

HAMPTON ROADS TRANSPORTATION PLANNING ORGANIZATION

2011 Guide to the HRTPO CMAQ and RSTP Project Selection Process

Prepared by the Hampton Roads Transportation Planning Organization
Updated July 2011



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REPORT DOCUMENTATION

TITLE

Guide to the HRTPO CMAQ and RSTP Project Selection Process

REPORT DATE

July 2011

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ABSTRACT

This document provides information on the process used by the Hampton Roads Transportation Planning Organization (HRTPO) to select projects for funding under the Congestion Mitigation and Air Quality (CMAQ) or Regional Surface Transportation Program (RSTP).

ACKNOWLEDGMENTS

This document was prepared in cooperation with the U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Virginia Department of Transportation (VDOT), Virginia Department of Rail and Public Transportation (DRPT), Transportation District Commission of Hampton Roads (TDCHR), and Williamsburg Area Transit Authority (WATA). The contents of this report reflect the views of the Hampton Roads Transportation Planning Organization (HRTPO). The HRTPO staff is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the FHWA, FTA, VDOT or DRPT. This report does not constitute a standard, specification, or regulation. FHWA, FTA, VDOT or DRPT acceptance of this report as evidence of fulfillment of the objectives of this program does not constitute endorsement/approval of the need for any recommended improvements nor does it constitute approval of their location and design or a commitment to fund any such improvements. Additional project level environmental impact assessments and/or studies of alternatives may be necessary.

NON-DISCRIMINATION

The HRTPO assures that no person shall, on the ground of race, color, national origin, handicap, sex, age, or income status as provided by Title VI of the Civil Rights Act of 1964 and subsequent authorities, be excluded from participation in, be denied the benefits of, or be otherwise subject to discrimination under any program or activity. The HRTPO Title VI Plan provides this assurance, information about HRTPO responsibilities, and a Discrimination Complaint Form.

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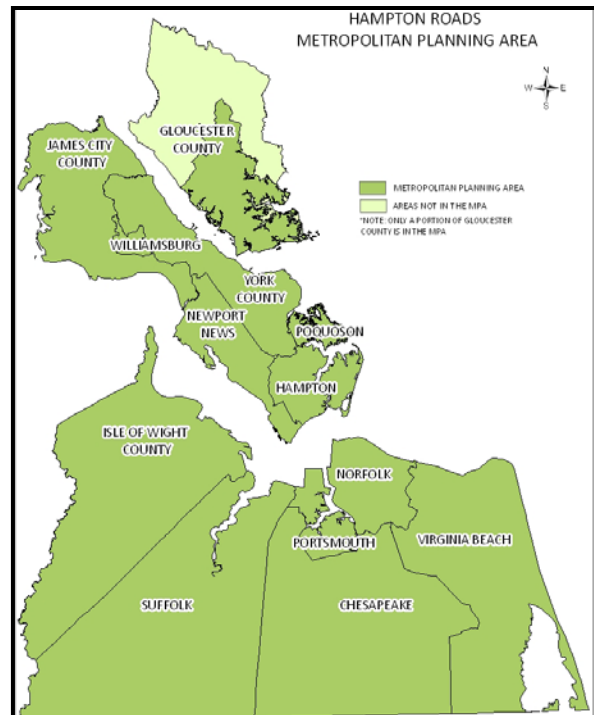
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OVERVIEW

The Hampton Roads Transportation Planning Organization (HRTPO) is the metropolitan planning organization (MPO) for the Hampton Roads area. As such, it is a federally mandated transportation policy board comprised of representatives from local, state, and federal governments, transit agencies, and other stakeholders and is responsible for transportation planning and programming for the Hampton Roads metropolitan planning area (MPA).

The MPA is comprised of the cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg, and the counties of Isle of Wight, James City, York, as well as a portion of Gloucester County.

The purpose of this document is to provide information and guidance on two federal programs: Congestion Mitigation and Air Quality (CMAQ) improvement program and the Regional Surface Transportation Program (RSTP). The HRTPO has the responsibility and authority of project selection and fund allocation for these two programs. Each of these programs is described in greater detail in the following sections of this document.



WHAT IS CMAQ?

