

RAPPAHANNOCK-RAPIDAN REGIONAL COMMISSION

TRANSPORTATION PROJECT PRIORITIZATION PROCESS



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ABOUT GAP-TA

Visit vtrans.org/about/GAP-TA for information about the Growth and Accessibility Planning Technical Assistance program.

OIPI will provide a blurb describing the GAP-TA program

ACKNOWLEDGMENTS

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LIST OF ACRONYMS

ACS	American Community Survey
AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
APM	Accident Protection Model
B/C ratio	Benefit/Cost Ratio
BIL	Bipartisan Infrastructure Law
CCI	Combined Condition Index
CDC	Centers for Disease Control
CEJST	Climate and Economic Justice Screening Tool
CoSS	Corridors of Statewide Significance
CSV	Comma Separated Value
CTB	Commonwealth Transportation Board
DCR	Virginia Department of Conservation and Recreation
DOT	Department of Transportation
EEA	Equity Emphasis Area
EPDO	Equivalent Property Damage Only
EDA	Economic Development Access
ETCE	Equitable Transportation Community Explorer
FRA	Federal Rail Administration
FHWA	Federal Highway Authority
FY	Fiscal Years
GAP	Growth and Accessibility Planning Technical Assistance Program
GIS	Geographic Information Systems
HSIP	Highway Safety Improvement Program
IID	Infrastructure Investment Division
IIJA	Infrastructure Investment and Jobs Act

LIST OF ACRONYMS

LASP	Locally Agency Safety Program
L RTP	Long Range Transportation Plan
MPO	Metropolitan Planning Organization
NHS	National Highway System
NOFO	Notice of Funding Opportunity
OIPI	Office of Intermodal Planning and Investment
PDC	Planning District Commission
RAISE	Rebuilding American Infrastructure with Sustainability and Equity
H-RGCP	Highway-Rail Grade Crossing Safety Program
RRRC	Rappahannock-Rapidan Regional Commission
RTP	Recreational Trails Program
SMART SCALE	System for the Management and Allocation of Resources for Transportation Safety, Congestion reduction, Accessibility, Land use, Economic development and the Environment.
SGR	State of Good Repair
SS4A	Safe Streets for All
SSI	Systemic Safety Improvements
STBG	Surface Transportation Block Grant Program
TAP	Transportation Alternatives Program
TIP	Transportation Improvement Program
VDOT	Virginia Department of Transportation
VEDP	Virginia Economic Development Partnership
VRTAC	Virginia Recreational Trails Program Advisory Committee
VTrans	Virginia's Statewide Transportation Plan

LOCALITY/REGIONAL POLICIES

Locality vs Regional Policies for the Submittal of Applications

Some funding programs, like SMART SCALE, limit the number of applications that regions can apply for, whether they are submitted by localities or the regional commission. It is therefore important that roles of localities, counties, and the Rappahannock-Rapidan Regional Commission (RRRC) are clearly defined and coordinated in SMART SCALE applications. This section describes whether a SMART SCALE application is led by:

1. RRRC, or
2. A locality or transit agency and RRRC is requested to support their submitted projects.

RRRC is the primary applicant to SMART SCALE if the project is of regional impact, involving Safe Routes to School, or connecting to natural resources (Figure 1).

1. Process for when RRRC is the Applicant

RRRC is an eligible applicant for projects that fall under the Corridors of Statewide Significance (CoSS) and Regional Networks project types. RRRC may submit projects at its discretion or at the request of another entity, such as municipalities like Orange, Warrenton, or Madison, or member counties like Fauquier or Rappahannock within the region.

Guidance Regarding Project Submissions by RRRC

It is the prerogative of the RRRC Board whether to apply for projects at the request of other entities. To assist in this decision, RRRC staff will:

- Review proposed projects to ensure they are consistent with the current, fiscally constrained regional Long-Range Transportation Plan and the fiscally constrained Transportation Improvement Program.
- Review proposed projects with respect to SMART SCALE evaluation factors and measures.
- Provide a recommendation to the RRRC Board on each project proposed for submission by the RRRC.

As required by the SMART SCALE process, the RRRC Board will specify the priority order of the projects RRRC submits. To assist in this decision, RRRC staff will:

1. Review RRRC Project Prioritization scores for each proposed project, using the screening tool described in this guidance document, among other resources.
2. Review proposed projects with respect to SMART SCALE

evaluation factors and measures.

3. Provide a recommendation to the RRRC Board on the priority order for projects proposed for submission by RRRC.

2. Process for when RRRC is requested to support projects submitted by Localities or Transit Agencies

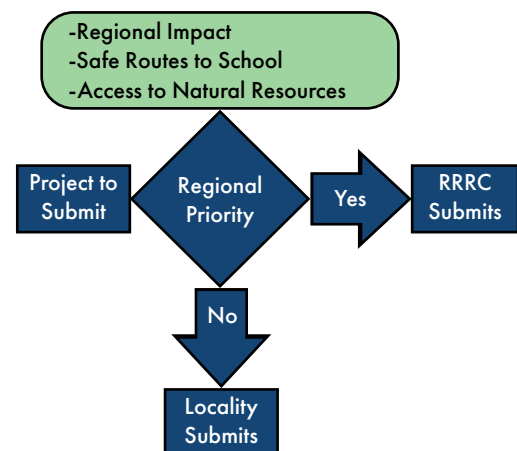
Localities and transit agencies that wish to independently submit projects for SMART SCALE evaluation must obtain a resolution of support from RRRC per SMART SCALE application requirements.

Guidance Regarding Project Submissions by Localities and Transit Agencies

1. In response to a request for RRRC support of project applications, RRRC staff will review the proposed projects to ensure they are consistent with the current, fiscally constrained Long-Range Transportation Plan (LRTP) and the fiscally constrained Transportation Improvement Program (TIP), as applicable.
2. For projects found to be consistent with the fiscally constrained LRTP and fiscally constrained TIP, a RRRC resolution of support will be provided to the applicant. If the applicant submits more than one project, the resolution will specify each project supported by the RRRC.
3. It is the responsibility of the Locality or Transit Agency to specify the priority order of the projects they submit for evaluation under SMART SCALE.

It may be useful for locally submitted proposals to SMART SCALE to also use the screening tool described in this guidance document for a combined list of locally and regionally submitted projects to improve the chances of the highest priority projects winning SMART SCALE funding.

Figure 1. Decision Flowchart for Locality vs. Regional Submissions to SMART SCALE



PROJECT SCREENING TOOL

Purpose and Need

The Rappahannock-Rapidan Regional Commission (RRRC) and its localities, like other regions in Virginia, have new and recurring infrastructure needs in response to growth or changes in their communities. There are many funding programs from state and federal sources to aid regions with these infrastructure needs. These programs are competitive, requiring that the highest priority projects be submitted for the highest likelihood of funding. To support their project prioritization process, RRRC identified a need to screen and prioritize projects for funding eligibility.

In cooperation with the Office of Intermodal Planning and Investment (OIPI), RRRC is developing a project screening tool to rank and identify transportation projects for different funding programs. This screening tool identifies existing conditions on and near proposed or potential transportation projects to score the fit with different funding programs and where additional low-cost infrastructural improvements would improve the chances of reward under different funding programs. This screening tool can be used in four ways to determine how competitive proposed transportation projects would be for certain funding streams, including:

1. Review of GIS layers that funding programs use to evaluate competitive projects.
2. Prioritization of transportation projects under each funding program.
3. Identification of potential for new projects that may be eligible under different funding programs.
4. Identification of low-cost infrastructure improvements that could increase the chance of program funding.

Screening Tool Design and Parameters

The screening tool is developed in ArcGIS Pro, Python, and Excel for use by RRRC staff and the staffs of member jurisdictions. To identify features within a set distance of each project location, this screening tool uses GIS layers from Interact VTrans and other sources for safety, infrastructure, traffic, and economic conditions to assess suitability for different funding programs, such as SMART SCALE, State of Good Repair (SGR), or Rebuilding American Infrastructure with Sustainability and Equity (RAISE).

The screening tool scores and prioritizes proposed projects based on nearby presence, number, prevalence, or values of GIS layers that different funding programs use to select proposals for funding. The screening tool can survey the area within user-defined distances of proposed or potential projects. The screening tool can be used to select features within any arbitrary buffer size;

however, in most cases the buffer should be set between 0 and 2,640 feet (i.e., ½-mile) from the edge of each proposed project. Buffers greater than ½-mile are not recommended as they consume more computational time and are no longer local to the project for pedestrian or bicyclist needs. By default, the screening tool uses a buffer distance of zero or 660 feet (i.e., 1/8th mile) for most GIS layers. This default setting is used since wider buffers are likely to intersect data outside the area of influence for corridors and intersections, and narrower buffers may not capture all features that could influence corridors or intersections. A zero-foot buffer is appropriate for attributes that influence, or are influenced by, the immediate project area; a 20-foot buffer is used for certain attributes that may sometimes fall just outside the edge of pavement (e.g., sidewalks, trails, shared-use paths); larger buffers are appropriate for attributes that may influence, or be influenced by, the project without being directly within or immediately adjacent to the project area (e.g., an Equity Emphasis Area (EEA), which may be served by the project even though the project is not immediately within it). The screening tool aggregates data on nearby features to each project area to develop a score for each funding program.

GIS Screening Tool Additional Infrastructure Recommendations

The screening tool also detects the presence of existing multimodal infrastructure within 660 feet of the buffer of each proposed or potential project to recommend additional low-cost infrastructure improvements that may be easily added to the project's scope to increase its competitiveness within SMART SCALE or other funding programs. The larger buffer is used to identify existing nearby multimodal infrastructure to which the subject project may be able to reasonably connect. Selected from the SMART SCALE Technical Guide Table 9.3: Tier 1 project types, these low-cost infrastructure improvements are listed below.

- Add/Construct Bike Lane, if near an existing bikeway or trail, or if a history of nearby bicycle-involved crashes is indicated
- Construct Shared-Use Path, if near an existing sidewalk, trail, or bikeway, or if a history of nearby pedestrian- or bicycle-involved crashes is indicated
- Construct Sidewalk, if near existing sidewalk, trail, or transit route (for improved access to any existing or proposed transit stops), or if a history of nearby pedestrian-involved crashes is indicated
- Add or improve Crosswalk, if near existing sidewalk or trail, or if a history of nearby pedestrian-involved crashes is indicated
- Construct or improve Bus Stop/ Shelter, if along an existing bus transit route

Many of the above listed Tier 1 infrastructure improvements may already be in the scope of proposed projects. This list does not include trafficway widening, restriping or signalization, or larger-scale transit or traffic circulation projects, as they are higher cost and likely to already be within the proposed project scope. This screening tool is designed to review, score, and prioritize multiple projects across the Rappahannock-Rapidan region and does not address the scope of individual proposals. This feature is intended only to flag that a given feature warrants further consideration, without guarantee as to the feasibility or true costs and benefits of any improvement.

GIS Project Policy Tool Recommendations

Infrastructure projects that are ranked the most suitable by the screening tool for each funding program may be recommended for submission to those funding programs. This tool is designed as an analytic tool or screening projects but is not the only method for selecting project proposals. The RRRC should work with local governments to make the final decisions for project proposals to different funding programs, using this screening tool in an advisory role.

This screening tool can be updated as funding program criteria and offerings change. Some programs, like SMART SCALE, may change their scoring criteria with each funding cycle. The screening tool can also readily incorporate GIS layers as they are updated with new data. Procedures for updating GIS layers are included in the screening tool manual later in this document.

This document guides users on how to use the screening tool effectively. The Funding Programs section summarizes the evaluation criteria used by each existing funding program so users understand how to score different projects and how the screening tool works for each funding program. The Screening Tool Manual section provides procedures to perform each of the screening tool functions and to update the screening tool as funding programs or GIS data sources change. The Appendix provides detailed information on the process for each funding program, including the GIS layers they monitor, but also administrative and financial details.

GIS Tool Technical Recommendations

The GIS tool should be compatible with any computer running ArcGIS Pro 3.2 or later. The GIS Tool should be run from a physical drive connected to the computer. The tool will not run from a Microsoft OneDrive folder. While it may run successfully from a network folder, doing so is not recommended as performance will likely be poor.

FUNDING PROGRAMS

Overview

This section presents the GIS layers and evaluation criteria for each funding program that the screening tool scores. Detailed evaluation criteria for each funding program are provided in the Appendix.

