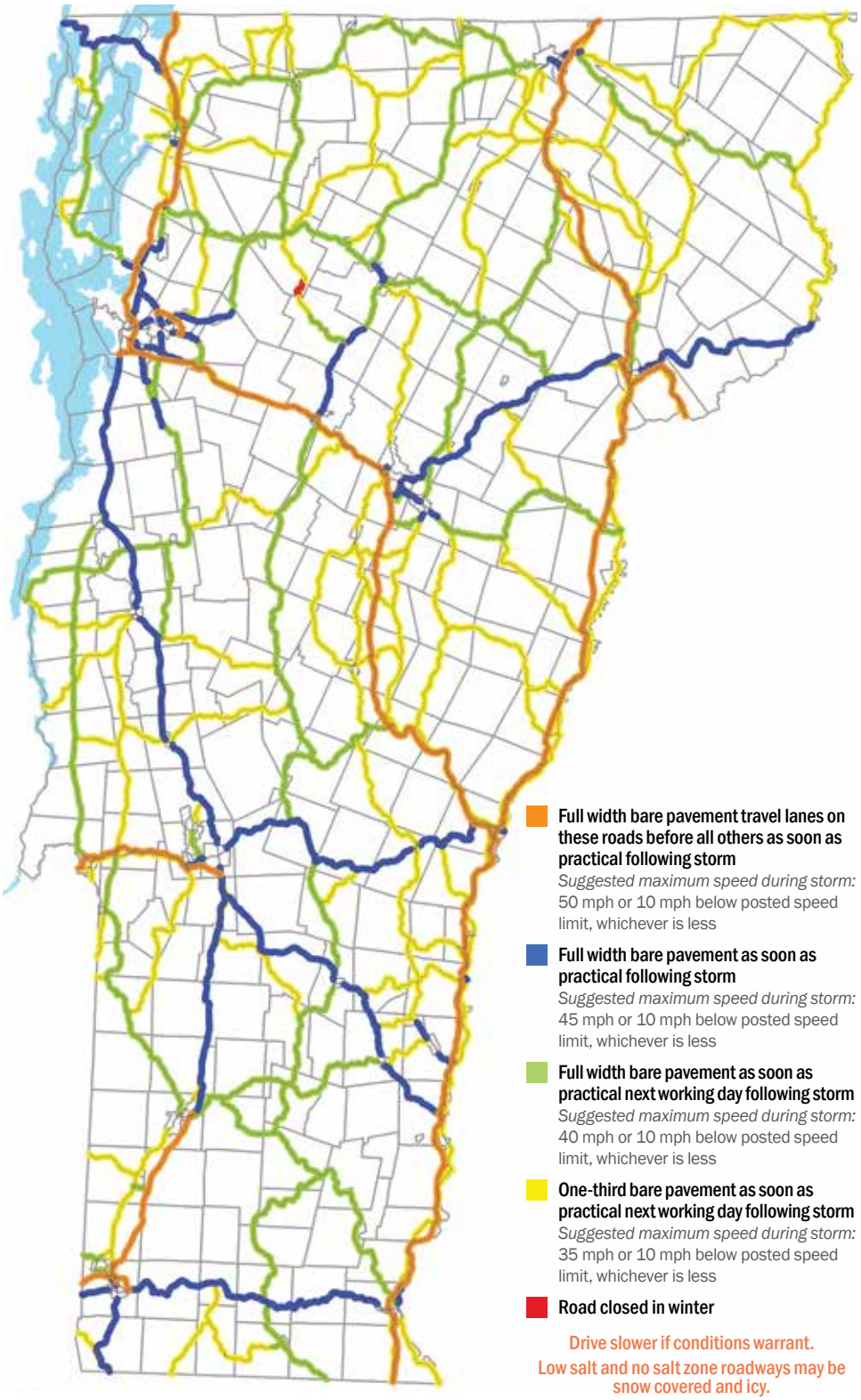
Best management practices associated with winter maintenance activities in conformance with the provisions of the VTrans SIC Plan include, but are not limited to:

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.

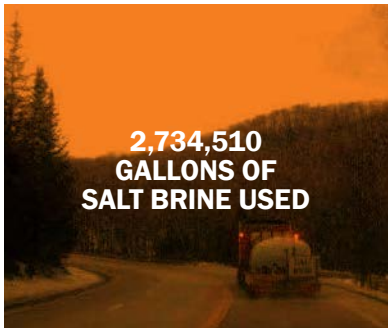
5. VTrans shall fully cover with impervious material all bulk salt storage areas under their control to reduce the amount and concentration of salt to the runoff of stormwater from these storage areas. All bulk salt storage shall be situated on an impervious material so as to minimize leaching of salt-laden 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 2013)



Winter Maintenance Statistics

2012–13 Data



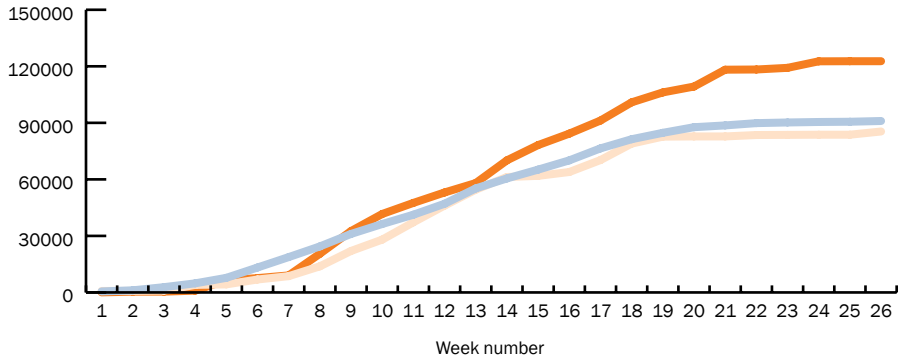
Two-Year Salt Prices Comparison

Location	2012 Price	2013 Price
District 1	$61.10	$59.59
District 2	$62.71	$61.90
District 3	$63.68	$62.17
District 4	$64.77	$62.67
District 5	$62.18	$61.58
District 6	$62.27	–
District 7	$65.46	$65.21
District 8	$63.70	$63.28
District 9	$67.29	$68.05

Vendor: Cargill
Vendor: American

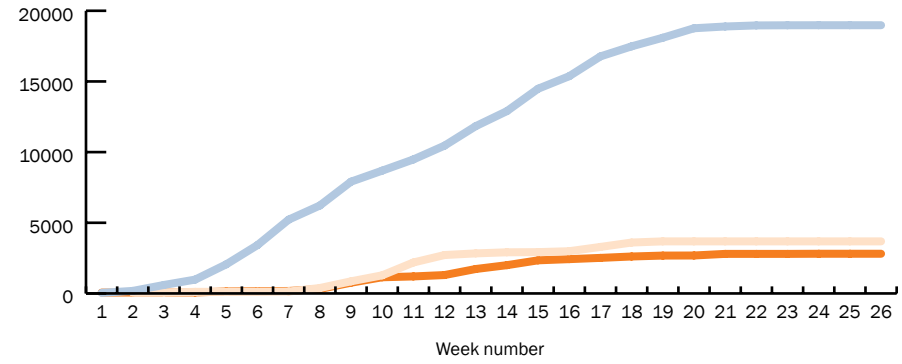
Salt Usage (in tons)

FY2013: 122,706
FY2012: 85,408
5-yr average: 90,979



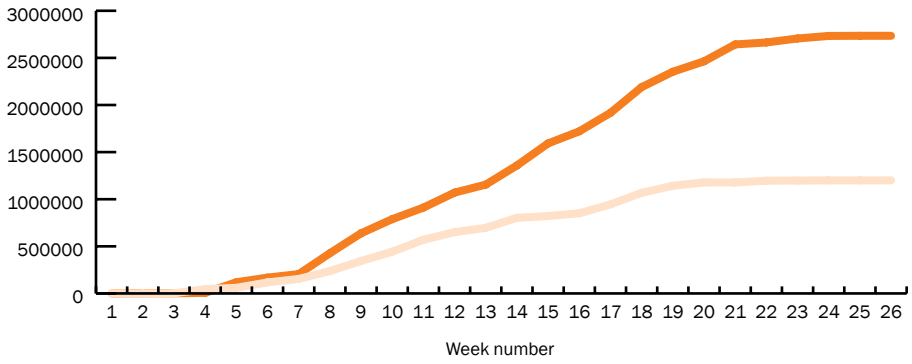
Sand Usage (in cubic yards)

FY2013: 2,808
FY2012: 3,684
5-yr average: 18,978



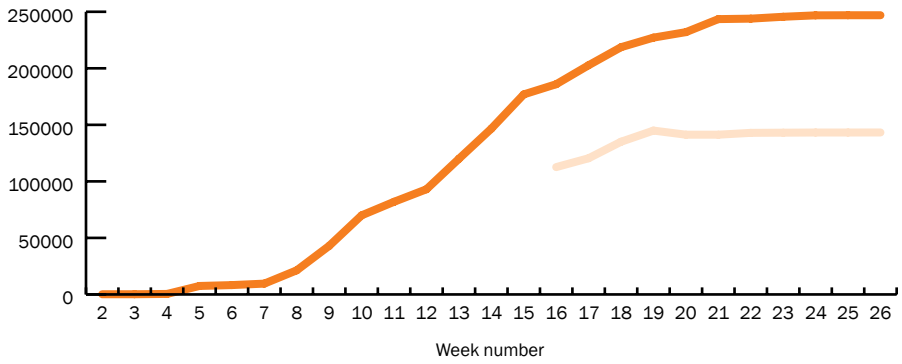
Brine Usage (in gallons)

FY2013: 2,734,510
FY2012: 1,200,750



De-Icer Usage (in gallons)

FY2013: 246,492
FY2012: 143,248

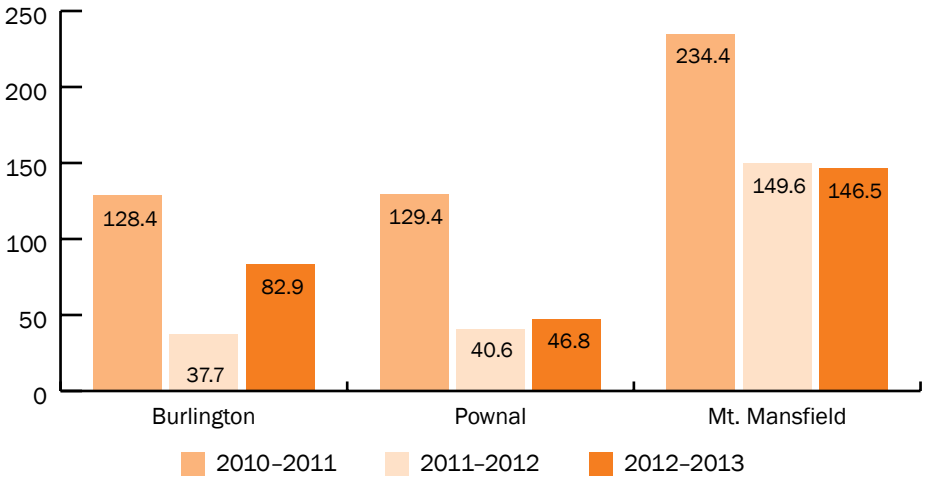


Winter Maintenance Events

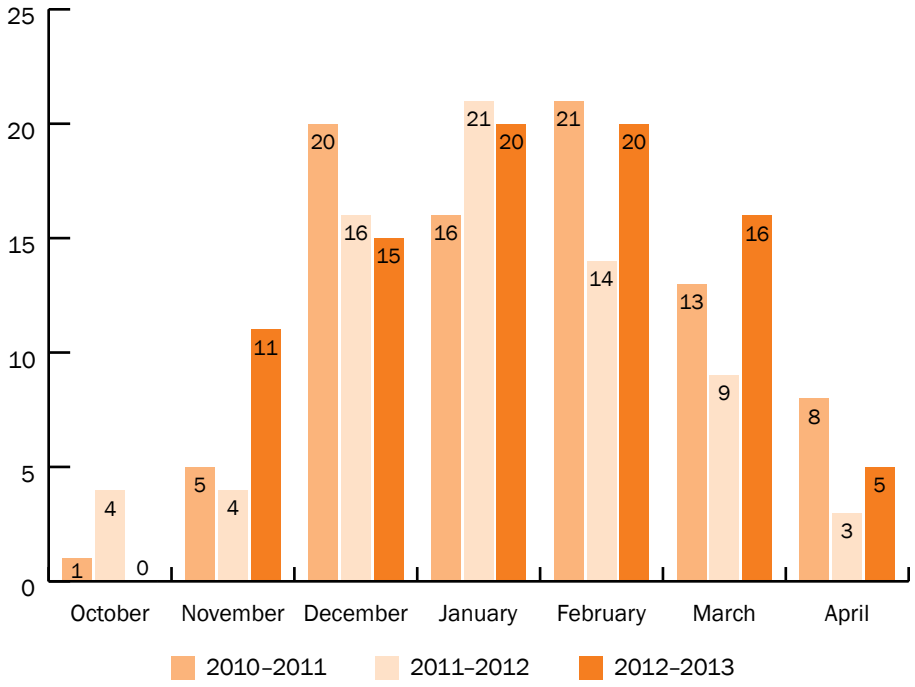
A Winter Maintenance Event is defined as one in which three or more districts are engaged in winter maintenance activities requiring snow plowing, salting or sanding. These can last anywhere from a few hours to several days.

Total Winter Events, Three-Year Comparison

Total Snowfall, Three-Year Comparison (in inches)



Average Winter Maintenance Event Days, Three-Year Comparison

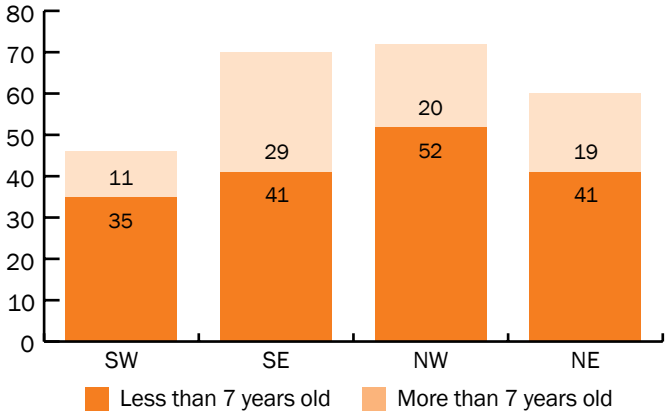


Equipment Performance Measures

VTrans is currently working with the University of Vermont to identify performance based measures for winter maintenance practices and optimization of snow management.

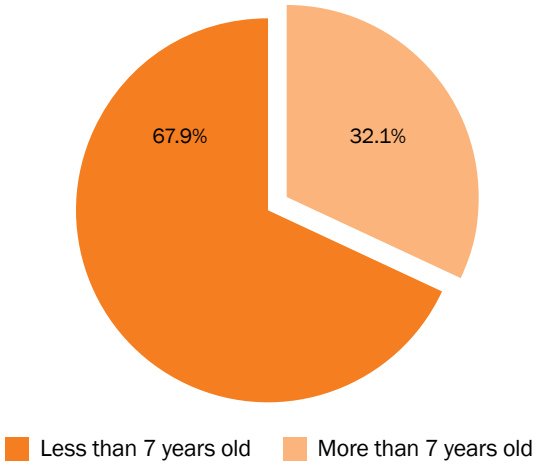
Dump/Plow Truck Count

as of April 2013, by Maintenance Region



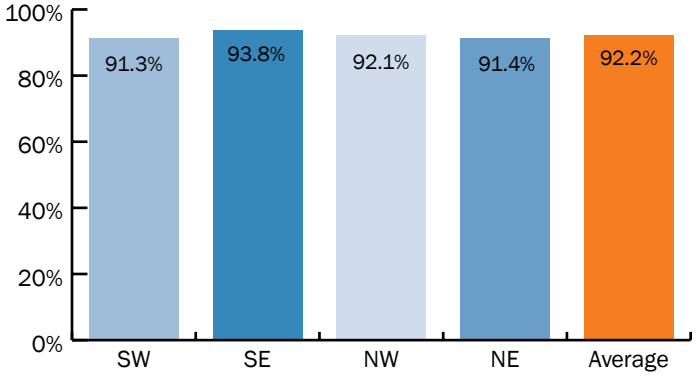
Dump/Plow Truck Age

as of April 2013



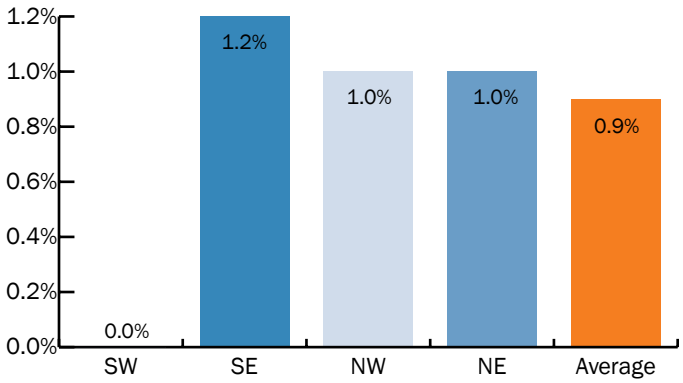
Dump Trucks, Percent In-Service

as of April 2013, by Maintenance Region



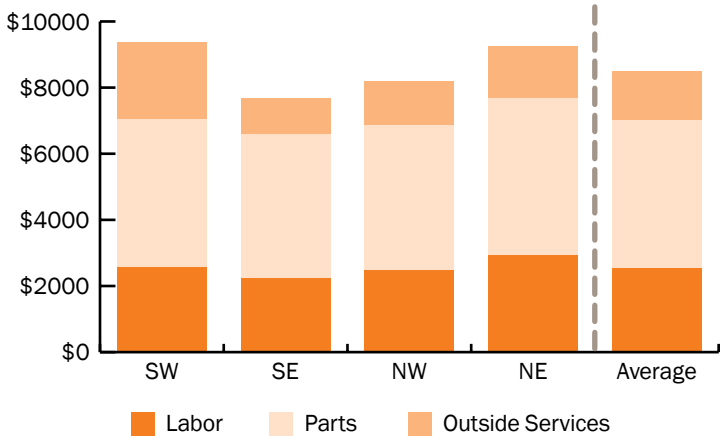
Dump Trucks, Unscheduled Downtime (Breakdowns)

as of April 2013, by Maintenance Region



Dump/Plow Trucks, Average Service Costs

Prior 12-months as of April 2013, by Maintenance Region



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
Wayne Gammell
186 Industrial Lane Road, Barre, VT 05641
Phone: (802) 828-2691 / Fax: (802) 828-3530

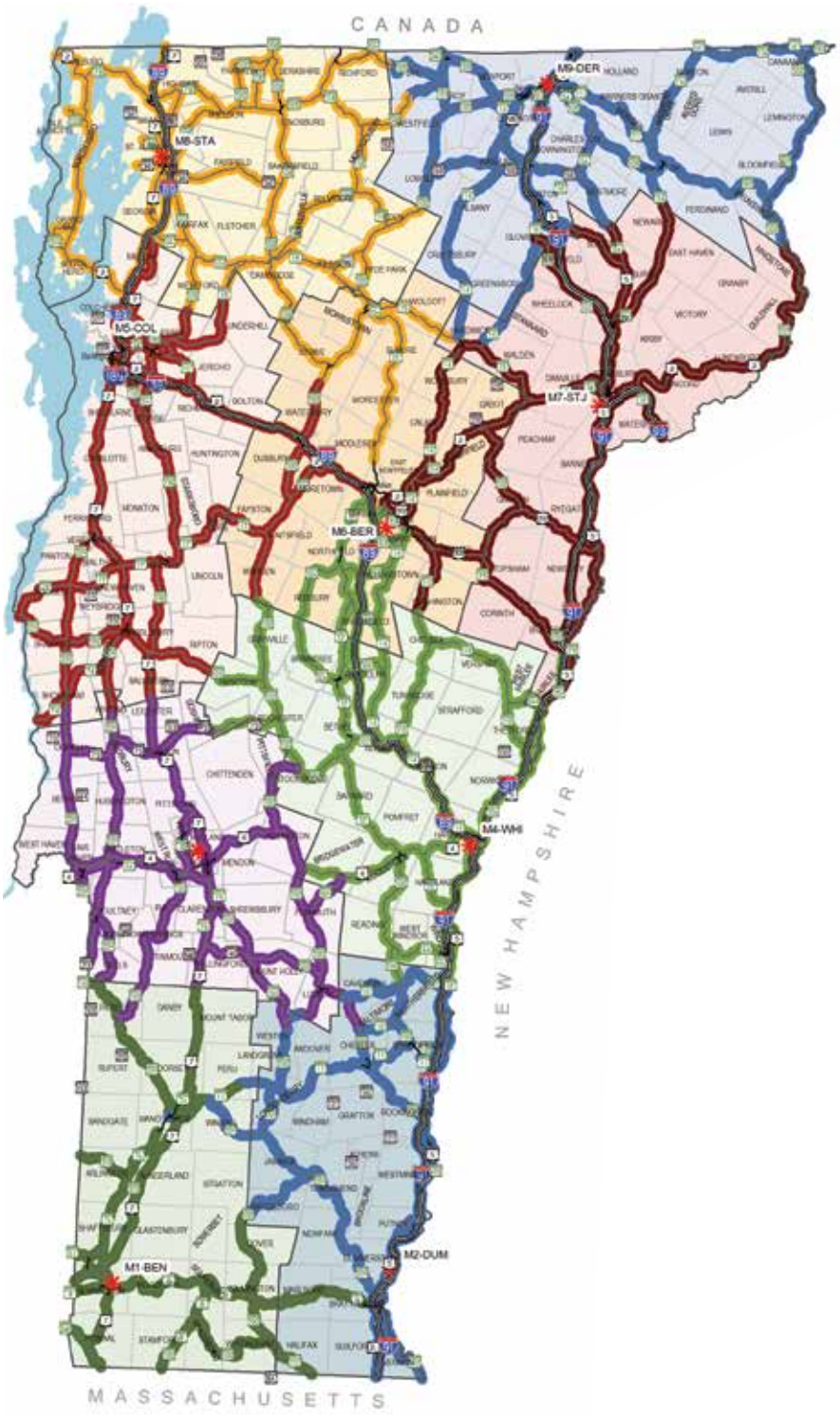
District 7
Plow route
Dale L. Perron
1068 US 5, Ste 2, St. Johnsbury, VT 05819
Phone: (802) 748-6670 / Fax: (802) 748-6671

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

Traffic Shop
Russell Velander
Phone: (802) 828-2680 / Fax: (802) 828-3553

✳ District Headquarters



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.

