

## **INTRODUCTION AND OVERVIEW**

The Vermont Agency of Transportation (VTrans) has a vision of a safe, efficient and fully integrated transportation system that promotes Vermont's quality of life and economic wellbeing.

VTrans' mission is to provide for the movement of people and commerce in a safe, reliable, cost-effective and environmentally responsible manner.

### **GOALS**

**SAFETY:** Promote safety as a critical component in the development, implementation and maintenance of the transportation system.

**EXCELLENCE:** Cultivate and continually pursue excellence in financial stewardship, performance accountability, and customer service.

**PLANNING:** Optimize the future movement of people and goods with corridor and natural resource management, balanced modal alternatives, and sustainable financing.

**PRESERVATION:** Protect the state's investment in its transportation system.

### **AMERICAN RECOVERY AND REINVESTMENT ACT (ARRA)**

A significant driving force in 2009 was, and continues to be, the federal economic stimulus bill, formally known as the American Recovery and Reinvestment Act (ARRA). ARRA made \$125 million available to the State of Vermont for transportation projects.

The money comes with numerous federal requirements. The key factors that determine viable candidates for Vermont's \$125 million in stimulus highway and bridge money came down to two basic criteria: eligibility and readiness. ARRA required that \$44 million of Vermont's allocation be obligated within 120 days of the date that the Federal Highway Administration apportions the funds – which was March 2, 2009. "Obligated" requires that the project is designed, permitted, and ready to go out to bid. The rest of Vermont's dedicated stimulus money must be obligated within one year of apportionment, or March 2, 2010.

Chosen projects are limited to highway infrastructure that is either part of the Federal Highway Aid Network or to off-network bridges longer than 20 feet that are classified as either structurally deficient or functionally obsolete.

This limitation unfortunately disqualified many municipal roadways and bridges from consideration. Vermont lobbied Congress to provide more flexibility to how stimulus funds can be used, but the bill passed by Congress did not provide such flexibility. The Federal Aid Highway Network generally includes:

- The Interstates and National Highway System (examples include I-89 and US Route 4)
- Urban and rural principal arterial routes (generally numbered State and U.S. highways).
- Other connector highways that provide motor vehicle access between arterial routes, including “major collectors” on the town highway network.

Projects selected for ARRA funding came from several sources. VTrans had projects that were “shovel ready” – essentially sitting on the shelf waiting for funding. VTrans worked with the Federal Highway Administration to obligate \$44 million to those projects by July 2, 2009 as required by ARRA deadlines. Most of those projects are paving and bridge repairs that did not require complex permitting or right-of-way acquisition.

VTrans, in consultation with the Vermont Legislature, then identified projects for its remaining ARRA funding, and has obligated most of those funds. All funds will be obligated by the 2010 deadline. Of the 76 total transportation projects funded with stimulus money, 48 (about 63 percent) will improve infrastructure that is municipally owned.

The purpose of the American Recovery & Reinvestment Act is to stimulate the U.S. economy and create jobs as quickly as possible. As a result, the Act has strong “maintenance of effort” language that requires the state to maintain all of its current transportation programs. Stimulus funds are not intended to allow states to stop other work it was planning. Thus Vermont must match all its regular federal formula funds within normal timeframes. This means it is essential that all usual transportation revenue remain intact. Vermont cannot redirect state funds previously targeted to be spent on federal-aid transportation projects.

**ROAD TO AFFORDABILITY:**

VTrans in 2006 under the leadership of Governor James Douglas and then Transportation Secretary Neale Lunderville embarked on a long-term effort to change the Agency’s business model. Titled “The Road to Affordability,” the policy is driven by a number of factors, but the policy’s essence is based on the fact that Vermont has an aging transportation infrastructure that demands greater and more costly attention than in the past. As a result, bridge, culvert and road maintenance are competing with new roadway construction projects for limited funds. This policy has subsequently been reaffirmed under the leadership of current Secretary David Dill.

Given this reality, Governor Douglas and Secretary Dill have taken steps to ensure that Vermont preserves its existing assets so that they do not deteriorate to the point that they require major reconstruction and become a financial drain on the entire system. Such early intervention and preventive maintenance can result in significant savings:

- A \$100,000 investment in a culvert under 20 feet of fill on the Interstate today will save over \$1 million for replacement construction and detours tomorrow.

- A \$100,000 investment in a new bridge membrane today will save over \$1 million for deck replacement tomorrow.
- A \$1 million investment in the pavement of a good roadbed today will save over \$5 million in costly reconstruction in the future.
- Preventive maintenance done today also minimizes future aggravation and delays for the traveling public and freight haulers.

Another critical component of “The Road to Affordability” is a set of strategic parameters that VTrans intends to use in the day-to-day management of Agency activities. These include:

Realignment of priorities:

- Future investment will be focused on traveler safety and the preservation of existing infrastructure.
- Optimize financial resources by focusing attention on a practical number of large projects.
- Set realistic timetables for large projects and new roadway segments, and balance funding within the Roadway Program to reflect priority on system preservation.