The following funding programs are considered for ranking by the GIS tool:

- SMART SCALE
- Highway Safety Improvement (HSIP)
 - Systemic Safety Improvements (SSI)
 - Bicycle and Pedestrian
 - Highway-Rail Grade Crossing Safety Program (H-RGCP)
 - Local Agency Safety Program
- Economic Development Access Program (EDA)
- RAISE Grant Program
- Recreational Trails program
- State of Good Repair (SGR)
 - Bridge
 - Pavement
- Transportation Alternatives Program (TAP)

Below each funding program description, a table summarizes the GIS layers used for evaluating award, their source and their weight assigned in the screening tool. The weights are tailored to the priorities of each funding program. Where several metrics evaluate the same priority for a program while other priorities in that same program are represented by only one metric, care was taken to keep priorities balanced. This resulted in some metrics having fractional weights. The tables for each funding program also show the aggregation function used by the Python script to create an output CSV to be processed in the Excel step of the screening tool.

The screening tool aggregation functions that can be selected in the screening tool are:

- Average(): Average the values of all features within the buffer distance of the project boundary
- Count(): Return the count of all features within the buffer distance of the project boundary
- Max(): Return the maximum value of all features within the buffer distance of the project boundary
- Min(): Return the minimum value of all features within the buffer distance of the project boundary
- Present(): Return a value of 1 if a feature is present within project boundary buffer, otherwise return a value of 0
- Sum(): Sum the values of all features within the buffer distance of the project boundary

SMART SCALE

SMART SCALE is a Virginia multimodal transportation funding program. Under the current guidelines, a tier 3 region like RRRC with a population under 250,000 can submit up to four project proposals to SMART SCALE for each round. As with previous rounds of SMART SCALE, proposals from RRRC's member jurisdictions will count toward this four-project limit. It is therefore important that the transportation infrastructure proposals submitted for SMART SCALE be carefully and systematically coordinated between local and regional applications.

The Policy section at the beginning of this document distinguishes between project types that require submission by RRRC versus those that should be submitted by member jurisdictions. RRRC and its localities are eligible to apply for SMART SCALE funding for clearly defined and geographically contiguous projects. In round six of SMART SCALE, there is an increased emphasis on funding of highway projects along Corridors of Statewide Significance (CoSS) and Regional Networks (RN). There are several CoSS in the Rappahannock-Rapidan Region. As regionally significant corridors, projects along these CoSS or RN should be submitted by the RRRC, not localities.

For the District Grant Program, localities may also submit projects that meet an Urban Development Area (UDA) or statewide safety need. Statewide safety needs are identified in VTrans mid-term needs, but other safety improvements may also be eligible provided the applicant completes and submits a safety study including a purpose and need statement, Average Annual Daily Traffic (AADT) data, field review observations, geometric design review, alternatives considered, the preferred alternative, expected benefits and a summary of conclusions. Additionally, the study area should have recorded at least 3+ Fatal or Injury crashes at the intersection or segment over the last five years.

SMART SCALE has a two-year update cycle, and the criteria for project selection and award have typically seen updates between cycles. This screening tool is developed in 2023-2024 but will be delivered and applied for use on SMART SCALE round seven in 2025-2026. It is not known whether SMART SCALE criteria for award may change from rounds six to seven, but this screening tool is designed to be flexible to accommodate any updates.

Table 1 and Table 2 list attributes and weights for the two SMART SCALE funding programs. Note that both list Mid-Term Needs identified by VTrans as a precursor to eligibility for SMART SCALE consideration and funding. The layer is therefore included in the screening tool as a "flag" for eligibility. This tool does not

guarantee applicability of a proposed project to a selected VTrans Mid-Term Need, nor does the lack of a selected VTrans need necessarily mean a project is ineligible for SMART SCALE.

Table 1. SMART SCALE District Grant Attributes and Weights

Metric	Source	Weight	Function
Estimated ADT	VTrans	0.25	Max()
Crashes EPDO Scores	VTrans	1	Sum()
All Crashes by location	VTrans	0.5	Count()
Heavy Vehicle Percent	VTrans	1	Max()
Transit Stops	VTrans	0.25	Present()
Transit Routes	DRPT	0.25	Present()
Trails	DCR	0.25	Present()
Sidewalks	VTrans	0.5	Present()
Park and Ride Lots	VTrans	0.5	Present()
Social Vulnerability Areas	CDC	0.5	Present()
Equity Emphasis Areas	VTrans	0.5	Present()
Designated Qualified Opportunity Zones	VTrans	1	Present()
VTrans Mid-Term Needs	VTrans	Flag	Present()

Table 2. SMART SCALE High Priority Attributes and Weights

Metric	Source	Weight	Function
Estimated ADT	VTrans	0.25	Max()
Crashes EPDO Scores	VTrans	1	Sum()
All Crashes by location	VTrans	1	Count()
Heavy Vehicle Percent	VTrans	1	Max()
Transit Stops	VTrans	0.25	Present()
Transit Routes	DRPT	0.25	Present()
Trails	DCR	0.25	Present()
Sidewalks	VTrans	0.5	Present()
Park and Ride Lots	VTrans	0.5	Present()
Census Tracts Median Income	ACS	0.5	Min()
VTrans Mid-Term Needs	VTrans	Flag	Present()

Highway Safety Improvement Program (HSIP)

The HSIP program funds transportation safety improvements. This program measures safety needs by crash density per AADT. Under HSIP, there are several other funding programs for safety, including systemic, bicycle and pedestrian, rail-highway crossing, and the local agency safety program.

Highway Safety Improvement Program, Highway and Local Roads

Projects can include infrastructural, roadway, or systemic measures to improve intersection, roadway departure, non-motorized, rail crossing, work zone safety, or general issues. The annual application

cycle is from August 1 to November 1. Funding is awarded based on a proposal's readiness and ability to address known safety issues.

Project applications are validated by a local VDOT liaison and then reviewed and scored by the project's respective district and the central office. The application then moves to the Commonwealth Transportation Board (CTB) for approval in May through June of the following year. Locality and highway projects are scored on an eight-point scale which includes benefit-cost ratio, hazard priority, number of crashes, projected cost, schedule suitability, multiple funding source availability, documentation, and project location.

HSIP funds must be allocated to the safety component of the construction project, per FHWA guidelines. HSIP funds are not to be spent on other aspects of projects, only safety improvements.

Funding is 90% federal but allocated and monitored by VDOT. Exceeding scope results in tighter monitoring of performance. Lower cost projects are preferred.

HSIP attributes and weights are presented in Table 3.

Table 3. Highway Safety Improvement Program, Highway and Local Roads Attributes and Weights

Metric	Source	Weight	Function
Crashes EPDO Scores	VTrans	1	Sum()
Roadway Deficiency crashes	VTrans	1	Count()
Truck ADT	VTrans	1	Max ()

HSIP - Systemic Safety Improvements (SSI)

Systemic safety improvements focus on longer term crash reduction over a project's life cycle. Projects delivered in minimal time with no right-of-way expansion are preferred. A projected benefit-to-cost ratio greater than one is preferred.

Projects are scored on a seven-point risk narrative of Safety, Cost, and Schedule. This is identical to the eight-point risk narrative for the highway and local HSIP programs except for the omission of condition and the greater weight of location on the risk narrative.

HSIP-SSI attributes and weights are presented in Table 4.

Table 4. Safety Program, Systemic Attributes and Weights

Metric	Source	Weight	Function
Crashes EPDO Scores	VTrans	1	Sum()
Roadway Deficiency crashes	VTrans	1	Count()
Pavement Condition	VTrans	0.5	Min()
Bridges & Culverts Condition	VTrans	0.5	Min()
All Crashes by location	VTrans	1	Count()
Estimated ADT	VTrans	1	Max()
Truck ADT	VTrans	1	Max()

[HSIP - Bicycle and Pedestrian Safety Program](#)

The Bicycle and Pedestrian Safety Program address non-motorized safety concerns where motorized crash risks are not high enough to be funded for safety improvements. A potential project could be on any roadway, sidewalk, or trail, and can include on-road marking/signing, intersection improvements, and accessibility measures. Ineligible projects include bike parking, directional signing, landscaping, and traffic management. Traffic Calming is also eligible if it is focused on non-motorized safety and not traffic control. Eligible locations would have minimal crash history, but well-documented safety hazards with the potential for fatal and injury crashes.

Applications should be guided by VDOT's Pedestrian Safety Action Plan (PBSAP), and the map of high risk locations and corridors identified on the [PBSAP website](#). There are higher-risk areas for pedestrians and cyclists throughout the Rappahannock-Rapidan region, specifically concentrated within the towns of Culpeper, Warrenton, and Orange.

This risk narrative is weighted on a six-point risk scale that includes project issues and proposed improvements, but omits Benefit/Cost (B/C) ratio, and location.

HSIP- Bicycle and Pedestrian Safety Program attributes and weights are presented in Table 5.

Table 5. Safety Program, Bicycle and Pedestrian Attributes and Weights

Metric	Source	Weight	Function
Crashes EPDO scores	VTrans	1	Sum()
Pedestrian-Involved Crashes	VTrans	1	Max()
Bicycle-involved Crashes	VTrans	1	Max()
Truck ADT	VTrans	1	Max()
Transit Stops	VTrans	0.5	Present()
Transit Routes	DRPT	0.5	Present()
Trails	DCR	1	Present()
Sidewalks	VTrans	1	Present()
Estimated ADT	VTrans	0.5	Max()

[HSIP - Highway-Rail Grade Crossing Safety Program \(H-RGCP\)](#)

This program is intended to reduce the number of train and vehicle crashes at grade crossings. Proposals are ranked and reviewed on a statewide basis. Half of the program funding must go toward warning systems for drivers. The other 50% can be spent on the elimination of hazards, including grade separation or sight distance issues. Highway safety projects for rail crossings are funded on a 90% federal match, while VDOT allocates the funding for the 10% local match.

This risk narrative is weighted on six-point risk scale that includes project issues and proposed improvements, but omits B/C ratio, and location.

Accident Protection Model (APM) inputs are adjusted to incorporate additional engineering data such as vehicle type volumes and physical characteristics. Candidate locations are ranked statewide using the Federal Rail Administration (FRA) APM formula and reviewed by HSIP staff for motorist sight distance, roadway geometry, and adjacent land use density/traffic congestion.

HSIP- H-RGCP attributes and weights are presented in Table 6.

Table 6. Highway-Rail Grade Crossing Safety Program Attributes and Weights

Metric	Source	Weight	Function
Rail Crossings	USDOT	1	Present()
Railroad At-Grade Crashes	VTrans	1	Count()
Estimated ADT	VTrans	1	Max()
Truck ADT	VTrans	1	Max()
Sidewalks	VTrans	1	Present()

[HSIP - Local Agency Safety Program\(LASP\)](#)

The LASP is for locally administered roads and can include spot improvements, multiple roadway corridors, or systemic upgrades at multiple locations.

The only locally administered roadways in the Rappahannock-Rapidan region are in Warrenton. Most roads in Warrenton are locally administered and have crash hotspots and traffic safety concerns, identified in [Plan Warrenton 2040](#). The only roadway within Warrenton identified as a corridor with safety concerns is Broadview Avenue. Here, US-17, US Business 29, and US-211 merge. These National Highways are all administered by VDOT.

HSIP- LASP attributes and weights are presented in Table 7.

Table 7. Local Agency Safety Program Attributes and Weights

Metric	Source	Weight	Function
Crashes EPDO scores	VTrans	1	Sum()
All Crashes by location	VTrans	1	Count()
Sidewalk	VTrans	0.5	Present()
Trails	DCR	0.5	Present()
Estimated ADT	VTrans	1	Max()
Truck ADT	VTrans	1	Max()

Economic Development Access Program

This program is meant to provide adequate road access to new and expanding employers in the region with at least 51% of the company’s revenue generated from outside the Commonwealth. EDA programs can be design-only but must be for employers that lack adequate access. Intersection modifications may be part of the project, but not the primary design of the project.

Qualified businesses must work with a locality’s economic development office or governing body to apply.

The program is administered by VDOT. See appendix for details. Economic development access safety program attributes and weights are presented in Table 8.

Table 8. Economic Development Access Program Attributes and Weights

Metric	Source	Weight	Function
Equity Emphasis Areas	VTrans	0.5	Present()
Truck ADT	VTrans	1	Max()
Designated Qualified Opportunity Zones	VTrans	0.5	Present()

RAISE Discretionary Grant Program

This program is for transportation capital or planning projects, administered through VDOT. Local governments, regional jurisdictions, or RRRC may apply through a [federal DOT process](#).

The Department reviews Merit Criteria for all applications and will then review Project Readiness and Economic Analysis only for a subset of projects determined by the Merit Criteria ratings. Project Readiness consists of a Technical Capacity, Environmental Risk Assessment, and Financial Completeness Assessment. Capital projects advanced for further analysis will undergo an (1) Economic Analysis (2) Environmental Risk Assessment; (3) Financial Completeness Assessment; (4) Technical Capacity Assessment. The Economic Analysis assesses the proposed project’s estimated benefit-cost ratio and net quantifiable benefits. Planning projects advanced for further analysis will only undergo a Financial Completeness Assessment and a Technical Capacity Assessment. Planning projects will not receive an Economic Analysis or Environmental Risk assessment.

