Pathways to the Future
TRANSPORTATION

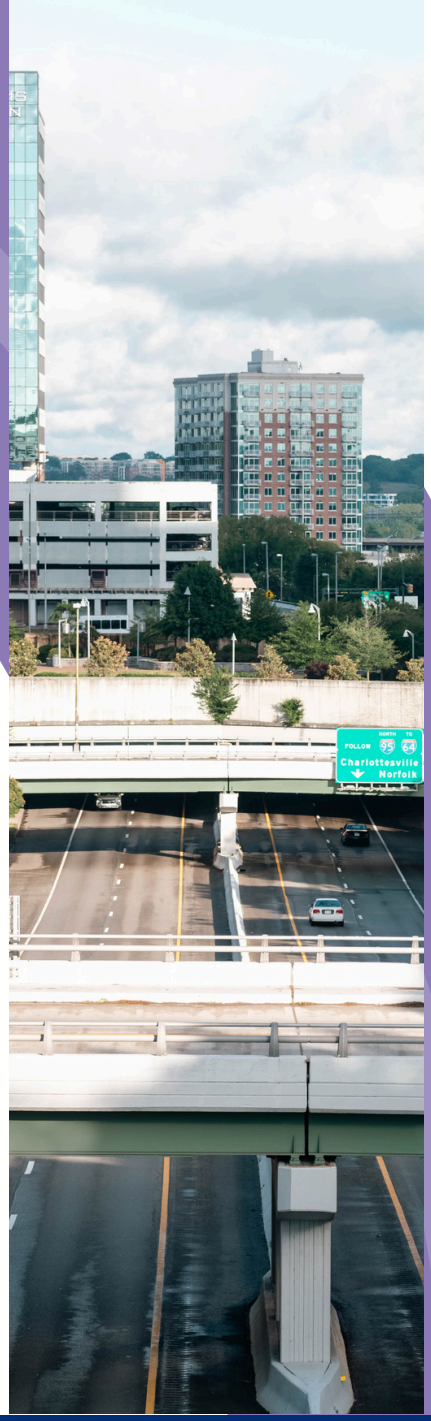
Technical Report G:
Project Prioritization Methodology

Long Range Transportation Plan

2050



Richmond Regional
Transportation
Planning Organization
POWERED BY PlanRVA



Project Prioritization Methodology

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ABSTRACT

The Richmond Regional Transportation Planning Organization (RRTPO) is in the process of updating the regional Long-Range Transportation Plan (LRTP) to the horizon year 2050. This LRTP has been branded Pathways to the Future: Transportation 2050. As part of this process and in keeping with federal regulations RRTPO staff worked with regional partners to develop an objective project evaluation methodology based on the four major goal areas, and score the projects included in the Universe of Projects for Transportation 2050.

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ACKNOWLEDGEMENT

Pathways to the Future: Transportation 2050 was prepared in cooperation with the U.S. Department of Transportation, Federal Highway Administration, Virginia Department of Transportation, and the Virginia Department of Rail and Public Transportation. This report also represents the collective work of state, regional, local and special interest representatives of the RRTPO 2050 Long-Range Transportation Plan Advisory Workgroup.

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Introduction

The purpose of this report is to describe the methodology which RRTPO staff will be using in the evaluation (Task 5.0) of the universe of transportation projects as vetted and approved by the LRTP-Advisory Workgroup (AWG) for consideration and inclusion in the fiscally constrained 2050 Long Range Transportation Plan, also known as Pathways to the Future 2050. The scale and type of projects eligible to be specifically listed in the plan are described in the 'Pathways to the Future 2050 Project Inclusion Guideline' (included here in the Appendices) and are generally thought of as projects of regional significance which will potentially be funded with federal and state funding sources. An overall objective of the project evaluation process is to fully comply with the RRTPO transportation planning process in the direction of a 'Performance-Based Planning and Programming (PBPP)' as directed by the federal transportation authorization bill 'Moving Ahead with Progress in the 21st Century Act' (MAP-21)' of 2012. This legislation calls on metropolitan planning organizations, like the RRTPO, to establish a performance and outcome-based program for federal funding sources, and to invest resources in projects that collectively address the ten federal planning factors and make progress towards seven national goals. The 'Fixing America's Surface Transportation Act (FAST Act) of 2015 continued the performance-based planning and programming requirements of MAP-21.

A first step in applying PBPP principles was taken by the RRTPO staff by developing vision, guiding principles, goals and objectives for the plan (Task 3.0). The Vision, Guiding Principles, Goals and Objectives for the plan were endorsed by the LRTP Advisory Workgroup (LRTP- AWG) and RRTPO Policy Board.

RRTPO staff have developed a performance-based evaluation method in which staff will be assessing the degree to which any given project will advance the region toward achieving one or multiple transportation goals and objectives and would be evaluated by a set of performance measures. This will be done through quantitative evaluation of project benefits to the extent possible given data and staff capacity constraints, in a way that is logically considered, uniform and consistent. Staff have tried to align some of the performance measures to those used in the Commonwealth's Smart Scale project evaluation process. RRTPO staff's intention is to assist LRTP-AWG Members/Project Champions by providing full transparency prior to the project evaluation process and to come up with a Needs-Based, Goal-Based and Performance-Based fiscally constrained transportation project list for the Richmond Metropolitan Planning Area. Any project not specifically listed in the plan, but which has a logical connection or potential impact on advancing one or

multiple LRTP goals and objectives will be considered as Local/Programmatic Projects and will be 'consistent with the LRTP' in the future.

Project Evaluation Goals and Performance Measures

Each project in the 'Universe of Project' (Task 5.0) will be evaluated based on the four LRTP goals as established in Task 3.0:

- Safety
- Sustainability
- Reliability
- Resiliency

Weights were derived to mirror SmartScale Performance Measures while reflecting updated regional goals.

Exhibit 1: LRTP Goal Weights for Project Scoring

LRTP Goal	Goal Weight
Safety	25%
Sustainability	35%
Reliability	25%
Resiliency	15%
Total	**100%**

Goal A: Safety

A transportation system where no one is killed or seriously injured, and people feel secure and comfortable regardless of how they travel.