Rethink project focus:

- Back to Basics – Where design status allows, develop project scopes that limit the addition of project amenities not related to preservation and environmental protection. (Example: under-grounding of utilities, streetscapes)
- Innovative Financing - Any proposed new roadway-segment project not presently in the Transportation Capital Program will require an innovative financing approach acceptable to the Agency prior to being considered for inclusion in the capital program.
- Just-in-time delivery of Design, Right of Way, & Permitting.

### **ASSET MANAGEMENT:**

As noted in “The Road to Affordability” discussion, VTrans takes a system-wide view of transportation problems, needs, and opportunities. The rationale is to ensure the maximum benefit per dollar of investment, while at the same time achieving system-wide performance goals (see below for a more extensive performance measurement description). That system-wide viewpoint is reflected in the annual budget-development process.

VTrans views asset management, performance measures, and project prioritization as a means to get the most out of limited transportation dollars. The state’s transportation budget must preserve an aging infrastructure that includes:

- 3,200 two-lane miles of pavement on state roads
- 2,689 bridges greater than 20 feet in length
- 10 state-owned airports
- 305 miles of state-owned rail line with 265 bridges
- 122 heated and 289 unheated buildings

- 68,000 + traffic signs under VTrans jurisdiction
- Over 100,000 small culverts
- Other assets including a fleet of vehicles, park & ride lots, rest areas, bike paths, and ancillary highway assets

The tradeoffs are evaluated through a quantitative project prioritization approach (see below for a more extensive description of project prioritization efforts). In essence, asset management is a tool to maximize the value of existing transportation infrastructure. Databases and computer models compare scenarios with different levels of funding for pavement and bridges. Other models are in various stages of development.

Vermont is one of the few states with asset-management principles, performance measures and project prioritization written into statute. To accomplish this, VTrans worked on a cooperative basis with the General Assembly, the Joint Fiscal Office, and the Legislative Council in developing the language.

#### Current VTrans Asset Management Systems

Like many other states, Vermont has “stovepipe” systems that analyze investments within a single type of asset. The critical components of VTrans’ asset-management process include a system inventory and condition assessment, performance measures, project prioritization, and the annual budget-development process.

The status of Vermont’s asset management systems is:

- Pavement – Computer software for pavement management is widely available. Vermont’s Paving Section runs such software to help develop VTrans’ paving program.
- Bridges – Like most DOTs, Vermont uses AASHTO’s Pontis bridge management software. VTrans’ Structures Section measures structurally deficient bridges, but is working to make more use of the Pontis deterioration models and a bridge health index to plan effective preventive maintenance.
- Safety – This is not an “asset” in the traditional sense. However, safety and crash statistics are important factors in project prioritization and selection. VTrans is a leader in developing a multi-agency Strategic Highway Safety Plan. This program works with multiple agencies to reduce Vermont’s crash rate despite rising traffic volume.
- Roadway – VTrans continues to evaluate and implement computerized systems to manage highway assets. This includes FHWA software as well as in-house developed approaches that prioritize roadway projects by evaluating safety, mobility, roadway geometry, pavement structure and condition, condition assessment of small culverts, guardrail and signs, as well as economic factors like travel time or the costs associated with crashes and delays. Additionally, the Roadway and the IT Sections

are working to integrate the various roadway databases to facilitate analysis across asset classes.

- Maintenance Management – VTrans' Operations Division uses MATS (Managing Assets for Transportation Systems) to record most highway maintenance work by location. MATS is being expanded to include culverts, transportation buildings, and ancillary assets.
- Central Garage Fleet and Equipment – The Central Garage must have the right equipment available at the right time, especially for snow removal and emergencies. VTrans uses a computerized system to not only track equipment usage but also to optimize maintenance and replacement cycles at the least cost.
- Buildings – The Operations Division uses facility-inventory and condition-reporting software to both calculate a building health index and to recommend repairs in a priority sequence.
- Signs – Roadway, Traffic & Safety currently maintains a database of 68,000 signs. Over 5,000 signs are replaced annually due to knock-downs, obsolescence, loss of reflectivity, changing federal standards, or as part of paving and construction projects.
- Aviation – The Aviation Section uses the Airport Information Management System (AIMS) to identify, prioritize and track progress on aviation-related projects. Aviation safety is the primary project driver at both the federal and state level.

#### **PERFORMANCE MEASUREMENT:**

VTrans has been systematically developing performance measures since 2001, and they have become a crucial part in managing the assets and services entrusted to the Agency. Performance measures indicate the effectiveness of the Agency in accomplishing its mission and indicate where shifts in funding are needed. The public expects VTrans to manage transportation assets and services in the most cost-effective manner.

Nationwide, transportation agencies manage assets that are absolutely critical to the economy. Bridges, pavement, sidewalks, lighting, and highway assets are just a few examples. In an era of decreased revenues, agencies are responsible for minimizing asset deterioration and long-term costs by investing in and maintaining the right assets at the right time. VTrans is no exception. In developing the annual transportation program, VTrans staff evaluates options and tradeoffs that adhere to Agency goals and objectives. VTrans managers estimate how the proposed program expenditures will impact the particular asset performance measure such as statewide pavement condition, bridge health, safety or DMV services.

