



Memorandum

To: Circ Task Force
From: Christine Forde
Date: August 5, 2011
Subject: VTrans and CCRPC (MPO) Prioritization Methodology

Prioritization of Transportation Projects

The Vermont Agency of Transportation (VTrans) is required to prioritize projects by state legislation enacted in 2005 and 2006. The statute directs VTrans to develop a project prioritization approach that assigns a numeric score resulting in a priority rating for each transportation project. Per statute, the rating system must include the following asset management-based factors:

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

The legislation also requires that VTrans consider the importance of the transportation facility to the economy as well as its importance to the social and cultural life of the surrounding community.

VTrans developed separate prioritization methodologies for each of the following asset categories: Paving, Roadway, Bridge, Traffic Operations, Bicycle/Pedestrian, and Park & Ride. VTrans scoring methodology for each asset category is attached.

To satisfy the legislature's requirement that regional priorities be given consideration, VTrans includes a local priority factor in the methodology for each asset category. Since 2005 the regional planning commissions (RPCs) have been providing project scores to VTrans as input to the prioritization process. The RPC scores are added as a component of VTrans overall priority. The regional scores make up 20 percent of the overall score for most project categories (15 percent for Bridge).

VTrans has suggested that RPCs consider the following factors when scoring projects:

- The impact of the project on congestion and mobility conditions in the region.
- The availability, accessibility and usability of alternative routes.
- The functional importance of the highway or bridge as a link in the local, regional or state economy.

Memorandum

- The functional importance of the highway or bridge in the social and cultural life of the surrounding communities.
- Conformance to local and regional plans.
- Local support for the project.

CCRPC Prioritization Methodology

CCRPC's current prioritization methodology was developed in 2005. This methodology uses planning factors Metropolitan Planning Organizations (MPOs) are required to consider in their planning process, as stated in Federal legislation. CCRPC is the designated MPO for Chittenden County. The planning factors are:

- ▶ *Economic Vitality - Support the economic vitality especially by enabling global competitiveness, productivity, and efficiency.*
- ▶ *Safety and Security - Increase the safety and security of the transportation system for motorized and nonmotorized users.*
- ▶ *Accessibility, Mobility and Connectivity - Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.*
- ▶ *Environment, Energy and Quality of Life - Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.*
- ▶ *Preservation of Existing System - Emphasize the preservation of the existing transportation system.*
- ▶ *Efficient System Management - Encourage and promote the safe and efficient management and operation of integrated, intermodal transportation systems to serve the mobility needs of people and freight and foster economic growth and development.*

The methodology consists of filling out one scoring sheet for each project to be scored. The scoring sheet has one column for each planning factor and five scoring ranges -- High, Medium-High, Medium, Low and No Impact. For each scoring range, under each planning factor, specific characteristics are listed that would result in the project being given that score.

To score a project, for each planning factor an evaluator would begin at the top scoring range and review the project characteristics from top to bottom until one is found that applies to the project in question. The evaluator would check the highest scoring characteristic and that would reflect the score given to the project for that planning factor. Only one score is applied to the project for each planning factor even though multiple characteristics may apply to the project.

A sample scoring sheet detailing CCRPC's methodology is attached following the VTrans prioritization factors.

Memorandum

Developing the Combined Score

VTrans receives project rankings from each RPC and includes those scores with VTrans scores as follows:

- The region's highest scoring project in each asset class gets 20 points (15 points for bridge) added to its VTrans score.
- The region's second highest scoring project in each asset class gets 18 points (13.5 for bridge) added to its VTrans score.
- The region's third highest scoring project in each asset class gets 16 points (12 points for bridge) added to its VTrans score.
- This process continues for the all top 10 scoring projects. For regions for more than 10 projects for any asset class, the minimum score received by each project is 2 points (1.5 points for bridge).

VTrans Project Prioritization Methodology by Asset Class

Paving:

- 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?