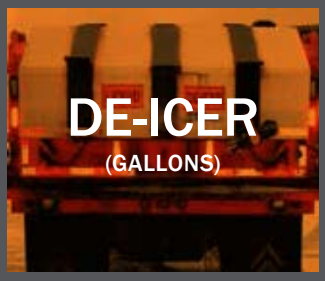
Project Manager
Christopher Taft

Facility Locations
Bennington
East Dorset
Readsboro
Wilmington
Marlboro

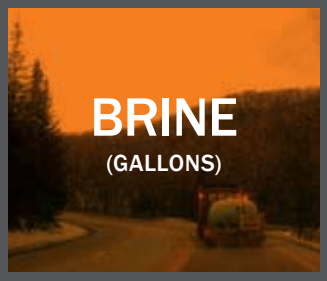
$2,080,901
WINTER MAINTENANCE COSTS

9,059

486



9,140



193,019

42
FULL TIME POSITIONS

1	Administrative Assistant B
1	Technician VI
1	Technician IV
1	DIT III
3	Area Maintenance Supervisors
3	Senior Maintenance Workers
2	Motor Equipment Mechanic III
2	Bridge Maintenance Mechanic III
4	Maintenance Equipment Specialists
1	Maintenance Worker VI
1	Maintenance Worker V
18	Maintenance Worker IV
1	Maintenance Worker II

43
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

1	Full sized van
1	2WD ½ ton or compact pick-up
8	Tandem axle plow trucks
14	Single axle plow trucks
3	4WD 1 ton with body/plow
4	4WD ¾ ton with plow
1	Grader
1	Tractor/Mower
4	4X4 Loaders
1	Excavator
3	Flatbed trailers
1	Backhoe
1	Fork lift

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
John Alexander

Facility Locations

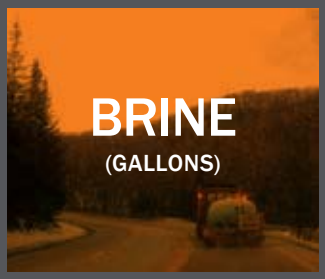
Ascutney
Chester
Dummerston
Jamaica
Londonderry
Marlboro
Rockingham
Springfield
Westminster

$2,183,364
WINTER MAINTENANCE COSTS

12,245

31

4,807



0

48
FULL TIME POSITIONS

1	Administrative Assistant B
1	Technician VI
1	Technician IV
1	Technician III
4	Area Maintenance Supervisors
6	Senior Maintenance Workers
2	Motor Equipment Mechanic III
1	Bridge Maintenance Mechanic III
1	Bridge Maintenance Mechanic II
5	Maintenance Equipment Specialists
1	Maintenance Worker VI
2	Maintenance Worker V
15	Maintenance Worker IV
2	Maintenance Worker III
2	Maintenance Worker II

51
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

1	2WD ½ ton or compact pick-up
3	2WD ¾ ton pick-up
7	Tandem axle plow trucks
18	Single axle plow trucks
1	4WD ¾ ton pick-up
1	4WD 1 ton with body/plow
6	4WD ¾ ton with plow
1	Grader
1	Tractor/Mower
6	4x4 Loaders
2	Excavators
3	Flatbed trailers
1	Backhoe

District 3

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

659 Lane Miles

District Transportation Administrator
Rob Faley

General Maintenance Manager
Bruce Nichols

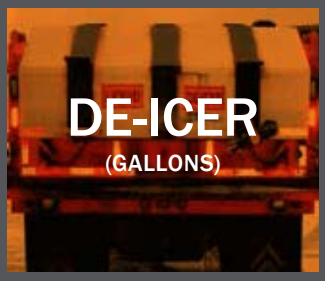
Project Manager
Tom Roberts

Facility Locations
Brandon
Castleton
Clarenden
Ludlow
Mendon
Rutland
Sudbury

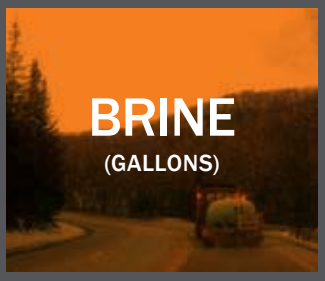
$2,830,948
WINTER MAINTENANCE COSTS

14,027

280



48,333



441,559

48
FULL TIME POSITIONS

1	Administrative Assistant B
1	Administrative Assistant A
1	Technician VI
1	Technician IV
5	Area Maintenance Supervisors
6	Senior Maintenance Workers
5	Maintenance Equipment Specialists
1	District Store Keeper
1	Vehicle Equipment Technician II
1	Motor Equipment Mechanic III
2	Bridge Maintenance Mechanic III
3	Maintenance Worker VI
2	Maintenance Worker V
15	Maintenance Worker IV
1	Maintenance Worker III

55
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

12	Tandem axle plow trucks
13	Single axle plow trucks
4	4WD ¾ ton pick-up
4	4WD 1 ton with body/plow
1	Baby dump plow truck
6	4WD ¾ ton with plow
1	Grader
2	Tractor/Mower
7	4X4 Loaders
1	Mini excavator
1	Excavator
3	Flatbed trailers

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

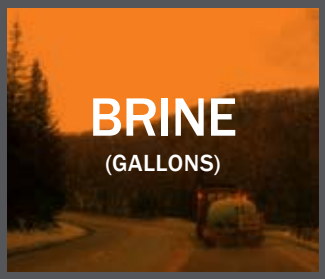
Fairlee
Randolph
Reading
Rochester
Royalton
Sharon
Thetford
Tunbridge
White River Jct.
Windsor
Williamstown
Woodstock

$4,147,925
WINTER MAINTENANCE COSTS

20,595

95

24,936



9,449

70
FULL TIME POSITIONS

1	Administrative Assistant B
1	Technician VI
1	Technician IV
2	Technician II
6	Area Maintenance Supervisors
8	Senior Maintenance Workers
4	Maintenance Equip. Specialists
1	District Store Keeper
2	Motor Equipment Mechanic III
1	Maintenance Worker VI
1	Maintenance Worker V
31	Maintenance Worker IV
7	Maintenance Worker III
2	Maintenance Worker II

82
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

1	Full sized van
1	2WD ¾ ton pick-up
1	4WD ½ ton pick-up
9	Tandem axle plow trucks
34	Single axle plow trucks
5	4WD ¾ ton pick-up
1	4WD 1 ton with body/plow
1	Baby dump plow truck
8	4WD ¾ ton with plow
1	Grader
2	Tractor/Mower
9	4x4 loaders
2	Excavator
4	Flatbed trailers
2	Backhoe
1	Tow plow

District 5

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

937 Lane Miles

District Transportation Administrator
David Blackmore

General Maintenance Manager
Art Danyow III

Project Manager
Richard Hosking

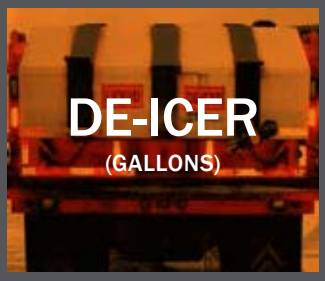
Facility Locations

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

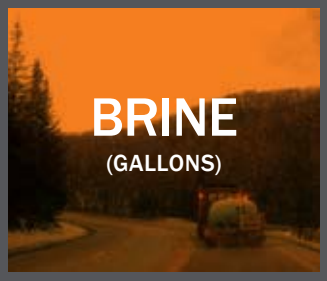
$3,902,790
WINTER MAINTENANCE COSTS

15,926

319



59,429



1,024,076

64
FULL TIME POSITIONS

1	Administrative Assistant B
1	Technician VI
1	DIT II
5	Area Maintenance Supervisors
6	Senior Maintenance Worker
5	Maintenance Equip. Specialists
2	Bridge Maintenance Mechanic III
1	Bridge Maintenance Mechanic II
1	Electrical Maintenance Specialist II
1	Motor Equipment Mechanic III
1	Motor Equipment Mechanic II
2	Maintenance Worker VI
2	Maintenance Worker V
20	Maintenance Worker IV
7	Maintenance Worker III
5	Maintenance Worker II

73
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

1	2WD ¾ ton pick-up
14	Tandem axle plow trucks
24	Single axle plow trucks
5	4WD 1 ton with body/plow
3	Baby dump plow truck
5	4WD ¾ ton with plow
1	Grader
3	Tractor/Mower
6	4X4 Loaders
2	Excavators
4	Flatbed trailers
1	Backhoe
2	Water tanker
1	Fork lift
1	Aerial bucket truck

District 6

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

Maintenance Transportation Administrator
Wayne Gammell

Assistant Maintenance Transportation Administrator
George McCool

Statewide Bridge Project Manager
William Sargent

Statewide Paving Project Manager
Edward (Ted) Domey

Garage Locations
Berlin
Vermont Learning Campus

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

11
FULL TIME POSITIONS

1	Administrative Assistant B
1	Manager IV
1	District Project Manager
1	Special Projects Manager
1	Program Technician II
1	Technician II
1	Administrative Services Technician

16
PIECES OF DISTRICT OWNED EQUIPMENT

3	Man lifts
6	Trailer mounted attenuators
1	Portable screen plant
6	Portable traffic signals

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

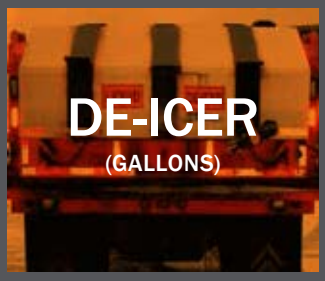
Facility Locations

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

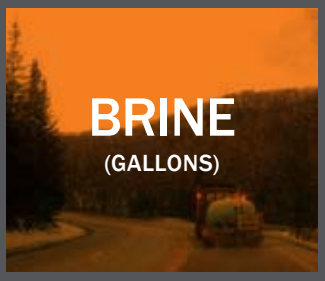
$3,913,972
WINTER MAINTENANCE COSTS

19,886

1,039



16,017



5,910

64
FULL TIME POSITIONS

1	Administrative Assistant B
1	Technician VI
1	DIT I
6	Area Maintenance Supervisors
6	Senior Maintenance Workers
7	Maintenance Equip. Specialists
1	District Storekeeper
1	Bridge Maintenance Mechanic IV
1	Bridge Maintenance Mechanic II
2	Motor Equipment Mechanic III
1	Maintenance Worker VI
1	Maintenance Worker V
31	Maintenance Worker IV
1	Maintenance Worker III

66
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

1	Full sized van
3	2WD ¾ ton pick-up
1	4WD ½ ton pick-up
16	Tandem axle plow trucks
20	Single axle plow trucks
1	Baby dump plow truck
6	4WD ¾ ton with plow
1	Grader
8	4X4 Loaders
2	Mini excavator
1	Excavator
5	Flatbed trailers
1	Backhoe

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

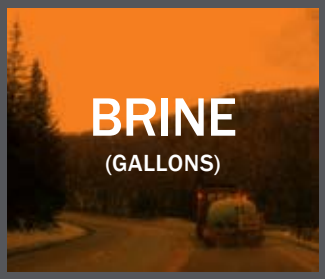
Cambridge
Eden
Enosburg
Georgia
N. Hero
Highgate
Montgomery
Morrisville
St. Albans

$4,120,404
WINTER MAINTENANCE COSTS

18,585

15

78,154



1,032,096

57
FULL TIME POSITIONS

1	Administrative Assistant B
1	Technician VI
1	Technician II
1	DIT II
5	Area Maintenance Supervisors
8	Senior Maintenance Workers
5	Maintenance Equip. Specialists
1	District Storekeeper
1	Bridge Maintenance Mechanic III
1	Bridge Maintenance Mechanic II
1	Vehicle and Equipment Technician II
1	Motor Equipment Mechanic II
5	Maintenance Worker VI
22	Maintenance Worker IV
1	Maintenance Worker II

71
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

3	2WD ¾ ton pick-up
13	Tandem axle plow trucks
21	Single axle plow trucks
1	4WD 1 ton with body/plow
2	Baby dump plow trucks
6	4WD ¾ ton pick-up
2	4WD ¾ ton with plow
2	4WD ½ ton pick-up
1	Grader
1	Tractor/Mower
6	4X4 Loaders
2	Excavators
4	Flatbed trailers
4	Backhoe
1	Water tanker
1	Forklift Tow plow

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
Scott Keysar

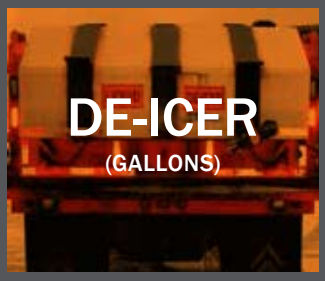
Facility Locations

Barton
Bloomfield
Canaan
Derby
Irasburg
Island Pond
Westfield
Westmore

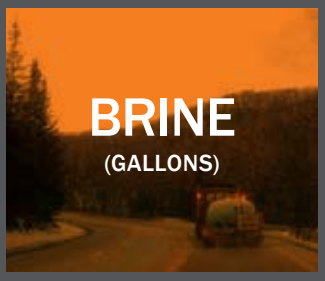
$2,784,443
WINTER MAINTENANCE COSTS

12,373

544



6,064



28,398

52
FULL TIME POSITIONS

1	Administrative Assistant B
1	Technician IV
2	Technician VI
1	DIT II
5	Area Maintenance Supervisors
6	Senior Maintenance Workers
5	Maintenance Equip. Specialists
1	District Storekeeper
2	Motor Equip. Mechanic III
2	Bridge Maintenance Mechanic III
2	Bridge Maintenance Mechanic II
1	Maintenance Worker VI
4	Maintenance Worker V
15	Maintenance Worker IV
2	Maintenance Worker III

61
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

1	2WD 1 ton pick-up with body
1	2WD ¾ ton pick-up
1	2WD ½ ton or compact pick-up
8	Tandem axle plow trucks
16	Single axle plow trucks
11	4WD 1 ton with body/plow
4	4WD ¾ ton pick-up
4	4WD ¾ ton with plow
1	Grader
7	4X4 Loaders
1	Mini excavator
1	Excavator
3	Flatbed trailers
1	Backhoe
1	Fork lift

Traffic Shop

US 302 #1756
Berlin, VT 05602
(802) 828-2680

Traffic Operations Manager
Russell Velander

Facility Locations
Berlin
Colchester
Mendon

13
FULL TIME POSITIONS

1	Administrative Assistant B
3	Traffic Shop Crew Supervisors
6	Pavement Marking and Sign Crew Specialist II
1	Electric Maintenance Specialist II
1	Electric Maintenance Specialist I

21
PIECES OF CENTRAL GARAGE ASSIGNED EQUIPMENT

1	2WD 1 ton pick-up with body
1	2WD ¾ ton pick-up
1	2WD ½ ton or compact pick-up
6	Stakebody truck
5	Paint truck
1	Aerial bucket truck
1	Auger truck
3	Sign truck
2	Fork lift

Central Garage

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

Superintendent
Ken Valentine

Facility Locations
Berlin

39
FULL TIME POSITIONS

1	Business Systems Analyst
1	Parts Specialist III
2	Parts Specialist II
3	District Storekeepers
1	Financial Technician II
1	Financial Specialist II
1	Financial Administrator II
4	Vehicle and Equip. Technician I
9	Vehicle and Equip. Technician II
4	Vehicle and Equip. Mechanic II
3	Motor Equip. Mechanic III
4	Central Garage Regional Supervisor
1	Fleet Operations Supervisor
1	Maintenance Mechanic II
1	Maintenance Mechanic I
1	Garage Maintenance Supervisor

18
PIECES OF EQUIPMENT AT CENTRAL GARAGE

16	Spare dump trucks (two in each district)
1	Spare grader
1	Servo lift

540
PIECES OF CENTRAL GARAGE OWNED EQUIPMENT

43	Assigned to District 1
51	Assigned to District 2
55	Assigned to District3
82	Assigned to District 4
73	Assigned to District 5
0	Assigned to District 6
66	Assigned to District 7
70	Assigned to District 8
61	Assigned to District 9
21	Assigned to Traffic Shop
18	At Central Garage

Structures Annual Report

INTERSTATE BRIDGE PROGRAM
STATE HIGHWAY BRIDGE PROGRAM
TOWN HIGHWAY BRIDGE PROGRAM

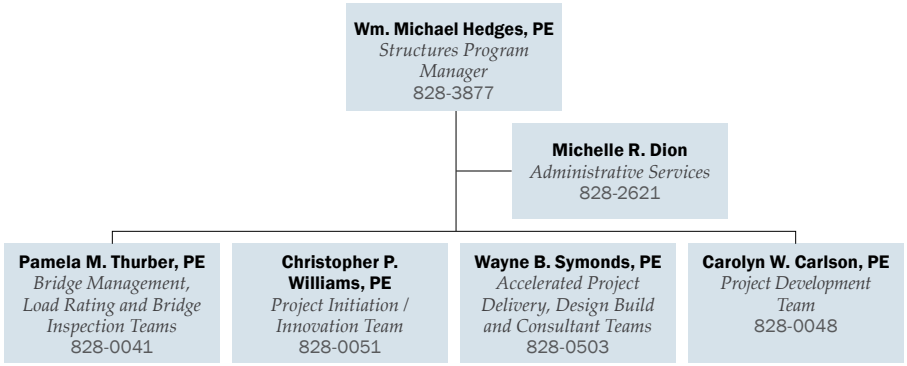
Program Overview

2013 has been an exciting year for VTrans' Structures Section. Structures recently reorganized to improve project delivery and treatment selection. The Project Initiation and Innovation Team (PIIT) was formed to develop better project scopes, schedules, and budgets. This team looks to identify projects which can be advanced and constructed more quickly due to reduced resource and right-of-way (ROW) impacts. Accelerated Bridge Program (ABP) teams were also formed to quickly advance these projects utilizing Accelerated Bridge Construction (ABC) techniques where road closures are measured in weeks, days, and even hours rather than months and years. Still other teams were formed to utilize staff more effectively on more traditional projects.

Bridge Management has partnered with the PIIT and Program Development's Asset Management Unit to assure that the right treatment has been selected for the right bridge at the right time. Similarly Bridge Inspection has strived to reach full compliance with new federal inspection metrics.

Inspecting our network of nearly 4,000 bridges to assure public safety and expediting the delivery of projects to maintain and enhance the interstate, state, and town highway bridges will continue to be the main focus of the Structures Program. Continuing repair work and replacing temporary bridges made necessary by Tropical Storm Irene increases our challenge.

Vermont has 2,716 long structures greater than 20 feet on interstate, state, and town routes and another 1,261 short structures greater than 6 to 20 feet on the state system that VTrans inspects. Inspections are conducted every 24 months on long structures and every 60 months on short structures unless conditions warrant more frequent inspections. Deck, superstructure, substructure, and channel conditions are all evaluated and each component is ranked on a scale of zero to nine, with nine indicating an excellent condition and zero a failed condition. Conditions are reported to the



Federal Highway Administration (FHWA) and, by and large, a condition rating of four (poor) or lower for any component determines that the bridge is structurally deficient. Of those 2,716 long structures, 8.32 percent are considered structurally deficient by federal standards.

Using national adjusted bridge data and report on FHWA's website, Vermont ranks 28th among the 50 states for percentage of structurally deficient bridges. This is due, in large part, to the age of our bridge network. Many of our bridges replaced bridges flooded in 1927 and are now in need of replacement or major rehabilitation. Additionally, many of our interstate bridges now exceed 50 years of age and are in need of rehabilitation.

Based on our data, Vermont's interstate bridges were last found to be 2.56 percent structurally deficient. Bridges on the state system were found to be 8.25 percent structurally deficient, and bridges on the town system were found to be 9.49 percent structurally deficient.