Safety is weighted at 25% of the total project score. Safety will be evaluated based on two performance measures weighted as shown in Exhibit 2. These performance measures are based on Smart Scale Project Evaluation Measures and are modified and customized to suit RRTPO needs.

Exhibit 2: Safety Performance Measure Weights

Performance Measure (PM)	PM Weight
S1. Crash Frequency	70%
S2. Crash Rate	30%
Total	**100%**

For roadway (including bike/ped) projects both of the measures would be used. For transit and freight projects only the first measure is used.

Performance Measure 1 – Reduction in Fatal and Injury Crashes

Description:

Reduction in Equivalent Property Damage Only (EPDO) of Fatal and Injury Crashes due to project implementation.

Explanation of Measure:

Equivalent Property Damage Only (EPDO) is a method used to standardize crashes based on severity. Virginia has adopted a statewide weighting for use in the Smart Scale program. For example, a crash resulting in a fatality or severe injury is weighted as heavily as 85 times that of a crash with only property damage. The full crash severity is listed below in Exhibit 3.

Exhibit 3: Crash Severity

Crash Severity	Rounded Value	Weighting
Fatality Injury	$3,024,000	178
Severe Injury	$3,024,000	178
Moderate Injury	$325,000	19
Minor Injury	$189,000	11
Property Damage Only	$17,000	0

This measure looks at the average number of fatal and injury crashes over a five-year period before and after the proposed improvement, weighted by severity. The expected change in crashes is calculated using a crash modification factor (CMF). Virginia has adopted standardized CMFs for most project types based on research compiled by the Federal Highway Administration (FHWA) and state agencies.

Outcome Measured:

The change in the annual expected number of fatal and injury crashes weighted by severity (equivalent property damage only)

Data Requirements/Analytical Tools:

- Most recent five years of crashes from VDOT Roadway Network System (RNS) geospatial (GIS) data prepared by Traffic Engineering Division, removing alcohol-related crashes.
- SYIP to determine if and when improvements have been implemented in proximity to the project (250 feet) in the last five years
- Pathways to the Future 2050 simplified Planning Level Crash Modification Factors (CMF) drawn from Virginia SMART Scale Panning Level Crash Modification Factors.

Methodology:

1. Compile five years of fatal and injury crashes within project limits. Project limits are defined as the 250 feet buffer area around the project.
2. Review the SYIP to determine if any improvements have been made within the project limits. If so, shorten analysis period to the post-improvement period only.
3. Weight the severity of each crash by EPDO using the statewide Smart Scale weighting and calculate the average annual EPDO.
4. For roadway and bike/ped projects, find the appropriate crash modification factor (CMF) for the project improvements. The percent expected crash reduction (PECR) is calculated as follows: PECR = 1 – CMF. Most improvements have been standardized for statewide usage. For transit, passenger rail, and park and ride lots, the expected reduction in VMT will be used to calculate crash reduction. For freight rail, the expected reduction in truck traffic (and corresponding truck crashes) will be used.
5. Multiply the PECR by the annual average EPDO of fatal and injury crashes to determine the expected reduction

Performance Measure 2 – Reduction in Fatal and Injury Crash Rate

Description:

Reduction in Equivalent Property Damage Only (EPDO) of Fatal and Injury Crashes per 1 Million Vehicles Miles Travelled (VMT) or 1 Million Entering Vehicles

Explanation of Measure:

This measure builds on the data and expected crash reductions in Measure S.1. Whereas Measure S.1. is focused on the overall number of fatal and injury crashes, this measure is focused on the rate of fatal and injury crashes per million vehicle miles (segments) or million entering vehicles (intersections). This measure allows for better comparison between projects on routes with different traffic volumes.

Outcome Measured:

The change in the annual rate of fatal and injury crashes weighted by severity (equivalent property damage only) per 1 million vehicle miles (segments) or 1 million entering vehicles (intersections)

Data Requirements/Analytical Tools:

- All data used in S.1.
- Latest available VDOT Annual Average Daily Traffic (AADT) data

Methodology:

1. Determine the project limits as defined in S.1. For segments calculate the annual traffic volume for the base year in million vehicle miles (MVM = Length * ADT * 365 / 1,000,000). For projects that cross multiple segments, the annual traffic volume is calculated as the average volume for all segments. For intersections the measure is million entering vehicle (MEV = ½ * sum of ADT on all approaches * 365 / 1,000,000).
2. Calculate annual EPDO of fatal + injury crashes avoided (S.1.). Convert into crash rate using the following formula: Crash Rate Reduction = EPDO of fatal + injury crashes avoided / MVM or MEV as appropriate.

Goal B: Sustainability

A transportation system that provides choices and meets the needs of the current generation and provides the same opportunity for future generations

Sustainability is weighted at 35% of the total project score. Sustainability will be evaluated on five performance measures weighted as shown in exhibit. These performance measures are based on Smart Scale Project Evaluation Measures and are modified and customized to suit RRTPO needs.

Exhibit 4: Sustainability Performance Measure Weights

Performance Measure (PM)	PM Weight
Access to Jobs	30%
Access to Service	30%
VMT per Capita	20%
Air Quality	20%
Impact to Resources	*Up to 5 points subtracted from final score based on total potential sensitive acreage impacted

Performance Measure 1 – Access to Jobs

Description:

Increase in average job accessibility per person (Travel Time of 30 minutes by auto, walking and biking, and transit) for all population.

Explanation of Measure:

Both accessibility performance measures are essentially calculating the change (Delta) in average access to jobs or destinations as a result of planned project improvements. The Delta comes from improvements in travel speed, pedestrian quality of service, or transit frequency, among other types of improvements. This Delta is evaluated by making modifications to the transportation network by specifying changes in travel speeds, added stops, new routes, reduced headway, etc. A decay factor reflecting decrease in the value resulting from reduced access to opportunities because of increased travel time.

Access to jobs is calculated for all areas within the RRTPO Metropolitan Planning Area (MPA) boundary and for all population residing within the MPA boundary.

Outcome Measured:

The average change in access to employment opportunities as a result of project implementation for all population.