The Congestion Mitigation and Air Quality (CMAQ) program provides federal funding to States and localities for transportation projects and programs that help improve air quality and reduce traffic congestion. This funding is intended for areas not meeting the National Ambient Air Quality Standards (NAAQS), referred to as *nonattainment areas*, and for areas that previously did not meet the standards, but now do, referred to as *maintenance areas*. Hampton Roads has been designated as a maintenance area for ozone.

WHAT IS RSTP?

The Surface Transportation Program (STP) provides federal funding that may be used by States and localities for a wide variety of highway and transit projects. Regional Surface Transportation Program (RSTP) funds are STP funds that are apportioned to specific regions within the State.

WHO ARE ELIGIBLE CMAQ/RSTP RECIPIENTS?

Eligible recipients of CMAQ and RSTP funds in Hampton Roads include the localities in the MPA, Hampton Roads Transit (HRT), Williamsburg Area Transit Authority (WATA), the Virginia Department of Transportation (VDOT), the Virginia Department of Rail and Public Transportation (DRPT), and the Virginia Port Authority (VPA).

PROJECT SELECTION PROCESS

HOW ARE ELIGIBLE PROJECTS SELECTED?

To be eligible for CMAQ or RSTP funding, a project must be consistent with the current HRTPO Long-Range Transportation Plan (LRTP). The LRTP is a long-term (at least 20 years), financially-constrained, transportation plan for the Hampton Roads MPA. The LRTP strives to improve transportation within the Hampton Roads region while increasing economic vitality, safety, mobility, and environmental protection.

The process for obtaining CMAQ or RSTP funding for transportation projects is a competitive one. Projects proposed by the eligible recipients are analyzed by HRTPO staff using a specific set of criteria that have been approved by the HRTPO Board. The proposed projects are then ranked based on the results of the analyses.

CMAQ/RSTP PROJECT SELECTION PROCESS (PSP) STEPS AND DEADLINES

CMAQ/RSTP PSP Steps	Deadline
1. Deadline for Public to submit projects to be considered for CMAQ/RSTP funding.	7/31/11
2. Deadline for Applications for project proposals from localities, transit agencies and state transportation agencies.	8/17/11
3. Project evaluations completed by HRTPO staff.	9/30/11
4. Transportation Programming Subcommittee (TPS) meeting to review proposed projects and recommend funding allocations.	10/12/11
5. Transportation Technical Advisory Committee (TTAC) meeting to consider recommendations of the TPS and makes a recommendation for consideration by the HRTPO Board.	11/2/11
6. HRTPO Board meeting to consider TTAC recommendations regarding CMAQ/RSTP projects and funding allocations for final approval.	11/17/11

CONGESTION MITIGATION AND AIR QUALITY

WHO RECEIVES CMAQ FUNDING?

Federal CMAQ funds are apportioned to each state according to the severity of its ozone and carbon monoxide (CO) problem. The state may use its CMAQ funds in any ozone, CO, or Particulate Matter (PM) nonattainment or maintenance area. Virginia allocates CMAQ funds to MPAs that have been designated as non-attainment or maintenance areas. Metropolitan Planning Organizations, like the HRTPO, are responsible for selecting projects for CMAQ funding within their MPA.

WHAT PROJECTS QUALIFY FOR CMAQ FUNDING?

To qualify for CMAQ funding, projects must demonstrate improvement in air quality. The current federal transportation funding legislation, the Safe, Accountable, Flexible, Efficient Transportation Equity Act—A Legacy for Users (SAFETEA-LU), directs States and MPOs to give priority to two categories. First, priority is to be given to diesel retrofits. This is particularly necessary to facilitate contract compliance, and other cost-effective emission reduction activities, taking into consideration air quality and health effects. Second, priority is to be given to cost-effective congestion mitigation activities that provide air quality benefits. It should be noted that although SAFETEA-LU establishes these CMAQ investment priorities, it also retains State and local agencies' authority in project selection.