VTrans is emphasizing system preservation as the best long-term way to provide mobility, safety, and economic well-being. Once a transportation program is executed, performance measures indicate whether the desired results are achieved. The performance results show where adjustments to the transportation program are needed in the next budget cycle.

The *2008 Performance Measures Report* is on the VTrans web page at <http://www.aot.state.vt.us/Planning/Documents/Planning/Performance-Report-Aug13-2008.pdf> VTrans is responsible for managing the performance of the assets and services in the chart below. Performance measures show Vermonters that VTrans is exercising good stewardship over the assets/services it manages, and is spending tax-payers' money wisely.

The higher level performance measures listed below are already adopted or are planned. Other measures are described in the policy plans developed for the asset categories.

<b>VTrans Strategic Performance Measures As of August 2008</b>		
<b>Asset/Investment Categories</b>	<b>Strategic Performance Measures</b>	<b>Target</b>
Highway	Pavement condition index based on vehicle miles traveled	70 on a scale of 0 - 100
	Percent of miles of pavements rated in "very poor" condition	< 25
	Number of structurally deficient bridges (bridges longer than 20 feet)	Fewer than: <ul style="list-style-type: none"> <li>• 22 Interstate SD bridges</li> <li>• 123 state SD bridges</li> <li>• 257 town SD bridges</li> </ul>
	Number of fatal plus incapacitating crashes per year	Reduce by 4% per year
	Percent of high-priority safety needs addressed	100% on state system
	Crash reduction attributable to the Highway Safety Improvement Program (Future)	TBD
	Park & Ride facility condition	Improve Facility Condition Index each year
Park & Ride spaces and utilization	Increase usage annually	
Signs: Provide readable, relevant, and compliant signs throughout the state	Reduce average age of signs to 7.5 years	
Aviation	Airport Pavement Condition	Maintain at "good" or better (PCI 80 or better)
	Airport Revenue	Increase by 3% annually
Public Transportation	Percent of routes at or below the acceptable level for cost per passenger - Goal 100%	TBD
	Percent of routes at or above the acceptable level for passengers per hour - Goal 100%	TBD
Rail	Increase ton-miles of freight (Future)	2% increase per year after 10m tons
	Increase Vermont origin or destination carloads (Future)	10k origin, 17k destination
	Annual passenger rail ridership	3% increase per year
Bike / Pedestrian	Reported motor vehicle crashes involving bicyclists & pedestrians	Hold or reduce number of crashes
	Mileage of bicycle and pedestrian facilities developed	Develop 4 miles per year
Maintenance	Percent of bridges cleaned and washed annually	50% or more
	Percent of State highway centerlines renewed annually	100%

	Mow at least two swaths on all major state roads and arteries annually.	100%
	Patch 100% of post winter potholes on state roads by June 1	100%
	Complete spring litter clean up on 100% of state roads by the end of May	100%
	Paint structural steel each calendar year	780 tons of structural steel
Transportation Buildings	Improve average building condition as measured by the building condition index. (Future)	TBD
Central Garage	Percentage of vehicles within their cost-effective service lives	85% or more
	Percentage of vehicles available for service (Future)	TBD
DMV	Service walk-in customers at DMV offices within 30 minutes	90% or better
	Turnaround time for DMV mail transactions	7 days or less
	Electronic transactions as a percent of the total transactions (Web, IVR, and Kiosk)	Reach 8% or more in three years
	Compliance rate of commercial vehicle equipment and drivers	Reduce % of Out-of-service violations
Organizational Excellence	Contracts completed on budget (Future)	95% on budget (proposed)
	Projects advertised on time (Future)	TBD

### **PROJECT PRIORITIZATION:**

The demand for transportation improvement far exceeds the funds available. Good stewardship mandates that VTrans use limited dollars to preserve and improve Vermont's transportation assets in the most efficient manner. The Agency must apply asset management principles to take a long-term view of the overall transportation network, and choose activities that minimize long-term costs.

The Agency owes transportation stakeholders an explanation of why one project was chosen over another. To that end, the Agency developed a quantitative project prioritization method that assigns a numeric score to competing projects. This score is a crucial part of the *Road to Affordability* program. Under that strategy, more emphasis is placed on preserving bridges, pavement, culverts and other assets. Priority scores guide VTrans and other stakeholders as to which projects to postpone and which ones to accelerate.

Project prioritization is the result of legislation in 2005 and 2006. Sec. 48 of Act 175 of the 2006 Legislative Session (19 V.S.A. paragraph 10b(c)) directs the Agency of Transportation to explain how projects are prioritized and selected for inclusion in the annual budget. In 2006, VTrans worked with the state's various Regional Planning Commissions and the Chittenden County Metropolitan Planning Organization to assign a numerical score to transportation projects based on defined criteria. The scores drive the transportation program and are an essential part of the budget process.

