HAMPTON ROADS TRANSPORTATION PLANNING ORGANIZATION

Guide to the HRTPO CMAQ and RSTP Project Selection Process

Prepared by the Hampton Roads Transportation Planning Organization
Updated October 2022

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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 Improvement Program (CMAQ) or Regional Surface Transportation Program (RSTP).

ACKNOWLEDGMENTS
Prepared in cooperation with the U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), and Virginia Department of Transportation (VDOT). The contents of this report reflect the views of the Hampton Roads Transportation Planning Organization (HRTPO). The HRTPO 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, VDOT or Hampton Roads Planning District Commission. This report does not constitute a standard, specification, or regulation. FHWA or VDOT acceptance of this report as evidence of fulfillment of the objectives of this planning study 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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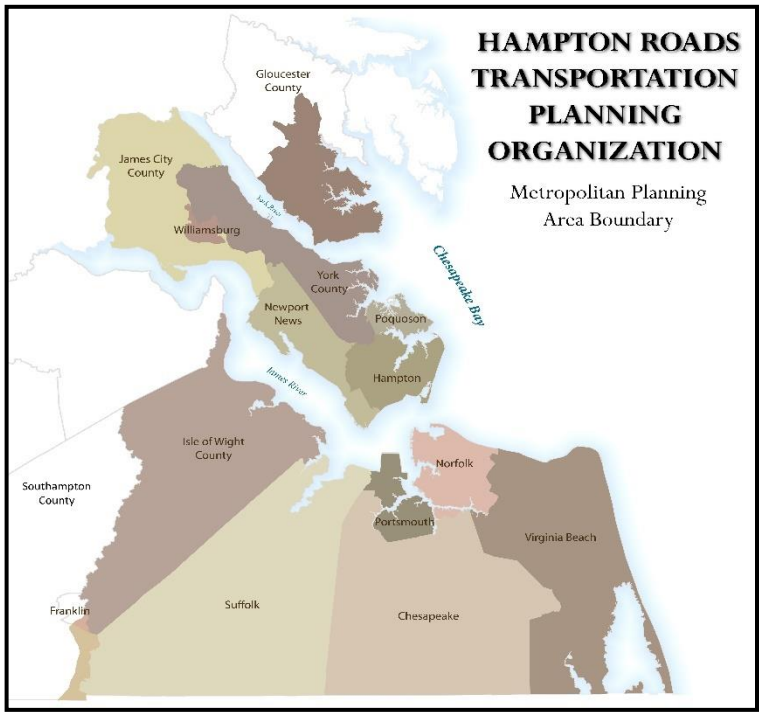
OVERVIEW

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; the counties of Isle of Wight, James City and York; a portion of the city of Franklin; and a portion of each of the counties of Gloucester and Southampton.



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

WHAT IS CMAQ?

CMAQ funds must be allocated to 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*. The ***Fixing America's Surface Transportation (FAST) Act***, signed into law on December 4, 2016, made CMAQ funding available for maintaining standards in attainment areas. Hampton Roads has been designated as an attainment area for the current ozone standard.

WHAT IS RSTP?

The FAST Act converted the long-standing Surface Transportation Program (STP) into the Surface Transportation Block Grant Program (STBGP). The STBGP promotes flexibility in State and local transportation decisions and provides flexible funding to best address State and local transportation needs. Regional Surface Transportation Program (RSTP) funds are STBGP 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 and/or portions of localities within the MPA, Hampton Roads Transit (HRT), Williamsburg Area Transit Authority (WATA), Suffolk Transit, the Virginia Department of Transportation (VDOT), the Virginia Department of Rail and Public Transportation (DRPT), the Virginia Port Authority (VPA), the National Park Service (NPS), and the HRTPO.

PROJECT SELECTION PROCESS

To be eligible for CMAQ or RSTP funding, a project proposal must meet eligibility requirements specified in the federal regulations and program guidance and 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. For NPS projects, a Transfer Order, issued by the Federal Highway Administration (FHWA) will be required to transfer funds to the NPS. An agreement between the Virginia Department of Transportation (VDOT) and the NPS would also be required.

The process for obtaining CMAQ or RSTP funding for transportation projects is a competitive one. Proposed projects are evaluated and ranked using a specific set of criteria that have been approved by the HRTPO Board. The Transportation Programming Subcommittee (TPS) – taking into account the available funding, policies and priorities of the HRTPO and Commonwealth Transportation Board (CTB), and using the ranked project lists as a guide – produces a list of recommended projects and funding allocations for consideration by the Transportation Technical Advisory Committee (TTAC) and the HRTPO Board. The steps of the project selection process are summarized below. For the timelines associated with a particular project selection process cycle, see the schedule posted on the HRTPO website (https://www.hrtpo.org/page/cmaq-and-rstp/).

CMAQ/RSTP PROJECT SELECTION PROCESS STEPS

1. A public notice is posted to solicit ideas from the general public for projects to be considered for CMAQ/RSTP funding. Ideas received from the public will be forwarded by HRTPO staff to the appropriate localities and/or agencies. This step usually occurs in July.

2. Applications for project proposals are accepted from eligible recipients. This step usually begins in July and runs through mid-August.