A Senior Review Team considers the outcome of further analysis to determine which projects to advance to the Secretary for consideration. The Secretary will ultimately make the final selection for awards, consistent with the statutory requirements for RAISE Grants and the selection criteria in the Notice of Funding Opportunity (NOFO).

Capital projects have a minimum grant amount of \$1 million and a maximum award of \$45 million. Capital projects may include roadway, transit, rail, intermodal, culvert/bridge, or stormwater

projects. Planning projects have no minimum grant amount. The Application deadline is February of each year.

RAISE grant program attributes and weights are presented in Table 9.

Table 9. RAISE Grant Program Attributes and Weights

Metric	Source	Weight	Function
Crashes EPDO Scores	VTrans	1	Sum()
Estimated ADT	VTrans	1	Max()
Estimated Truck ADT	VTrans	1	Max()
Transit Stops	VTrans	1	Present()
Transit Routes	DRPT	1	Present()
Trails	DCR	1	Present()
Sidewalks	VTrans	1	Present()
Park and Ride Lots	VTrans	1	Present()
Equity Emphasis Areas	VTrans	0.5	Present()
Social Vulnerability Areas	CDC	0.5	Present()
Census Tracts Median Income	ACS	1	Min()
Designated Qualified Opportunity Zones	VTrans	1	Present()
Pavement Condition	VTrans	1	Min()
Bridge & Culvert Condition	VTrans	1	Min()

Recreational Trails Program (RTP)

The recreational trails program funds connections and expansions of recreational trail networks. Though it is funded by the FHWA, it is administered by the Virginia Department of Conservation and Recreation (DCR). Town, city, and county governments may apply for project funding. The program funds new trail linkages and trail alignments, maintenance of existing trails, rehabilitation and restoration of trails and trailside facilities, lease of trail maintenance equipment, and planning and publicity for trail facilities. The program does not fund accessibility for motorized vehicles to non-motorized trails, or new motorized trails.

The RTP offers 80-20 matching funds if localities can dedicate 20% of project costs to their project. Each applicant project is previewed by DCR, then reviewed and scored by the Virginia Recreational Trails Program Advisory Committee (VRTAC) for project selection. DCR reports field conditions and suitability recommendations to FHWA after a site inspection. If authorized by FHWA, projects have three years to complete the required environmental review process, design plans, permitting, and project construction.

Recreational trails program attributes and weights are presented in Table 10.

Table 10. Recreational Trails Program Attributes and Weights

Metric	Source	Weight	Function
Trails	DCR	1	Present()
Sidewalks	VTrans	1	Present()

State of Good Repair (SGR)

For the State of Good Repair (SGR) Bridge Program localities must submit a pre-application for all projects. Priority is given to primary extension routes of the [National Highway System \(NHS\)](#). For the RRRC, the NHS routes are I-66, US-29, US-15, US-211, VA-3, Each locality must submit a separate application for each individual project.

SGR bridge program attributes and weights are presented in Table 11.

Table 11. State of Good Repair Locality Bridge Program Attributes and Weights

Metric	Source	Weight	Function
Estimated Truck ADT	DCR	1	Max()
Estimated ADT	VTrans	1	Max()
Pavement Condition	VTrans	0.5	Min()
Bridge & Culvert Condition	VTrans	1	Min()

For the SGR Pavement Program, only routes that are locally maintained and in poor condition (Combined Condition Index (CCI) less than 60) are eligible for funding. Priority is given to primary extension routes of the [National Highway System \(NHS\)](#). For the RRRC, NHS routes are I-66, US-29, US-15, US-211, and

VA-3. Each locality must submit a separate application for each project.

SGR pavement program attributes and weights are presented in Table 12.

Table 12. State of Good Repair Locality Pavements Program Attributes and Weights

Metric	Source	Weight	Function
Estimated ADT	VTrans	1	Max()
Estimated Truck ADT	VTrans	1	Max()
Pavement Condition	VTrans	1	Min()

Transportation Alternatives Program (TAP)

This program is intended to expand non-motorized travel modes, strengthen local economies, improve safety and quality of life, and protect the environment.

Eligible projects include infrastructure projects for non-motorized transportation users to access daily needs, non-motorized networks, safe routes to school, as well as the construction of viewing areas, historic preservation, vegetation management in right of way, archaeological, or environmental mitigation projects like stormwater or wildlife infrastructure.

Local governments, regional transportation organizations, local governments, other regional governments with transportation oversight, transit agencies, natural resource or public land agencies, school districts, local education agencies, schools, tribal governments, and state departments of transportation may apply.

Table 13. Transportation Alternatives Program Attributes and Weights

Metric	Source	Weight	Function
Crashes EPDO Scores	VTrans	1	Sum()
Park and Ride Lots	VTrans	1	Present()
Sidewalks	VTrans	1	Present()
Bicycle Routes	VDOT	1	Present()
Trails	DCR	1	Present()
Transit Stops	VTrans	1	Present()
Transit Routes	DRPT	1	Present()
Social Vulnerability Areas	CDC	0.5	Present()
Equity Emphasis Area	VTrans	0.5	Present()
Designated Qualified Opportunity Zones	VTrans	0.5	Present()

SCREENING TOOL MANUAL

Screening Tool Description













The screening tool is an ArcGIS Pro project and Excel workbook to be locally installed and available on an RRRRC workstation. The screening tool outputs CSV data from a Python script run from ArcGIS Pro for use in Excel for final scoring and comparison.

The screening tool consists of:

1. ArcGIS Pro project "RRRC_Tool", which uses GIS Layers from RRRRC_Clip.gdb and a configuration file in Default.gdb "ScoringMeasuresCriteria" to produce CSV aggregate data about each project.
2. Excel workbook "RRRC_Project_Prioritization_Workbook_template" which processes the data in the CSV from the ArcPro Screening tool to normalize, weight and score the aggregate values of the GIS layers for each of the above funding programs.

The contents of the Screening Tool Directory will appear as follows on the user's local drive when uncompressed from RRRRC_tool.zip.

Figure 2. Directory Listing of the RRRRC_tool screening tool

Name
 Default.gdb
 Definition Queries
 Field Calculations
 RRRRC_Clip.gdb
 RRRRC_Tool_index
 Script Tool Code Backups
 AggregateAttributesScript
 GetAttributesScript
 ProjectPrioritizationScripts.atbx
 QueryServiceLayerFeaturesToRegion
 RRRRC_Project_Prioritization_Workbook_t...
 RRRRC_Tool

The screening tool may be delivered to member jurisdictions, if necessary, via a zip file of the ArcGIS Pro file, Excel components, and all associated data. New or updated data can be added into this geodatabase to keep the screening tool current, using procedures detailed in the four numbered items on page 20. The tool is compatible with any computer running ArcGIS Pro 3.2 or later. The tool cannot be run from a Microsoft OneDrive folder, and running from a network folder should be avoided.

Layers and Funding Programs

Each of the funding programs, such as SMART SCALE, HSIP, or SGR, use a set of GIS layers to evaluate project suitability and prioritization. In the ArcGIS Pro screening tool, each of the funding programs has a layer group used for prioritization in the Table of Contents tab of ArcGIS Pro. Users can toggle different views by checking the boxes next to each grouping. The "All Layers" group contains all the layers that the Python script uses in ArcGIS Pro to generate aggregate scores in a CSV. This CSV populates the Excel workbook to calculate scores and prioritization for proposed or projected projects.

This screening tool can be used in four ways to understand the likelihood of being awarded funding for potential or proposed transportation projects.

3. Visual Review of GIS layers that funding programs use to evaluate winning projects.
4. Prioritization of transportation projects under each funding program.
5. Identification of potential for new projects that may be eligible under different funding programs.
6. Identification of low-cost infrastructure improvements that may increase chance of funding.

1. Visually Reviewing the region for Project Needs that are awarded by Different Funding Programs

Because the ArcGIS Pro screening tool has groups for several funding programs, displaying one group at a time is recommended. Individual layers can be added from the "All Layers" group if additional context is desired in a certain performance area.

The ArcGIS Pro component of the screening tool has groups in the table of contents that correspond to the data that each funding program uses for its scoring criteria.

Each funding program has different focal GIS layers. Viewing each layer in ArcGIS Pro can suggest where issues and opportunities for improvements are located that could be good candidates for different funding programs.

The screening tool currently displays the GIS Layers for the following funding programs:

- District Grant Program (SMART SCALE)
- High Priority Projects Program (SMART SCALE)
- Highway and Local Roads (HSIP)
- Systemic Safety Improvements (SSI)
- Bicycle and Pedestrian (HSIP)
- Highway-Rail Grade Crossing Safety Program (H-RGCP)
- Local Agency Safety Program (LASP)
- Economic Development Access Program (EDA)
- RAISE
- Recreational Trails Program
- Locality Bridges (SGR)
- Locality Pavements (SGR)
- Transportation Alternatives Program

2. Prioritizing Projects per Different Funding Programs

The screening tool can score proposed projects on each funding program based on their weighting of improvement features as listed above.

The screening tool operates in two stages: ArcGIS Pro and Excel. The screening tool uses ArcGIS Pro to identify features of interest in different funding programs within specified distances of proposed projects.

Import proposed corridor/intersection layers

From ArcGIS Pro under the “Map” ribbon, click the “Add Data” logo to add proposed intersection point or corridor line locations for transportation improvements. The screening tool uses these proposed project locations for prioritization on the funding programs.

Define proposed Project boundaries

The screening tool requires that all proposed projects be polygons defining the edge of the trafficway for the proposed project. Project proposals are usually defined as centerlines along corridors or points at intersections, so the conversion to polygons may require work on the part of RRRC or locality staff.

For both linear (segment or corridor) and point (intersection or interchange) improvements, polygons should extend from edge of pavement to edge of pavement. Linear improvements should cover the approximate physical limits of any proposed improvement. The limits of the project polygon for intersection improvements should include the area of influence for the intersection per the following guidelines:

- Include the area within the subject intersection
- Include all intersection approach influence areas, defined as the greater of:
 - 250’ from the intersection, or
 - The extent of any turn lanes on a given approach
- Where an adjacent intersection is less than 500 feet away, the intersection approach influence area should only extend

to the midpoint between the subject intersection and the adjacent intersection.

For project areas comprising both linear and point improvements, a single polygon representing the composite of each individual project component should be drawn. For example, if a project includes improvements to two intersections that are 1000’ apart with no existing turn lanes and a new two-way left-turn lane (TWLTL) between the two intersections, the intersection’s individual polygons would include 250’ on each approach, leaving a 500’ gap in the segment between them, and the new TWLTL would be represented by a 1000’ polygon from intersection to intersection. The composite of these would result in a single polygon extending 250’ around each intersection and covering the entire segment between the two intersections. Again, parts of the polygon will cover the entire paved surface, from edge to edge.

The polygon boundaries of 2024 proposed projects from the RRRC Long Range Transportation Plan (LRTP) are included as the “RRRC_ Projects” layer. This includes some projects that have already received funding.

Ensure Coverages of Interest are in “All Layers” directory of ArcGIS Pro Screening Tool

The ArcGIS Pro screening tool and Python Script is written to use the layers in the “All Layers” directory to compare them with the locations of the proposed or suggested projects.

Define Export coverages and their buffers of interest

The ArcGIS Pro screening tool and the Python script will output a list of all variables defined in “Scoring Measures Criteria” in the “Standalone Tables” group in the ArcGIS Pro screening tool. This worksheet configures the layers that will be searched for within the specified radius of the proposed project. The worksheet defines source layers from within “All Layers,” the name of these layers in the output CSV file, the search distance from the edge of the proposed project for the layer features, and the aggregating function to be applied to the layer features. These functions are listed for each coverage used by each funding program in Table 1 through Table 13.

Run Python Script to query which of the coverages in the spreadsheet are within the specified distance of the proposed projects

Processing in Python or elsewhere for the specific grouping, count, presence, or average of each layer type, the ArcGIS Pro screening tool will aggregate each segment by the functions defined in the “Function” columns in tables Table 1 through Table 13. The Python Script is accessed as a geoprocessing script called “CalculateMeasureValuesByProject”.

“CalculateMeasureValuesByProject” requires six inputs, some of which are filled out by default. The interface for this script is shown in Figure 3:

Input Project Polygons

The layer that contains the project boundaries in polygon form. This is set to “RRRC_Projects” by default.

Project Polygon Unique ID Field

The field in the layer defined in “Input Project Polygons” that has unique values for each project polygon. This field is “UniqueProjectID” for “RRRC_Projects” and is set to “UniqueProjectID” by default.