The legislation reads:

The agency of transportation, in developing each of the program prioritization systems schedules for all modes of transportation, shall include the following throughout the process:

The agency shall annually solicit input from each of the regional planning commissions and the Chittenden County Metropolitan Planning Organization on regional priorities within each schedule, and those inputs shall be factored into the prioritizations for each program area and shall afford the opportunity of adding new projects to the schedules.

*Each year the agency shall provide in the front of the transportation program book a detailed explanation describing the factors in the prioritization system that creates each project list.* (Emphasis added: This write-up satisfies that directive.)

The legislation builds on Section 53 of Act 80 of 2005 (19 V.S.A. paragraph 10g). That legislation requires the Agency to develop a numerical grading system to assign a priority rating to paving, roadway, bridge, and bridge maintenance projects. It requires the rating system to include asset management-based factors which are objective and quantifiable including:

- Safety
- Traffic volume
- Availability of alternate routes
- Future maintenance and reconstruction costs
- Priorities assigned by the regional planning commission or the MPO

The legislation also requires that the Agency consider the functional importance of the highway or bridge to the economy as well as its importance to the social and cultural life of the surrounding communities.

The Agency is prioritizing projects related to bridge, pavement, roadway, buildings, bike/pedestrian, park & ride lots, aviation, rail, transportation enhancements, and new public transit routes. Each Program Manager develops a method appropriate for the asset. Those methods take advantage of available data and technology.

The project prioritization and selection approach continues to evolve. In 2008, VTrans and the Directors of the Vermont Association of Planning and Development Agencies met several times to further improve the process. 2009 was the first year when the changes were in place. The results of the meetings are in a legislative report titled, *Project Prioritization and Addition of New Projects for the State Transportation Program*. In summary, the meetings resulted in the following:

- Increased local input in the selection of paving projects
- Developed an approach for the regions and MPO to substitute a candidate project with a new project.
- Emphasized the importance of obtaining local input for project priorities. Although local input is not needed for Interstates and certain FHWA funded safety projects, it is an essential component of the VTrans project selection process for most other asset classes.

- Although the RPCs and MPO have flexibility in how they prioritize projects, they will, at minimum, use common criteria as specified by the Legislature.
- VTrans Program Managers will provide more information on candidate projects in order that each region has an accurate “big picture”.

A close working relationship between VTrans and the RPCs/MPO assures the success of project prioritization and selection. The changing transportation environment will necessitate further changes over time.

As explained by the following, the priorities balance Agency asset-management principles with regional priorities. Local transportation priorities are an important factor that helps determine where a project falls on the Agency’s prioritization list. Each Regional Planning Commission (RPC) and the Metropolitan Planning Organization (MPO) rank all projects in their region in order of importance. These rankings are given “weight” within the Agency’s scoring process to reflect a region’s needs.

### **RPC/MPO Input:**

As of 2009, VTrans has gone through five iterations of project prioritizations with the RPCs/MPO. VTrans is doing the following:

By December of each year, VTrans’ Policy & Planning Division produces a list of all Capital Program projects that are not yet under contract. The RPCs/MPO prioritize these projects and return the results to the Agency by April 1. The VTrans Policy & Planning Division assembles the RPC/MPO priorities and delivers them to the Program Managers who incorporate the priorities into their own scores. These scores drive the budget for the fiscal year starting twelve months later.

In 2007, the Agency implemented a process for RPCs/MPO to formally request a “critical need” new project to be added to the transportation program. The project request must clear a very high hurdle since the state simply cannot afford to add to the large project backlog. We do recognize, however, that in some highly unusual cases a critical new project might rise to the top. RPCs/MPO may submit documentation for a critical-need project to VTrans. It will be evaluated by a team in VTrans after which VTrans will accept or deny the project. The process is described in another document titled *Criteria and Process for Considering Critical Need Project Requests* provided to the RPCs/MPO.

In 2008 and 2009, the Agency and the RPCs/MPO jointly implemented a process to allow project substitution. This process allows an RPC/MPO to substitute a lower priority candidate project with a new project. Projects must be of similar cost and the affected towns must participate. VTrans, too, must be part of the process from the beginning. There were no project substitutions in 2009, but the process is still in place for 2010.

Another change in 2009 is how VTrans selects town highway bridges to add to the transportation program as a candidate project. VTrans provided each RPC/MPO a list of the most needy town bridges in their territories and asked for advice in moving them into the transportation program. Once a bridge is a candidate it is assigned a project number

and preliminary scoping work commences. The RPCs/MPO now have a much larger role in these choices.

### **Prioritization factors by project type**

#### **Paving:**

The Paving Section is responsible for providing the traveling public with the best highway surface condition, with the funding available, using a variety of surface treatments. The Paving Section collects information about pavement surface condition with a specially equipped van that measures several factors including rutting, cracking, and pavement roughness. These data are analyzed for the entire State Highway network to determine the optimum treatment to maximize the pavement's life expectancy. These factors are combined with regional priorities to develop the annual paving program. Factors for paving are:

- Pavement Condition Index (20 points)
  - Weighted based on condition; more points are assigned for higher levels of deterioration.
- Benefit/Cost (60 points)
  - The B/C is provided by the Pavement Management System, a.k.a. dTIMS. Factors include optimal treatment, traffic volume, and type of traffic (trucks).
- Regional Priority (20 points)
  - Does the regional planning commission support the project from a local land-use and economic-development perspective?