Examples of projects that are eligible for funding under CMAQ include:

- **Highway Projects**
 - HOV Lanes
 - Intersection Improvements
 - Coordinated Signal Systems Improvements
 - Citywide Signal System Improvements

- **Transit Projects**
 - New/Expanded Service
 - Bus Shelters/Facilities
 - Vehicle Purchase/Replacement
 - Operating Assistance*

- **Fixed Guideway Projects and Studies****
 - High Speed Rail
 - Intercity Passenger Rail
 - Light Rail
 - New Facilities (e.g., lines, stations, terminals, transfer facilities)
 - Vehicle Purchase/Replacement
 - Operating Assistance*

- **Planning Studies****

- **Transportation Demand Management Projects**

- Regional Rideshare
- Marketing and Outreach Programs
- HOV Express Bus Service
- Park and Ride Lots

- **Intelligent Transportation Systems Projects**

- **Bikeway/Pedestrian Facilities**

- **Other**

- Freight/Intermodal
- Value/Congestion Pricing

** Operating assistance to introduce new transit service or expand existing service is eligible. It may be a new type of service, service to a new geographic area, or an expansion of existing service providing additional hours of service or reduce headway. For a service expansion, only the operating costs of the new increment of service are eligible. Eligible operating costs include labor, fuel, maintenance, and related expenses. Operating Assistance may be CMAQ-funded for a maximum of three years. The intent is to support the demonstration of new services that may prove successful enough to sustain with other funding sources, and to free up CMAQ funds to generate new air quality benefits.*

*** Studies that are part of the project development pipeline (e.g., preliminary engineering) under NEPA are eligible for CMAQ support, as are FTA's Alternatives Analyses. General studies that fall outside specific project development do not qualify for CMAQ funding. Examples of ineligible studies include major investment studies, commuter preference studies, modal market polls or surveys, transit master plans, and others. These activities are eligible for Federal planning funds.*

REGIONAL SURFACE TRANSPORTATION PROGRAM

WHO RECEIVES RSTP FUNDING?

RSTP funds are apportioned by the State to the Metropolitan Planning Areas (MPAs) within Virginia. Metropolitan Planning Organizations, like the HRTPO, are responsible for selecting projects for RSTP funding.

WHAT PROJECTS QUALIFY FOR RSTP FUNDING?

Examples of projects eligible for funding under RSTP include:

- **Highway Capacity, Accessibility, and Operational Improvements**
 - Roadway Widening
 - New Facilities
 - HOV Lanes
 - New Interchanges
 - Intersection/Interchange Improvements
 - Corridor Operational Improvements
 - Bridge Rehabilitation
 - Traffic Signal System Improvements
- **Intermodal Transportation Projects**
 - Freight Facilities
- **Transit Projects**
 - New Service
 - Expansion of Existing Service
 - Bus Shelters/Facilities
 - Vehicle Replacement/Purchase
- **Fixed Guideway Projects and Studies**
 - High Speed Rail
 - Intercity Passenger Rail
 - Light Rail
 - New Facilities (e.g., lines, stations, terminals, transfer facilities)
 - Vehicle Purchase/Purchase
- **Planning Studies**
- **Transportation Demand Management Projects**
 - Regional Rideshare
 - Marketing and Outreach Programs
 - HOV Express Bus Service
 - Park and Ride Lots
- **Intelligent Transportation Systems**

APPENDIX A – CMAQ POLICIES, PROCEDURES AND ANALYSIS METHODOLOGIES

PROGRAM CRITERIA AND FUNDING POLICIES

Funding Program Criteria

- Must meet all applicable federal regulations and requirements
- Must be consistent with the current HRTPO Long-Range Transportation Plan
- Provide funding for mix of forward thinking and traditional projects
- Rank based on cost-effectiveness for reductions of volatile organic compounds (VOC) and Nitrogen Oxides (NOx)
- Improve air quality over the long term
- Projects should be of regional significance