FHWA is transitioning to a measure that takes into account the size of the bridges when evaluating structural deficiencies. A 25 foot bridge in poor condition should not be compared equally to a 500 foot bridge in poor condition. It is for that reason we too are transitioning to measures that take into account bridge deck area. Our strategy will vary with the highest standard for the interstate where traffic and expectations are highest. State bridges provide greater movement of people and goods than town bridges so state bridge standards will fall between the interstate and town highway bridge standards.

To address these needs Vermont utilizes bridge management systems, techniques, and logic along with a prioritization system to identify appropriate treatments for the bridge network and the appropriate timing. These treatments can range from complete replacements and major rehabilitations to preservation activities such as painting and waterproofing.

Bridge conditions are improving. Funding increases have occurred nearly every year from $48.7 million in FY05 to $132.7 million in FY14. This is a result of numerous congressional earmarks, ARRA funding, Bridge Maintenance funding, TS Irene ER, and Administration and Legislative support in recent years.

Vermont has also ramped up its Bridge Maintenance and Preservation activities which will pay dividends well into the future. From its modest start of $4.7 million in FY06, Bridge Maintenance has climbed to $28.6 million in FY14. These treatments do little to improve structural deficiencies, but will extend the lives of our better bridges.

With the continued support of the Legislature we hope to continue to improve overall bridge conditions and further reduce the number of structurally deficient bridges in the state. Please read on to find out more about the state of our bridges, our bridge programs, and the opportunities that lay ahead.

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 2013)

	Interstate	State Highway	Town Highway	Other	Totals
Long Structures	313	776	1,622	5	2,716
Short Structures	211	1,050	*	*	1,261
Totals	524	1,826	1,622	5	3,977

Long Structures

	Interstate	State Highway	Town Highway	Other	Totals
Above Ground	265	714	1,530	4	2,513
Buried	48	62	92	1	203
Totals	313	776	1,622	5	2,716

Short Structures

	Interstate	State Highway	Town Highway	Other	Totals
Above Ground	0	173	*	*	173
Buried	211	877	*	*	1,088
Totals	211	1,050	*	*	1,261

Vermont's "Off-Highway" Structure Population (as of December 2013)

	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.).

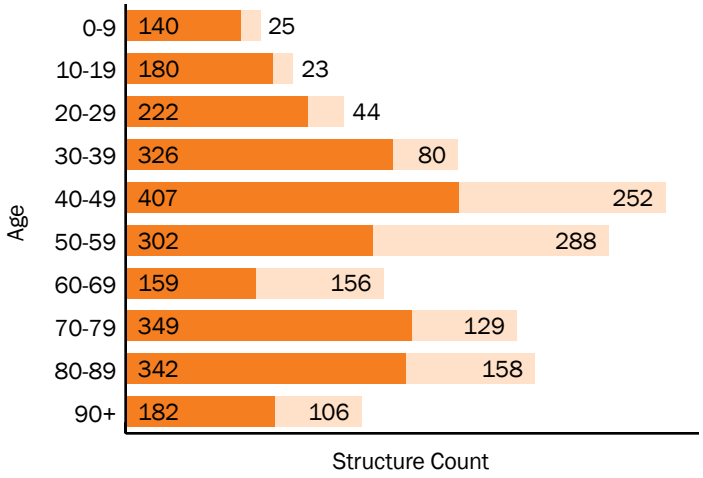
Bridge Conditions

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.

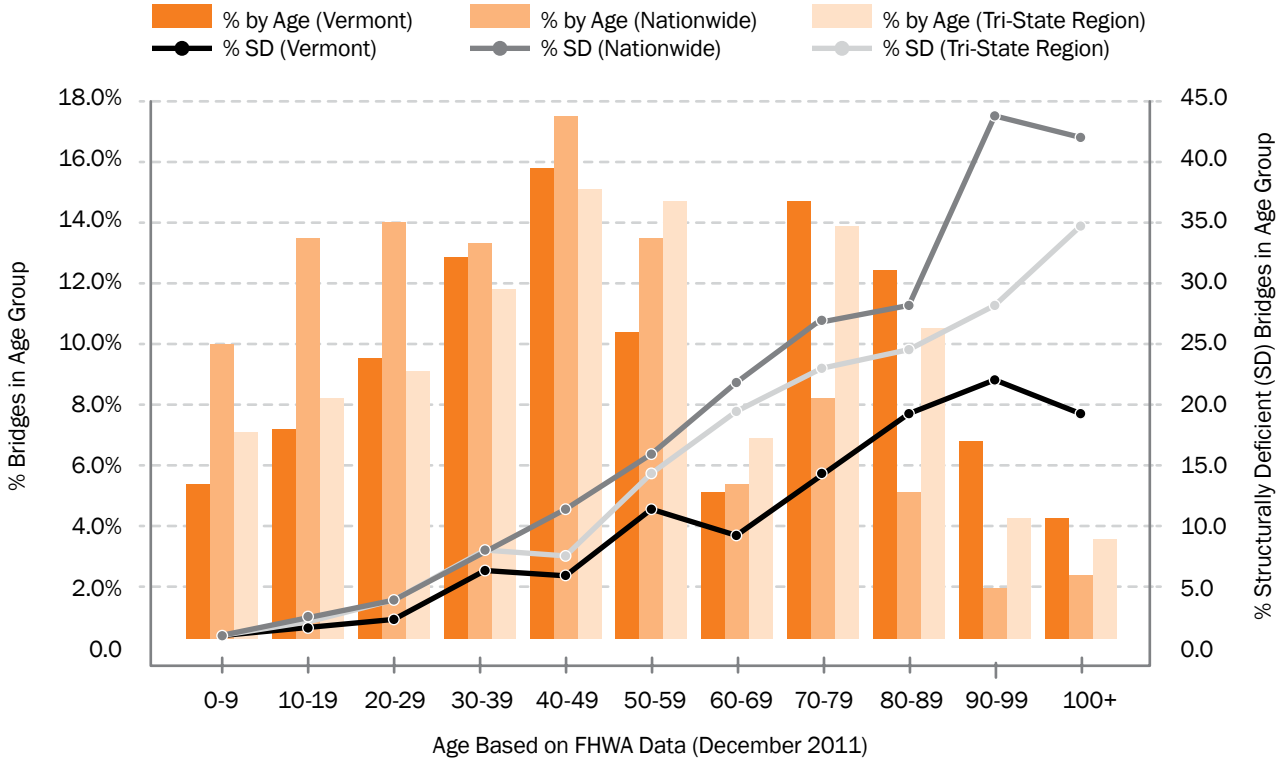
- Interstate, State Highway, and Town Highway Long Structures
- Interstate and State Highway Short Structures
- * Based on year of original build (as submitted to FHWA, April 2013)

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.

BARNET, VT/MONROE, NH. Lacing on a truss member.

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.

WINDSOR. A bridge inspection team utilizes a service lift on I-91.

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.

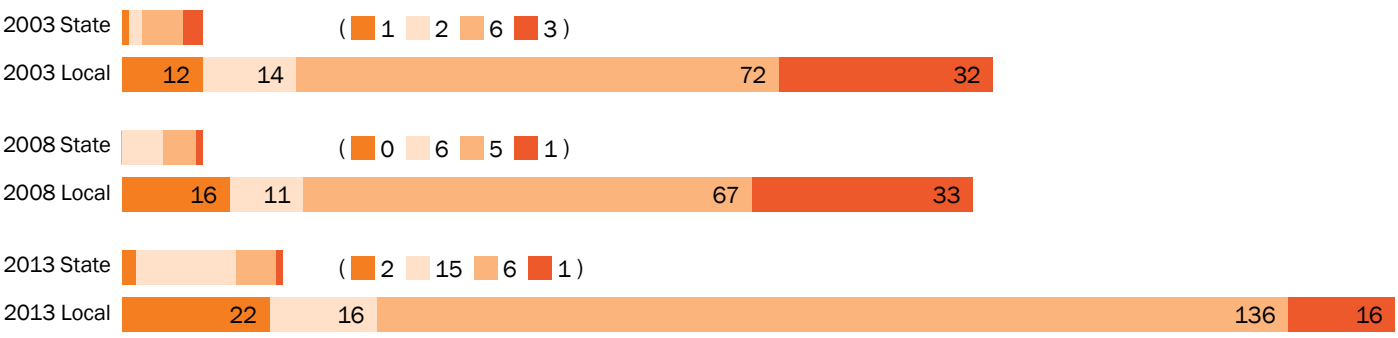
Temporary
Open but with a temporary structure in place to carry legal loads while original structure is closed and awaiting replacement or rehabilitation.

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, 2013)



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.

WOODSTOCK. The Taftsville covered bridge was completely restored after being severely damaged by Tropical Storm Irene.

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 2013)

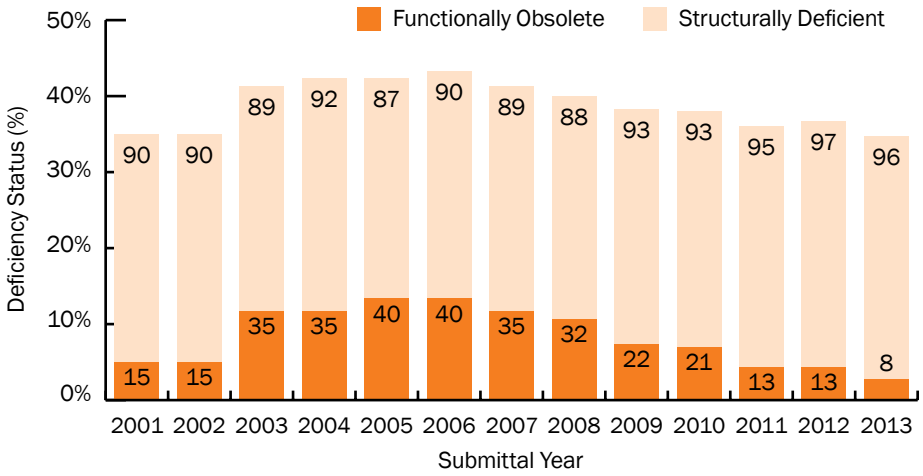
	FO	% FO	SD	% SD
Interstate "Long" Structures	96	30.67%	8	2.56%
State Highway "Long" Structures	100	12.89%	64	8.25%
Town Highway "Long" Structures	357	22.01%	154	9.49%
On-System "Short" Structures	N/A	N/A	109*	8.64%
System Total	553	—	335	—

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

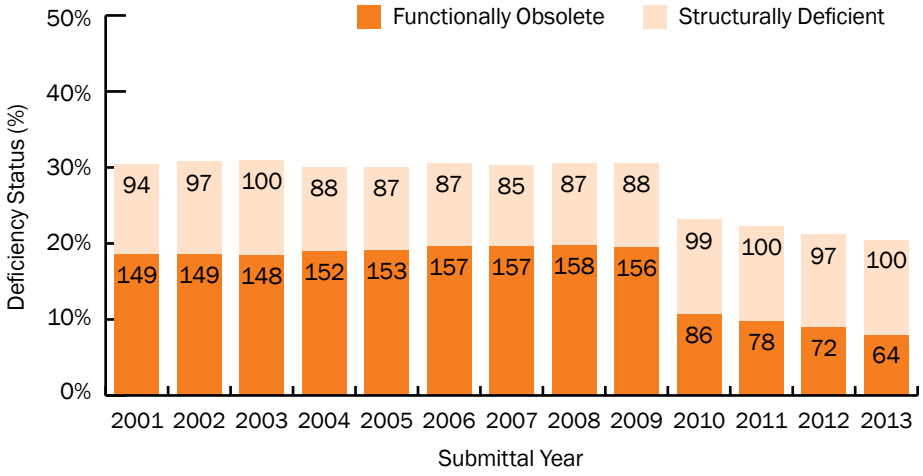
BRATTLEBORO. Demolition begins on the I-91 bridge across the West River.

BRATTLEBORO. Cross-section of the new bridge being built over the West River.

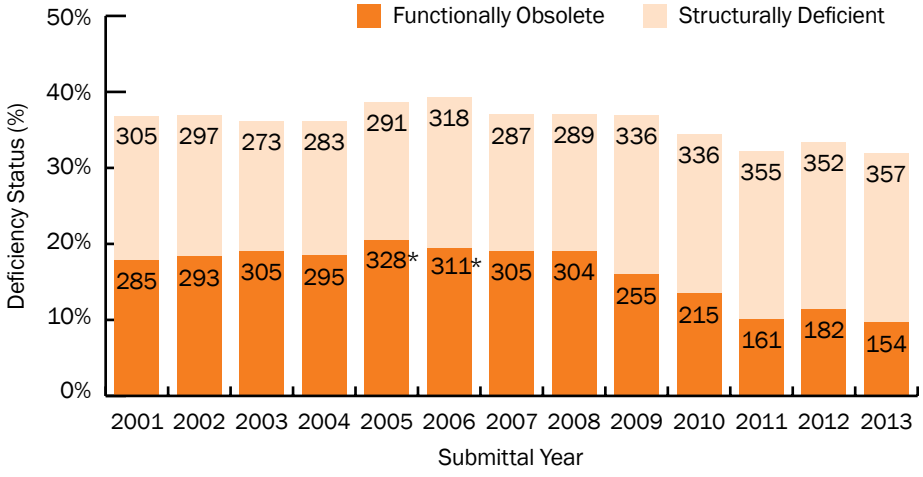
Interstate Trends



State Highway Trends



Town Highway Trends



* Corrected to reflect oversight in NBI inventory rating reporting format

New 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.

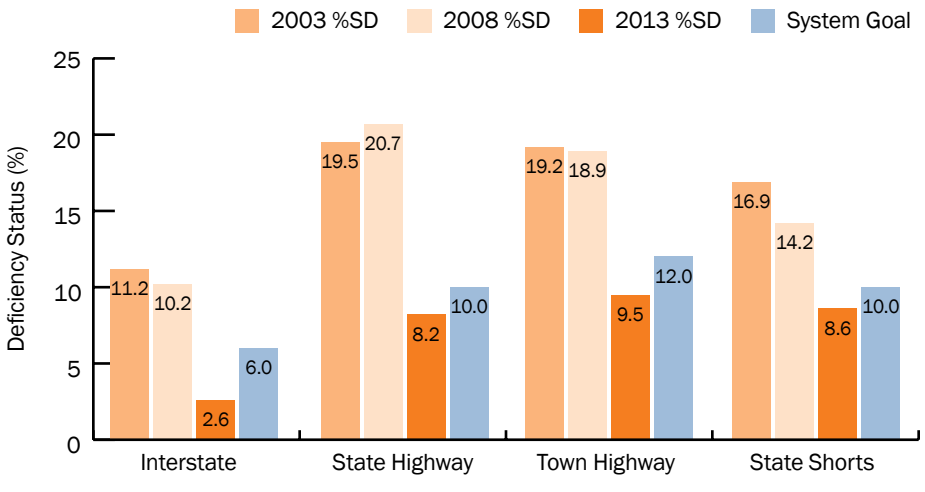
- 6% on the interstate system (18 bridges)
- 10% on the state highway system (77 bridges)
- 12% on the town highway system (194 bridges)
- 10% on interstate/state highway system culverts (126 culverts)

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

SPRINGFIELD. Rehabilitated truss bridge.

Structural Deficiency Over Time by System

* 2003, 2008 and 2013 represent year data submitted to FHWA



Accelerated Bridge Program

VTrans implemented the Accelerated Bridge Program (ABP) in January, 2012. The primary focus of the ABP is to improve the condition of Vermont's bridges while reducing project costs through expedited project development, delivery, and construction. For example, one of the fundamental performance goals for the program is to reduce the standard design phase from 60 to 24 months. In 2013, 12 projects met or exceeded this goal out of a possible 15.

The ABP is dedicated to expediting project delivery and fostering an environment of innovation, collaboration, and efficiency with a strong emphasis on customer service. The program continues to seek and implement strategies to acquire early and continued public support, standardize design and plan preparation, vet alternative contracting methods, and incorporate technologies to shorten project delivery and reduce impacts to the environment and traveling public during construction. Through these initiatives, the VTrans ABP has become a recognized national leader.

This year's highlights include:

Focused Customer Service

Project managers are seeking earlier involvement from the regional planning commissions, towns and stakeholders to obtain as much information as possible 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. To create greater interest in ABP deployment at the town level, Vermont Act 153 reduced the local share for all town highway bridge projects with road closures by fifty percent. Road closures reduce overall construction mobility impacts while reducing workers exposure to traffic hazards.

Standardization and Project Specifications

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 a standardized approach to designing and constructing 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 bridge closure periods and associated impacts to the traveling public and scheduling requirements to allow for increased coordination between the contractor and agency staff.

Streamlining the Project Development Process

The ABP team continues to implement a streamlining initiative that has produced measurable reductions in project delivery times. For example, short term road closures significantly reduce or in many cases eliminate impacts to right-of-way, utilities, and environmental resources shortening steps in the project development process. This provides better predictability of project schedule due to reduced risk of complicated resource impacts. To that end, project team members strive to expedite communication, project reviews and decision making to meet or exceed our program goals. In addition, a data sharing portal was created that allows files to be shared instantly with project team members, decreasing the amount of time it takes to transfer information, and aids in timely review. To aid in this effort, the ABP was awarded a $250,000 national grant to assess the program and identify and implement strategies to further expedite project delivery.

Innovative Contracting Techniques

The Structures Section successfully completed the first two Design-Build (D-B) projects including the Checkered House Bridge in Richmond. With a D-B project, design and construction easily overlap, allowing for fast track construction. Three more interstate bridge replacement projects are underway in Brattleboro, Milton, and Windsor representing $102.5 M in construction costs. A new contracting method known as Contract Manager/ General Contractor (CMGC) was recently implemented on two interstate bridge replacement projects in Hartford. This alternative to traditional design-bid-build projects ensures successful, fast track implementation of large projects and innovative technologies by collaborating with the contractor during the design phase. The Hartford project will deploy Structures' first lateral slide. Each bridge will be constructed adjacent to the existing structures and slid into place over a weekend closure period.

Celebration of Success

- 21 projects were designated into the accelerated bridge program over the past year.
- 52% (11 projects) of the designated ABP are state bridge projects while the remaining 48% (10 projects) are town highway bridge projects.
- 15 ABP projects were advertised in 2013. Of the 15 projects, 80% (12 projects) were advertised within 24 months. The remaining three were advertised in 29, 30, and 33 months.
- All 7 ABP advertised in 2012 were successfully constructed during the 2013 construction season. 6 of these projects were Irene emergency projects.

Preventive Maintenance

Project Selection and 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.

MILTON. A bridge over I-89 tented for painting. By removing aging lead paint and replacing it with an advanced polymer coating, we simultaneously extend the life of the structure and eliminate an environmental hazard.

Challenges and Opportunities

Tropical Storm Irene brought both challenges and opportunities. The Structures Section played an integral role in the response and recovery. Initially the inspections, temporary repairs, new temporary bridges and expedited project deliveries were daunting. As the waters receded and dust settled, we realized that opportunities had surfaced. If there is a will, and all of our partners pull together, we can get projects developed and constructed more quickly.

This led us to develop the Project Initiation and Innovation team (PIIT) and the Accelerated Bridge Program (ABP) teams. By doing more investigation upfront, projects can move forward more quickly and with fewer costly changes. Finding appropriate locations where we can forego temporary bridges and avoid the resource and ROW impacts can save us considerable time and money in permitting, design and construction. This way, time and money can be better spent on the next priority.

Both nationwide and here in Vermont, bridges are aging as traffic demands increase. Two major events—the 1927 flood and the construction of the interstate system—saw large numbers of structures built within short time frames. Vermont's challenge is how to properly plan for and meet the needs of these aging structures. Meeting this challenge is multifaceted and includes everything from having a vigilant inspection program to using asset management principles to guide decisions and a commitment to maintaining a long-term preventive maintenance program.

Bridge maintenance is not just about fixing bridges when they break down. Proper care uses preventive maintenance to breathe new life into not-so-new bridges before they have the chance to deteriorate. Frequent inspections, not just by trained inspectors but also by those tasked with routine maintenance, along with a robust preventive maintenance program, is vital to extending performance, keeping costs down, and maintaining safety.

JAMAICA. This bridge on VT 100 utilized accelerated project delivery, moving from survey to contract plans in only 11 months.

At this point all Tropical Storm Irene bridge projects have been completed or are under contract. Lessons learned have helped enhance our plan development, permit clearance and right-of-way acquisitions to promote a streamlined project development and contracting processes.

Alternative contracting methods, including Construction Management General Contracting (CMGC), design-build contracts and the use of simplified designs, standards, and contracting have all been used this past year. Initial experience seems promising so each method is being considered as options for future projects.

Advancing preventive maintenance, improving prediction models, applying emerging technologies, developing decision-making tools and refining appropriate performance measures and goals are just some of the opportunities that VTrans is committed to moving forward. We will continue to work with municipalities so they not only understand the need, but have the necessary tools to maintain and preserve their assets.

Legislative and administrative support for bridges remains strong and diligence will have its rewards. Excellent bid prices, efficient designs and strong funding levels that support bridge maintenance and rehabilitation efforts are cause for excitement and indicate a readiness to succeed.

Please refer to the online version of this report for additional copies.