Data Requirements/Analytical Tools:

- RRTPO Accessibility Analysis Tool
- Richmond-Tri-Cities (RTC) Travel Demand Model
- 2017 and 2050 Auto and Transit Skims from RTC Model for highway and transit projects
- Bicycle or pedestrian system connectivity changes for active transportation projects (as it relates to filling gaps in existing bike/ped network or the last mile connection to transit service).
- 2017 Base Year and 2050 Horizon Year total employment • Existing and Committed Highway and Transit Networks (E+C)
- Project Limit Shapefile
- Project Conceptual Sketches (for complex projects like interchanges)

Methodology:

1. For all Highway, Transit and Active Transportation Projects

   This analysis requires the use of the RTC model and the RRTPO Accessibility Analysis Tool to estimate future no-build (without project) and build (with project) job accessibility. The project is added to the RRTPO Accessibility Tool and outputs are then used to summarize average job accessibility.
   - Code the project into the RTC Travel Demand Model with assumed posted speed limit, facility type, and number of lanes for highway projects and additional stops, new routes, or reduced headway for transit projects. Flag the links for any connectivity changes due to any active transportation projects.
   - Extract the Auto and Transit Skims for the build and the no-build model runs and input it into the RRTPO Accessibility Analysis Tool.

- The RRTPO Accessibility Analysis Tool calculates the improvement in number of jobs reachable within that travel time resulting from a proposed transportation improvement and generates job accessibility scores for each project. The average number of jobs reachable represents the total jobs accessible from each TAZ to every other TAZ.
- Dividing the total reachable job divided by the TAZ population gives the total jobs per person. This calculation is done for all TAZ sets to get the average job accessibility per person.

2. For all other projects

The change in average job accessibility per person is not measured for freight and rail projects.

Performance Measure 2 – Access to Goods and Services

Description:

Increase in average access to weighted destinations per 1000 persons (Travel Time of 30 minutes for all modes) for all population.

Explanation of Measure:

This measure is similar to the "Access to Jobs" performance measure, but instead of jobs it measures the change in average access to destinations as a result of planned project improvements. For this analysis - grocery stores, pharmacies, schools, colleges, health care facilities, parks, libraries and government centers are considered as destinations. Each destination within each destination type is given a weighted score in the range of 1 to 5. Each destination type is also weighted as essential (multiplier of 1.5) or non-essential (multiplier of 1) to establish a destination score by TAZ.

Outcome Measured:

The change in average access to weighted destinations per 1000 persons as a result of project implementation for all population.

Data Requirements/Analytical Tools:

- RRTPO Accessibility Analysis Tool
- Richmond-Tri-Cities (RTC) Travel Demand Model
- 2017 and 2050 Auto and Transit Skims from RTC Model for highway and transit projects
- Bicycle or pedestrian system connectivity changes for active transportation projects (as it relates to filling gaps in existing bike/ped network or the last mile connection to transit service).
- Destinations (Grocery Stores, Pharmacies, Schools, Colleges, Health Care Facilities, Parks, Libraries and Government Centers) location by TAZs.
- Existing and Committed Highway and Transit Networks (E+C)
- Project Limit Shapefile
- Project Conceptual Sketches (for complex projects like interchanges)

Methodology:

1. For all Highway, Transit and Active Transportation Projects

   This analysis requires the use of the RTC model and the RRTPO Accessibility Analysis Tool to estimate of future no-build (without project) and build (with project) destinations accessibility. The project is added to the RRTPO Accessibility Tool and outputs are then used to summarize average destinations accessibility.

   - Code the project into the RTC Travel Demand Model with assumed posted speed limit, facility type, and number of lanes for highway projects and additional stops, new routes, or reduced headway for transit projects. Flag the links for any connectivity changes due to any active transportation projects.
   - Extract the Auto and Transit Skims for the build and the no-build model runs and input it to the RRTPO Accessibility Analysis Tool. The RRTPO Accessibility Analysis Tool calculates the improvement in number of weighted destinations reachable within that travel time resulting from a proposed transportation improvement and generates destination accessibility scores for each project. The average number of weighted destinations reachable represents the total weighted destinations accessible from each TAZ to every other TAZ.

- The total reachable weighted destinations divided by the TAZ population gives the total weighted destination per person. Since this number is likely to be small, multiplying this by 1000 gives the total weighted destinations per 1000 people. This calculation is done for all TAZ sets to get the average weighted destinations per 1000 people.

2. For all other projects

   The change in average access to weighted destinations per 1000 persons is not measured for freight and rail projects.

Performance Measure 3 – Reduction in Vehicle Miles Travelled

Description:

Reduction in daily Vehicle Miles Travelled (VMT) per capita attributed to the project.

Explanation of Measure:

Vehicle miles traveled (VMT) is a measure used extensively in transportation planning. It measures the amount of travel for all vehicles in a geographic region over a given period of time (daily or 24-hour period for this analysis). It is calculated as the sum of the number of miles traveled by all vehicles on all roadways. When divided by the total population of a geographical unit (RTC Model Area) the VMT per capita is determined. Decrease in VMT per capita is an indicator attributed to a project for a better integration of transportation planning and land use planning.

Outcome Measured:

The potential benefit of the project by the reduction of daily VMT per capita

Data Requirements/Analytical Tools:

- 2017-2050 Richmond-Tri-Cities (RTC) Travel Demand Model
- Existing and Committed Highway and Transit Networks (E+C)
- Project Limit Shapefile

- Project Conceptual Sketches (for complex projects like interchanges)

Methodology:

1. Highway/Transit Projects This analysis requires the use of the RTC Travel Demand Model to estimate of future no-build (without project) and build (with project) VMT per capita. The project is added to the regional travel demand model and model outputs are then used to summarize project build VMT per capita. The VMT per capita is the calculated at the system level.
    - Code the project into the RTC Travel Demand Model with assumed posted speed limit, facility type, and number of lanes.
    - Calculate total difference in VMT per capita between the no-build model and the build model.

2. Active Transportation/Freight Projects For other modes, estimate reduction in total VMT per capita. The VMT reduction is associated with a shift of demand from auto to the other modes. For the highway network, total VMT may be reduced, because of the new demand in other mode or parallel facilities.

Performance Measure 4 – Air Pollution Emissions Reduction

Description:

Change in estimated emissions (VOC, NOx, CO_2, PM2.5) due to the project.