Project Name/Description Field

The field in the layer defined in “Input Project Polygons” that has a unique name for each project polygon. This field is “Name” for “RRRC_Projects” and is set to “Name” by default.

Scoring Criteria Definitions Table

The Table in the ArcGIS Pro Table of Contents that defines the buffer distance and aggregation method for each GIS Layer to be applied at each project polygon. This is “ScoringMeasuresCriteria” by default, referring to the table listed at the bottom of the “RRRC_Tool” ArcGIS Pro Screening Tool. As reviewed below, this table can be edited to modify the buffer distance or aggregation types for different GIS layers.

Output Path

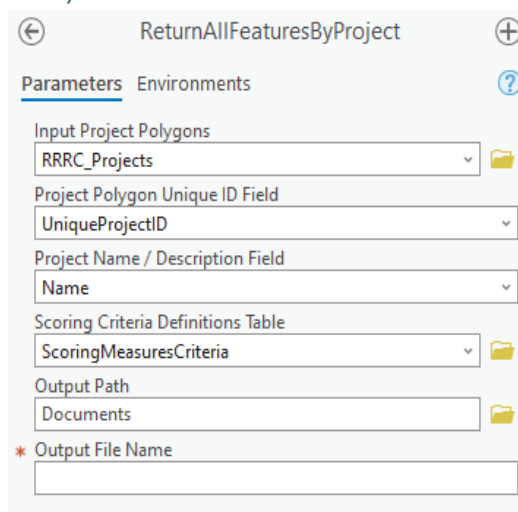
This is the directory that the CSV will be output to. This is important to keep track of, as this is where the CSV will need to be opened in the Excel Screening Tool will be found. This is set to “Documents” by default but can be set to the user’s project directory.

Output File Name

This is the file name of the CSV that will be produced by the “CalculateMeasureValuesByProject” geoprocessing script. There is no default value for this input as it is set by the user. This is important to note, as this CSV will need to be opened in the Excel Screening Tool to complete the scoring of projects.

Once all the inputs for the “CalculateMeasureValuesByProject” geoprocessing tool are input, run the geoprocessing tool to survey and aggregate all GIS layers within the buffer distances and aggregation methods defined in “ScoringMeasuresCriteria”. The geoprocessing script will output a CSV file with the output file name in the output path defined by the user for the geoprocessing script.

Figure 3. Inputs required by the Python Script to Produce the CSV from ArcGIS Pro Layers



“CalculateMeasureValuesByProject” will produce aggregate scores summarized by the methods defined in the funding source tables in the Funding Programs section above and editable in the “ScoringMeasuresCriteria” worksheet in the ArcGIS Pro screening tool. To see the features within buffer distances of the proposed projects without aggregation, use the “CalculateMeasureValuesByProject” Geoprocessing script. This will produce a CSV file with a line for each instance of each feature within the buffer distances defined in “ScoringMeasuresCriteria”. This is useful for understanding the values that comprise each aggregate score in the CSV produced by “CalculateMeasureValuesByProject”.

Open the resulting CSV file for a list of all projects and their buffer distance from each project

These will be matched in Excel for their suitability along with various funding programs detailed above. The ArcGIS Pro screening tool and the Python script will output a list of all variables defined in “Scoring Measures Criteria” in the “Standalone Worksheets” group in the ArcGIS Pro screening tool.

The ArcGIS Pro screening tool’s CSV output will have aggregate measures for all instances of the features in “All Layers” within the distances specified in “Scoring Measures Criteria” of each proposed project, sorted by projectID for each proposed project. Each funding program has a subset of layers of interest and weights that are used to generate a score by multiplying the

weights for the layer by their aggregate values output in the CSV. This will create a weighted average prioritization score for each funding program.

The Excel workbook will use the aggregate scores for each GIS layer to calculate scores for each proposed project on each of the funding programs using the weights described in the funding programs section above.

3. Exploring Potential New Projects per Different Funding Programs

Identify Prospective Project Locations

For potential new projects within RRRC boundaries, new project areas can be tested using the same distance and weight criteria for different funding programs as the list of proposed projects detailed above.

The ArcGIS Pro distance queries are in the “new polygons” layer.

Define proposed Project boundaries

The Screening tool requires that all proposed projects be polygons defining the edge of trafficway for the proposed project. Project proposals are usually defined as centerlines along corridors or points at intersections, so the conversion to polygons may require work on the part of RRRC or locality staff.

Use the same procedure as in procedure 2 above to create consistent buffer polygons for each prospective project.

The empty “Project_Polygons_Template” layer in the Default geodatabase can be used to develop and/or test new project areas. A copy of this GIS layer, or a different polygon layer of potential projects, may be specified by the Python tool to generate a CSV output of aggregate scores for processing by the Excel screening tool. All that is required is that the input layer contain polygons and that layer’s attribute table contain a unique identifier field.

Define Export coverages and their buffers of interest

The ArcGIS Pro screening tool and the Python script will output a list of all variables defined in “Scoring Measures Criteria” in the “Standalone Worksheets” group in the ArcGIS Pro screening tool. This worksheet configures the layers which will be searched for within the specified radius of the proposed project. The worksheet defines source layers from within “All Layers,” the name of these layers in the output CSV file, the search distance from the edge of the proposed project for the layer features, and the aggregating function to be applied to the layer features. These functions are listed for each coverage used by each funding program in Table 1 through Table 13.

Run the Python Script to query which of the coverages in the spreadsheet are within the specified distance of the proposed projects

Processing in Python or elsewhere for the specific grouping, count, presence, or average of each coverage type, the ArcGIS Pro screening tool will aggregate each segment by the functions defined in the “Function” columns in tables Table 1 through Table 13.

See Section 2 above for a description of running the “CalculateMeasureValuesByProject” Python script to produce a CSV of aggregate attributes from ArcGIS Pro for processing within the Excel screening tool.

Open the resulting CSV file for a list of all projects and their buffer distance from each project

Each project will be matched in Excel for suitability for the funding programs detailed above. The ArcGIS Pro screening tool and the Python script will output a list of all variables defined in “Scoring Measures Criteria” in the “Standalone Worksheets” group in the ArcGIS Pro screening tool.

The ArcGIS Pro screening tool’s CSV output will have aggregate measures for all instances of the features in “All Layers” within the distances specified in “Scoring Measures Criteria” of each proposed project, sorted by projectID for each proposed project. Each funding program has a subset of layers of interest and weights that are used to generate a score by multiplying the weights for the layer by their aggregate values output in the CSV. This will create a weighted average prioritization score for each funding program.

The Excel workbook will use the aggregate scores for each GIS layer to calculate scores for each proposed project on each of the funding programs, using the weights described in the funding programs section.

4. Identifying Low-Cost Infrastructure Additions to Increase the Chances of Funding Reward

The screening tool identifies the presence of multimodal networks within 660 feet of any proposed or potential projects. The presence of walkways, bikeways, or transit networks near projects is an indication that project scopes could be modified to include considerations for bicycle, pedestrian, and transit networks.

The Excel step of the screening tool will identify if any multimodal networks are within 660 feet or up to 1/8 mile of each project, and eligible for the addition of low-cost infrastructure to the project scope.

Maintenance and Update of the Screening Tool

Maintaining and configuring the screening tool in ArcGIS Pro and Excel is described in the following sections.

Adding or updating GIS Layers in the Screening Tool

It may be necessary in the future to add layers to the GIS screening tool. Funding programs already in the screening tool may change the layers that they use for scoring projects. Newly added funding programs may have new GIS layers that they use to determine funding eligibility. This will provide an overview of the steps required for adding GIS layers to the GIS process tool.

1. Download the needed GIS layer from the data source called for by the funding program.
2. Use the "Add Data" function under the "Map" tab of ArcGIS Pro to add the new GIS Layer to the ArcGIS Pro screening tool.
3. Ensure that the new GIS layer is clipped to the RRRR regional extent and that it has the expected features needed by the funding program of interest. If it is not clipped to the RRRR region, clip it using the "RRRC Boundary" as a clipping mask.
4. Right-click the new or clipped GIS Layer to select "Data" > "Export Features" to export the data to the "RRRC_Clip.gdb" geodatabase. This will add it to the permanent collection of GIS layers used by the screening tool for scoring against different funding programs.
5. After adding the new GIS layer into "RRRC_Clip.gdb," add it back to the ArcGIS Pro Table of Contents under the new or existing funding program group. Also add the new GIS layer to the "All Layers" group. If the GIS layer is not listed in the "All Layers" group, it will not be exported to the CSV to be used in the Excel step of the screening tool. The new GIS Layer can be found in the "RRRC_Clip.gdb" geodatabase under the Catalog listing for "Databases."
6. To add the new GIS layer's data to the CSV export, add one or more lines to the "ScoringMeasuresCriteria" to ensure that the Python export script includes data from the new GIS layer in its exports.
7. Remove the new GIS layer from the top level of the ArcGIS Pro table of contents to keep the Table of Contents clean to include only Funding Groups, All Layers, and the GIS layers RRRR boundary, RRRR_Projects and Sample Polygons.

Adding or updating GIS Layers from a Hosted Service Layer

The RRRR_clip.gdb contains all the GIS layers that could be downloaded from Interact VTrans or other sources. These layers are all clipped to the boundaries of the Rappahannock-Rapidan Region for use by the screening tool. Some layers needed by this screening tool are only available as GIS service layers from ArcGIS Online or other services. Two GIS layers of this type are the "Trails" polyline coverage and the "Park and Ride lot" point coverage. For these layers, the extent of the coverage could be beyond the boundaries of the region, but because they cannot be downloaded and modified, these layers cannot be clipped to the region boundary. Instead, a Definition Query must be applied to filter their features to those falling within, or crossing, the region boundary.

The "QueryServiceLayerToRRRCBoundaryByGlobalID" geoprocessing script has been provided to enable the user to apply this filtering with minimal effort. The geoprocessing script has three inputs, only two of which need editing for the screening tool:

InputLayer

The layer from the ArcGIS Pro Table of Contents that is a GIS service layer and needs to be filtered to only features in the region.

UniqueIDField

Any field in the input layer that has unique values for each layer feature. If a GlobalID is available in the GIS service layer, this will be set to GlobalID automatically. Otherwise, the user will need to inspect the attribute table of the GIS service layer to identify a field with unique values for each feature. The OBJECT_ID field should be used only as a last resort in the absence of any other unique field as that value is not guaranteed to remain fixed.

RegionBoundary

The polygon feature representing the Rappahannock-Rapidan region boundary. This is set to "RRRCBoundary" by default and would not be changed unless a different focal extent was needed within the region.

After this script is run, the GIS layer in InputLayer will be queried to show only the features within or intersecting the regional boundary. This queried layer can be copied into the "All Layers" group, and any other applicable layer group, in the table of contents. In order for the layer to work correctly with the "ReturnAllFeaturesByProject" and "CalculateMeasureValuesByProject" geoprocessing tools it must at least be copied to the "All Layers" group.

Adding or updating GIS Layers from Interact VTrans in the Screening Tool

To add or update new GIS layers from Interact VTrans, visit the Map Explorer at <https://vtrans.org/interactvtrans/map-explorer>. The available GIS layers are listed at the left of the Explorer interface in several drop-down categories. Such as "VTrans Travel Markets" or "Roadway Characteristics." There is also a search tool at the top of this menu in the upper left corner of the Interact VTrans interface.

1. To collect data for the screening tool, click on the Magnifying Glass icon next to each listed GIS layer.
2. Click on the "+ Start Query" button icon to narrow the query for the GIS layer data to the RRRRC region.
3. Under the drop down "Select an Area Type" Menu, select the "Planning District Commissions", select the "Rappahannock-Rapidan Regional Commission", then click the "Next" button icon.
4. Click on the "Run" button icon in the lower left of the next screen to run the query of the GIS layer clipped to the RRRRC boundary. It should not be necessary to add further search criteria, as the full attributes of each GIS layer from Interact VTrans can be specified and selected within ArcGIS Pro. Same GIS layers, like truck AADT or cyclist-involved crashes are defined within the attributes of more general GIS layers like AADT or Crashes.
5. At the top left of the next Layer screen, click the "Download Results" dropdown to select CSV or Shapefile download. For the RRRRC tool, use the Shapefile download option.
6. Follow the steps in the above process to add the feature to the GIS screening tool.

Modifying the GIS Layers that the Screening Tool Python Script Outputs to CSV

The CSV output from the screening tool is configured through the "Scoring Measures Criteria" standalone table in the ArcGIS Pro screening tool table of contents. This table is stored in the tool's Default geodatabase.

To change the items in the table, select it in the table of contents, right-click and select "Open" in the pop-up contextual menu. The table will open in the ArcGIS Pro session.