Funding Policies

1. Priority for new CMAQ allocations will be given in the following order:
 - a. Previously approved and underway CMAQ project phases will be funded to completion.
 - b. Other on-going project phases eligible for CMAQ funding will be evaluated in order to be considered.
 - c. Unfunded and new candidate projects will be evaluated and ranked in order to be considered.
2. Establish a reserve account of approximately 5% of the CMAQ mark per fiscal year to cover potential cost overruns or future reductions in marks. The reserve amount for a particular year should be allocated by the end of that fiscal year.
3. Program six years of CMAQ preliminary allocations in accordance with project schedules and estimates. Allocate funds consistent with how they will be obligated and expended.
4. CTB members will work with MPOs and VDOT/DRPT staff to identify projects and allocations for CMAQ; VDOT Central Office, working with DRPT, will manage programming CMAQ allocations.
5. Considerations for funding cost overruns:
 - a. If the cost/annual allocation and the scope of a project change less than 10% on any one CMAQ funded project, the locality/agency should notify the TTAC with a request and justification for a change in funding. The TTAC must review the request and recommend use of the reserve account or, if possible, commit future year funding to preserve the project.
 - b. If the cost/annual allocation and/or scope of the project change by more than 10% on any one CMAQ funded project, the locality/agency should notify the TTAC and HRTPO Board with a request and justification for a change in funding and/or scope. The TTAC and HRTPO Board must review the request and may recommend one or any combination of the following:

-
- i. Scale back the project
 - ii. Use local funds
 - iii. Use urban, primary, or secondary funds
 - iv. Use CMAQ reserve account funds
 - v. Use existing CMAQ funds from another project
 - vi. Use future CMAQ allocations
 - vii. Use future non-CMAQ funds
 - viii. Drop the project

APPLICATION PROCESS AND PRELIMINARY SCREENING

The HRTPO staff provides standard application forms for submitting CMAQ project proposals. These forms are made available in electronic format and on the HRTPO web site. Jurisdictions and transit agencies return completed forms to HRTPO within a set time schedule. Projects are screened using the following criteria:

- Must meet all applicable SAFETEA-LU requirements
- Must be included in the current Long-Range Transportation Plan
- Must be well defined
- Reasonable data (including data required for the emissions analysis) and cost estimates must be provided

EMISSIONS ANALYSIS OF ELIGIBLE PROJECTS

The HRTPO staff performs an emissions analysis on all eligible projects. Emissions are estimated for volatile organic compounds (VOC) and nitrogen oxides (NOx). Analysis results are tabulated for the eligible projects.

PROJECT RANKING

Projects are ranked based on their cost-effectiveness ratios for VOC and NOx reduction. Each project is analyzed to estimate the impact of the project on VOC and NOx emissions. The cost per reduction of emissions is computed using the total cost of each project and annualizing the cost over the effective life of the project. Once all of the projects are analyzed, they are ranked on the basis of their cost effectiveness ratios. In the cost effectiveness analysis, the amount of emissions reduction per dollar spent is computed for VOC and NOx . A rank is then applied for each of these emission types, with a lower rank number indicating greater cost effectiveness. Finally, the two ranks are combined and these composite ranks are scored, again with the lower composite rank number indicating greater cost effectiveness.

PROJECT SELECTION

The Transportation Programming Subcommittee reviews the ranked set of eligible CMAQ projects and makes recommendations to the TTAC.

CMAQ ANALYSIS METHODOLOGIES

Projects proposed for CMAQ funding are analyzed for their effectiveness in reducing emissions of VOCs, also known as hydrocarbons, and NO_x. The analysis methodologies for various types of CMAQ projects were originally developed in 1993. Over the years, as “new” types of projects were proposed, analysis methodologies were developed to evaluate them. The projects can be divided into three primary groups:

- A. Highway Projects
- B. Non-Highway Projects
- C. Other Projects including ITS

A. HIGHWAY PROJECTS

Highway Projects include improvements to traffic signal timing and intersection/interchange geometric design, upgrades to traffic signal systems, and Intelligent Transportation System (ITS) projects. Analysis methodologies vary depending on the type of project being evaluated. A brief description of the analysis methodologies used for each type of highway project is included below.

Isolated Intersection Analysis

This project type refers to improvements at individual intersections that are not part of a coordinated signal system. The projects may include improvements in the geometric design of the intersection and signal timing or improvements in timing only. The change in emissions for a project is based on the change in delay (in hours per day) at the intersection as a result of the project.