Highway Safety and Design

Program Overview

The Highway Safety and Design Section is responsible for the traffic, safety, and roadway conditions associated with one of our state's most valuable assets: 3,200 two-lane miles of state highway. As part of this responsibility, the section inventories the associated assets, evaluates conditions, analyzes crashes, and ultimately delivers projects to address the needs of the network.

During 2013, the Section continued to deliver projects that improve the safety and mobility for all users of our highway network. This included the delivery of 287 miles of paving projects across the network, and the construction of major projects such as the Morristown Alternate Truck Route, US 2 upgrades in Danville, a new roundabout in Cambridge at the intersection of VT 15 and VT 108, and improvements to VT 73 in Sudbury and Brandon. In addition, numerous slope stabilization, culvert replacement, and safety improvement projects across the state were completed. The Section also continued to support the state's response to Tropical Storm Irene. This was accomplished by providing support to the Operations Division recovery efforts and by progressing the engineering and permitting of 30 projects, involving repairs to 130 miles of affected roadway corridors and 20 individual sites outside those corridors.

VERSHIRE. Newly paved VT 113.

HARTFORD. Approaching Quechee Gorge on VT 4. Centerline rumble stripes were one of many safety improvements made in partnership with the Vermont Highway Safety Alliance.

The Section continues to be a leader in highway safety initiatives throughout the state. During this past year, the Section, in conjunction with the Vermont Highway Safety Alliance, published the new Strategic Highway Safety Plan. The plan defines critical emphasis areas to be addressed in support of our goal to reduce the number of major crashes on Vermont's highways. The Highway Safety and Design Section's greatest impact on highway safety is through effective engineering of improvements and projects on state and local highways. The two primary conduits for many of these improvements are the Highway Safety Improvement Program and the High Risk Rural Road program. Both of these programs, along with all VTrans projects, focus on cost effective implementation of highway safety improvements.

It is important to note continued improvement in the highway network condition. For the second year in a row, the number of miles of highway rated in very poor condition is below our 25% performance goal, this year having been reduced to 21%. The fiscal year 2015 Governor's recommended budget for the Paving, Roadway, and Traffic and Safety programs will fund the continued principles of preventive maintenance, highway safety and major projects within the Highway Safety and Design Section.

This year's annual report is broken into four sections:

- Pavement Management
- Roadway Design
- Traffic and Safety
- Asset Management

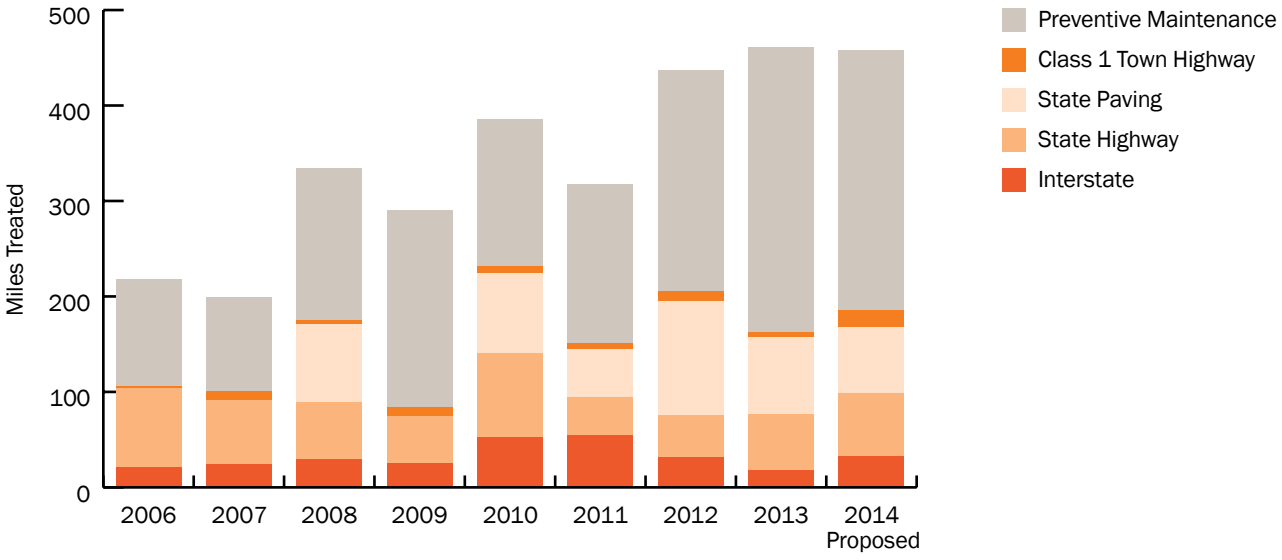
For further information regarding the VTrans Highway Safety and Design Section, please contact Ken Robie, P.E., Program Manager at (802) 828-2645 or email ken.robie@state.vt.us.

Pavement Management

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

Category	Construction Season								
	Proposed 2014	2013	2012	2011	2010	2009	2008	2007	2006
Interstate	33	18	32	55	53	25	30	24	21
Carried forward from previous year	0	31	0	6	0	0	0	12	0
Incomplete, to be carried forward	0	0	31	0	6	0	0	0	12
Rutfilling (single lane miles)	0	0	0	0	0	0	0	6	12
Surface Treatments	62	61	37	44	45	52	21	15	9
State Highway	65	59	43	39	87	50	59	68	83
Carried forward from previous year	26	7	0	3	27	0	10	0	15
Incomplete, to be carried forward	0	26	7	0	3	27	0	10	4
Surface Treatments	55	25	85	12	26	7	14	0	0
Class 1 Town Highway	17	6	10	6	8	9	4	9	2
Carried forward from previous year	0	0	0	1	0	2	0	0	1
Incomplete, to be carried forward	0	0	0	0	1	0	2	0	0
State Paving	70	80	120	51	84	0	82	0	0
Crack Seal	156	212	110	111	82	147	124	77	82
Carried forward from previous year	0	0	0	0	0	0	0	0	9
Incomplete, to be carried forward	0	0	0	0	0	0	0	0	0
Paving Project Total (items in orange)	211	201	205	161	259	86	185	113	122
Preventive Maintenance Total (items in gray)	273	298	232	167	153	206	159	98	112

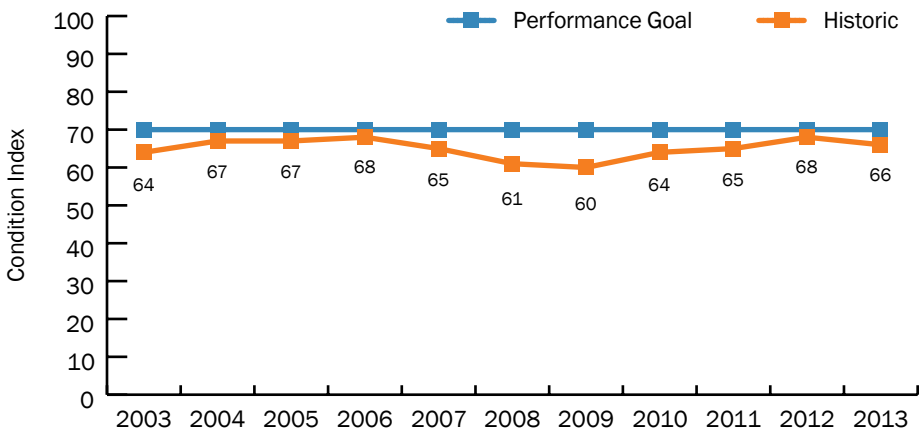
Paving Mileage Summary (as per table above)



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.

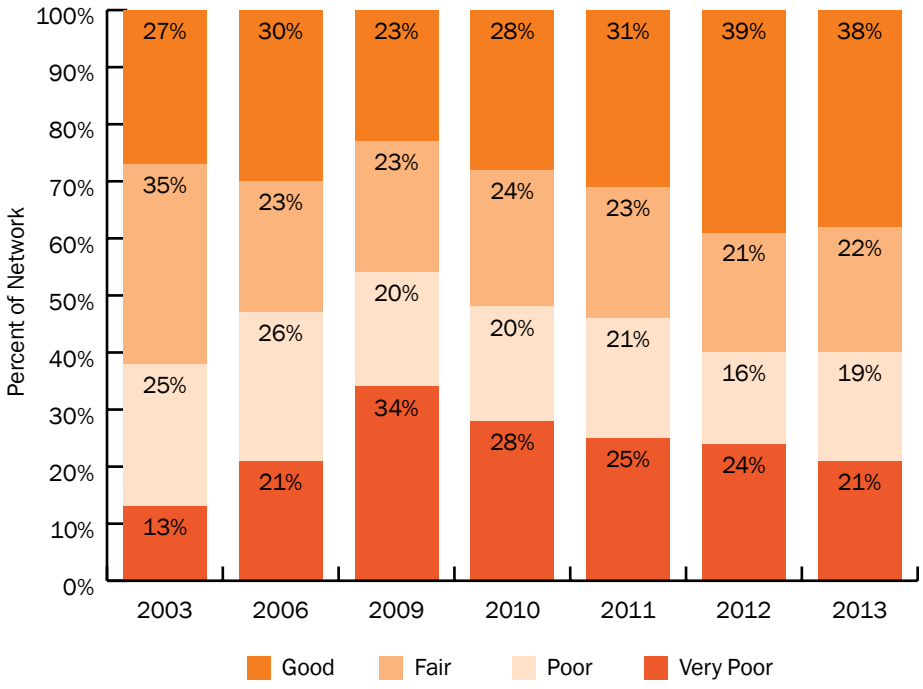
Travel Weighted Average Network Condition



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%.

Conditions Over Time, Unweighted



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

Recycled-Asphalt Pavement (RAP) Program

During the 2008 legislative season, lawmakers challenged VTrans to develop specifications that would facilitate the increased use of recycled-asphalt pavement (RAP) in our hot mix asphalt pavements. In concert with that requirement they asked that we also monitor our production and usage of the material to get a better understanding of its true value.

RAP generated from our projects is recycled back into VTrans paving projects as shoulder backing material, subbase material, cold mix base course, and as a percentage of our hot mix base course. The total RAP generated by VTrans paving activities in 2013 is estimated at 262,500 tons, of which approximately 192,000 tons were recycled back into these projects in the aforementioned manner.

From an economics standpoint, using RAP in this capacity yields an estimated salvage value of approximately $5 to $20/ton based on 2013 bid data. From this perspective, the value of the 2013 harvest is estimated to be somewhere between $1,312,500 and $5,250,000 with either figure representing a significant value.

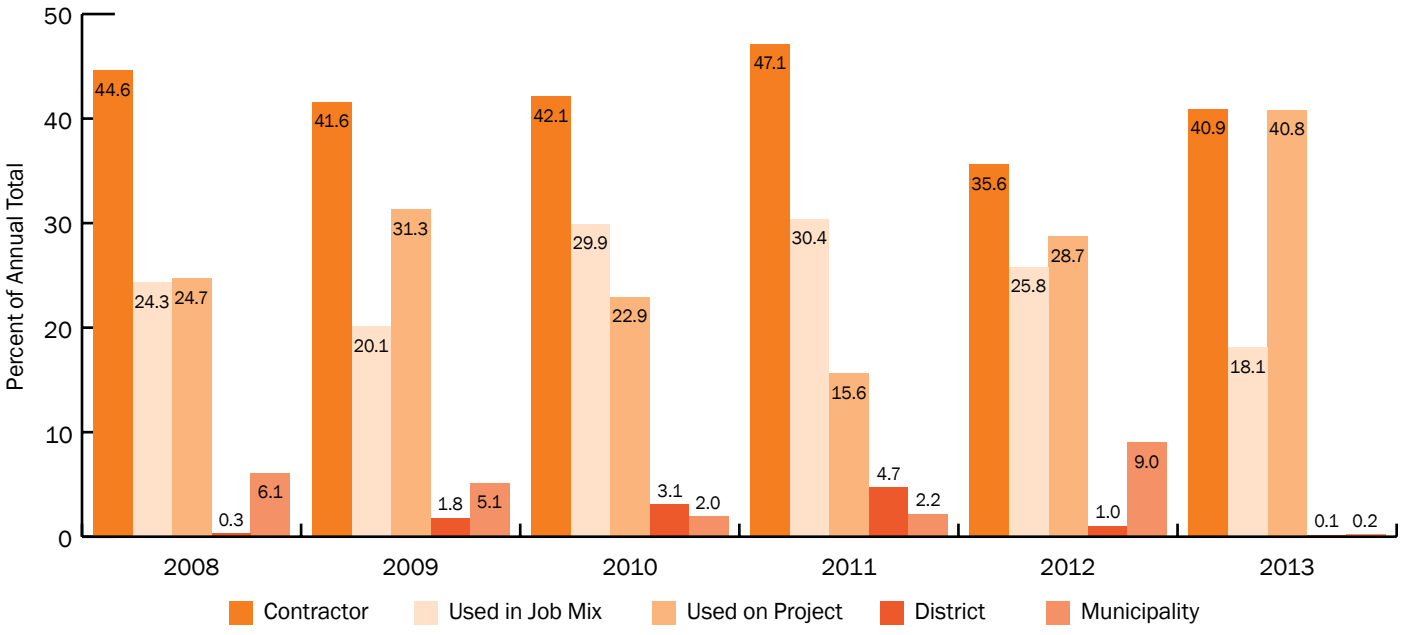
In addition to economic benefits, using RAP provides many benefits to the environment. The use of RAP in general reduces the consumption of natural resources. A substantial environmental benefit of processing RAP on site comes from significantly reducing the number of truck trips required to haul material used for cold mix base course to and from the project had RAP not been utilized on site. The reduced truck trips translate to less greenhouse gas emissions and less road pollution. It is estimated that approximately 364,000 truck miles were saved in 2013 by using RAP for cold mix base course on VTrans projects.* This translates to an estimated reduction of 350 tons of CO2 emissions.**

* Assumes 20 tons/truck load and an average of 60 miles per round trip per project, yielding an estimated total of 364,000 miles reduced.

** Using 0.0097 tons of CO2 emissions / gallons conversion from http://www.co2benchmark.com/EPA-calculations-and-conversions, and assuming mileage of 10 miles per gallon of fuel.

WAITSFIELD. Reclaiming pavement on VT 100.

Paving Program RAP Inventory



Network Pavement Structural Types

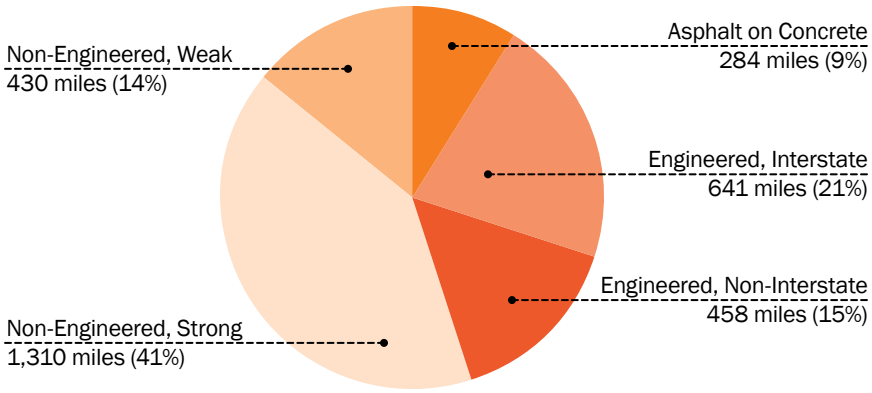
The "Pavement Type Distribution" chart represents the breakdown of the various pavement structural types a motorist will encounter throughout the agency's highway network. This information provides a sense of how the network structures vary, and how that can pose a challenge from a management perspective.

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. US 279. An example of engineered pavement.

Project 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

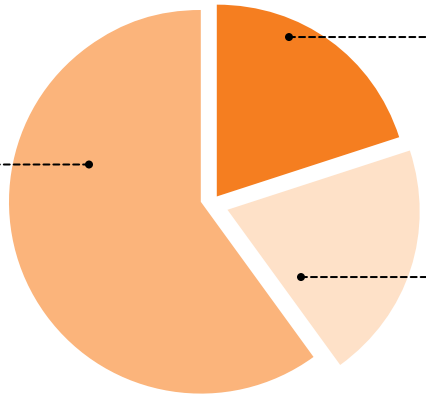
Regional Planning Commission (RPC) Rank

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

POST MILLS. Cracked pavement on VT 244.