The fields in this table are:

AttributeFriendlyName

The name of the measure as referred to in the Excel tool. This must be unique, so if the same attribute is used for multiple measures based on different buffer sizes or aggregations functions, each use of that attribute must be given a unique name here. For example, the attribute field "PED_NONPED" in the "Pedestrian Crashes" layer is used with both a 20' and 660' buffer. These two

measures are named "Pedestrian-Involved Crashes" and "Pedestrian-Involved Crashes Nearby", respectively.

Target Measure or Description

Free text description of the GIS layer.

LayerName

This must be the name of a layer that is listed in the "All Layers" group under the ArcGIS Pro Table of Contents.

LayerUniqueIdentifier

This must be the name of the unique index field from the attribute table listed in Layer Name.

AttributeFieldID

This must be the name of the attribute field from the attribute table listed in Layer Name that will be aggregate in the output CSV from the Python script. The field alias cannot be used, and the AttributeFieldID cannot contain spaces.

BufferSizeFeet

The number of feet from the edge of the buffer that the Python Script will scan for the presence, count, sum, maximum, or minimum of attribute features or the values in AttributeFieldID. If this value is set to zero, only the features inside project polygon boundaries will be used. This value could be as large as 2,500 feet, but the default value for the screening tool is 660 feet.

Function

The aggregation type for the data in the features within the buffer distance specified in BufferSizeFeet for the Python Script to perform on the features found in AttributeFieldID for the functions:

- Sum(),
- Max(), or
- Min()

or the geographic features detected from LayerName for the functions:

- Present()
- Count()

The selection of available functions will be available in a dropdown menu for this item, unlike the other items in the new rows which are manually entered.

To add a GIS layer to the CSV output, click at the bottom of the table to add a line. Each of the above fields must be filled out to reference the attributes of a GIS layer in the "All Layers" group and define an aggregation method. Adding a new line to the "Scoring Measures Criteria" table will add a new line to the CSV output from the Python script for every ProjectID.

Converting qualitative attributes to quantities for use in the Screening Tool

The numeric functions specified in the function column of the “Scoring Measures Criteria” table require qualitative- not quantitative data- to work, which means cell values should be populated as “low”, “medium”, and “high” for example. Attributes with qualitative values need to be recoded before they can be used for the numerical aggregate functions in the screening tool.

To do this, create a new recode column in the attribute table and select each value of the qualitative attribute one at a time and calculate the value of the new recoded column as a distinct numeric value in the recode column. For example, cell values like “low”, “medium”, and “high” could be listed in the recode column as 1, 2, and 3.

Setting the EPDO weights in the Screening Tool

An example of qualitative GIS layer attributes that require recoding to quantitative values for use in the screening tool is the need to recode crash severity ranks and Equivalent Property Damage Only (EPDO) from letter codes to numeric values. The recoded values in the screening tool are from the [SMART SCALE Round 6 Technical Guide](#), Appendix A Table 6.2 “EPDO Crash Value Conversion”. Table 6.2 provides both the rounded cost of accident types and their weights. These values are roughly equivalent, as shown below:

Crash Type	Rounded Cost	Weight
K (Fatal)	\$2,715,000	170
A (Severe Injury)	\$2,715,000	170
B (Moderate Injury)	\$300,000	20
C (Minor Injury)	\$170,000	10
O (Property Damage Only)	\$16,000	0

For the screening tool as delivered the EPDO scores are recoded by weight from 0-170.

If RRRRC needs to use a different coding schema for EPDO values, select each value of “Crash_Seve” in the attributes of “All Crashes” in ArcGIS Pro and calculate the new values for each of the crash severity level listed above. The recoded values can then be used in the Sum() function by the Python script to create the CSV file to be processed by the Excel component of the screening tool.

To assist with this process, a Python field calculation script (‘Crash_EPDO.cal’) is packaged with the RRRRC Scoring Tool ArcGIS Pro project in the ‘Field Calculations’ folder.

When updating this data with the latest crash data from InteractVTrans, the EPDO field will need to first be created. To do this, open the new crash layer’s attribute table, click the Field: Add tool, and create a new Short type field called EPDO. Once the new field is created and edits to the layer are saved, right-click the

field name in the attribute table view, click ‘Calculate Field’, and load the calculation script by clicking the folder icon under the Code Block section. Once the calculation is loaded, click Apply.

Adding Other Calculated Attributes to Layers

As with the EPDO calculation above, several other layers require one or more fields to be calculated. This can be done by following the same procedure outlined immediately above for Setting the EPDO weights in the Screening Tool. These layers and their new fields, data types, and field calculation scripts are:

- Bicycle Facilities Layer
 - BikeFacilityQuality (Short type); Bike_Facility_Quality_Field.cal
 - SUP (Short type); Bike_Facility_Is_SUP_Field.cal
- Bridge & Culvert Condition
 - BridgeCulvertSeverity (Short type); Bridge_and_Culverts_Severity_Field.cal
- Pavement Condition
 - PavementConditionSeverity (Short type); Pavement_Condition_Severity_Field.cal
- VTrans Mid-Term Needs (VTrans_Needs_RRRC)
 - COSS_ANY_NEED (Short type); VTrans_Any_CoSS_Needs.cal
 - RN_ANY_NEED (Short type); VTrans_Any_RN_Needs.cal
 - UDA_ANY_NEED (Short type); VTrans_Any_Safety_Needs.cal
 - SAFETY_ANY_NEED (Short type); VTrans_Any_UDA_Needs.cal

Note that all of the above fields use Short data type, as they all evaluate to very small integer values.

Modifying the Scoring of Aggregate GIS layer Scores in the Excel Step of the Screening Tool

The ArcGIS Pro screening tool outputs a variety of aggregate statistics for the GIS layers in the “All Layers” group of the table of contents. The aggregate statistics for Sum(), Min (), or Max() functions can have values of thousands or tens of thousands, while the aggregate statistic for Present() will be 0 or 1 and the values for Count() will have values of tens or hundreds. To change the weighting of a GIS layer in the scoring for a funding program, change the value of the cell at the intersection of the GIS layer row and funding program column. These disparate values require recoding within Excel to balance the values of the aggregate outputs for different GIS layers.

Using a four-level, 0-3 scale, each GIS layer aggregate is typically coded from its minimum value to its maximum value; however, reversing the “Bottom Score Threshold” and “Top Score Threshold” in the “Metric Scoring Ranges” spreadsheet of the Excel workbook will result in the lowest raw values receiving the

highest score and the highest raw values receiving 0. In general, the “Metric Scoring Ranges” spreadsheet determines the initial Suggested Scores” for each function type as:

- For Present() aggregate scores, 0 will be coded as 0 and 1 will be coded as 3.
- For Count(), Min(), Max(), and Sum() aggregate scores, the threshold values would be 90th percentile of raw scores for the 3, top quartile for 2, and bottom quartile for 1; where a particular quartile calculation raises an error, the mid-point between the thresholds on either side will be used.

Because the maximum and/or minimum scores for some attributes will vary depending on the specific set of projects included in the analysis, the spreadsheet “Metric Stats for Region” is useful for determining the universe of possible values within the region without regard for specific projects. To calculate these values, the entire attribute table column for a given measure should be copied from ArcGIS and pasted as a new column in the spreadsheet “Regionwide Attributes” and the last column in “Metric Stats for Region” should be copied to the right. This spreadsheet should only be used for Min() and Max() functions, though it may be useful to determine orders of magnitude for the Sum() function. For example, if 20% of all values for a summed attribute are >100,000, the maximum score threshold should probably be at least 100,000.

Any Min() or Max() measures’ ranges calculated in “Metric Stats for Region” will automatically populate the Suggested Scores section of the “Metric Scoring Ranges” spreadsheet.

Ultimately, the scoring ranges used by the tool are chosen manually. Any suggested ranges the Region wishes to adjust or override may be modified by first adjusting the Bottom Score Threshold and Top Score Threshold values for the target measure, which will cause the Suggested Scores to recalculate for thresholds 1 and 2. If further adjustments to thresholds 1 and 2 are desired, those values may be hard-coded into the Implemented Scores section, as these are the cells whose values ultimately determine each project’s score for each measure. The cells that should not be manually updated in both the “Metric Scoring Ranges” and “Metric Stats for Region” are indicated by a gray background.

Modifying the Weights of Different GIS layers in the Excel Step of the Screening Tool

The weighting setting tab in the Excel screening tool controls which GIS layers contribute to the screening tool scoring for each proposed or prospective project. The GIS layer is a table of multipliers used to control the importance of the different GIS layers aggregated into scoring for each funding program.

The weighting tool is arranged with the GIS Layer aggregate inputs in rows and funding programs in columns.

Most values in this screening tab are 1, indicating that the GIS layer output will contribute equally to the scoring as the other GIS layers. Currently, the only other weighting value is 0.5, indicating that the GIS layer will be half as important in the scoring for the funding program.

CONCLUSION

The screening tool will aid the RRRC in exploring funding opportunities for proposed and potential projects. The screening tool is designed to incorporate new funding programs as they become available and to adjust to changing requirements of existing funding programs. The screening tool is flexible enough to adapt to the needs of other regions of Virginia, provided they have the GIS layers that the funding programs use for scoring their projects.

APPENDIX A: FUNDING PROGRAMS, PROCEDURES, AND RELEVANT GIS LAYERS

This appendix contains more detailed descriptions of each funding program, including information on how it is administered, what kinds of projects it funds, and how they determine awards for different projects. Each funding program also includes the GIS coverages used in ranking projects, along with a link to their source as of mid-2024. Per the manual, these source layers and funding programs can be updated as new funding programs become available or existing funding programs change their criteria for determining awards.

SMART SCALE

<https://smartscale.org>

District Grant and High Priority Project Programs

- Eligible applicants:
 - Metropolitan Planning Organizations (MPOs) and Planning District Commissions (PDCs)
 - Counties
 - Cities
 - Towns that maintain their own infrastructure and qualify to receive payments pursuant to § 33.2-319
 - Transit agencies that receive state operating assistance from the Mass Transit Trust Fund, as established in § 58.1-638(A)(4)(b)(2) of the Code of Virginia, are also eligible to submit projects.
 - NOTE: The number of applications a given applicant may submit is based on the type of and population represented by the applicant.
 - Tier I entities (localities with less than 100k people and MPOs, PDCs, or Transit Agencies with less than 250k people) like the RRRRC have a SMART SCALE application cap of 4 applications.
- Eligible project types:
 - Highway Improvements (Widening, Operational Improvements, Access Management, Intelligent Transportation Systems, Technology, and Safety Improvements)
 - Transit and Rail Capacity Expansion
 - Bicycle and pedestrian improvements
 - Transportation Demand Management (Vanpool, carpool, trip reduction programs, and park & rides -including new, expanded, or designated spaces on publicly owned property)
 - Projects within priority corridors. This includes the Seminole Corridor (US 29) within the RRRRC.
- Project application requirements:
 - Project may not be a standalone study or in-kind replacement.
 - Project may not be fully funded through another funding source, though leveraging of partial funding is permissible and encouraged.
 - Project must be clearly defined; projects deriving from an alternatives analysis study, etc., must reflect the preferred alternative.

- Project components and features must be proximate and of the same project type.
- A detailed project sketch and funding-year (typically four to five years in future) cost estimate consistent with VDOT requirements must be provided by the applicant; VDOT/OIPI may provide some limited support from District staff.

The SMART SCALE process excludes the following project types and funding sources:

- Stand-alone studies
- Pavement and bridge rehabilitation/replacement projects
- Fully funded projects
- Exception – Total cost expected to exceed \$1 billion, procurement to start prior to award of next round of SMART SCALE, and project was ineligible for most recent previous round of SMART SCALE due to project readiness.
- Projects for which project components or features are not contiguous, proximate, or of the same improvement type.