Highway Capacity Software is used to compute the intersection delay for the afternoon peak hour with and without the project. Then, using the total number of vehicles entering the intersection during the afternoon peak hour and the change in intersection delay resulting from the project, vehicle-hours of delay are computed for the afternoon peak hour. That value is then converted to vehicle-hours of delay per day by using a seventeen percent conversion factor derived in the Cost Benefit Model for Intersection Level of Service Improvements, a study published by the HRPDC in June 1997. The Idle Emissions Factors are applied to the vehicle-hours of delay per day to compute the change in emissions of VOC and NO_x for the intersection in units of kilograms per day.

Coordinated Signal Systems

This type of project includes several intersections along a section of roadway for which the signal timing is coordinated to promote progression of traffic along that section. Most of the projects in this category consist of improvements to signal timing only. The change in emissions for a project is based on the change in average speed (in miles per hour) along the section of roadway as a result of the project.

The initial average speed along the section of roadway is either submitted with the project proposal or taken from one of the HRTPO Regional Travel Time studies. In an analysis of a sample of before and after studies of coordinated signal system improvements, it was determined that an average increase of four miles-per-hour in average speed resulted from such improvements. Therefore, for the purposes of the emissions analyses, an increase of four miles-per-hour is assumed to occur as a result of the coordinated signal system projects.

The emissions factors are determined for the “before” and “after” average speeds. These factors are multiplied by the daily VMT (vehicle miles traveled) for the section of roadway to compute the daily change in emissions of VOC and NO_x for the section in units of kilograms per day.

Citywide Signal System Improvements

This type of project includes a large number of intersections within a jurisdiction. Nearly all of the intersections included in this type of project are part of a coordinated signal system. The projects in this category include improvements to signal equipment and signal timing. The change in emissions for a project is based on the change in average speed (in miles per hour) for the citywide system.

To analyze these projects, “citywide” values for average speed and VMT for principal and minor arterials are obtained from a VDOT Conformity Analysis. Then, using the analysis discussed in the section on Coordinated Signal Systems, a four miles-per-hour increase in average speed is assumed to result from the project. If the applicant submits additional “before” and “after” data and analyses, the staff will use this data in lieu of the average value estimated for this category.

The emissions factors are determined for the “before” and “after” average speeds. These factors are multiplied by the citywide daily VMT to compute the daily change in emissions of VOC and NO_x in units of kilograms per day.

Intelligent Transportation Systems (ITS)

A wide array of projects are classified as ITS projects, including Advanced Traffic Management Systems, variable message signs, communications, incident management and other innovative applications that take advantage of new technologies to help improve traffic flow, safety, driver information and, often as a result, air quality. Analysis methodologies for ITS projects are usually project-specific and may be qualitative or quantitative depending on the type of project and the availability of input data.

B. NON-HIGHWAY PROJECTS

Transit and Fixed Guideway Projects

Transit projects include Park and Ride Lots, Replacement Buses, and New/Expanded Transit Services. Fixed Guideway projects include High Speed Rail, Intercity Passenger Rail, Light Rail, Station Development and Vehicle Upgrades. Emissions benefits for most transit projects are based on the predicted reduction in automobile trips and VMT resulting from the project. Projects that involve new or expanded service also take into account the increase in emissions due to the “new” transit vehicles on the road. Park and ride lot projects take into account the emissions due to the automobile trips to

the lot. Emissions reductions resulting from replacement buses are due to emissions improvements in the newer bus engines and any increases in ridership due to newer vehicles.

Bikeway Projects

Air quality benefits of bikeway projects are calculated as a function of a reduction in the number of automobile trips and VMT. Specifically, emissions reductions are based on cold start and hot soak emissions produced at the beginning and end of a trip, respectively. The methodology is based on Census data for Hampton Roads, results from the regional model and a review of CMAQ studies conducted in different regions of the country. The Benefit Cost Analysis of Bicycle Facilities tool based on the Guidelines for Analysis of Investments in Bicycle Facilities (NCHRP Report #552) was used to determine the reduction of vehicle trips attributable to a given bikeway.

C. OTHER PROJECTS

The “Other” group includes projects that may not fit perfectly within the Highway or Non-Highway groups. Innovative projects in this group may include alternative fuels, truck idling controls, early engine retirement programs, and Intermodal freight projects, among others.