The results from these analyses are summarized for the three program funding categories/functional classifications: Interstate (90% Federal/10% State), State Highways (80/20), and Class 1 Town Highways (80/20).

#### **Bridge:**

The Structures Section inspects long bridges (greater than 20 feet) at least every two years as required by the Federal Highway Administration's National Bridge Inventory. Engineering factors from the inspection are combined with regional priorities, and other factors to produce a numeric score. Prioritization factors for bridges are:

- Bridge Condition (30 points)
  - Weighted based on condition of major, inspected components (deck, superstructure, substructure, and culvert); more points assessed for higher levels of deterioration. The condition is determined at the most recent inspection.
- Remaining Life (10 points)
  - Correlates the accelerated decline in remaining life to condition.

- Functionality (5 points)
  - Compares roadway alignment and existing structure width, based on roadway classification, to accepted state standards. Too narrow or poor alignment bridges are safety hazards and can impede traffic flow.
- Load Capacity and Use (15 points)
  - Is the structure posted or restricted? What is the inconvenience to the traveling public if the bridge is out of service? What is the average traffic use on the structure?
- Waterway Adequacy and Scour Susceptibility (10 points)
  - Are there known scour issues or concerns? Is the structure restricting the natural channel? Are channel banks well protected or vegetated?
- Project Momentum (5 points)
  - Points are assigned if the project has a clear right of way, has all environmental permits, and the design is ready and waiting for funds to become available.
- Regional Input and Priority (15 points)
  - Does the regional planning commission support the project from a local land-use and economic-development perspective?
- Asset – Benefit Cost Factor (10 points)
  - This compares the benefit of keeping a bridge in service to the cost of construction. The “benefit” considers the traveling public by examining the traffic volume and the length of a detour if the bridge were posted. For example, a bridge with a high traffic count that does not have a good detour around it would get a higher benefit score.

Assigned points are summed together to yield a maximum point value of 100.

### **Roadway:**

Roadway projects include full depth highway reconstruction, realignment, increasing highway width, adding lanes, and more. Some of these projects take years to develop due to the time required to obtain permits and to purchase right of way. There is a large backlog of projects that the Agency is working through. Factors in Roadway prioritization are:

- Highway System (40 points)
  - This factor looks at the Highway Sufficiency Rating and the network designation. Interstates are held to the highest standard, followed by non-Interstate primary and then off-primary roads. The Highway Sufficiency Rating considers traffic, safety, width, subsurface road structure, and more.

- Cost per vehicle mile (20 points)
  - This is the project cost divided by the estimated number of miles vehicles will travel on the project. This is a relatively easy method to get a benefit/cost ratio for comparing similar projects.
- Regional Priority (20 points)
  - The top RPC Roadway project is assigned 20 points. The score is reduced for lower RPC priorities. Projects listed as priority #10 and lower get two points.
- Project Momentum (20 points)
  - This factor considers where the project is in the development process and anticipated problems such as right of way or environmental permitting. Some projects are so far along that they must be completed or the Agency would have to pay back federal funds.
- Designated Downtown project
  - Per 19 V.S.A. § 10g(1)(3), VTrans awards ten bonus points to the base score for projects within a designated downtown development district established pursuant to 24 V.S.A. § 2793.

**Traffic Operation (Intersection Design):**

- Intersection Capacity (40 points maximum)
  - This factor is based on Level of Service (LOS) for the intersection and the number of intersections that are in the coordinated system. Projects with a lower LOS and that are part of a larger coordinated system receive higher scores for this category.
- Accident Rate (20 points maximum)
  - This factor is based on the critical-accident ratio for the intersection. Projects with higher critical-accident ratios receive higher scores for this category.
- Cost per Intersection Volume (20 points maximum)
  - This factor uses the estimated construction cost and average-annual-daily traffic through the intersection. VTrans calculates the construction cost of the project for each anticipated user through the intersection. Projects with lower costs per intersection volume receive higher scores for this category.
- Regional Input and Priority (20 points maximum)
  - This factor is based on the ranking of projects from the RPCs/MPO. The RPCs/MPO rank the projects based on criteria they develop. Projects with higher regional rankings receive higher scores for this factor.
- Project Momentum (10 points maximum)

- This factor considers:
  - Where the project is in the development process
  - Anticipated problems such as right of way or environmental permitting
  - Funding

### **Park & Ride:**

The Agency of Transportation has 29 Park & Ride lots strategically placed in various locations in the state. Demand for Park & Ride spaces and new lots is increasing, especially as fuel prices rise. Requests for new lots are evaluated based on the following criteria:

- Total Highway and Location (40 points)
  - An accumulation of points from individual scorings of Highway Sufficiency Rating, Current Average daily Traffic, Highway Function (Network), distance from Primary Network and Public Transit Service.
- Cost/Parking Space (20 points maximum)
  - Correlates the facility project cost with the total number of parking spaces.
- Regional Input and Priority (20 points)
  - Regional Planning Commission support for the project from a Regional perspective, and the project's priority within the region.
- Project Momentum (20 points)
  - Projects that are already underway, projects that are already in VTrans' capital program and have identified funding, and projects that do not anticipate permitting or right-of-way problems are assigned more points.