Explanation of Measure:

Environmental Protection Agency (EPA) has set National Ambient Air Quality Standards (NAAQS) for six common air pollutants (also known as "criteria air pollutants"). These pollutants can harm our health and the environment, and cause property damage. Some of these pollutants are emitted to the atmosphere through passenger vehicle transportation. The pollutant emissions from passenger vehicle transportation includes ozone precursors-volatile organic compounds (VOC) and nitrogen oxides (NOx), and other pollutants particulate matter (PM2.5 and PM10), sulfur oxides (SOx) and carbon monoxide (CO). Since the Richmond region historically had issues meeting the ozone standard, the current Air Pollution measure analysis has been streamlined to limit to ozone precursors only i.e. VOC

and NOx. Given the increased importance in planning, carbon dioxide equivalent (CO2e) and PM2.5 have also been added. These emissions can be calculated at the project scale on the basis of per-mile factors. This measure seeks to weigh the potential emission reduction due to the change in travel characteristics attributed to the project. If there is reduction in pollutant emission attributed to the project, then the project be will given a score.

Outcome Measured:

Annual reduction of the pollutant emissions in metric ton.

Data Requirements/Analytical Tools:

- 2017 -2050 Richmond-Tri-Cities (RTC) Regional Travel Demand Model
- Existing and Committed Highway and Transit Networks (E+C)
- Project Limit Shapefile
- Project Conceptual Sketches (for complex projects like interchanges)
- National average on-road passenger vehicle fuel economy from Environmental Protection Agency (EPA) data i.e. 22 miles/gallon of gasoline.
- EPA Motor Vehicle Emission Simulator (MOVES2014a) Emission Factors for Richmond Area CMAQ Analyses (Exhibit 5).

Exhibit 5: Emissions Factor for Richmond Area

Time 1	Time2	NOSFactorLDV	NOSFactorF	VOCFactorLDV	VOCFactorF	CarbonDiLDV	CarbonDiF	PM25LDV	PM25F
0	2.5	0.328267426	1.171784336	0.332544999	0.443310264	1233.882409	1352.943049	0.0437941	0.10631
2.5	7.5	0.328267426	1.171784336	0.332544999	0.443310264	1233.882409	1352.943049	0.0437941	0.10631
7.5	12.5	0.255252837	0.774095586	0.197589603	0.260896665	756.9128272	838.679888	0.0282199	0.068307
12.5	17.5	0.230913744	0.651598685	0.152604405	0.199321696	597.9226247	673.070785	0.0229252	0.057183
17.5	22.5	0.216837693	0.573732998	0.12871221	0.166310991	515.6635382	583.7993246	0.0197176	0.04957
22.5	27.5	0.204550823	0.520517031	0.111557762	0.143295086	460.749873	523.8529814	0.0167569	0.044006
27.5	32.5	0.18367925	0.477861003	0.096593924	0.124435807	411.24189	473.7556473	0.0139682	0.039716
32.5	37.5	0.174993217	0.427159431	0.08330641	0.107834174	388.5473909	442.1174072	0.0119713	0.032535
37.5	42.5	0.170079861	0.406120684	0.072811043	0.094918745	374.5848995	426.7798248	0.0104702	0.029442

Time 1	Time2	NOSFactorLDV	NOSFactorF	VOCFactorLDV	VOCFactorF	CarbonDiLDV	CarbonDiF	PM25LDV	PM25F
42.5	47.5	0.167644527	0.391175495	0.065134109	0.085364223	364.0769162	415.1808782	0.0092858	0.027026
47.5	52.5	0.168047179	0.378826914	0.059816421	0.078484668	356.2663996	405.4644083	0.0083267	0.024335
52.5	57.5	0.170028555	0.369356186	0.05573059	0.073111415	352.422405	399.5496977	0.0077322	0.021909
57.5	62.5	0.173647452	0.368731211	0.052641692	0.068908859	352.2524828	398.9780353	0.0074669	0.020595
62.5	67.5	0.1795266	0.387333395	0.050768567	0.06632287	355.9249923	405.8924917	0.0073491	0.020865
67.5	72.5	0.191707695	0.410959051	0.051041671	0.065997549	368.7436805	421.1827353	0.0075305	0.021406
72.5	99	0.191707695	0.207071238	0.051041671	0.065997549	368.7436805	421.1827353	0.0075305	0.021406

Methodology:

1. Highway/Transit Projects

   This analysis requires the use of the RTC Travel Demand Model to estimate future no-build (without project) and build (with project) annual pollutant emissions in metric tons. The project is added to the regional travel demand model and model outputs are then used to summarize annual pollutant emissions.

   - Code the project into the RTC Travel Demand Model with assumed posted speed limit, facility type, and number of lanes.
   - Calculate daily emissions for each pollutant based on the emission factors provided in Exhibit 5.
     - Exhibit 5 presents the emissions factors of grams per vehicle mile, for different speed bins.
     - The speed bins are the range of vehicle's congested speeds. For example, if the modeled congested speed is 34 mph, the emissions are estimated from the factors corresponding to the speed bin of 32.5-37.5.
     - The emissions in grams is computed by the following formula: Model volume*link distance*emissions factor. This statistic is converted to tons by the appropriate conversion factor.
   - Calculate the total annual emissions for all pollutants. Total Annual Emissions = Daily emissions (NOx + VOC) * 365 tons.
   - Calculate total difference in annual emissions between the no-build model and the build model.

2. Active Transportation/Freight Projects

For other transportation modes, Vehicles Miles Travelled (VMT) reduction associated with the project is used to calculate annual pollutant emissions. The VMT reduction is associated with a shift of demand from auto to the other modes. For the highway network, total VMT may be reduced, because of the new demand in other modes or parallel facilities.

- Calculate VMT reduction estimate due to the project implementation
- Use the FHWA's CMAQ Toolkit to calculate annual emissions reductions for each pollutant in 2040.[1]

Performance Measure 5 – Impacts to Cultural and Natural Resources

Description

Combined valuation of habitat, water quality, flooding risk, working lands and heritage resources present within ¼ mile of the project limit.

Explanation of Measure

Infrastructure projects have impacts on the natural environment and cultural heritage and are subject to risks from natural processes like flooding and sea level rise. This measure seeks to weigh the potential for negative impacts on the region's natural and heritage resources.