APPENDIX B – RSTP POLICIES, PROCEDURES AND ANALYSIS METHODOLOGIES

PROGRAM CRITERIA AND FUNDING POLICIES

Funding Program Criteria:

- Must meet all applicable federal regulations and requirements.
- Must be consistent with the current Long-Range Transportation Plan.
- RSTP funds should play a significant role in the region’s transportation system generally affecting two or more localities.
- The region could use RSTP funds to implement a regional project, which would have a low probability of funding under the current allocation program.
- Substantial RSTP funds will not be used for interstate improvements.
- RSTP funds should be used for projects that are un-fundable by a locality or present funding sources.
- In many cases, full funding could not be achieved, however, multiple years of supplemental funding will enable the region to fund these projects at a significant level.
- Projects should be of regional significance.
- Finance ITS improvements.
- Finance new regionally significant projects when substantive progress can be made as a result of RSTP funding.

Funding Policies:

1. Priority for new RSTP allocations will be given in the following order:
 - a. Previously approved and underway RSTP project phases will be funded to completion.
 - b. Other on-going project phases eligible for RSTP funding will be evaluated in order to be considered.
 - c. Unfunded and new candidate projects will be evaluated and ranked in order to be considered.
2. Establish a reserve account of approximately 5% of the RSTP mark per fiscal year to cover potential cost overruns or future reductions in marks. The reserve amount for a particular year should be allocated by the end of that fiscal year.
3. Program six years of RSTP preliminary allocations in accordance with project schedules and estimates. Allocate funds consistent with how they will be obligated and expended.

-
4. Considerations for funding cost overruns:
 - a. If the cost/annual allocation and the scope of a project change less than 10% on any one RSTP funded project, the locality/agency should notify the TTAC with a request and justification for a change in funding. The TTAC must review the request and recommend use of the reserve account or if possible commit future year funding to preserve the project.
 - b. If the cost/annual allocation and/or scope of the project change by more than 10% on any one RSTP funded project, the locality/agency should notify the TTAC and HRTPO Board with a request and justification for a change in funding and/or scope. The TTAC and HRTPO Board must review the request and may recommend one or any combination of the following:
 - i. Scale back the project
 - ii. Use local funds
 - iii. Use urban, primary, or secondary funds
 - iv. Use RSTP reserve account funds
 - v. Use existing RSTP funds from another project
 - vi. Use future RSTP allocations
 - vii. Use future non-RSTP funds
 - viii. Drop the project

APPLICATION PROCESS AND PRELIMINARY SCREENING

The HRTPO staff provides standard application forms for submitting RSTP project proposals. These forms are made available in electronic format and on the HRTPO web site. Jurisdictions and transit agencies return completed forms to HRTPO within a set time schedule. Projects are screened using the following criteria:

- Must meet all applicable SAFETEA-LU requirements
- Must be included in the current Long-Range Transportation Plan
- Must be well defined
- Reasonable data and cost estimates must be provided
- Must meet all criteria and approved by the HRTPO Board

PROJECT EVALUATION AND METHODS

Projects are placed into six categories and then scored. Projects within each category are then compared to one another. The six categories are:

1. Highway Capacity, Accessibility and Operational Improvements, including:
 - Roadway Widening
 - New Facilities
 - HOV Lanes
 - New Interchange
 - Intersection/Interchange Improvements
 - Corridor Operational Improvements
 - Bridge Rehabilitation
2. Intermodal Transportation Projects, including:
 - Passenger facilities
 - Freight facilities
3. Transit and Fixed Guideway Projects, including:
 - New Service
 - Expansion of Existing Service
 - Bus Shelters/Facilities
 - Vehicle Replacement/Purchase
 - Fixed Guideway
 - Other Transit and ITS Projects
 - High Speed Rail
 - Intercity Passenger Rail
 - Light Rail
 - Station Development
 - Vehicle Upgrades
4. Planning Studies, including:
 - Alternatives Analysis
 - Other Planning Studies
5. Transportation Demand Management Projects, including:
 - Regional Rideshare
 - Marketing and Outreach Program
 - HOV Express Bus Service
 - Park-and-Ride Lots
6. Intelligent Transportation Systems

The HRTPO staff evaluates all projects according to the criteria developed by the TTAC and approved by the HRTPO Board. The staff prepares a list of candidate projects that have been scored and ranked by category. Projects with insufficient data or late submittals are dropped from the process. The list of projects is then submitted to the Transportation Programming Subcommittee for review.