Roadway:

- 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 2007 legislation Sec. 38. 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.

VTrans Project Prioritization Methodology by Asset Class

Bridge:

- 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.

VTrans Project Prioritization Methodology by Asset Class

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.

VTrans Project Prioritization Methodology by Asset Class

Bicycle/Pedestrian:

- 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 ends 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 such as 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

VTrans Project Prioritization Methodology by Asset Class

Park & Ride:

- 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.

CCMPO Project Prioritization Scoring Criteria

Project Name: _____

	Economic Vitality	Safety and Security
High Impact (10 points)	<ul style="list-style-type: none"> <input type="checkbox"/> Projects that provide new or improved access to regional activity centers <input type="checkbox"/> Projects that enhance freight movement on interstate or principal arterial <input type="checkbox"/> Projects that improve airport access <input type="checkbox"/> Projects that improve access to tourism facilities <input type="checkbox"/> Projects that maintain existing access facilities on interstate 	<ul style="list-style-type: none"> <input type="checkbox"/> VTrans identified High Crash Location – intersection or section of roadway. Improvements might include: sight distance, alignment, pedestrian crossing, new signal, speed control <input type="checkbox"/> Bridge safety improvements for bridges with sufficiency rating up to 25 <input type="checkbox"/> Other project deemed very important to the safety of the transportation system
Medium-High Impact (7 points)	<ul style="list-style-type: none"> <input type="checkbox"/> Projects that provide new or improved access to local activity centers <input type="checkbox"/> Projects that provide access to planned future activity centers <input type="checkbox"/> Projects that improve access facilities important to rural communities <input type="checkbox"/> Address environmental issues that could impact economic development <input type="checkbox"/> Projects that maintain existing access facilities on principal arterial <input type="checkbox"/> New/expanded Park and Ride Lots 	<ul style="list-style-type: none"> <input type="checkbox"/> Improve emergency access <input type="checkbox"/> Bridge safety improvements for bridges with sufficiency rating of 25.1 to 50 <input type="checkbox"/> New median barriers, guardrail or shoulder <input type="checkbox"/> Intersection/roadway safety improvements (sight distance, alignment, pedestrian crossing, new signal, speed control) in location with a perceived safety problem <input type="checkbox"/> Rail grade crossing improvements and warning signs
Medium Impact (5 points)	<ul style="list-style-type: none"> <input type="checkbox"/> Streetscape or bike/pedestrian improvements in regional activity centers that improve commercial attractiveness <input type="checkbox"/> Supports mobility needs of rural community <input type="checkbox"/> Projects that enhance freight movement on minor arterial or major collector <input type="checkbox"/> Bicycle/pedestrian projects that encourage tourism <input type="checkbox"/> Projects that maintain existing access facilities on minor arterial or major collector 	<ul style="list-style-type: none"> <input type="checkbox"/> Transit equipment for safety or security. For example, shelters. <input type="checkbox"/> Bridge safety improvements for bridges with sufficiency ratings from 50.1–80 <input type="checkbox"/> Repaving interstate or principal arterial <input type="checkbox"/> Dedicated bike/pedestrian facilities <input type="checkbox"/> Upgrading signage and pavement markings to improve safety
Low Impact (3 points)	<ul style="list-style-type: none"> <input type="checkbox"/> Supports mobility needs of business or industry not in an activity center <input type="checkbox"/> Other improvements that support tourism <input type="checkbox"/> Other streetscape or bike/ped improvement in activity centers 	<ul style="list-style-type: none"> <input type="checkbox"/> Paving minor arterial or major collector <input type="checkbox"/> Other safety improvements
No Impact (0 Points)	<ul style="list-style-type: none"> <input type="checkbox"/> No discernable benefits 	<ul style="list-style-type: none"> <input type="checkbox"/> No discernable benefits