Outcome Measured:

Total value of environmental and heritage features within ¼ mile of project limits. Categorical scores for each major category of natural resources (habitat, water quality, flooding risk, and working lands) and a flag for healthy and unhealthy waters are available in the dataset as well, allowing for custom analysis based on the nature of a given project. This measure is an inverse measure, meaning that a project with no impacts will receive the highest score.

[1] https://www.fhwa.dot.gov/environment/air_quality/cmaq/toolkit/

Data Requirements/ Analytical Tools

Exhibit 6: Regional Ecological Framework Hexagons (from regional Natural Resources plan)

Category	Dataset	Source
Water Quality	National Wetlands Inventory	U.S. Fish and Wildlife Service
	Aquatic Life Conservation Opportunity Areas (ALCOAs)	VDCR
	ConserveVA Healthy Waters Conservation Opportunity Areas (HWCOAs)	VDCR
Habitat	Ecological Cores	VDCR
	Natural Land Network	VDCR
	Wildlife Biodiversity Resilience Corridor	Wildlife Corridor Action Plan
	Predicted Suitable Habitats Summary	VDCR
	Natural Heritage Screening Layer	VDCR
Working Lands	Forest Conservation Value	VDOF
	Agricultural Model	VDCR
Flooding	Special Flood Hazard Areas	FEMA
	Sea Level Rise (SLR)	NOAA
	Henrico Community Flood Areas	Henrico County
	Future Flood Hazard Areas	VDCR
Flags (not factored into the regional index	Water Quality Assessment	VDEQ
	Areas of High Wildlife-Vehicle Conflict Occurrences	VDWR

Exhibit 7: Regional Heritage Framework Hexagons

Dataset	Source
DCR Easements and Conservation Lands (2025)	Virginia Dept. Of Conservation and Recreation
Buffered Chickahominy Tribal Village Sites	Virginia Dept. Of Environmental Quality
National Register of Historic Places (2024)	U.S. National Park Service

Exhibit 8: Regional Environmental Index Map

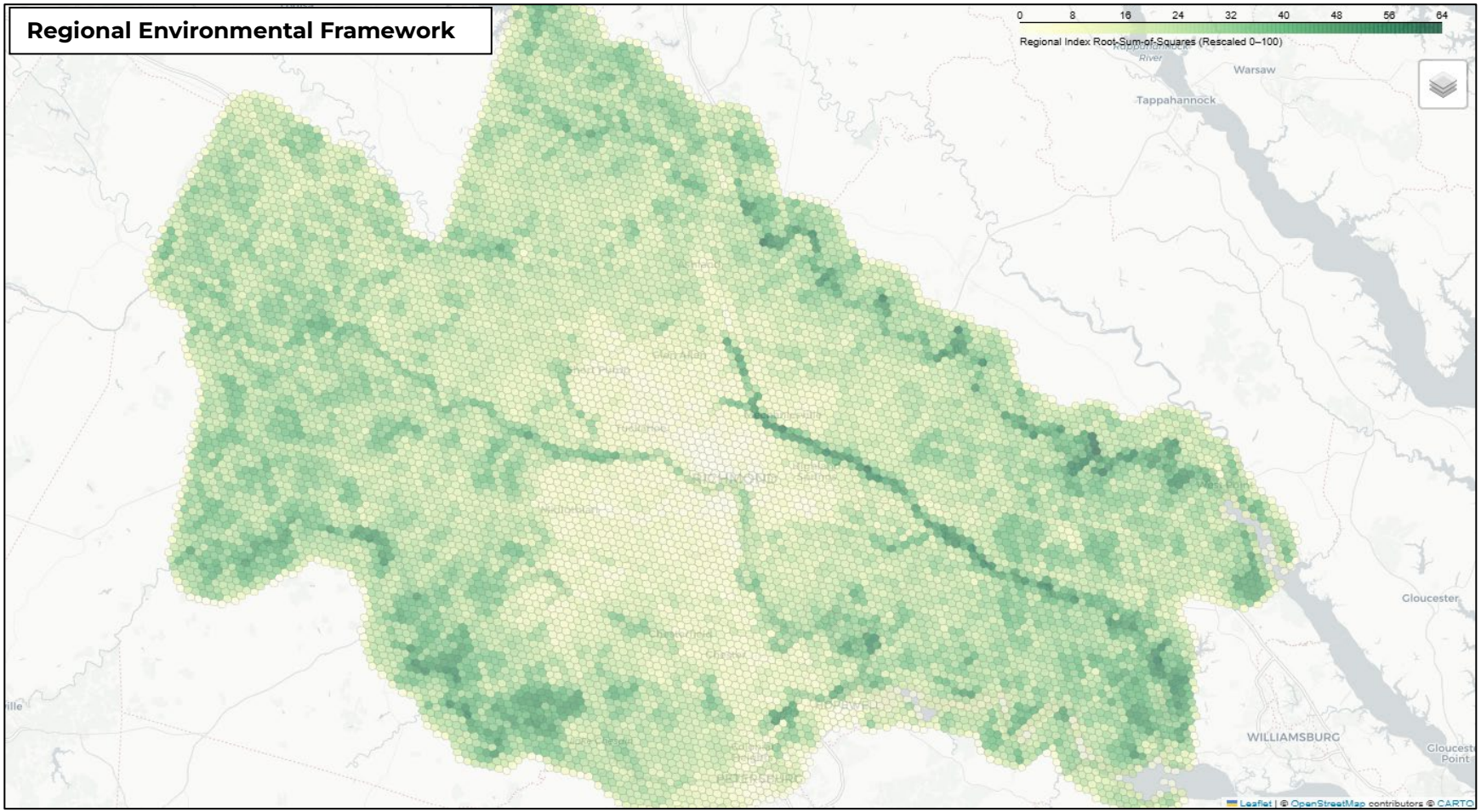
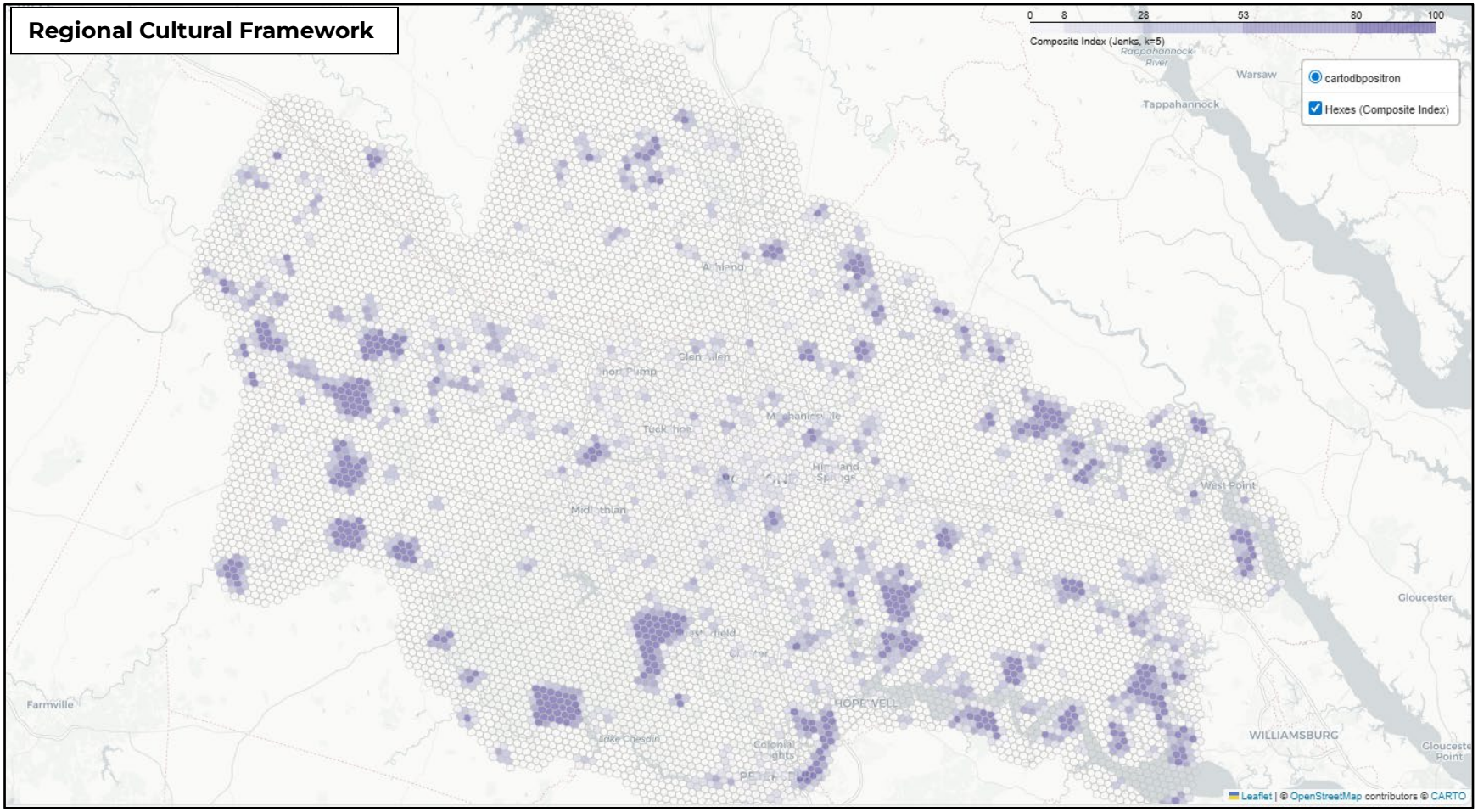