3. Submitted project proposals are analyzed and ranked by HRTPO staff.

4. The TPS meets to review the project proposals and recommends selected projects to be funded with CMAQ or RSTP funds.

5. The TTAC considers the recommendations of the TPS and makes a recommendation for consideration by the HRTPO Board.

6. The HRTPO Board considers the TTAC recommendation and takes action to approve a set of projects and funding allocations for CMAQ and RSTP.

CMAQ AND RSTP FUNDING POLICIES

The following are the funding policies of the HRTPO regarding CMAQ and RSTP funds:

1. Priority for new CMAQ and RSTP allocations will be given in the following order:

    a. Previously approved and underway CMAQ and RSTP project phases will be funded to completion.

    b. Other on-going project phases eligible for CMAQ and 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. Whenever possible, a reserve account of approximately 5% of the CMAQ or RSTP funds per fiscal year will be established to cover potential cost overruns or future reductions in funding. The reserve amount for a particular year should be allocated by the end of that fiscal year.

3. Program six years of CMAQ and RSTP preliminary allocations in accordance with project schedules and estimates. Allocate funds consistent with how they will be confirmed and spent.

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. Projects funded, in whole or part, from federal funds referred to as Congestion Mitigation and Air Quality Improvement, shall be selected as directed by the board. Such funds shall be federally obligated within 12 months of their allocation by the board and expended within 36 months of such obligation. If the requirements included in this requirement are not met by such agency or recipient, then the board shall use such federal funds for any other project eligible under 23 USC 149.

    Funds made available to the Metropolitan Planning Organizations known as the Regional Surface Transportation Program for urbanized areas greater than 200,000 shall be federally obligated within 12 months of their allocation by the board and expended within 36 months of such obligation. If the requirements include in this paragraph are not met by the recipient, then the board may rescind the required match for such federal funds.

    Authority: Title 2.2, Chapter 2, Article 10, § 2.2-201, and Titles 33, 46, and 58, Code of Virginia.

6. Considerations for funding cost overruns:

a. If the cost/annual allocation and/or scope of a project change less than 10% on any one CMAQ or 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 CMAQ or 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 CMAQ or RSTP reserve account funds
    iv. Use existing CMAQ or RSTP funds from another project
    v. Use future CMAQ or RSTP allocations
    vi. Use future non-CMAQ/non-RSTP funds
    vii. Drop the project

7. Policy for handling surplus CMAQ and RSTP allocations on completed or canceled projects:

While the handling of surplus CMAQ and/or RSTP allocations on completed or canceled projects may be determined by the TPS, TTAC, and HRTPO Board on a case by case basis, in general, if there are unused CMAQ and/or RSTP funds allocated to a project that has been completed or canceled, the transfer of the available funds will be handled as follows:

Within 180 days after a project has been completed (VDOT C5 form processed and final reimbursement received or equivalent from other agencies) or canceled:

a. The project sponsor (locality or agency) will request that the available funds be transferred to one or more of the sponsor's previously approved CMAQ or RSTP projects, depending upon the type of funds available; or

b. The project sponsor (locality or agency) will request that the available funds be transferred to the CMAQ or RSTP reserve account.

8. Policy for handling surplus CMAQ and RSTP allocations on a project that occur as a result of an award of funding from other programs, such as SMART SCALE, State of Good Repair, TA Set-Aside, TIGER, INFRA, etc.:

Within 90 days after VDOT or DRPT confirms that an approved CMAQ/RSTP project is overfunded due to receipt of funds from other programs resulting from duplicate funding requests, any CMAQ and/or RSTP funds in excess of what is needed to fully fund the project will be handled as follows:

a. The project sponsor (locality or agency) will request that the available funds be transferred to one or more of the sponsor's previously approved CMAQ or RSTP projects, depending upon the type of funds available; or

b. The project sponsor (locality or agency) will request that the available funds be transferred to the CMAQ or RSTP reserve account.

In the event a project has been allocated CMAQ and/or RSTP funds from the HRTPO and those allocations are subsequently removed due to the project being fully funded from other sources, the project will retain its status as a previously-approved CMAQ/RSTP project should it require additional funding from the HRTPO CMAQ/RSTP Reserve Account at a later date to cover a cost overrun.

CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT PROGRAM

WHO RECEIVES CMAQ FUNDING?

Federal CMAQ funds are apportioned to each state according to the severity of the state's problems with respect to the National Ambient Air Quality Standards (NAAQS) set by the Environmental Protection Agency (EPA). The state may use its CMAQ funds in any nonattainment or maintenance area. Virginia allocates CMAQ funds to MPAs that are or have been designated as nonattainment or maintenance areas. MPOs, like the HRTPO, are responsible for selecting projects for CMAQ funding within their MPAs.

WHAT PROJECTS QUALIFY FOR CMAQ FUNDING?

According to the guidebook to the Bipartisan Infrastructure Law (BIL), aka the Infrastructure Investment and Jobs Act (IIJA):

> "Transportation projects that reduce congestion and reduce the mobile source emissions for which an area has been designated nonattainment or maintenance for ozone, carbon monoxide, and particulate matter by the Environmental Protection Agency."