	Accessibility, Mobility and Connectivity	Environment, Energy and Quality of Life
High Impact (10 points)	<ul style="list-style-type: none"> <input type="checkbox"/> New/expanded transit infrastructure, service or dedicated facilities for buses <input type="checkbox"/> Bicycle /pedestrian facilities making intermodal linkages or regional connections <input type="checkbox"/> New/expanded access to airports, freight distribution facilities, major industrial centers or regional activity centers <input type="checkbox"/> Provides gap closure in major regional corridor, including new bridges <input type="checkbox"/> Bridge rehab or replacement in areas with limited alternative routes 	<ul style="list-style-type: none"> <input type="checkbox"/> Traffic calming project within established neighborhood or activity center <input type="checkbox"/> Bus replacement for vehicles beyond useful life <input type="checkbox"/> Bicycle/pedestrian facilities within an established neighborhood or activity center <input type="checkbox"/> Significant reduction in the quantity and improvement to the quality of water runoff <input type="checkbox"/> Clean fuel buses/vehicles. Alternative fuel infrastructure. <input type="checkbox"/> Transportation demand strategies, programs and incentives, including park and ride lots <input type="checkbox"/> Projects that encourage compact land use or transit oriented design <input type="checkbox"/> Necessary bridge improvements in areas with limited alternative routes where bridges provide critical connectivity to the community.
Medium-High Impact (7 points)	<ul style="list-style-type: none"> <input type="checkbox"/> Bridge rehab or replacement on interstate or principal arterials <input type="checkbox"/> Bicycle/pedestrian facility connecting neighborhoods <input type="checkbox"/> Upgrade to existing access facilities to airports, freight distribution facilities, major industrial centers or regional activity centers <input type="checkbox"/> Projects that improve connectivity and mobility for rural communities 	<ul style="list-style-type: none"> <input type="checkbox"/> Streetscape enhancement project
Medium Impact (5 points)	<ul style="list-style-type: none"> <input type="checkbox"/> Access to local activity centers <input type="checkbox"/> Bicycle/pedestrian facility making connections within an established neighborhood or activity center <input type="checkbox"/> Signing and informational systems (other than ITS) <input type="checkbox"/> Improvements to interstates, freeways and principal arterials that do not provide direct access to airports, freight distribution facilities, major industrial centers or regional activity centers <input type="checkbox"/> Provides gap closure in minor regional corridor <input type="checkbox"/> New facilities to remove traffic from parallel congested routes <input type="checkbox"/> Bridge rehab/replacement on minor arterial or principal collector or other rural bridges 	<ul style="list-style-type: none"> <input type="checkbox"/> Rehabilitation or reconstruction of transit vehicles or facilities that increases ridership <input type="checkbox"/> Signal updating and interconnections <input type="checkbox"/> Projects that remove traffic from a neighborhood within an established activity center <input type="checkbox"/> Addresses stormwater or water quality issues associated with existing transportation system <input type="checkbox"/> New roundabout or signal projects <input type="checkbox"/> Necessary bridge improvements in areas with limited alternative routes.
Low Impact (3 points)	<ul style="list-style-type: none"> <input type="checkbox"/> Provides gap closure in local corridor <input type="checkbox"/> Bridge rehab/replacement to other urban bridges <input type="checkbox"/> Improvements to minor arterials 	<ul style="list-style-type: none"> <input type="checkbox"/> Streetscape enhancement associated with another project <input type="checkbox"/> Stormwater treatment or water quality improvements associated with another project <input type="checkbox"/> New bike/pedestrian facility associated with another project <input type="checkbox"/> Traffic calming associated with another project <input type="checkbox"/> Other intersection improvements to reduce congestion <input type="checkbox"/> Necessary bridge improvements in areas where detours would have negative impacts on businesses and/or individuals.
No Impact (0 Points)	<ul style="list-style-type: none"> <input type="checkbox"/> No discernable benefits 	<ul style="list-style-type: none"> <input type="checkbox"/> No discernable benefits