Exhibit 9: Regional Heritage Index Map



Methodology:

1. Create a ¼ mile buffer around each project.
2. Run the union tool to determine the areas of overlap between the buffer and the environmental and conservation areas hexagon features.
3. Calculate the average Regional Environmental Index and Regional Heritage Index scores in the buffer.
4. For each project, apply an adjustment to the index score based on the project tier shown in Exhibit 10 and formulas. This adjustment is intended to reflect the potential impact of certain project types:

Exhibit 10: Adjustment Factor for Projects

Tier	Adjustment
1	10%
2	30%
3	50%

Average Regional Environmental Index * Adjustment Factor = Adjusted Average Regional Environmental Index

Average Regional Heritage Index * Adjustment Factor = Adjusted Average Regional Heritage Index

5. Calculate the overall impact score using the following formula:

(3 * Adjusted Regional Environmental Index) + Adjusted Regional Heritage Index = Impact Score

Goal C: Reliability

A consistent and predictable transportation experience for all people regardless of how they travel.

Reliability is weighted at 25% of the total project score. Reliability will be evaluated based on three performance measures weighted as shown in Exhibit 11

Exhibit 11: Reliability Performance Measure Weights

Performance Measure (PM)	PM Weight
Person Throughput	40%
Person Hours of Delay	40%
Freight Corridor Throughput	20%

Performance Measure 1 – Total Corridor Person Throughput

Description:

Increase in corridor total (multimodal) person throughput attributed to the project.

Explanation of Measure:

The number of vehicles successfully entering the system (project limit) during the analysis period (AM, midday, PM, and night-time) is defined as vehicle throughput. By multiplying the vehicle throughput by the average vehicle occupancy rate person, throughput can be determined. An average occupancy rate of 1.2 persons per vehicles will be used based on SMART SCALE practice.

Outcome Measured:

The potential benefit of the project in increasing the number of users (persons) served within the peak-period.

Data Requirements/Analytical Tools:

- 2017 -2050 Richmond-Tri-Cities (RTC) Regional Travel Demand Model
- Existing and Committed Highway and Transit Networks (E+C)
- Project Limit Shapefile
- Project Conceptual Sketches (for complex projects like interchanges)

Methodology:

1. Highway/Transit Projects

This analysis requires the use of the RTC Travel Demand Model to estimate future no-build (without project) and build (with project) person throughput. The project is added to the regional travel demand model and model outputs are then used to summarize project vehicle throughput.

- Code the new facility into the RTC Travel Demand Model with assumed posted speed limit, facility type, and number of lanes.
- Calculate total difference in Vehicle Throughput between the no-build model and the build model.
    - **Method 1**: For projects < 2 miles with no new connections, delay is calculated using only the project segments.
    - **Method 2**: For larger projects or those with new connections, delay is calculated using all links within the project buffer where the no-build congested speed is less than the posted speed limit and the volume on the link increases by more than 10% between from no-build to build.
- Multiplying the difference between the no-build throughput from the build throughput by 30% to convert to peak period throughput (expressed in vehicle).
- Multiply by average vehicle occupancy rate (1.2) to get the person throughput.