Program application and funding cycle:

- Biennial application cycle
- Projects selected for funding will be generally programmed into the fifth or sixth year of the current Six-Year Improvement Program (SYIP) (in some cases, funding may be advanced earlier at the discretion of VDOT Infrastructure Investment Division (IID))

District Grant Program GIS

- Estimated ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)&field=2021 AADT](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT)&field=2021%20AADT)
- Crashes EPDO segments
 - <https://vtrans.org/interactvtrans/map-explorer?layer=Crash%20Data>
- All Crashes by location
 - [vtrans.org/interactvtrans/map-explorer?layer=Crash Data](https://vtrans.org/interactvtrans/map-explorer?layer=Crash%20Data)
- Heavy Vehicle Percent
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT))
- Transit Stops
 - [vtrans.org/interactvtrans/map-explorer?layer=Bus Stops](https://vtrans.org/interactvtrans/map-explorer?layer=Bus%20Stops)

- Transit Routes
 - https://services9.arcgis.com/9oDT7ErWemWCzvY7/arcgis/rest/services/Transit_Data_October_2021/FeatureServer
- Trails
 - <https://services1.arcgis.com/PxUNqSbaWFvFgHnJ/arcgis/rest/services/VASStateTrails/FeatureServer/0>
- Sidewalks
 - vtrans.org/interactvtrans/map-explorer?layer=Sidewalks
- Park and Ride Lots
 - <https://vtrans.org/interactvtrans/map-explorer?layer=Park%20and%20Ride%20Lots>
- VTrans Needs
 - <https://vtrans.org/interactvtrans/map-explorer?layer=2023%20VTrans%20Mid-term%20Needs>
- Social Vulnerability classification
 - https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html
- Equity Emphasis Areas
 - [https://vtrans.org/interactvtrans/map-explorer?layer=Equity%20Emphasis%20Area%20\(EEA\)%20Index&field=Equity%20Emphasis%20Area%20IndexQualified%20Opportunity%20Zones](https://vtrans.org/interactvtrans/map-explorer?layer=Equity%20Emphasis%20Area%20(EEA)%20Index&field=Equity%20Emphasis%20Area%20IndexQualified%20Opportunity%20Zones)
 - [vtrans.org/interactvtrans/map-explorer?layer=Designated Qualified Opportunity Zones](https://vtrans.org/interactvtrans/map-explorer?layer=Designated%20Qualified%20Opportunity%20Zones)
- Trails
 - <https://services1.arcgis.com/PxUNqSbaWFvFgHnJ/arcgis/rest/services/ManagedTrails/FeatureServer>
- Sidewalks
 - vtrans.org/interactvtrans/map-explorer?layer=Sidewalks
- Park and Ride Lots
 - <https://vtrans.org/interactvtrans/map-explorer?layer=Park%20and%20Ride%20Lots>
- VTrans Needs
 - <https://vtrans.org/interactvtrans/map-explorer?layer=2023%20VTrans%20Mid-term%20Needs>
- Census Tracts Median Income
 - [ACS Data set : B06011 \[https://data.census.gov/tables?q=B06011:Median%20Income%20in%20the%20Past%2012%20Months%20\\(in%202022%20Inflation-Adjusted%20Dollars\\)%20by%20Place%20of%20Birth%20in%20the%20United%20States&g=050XX00US51047,51061,51113,51137,51157\]\(https://data.census.gov/tables?q=B06011:Median%20Income%20in%20the%20Past%2012%20Months%20\(in%202022%20Inflation-Adjusted%20Dollars\)%20by%20Place%20of%20Birth%20in%20the%20United%20States&g=050XX00US51047,51061,51113,51137,51157\)](https://data.census.gov/tables?q=B06011:Median%20Income%20in%20the%20Past%2012%20Months%20(in%202022%20Inflation-Adjusted%20Dollars)%20by%20Place%20of%20Birth%20in%20the%20United%20States&g=050XX00US51047,51061,51113,51137,51157)

High Priority Project Programs GIS

- Estimated ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)&field=2021 AADT](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT)&field=2021%20AADT)
- Crashes EPDO segments
 - [vtrans.org/interactvtrans/map-explorer?layer=Crash Data](https://vtrans.org/interactvtrans/map-explorer?layer=Crash%20Data)
- All Crashes by location
 - [vtrans.org/interactvtrans/map-explorer?layer=Crash Data](https://vtrans.org/interactvtrans/map-explorer?layer=Crash%20Data)
- Heavy Vehicle Percent
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT))
- Transit Stops
 - [vtrans.org/interactvtrans/map-explorer?layer=Bus Stops](https://vtrans.org/interactvtrans/map-explorer?layer=Bus%20Stops)
- Transit Routes
 - https://services9.arcgis.com/9oDT7ErWemWCzvY7/arcgis/rest/services/Transit_Data_October_2021/FeatureServer

Highway Safety Improvement Program Summaries

<https://highways.dot.gov/safety/hsip>

For all HSIP programs

- Annual application cycle
- Intake period is August 1 to November 1
- Schedule begins with intake then moves to Local Liaison validation, district validation, central office validation, detail review/scoring, programming of the funding, and finally CTB approval in May-June, in that order.

Highway and Local Roads (HSIP)

- Eligibility Guidelines
 - General
 - Safety data management, safety planning, Roadway Safety Audits (RSAs), retro-reflectivity, signage/pavement marking improvements, older driver/pedestrian enhancements.
 - Intersection
 - Intersection safety, systemic improvement, traffic control, high friction surface, emergency preemption.
 - Roadway Departure
 - Systemic improvements, geometric improvements, rumble strips or warning devices, roadside hazard elimination, widening, guardrails, barriers, or high friction surfaces.
 - Non-Motorized
 - Traffic calming, bicycle/pedestrian improvement, school zone improvements, truck parking facilities.
 - Rail Crossing
 - Traffic enforcement, railway-highway grade crossing install.
 - Work Zone
 - Emergency communication equipment, operational activities, traffic enforcement.
- Funding
 - Highway safety projects are federally financed at 90% with state or locality providing 10% match.
 - VDOT allocates funds for local match
 - Low-cost projects are prioritized because significant increases in project costs change the outcome of economic assessments.
 - Exceeding scope results in tighter monitoring of performance.
 - Modifications to scope, cost, schedule require HSIP staff approval/potentially District Engineer approval
 - Safety funding must follow FHWA guidance by fully funding construction through other sources, should be funded by broader funding source for project instead of program funds.

- Projects funded on final ranked scores from selection process until FY funds are exhausted.
- Selected projects are entered into the SYIP project pool and final list is submitted to CTB for approval.
- Selection
 - Proposal Utility
 - Proposal's ability to address safety issue.
 - Review: B/C Ratio/Risk reduction, SHSP Emphasis Area, Identified Safety Issue, Targeted Severe Crashes, Support from Engineering Review/Road Safety Audit
 - Proposal Feasibility
 - What is the readiness and schedule of the proposal to be constructed based upon public support, right-of way, utilities, environmental?
 - Review: Project Cost, Public Support, Right-of-Way/Utilities, Schedule, Environment
 - Three-phase method: initial review, risk narrative/preliminary scoring, engineering review
 - Initial review addresses project, eligibility, requirements, required authorization signature.
 - Risk narrative scores eight weighted factors
 - B/C @ 40%
 - Problem ID (est. priority) @ 25%
 - Number of Targeted Crashes @ 10%
 - Cost @ 5%
 - Schedule @ 5%
 - Multiple Funding Sources @ 5%
 - Supporting Docs @ 5%
 - Location @ 5%
 - Engineering Review looks at preliminary scoring, problem vs. proposal's ability to correct, practicality/constructability.

Safety Program, Highway and Local GIS

- Crashes EPDO segments
 - vtrans.org/interactvtrans/map-explorer?layer=CrashData
- Roadway Deficiency Crashes
 - vtrans.org/interactvtrans/map-explorer?layer=CrashData
- Truck ADT
 - [https://vtrans.org/interactvtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20\(AADT\)](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT))

Systemic Safety Improvement (SSI)

<https://www.vdot.virginia.gov/doing-business/technical-guidance-and-support/traffic-operations/vhsip/>

- Eligibility Guidelines
 - Any roadway features/improvements that target crash reduction/safety are applicable.
 - Eligibility based on benefit from crash reductions against improvement cost over proposal life cycle.
 - Based on 3-5 years of available crash reports/targeted types of crashes by improvement.
 - B/C ratio greater than 1.0 is prioritized but not the only basis.
 - Also considers total targeted severe crashes, validity of improvement countermeasure, project cost, time frame.
 - "Safety projects delivered in minimal time with no right-of-way acquisition that target high severe crash locations are more favorable".
 - B/C ratio may not always be available; must document risk factors and identify how the proposed treatment will address/mitigate those factors in this situation.
- Funding
 - Highway safety projects are federally financed at 90% with state or locality providing 10% match.
 - VDOT allocates funds for local match
 - Low-cost projects are prioritized because significant increases in project costs change the outcome of economic assessments.
 - Exceeding scope results in tighter monitoring of performance.
 - Modifications to scope, cost, schedule require HSIP staff approval/potentially District Engineer approval.
 - Safety funding must follow FHWA guidance by fully funding construction through other sources, should be funded by broader funding source for project instead of program funds.
 - Projects funded on final ranked scores from selection process until FY funds are exhausted.
 - Selected projects are entered into the SYIP project pool and final list is submitted to CTB for approval.
- Selection
 - Three-phase method: initial review, risk narrative/preliminary scoring, engineering review
 - Risk narrative scores seven weighted factors
 - B/C @ 40%
 - Location @ 30%
 - # of Targeted Crashes @ 10%
 - Cost @ 5%
 - Schedule @ 5%
 - Multiple Funding Sources @ 5%
 - Supporting Docs @ 5%
 - Other process elements same as HSIP above

Safety Program, Systemic GIS

- Crashes EPDO
 - vtrans.org/interactvtrans/map-explorer?layer=CrashData
- Roadway Deficiency crashes
 - vtrans.org/interactvtrans/map-explorer?layer=CrashData
- Pavement Condition
 - [vtrans.org/interactvtrans/map-explorer?layer=PavementCondition&field=CombinedConditionIndex\(CCI\)](https://vtrans.org/interactvtrans/map-explorer?layer=PavementCondition&field=CombinedConditionIndex(CCI))
- Bridge & Culvert Condition
 - vtrans.org/interactvtrans/map-explorer?layer=BridgeandCulvertCondition
- All Crashes by location
 - vtrans.org/interactvtrans/map-explorer?layer=CrashData
- Estimated ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=RoadwayandTruckVolumes\(AADT\)](https://vtrans.org/interactvtrans/map-explorer?layer=RoadwayandTruckVolumes(AADT))
- Truck ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=RoadwayandTruckVolumes\(AADT\)](https://vtrans.org/interactvtrans/map-explorer?layer=RoadwayandTruckVolumes(AADT))

Bicycle and Pedestrian Safety Program (BPSP)

<https://www.transportation.gov/pedestrian-bicycle-safety>

- Eligibility Guidelines
 - Intended to address non-motorized safety concerns in locations with crash risks that typically do not have sufficient crash numbers needed to rank well for project selection under the HSIP methods.
 - Any public road, public surface transportation facility, or public bicycle/pedestrian path or trail.
 - Eligible features include on-street facilities; shared-use paths; treatments for intersections, mid-block crossings, crosswalks; signs and pavement markings; accessibility features; and traffic calming.
 - Ineligible features are bicycle parking, directional signing, landscaping, maintenance, traffic calming for motor vehicles, and traffic management.
 - VDOT Pedestrian Safety Action Plan identifies locations for safety improvements; this should guide BPSP applications.
- Funding
 - Highway safety projects are federally financed at 90% with state or locality providing 10% match.
 - VDOT allocates funds for local match
 - Low-cost projects are prioritized because significant increases in project costs change the outcome of economic assessments.
 - Exceeding scope results in tighter monitoring of performance.
 - Modifications to scope, cost, schedule require HSIP staff approval/potentially District Engineer approval
 - Safety funding must follow FHWA guidance by fully funding construction through other sources, should be funded by broader funding source for project instead of program funds.
 - Projects funded on final ranked scores from selection process until FY funds are exhausted.
 - Selected projects are entered into the SYIP project pool and final list is submitted to CTB for approval.
- Selection
 - Objective 100 point-based scoring system is used to account for characteristics associated with these types of projects (because they differ from typical roadway safety analysis criteria):
 - Minimal crash history that does not support a B/C analysis
 - Potential for severe fatal and injury crashes
 - Well-documented safety hazards at each location
 - Three-phase method: initial review, risk narrative/preliminary scoring, engineering review
 - Risk narrative scores six weighted factors
 - Project Issues Identified @ 30%
 - Proposed Improvement Projects @ 45%

- Cost @ 5%
- Schedule @ 5%
- Multiple Funding Sources @ 5%
- Supporting Documents @ 10%
- Other process elements same as HSIP implementations.