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

- **Highway Projects**
  - 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. The revised interim guidance on CMAQ operating assistance under MAP-21, published by FHWA in July 2014, revised the three-year operating assistance specified under previous guidance to allow for the operating assistance to be spread over five sequential years to allow for a taper down approach. Grantees may spread the third year amount (an amount not to exceed the greater of years 1 or 2) across an additional two years (i.e. years 4 and 5).*

*** Studies that are part of the project development pipeline (e.g., preliminary engineering) under the National Environmental Policy Act (NEPA) are eligible for CMAQ support, as are FTA 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/Replacement

- **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 CRITERIA, PROCEDURES AND ANALYSIS METHODOLOGIES

FUNDING PROGRAM CRITERIA

- Must meet all applicable federal regulations and requirements
- Must be consistent with the current HRTPO LRTP
- 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 (NO_x)
- Improve air quality over the long term
- Projects should be of regional significance

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 website. Eligible applicants submit completed forms to HRTPO staff within a set time schedule. Projects are screened using the funding criteria above plus the following screening criteria:

- Project must be well defined
- Reasonable data (including data required for the emissions analysis) and cost estimates must be provided
- Must meet criteria approved by the HRTPO Board

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 (NO_x). Analysis results are tabulated for the eligible projects.

PROJECT RANKING

Projects are ranked based on their cost-effectiveness ratios for VOC and NO_x reduction. Each project is analyzed to estimate the impact of the project on VOC and NO_x 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 scored 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 NO_x. A score is then applied for each of these criteria. The two scores are combined to form a composite score. Finally, the projects are sorted by composite score – lower composite scores indicating greater cost effectiveness.

PROJECT SELECTION

The Transportation Programming Subcommittee (TPS) reviews the ranked, eligible CMAQ projects and makes recommendations to the TTAC. Projects are selected based upon:

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

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 the methodologies have been reviewed and revised, as necessary. For this 2022 update, staff used the following inputs:

- Research by others
- Comments by TPS members during review of draft methodologies
- CMAQ scoring toolkit (National Cooperative Highway Research Program [NCHRP], 2019) for methodology and new emissions factors.

Analysis methodologies vary depending on the type of project being evaluated. Highlights of the analysis methodologies used for each type of project are included below.

A. Highway Projects
B. Transit Projects
C. Bike/Pedestrian Projects

Note that staff will prepare analysis spreadsheets after submittal of eligible projects of types not covered in this section.

A. HIGHWAY PROJECTS

SIGNAL RETIMING

For signal re-timings, staff calculates the air quality benefit of **reduced idling delay**, using these parameters:

- 300 weekday equivalents per year
- 14 seconds of delay savings per vehicle
    - 25% (from an ITE Journal article[1]) of 55 seconds (from an HCM table[2])
- 5-year useful life
    - Based on FHWA re-timing recommendation (3-5 years)
- 2030 emissions factors

[1] The benefits of retiming traffic signals. Srinivasa Sunkari. ITE journal, Apr. 2004, p. 26
[2] Table 5 – Definition of Intersection Levels of Service, Highway Capacity Manual 2000

ISOLATED INTERSECTION PROJECTS

For isolated intersection projects, staff calculates the air quality benefit of **reduced idling delay**, using these parameters:

- 17% peak-hour delay factor (from 1997 HRTPO study[3])
- 300 weekday equivalents per year
- 30-year useful life
    - Based on civil project standard
- 2030 emissions factors

SIGNAL SYSTEM UPGRADES

In order to prepare an appropriate calculation method, staff intends to update the existing scoring spreadsheet for signal system upgrades once the essence of the subject upgrade is known, i.e. if/when an application is submitted.

CORRIDOR SIGNAL COORDINATION

For corridor signal coordination, staff calculates the air quality benefit of **reduced travel time**, using these parameters:

- 15% reduction in travel time for re-coordination (a higher % for *new* coordination)
    - Based on six projects in Escondido CA[4]
- 3 minutes per mile pre-coordinated travel time
    - Based on travel times for Virginia Beach Blvd, Hampton Blvd, and Victoria Blvd from Google Maps
- 3.2% heavy duty vehicles (non-freeways, 2017-2019 CMP network)
    - Use % from application, if included
- 365 days per year (due to using average annual daily traffic [AADT])
- 10 year useful life (as recommended by TPS at 2-18-22 meeting)
- 2030 emissions factors

[3] "Cost Benefit Model for Intersection Level of Service Improvements", HRPDC, 1997
[4] https://www.escondido.org/signal-synchronization-program.aspx

B. TRANSIT

NEW OR EXPANDED BUS SERVICE

For new or expanded bus service, staff calculates the air quality benefit of **reduced auto trips**, using these parameters:

- Bus emissions factors (EFs)
  - If funding will be used for operating *existing* bus fleet, use 2030 fleet-average EFs
  - If funding will be used—in part or whole—for *new* buses, use 2030 model-year EFs
- Auto emissions
  - 2030 fleet-average EFs
  - Account for engine starts (in addition to engine running)
  - Auto trip reduction is 53% of additional bus ridership (based on 2019 GRTC survey[5])
  - 10.5 miles per auto trip (based on 2017 NHTS)
- 3 analysis years
  - based on length of CMAQ operations funding

[5] Source: Results of the GRTC 2019 Passenger Survey (Warner Transportation Consulting, Inc., Dec. 20, 2019)

BUS REPLACEMENT

For bus replacement, staff calculates the air quality **difference between the old and new buses**, using these parameters:

- NCHRP CMAQ scoring toolkit[6] for emissions factors (EFs)
    - Assume analysis year is 2030
    - For new and old buses, use model year as specified in application.
    - Use EFs for road type 5 (urban unrestricted access)
- 15 service years for new buses
    - based on average retirement age of a 12-year-bus

BUS SHELTERS

For bus shelters, staff calculates the air quality benefit of **reduced auto trips**, using these parameters:

- Auto emissions
    - 2030 fleet-average EFs
    - Account for engine starts (in addition to engine running)
    - 5% increase in boardings (at subject stops) due to shelters
        - based on survey of local and state transit agencies
    - Auto trip reduction is 53% of additional bus ridership
        - based on 2019 GRTC survey
    - 10.5 miles per auto trip
        - based on 2017 NHTS
- 20 analysis years
    - "a useful life of about 20 years seems to be typical" (http://lgam.wikidot.com/bus-shelter)[7]

C. BIKE/PEDESTRIAN PROJECTS

MULTI-USE PATHS

For multi-use paths, staff calculates the air quality benefit of **reduced auto trips**, using these parameters:

- Auto emissions
    - 2030 fleet-average EFs
    - Account for engine starts (in addition to engine running)
    - Base on *bike and walk* commuters in blockgroups *adjacent* to path (source: Census)
    - 60% increase in bike and walk commuters due to paths
        - based on survey of TPS members
    - 5 mile per auto trip replaced
        - based on TPS members, 6-17-22 meeting
- 30 analysis years (standard for civil project)

[6] An Excel file prepared for the National Cooperative Highway Research Program (NCHRP), 2019.
[7] No other source for this information could be found.

PEDESTRIAN IMPROVEMENTS

For pedestrian improvements, staff calculates the air quality benefit of **reduced auto trips**, using these parameters:

- Auto emissions
    - 2030 fleet-average EFs
    - Account for engine starts (in addition to engine running)
    - Base on *walk* commuters in blockgroups *adjacent* to path (source: Census)
    - 40% increase in walk commuters due to paths
        - based on survey of TPS members
    - 5 mile per auto trip replaced
        - based on TPS, 6-17-22 meeting
- 30 analysis years (standard for civil project)

COMPLETE STREETS

For complete streets, staff calculates the air quality benefit of **reduced auto trips**, using these parameters:

- Auto emissions
    - 2030 fleet-average EFs
    - Account for engine starts (in addition to engine running)
    - Base on *bus, bike, and walk* commuters in blockgroups *within 2 mi* of path
    - 45% increase in bus, bike, and walk commuters due to paths
        - based on survey of TPS members
    - 5 mile per auto trip replaced
        - based on TPS members, 6-17-22 meeting
- 30 analysis years (standard for civil project)

APPENDIX B – RSTP CRITERIA, PROCEDURES AND ANALYSIS METHODOLOGIES

FUNDING PROGRAM CRITERIA:

- Must meet all applicable federal regulations and requirements.
- Must be consistent with the current HRTPO LRTP.
- 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 that 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 may 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.

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 website. Eligible applicants submit completed forms to HRTPO staff within a set time schedule. Projects are screened using the funding criteria above plus the following screening criteria:

- Project must be well defined
- Reasonable data and cost estimates must be provided
- Must meet criteria approved by the HRTPO Board

PROJECT EVALUATION AND METHODS

RSTP Projects generally fall into the following six categories:

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 utilizing the HRTPO Project Prioritization Tool. Projects with insufficient data or late submittals are excluded from the process. The list of projects is then submitted to the TPS for review.

PROJECT SELECTION

The TPS reviews the ranked sets of eligible RSTP projects and makes recommendations to the TTAC which then forwards recommendations on to the HRTPO Board to consider. Projects are selected based upon:

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

RSTP Project Evaluation Methodology By Project Category

Table 1

Project Category	Evaluation Method
Highway Capacity, Accessibility and Operational Improvements • Roadway widening, new facilities, HOV lanes, new interchanges, intersection improvements • Corridor operational improvements • Bridge rehabilitation	HRTPO Project Prioritization Tool
Intermodal Transportation Projects • Intermodal facilities	HRTPO Project Prioritization Tool
Transit and Fixed Guideway • New service, expansion of service, shelters and facilities (bus, HOV express) • Vehicle replacement/purchase • Other transit, Other Fixed Guideway, and Transit ITS projects	HRTPO Project Prioritization Tool
Planning Studies • Alternatives Analysis • Feasibility Studies	HRTPO Project Prioritization Tool
Transportation Demand Management • Regional rideshare • Marketing & outreach • HOV lane express bus service • Park and Ride Lots	HRTPO Project Prioritization Tool
Intelligent Transportation Systems	HRTPO Project Prioritization Tool