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%

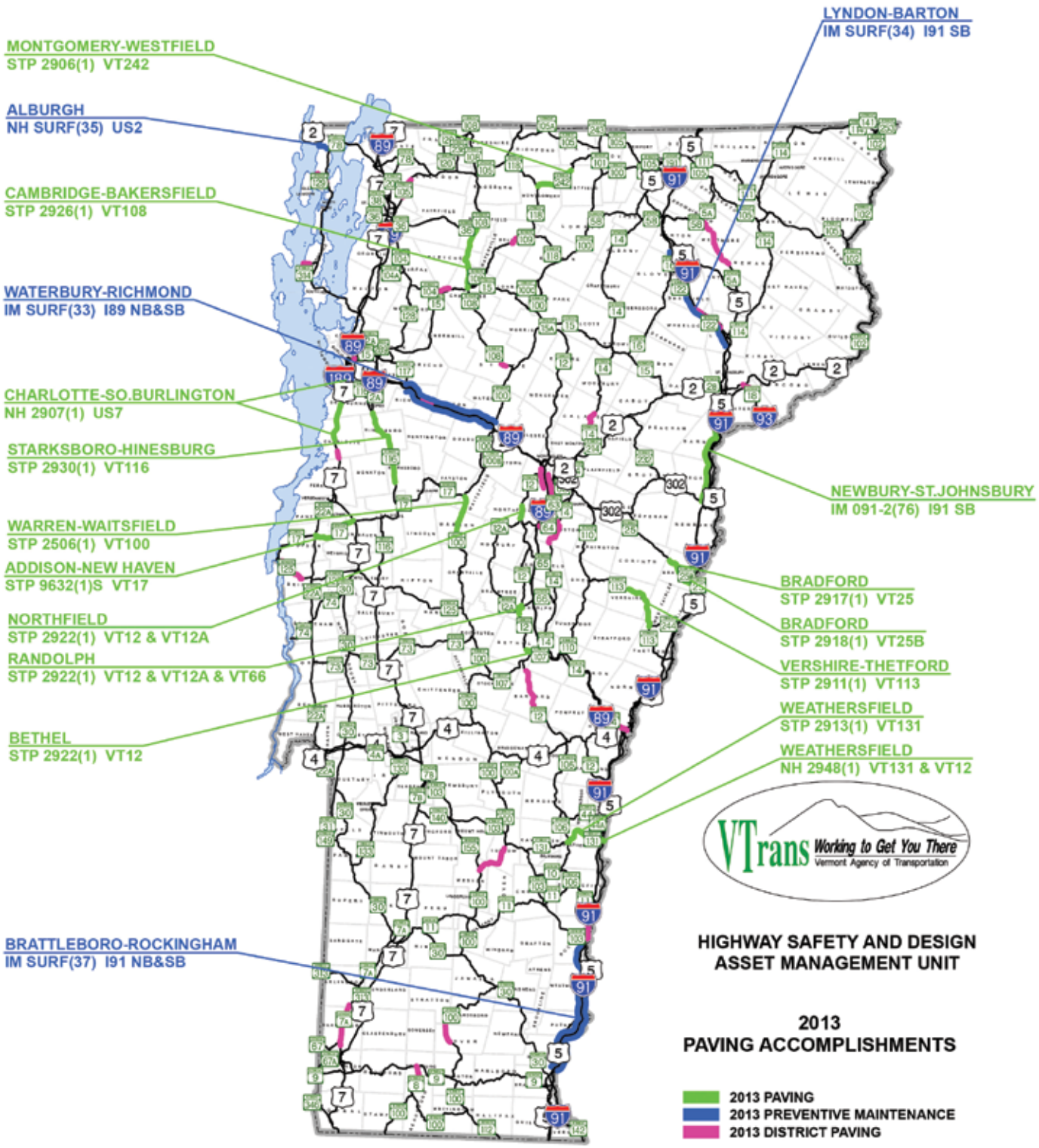
B/C Score

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

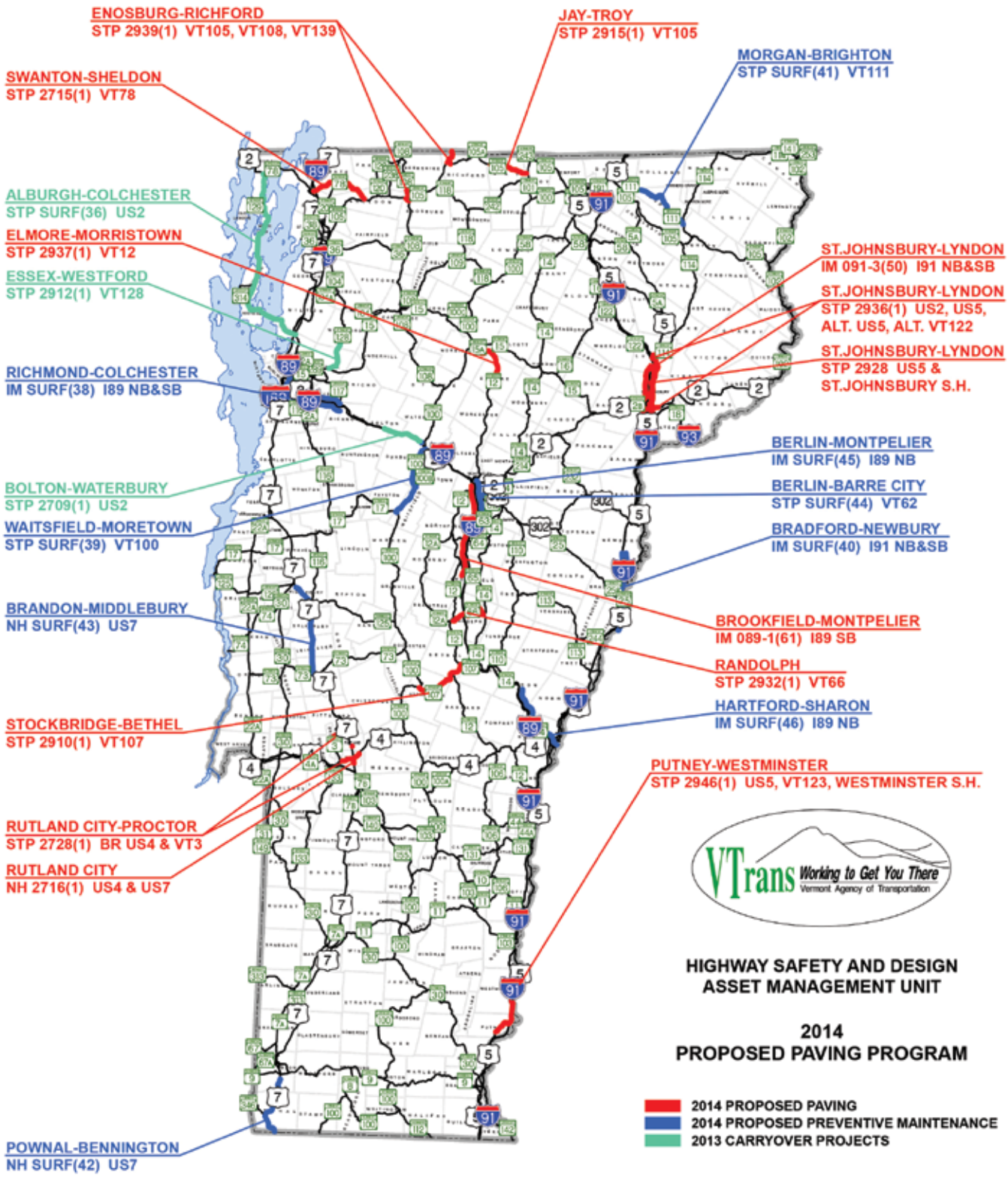
RPC Rank
20%

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

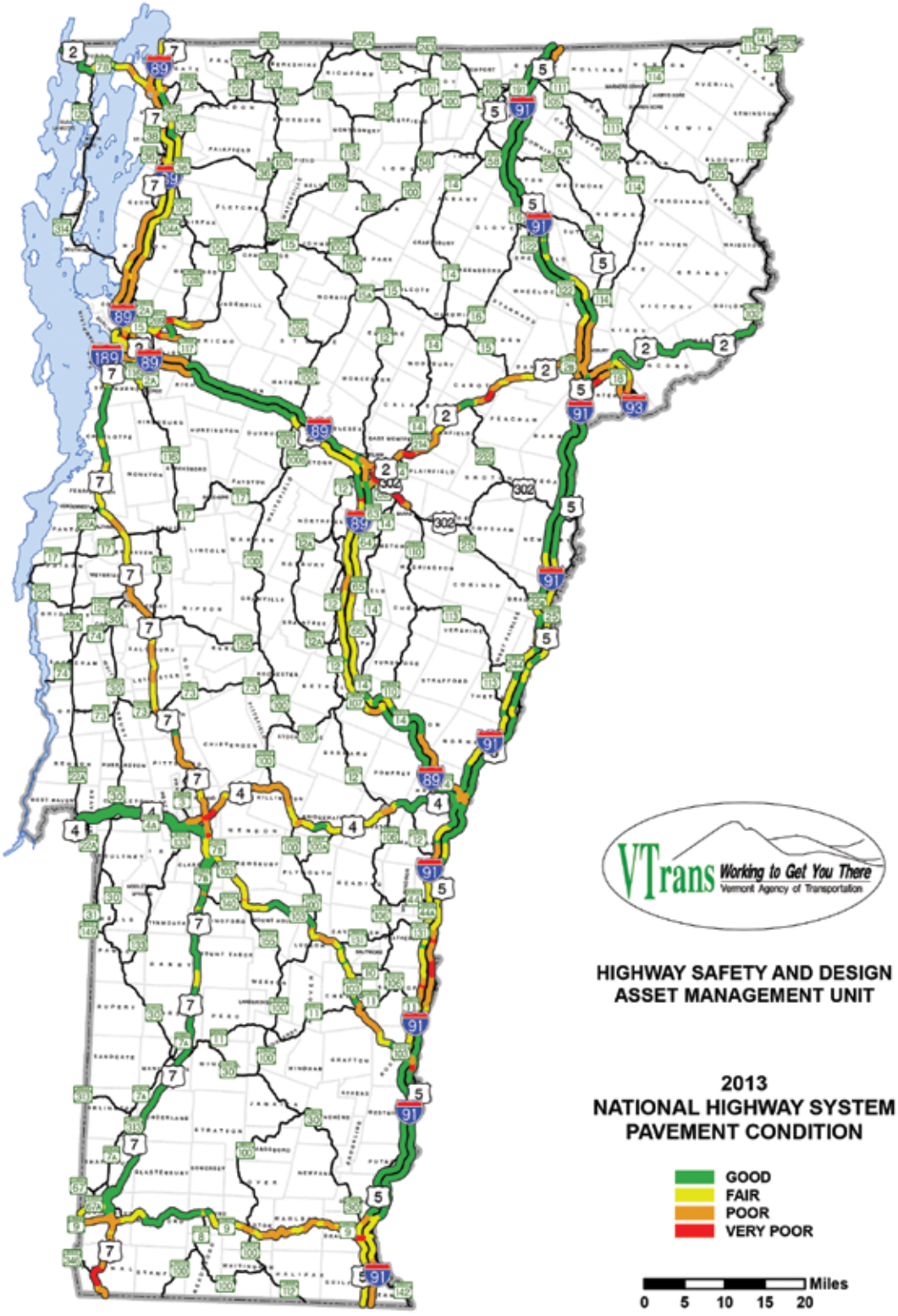
2013 Paving Accomplishments



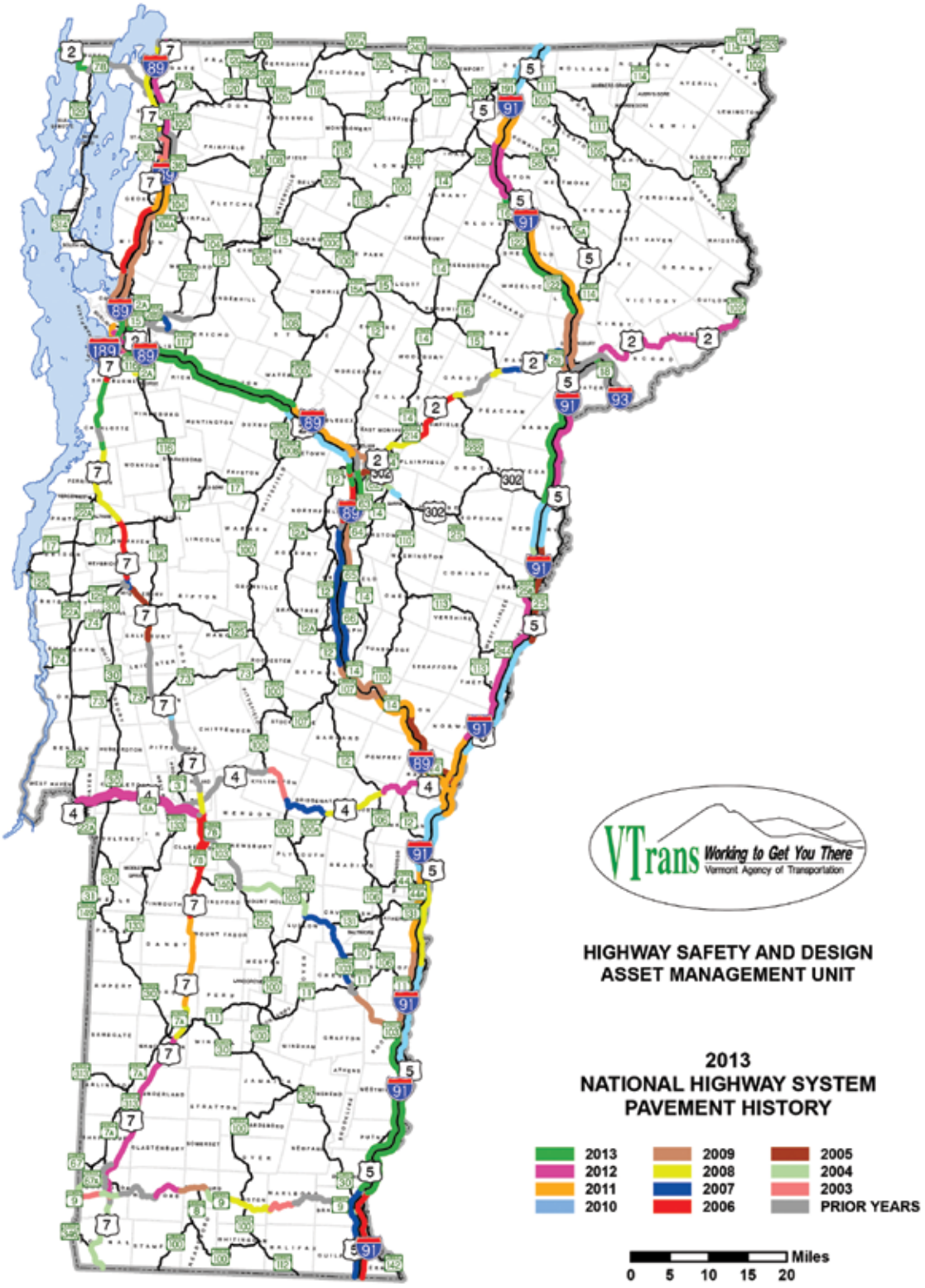
2014 Proposed Paving Program



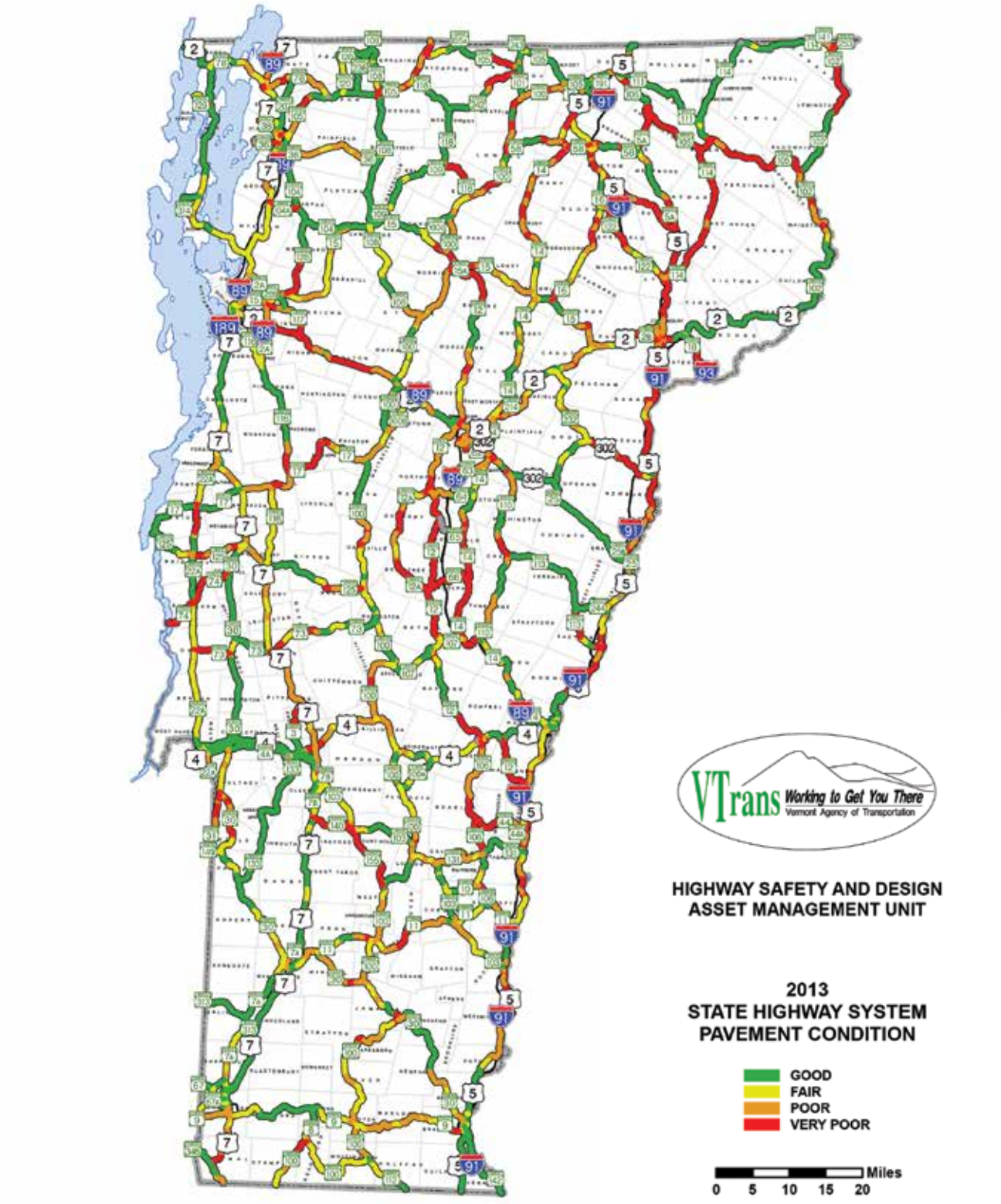
National Highway System Pavement Condition



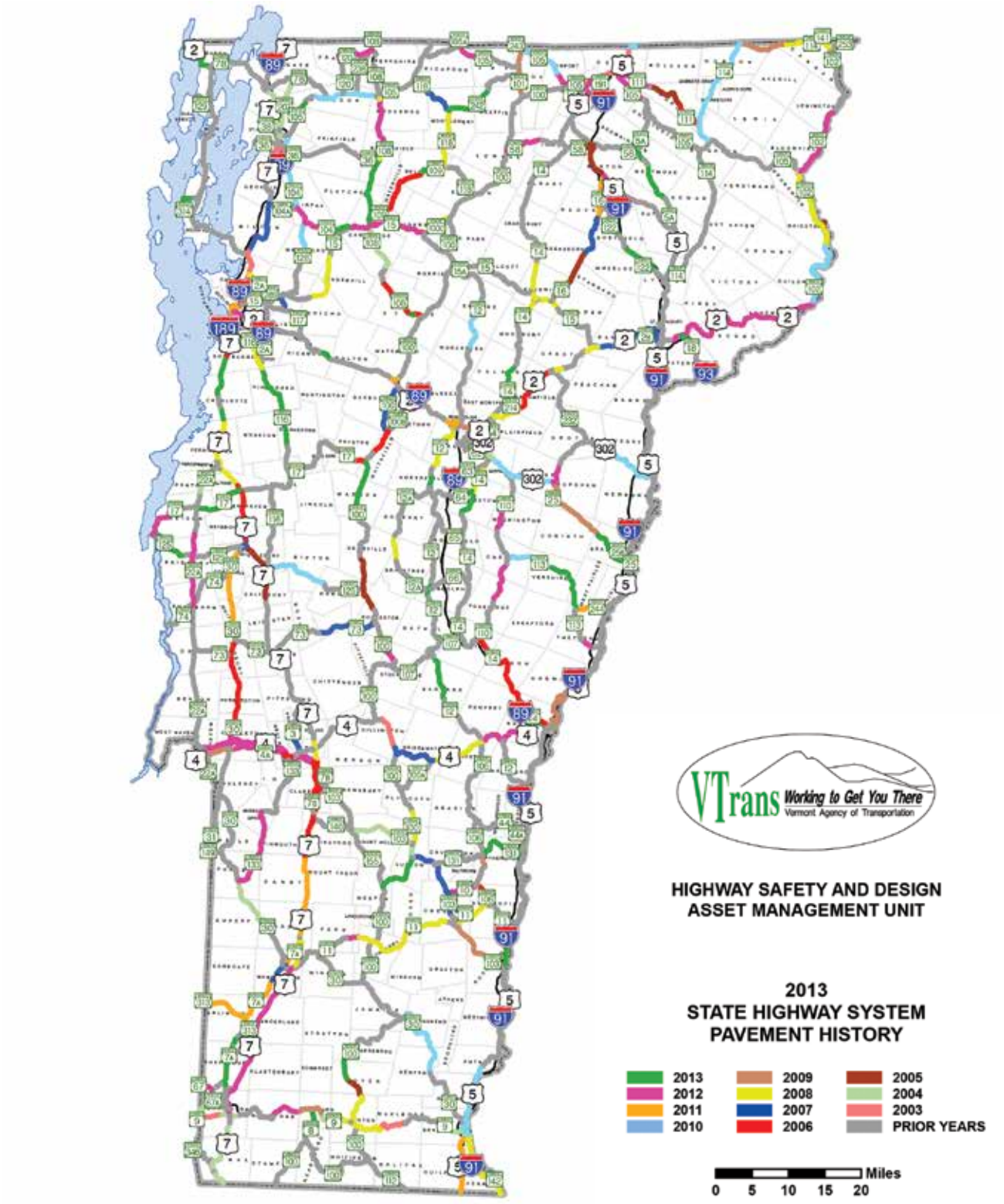
National Highway System Pavement History



State Highway System Pavement Condition



State Highway System Pavement History



Danville FEGC 028-3(32)

Danville Village - US 2 Reconstruction

Project History

Upgrades to US 2, the primary east-west corridor in northern Vermont, have been underway since the late 1970s. The planning and design of the one-mile section of this roadway through Danville Village has been in the works for 25 years. In 2000, after the consideration of many options and alternatives, VTrans partnered with the Vermont Arts Council and the Danville community to develop a context sensitive design meeting the needs of both the traveling public passing through the village and those who live and do business there.

Design Solution

In order to maintain the village character while accommodating over 7000 cars per day, a typical rural highway design would not work. Being a 50 mph highway on either end of the village, measures were needed to provide a safe and attractive environment for residents and businesses in the village. This was accomplished with a narrower, curbed roadway with median islands, ornamental lighting, street trees, sidewalks and crosswalks, artwork, a traffic signal and removal of overhead utilities in the area of the village green. Changes in the traffic pattern around the village green and upgrades to those town roads were additional steps taken to achieve that goal.

Upgrades to US 2 include full roadbed reconstruction and paving, subsurface drainage, stormwater collection and treatment, and municipal waterline replacement.

Construction

Construction began in May 2010 and was completed in August 2013.

Approximate Construction Cost = $11,000,000

DANVILLE. Looking west on US 2, towards the village.

DANVILLE. Looking east on US 2 in the village.

Sudbury-Brandon STP 0158(3)

Project History

Located on VT 73 along the Otter Creek, this project was originally scoped as a Flood Mitigation Project to eliminate and/or reduce the frequency of annual road closures during spring flood events. Alternative designs to fully reconstruct the roadway at a significantly higher grade were developed but were unable to secure the necessary Environmental and Floodplain Management Permits.

Design Solution

The approved design implemented a pavement rehabilitation that included only raising the roadway profile as necessary at site specific locations along approximately one mile of roadway to reduce the magnitude of roadway overtopping and mitigate the frequency of road closure events. To complete the corridor rehabilitation, an additional 4 miles of pavement resurfacing extending westerly along VT 73 to the intersection with VT 30 were added to complete the corridor rehabilitation.

Following completion of the project, subsequent monitoring of the roadway along the Otter Creek will be performed to evaluate the conveyance of water over the roadway during spring thaw events and the frequency of road closures.

Construction

Construction began in May 2013 and was substantially completed by October 2013.

Approximate Construction Cost = $2,600,000

SUDBURY. New reclaimed roadway and guardrail abutting Otter Creek.

SUDBURY. Area of moderate grade increase where overtopping occurred.

SUDBURY. Significant grade increase where most severe flooding occurred.

Morristown STP F 029-1(2) C/1

Bridge over the Lamoille River

Project History

This project is for the construction of a 545 foot span bridge over the Lamoille River that is part of an overall project that provides a new 1.98 mile roadway that will connect VT 100 to VT 15, and provide an alternative route for large trucks and through traffic around the historic village of Morrisville. This project has been under development since the early 1970s and enjoyed nearly universal support in the local and regional community. Morristown and the Lamoille County Planning Commission worked closely with the agency for many years to address the various planning, engineering, and permitting needs for the project. The agency pursued phasing the overall project to construct the bridge first based on the minor amount of ROW needed for the bridge. This would allow the more complicated bridge work to start ahead of the roadway work and realize a potential savings with a prime contractor working specifically on the bridge and not having it done by others if it were bid as one contract.