### **Bicycle/Pedestrian:**

The Bicycle/Pedestrian Section solicited bicycle and pedestrian projects from the Regional Planning Commissions and the MPO. The project prioritization scoring is as follows:

- Land Use Density (20 points)
  - Weighted based on surrounding land use condition.
    - Downtown or Village center
    - Connects outlying area to Downtown or Village Center
    - Connects Residential Area to School or Recreation area
    - Part of Regional Network
- Connectivity to a larger network of bicycle and pedestrian facilities (10 points)
  - Correlates the proximity of the proposed bike or pedestrian improvement to a larger (local or regional) network of facilities.
    - Completes critical missing link
    - First facility in a community
    - Links to both ends of facility
    - Links to one end of facility
    - Does not link to existing facility
- Multi-Modal Access (5 points)

- Correlates the proximity of the proposed bike or pedestrian improvement to other transportation modes. For example, points are given if the sidewalk, path or bike lane provides access to a bus station, train station or a Park & Ride lot.
- Designated Downtown or Village Center (5 points)
  - Points are assigned if the proposed facility is completely or partially within a downtown area.
- Project Cost (20 points)
  - Cost is analyzed per linear foot plus a consideration for bridges and retaining walls.
- Regional Priority (20 points)
- Project Momentum (20 points)
 

Two points are assigned for each of 10 different factors:

  - Project Development Process
    - Project definition complete
    - Preliminary design complete
    - Environmental permits acquired
    - ROW clear
  - Funding
    - Project was funded in previous fiscal year
    - Project construction identified in the State Transportation Improvement Plan
    - Project construction expenditures are in the current Capital Program
  - Anticipated Workflow Problems
    - No environmental/resource problems anticipated
    - No design problems anticipated
    - No ROW problems anticipated

### **Transportation Enhancement Projects:**

Applications are reviewed by VTrans' Policy and Planning Division and the Local Transportation Facilities (LTF) Section to ensure that the proposed projects meet all eligibility requirements for consideration.

LTF staff reviews and comments on the applications for technical feasibility, budgetary feasibility, cost/benefit of the proposed project, and the capability/track record of the project sponsor.

Applications and the LTF comments are scored by the Transportation Enhancement Grant Committee (TEGC). The score is based on the following ten criteria: (Note: Per legislative directive, preference is given to bicycle and pedestrian facilities as well as projects that are within Designated Downtowns and Villages.)

- The project promotes quality, linkage, and variety in Vermont's transportation system. (10 points)  
Points are given for project characteristics such as:

- Has a clear, desirable, and defensible relationship to surface transportation.
- Creates or completes a new transportation facility where it is needed.
- Enhances the function and/or aesthetics of an existing transportation system.
- Makes linkages to other modes of transportation, including public transportation, bicycling and walking facilities.
- Benefits a substantial number of Vermonters and visitors to the State. Does the project serve populations currently not served or underserved? (10 points)
- The project is compatible with its surroundings as well as relevant state, regional, and local planning. The project is supported by the RPC or MPO. (10 points)
- The project is feasible and likely to be finished. (10 points)
  - There are no substantial environmental concerns, property ownership issues, or design challenges.
  - The project has a completed study demonstrating its feasibility.
  - The project has completed an analysis other than a feasibility study, has a detailed budget and firm commitment of local matching funds.
  - The project sponsor has made provisions for long-term maintenance and its costs.
- The project enjoys strong community support. Indicators of support are: (10 points)
  - Letters of support from organizations and individuals
  - A local financial match greater than 20 percent
- The project accurately and effectively addresses one or more of the 12 eligible Transportation Enhancements activities. (10 Points)
- The project is particularly innovative or creative. For example, points are given if the project has unique partnerships, innovative design, and use of local materials. (10 points)
- The project budget is 50 percent or more for pedestrian and bicycle travel surfaces. (10 points)
- The project benefits an economically disadvantaged area, as evidenced by State designation or the town's most recent U.S. Department of Labor rate of unemployment. (5 points)
  - The Project is located within Orleans and Essex Counties or within the geographic area of the Springfield Regional Development Corporation.
  - The project is located in a town where the rate of unemployment exceeds 5.9 percent.
- The project benefits a designated downtown or village, as determined by the Vermont Downtown Board.
  - The project is within a Designated Downtown District. (5 points)
  - The project is directly adjacent to a Designated Downtown District. (3 points)
  - The project is within a Designated Village District. (2 points)

The TEGC members return their scores for each project to the Policy and Planning

Division where the scores are averaged for each project.