PROJECT SELECTION

The CMAQ/RSTP Working Group reviews, discusses and revises candidate projects as appropriate, and makes recommendations to the TTAC. Projects are selected based upon:

- Project Score/Ranking
- Funding Availability
- Other Criteria (prior commitment, federal mandates, etc.)

PROJECT PRIORITIZATION

Selected projects are assigned to fiscal years based on priority and on project readiness.

RSTP PROJECT EVALUATION METHOD BY PROJECT CATEGORY

Project Category	Evaluation Method
Highway Capacity, Accessibility and Operational Improvements <ul style="list-style-type: none">• Roadway widening, new facilities, HOV lanes, new interchanges, Intersection improvements• Corridor operational improvements• Bridge rehabilitation	<ul style="list-style-type: none">• See Table 2• See Table 3• See Table 4
Intermodal Transportation Projects <ul style="list-style-type: none">• Intermodal facilities	<ul style="list-style-type: none">• See Table 5
Transit and Fixed Guideway <ul style="list-style-type: none">• New service, Expansion of Service, Shelters and Facilities (Bus, HOV express)• Vehicle replacement/purchase• Other transit and ITS projects• Fixed Guideway (High Speed Rail, Intercity Passenger Rail, Light Rail, Station Development, Vehicle Upgrades)	<ul style="list-style-type: none">• See Table 6• See Table 7• See Table 8
Planning Studies <ul style="list-style-type: none">• Alternatives Analysis• Feasibility Studies	<ul style="list-style-type: none">• See Table 9
Transportation Demand Management <ul style="list-style-type: none">• Regional rideshare• Marketing & outreach• HOV lane express bus service• Park and Ride Lots	<ul style="list-style-type: none">• See Table 10
Intelligent Transportation Systems	<ul style="list-style-type: none">• See Table 11

HIGHWAY CAPACITY, ACCESSIBILITY AND OPERATIONAL IMPROVEMENTS

Table 2

Roadway Widening, New Facility, HOV Lanes, Intersection Improvements

Evaluation Criteria	Points	Scoring Instructions
Congestion Level	0-20	Existing and future conditions (10 points each): severe=7, moderate=3, low=0
Cost-Effectiveness	0-20	Lowest cost/vmt = 20 Highest cost/vmt = 0 Straight line interpolation between
System Continuity	0-20	Completion of a missing link in the transportation system Total completion = 20 Partial completion = 10
Safety	0-20	20 points to the project with highest safety improvements
Air Quality	0-10	Reduces NOx =5 points Reduces HC=5 points
Project Readiness	0-10	Projects with detailed design and cost estimates that are ready to go will receive 10 points

Table 3

Corridor Operational Improvements

Evaluation Criteria	Points	Scoring Instructions
Arterial LOS based on Average Travel Speed	0-25	Relative Scale - maximum points to arterial with lowest average speed (worst LOS), 0 to arterial with LOS C or better
ADT of Roadway	0-20	Existing and future ADT (10 points each). Relative scale - maximum points to highest corridor ADT/Lane
Cost-Effectiveness	0-35	Relative Scale- maximum points to the project with lowest cost/vmt
Existing Accident Experience	0-20	Relative Scale- maximum points to the project With highest accident rate or frequency
Project Readiness	0-10	Projects with detailed design and cost estimates that are ready to go will receive 10 points

Table 4
Bridge Rehabilitation

Evaluation Criteria	Points	Scoring Instructions
Bridge Condition per VDOT Sufficiency Index	0-60	Relative Scale- maximum points to the bridge with worst condition
ADT of Bridge	0-30	Relative Scale- maximum points to the bridge with highest ADT
Project Readiness	0-10	Projects with detailed design and cost estimates that are ready to go will receive 10 points