2.Active Transportation/Freight Projects

For trips on other modes, estimate total person throughput for existing and new users in the peak period. Once the number of vehicles on impacted roadway(s) is computed, determine the peak period person throughput for no-build and build conditions by multiplying an average vehicle occupancy rate by the vehicle throughput.

Performance Measure 2 – Reduction in Person Hours of Delay

Description:

Decrease in the number of person hours of delay in the corridor attributed to the project.

Explanation of Measure:

The travel time (for all vehicles entering and attempting to enter the system during the analysis period) minus the theoretical travel time at the free-flow speed. This difference is divided by the number of vehicle trips to obtain mean delay per trip. The free-flow speed is defined as the minimum of the maximum safe speed.

Outcome Measured:

The potential benefit of the project in reducing peak-period person hours of delay.

Data Requirements/Analytical Tools:

- 2017 -2050 Richmond-Tri-Cities (RTC) Travel Demand Model
- Existing and Committed Highway and Transit Networks (E+C)
- Project Limit Shapefile
- Project Conceptual Sketches (for complex projects like interchanges)

Methodology:

1. Highway/Transit Projects

   This analysis requires the use of the RTC Travel Demand Model to estimate future no-build (without project) and build (with project) person throughput and congested travel speeds. The project is added to the regional travel demand model and model outputs are then used to summarize project build vehicle delay. The total vehicle delay reduction is the cumulative effect at a system level.

   - Code the project into the RTC Travel Demand Model with assumed posted speed limit, facility type, and number of lanes.
   - Calculate total difference in Vehicles Hours Travelled (VHT) between the no-build model and the build model.
     - **Method 1**: For projects < 2 miles with no new connections, delay is calculated using only the project segments.

    - **Method 2**: For larger projects or those with new connections, delay is calculated using all links within the project buffer where the no-build congested speed is less than the posted speed limit and the volume on the link increases by more than 10% between from no-build to build.
- Multiply the difference between the no-build VHT from the build VHT by 30% to convert to peak period delay reduction (expressed in vehicle hours)
- Compute the person peak period delay by multiplying the average vehicle delay by an average vehicle occupancy rate (1.2).

2. Active Transportation/Freight Projects

   For trips from other modes, estimate total person travel time savings for existing and new users in the peak hour. The person travel time savings for existing users is associated with any improvement in frequency or travel time associated with the project. For active transportation projects the mode shift from vehicles to active transportation projects will be used to calculate the overall reduction in person hours of delay.

Performance Measure 3 – Truck Throughput on Freight Corridors

Description:

Increase in corridor total truck throughput during peak period attributed to the project

Explanation of Measure:

The number of trucks present at the start plus those attempting to enter and successfully entering the system (project limit) during the peak period is defined as truck throughput. Truck means heavy trucks, defined as those with three or more axles or pulling a trailer. In the FHWA standard classification scheme, this is classes 6 through 13.

Outcome Measured:

The potential benefit of the project in increasing the number trucks served through the project within a day (24-hour period).

Data Requirements/Analytical Tools:

- 2017 -2050 Richmond-Tri-Cities (RTC) Regional Travel Demand Model
- Existing and Committed Highway and Transit Networks (E+C)
- Project Limit Shapefile
- Project Conceptual Sketches (for complex projects like interchanges)

Methodology:

1. Highway Projects
   This analysis requires the use of the RTC Travel Demand Model to estimate of future no-build (without project) and build (with project) truck throughput. The project is added to the regional travel demand model and model outputs are then used to summarize project vehicle throughput. The same approach is used as for person throughput, except the calculations are made using truck VHT and the results are not scaled by an occupancy rate.
   - Code the new facility into the RTC Travel Demand Model with assumed posted speed limit, facility type, and number of lanes.
   - Calculate total difference in Truck Throughput between the no-build model and the build model.
     - Method 1: For projects < 2 miles with no new connections, throughput is calculated using only the project segments.
     - Method 2: For larger projects or those with new connections, throughput is calculated using all links within the project buffer where the no-build congested speed is less than the posted speed limit and the volume on the link increases by more than 10% between no-build and build.
   - The resulting change in all day congested throughput is multiplied by 30% to convert to a peak-period result.

2. Transit/Active Transportation/Freight Projects
   For trips on other modes, estimate total truck throughput for existing and new trucks in the peak period.
   For Transit and Active Transportation project no truck throughput is attributed to the project.

Goal D: Resiliency

A transportation system that prepares, adapts, and recovers quickly from disruptions caused by natural disasters, extreme weather events, and other emergencies.

Resiliency is weighted at 15% of the total project score. Reliability will be evaluated based on two performance measures weighted as shown in Exhibit 12.

Exhibit 12: Resiliency Performance Measure Weights

Performance Measure (PM)	PM Weight
Network Redundant Capacity	50%
Network Connectivity	50%

Performance Measure 1 – Network Redundant Capacity

Description:

Excess capacity for temporary increases in traffic volumes during natural disasters, evacuations, and other major events.

Explanation of Measure:

This measure estimates the ability of the network to absorb a 10% increase in volume. This measure calculates the change in vehicle hours traveled between build and no build scenarios with the additional assignment divided by the average travel time in the no-build scenario.

Outcome Measured:

The potential benefit of the project in reducing the number of vehicles (trips) experiencing excessive delay during temporary spikes in traffic volumes

Data Requirements/Analytical Tools:

- 2017 -2050 Richmond-Tri-Cities (RTC) Travel Demand Model

- Existing and Committed Highway and Transit Networks (E+C)
- Project Limit Shapefile
- Project Conceptual Sketches (for complex projects like interchanges)

Methodology:

1. Highway/Transit Projects

   This analysis requires the use of the RTC Travel Demand Model to estimate future no-build (without project) and build (with project) person throughput and congested travel speeds. The project is added to the regional travel demand model and model outputs are then used to summarize project build vehicle hours traveled and then run with a 10% increase in trip assignment.
   - Code the project into the RTC Travel Demand Model with assumed posted speed limit, facility type, and number of lanes.
   - Calculate total difference in Vehicles Hours Travelled (VHT) between the base no-build model and the 10% increased assignment no-build model. Repeat for the build scenario.
   - Calculate the difference between the change in vehicle hours traveled in the no-build and build scenario.