Safety Program, Bicycle and Pedestrian GIS

- Crashes EPDO
 - vtrans.org/interact/vtrans/map-explorer?layer=CrashData
- Pedestrian-Involved Crashes
 - vtrans.org/interact/vtrans/map-explorer?layer=CrashData
- Bicycle-Involved Crashes
 - vtrans.org/interact/vtrans/map-explorer?layer=CrashData
- Estimated Truck ADT
 - [vtrans.org/interact/vtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)](https://vtrans.org/interact/vtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT))
- Transit Stops
 - vtrans.org/interact/vtrans/map-explorer?layer=BusStops
- Transit Routes
 - https://services9.arcgis.com/9oDT7ErWemWCzvY7/arcgis/rest/services/Transit_Data_October_2021/FeatureServer
- Trails
 - <https://services1.arcgis.com/PxUNqSbaWFvFgHnJ/arcgis/rest/services/ManagedTrails/FeatureServer>
- Sidewalks
 - vtrans.org/interact/vtrans/map-explorer?layer=Sidewalks
- Estimated ADT
 - [vtrans.org/interact/vtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)](https://vtrans.org/interact/vtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT))

Highway-Rail Grade Crossing Safety Program (H-RGCP)

<https://www.vdot.virginia.gov/doing-business/technical-guidance-and-support/traffic-operations/vhsip/>

- Overview
 - Aimed at reducing the risk and number of crashes involving trains at highway-rail grade crossings. Private crossings are not eligible.
- Eligibility Guidelines
 - Proposals are developed through safety partners and ranked and reviewed on statewide basis.
 - Federal Legislation specifies that at least 50% of funds must go toward warning devices including:
 - Active warning devices
 - Flashing lights/gates
 - Circuitry improvements
 - Motion detectors and constant warning time predictors
 - Traffic and railroad signal upgrades to provide interconnection
 - Up to 50% also available for elimination of hazards
 - Grade separation
 - Crossing closure
 - Surface improvements
 - Standard signs and markings
 - General site improvements (improve sight distance restrictions, alignment, grade, etc.)
- Funding
 - Federal apportionment is approximately \$5million.
 - Funds must be distributed in accordance with guidelines stated under Eligibility Guidelines above.
 - Highway safety projects are federally financed at 90% with state or locality providing 10% match.
 - VDOT allocates funds for local match
 - Low-cost projects are prioritized because significant increases in project costs change the outcome of economic assessments.
 - Exceeding scope results in tighter monitoring of performance.
 - Modifications to scope, cost, schedule require HSIP staff approval/potentially District Engineer approval.
 - Safety funding must follow FHWA guidance by fully funding construction through other sources, should be funded by broader funding source for project instead of program funds.
 - Projects funded on final ranked scores from selection process until FY funds are exhausted.
 - Selected projects are entered into the SYIP project pool and final list is submitted to CTB for approval.

- Selection
 - Three-phase method: initial review, risk narrative/preliminary scoring, engineering review.
 - Risk narrative scores six weighted factors:
 - Project Issues Identified @ 30%
 - Proposed Improvement Projects @ 45%
 - Cost @ 5%
 - Schedule @ 5%
 - Multiple Funding Sources @ 5%
 - Supporting Documents @ 10%
 - Accident Protection Model (APM) inputs are adjusted to incorporate additional engineering data (i.e., vehicle type volumes, physical characteristics, etc.).
 - Candidate locations are ranked statewide using FRA APM formula and reviewed by HSIP staff considering:
 - Sight distance for motorists to make a safe stop
 - Roadway geometry causing hazards and limitations i.e., steep grade, narrow pavement, curves, surrounding improvements, etc.
 - Adjacent land use development and adverse safety effects of this development like congestion, conflict of Right of Way, or other land use problems.
 - Project development and implementation is more complicated for H-RGCP and there are extra steps outlined in the document that require VDOT and federal HSIP staff to directly administer development and implementation processes, see HSIP Implementation Manual 6.7-6.9.

Highway-Rail Grade Crossing Safety Program GIS

- Rail Crossings
 - Railroad Grade Crossings at USDOT ArcGIS OpenData
 - https://data-usdot.opendata.arcgis.com/datasets/e31c46507b7245f6b0832cd09634a576_0/explore?filters=eyJzdGF0ZWNvZGUiOiI1MV19
- Railroad At-Grade Crashes:
 - vtrans.org/interactvtrans/map-explorer?layer=CrashData
- Estimated ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)&field=2021 AADT](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes (AADT)&field=2021 AADT)
- Estimated Truck ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes (AADT))
- Sidewalks
 - vtrans.org/interactvtrans/map-explorer?layer=Sidewalks

Local Agency Safety Program (LASP)

<https://highways.dot.gov/safety/learn-safety/noteworthy-practices/local-agency-safety-program>

- Overview
 - 20% of serious crashes occur on locally administered roadways.
 - LASP is a VDOT program that funds improvements to safety on these roadways at around \$10million/year total funding.
 - Projects will categorically apply to other HSIP areas and follow implementation guidelines for those areas but are deemed eligible/funded separately through LASP due to being unlikely to receive funding through other HSIP program selection processes.
- Eligibility Guidelines
 - Must meet following criteria in order:
 - If locality has not administered a federal aid highway improvement in last 5 years, they will be limited to a maximum of one new HSIP project before others are allowed to progress.
 - Locality can request HSIP funds if the total amount allocated to the locality is less than \$5million or locality has 5 or less HSIP projects.
 - If locality exceeds this, it can apply for additional funds only if 70% of HSIP allocations have been authorized for construction at the time of application.
 - For HSIP projects with no right-of-way phase, locality must complete preliminary engineering phase and have project authorized for construction within 18 months of PE phase funds being authorized. If there is a right-of-way phase, locality must complete PE and RW phase and have construction authorized within 30 months of PE phase funds being authorized. If project does not progress to construction phase in this time, VDOT can revoke funding upon reevaluation.
 - HSIP projects administered by locality show regular expenditure of funds indicating progression of project. No more than a year can pass without expenditure/corresponding progression of project. If this occurs, project proposals will not be considered until resumption of expenditure/work.
 - VDOT expects HSIP projects to be closed out within 6 months of completion. Some leniency is possible if timeline changes are communicated to VDOT.
 - Eligible project scopes:
 - Roadway spots or intersections
 - Roadway corridors
 - Systemic treatments at multiple locations

- Funding
 - Needs will surpass available funds for this program.
 - Only Tier 1 improvements from VDOT Locally Administered Projects Manual will be considered.
 - Project costs should exceed \$500,000 because if lower, the administrative costs outweigh the project value.
 - Systemic/multipoint projects should be bundled.
 - Projects funded on final ranked scores from selection process until FY funds are exhausted.
 - Selected projects are entered into the SYIP project pool and final list is submitted to CTB for approval.
- Selection
 - 100 point-based system for prescreening like other programs.
 - Three-phase method: initial review, risk narrative/preliminary scoring, engineering review
 - Final engineering review consistent with which other HSIP programs applies
 - These are outlined in their respective sections above.

Local Agency Safety Program GIS

- Crashes EPDO segments
 - vtrans.org/interactvtrans/map-explorer?layer=CrashData
- All Crashes by location
 - vtrans.org/interactvtrans/map-explorer?layer=CrashData
- Sidewalks
 - vtrans.org/interactvtrans/map-explorer?layer=Sidewalks
- Trails
 - <https://services1.arcgis.com/PxUNqSbaWFvFgHnJ/arcgis/rest/services/VASStateTrails/FeatureServer/0>
- Estimated ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT))
- Truck ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT))

Economic Development Access Program

<https://www.vdot.virginia.gov/doing-business/for-localities/funding-programs/access-programs/>

- Administered by VDOT
- Meant to assist localities in providing adequate road access to new and expanding:
 - Manufacturing and processing companies
 - Research and development facilities
 - Distribution centers
 - Regional service centers
 - Corporate headquarters
 - Other basic employers with at least 51% of the company's revenue generated from outside the Commonwealth
- Applies to design-only projects
- Eligibility:
 - Projects affiliated with a basic employer—51% of revenue generated outside the Commonwealth
 - Site must not already have adequate access
 - Improvements like turn lanes or intersections modifications may also be necessary but not as the primary target of the project.
- Process:
 - Qualified business must work with a locality's economic development office or governing body to apply.
 - After business has made decision to locate, business representatives provide following to locality:
 - Letter of intent including operations description; target dates for construction of facility and commencement of operations; anticipated capital investment in land, buildings, new equipment; anticipated employment numbers (new); type of product manufactured; access road improvements requested; estimates of volume on average business day.
 - Preliminary plan showing the entire parcel with building location, other site features, entrance, access road, existing public roads, and highways.
 - If site is part of an economic development subdivision, parcels must be labeled and delineated.
 - Locality then contacts VDOT Manager.
 - Local officials request an EDA allocation via resolution of governing body.
 - VDOT Manager assembles and reviews information on the project request and business establishment, forwards to District Administrator to confirm standards and costs.
 - VDOT District Administrator reviews project and provides recommendation to Local Assistance Division.
 - VEDP reviews project and recommends allocation of funds.

- CTB reviews and determines project allocations and formalizes conditions of the allocation expenditures.
- Time frame is usually six to eight months from initial request.
- Maximum allocation is \$700,000 but if costs exceed this, locality can request up to \$150,000 if the locality matches amounts over \$700,000 dollar-by-dollar.

Economic Development Access Program GIS

- Equity Emphasis Areas
 - [https://vtrans.org/interactvtrans/map-explorer?layer=Equity%20Emphasis%20Area%20\(EEA\)%20Index&field=Equity%20Emphasis%20Area%20IndexQualified Opportunity Zones](https://vtrans.org/interactvtrans/map-explorer?layer=Equity%20Emphasis%20Area%20(EEA)%20Index&field=Equity%20Emphasis%20Area%20IndexQualified%20Opportunity%20Zones)
- Truck ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT))
- Qualified Opportunity Zones
 - [vtrans.org/interactvtrans/map-explorer?layer=Designated Qualified Opportunity Zones](https://vtrans.org/interactvtrans/map-explorer?layer=Designated%20Qualified%20Opportunity%20Zones)

RAISE Grant Program

<https://www.transportation.gov/RAISEgrants>

- Rebuilding American Infrastructure with Sustainability and Equity (RAISE) discretionary grant program.
 - Previously known as Better Utilizing Investments to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER) discretionary grants.
- Administered either directly through federal departments or through state DOTs.
- Eligible applicants (selected)
 - States
 - Local governments
 - Public agencies/authorities
 - Special purpose districts or transportation authorities
 - Tribes
 - Transit agencies
- Eligible projects
 - Capital projects including
 - Highway, bridge, or other road projects eligible under title 23, US Code
 - Public transportation projects eligible under chapter 53 of title 49 of US Code
 - Passenger and freight rail transportation projects
 - Port infrastructure investments
 - Surface transportation components of an airport
 - Intermodal projects
 - Replacement of culverts or stormwater runoff prevention
 - Projects investing in surface transportation facilities on Tribal land
 - Any other projects deemed applicable by secretary of VDOT
 - Planning projects including planning, preparation, or design of surface transportation elements.
- Funding
 - Capital projects in urban areas
 - Minimum is \$5 million, must be \$6.25 million minimum total costs to meet match requirements.
 - Capital projects in rural areas
 - Minimum is \$1 million
 - Planning projects have no minimum
 - Maximum grant awards are \$45 million
- Eligible applicants submit application through federal DOT process.

RAISE GIS

- Crashes EPDO segments
 - vtrans.org/interactvtrans/map-explorer?layer=CrashData

- Estimated Truck ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)&field=2021 Truck AADT](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT)&field=2021%20Truck%20AADT)
- Estimated ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT))
- Transit Stops
 - [vtrans.org/interactvtrans/map-explorer?layer=Bus Stops](https://vtrans.org/interactvtrans/map-explorer?layer=Bus%20Stops)
- Transit Routes
 - https://services9.arcgis.com/9oDT7ErWemWCzvY7/arcgis/rest/services/Transit_Data_October_2021/FeatureServer
- Trails
 - <https://services1.arcgis.com/PxUNqSbaWFvFgHnJ/arcgis/rest/services/VAStateTrails/FeatureServer/0>
- Sidewalks
 - vtrans.org/interactvtrans/map-explorer?layer=Sidewalks
- Park and Ride Lots
 - <https://vtrans.org/interactvtrans/map-explorer?layer=Park%20and%20Ride%20Lots>
- Census Tracts Median Income
 - [ACS Data set : B06011 \[https://data.census.gov/tables?q=B06011:%20Median%20Income%20in%20the%20Past%2012%20Months%20\\(in%202022%20Inflation-Adjusted%20Dollars\\)%20by%20Place%20of%20Birth%20in%20the%20United%20States&g=050XX00US51047,51061,51113,51137,51157\]\(https://data.census.gov/tables?q=B06011:%20Median%20Income%20in%20the%20Past%2012%20Months%20\(in%202022%20Inflation-Adjusted%20Dollars\)%20by%20Place%20of%20Birth%20in%20the%20United%20States&g=050XX00US51047,51061,51113,51137,51157\)](https://data.census.gov/tables?q=B06011:%20Median%20Income%20in%20the%20Past%2012%20Months%20(in%202022%20Inflation-Adjusted%20Dollars)%20by%20Place%20of%20Birth%20in%20the%20United%20States&g=050XX00US51047,51061,51113,51137,51157)
- Qualified Opportunity Zones
 - [vtrans.org/interactvtrans/map-explorer?layer=Designated Qualified Opportunity Zones](https://vtrans.org/interactvtrans/map-explorer?layer=Designated%20Qualified%20Opportunity%20Zones)
- Pavement Condition
 - [vtrans.org/interactvtrans/map-explorer?layer=Pavement Condition&field=Combined Condition Index \(CCI\)](https://vtrans.org/interactvtrans/map-explorer?layer=Pavement%20Condition&field=Combined%20Condition%20Index%20(CCI))
- Bridge & Culvert Condition
 - [vtrans.org/interactvtrans/map-explorer?layer=Bridge and Culvert Condition](https://vtrans.org/interactvtrans/map-explorer?layer=Bridge%20and%20Culvert%20Condition)