Design Solution

The original design concept for the bridge over the Lamoille River proposed a pier in the river and on each shoreline. The current design is a slant-legged rigid frame (also called a "grasshopper" bridge), which spans most of the river channel and does not need a pier in the river. This avoids the direct impact of a pier and the related scour and streambed impacts which can occur. The bridge is also visually appealing, allowing motorists to view the scenic river crossing.

Construction

Construction began in July 2012 and is expected to be completed in 2014.

Activities accomplished this year included pouring bridge footings, erecting structural steel, pouring the bridge deck and curbing, and installing bridge rail.

Approximate Construction Cost: $7,961,000

MORRISTOWN. View of bridge looking south.

MORRISTOWN. View of the top of the bridge looking north.

MORRISTOWN. View of mechanically stabilized earth wall at southern bridge approach.

Morristown STP F 029-1(2)

VT 100 Alternate Truck Route

Project History

This project is for the construction of a new limited access highway that will connect VT 100 to VT 15, and provide an alternative route for large trucks and through traffic around the historic village of Morrisville. This project has been under development since the early 1970s and enjoyed nearly universal support in the local and regional community. Morristown and the Lamoille County Planning Commission worked closely with the agency for many years to address the various planning, engineering, and permitting needs for the project. The agency pursued phasing the overall project and chose to construct the bridge first followed by the roadway.

Design Solution

The roadway project begins approximately 0.190 mile south of the Morristown Corners Road and extends north 1.98 miles to terminate across from the Sunset Motel on VT 15. The alignment that was chosen diverges from existing VT 100 approximately 1300 feet north of the Morristown Corners Road intersection passing through fields, crossing the Lamoille River, Bridge Street, and railroad line, passing between a commercial area and the Wabun Avenue-Wilkens Street neighborhood, crossing Professional Drive and Safford Avenue, and finally meeting VT 15 west of the existing VT 100/VT 15 intersection.

Some design elements include:

- Pedestrian culvert at the Bishop Marshall School;
- 14 foot wide by 178 foot long prefabricated multi-modal bridge connecting the recreational rail trail above new VT 100;
- 285.6 foot long 9x7 culvert in the ravine between Wilkins Street and Professional Drive;
- Two lane roundabout at the intersection of VT 100/VT 15 intersection.

Construction

Construction began in April 2013 and is expected to be completed in 2014. Activities accomplished this year included building the pedestrian underpass, installing the ravine culvert, blasting ledge, installing drainage and utilities relocation.

Approximate Construction Cost = $10,068,085

MORRISTOWN. View of pedestrian culvert near the Bishop Marshall School.

MORRISTOWN. During construction of the ravine culvert.

MORRISTOWN. View of blasting area north of Bridge Street.

Fletcher STP 027-1(22)

VT 108 Slide Project

Project History

In the past two years two separate slide areas in this half mile stretch of VT 108 began to slough down the adjacent embankments. The VTrans Operations Division brought these two areas of concern to the Program Development Division's attention, through the District Needs Program, where it could be evaluated and stabilized through the project development process.

Design Solution

The Materials and Research Section determined that subsurface water was the cause of the settlement for both the northern and southern slides. The northern slide also had a failed culvert as a contributing factor.

The design for the northern slope included excavation of the entire southbound travel lane (such that drainage aggregate could be installed below subgrade), replacement of a failed culvert and installation of underdrain.

The design for the southern slope included 24" stone fill that was keyed into the toe of the slope and extended over the entire length of the slope.

This project was combined with a planned paving reclamation project along this section of VT 108 to ensure completion prior to the paving project.

Construction

The project bids were opened in January 2013. Construction began in April 2013 and was substantially complete by October 2013.

Approximate Construction Cost: $460,000

FLETCHER. Northern slide before construction, looking south along VT 108.

FLETCHER. Southern slide before construction, looking south along VT 108.

FLETCHER. Northern slide during construction, looking south along VT 108.

Hartford IM 089-1(60)

I-89 Roadway Subsidence Project

Project History

This project is located on I-89 in Hartford in the southbound lane just prior to the bridge crossing over into New Hampshire.

The project area has had a history of subsidence which for some years has required VTrans Operations Division to pave multiple times within a given year.

Due to the high traffic volumes in this area conventional construction techniques were not deemed suitable as they would significantly impact the traveling public.

Non-destructive testing showed that there were significantly sized voids deep within the subgrade of this area.

Design Solution

In an effort to minimize the impact to the traveling public, an experimental process known as Deep Soil Injection (DSI) was implemented.

DSI allows for the injection of the subgrade with a polymer. For this project the injection needed to occur 21 feet below the road surface. The injected polymer fills the voids and becomes rigid within minutes. This process allowed for the stabilization of the subgrade without having to utilize the traditional method of deep excavation.

This project was accomplished by the combined collaborative efforts of Highway Safety and Design, Materials and Research and Uretek Company.

Construction

Construction began in October 2013 and is expected to be complete by June 2014.

Approximate Construction Cost: $1,350,000

HARTFORD. I-89 Southbound Lane, looking south into New Hampshire.

Montpelier NH 028-2(9)

I-89 Exit 8 Interchange Ledge Stabilization

Project History

This project is located on Ramps A and B of the I-89 Exit 8 interchange and the Montpelier State Highway.

This project was brought to the attention of the Program Development Division through the coordinated efforts of the District Needs Program and the VTrans Geologist.

This site has been monitored by the VTrans Geologist and was rated as an A or an area representing a high hazard potential when considering the slope, traffic volume, rock type, rock fall events and other factors.

Design Solution

The VTrans Geologist performed comprehensive evaluations of the ledge cuts taking into account multiple features . Through these evaluations the VTrans Geologist was able to determine which stabilization methods would reduce the likelihood of rockfall events reaching the roadway.

These evaluations determined that the stabilization of this ledge cut would include scaling, rock doweling and solid rock excavation to reduce the slope of the ledge cut and hence reduce the likelihood of falling rock from reaching the roadway.

Construction

Construction began in September 2013 and was substantially complete in December. Minor work remains to be completed in Spring 2014.

Approximate Construction Cost: $1,360,000

MONTPELIER. Prior to construction. Ramp B ledge cut.

MONTPELIER. During construction. Ramp A and Montpelier State Highway ledge cut.

MONTPELIER. During construction. Ramp B ledge cut.

Searsburg STP SCRP(8)

Project History

This project, included in the Roadway Design Culvert Rehabilitation Program, represents the replacement of a deteriorated culvert located along VT 8 contributing to the continued maintenance of the roadway shoulders, guardrail and side slope embankments.

Design Solution

The approved design included replacing the existing undersized structure with a new 7' x 12' pre-cast concrete box structure. The project included staged construction with a signalized one-way temporary detour.

The new roadway profile was raised approximately four (4) feet above the existing roadway to improve substandard geometric conditions and mobility for large trucks and school buses during the winter months.

Construction

Construction began in June 2013 and was completed in November 2013.

Approximate Construction Cost: $450,000

SEARSBURG. Phase II pre-cast box culvert section installation.

SEARSBURG. Completed culvert installation and roadway reconstruction.

Richmond IM 089-2(46)

I-89 Ledge Stabilization

Project History

This is a ledge stabilization project that arose from a rockfall event in mid-March on the southbound lane of I-89 in the town of Richmond.

Luckily, this rockfall event caused only minor damage to the roadway and to the roadway users (only tires were damaged).

The VTrans Geologist determined that due to the deterioration of the ledge cut and the expectation of future freeze—thaw cycles that continued rockfall events were likely in this area. As such this project was declared an emergency so that stabilization could begin immediately.

Design Solution

Through VTrans Geologist's evaluations, the design solution was determined to include scaling, shotcrete and doweling as methods of stabilization.

Construction

Due to the emergency nature of this project, the VTrans Operations Division used existing contracts instead of advertising the project to perform the needed work.

Construction began in April 2013 and was completed in June.

Approximate Construction Cost: $900,000

RICHMOND. During construction.

RICHMOND. During construction.

RICHMOND. After construction.

Maidstone STP 0271(20)

VT 102 Slide Project

Project History

This project is located on VT 102 in the town of Maidstone, adjacent to the Connecticut River.

This project was brought to the attention of the Program Development Division through the coordinated efforts of the District Needs Program where projects that are outside of Operations scope can be developed and constructed.

Although the slope failure at this location had not yet impacted the roadway it was of concern as the slope was continuing to erode into the Connecticut River. With up to a 60 foot drop this proved to be of major concern.

With the continued erosion of the slope it was determined that it was only a matter of time before it reached the roadway, so the site was declared an emergency to expedite the slope stabilization.

Design Solution

The remediation for this slope failure involved evaluation and recommendations from the Materials and Research section.

The remediation included keying 3 foot stone into the Connecticut River and continuing the 3 foot stone up the slope to the ordinary high water level and then placing 2 foot stone to the top of the slope.

Construction of this project involved work in New Hampshire. New Hampshire requires slopes to be vegetated after construction, so this work was done to comply with state permit regulations.

Construction

The project was advertised in February of 2013. Bids were opened March 6, 2013.

Construction began in March of 2013 with substantial completion reached in October 2013.

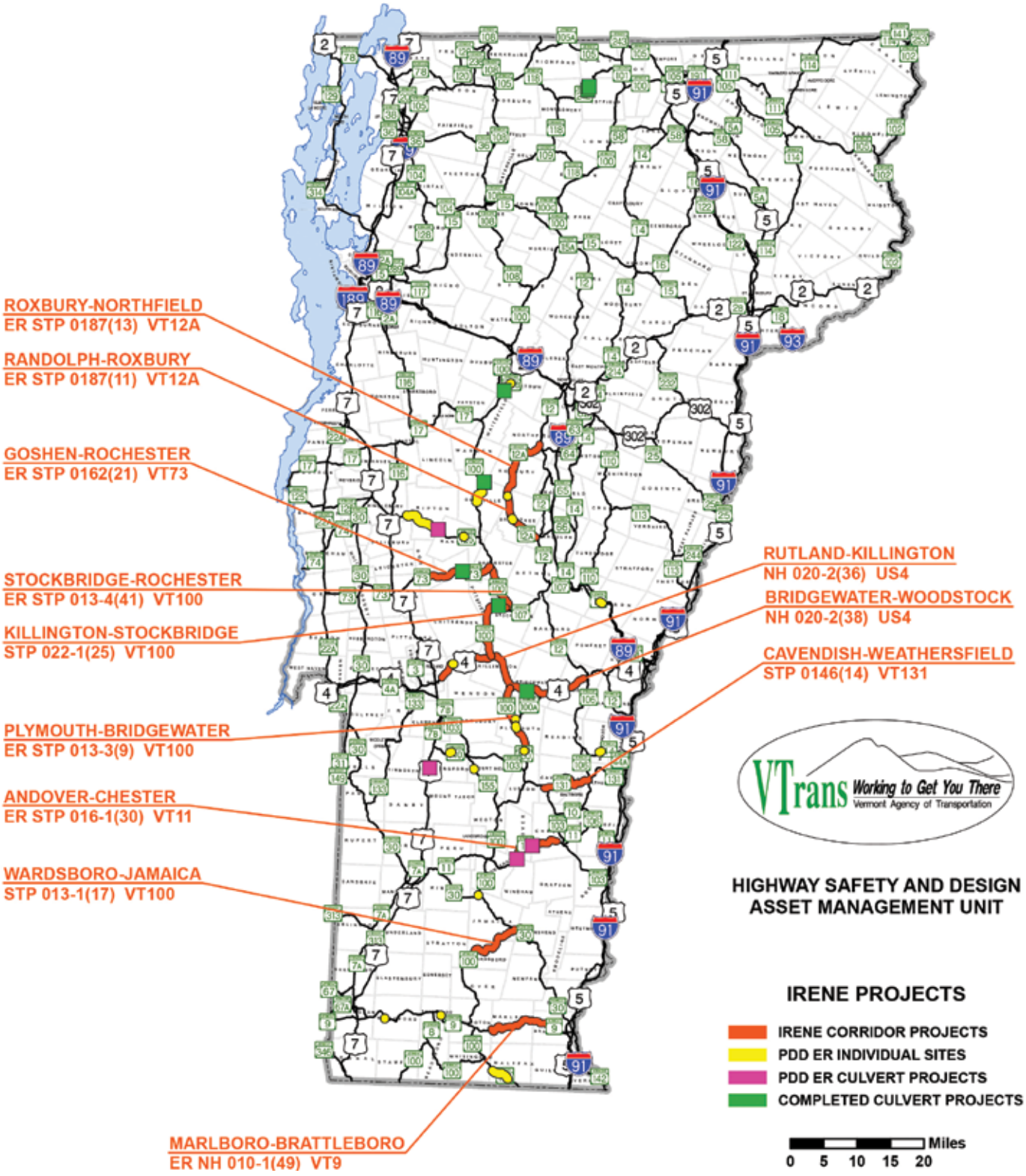
Project Cost: Approximately $840,000

MAIDSTONE. Prior to construction. Slope adjacent to VT 102.

MAIDSTONE. Prior to construction. Slope adjacent to VT 102.

MAIDSTONE. Prior to construction. Slope adjacent to VT 102.

Irene Projects 2014



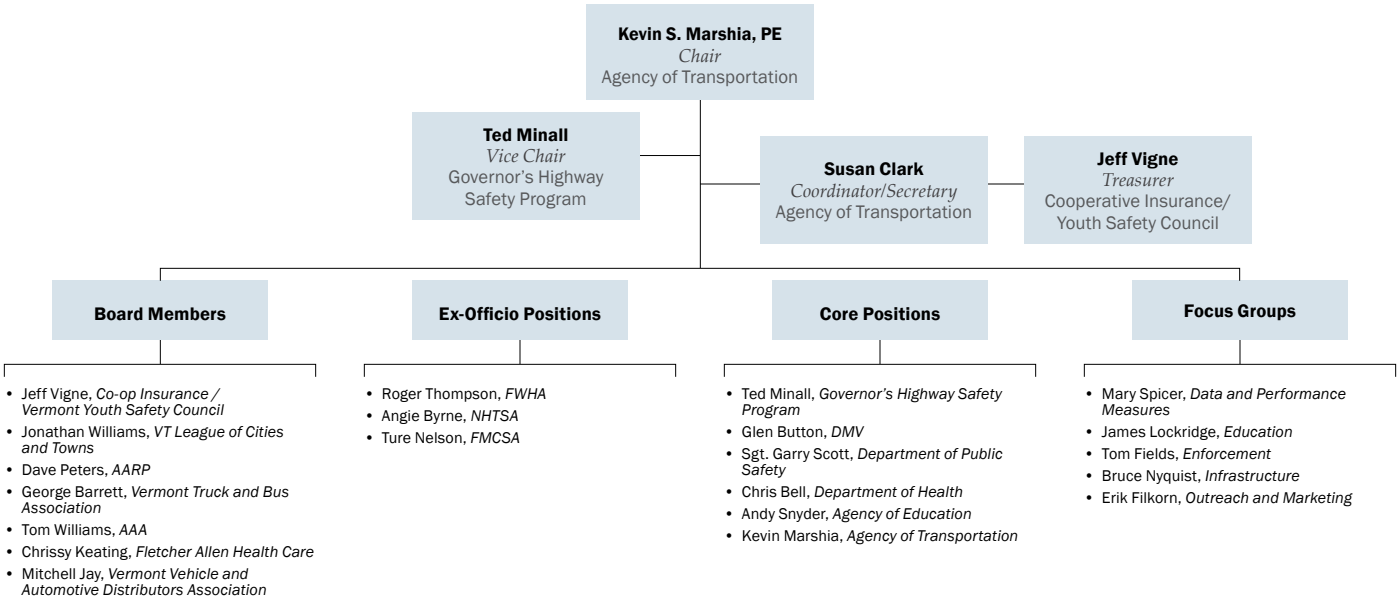
Vermont's Highway Safety Alliance

The Vermont Highway Safety Alliance, (VHSA) is a non-profit formed in August 2012, and has a membership of about 80 individuals. Guided by the policy decisions of the Board, the five Focus Groups of the Alliance work to reduce crashes and improve highway safety. The actions of the Alliance are driven by the second edition of the Strategic Highway Safety Plan (SHSP) completed in 2013 after a thorough analysis of Vermont crash data. Based on this analysis, the Board identified critical, significant, and special emphasis areas. Focus Groups developed the strategies and subsequent actions necessary to implement the plan and achieve the goals set by the Board. The SHSP consists of two documents, the public introductory document, which summarizes goals, processes, and emphasis areas, and the supplemental document which outlines the details for implementation. The VHSA Board of Directors oversees these efforts and tracks the performance. Currently the VHSA is formalizing reporting procedures to provide a continual update on the status of the actions and strategies.

This past year the VHSA increased its public exposure. Numerous volunteers staffed the VHSA and Vermont State Police exhibit booth over the 10 days of the Champlain Valley Exposition. Information about the VHSA and our public/private partners' safety programs were also distributed at the Vermont Municipal Highway Association and Vermont League of Cities and Towns, Town Fair.

In addition, two regional safety forums were hosted by the Central Vermont/Lamoille Valley Regional Planning Commissions and the Addison/Rutland Regional Planning Commissions for their towns. These events exposed local staff from the four E's (Education, Engineering, Enforcement, and EMS) to the many programs and resources available to them as they work to reduce crashes, fatalities, and injuries on the local roads in their cities and towns.

Earlier this year, a demonstration of cooperation between partners, which is the VHSA model, produced an action plan to address safety issues along the Rt 4 corridor from Hartford to Bridgewater. This stretch of US 4 experienced several fatalities within a short period of time during the spring and early summer. In June the VHSA held a summit in Hartford that included town administrators, fire, police, and EMS from the four towns along the corridor in order to develop a multi-dimensional plan of attack to the problem. Local, county, and state law enforcement increased the frequency of their details along the road. VTrans paved the roadway and installed centerline rumble strips. The four towns pushed out some information to the traveling public through various outlets and AARP held Safe Driver classes. Since then there have been no fatalities and the public appears to be more aware of the need to limit distractions while driving through this area.



Highway Safety Improvement Program (HSIP)

Annually, the VTrans Safety Section identifies the top 10 locations in need of safety improvements on the Vermont federal aid highway system. These locations were selected based on crash frequency, severity, and traffic volume.

After identification, the Safety Section then held a meeting at each location. Oftentimes these meetings included key town officials, the Regional Planning Commission (RPC), or Metropolitan Planning Organization (MPO), emergency responders, and highway engineers.

Information that is gathered at these meetings will aid in the selection of project recommendations.

A report is done for each site that summarizes the crash history, anecdotal safety information gathered from the on-site meeting, and short and long-term recommended solutions.

Oftentimes the short term solutions are low cost safety improvements such as new signs and lines, guardrail, brush clearing, minor intersection alignment improvements, and signal head upgrades. Each year, $50,000 to $100,000 is spent to implement the short term improvements identified in the HSIP.

There are usually 1–6 locations programmed each year as safety projects, and the long-term solutions are implemented. These projects are much more involved and can consist of roadway realignment, the installation of a roundabout, or new turning lanes.

JERICHO. HSIP Example Project Site in Jericho on VT 117 near Barber Farm Road intersection. Picture was taken before safety improvements. Note the lack of delineation around the curve.

JERICHO. Project after improvements which included installation of new 6”x 8” rectangular white delineators.

High Risk Rural Roads Program (HRRR)

The High Risk Rural Roads (HRRR) program was initiated in 2008. The purpose of the program is to partner with the Regional Planning Commissions (RPCs), FHWA, and the towns to implement low cost safety improvements on all of Vermont's public highways.

Based on crash data and local input, sites are identified, selected and prioritized by the RPCs, towns and VTrans.

Each summer, VTrans works closely with the towns in determining the appropriate safety solutions at each site.

There were 27 sites selected this year. VTrans contracted these projects, and oversaw the construction operations for the participating municipalities, in order to simplify the process for them. Work was started in the spring of 2013 and was completed in the fall 2013.

Four regional umbrella projects were contracted, implementing low cost safety improvements such as new and upgraded signs and lines, and new guardrail.

The four regional construction projects totaled approximately $500,000 this year.

BENSON. HRRR example project site in Benson on VT 144, before and after safety improvements.

BENSON. HRRR example project site in Benson on VT 144, before and after safety improvements.

Essex Town STP 5400(5)

VT 117 and Sand Hill Road Intersection Project

Project History

This project is located at the intersection of VT 117 and Sand Hill Road in the town of Essex.

Improvements to this intersection were warranted because of safety concerns and traffic congestion due to the left hand turning movements onto Sand Hill Road.

From 2008-2012 this intersection saw 15 crashes, 33% of which resulted in injuries.

Along with the above, this intersection was a point of congestion during both the morning and evening peak hours as vehicles tried to enter or leave VT 117 respectively to access Sand Hill Road.

This section of VT 117 had a history of erosion along the side slopes adjacent to the existing stream.

Design Solutions

The design solution for this intersection involved installation of a new left turn lane for vehicles turning left off of VT 117 onto Sand Hill Road along with drainage improvements to help reduce the ice accumulation on the roadway.