The TEGC awards funds usually in the priority ranked order until there is approximately \$500,000 left. At that time, the committee considers the geographic distribution of projects. If necessary, projects might be elevated in priority to achieve better geographical distribution

### **Aviation:**

The Aviation Program prioritizes projects by scoring 14 airport and project factors. Safety is paramount. To maintain safety, the Federal Aviation Administration (FAA) has stringent regulations that trigger airport improvements and projects. Projects are also initiated by the aviation community and by the Agency to meet our own standards.

Airport project descriptions, costs and scoring factors are maintained in the Airport Information Management System (AIMS) data base. AIMS is updated annually when the Capital Improvement Program is negotiated with the FAA for federal funding. Projects that are accepted by the FAA are presented to the Legislature in the Aviation Program's annual budget request for the state's 10 percent matching funds.

Burlington International Airport (BIA) projects are prioritized by BIA. The state, by statute, can provide up to three fifths of the match funds, and serves as a pass through for federal funds.

Scoring weights for state-owned airports are:

- Airport activity (number of operations and based aircraft) (0 to 100 points)
- Population served & local government support (0 to 24 points)
- Economic Development (0 to 40 points)
- Project Type (runway type, paving, navigation, etc.) (0 to 120 points)
- FAA Priority & Standards ranking (0 to 120 points)
- Previous Federal/State Funding (0 to 200 points)
- Cost/Benefit for Projects less than \$75,000 (100 points)
- Resource Impacts (0 to 40 points)
- Local Interest/Support (0 to 20 points)

The scores are totaled, ranked by priority, and made available to the public. The VTrans Aviation Section selects vendors to complete the projects that are funded.

### **Rail:**

VTrans owns 305 miles of active rail line that is leased to private operators. The rail operator is responsible for maintaining the track and bed. VTrans, however, is responsible for the bridges and sometimes contributes towards track upgrades. To remain viable and provide increased support for Vermont's economy, most of the lines require substantial work to support higher weight limits, double-stack containers, and higher speed passenger service. As with other assets, the needs are greater than the available funds. This necessitates hard choices among competing projects.

The Agency collaborates with the Rail Advisory Council to identify broad priorities. Prior to initiating new projects, it is necessary to assure that the current system is preserved. Preservation represents a significant challenge due to the age of the infrastructure. Preservation of the current system is the Agency's number one priority. The second priority is to improve the infrastructure to a modern standard that supports the movement of people and goods. A flow chart in the State Rail and Policy Plan depicts the process for that decision making. Once identified, new projects are subjected to the following ranking system for prioritization:

- Railroad freight operations: This measures the increase in ton-miles or car-miles. (60 points)
- Railroad passenger operation: Points are awarded for an increase in passenger count or passenger miles traveled. (60 points)
- Line conditions: Points are awarded if the project increases the Federal Rail Administration track condition. (60 points)
- Operational costs: Points are awarded based on the operational costs required from the state. (60 points)
- Facility Standards: Does the proposed project address clearance and/or weight limitations? (60 points)
- Priority Route: Points are awarded if the project is on one of the rail priority routes. (60 points)
- Vermont-based activity: Points are awarded for carloads and passengers in Vermont and/or rail jobs created in Vermont. (40 points)
- Government and local support (40 points)
- Economic Development (40 points)
- Documented non-state funding opportunities (60 points)
- Resource Impacts: Does the project require environmental mitigation? (60 points)
- Regional scope: Points are awarded if the project increases competition, partners with other states, or improves intermodal connections. (60 points)
- Utilization of resources: More points are awarded if the project schedule is one year or less. (30 points)
- General safety: Safety can involve rail crossings, ROW, security, etc. (60 points)

### **Public Transit New Starts:**

Twelve independent public transit providers cover regions of the state. VTrans subsidizes their operation under a variety of federal and state programs related to transportation and human services. A major component of public transit in Vermont is a federal program to maintain air quality by encouraging expansion of public transit routes. That program, CMAQ (Congestion Mitigation and Air Quality), provides 80 percent of the operation of new public transit routes for a period of three years. Proposals for New Start funding involve an open competitive process through VTrans' Public Transit Section. Proposals for new public transit routes are evaluated and scored. New Start awards are based on that score.

The scoring weights for the New Start program are:

- Mobility improvements: This gauges the project's capacity to shift travelers from single-occupancy vehicles to public transit. (15 points)
- Environmental Benefits (10 points)
- Operating Efficiencies: This looks at the proposed project's estimated cost per vehicle mile and cost per hour. (15 points)
- Project coordination: This evaluates how well the proposed route fits in with existing routes. (10 points)
- Regional Connectivity: This evaluates route connectivity to outside transportation agencies including coordination of schedules. (15 points)
- Local financial commitment: This looks at the stability and reliability of the local match, and the provisions to cover unanticipated cost overruns and funding shortfalls. (20 points)
- Sustainability of funding continuation: This examines the continuation of funding after the three-year, start-up funding ends. (15 points)