HRTPO Project Prioritization Tool: Weighting Factors Charts

2045 LRTP Project Prioritization Weighting Factors - Project Utility

Highway Projects	
PROJECT UTILITY	
Congestion Level	**40.00**
% Reduction in Existing and Future V/C Ratios (Daily Delay)	*10.00*
Existing Peak Period Congestion/Level of Service	*10.00*
Person Throughput	*5.00*
Person Hours of Delay	*5.00*
Impact to Nearby Roadways	*10.00*
Travel Time Reliabililty	**15.00**
Level of Travel Time Reliability (LOTTR)	*10.00*
Truck Travel Time Reliability (TTTR)	*5.00*
System Continuity and Connectivity	**25.00**
Degree of Regional Impact	*15.00*
Improves Access to Major Employment or Population Centers	*3.00*
Resiliency	*5.00*
Addresses a Gap	*2.00*
Safety and Security	**15.00**
Reduction of EPDO of Fatal and Serious Injury Crashes	*5.00*
Reduction of EPDO Rate of Fatal and Serious Injury Crashes	*5.00*
Improvement to Incident Management or Evacuation Routes	*5.00*
Modal Enhancements	**5.00**
Enhances Other Modal Categories	*3.00*
Access to Multimodal Choices	*2.00*
PROJECT UTILITY TOTAL	***100.00***

2045 LRTP Project Prioritization Weighting Factors - Project Utility

Interchange Projects	
PROJECT UTILITY	
Congestion Level	**40.00**
Existing Queue Conditions: Number of Approaches with Queues	*10.00*
Queue Improvements: Number of Approaches Improved	*10.00*
Person Throughput	*5.00*
Person Hours of Delay	*5.00*
Number of Movements Added or Improved	*10.00*
Travel Time Reliabililty	**15.00**
Level of Travel Time Reliability (LOTTR)	*10.00*
Truck Travel Time Reliability (TTTR)	*5.00*
System Continuity and Connectivity	**25.00**
Degree of Regional Impact	*15.00*
Improves Access to Major Employment or Population Centers	*3.00*
Resiliency	*5.00*
Addresses a Gap	*2.00*
Safety and Security	**15.00**
Reduction of EPDO of Fatal and Serious Injury Crashes	*5.00*
Reduction of EPDO Rate of Fatal and Serious Injury Crashes	*5.00*
Improvement to Incident Management or Evacuation Routes	*5.00*
Modal Enhancements	**5.00**
Enhances Other Modal Categories	*3.00*
Access to Multimodal Choices	*2.00*
PROJECT UTILITY TOTAL	***100.00***

2045 LRTP Project Prioritization Weighting Factors - Project Utility

Bridge & Tunnel Projects	
PROJECT UTILITY	
Congestion Level	**40.00**
% Reduction in Existing and Future V/C Ratios (Daily Delay)	*10.00*
Existing Peak Period Congestion/Level of Service	*10.00*
Person Throughput	*5.00*
Person Hours of Delay	*5.00*
Impact to Nearby Roadways	*10.00*
Travel Time Reliabililty	**15.00**
Level of Travel Time Reliability (LOTTR)	*10.00*
Truck Travel Time Reliability (TTTR)	*5.00*
Infrastructure Condition	**15.00**
Bridge State of Good Repair Ratings:	
Condition Factor	*5.50*
Importance Factor	*4.50*
Design Redundancy Factor	*3.00*
Structure Capacity	*2.00*
Tunnels:	
Age of Tunnel	*5.00*
Last Major Repair	*5.00*
Costs for Necessary Repairs/Upgrades	*5.00*
System Continuity and Connectivity	**15.00**
Degree of Regional Impact	*5.00*
Improves Access to Major Employment or Population Centers	*3.00*
Resiliency	*5.00*
Addresses a Gap	*2.00*
Safety and Security	**10.00**
Reduction of EPDO of Fatal and Serious Injury Crashes	*2.50*
Reduction of EPDO Rate of Fatal and Serious Injury Crashes	*2.50*
Improvement to Incident Management or Evacuation Routes	*3.00*
Diversion Impact Due to Failure (Impact of Detour to Alternate Crossing)	*2.00*
Modal Enhancements	**5.00**
Enhances Other Modal Categories	*2.00*
Access to Multimodal Choices	*2.00*
Provides Continuous Maritime Crossing	*1.00*
PROJECT UTILITY TOTAL	***100.00***

2045 LRTP Project Prioritization Weighting Factors - Project Utility

Intermodal/Freight Projects	
PROJECT UTILITY	
Better Accommodates Intermodal Movements	**30.00**
Improves Rail/Vehicular Access	**30.00**
Travel Time Reliabililty	**15.00**
Level of Travel Time Reliability (LOTTR)	*5.00*
Truck Travel Time Reliability (TTTR)	*10.00*
System Continuity and Connectivity	**15.00**
Degree of Regional Impact	*10.00*
Resiliency	*3.00*
Addresses a Gap	*2.00*
Modal Enhancements	**10.00**
Enhances Other Modal Categories	*6.00*
Access to Multimodal Choices	*4.00*
PROJECT UTILITY TOTAL	***100.00***

Transit Projects	
PROJECT UTILITY	
Congestion - Percent of Trips Removed from Roadways	**10.00**
Existing Usage and/or Prospective Ridership, Coverage Area/ Population Served	**20.00**
System Continuity and Connectivity	**25.00**
Degree of Regional Impact	*9.00*
Improves Access to Major Employment or Population Centers	*9.00*
Resiliency	*5.00*
Addresses a Gap	*2.00*
User Benefit	**35.00**
Annual Travel Time Savings per Rider	*10.00*
New Project	*5.00*
Increased Travel Time Reliability	*5.00*
Operating Efficiency	*5.00*
Accessibility (including ADA) and/or Customer Experience	*5.00*
Safety and Security	*5.00*
Modal Enhancements	**10.00**
Enhances Other Modal Categories	*6.00*
Access to Multimodal Choices	*4.00*
PROJECT UTILITY TOTAL	***100.00***