	Preservation of Existing System	Efficient System Management
High Impact (10 points)	<ul style="list-style-type: none"> <input type="checkbox"/> Reconstruction, resurfacing or intersection improvements for project with perceived critical need (preservation projects) <input type="checkbox"/> Bridge structural improvements for bridges with sufficiency rating of less than 25, or in imminent danger of being closed or weight restricted <input type="checkbox"/> Reconstruction or resurfacing of existing bike/ped facilities that are in danger of being closed due to deficiencies 	<ul style="list-style-type: none"> <input type="checkbox"/> TDM strategies, programs and incentives including new or expanded park and ride lots <input type="checkbox"/> Increases transit service capacity and/or reliability <input type="checkbox"/> New or improved intermodal transportation center <input type="checkbox"/> Traffic signal interconnect or other ITS improvements <input type="checkbox"/> Improvements to roadways, corridors or intersections with significant congestion (LOS E or F) including roundabouts <input type="checkbox"/> Improvements to intersections accessing bicycle/pedestrian facilities serving primarily a transportation use
Medium-High Impact (7 points)	<ul style="list-style-type: none"> <input type="checkbox"/> Reconstruction, resurfacing or intersection improvements for project with perceived significant need (preservation projects) <input type="checkbox"/> Bridge structural improvements for bridges with sufficiency rating of 25 – 50, or with significant structural deficiencies <input type="checkbox"/> Reconstruction or resurfacing of existing bike/ped facilities with significant need. <input type="checkbox"/> Existing transit facility replacement/rehab that prolongs useful life of assets <input type="checkbox"/> Transit vehicle replacement/rehab consistent with FTA Standards 	<ul style="list-style-type: none"> <input type="checkbox"/> Improvements to congested roadways, corridors or intersections (LOS D) including roundabouts <input type="checkbox"/> New interchanges on limited access highways, in locations with significant congestion, to relieve congestion <input type="checkbox"/> New signals or roundabouts where warranted <input type="checkbox"/> Reduces congestion on congested parallel route (LOS D, E or F) <input type="checkbox"/> Necessary bridge improvements in areas with limited alternative routes.
Medium Impact (5 points)	<ul style="list-style-type: none"> <input type="checkbox"/> Reconstruction, resurfacing or intersection improvements for project with perceived need (preservation projects) <input type="checkbox"/> Bridge structural improvements for bridges with sufficiency rating of 50.1-75, or with moderate structural deficiencies <input type="checkbox"/> Reconstruction or resurfacing of existing bike/ped facilities with perceived need. <input type="checkbox"/> Necessary improvements to existing park and ride lots <input type="checkbox"/> Addresses environmental issues impacting the existing transportation system 	<ul style="list-style-type: none"> <input type="checkbox"/> Improvements to existing interchanges, intersections or roadways (LOS C) including roundabouts <input type="checkbox"/> Introduces new connections between existing street patterns <input type="checkbox"/> Improvements that reduce travel time <input type="checkbox"/> New signal which relieves congestion <input type="checkbox"/> Median treatments or access management <input type="checkbox"/> Left or center turn lanes <input type="checkbox"/> Reduces congestion on parallel route <input type="checkbox"/> Bicycle/pedestrian facility within established neighborhood or activity center, or access improvements at existing intersections
Low Impact (3 points)	<ul style="list-style-type: none"> <input type="checkbox"/> Other improvements to the existing transportation system <input type="checkbox"/> Transportation improvements that have an indirect benefit to the existing transportation system 	<ul style="list-style-type: none"> <input type="checkbox"/> Bus station/stop amenities and shelters <input type="checkbox"/> Traffic flow improvements <input type="checkbox"/> Necessary bridge improvements in areas where detours would have negative impact businesses and/or residents.
No Impact (0 Points)	<ul style="list-style-type: none"> <input type="checkbox"/> No discernable benefits 	<ul style="list-style-type: none"> <input type="checkbox"/> No discernable benefits