### **Central Garage Vehicle Fleet:**

The Central Garage provides VTrans safe and reliable vehicles through an internal service fund. Within that system, there is an understanding that some fleet activities are critical and require the most reliable response times. Replacement purchases and repairs are prioritized accordingly. Equipment can be grouped into three priority tiers:

- The top tier is:
  - Snowplows are most critical as maintaining winter travel is the highest profile activity of the Agency.
  - Front-end loaders are critical to loading sand and salt into those trucks, and are also a high priority.
  - DMV enforcement vehicles provide a significant portion of the state's commercial vehicle law enforcement activities and are also considered critical.
- A second tier of equipment is important but not as time critical. Examples of those are:
  - Pick-up trucks and heavy utility vehicles that provide the mobility the Agency staff needs to do their jobs.
  - Graders that are used to clear ice, wing back snow drifts, and are generally difficult to rent.
- Least critical are those pieces of equipment whose work can be scheduled ahead of time and which could be obtained through other sources. The Agency has rental agreements with equipment owners throughout the state.
  - Excavators
  - Backhoes
  - Tractors
  - Miscellaneous construction equipment

There is no rigid formula that dictates when equipment should be replaced. Age, mileage (or hours of service), historic and anticipated repair costs, and consequences of failure enter into priorities for replacement vs. repair.

## **Safety:**

VTrans runs a Highway Safety Improvement Program (HSIP) to enhance safety on all Vermont roads. The prioritization process starts with determining high-crash locations from reported crashes, crash severity, road geometry, and anecdotal information.

The Agency scores each location and sorts the list. Agency staff closely reviews the top 50 crash locations, and determines possible improvements. A cost/benefit analysis is conducted to determine the maximum safety improvement for limited dollars. Most high-crash sites get a low-cost improvement such as signs/lines, but a few are targeted for more expensive geometric improvements based on the severity and types of crashes.

The crash analysis is for both state- and town-owned roads. HSIP projects are considered on all public highways.

## **District Decision Making**

The Agency has nine district offices throughout the state. These offices are responsible for normal highway operations and maintenance such as plowing, minor repairs, culverts, guard rails, installing signs, etc. Districts respond to immediate problems and conduct normal maintenance required for a safe and efficient transportation network. A number of factors go into District decisions to address a particular problem or condition. Those are in priority order:

- **Time critical activities:** These are related to safety such as snow and ice control, critical bridge repairs, guardrails, sign repairs, potholes, other emergency repairs and storm damage. The focus is on keeping the transportation system functional and safe. These activities take place primarily on state facilities, but Districts often provide aid to towns.
- **Maintenance Activities:** These are often seasonal activities such as mowing, ditching, and culvert maintenance that maintain the overall condition of the transportation system. The amount of these activities accomplished is determined by Best Maintenance Practices, funding and staffing resources.
- **Preventive Maintenance Activities:** These strategic activities add service life to the system and include bridge repair as well as culvert linings and inverts. Funding often dictates the amount of work accomplished.

Support Activities such as personnel administration, technical support to towns, administration of grant programs, and maintenance of equipment and facilities are done to support all of the above or in support of towns.

## **Town Programs**

The Agency manages several programs for the benefit of towns. These are not listed separately in the Annual Budget; however, the decision process is described below.

## **Class 2 Roadway:**

The Agency distributes grants to towns for Class 2 Town Highways. Projects are selected from town applications by VTrans District Administrators based on town input and VTrans' knowledge of the transportation problem. The District Administrator tracks the history of the grant awards by town to ensure, over time, an equitable distribution of the available funds based on the number of Class 2 Town Highway miles. Occasionally, a critical Class 2 highway need arises in a town that is not due for a grant based on the equitable distribution formula. When this occurs and the District awards a grant to such a town, the District will then work to ensure that future grants bring the equitable distribution back into line.

## **Town Highway Structures:**

Town Highway Structure grants are awarded to towns for bridges or large culverts. Bridge projects are selected from town applications by VTrans District Administrators based on town input and VTrans' knowledge of the transportation problem. The District Administrator tracks the history of the grant awards by town to ensure that, over time, there is an equitable distribution of the available funds based on the number of structures on the town's highway system. Occasionally, a critical bridge need arises in a town that is not due for a grant based on the equitable distribution formula. When this occurs and the District awards a grant to such a town, the District will then work to ensure that future grants bring the equitable distribution back into line.

## **Municipal Mitigation Grants:**

The Municipal Mitigation Grant program consists of four separate grant programs.

- Better Back Roads Program
- Clean and Clear Program
- Two federal storm water mitigation earmarks

These four programs address roadside erosion problems as well as environmental problems associated with stormwater runoff.

Projects are selected by committees made up of representatives from VTrans, the Vermont Local Roads Program, the Northern Vermont Resource Conservation and Development Council, and the Vermont Agency of Natural Resources. Projects are prioritized and selected by these committees based on the applicant's ability to demonstrate that the project will reduce or eliminate roadside erosion or reduce water pollution generated by, or directly associated with, existing public roads and road maintenance activities.