2045 LRTP Project Prioritization Weighting Factors - Project Utility

Active Transportation Projects	
PROJECT UTILITY	
Existing Usage and/or User Demand	**20.00**
System Continuity and Connectivity	**30.00**
Access to Transit, Local, or Regional Destinations	*10.00*
Regional Significance	*5.00*
Connections to Existing Bicycle/Pedestrian Facilities	*5.00*
Elimination of Barriers to Major Destinations	*5.00*
Resiliency	*5.00*
Safety	**30.00**
Crash History	*15.00*
Level of Separation/Network Quality	*10.00*
Associated with Safe Routes to School	*5.00*
Modal Enhancements	**20.00**
Enhances Other Modal Categories	*10.00*
Enhances First Mile - Last Mile Connections	*6.00*
Access to Multimodal Choices	*4.00*
PROJECT UTILITY TOTAL	***100.00***

Systems/Demand Management Projects	
PROJECT UTILITY	
Congestion Level	**40.00**
Existing Congestion Level	*20.00*
Project Improves Level of Service or Increases Service Capacity	*10.00*
Person Throughput	*5.00*
Person Hours of Delay	*5.00*
Travel Time Reliabililty	**15.00**
Level of Travel Time Reliability (LOTTR)	*10.00*
Truck Travel Time Reliability (TTTR)	*5.00*
System Continuity and Connectivity	**15.00**
Degree of Regional Impact	*5.00*
Resiliency	*5.00*
Improves Access to Major Employment or Population Centers	*3.00*
Addresses a Gap	*2.00*
Safety and Security	**15.00**
Degree Project Will Reduce Crashes (use EPDO data when possible)	*5.00*
Improvement to Incident Management or Evacuation Routes	*5.00*
Emergency Preemption or Incident Detection	*5.00*
Project Type Dependent Measures	**10.00**
(refer to Project Type Measures for specifics)	*10.00*
Modal Enhancements	**5.00**
Enhances Other Modal Categories	*3.00*
Access to Multimodal Choices	*2.00*
PROJECT UTILITY TOTAL	***100.00***

2045 LRTP Project Prioritization Weighting Factors - Economic Vitality

Highway Projects	
ECONOMIC VITALITY	
Travel Time and Delay Impacts	**30.00**
Total Reduction in Regional Travel Time	*15.00*
Total Reduction in Regional Delay	*15.00*
Labor Market Access	**10.00**
Increased Access for High Density Employment Areas	*10.00*
Addresses the Needs of Basic Sector Industries	**30.00**
Increases Access for Defense Installations	*6.00*
Facility part of STRAHNET/Roadway Serving the Military	*4.00/3.00*
Increases Access for Port Facilities	*5.00*
Provides Improved Access to Truck Zones	*5.00*
Increases Access to Tourist Destinations	*10.00*
Increased Opportunity	**20.00**
Provides New of Increased Access	*5.00*
Supports Plans for Future Growth	*5.00*
Provides Access to Institutions of Higher Education (including workforce development sites)	*5.00*
Improved Access to UDAs/GOZs/IEDAs	*5.00*
Economic Distress Factors	**10.00**
Provides Access to Low Income Areas	*5.00*
Provides Access to Areas with High Unemployment	*5.00*
ECONOMIC VITALITY TOTAL	***100.00***

Interchange Projects	
ECONOMIC VITALITY	
Travel Time and Delay Impacts	**30.00**
Total Reduction in Regional Travel Time	*15.00*
Total Reduction in Regional Delay	*15.00*
Labor Market Access	**10.00**
Increased Access for High Density Employment Areas	*10.00*
Addresses the Needs of Basic Sector Industries	**30.00**
Increases Access for Defense Installations	*6.00*
Facility part of STRAHNET/Roadway Serving the Military	*4.00/3.00*
Increases Access for Port Facilities	*5.00*
Provides Improved Access to Truck Zones	*5.00*
Increases Access to Tourist Destinations	*10.00*
Increased Opportunity	**20.00**
Provides New of Increased Access	*5.00*
Supports Plans for Future Growth	*5.00*
Provides Access to Institutions of Higher Education (including workforce development sites)	*5.00*
Improved Access to UDAs/GOZs/IEDAs	*5.00*
Economic Distress Factors	**10.00**
Provides Access to Low Income Areas	*5.00*
Provides Access to Areas with High Unemployment	*5.00*
ECONOMIC VITALITY TOTAL	***100.00***

2045 LRTP Project Prioritization Weighting Factors - Economic Vitality

Bridge & Tunnel Projects	
ECONOMIC VITALITY	
Travel Time and Delay Impacts	**30.00**
Total Reduction in Regional Travel Time	*15.00*
Total Reduction in Regional Delay	*15.00*
Labor Market Access	**10.00**
Increased Access for High Density Employment Areas	*10.00*
Addresses the Needs of Basic Sector Industries	**30.00**
Increases Access for Defense Installations	*6.00*
Facility part of STRAHNET/Roadway Serving the Military	*4.00/3.00*
Increases Access for Port Facilities	*5.00*
Provides Improved Access to Truck Zones	*5.00*
Increases Access to Tourist Destinations	*10.00*
Increased Opportunity	**20.00**
Provides New of Increased Access	*5.00*
Supports Plans for Future Growth	*5.00*
Provides Access to Institutions of Higher Education (including workforce development sites)	*5.00*
Improved Access to UDAs/GOZs/IEDAs	*5.00*
Economic Distress Factors	**10.00**
Provides Access to Low Income Areas	*5.00*
Provides Access to Areas with High Unemployment	*5.00*
ECONOMIC VITALITY TOTAL	***100.00***