Recreational Trails Program (RTP)

<https://www.dcr.virginia.gov/recreational-planning/trailfund>

- Assistance program of FHWA administered by Virginia Department of Conservation and Recreation
- Deadline for applications is in May
- Eligible applicants
 - Towns
 - Cities
 - County governments
 - Tribes
 - Recreation agencies and authorities
 - State agencies
 - Non-profits
- Eligible projects
 - Maintenance and restoration of existing recreational trails
 - Development and rehabilitation of trailside and trailhead facilities
 - Assessment of trail conditions for accessibility and maintenance
 - Lease of recreational trail maintenance equipment
 - Development and dissemination of publications and operation of educational programs promoting safety and environmental protection related to trail use
 - State costs incurred in program administration
- Ineligible projects
 - Property condemnation (eminent domain)
 - Constructing new trails for motorized use in National Forest or Bureau of Land Management (BLM) land unless consistent with resource management plans
 - Facilitating motorized access on otherwise non-motorized trails
 - Construction of new recreational trails (eligible again in 2024)
 - Development of trail linkages (eligible again in 2024)
 - Lease of recreational trail construction equipment (eligible again in 2024)
 - Acquisition of easements and fee simple title to property for recreational trails or recreational trail corridors (eligible again in 2024)
- Funding
 - 80-20 matching reimbursement program
 - 80% of project cost reimbursement for at least 20% of recipient matching contribution
 - Yearly funds divided 30% for motorized trail uses, 30% non-motorized trail uses, 40% for multi-use/diversified trail uses
 - Diversified allocation of \$580,000; minimum request of \$25,000, maximum of \$250,000
 - Non-motorized allocation of \$435,000; minimum request of \$25,000, maximum of \$250,000
 - Motorized allocation of \$435,000; minimum request of \$25,000, maximum of \$435,000

- Process
 - Preliminary review by DCR staff to verify completeness and eligibility.
 - Applications sent to Virginia Recreational Trails Program Advisory Committee (VRTAC) for review and scoring.
 - VRTAC meets to review all scores and recommend projects for funding.
 - Applicants of projects recommended for funding are contacted by DCR and a site inspection is scheduled.
 - Applicants not selected are notified.
 - DCR staff conduct a site inspection for field conditions and suitability recommendation to FHWA.
 - DCR staff work with the applicant to prepare the necessary forms to submit to FHWA for approval and authorization.
 - Projects authorized by FHWA are issued a project agreement that allows 3 years to complete the required environmental review process, design plans, permitting, project construction.

Economic Development Access Program GIS

- Trails
 - <https://services1.arcgis.com/PxUNqSbaWFvFgHnJ/arcgis/rest/services/VAStateTrails/FeatureServer/0>
- Sidewalks
 - vtrans.org/interactivtrans/map-explorer?layer=Sidewalks

State of Good Repair (SGR)

Bridge Program

<https://www.vdot.virginia.gov/doing-business/for-localities/local-assistance/sgr-bridges/>

- Aimed at replacing bridges in poor condition on the National Bridge Inventory
- Applicants
 - VDOT
 - Localities
 - Based on which entity maintains the roadway of which the bridge is part
- Eligible projects
 - Bridges graded as poor condition, structurally deficient on VDOT or locally maintained right-of-way.
 - Prioritized based on importance, condition, design redundancy, structure capacity, and cost-effectiveness.
- Funding
 - VDOT Districts will receive between 5.5% and 17.5% of total annual funding based on need.
 - Total program funding not listed in supporting documents.
- Process
 - For localities
 - Pre-applications are required for all eligible structures in locality to submit full applications.
 - Submit to VDOT District Locality Liaison
 - Must include draft progress pre-scoping report
 - Pre-application must be submitted for all bridges in each locality to submit full application.
 - Recommended to submit smart flags, concept drawings, cost estimates for repair/replace.
 - Full application must include pre-scoping report, proposed smart flags, conceptual drawings, cost estimate, repair/replace alternatives.
 - For VDOT-owned bridges
 - Pre-applications are handled internally at district level.
 - Full applications are required for all eligible structures in district.
 - Full application must include pre-scoping report, proposed smart flags, conceptual drawings, cost estimate, repair/replace alternatives.

State of Good Repair, Bridges GIS

- Bridge & Culvert Condition
 - [vtrans.org/interactvtrans/map-explorer?layer=Bridge and Culvert Condition](https://www.vdot.virginia.gov/doing-business/for-localities/local-assistance/sgr-bridges/)

State of Good Repair, Locality Bridges (GIS)

- Estimated Truck ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)](https://www.vdot.virginia.gov/doing-business/for-localities/local-assistance/sgr-bridges/)

- Estimated ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)](https://www.vdot.virginia.gov/doing-business/for-localities/local-assistance/sgr-bridges/)
- Bridge & Culvert Condition
 - [vtrans.org/interactvtrans/map-explorer?layer=Bridge and Culvert Condition&field=General Condition Rating \(GCR\)](https://www.vdot.virginia.gov/doing-business/for-localities/local-assistance/sgr-bridges/)
- Pavement Condition
 - [vtrans.org/interactvtrans/map-explorer?layer=Pavement Condition&field=Combined Condition Index \(CCI\)](https://www.vdot.virginia.gov/doing-business/for-localities/local-assistance/sgr-bridges/)

Pavement Program

- Aimed at resurfacing pavement in poor condition according to VDOT condition index
- Applicants
 - VDOT
 - Localities
 - Based on which entity maintains the roadway in question
- Eligible projects
 - Routes which are locally maintained and have a primary route number
 - Routes which have a Combined Condition Index (CCI) of less than 60, as determined by VDOT or by locality using the same rating contractor/evaluation process.
 - Index found in SMART Portal
 - Any Primary Extension Segment with a CCI less than 60 can apply; priority given to Primary Extension. Routes on the National Highway System (NHS)
- Funding
 - Maximum of \$1.5 million per locality for all application in each fiscal year
 - Total program funding not listed in supporting documents
- Process
 - Each locality required to submit a separate application for each identified project, \$1.5 million limit per locality
 - Scoring based on point system:
 - Up to 45 points provided dependent on the route segment's highest predicted CCI
 - Additional 10 points for route segments on NHS
 - Up to 30 points based on route's lowest AADT
 - Additional 15 points awarded to localities that have expended at least 25% of their maintenance payment allocations on pavements in their localities over previous three fiscal years.
 - Eligible segments can be selected through SMART Portal and show beginning and ending termini
 - AADT, Street Name, and NHS status also appear in SMART Portal
 - Localities will acknowledge that projects selected for funding will be executed using the federal development process, including Detailed Cost Estimate.

- Applications will be ranked statewide and available allocations will be awarded in order of ranked priority.
- Annual cycle beginning in October and ending in June.

State of Good Repair, Locality Pavements (GIS)

- Estimated Truck ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)&field=2021 Truck AADT](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT)&field=2021%20Truck%20AADT)
- Estimated ADT
 - [vtrans.org/interactvtrans/map-explorer?layer=Roadway and Truck Volumes \(AADT\)](https://vtrans.org/interactvtrans/map-explorer?layer=Roadway%20and%20Truck%20Volumes%20(AADT))
- Pavement Condition
 - [vtrans.org/interactvtrans/map-explorer?layer=Pavement Condition&field=Combined Condition Index \(CCI\)](https://vtrans.org/interactvtrans/map-explorer?layer=Pavement%20Condition&field=Combined%20Condition%20Index%20(CCI))

Transportation Alternatives Program (TAP)

<https://www.fhwa.dot.gov/bipartisan-infrastructure-law/ta.cfm>

<https://www.vdot.virginia.gov/doing-business/for-localities/local-assistance/transportation-alternatives/>

- Subset of the federal Surface Transportation Block Grant Program (STBG), the Infrastructure Investment and Jobs Act (IIJA), aka Bipartisan Infrastructure Law (BIL)
- Expands non-motorized travel choices, strengthens local economics, improves safety and quality of life, and protects the environment.
- Applicants
 - Local governments
 - Regional transportation authorities
 - Transit agencies
 - Natural resource or public land agencies
 - School districts, local education agencies, schools
 - Tribal governments
 - Metropolitan planning organizations
 - Any other local or regional governmental bodies with transportation oversight.
 - State departments of transportation
- Eligible projects
 - On- and off-road trails for pedestrians, bicycles, non-motorized forms of transportation.
 - Construction, planning, design of projects and systems with safe routes for non-drivers to access daily needs.
 - Rails-to-Trails
 - Construction of turnouts and viewing areas, comprised of a project that supports a qualifying logical terminus with independent utility.
 - Community improvement activities
 - Inventory, control, removal of outdoor advertising
 - Historic preservation and rehab or historic transportation facilities
 - Vegetation management practices within Right of Way
 - Archaeological activities relating to impacts from transportation projects
 - Environmental mitigation activities
 - Stormwater management, control, water pollution
 - Wildlife harm reduction
 - Safe routes to school projects, infrastructural and non-infrastructural
 - Planning, design, construction of boulevards or other roadways in Right of Way of former interstate routes
- Ineligible projects
 - MPO administrative purposes
 - Promotional activities and training
 - Routine maintenance and operations
 - General recreation and park facilities
 - Traditional roadway activities
 - Property acquisition
- Aesthetic improvements
- Funding
 - Suballocation for Recreational Trails Program
 - Funds distributed based on population areas (59%) and rest of Commonwealth (41%)
 - 80-20 match program
- Process
 - CTB requires TAP projects to reach construction phase within four years of initial allocation.
 - Public involvement required in process
 - Site visit required on behalf of locality and VDOT staff to approve engineering, environmental, maintenance, planning, and other concerns with respective personnel.
 - Local resolution of support required
 - VDOT solicits applications every two years through SMART Portal
 - Director of Local Assistance invites applications from County Administrators and City/Town Managers to participate in biennial cycle.
 - Pre-application submittal for each project is required through the SMART Portal.
 - VDOT Project Manager reviews the eligibility, scope and estimate prior to the final application submittal.
 - Locality coordinates with VDOT Manager to review potential projects; Manager provides support regarding eligibility, estimates, scheduling.
 - If locality requests VDOT administration of project, locality must coordinate with VDOT Manager for concurrence on scope, schedule, estimate.
 - VDOT Manager reviews SMART Portal application to make an eligibility determination and determine ability of locality to complete construction.
 - VDOT Local Assistance Division reviews final applications and notifies local VDOT Manager of state matching funds available for project subject to CTB approval.
 - Project enters SYIP project pool and is scheduled

Transportation Alternatives GIS

- Crashes EPDO
 - vtrans.org/interactvtrans/map-explorer?layer=CrashData
- Park and Ride Lots
 - <https://vtrans.org/interactvtrans/map-explorer?layer=Park%20and%20Ride%20Lots>
- Sidewalks
 - vtrans.org/interactvtrans/map-explorer?layer=Sidewalks
- Trails
 - <https://services1.arcgis.com/PxUNqSbaWFvFgHnJ/arcgis/rest/services/ManagedTrails/FeatureServer>

- Transit Stops
 - vtrans.org/interactvtrans/map-explorer?layer=BusStops
- Transit Routes
 - https://services9.arcgis.com/9oDT7ErWemWCzvY7/arcgis/rest/services/Transit_Data_October_2021/FeatureServer
- Bicycle Routes
 - <https://vdot.maps.arcgis.com/apps/webappviewer/index.html?id=6b824c469989495e8c62c05c3103ade7>
- Social Vulnerability classifications
 - https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html
- Equity Emphasis Areas
 - [https://vtrans.org/interactvtrans/map-explorer?layer=Equity%20Emphasis%20Area%20\(EEA\)%20Index&field=Equity%20Emphasis%20Area%20Index](https://vtrans.org/interactvtrans/map-explorer?layer=Equity%20Emphasis%20Area%20(EEA)%20Index&field=Equity%20Emphasis%20Area%20Index)