Additional improvements included relocation of the stream and placement of stabilization to reduce erosion in the stream as well as the slope of the roadway.

Construction

Construction started in the spring of 2013 and was completed in the fall of 2013.

Project Cost: Approximately $772,000

ESSEX TOWN. Looking east, along VT 117 with Sand Hill Road on the left before construction.

ESSEX TOWN. Looking east, along VT 117 with Sand Hill Road on the left, after signal, pavement and line striping installation.

ESSEX TOWN. After completion, looking at the intersection from Sand Hill Road.

Colchester TCSP TCSE(9)

VT 15 Fanny Allen HAWK Crossing Project

Project History

This project is located in Colchester on VT 15 near the access to the Fanny Allen campus.

Several parties expressed concern about the pedestrian safety involved in crossing at this location. Pedestrians were observed frequently crossing at this location, creating a potential safety concern given the high vehicle volumes exceeding 28,000 vehicles per day.

Design Solution

A High-Intensity Activated cross walk beacon signal (HAWK) was selected to provide the safe passage of pedestrians across VT 15.

This was the first HAWK installation in Vermont, and at the time also the first installation in northern New England. Traffic Design researched systems all over the country during the design phase to develop a design that would be visible and incorporate familiar features for Vermont drivers.

Construction

Construction commenced on this project in the summer of 2012. The intersection was reconstructed and became fully operational in early winter of 2012. Construction was completed in the summer of 2013.

Project Cost: Approximately $300,000

COLCHESTER. Before construction, looking across VT 15 from Fanny Allen toward Cumberland Farms.

COLCHESTER. After construction, looking easterly along VT 15 towards Essex.

COLCHESTER. After construction, view of new HAWK signal looking toward Fanny Allen.

Cambridge STP 030-2(27)

VT 15 and VT 108 Roundabout Project

Project History

This project is located at the intersection of VT 15 and VT 108 in the village of Jeffersonville in the town of Cambridge.

This intersection was listed on the High Crash location list. In five years, from 2007 to 2011, this intersection saw 9 crashes, 22% of which resulted in injury.

The major safety concerns observed included difficulty for motorists entering VT 15 from VT 108 due to congestion, short gaps and difficulty of judging the approach speeds of oncoming traffic.

Design Solutions

The design solution for this project included replacement of the existing stop controlled four-way intersection and flashing beacon with a roundabout.

This project was combined with a bridge replacement construction project, BRF 027-1(4) to realize cost savings.

Construction

Construction commenced on this project in the spring of 2012. The roundabout was constructed and became fully operational in the summer of 2013, with all construction activities to be completed by the spring of 2014.

Project Cost: Approximately $1,900,000

CAMBRIDGE. During construction, looking southerly across the intersection.

CAMBRIDGE. During construction, looking west along VT 15 across the truck apron. The central island is on the right.

CAMBRIDGE. After construction, looking west down VT 15, from the eastern splitter island.

Traffic Operations Projects

Improving our roadway delineation by restriping our roadways is one of the best low cost initiatives for reducing crashes. The following projects, where the placement of pavement markings was contracted out, allows our state maintenance forces to gain additional coverage to ensure that more miles of pavement markings are refreshed on an annual basis.

Pavement Marking Projects

IM MARK (113) Interstate Marking

Annual painting of worn pavement markings.

STP MARK (400) and (401)

This year we contracted out the painting of Class 2 town highway centerlines, with over 2700 miles painted. This allowed VTrans Traffic Shop staff to concentrate on state highway markings, including the NHS which has traditionally been contracted out.

Centerline Rumble Stripes

As part of the agency's efforts to improve safety statewide, Highway Safety and Design has instituted a centerline rumble stripe (CLRS) policy which requires that CLRS be considered on all projects. This policy applies to all projects that involve a highway with a speed limit of greater than 40 mph and have a paved shoulder width of at least three feet. The proximity of homes near the road will also be considered.

Vermont now has a total of approximately 80 miles of CLRS. Crash trends on those highways where CLRS have been installed indicate an approximate 18% reduction in total crashes and a 36% reduction in injury-related crashes.

Sign Projects

Sign upgrades are also an important part of improving safety on Vermont highways, by providing enhanced warning and delineation of curves; improved intersection warning; more legible guide signs including upsized street name signs; and upgraded sign sheeting for better visibility.

The VTrans sign asset management program utilizes a 15 year sign replacement cycle. This cycle length puts us on track for meeting the federal sign retro-reflectivity requirements statewide by the compliance target of January 2015.

Approximately 127 miles of sign upgrades were constructed in 2013, including:

- A corridor sign project (28 miles) on VT 12 from Hartland to Bethel;
- A regional sign project (17 miles) on VT 78 and US 7 in the Northwest Region;
- A regional sign project (25 miles) on VT 8, VT 30, VT 31 and VT 346 in the Southwest Region; and
- Several project-wide sign upgrades included in paving projects for a total of approximately 57 miles.

BENNINGTON. Newly installed pavement markings on US 279.

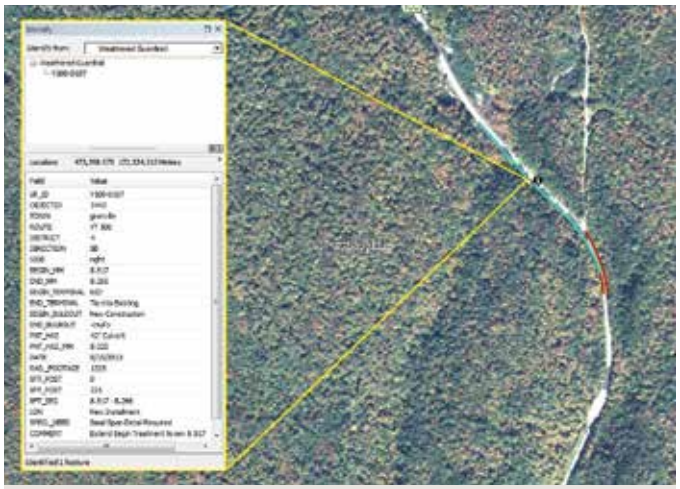
Statewide Guardrail Inventory

The Statewide Guardrail Inventory (SGI) provides a framework for monitoring the approximate 1000 miles of guardrail for which the state is responsible. The SGI is designed to record geographic location, condition data, rail type, end treatment type, and other descriptive characteristics.

This past year saw the continued capture of guardrail sections from As-Built plans and entry into the AMU's Geographic Information System (GIS) database. The tools and processes used to capture, store, and maintain the guardrail data continues to be a focus area.

These efforts will set the stage for the capture and association of repair, replacement, maintenance, and/or rehabilitation work activities to specific sections of guardrail (among our other assets) in efforts to validate, maintain, and preserve our inventories

In addition to the above, 2013 saw the initiation of a Statewide Weathered Guardrail (SWGRP) project, which supported the statewide safety project GARD002 and is expected to go to construction in FY 2014. SWGRP utilized a single Global Navigation Satellite System (GNSS), and captured over 600 (X,Y) coordinates with an average accuracy of 1.5 ft. along 188 guardrail segments consisting of 83,000 ft of weathered guardrail. In addition to the location information, as many as 10 additional critical attributes were captured per segment. It is worth noting that all of the field collection was accomplished within an 8 day period and spanned across eight of the nine maintenance districts and 19 different towns.



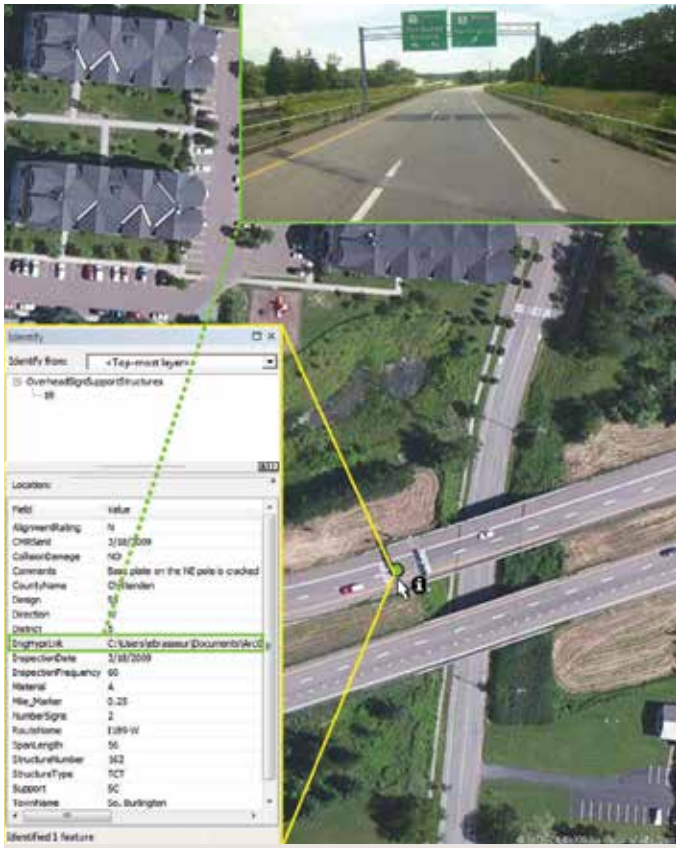
GRANVILLE. Guardrail locations shown on a GIS interface.

Statewide Overhead Sign Structure

2013 saw the initiation of the Statewide Overhead Sign Structure project. This project aims to supplement existing VTrans overhead sign structure data with additional attributes and information required by Highway Safety and Design to effectively manage this asset.

The Statewide Overhead Sign Support Structure Inventory (SOSSSI) continues work on the establishment of a reconciled SOSSSI database and a data lifecycle management protocol.

The data collected during this task will ultimately be stored within a GIS database and will be available to a broad range of employees.



SOUTH BURLINGTON. GIS imagery of sign locations on I-189.

Statewide Road Data Inventory

Roadway data is stored in many different sections and in several different forms throughout VTrans. Highway Safety and Design Asset Management is a partner in this management schema and as such helps in it's maintenance.

AMU Efforts include the collection and extraction of over a dozen different attributes for the roadway inventory, such as lane width, basic shoulder information, turning lane, curve, and grade and median information. This data is drawn from both as-built plans and field collection.

This past year saw the initiation of a statewide data collection contract which allowed for a statewide collection of curve data. 2014 will see the continuation of such efforts and a pilot is planned that will examine the benefits and risks of an automated statewide collection of core attributes such as shoulder width and type.

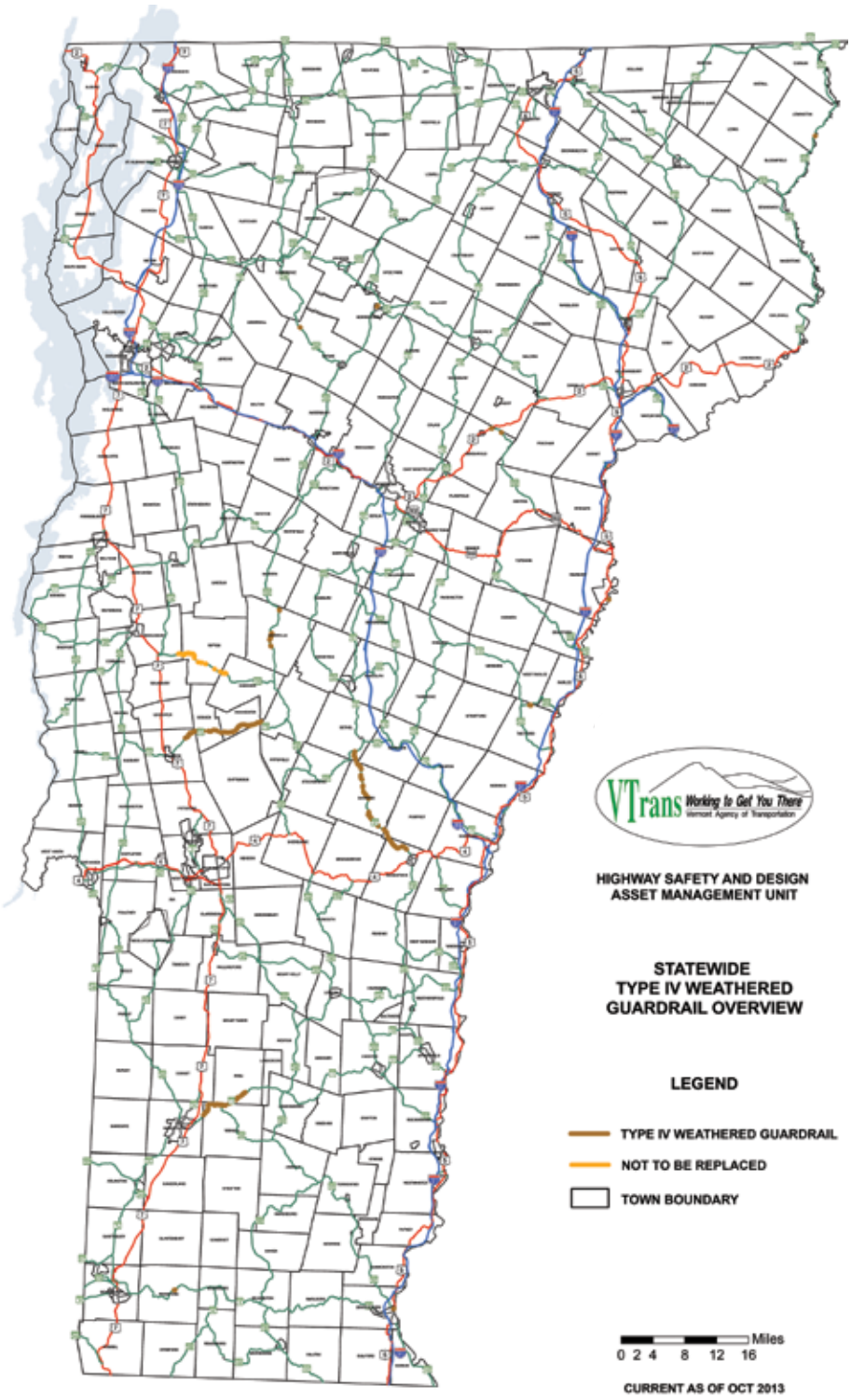
The collection and maintenance of roadway data support many sections and programs, including Pavement Design, Safety Analyst, HPMS, Sufficiency, Rating, and the route logs.

Statewide Sign Inventory

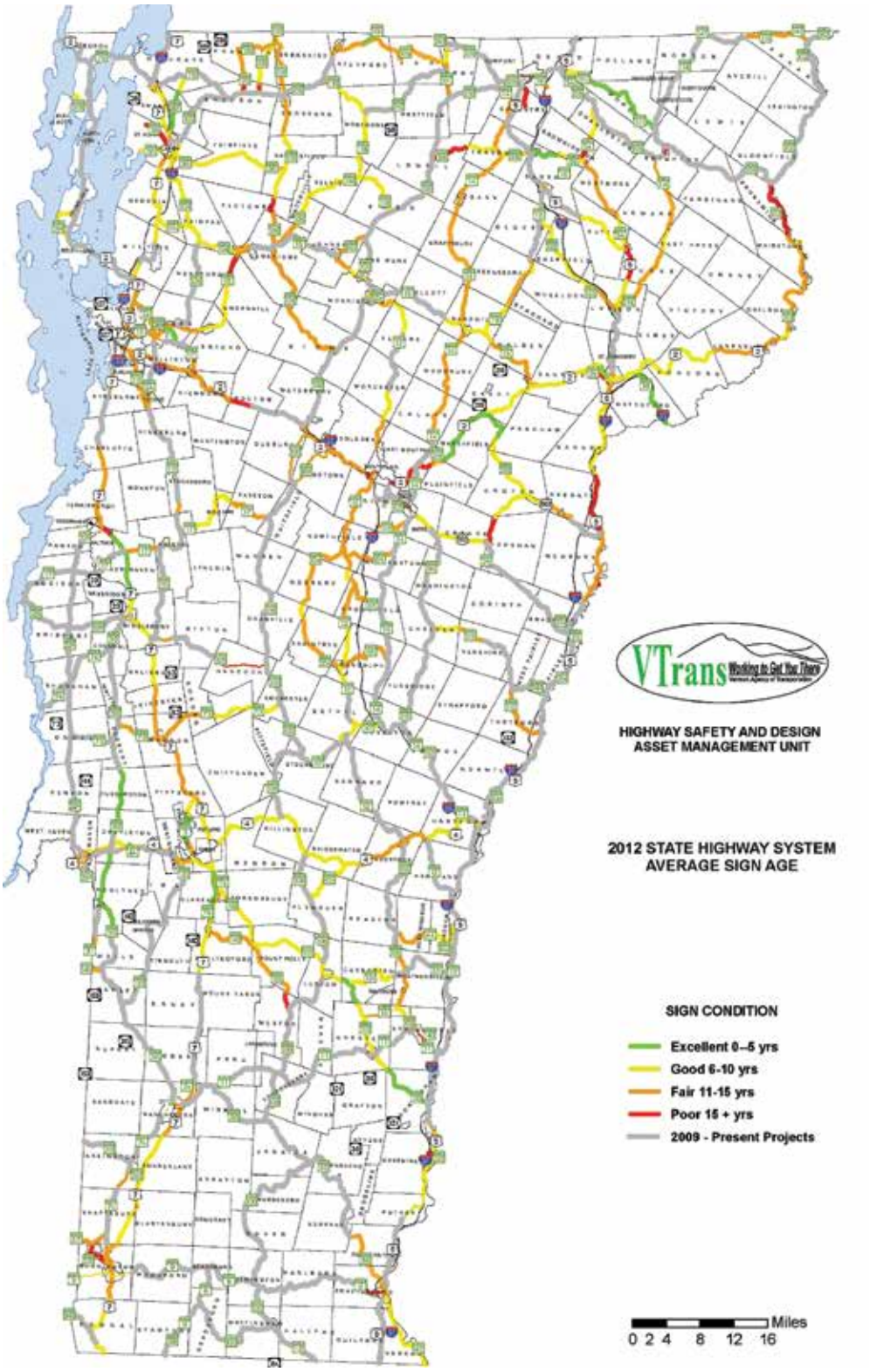
The AMU is responsible for managing the traffic sign database. Sign data comes from many sources but the primary ones are project plans, work orders, and knockdown forms. Traffic signs managed by VTrans are found on interstates, US routes, Vermont routes and state named routes. The map on page 90 shows the 2012 sign distribution and average age on the state highway system.

The timely and accurate recording of this information is key to ensuring the state can meet the federal retroreflectivity requirements. As such, 2013 saw the initiation of a statewide sign reconciliation project that sought to pilot the feasibility of a statewide automated collection of core attributes such as location and sign code for state maintained signs. This effort has also involved the review and revision to VTrans sign data management practices to ensure the continued timely and accurate collection, extraction and analysis of the sign data. The reconciliation effort is expected to be completed in the mid-2014 timeframe.