Intermodal/Freight Projects	
ECONOMIC VITALITY	
Travel Time and Delay Impacts	**30.00**
Total Reduction in Regional Travel Time	*15.00*
Total Reduction in Regional Delay	*15.00*
Labor Market Access	**20.00**
Impact on Truck Movement	*15.00*
Increases Access for High Density Employment Areas	*5.00*
Improves Interaction Between Modes of Travel for Basic Sector Industries	**20.00**
Increases Access for Port Facilities	*5.00*
Improves Access to Truck Zones	*5.00*
Improves Flow of Rail	*5.00*
Increases Access to Air	*5.00*
Increased Opportunity	**30.00**
Provides New of Increased Access	*15.00*
Supports Plans for Future Growth	*10.00*
Improved Access to UDAs/GOZs/IEDAs	*5.00*
ECONOMIC VITALITY TOTAL	***100.00***

2045 LRTP Project Prioritization Weighting Factors - Economic Vitality

Transit Projects	
ECONOMIC VITALITY	
Labor Market Access	**30.00**
Increases Access for Major Employment Centers	***20.00***
Increases Frequency of Service	***10.00***
Addresses the Needs of Basic Sector Industries	**20.00**
Provides or Improves Access for Defense Installations	***10.00***
Provides/Improves Access for Tourist Destinations	***10.00***
Increased Opportunity - Provides New Access to the Network	**30.00**
Supported by Plans for Increased Density and Economic Activity	***15.00***
Provides New Access to the Network	***5.00***
Provides Access to Institutions of Higher Education (including workforce development sites)	***5.00***
Improved Access to UDAs/GOZs/IEDAs	***5.00***
Economic Distress Factors	**20.00**
Provides Access to Low Income Areas	***10.00***
Provides Access to Areas with High Unemployment	***10.00***
ECONOMIC VITALITY TOTAL	***100.00***

Active Transportation Projects	
ECONOMIC VITALITY	
Labor Market Access	**20.00**
Increases Access for Major Employment Centers	***20.00***
Addresses the Needs of Basic Sector Industries	**20.00**
Provides or Improves Access for Defense Installations	***10.00***
Provides/Improves Access for Tourist Destinations	***10.00***
Increased Opportunity - Provides New Access to the Network	**40.00**
Supports Plans for Future Growth	***10.00***
Provides New Access to the Network	***10.00***
Provides Access to Institutions of Higher Education (including workforce development sites)	***10.00***
Improved Access to UDAs/GOZs/IEDAs	***10.00***
Economic Distress Factors	**20.00**
Provides Access to Low Income Areas	***10.00***
Provides Access to Areas with High Unemployment	***10.00***
ECONOMIC VITALITY TOTAL	***100.00***

2045 LRTP Project Prioritization Weighting Factors - Economic Vitality

Systems/Demand Management Projects	
ECONOMIC VITALITY	
Travel Time and Delay Impacts	**30.00**
Total Reduction in Regional Travel Time	*15.00*
Project Improves Delay During Peak Congestion and/or Special Events	*15.00*
Labor Market Access	**10.00**
Increased Access for High Density Employment Areas	*10.00*
Addresses the Needs of Basic Sector Industries	**30.00**
Increases Access for Defense Installations	*6.00*
Facility part of STRAHNET/Roadway Serving the Military	*4.00/3.00*
Increases Access for Port Facilities	*5.00*
Provides Improved Access to Truck Zones	*5.00*
Increases Access to Tourist Destinations	*10.00*
Increased Opportunity	**20.00**
Provides New of Increased Access	*5.00*
Supports Plans for Future Growth	*5.00*
Provides Access to Institutions of Higher Education (including workforce development sites)	*5.00*
Improved Access to UDAs/GOZs/IEDAs	*5.00*
Economic Distress Factors	**10.00**
Provides Access to Low Income Areas	*5.00*
Provides Access to Areas with High Unemployment	*5.00*
ECONOMIC VITALITY TOTAL	***100.00***

2045 LRTP Project Prioritization Weighting Factors - Project Viability

Highway Projects	
PROJECT VIABILITY	
Project Readiness	**50.00**
Percentage of Committed Funding	*15.00*
Prior Commitment	*10.00*
Project alignment status	*5.00*
Percentage of Project Design Complete	*5.00*
Environmental Documents Status	*5.00*
Environmental Decisions Obtained	*5.00*
ROW Obtained/Utilities Coordinated	*5.00*
Land Use/Future Development Compatibility	**20.00**
Environmental:	**10.00**
Environmental MOEs	*3.00*
Acres of Natural and Cultural Resources	*3.00*
Project reduces traffic delay at a congested bottleneck with high percentage of truck traffic and/or includes improvements to freight/rail/intermodal facilities	*2.00*
Percentage of truck traffic (for congested bottlenecks with high truck traffic)	*2.00*
Cost Effectiveness	**20.00**
PROJECT VIABILITY TOTAL	**100.00**