INTERMODAL TRANSPORTATION PROJECTS

Table 5
Intermodal Facilities

Evaluation Consideration	Points
Will the project establish opportunities for linkages or connections between transportation modes or existing corridors or centers?	Up to 40 points
Will the project improve the operating system to better accommodate intermodal movements?	Up to 25 points
Will the project improve rail or vehicular access to freight distribution facilities, ports, or major industrial clients?	Up to 25 points
Project Readiness Projects with detailed design and cost estimates that are ready to go will receive 10 points	Up to 10 points

TRANSIT AND FIXED GUIDEWAY

Table 6

New Service, Expansion of Existing Service, Facilities, High Speed Rail, Intercity Passenger Rail, Light Rail, Station Development, Vehicle Upgrades, etc.

Evaluation Criteria	Points	Scoring Instructions
Congestion relief	0-10	Impacts of new/expanded service on area highways- 10 points to the project with the highest % of trips removed from highways; 0 points to the project with no impact on adjacent highway.
Facility Usage- Daily Ridership	0-20	Relative Scale Highest ridership=20 points Lowest ridership=0 points
Cost Effectiveness - Subsidy/ passenger (or use other FTA formula depending on the project)	0-20	Relative scale Lowest subsidy/passenger=20 Highest subsidy/passenger=0
Air Quality	0-20	NOX reductions=10 HC reductions=10
Coverage Area	0-20	Relative scale - Population and Employment data.
Project Readiness	0-10	Projects with detailed design and cost estimates that are ready to go will receive 10 points

Table 7

Vehicle Replacement/Purchase

Evaluation Criteria	Points	Scoring Instructions
Average age of the vehicles	35	FTA standard=12 years
Number of vehicles to replace/total fleet	10	
Emissions changes of the old and new vehicles	30	
Cost Effectiveness	10	Cost/Ridership
Average mileage of the vehicles to be replaced	15	FTA Standards

Table 8

Other Transit, Fixed Guideway and ITS Projects

Evaluation Consideration	Points
Will the project increase service reliability of the transit system?	0-25
Will the project improve passenger safety, comfort and convenience?	0-30
Does the project improve efficiency of the transit system?	0-10
Does the project improve the revenue collection?	0-25
Does the project improve transit data collection system?	0-10

PLANNING STUDIES**Table 9**

Alternatives Analysis & Feasibility Studies

Evaluation Consideration	Points	Yes or No
1. Is the study necessary to address a major issue or to revise the Plan?	0-25	
2. Is the study necessary to address a safety issue?	0-15	
3. Is the study concerned with encouraging multimodal transportation?	0-10	
4. Does the study address the mobility or accessibility needs of the region?	0-20	
5. Is the study well defined in terms of purpose, design concept and scope?	0-10	
6. Do the goals and objectives of the study show support for economic development?	0-10	
7. Do the goals and objectives demonstrate preservation or protection of the environment?	0-10	

TRANSPORTATION DEMAND MANAGEMENT

Table 10

Regional Rideshare, Marketing & Outreach, HOV Lane Express Bus Service, Park-and Ride Lots, Telecommuting, etc. The TDM Committee developed the following criteria. Measures will be evaluated against the base year's figures (TDM Manager will provide appropriate data for base and target years).

Measures of Success	Base Year	Target Year
Number of employers offering some TDM programs		
% of employees ridesharing (car, van, bus)		
% of employees walking or biking		
Number of contacts made		
Parking Management (availability, price, zoning requirements)		
Mixed use land use (trip reduction)		
HOV usage/ Vehicle occupancy rates		
Other measures		

INTELLIGENT TRANSPORTATION SYSTEMS

Table 11

ITS Projects

Evaluation Consideration	Points
Will the project improve traffic flow during peak congestion periods and special events?	0-15
Will the project directly reduce the number or severity of accidents, which occur on roadways?	0-25
Will the project improve level of service, increase service capacity, or contribute to incident management?	0-20
Does the project address the mobility or accessibility needs of the region?	0-10
Does the project improve the linkage and communications among various operating agencies to provide better and accurate traffic information to the motorists?	0-20
Is the project part of the Regional ITS Strategic Plan?	0-10