Statewide Type IV Weathered Guardrail Overview



State Highway System Average Sign Age

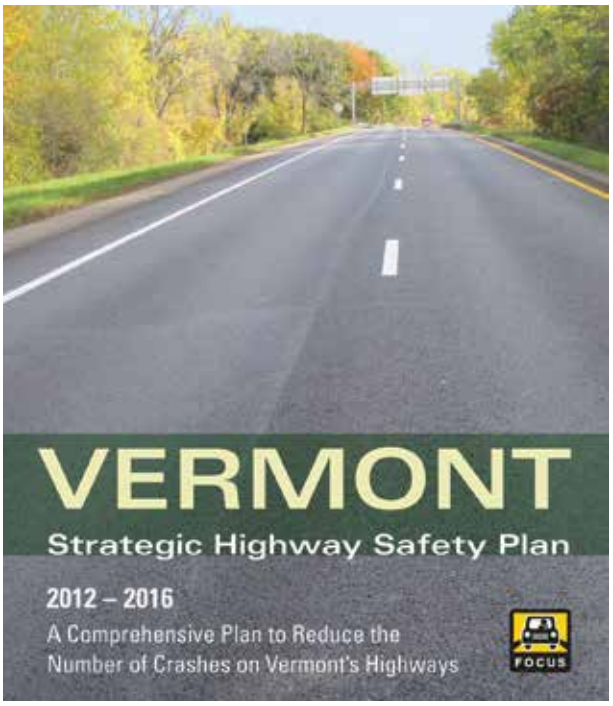


Resources

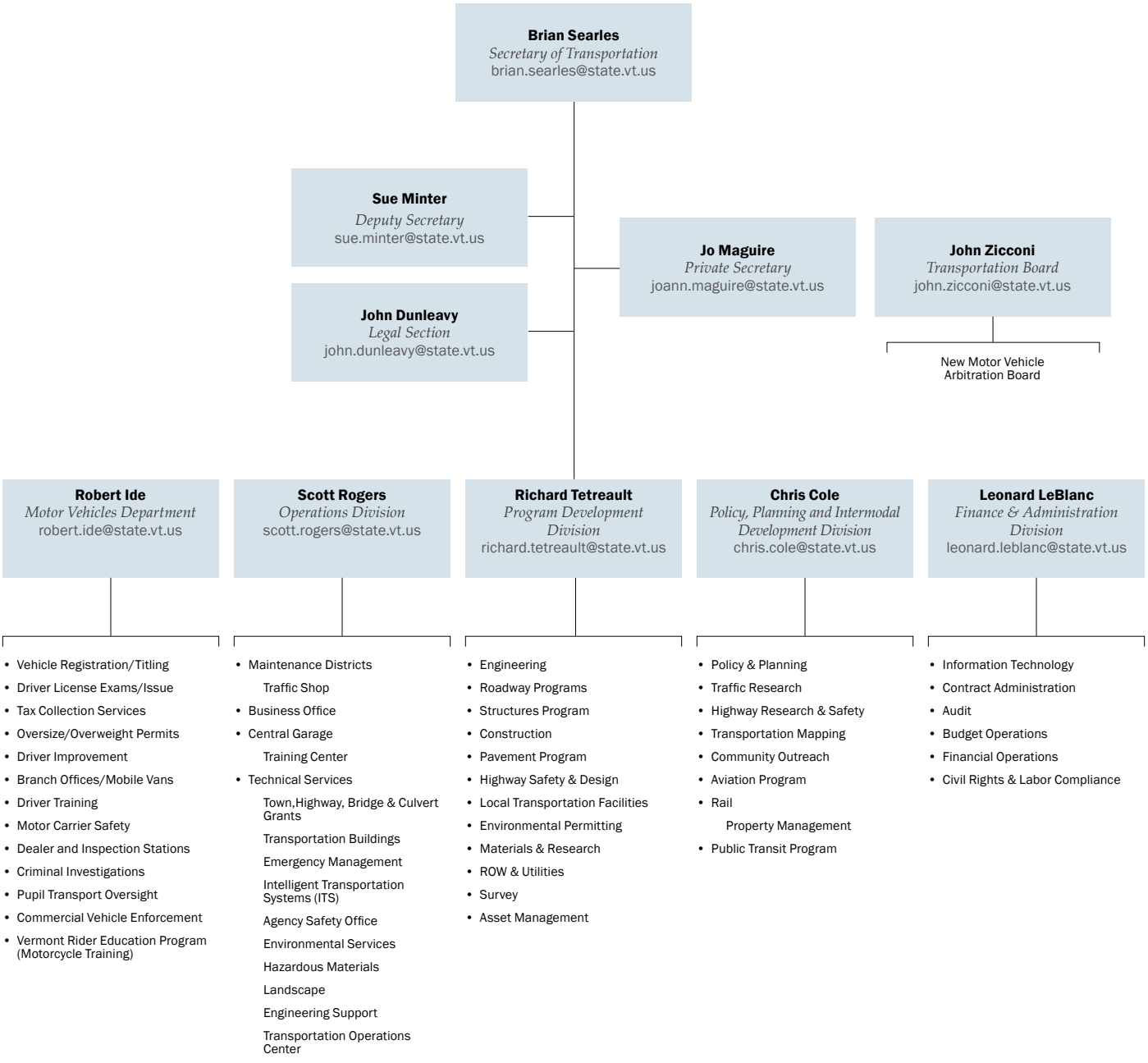
Additional reports available from the Agency of Transportation include:

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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Robin Stern
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Vanessa Kittell
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Technician

Peter Hood
New Car Dealer

David Curtis
Public

Mitchell Jay
Public

Alternates
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New Car Dealer

David Baker
Technician

John Manahan
Public

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Chris Cole
Director of Policy, Planning & Intermodal Development (VTrans) is his designee

Mary Grant
Rural Community Transportation

Randy Schoonmaker
Deerfield Valley Transit Association

Jim Moulton
Addison County Transit Resources

Bill Watterson
Chittenden County Regional Transit

Douglas Racine
Secretary, Agency of Human Services
Susan Bartlett is his designee.

Annie Noonan
Secretary, Department of Labor

Lawrence Miller
Secretary, Agency of Commerce and Community Development
John E. Adams
Planning Coordinator for Department of Housing and Community Development (ACCD) is his 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

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Rail Projects

Regular Projects Under Construction or Completed in 2013

Project Name & Number	Route	Asset	Description
St. Albans City STP 2038(14)	New England Central Railroad	Xing 247-412X	Elm Street (TH-6)
Salisbury WCRS(15)	Vermont Railway - Northern	Bridge 232	New Superstructure
Middlebury WCRS(16)	Vermont Railway - Northern	Bridge 234	New Superstructure
Pittsford STP 2033(21)	CLP Florence Branch	Two Crossings	Whipple Hollow Road (837--138R;837-139X)
Rutland-Burlington VTRY(1) Contract 1	Vermont Railway - Northern	Track	6 Miles CWR (Ties and Ballast)
Manchester WCRS(24)	Vermont Railway - B&R	Bridge 72	Stone Fill and Scour Protection

May Flood and Tropical Storm Irene: Related Projects Under Construction or Completed in 2013

Project Name & Number	Route	Asset	Description
Barre Town RREW001-404	WACR - Montpelier & Barre	Track	Stabilization of Embankment (Switchback)
Barre City RREW12R	WACR - Montpelier & Barre	Bridge 308	Substructure Replacement
Pawlet RREW12L	D&H Rail Trail	Bridge 94	New Substructure
Rupert RREW12M	D&H Rail Trail	Bridge 95	New Substructure
Rupert RREW12N	D&H Rail Trail	Bridge 98	Substructure Rehabilitation
Rupert RREW12O	D&H Rail Trail	Bridge 114.27	Substructure Rehabilitation
Rupert RREW12P	D&H Rail Trail	Cattle Pass	Install New Culvert

Regular Projects to Be Bid During 2013-2014

Project Name & Number	Route	Asset	Description
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
Sunderland WCRS(25)	Vermont Railway - B&R	Bridge 63	Bridge Rehabilitation
Rockingham GMRC(9)	GMRC - Bellow Falls	Bridge 107	Bridge Rehabilitation
Rutland-Burlington VTRY(1) Contract 2	Vermont Railway - Northern	Track	6 Miles CWR (Install CWR)
Rutland-Burlington VTRY() PHASE II	Vermont Railway - Northern	Track	4 Miles CWR (Ties, Ballast and CWR)
Pittsford HPP ABRB(9)	Vermont Railway - Northern	Bridge 219	Superstructure and Substructure Rehabilitation
Tiger V	Vermont Railway - Northern	Track	Install 9 miles of CWR
Arlington STP 0114(4)	Vermont Railway - B&R	Xing 847-921B	Legion Street
Middlebury WCRS(9)	Vermont Railway - Northern	Bridge 239	Bridge Rehabilitation
Barre City STP 0261(42)	WACR - Montpelier & Barre	Xing 837-345K	VT 62
Barton STP 0286(6)	WACR- Conn	Xing 850-896Y	VT 16, Eastern Avenue
Clarendon STP 2033(25)	GMRC - Bellow Falls	Xing 859-894R	East Clarendon Road
Ludlow STP 2033(23)	GMRC - Bellow Falls	Xing 859-859C	TH 362, West Hill Road
Leicester STP 2033(24)	Vermont Railway - Northern	Xing 851-341S	Old Jerusalem Road
Hydeville STP 2033(26)	CLP	Xing 248-947A	Blissville Road

May Flood, Tropical Storm Irene and June Flood 2013: Related Projects To Be Bid During 2013-2014

Project Name & Number	Route	Asset	Description
Cavendish RREW12K	GMRC - Bellow Falls	Bridge 127	Bridge Approach Stabilization
Rockingham RREW12J	GMRC - Bellow Falls	Bridge 110	New Bridge Approach and Rock Stabilization
VTR Culvert 97.10 RREW001-402	Vermont Railway - Northern	Culvert	New Culvert Installation
VTR Culvert 91.90 RREW001-402	Vermont Railway - Northern	Culvert	New Culvert Installation
VTR Culvert 96.10 RREW001-402	Vermont Railway - Northern	Culvert	New Culvert Installation
VTR Culvert 99.10 RREW001-402	Vermont Railway - Northern	Culvert	New Culvert Installation
Hardwick RREW12V	LVRT	Rail Trail	Slope Stabilization
Highgate RREW001F	LVRT	Rail Trail	Slope Stabilization
St. Johnsbury RRW4001A	LVRT	Rail Trail	Slope Stabilization
East Wallingford REW4140A	GMRC - Bellow Falls	Track	Slope Stabilization

Construction Projects

Regular Projects Substantially Completed in 2013

Project Name & Number	Route Number	Description of Work
Addison STP 032-1(18)	VT 17 & 125	Cold planing, resurfacing of VT 17 & VT 125
Addison STP CULV(14)	VT 17	Replace existing 5'-0" RCP twin culverts with a precast box
Addison-New Haven STP 9632(1)	VT 17	Cold planing, reclaiming, resurfacing, new pavement marking
Barre City FEGC F 026-1(34) C/2	US 302	Reconstruction including subbase, drainage, sewer, water
Barre City RREW12R	WCRR	Replacement of abutment & retaining wall
Barre Switchback Slide	WCRR	Slope stabilization w/construction of retaining wall
Barre Town BRF 6100(7)	TH 7	Replace Bridge 11
Bennington ER BHF 010-1(45)	VT 9	Construction of retrofit micropile foundations for bridge
Bethel BRF 022-1(14)	VT 107	Replace Bridge 15 on VT 107 over the White River
Bethel-Randolph-Northfield STP 2922(1)	VT 12, 12a, 66	Cold planing, resurfacing, signage, pavement markings
Bradford STP 2917(1) & Bradford STP 2918(1)	VT 25	Cold planing, resurfacing, new pavement markings, guardrail
Brattleboro AC IM 091-1(50)	I-91	Design and construction required to rehabilitate Bridges 5 & 6 N&S
Brattleboro-Rockingham IM SURF(37)	I-91	Surface preparation, patching, pothole repair, crack sealing
Brighton ER STP 034-3(25)	VT 105	Replace Bridge 84 with a new concrete structure
Burlington-South Burlington NH 2624(1)	US 2	Cold planing, resurfacing, new pavement markings, signs
Cambridge-Bakersfield STP 2926(1) & Fletcher STP 027-1(22)	VT 108	Reclaim & resurface VT 108
Charlotte BHO 1445(34)	TH 36	Rehabilitate covered bridge with related approach work
Danville FEGC 028-3(32)	US 2	Reconstruction including subbase, drainage, water
Essex Town STP 5400(5)	VT 117	Widening of shoulders, a new left-turn lane, guardrail
Granville STP 013-4(38)	VT 100	Bridge membrane replacement
Hancock ER BRF 0174(16)	VT 125	Replace Bridge 23
Hartford (Wilder) STP 1444 (35)	TH 81 & TH 29	Replace Bridge 36 on TH 81 and rehabilitate Bridge 38
Hartland-Bethel STPG Sign(40)	VT 12	Remove and install signs & posts on VT 12
Highgate STP 0297(8)(Re-advertised)	VT 207	Installation of slope stabilization and underdrain
Jamaica ER BRF 013-1(16)	VT 100	Replace Bridge 78
Lyndon-Barton IM SURF(34)	I-91	Surface preparation, patching, pothole repair, crack sealing
Maidstone STP 0271(20)	VT 102	Slope stabilization
Montgomery-Westfield STP 2906(1)	VT 242	Reclaim & resurface VT 242
Newbury-St. Johnsbury AC IM 091-2(76)	I-91	Resurfacing
Newport City BRO 1449(25)	TH 11	Replace Bridge 9
Plymouth ER BRS 0149(5)	VT 100a	Replace Bridge 8
Readsboro BRF 0105(3)	TH 2	Replace Bridge 32
Richmond STP RS 0284(11)	US 2	Rehabilitation and design of Checkerhouse Bridge 24
Richmond-Highgate IM BPNT(9)	I-89	Bridge painting
Rutland-Burlington VTRY(1) C\1	VTR	Replace existing wood cross ties, surfacing of track
Salisbury WCRS(15) & Middlebury WCRS(16)	VTR	Replace existing decks with new prestressed concrete
Searsburg STP SCRP(7)	VT 8	Install a new box culvert

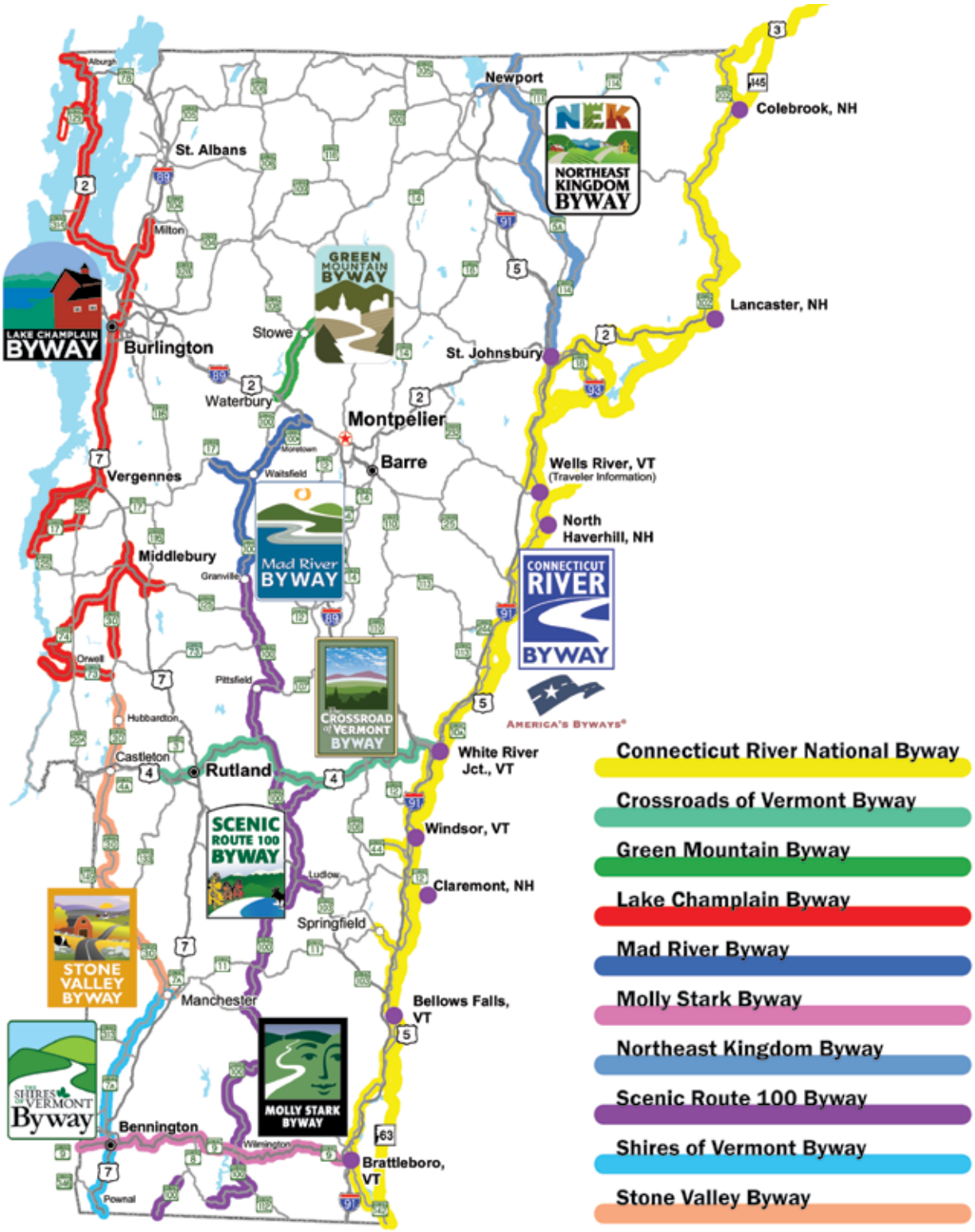
Project Name & Number	Route Number	Description of Work
St. Albans STP 2038(14)	TH 6	Reconstruct rail highway crossing # 247412x
St. Johnsbury BRF 028-4(25)S	US 2	Replace Bridge 108
St. Johnsbury IM MEMB(27) & St. Johnsbury BHF MEMB(28)	I-91, VT 973	Bridge membrane replacement
Starksboro-Hinesburg STP 2930(1)	VT 116	Resurfacing
Statewide IMG MARK(113)	Various	Pavement markings on all interstate highways
Statewide NE REG STP HRRR(12) & Statewide NE REG HES HSIP(3)	Various	Remove and install signs, pavement markings, guardrail
Statewide NORTH HES MARK(400)	Various	Centerline pavement marking on class 2 town highways
Statewide NW REG STP HRRR(13) & Statewide NW REG HES HSIP(4)	Various	Remove and install signs and posts, guardrail, pavement markings
Statewide NW REG STPG SIGN(42)	VT 78, US 7	Remove and install signs and posts
Statewide SE REG STP HRRR(14) & Statewide SE REG HES HSIP(5)	Various	Remove and install signs and posts
Statewide SOUTH HES MARK(401)	Various	Centerline pavement marking on class 2 town highways
Statewide SOUTH HES MARK(401)	Various	Centerline pavement marking on class 2 town highways
Statewide STP CRAK(31)	Various	Crack sealing
Statewide STP SRIN(25)	Various	Signs, pavement markings, and small segments of sidewalk
Statewide SW REG STP HRRR(15) & Statewide SW REG HES HSIP(6)	Various	Remove and install signs & posts and pavement markings
Statewide SW REG STPG SIGN(41)	Various	Remove and install signs and posts
Sudbury-Brandon STP 0158(3)	VT 73	Reclaiming & resurfacing VT 73
Vershire-Thetford STP 2911(1)	VT 113	Reclaiming & resurfacing VT 113
Warren-Waitsfield STP 2506(1)	VT 100	Reclaim & resurface VT 100
Waterbury-Richmond IM SURF(33)	I-89	Surface rehabilitation with alternate-paver placed treatment
Waterford IM MEMB(31)	I-93	Bridge membrane replacement
Weathersfield STP 0146(11)	VT 131	Line existing culvert with a cured-in-place pipe liner
Weathersfield STP 2913(1)	VT 131	Reclaim & resurface VT 131
Westfield ER CULV(34) & Westfield ER CULV(40)	VT 242	Replacement of two culverts w/precast boxes
Woodford ER BHF 010-1(44)	VT 9	Rehabilitate Bridge 11
Woodstock BHO 1444(52)	TH 2	Rehabilitate Bridge CB45
Woodstock BRO 1444(55)	TH 6	Replace Bridge 23

Municipally Managed Projects

Regular Projects Substantially Completed in 2013

Essex Junction STP SDWK(14)	New sidewalk and pedestrian lighting along VT 2A
Essex Junction STP EH12(12)	New sidewalk and pedestrian lighting along VT 2A
Burlington STP EH09(16)	Mid-block pedestrian crossing along Main Street with related signage, ramps, bump-outs and benches.
Statewide STP SRIN(25)	Safe Routes to School improvements in 10 towns including signs, pavement markings and radar speed feedback signs.
St. Albans TCSP TCSE (11)	Streetscape improvements along Main Street including sidewalks, lights, signs and landscaping.
St. Albans TDG3(49)	Streetscape improvements along Main Street including sidewalks, lights, signs and landscaping.
St. Albans STP EH11(10)	Streetscape improvements along Main Street including sidewalks, lights, signs and landscaping.
St. Albans SSMG(69)	Stormwater improvements along Main Street
Jamaica STP EH11(6)	New sidewalk along VT 30
Middletown Springs STP SRIN(30)	New sidewalk from the elementary school to an existing crosswalk on VT 133
North Bennington STP EH05(3)	Sidewalk improvements along Bank & Main Street
Colchester STP WALK (15)	Sidewalk improvements and pedestrian signal along US 7
Jericho STP SDWK(2)	Sidewalk improvements along VT 15
Jericho STP SRIN(28)	Sidewalk and drainage improvements at Jericho Elementary School
Readsboro SRP SRIN(17)	Sidewalk improvements along VT 100
Lyndon STP EH05(18)	Gravel footpath behind municipal building
Waitsfield WALK(24)S	Sidewalk improvements along VT 100
Swanton – St. Johnsbury STP LVRT(2)	Construction of bridges in St. Johnsbury and Danville on the Lamoille Valley Rail Trail
Waterbury BRO 1446(35)	Realignment and construction of a new portion of roadway to replace existing truss bridge on Farr Road over the Little River.
Williston SSMG(65)	Bank stabilization and storm drain replacement adjacent to Avenues “C” and “D”
South Burlington SSMG(64)	Improve existing drainage swales and replace drainage pipes along Hayes Avenue
Burlington STP SDWK(5)	Sidewalk improvements along Colchester Avenue
Burlington ST 5000(23)	Installation of rectangular rapid flashing beacons along Pine Street with sidewalk, curb and crosswalk improvements
Readsboro ST PRDP(103)	Construction of municipal park and ride facility
Warren ST PRDP(107)	Construction of municipal park and ride facility
Peru ST PRDP(123)	Construction of municipal park and ride facility
Weathersfield ST PRDP(126)	Construction of municipal park and ride facility
Pittsfield ST PRDP(118)	Construction of municipal park and ride facility
West Rutland ST PRDP(110)	Construction of municipal park and ride facility
West Haven ST PRDP(135)	Installation of solar powered lighting at municipal park & ride facility
Better Back Roads projects	Municipal mitigation projects at various locations statewide

Vermont Byways Map



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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