Interchange Projects	
PROJECT VIABILITY	
Project Readiness	**50.00**
Percentage of Committed Funding	*15.00*
Prior Commitment	*10.00*
Project alignment status	*5.00*
Percentage of Project Design Complete	*5.00*
Environmental Documents Status	*5.00*
Environmental Decisions Obtained	*5.00*
ROW Obtained/Utilities Coordinated	*5.00*
Land Use/Future Development Compatibility	**20.00**
Environmental:	**10.00**
Environmental MOEs	*3.00*
Acres of Natural and Cultural Resources	*3.00*
Project reduces traffic delay at a congested bottleneck with high percentage of truck traffic and/or includes improvements to freight/rail/intermodal facilities	*2.00*
Percentage of truck traffic (for congested bottlenecks with high truck traffic)	*2.00*
Cost Effectiveness	**20.00**
PROJECT VIABILITY TOTAL	**100.00**

2045 LRTP Project Prioritization Weighting Factors - Project Viability

Bridge & Tunnel Projects	
PROJECT VIABILITY	
Project Readiness	**50.00**
Percentage of Committed Funding	*15.00*
Prior Commitment	*10.00*
Project alignment status	*5.00*
Percentage of Project Design Complete	*5.00*
Environmental Documents Status	*5.00*
Environmental Decisions Obtained	*5.00*
ROW Obtained/Utilities Coordinated	*5.00*
Land Use/Future Development Compatibility	**20.00**
Environmental:	**10.00**
Environmental MOEs	*3.00*
Acres of Natural and Cultural Resources	*3.00*
Project reduces traffic delay at a congested bottleneck with high percentage of truck traffic and/or includes improvements to freight/rail/intermodal facilities	*2.00*
Percentage of truck traffic (for congested bottlenecks with high truck traffic)	*2.00*
Cost Effectiveness	**20.00**
PROJECT VIABILITY TOTAL	**100.00**

Intermodal/Freight Projects	
PROJECT VIABILITY	
Project Readiness	**50.00**
Percentage of Committed Funding	*15.00*
Prior Commitment	*10.00*
Project alignment status	*5.00*
Percentage of Project Design Complete	*5.00*
Environmental Documents Status	*5.00*
Environmental Decisions Obtained	*5.00*
ROW Obtained/Utilities Coordinated	*5.00*
Land Use/Future Development Compatibility	**20.00**
Environmental:	**10.00**
Environmental MOEs	*3.00*
Acres of Natural and Cultural Resources	*4.00*
Percentage of truck traffic (for congested bottlenecks with high truck traffic)	*3.00*
Cost Effectiveness	**20.00**
PROJECT VIABILITY TOTAL	**100.00**

2045 LRTP Project Prioritization Weighting Factors - Project Viability

Transit Projects	
PROJECT VIABILITY	
Project Readiness	**50.00**
Percentage of Committed Funding	*15.00*
Prior Commitment	*10.00*
Project alignment status	*5.00*
Percentage of Project Design Complete	*5.00*
Environmental Documents Status	*5.00*
Environmental Decisions Obtained	*5.00*
ROW Obtained/Utilities Coordinated	*5.00*
Land Use/Future Development Compatibility	**20.00**
Environmental:	**10.00**
Environmental MOEs	*3.00*
Acres of Natural and Cultural Resources	*4.00*
Air Quality/Emissions Reduction (Tons of emissions (HC and Nox) reduced per year)	*3.00*
Cost Effectiveness	**20.00**
PROJECT VIABILITY TOTAL	**100.00**

Active Transportation Projects	
PROJECT VIABILITY	
Project Readiness	**50.00**
Percentage of Committed Funding	*15.00*
Prior Commitment	*10.00*
Project alignment status	*5.00*
Percentage of Project Design Complete	*5.00*
Environmental Documents Status	*5.00*
Environmental Decisions Obtained	*5.00*
ROW Obtained/Utilities Coordinated	*5.00*
Land Use/Future Development Compatibility	**20.00**
Environmental:	**10.00**
Access to Natural and Cultural Resources	*6.00*
Air Quality/Emissions Reduction (Tons of emissions (HC and Nox) reduced per year)	*4.00*
Cost Effectiveness	**20.00**
PROJECT VIABILITY TOTAL	**100.00**

2045 LRTP Project Prioritization Weighting Factors - Project Viability

Systems/Demand Managment Projects	
PROJECT VIABILITY	
Project Readiness	**50.00**
Percentage of Committed Funding	*15.00*
Prior Commitment	*10.00*
Project alignment status	*5.00*
Percentage of Project Design Complete	*5.00*
Environmental Documents Status	*5.00*
Environmental Decisions Obtained	*5.00*
ROW Obtained/Utilities Coordinated	*5.00*
Land Use/Future Development Compatibility	**20.00**
Environmental:	**10.00**
Environmental MOEs	*3.00*
Acres of Natural and Cultural Resources	*3.00*
Project reduces traffic delay at a congested bottleneck with high percentage of truck traffic and/or includes improvements to freight/rail/intermodal facilities	*2.00*
Percentage of truck traffic (for congested bottlenecks with high truck traffic)	*2.00*
Cost Effectiveness	**20.00**
PROJECT VIABILITY TOTAL	**100.00**