     $[(VHT_{NB+10\%} - VHT_{NB}) - (VHT_{B+10\%} - VHT_{B})]$ = Change in VHT
   - Calculate the change in vehicles by dividing the change in vehicle hours traveled by the average trip length in hours.

     Change in VHT / Average Trip $Time_{NB}$ = Change in number of trips/vehicles experiencing excessive delay

2. Active Transportation/Freight Projects

   For trips from other modes, estimate the mode shift associated with the project. The shift in mode will be used to calculate a simplified redundancy index measure:

   Redundancy Index = $(VHT_{NB+10\%} - VHT_{B(Shift)+10\%})$/ Average Trip Time

Performance Measure 2 – Network Connectivity

Description:

Change in the ratio of congested AM peak travel time and the ideal straight-line distance at free-flow speed.

Explanation of Measure:

This measure assesses the directness of the shortest route between two TAZs in real travel conditions compared to an idealized straight distance as measured in minutes. A more direct route represents a better-connected network which can provide better access during disasters and other emergencies and reduces travel overall.

Outcome Measured:

Average ratio of loaded AM peak and idealized straight distance Origin-Destination (OD) pair travel times

Data Requirements/Analytical Tools:

- 2017 -2050 Richmond-Tri-Cities (RTC) Travel Demand Model
- Existing and Committed Highway and Transit Networks (E+C)
- Project Limit Shapefile
- Project Conceptual Sketches (for complex projects like interchanges)

Methodology:

1. Highway/Transit Projects

   This analysis requires the use of the RTC Travel Demand Model to estimate future no-build (without project) and build (with project) connectivity. The project is added to the regional travel demand model and model outputs are then used to summarize the change in average travel time.

   - Code the project into the RTC Travel Demand Model with assumed posted speed limit, facility type, and number of lanes.

- Calculate ratio of in Vehicles Hours Travelled (VHT) and between AM peak congested period and the direct line between TAZs at no-build free-flow speed in the no-build model. Repeat with build scenario.
- Compute the change in the ratio between build and no-build to determine the network connectivity index.

2. Active Transportation/Freight Projects

   For active transportation, the difference between the straight-line distance and shortest routable path on low traffic stress corridors (LTS 1) is used using GIS network datasets. For bike projects, an average speed of 10 mph is assumed; projects with pedestrian improvements, an average speed of 3 mph is assumed. This measure is not calculated for rail or freight projects which primarily serve interregional travel.

Project Scoring

1. The following steps will be used to score all the projects:
2. Calculate raw value for all the 12 Performance measures within the Four Goal categories for each project.
3. For each performance measure, the highest value is determined after calculating the raw values for all the projects. The highest value is given a normalized value of 100. Other values are normalized by providing the percentage value of the highest value. This process is repeated for all projects.
4. Once the normalized value has been assigned for all the performance measures within the goal categories, they will be applied to the performance measure weights.
5. Once the performance measure weights are applied, the sum of the normalized performance measure value will produce the Goal value.
6. The goal weight is then applied to the goal value. This is repeated for all the goal categories.
7. This gives us the Weighted Goal value
8. Summing all the weighted goal value gives the project Benefit Score
9. The total project cost of the project is recorded.
10. The project Benefit Score is then divided by the total project Cost (in $10 million) to determine the Pathways to the Future 2050 Project Score

All the projects in the ‘Universe of Projects’ will be ranked based on the Pathways to the Future 2050 Project Score. The project getting the highest score will be ranked first, followed by the project ranking second and so on. The Pathways to the Future 2050 project Scoring Sheet is provided in the appendices.

Project Readiness

The Project Readiness component is intended to provide an additional criterion to evaluate the relative merits of similar scoring projects and be used to determine which Timeband a project falls into. Project Readiness will not directly factor into the Pathways to the Future 2050 Project Score. Projects which have completed EA (Environment Assessment) or EIS (Environment Impact Statement) as required by the National Environmental Policy Act (NEPA); completed IMR (Interchange Modification Report) or IJR (Interchange Justification Report) or conducted any public outreach (public meeting, survey, etc.) will be eligible for Project Readiness.

Appendices

Appendix 1. Transportation 2050 Scorecard Template

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I crash reduced	F+I crash rate	Access to Jobs	Access to Services	VMT per capita	Air Quality	Impact to Resources	Person thruput	Person hours of delay	Freight Corridor thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	*	40%	40%	20%	50%	50%
Points	17.5	7.5	10.5	10.5	7	7		10	10	5	7.5	7.5
Benefit Score	0 – 100 value											
Cost	$##,###,###											
Cost Benefit Score	Benefit Score / (Cost / $10,000,000)											

Appendix 2. Regional Projects based on Project Inclusion Guidelines and Project Tiers by Project Type

1. Roadway Projects

   For projects located on roads in the Richmond/Tri-Cities travel demand model network

   A. Capacity Change (add/remove lane; change use of lane e.g. HOV or HOT lanes, bus lanes) – **Tier 3 for adding lane; Tier 2 for lane removal, change use of lane e.g. HOV or HOT lanes, bus lanes**
   B. Realignment, extension, or relocation – **Tier 3**
   C. New interchange or interchange modification – **Tier 3 for new interchange; Tier 2 for interchange modification**
   D. Overpass or underpass – **Tier 3**
   E. Major Intersection improvements on arterials – **Tier 2**
   F. Spot safety or ITS improvements bundled at the corridor level on the LRTP Highway Network – **Tier 2**
   G. Active Transportation and/or Transit Infrastructure improvements at the Corridor level bundled with a roadway project on the LRTP Network – **Tier 2**
   H. New road or alignment which normally would be on the LRTP Road Network – **Tier 3**

2. Bridge Projects

   A. Replacement/major rehabilitation of National Bridge Inventory (NBI) structures on the LRTP Road Network with a Poor or Cusp Bridge Condition Rating – **Tier 3 for bridge replacement; Tier 2 for bridge rehabilitation**

3. Transit Projects

   A. New Bus Rapid Transit (BRT) Corridors – **Tier 2**
   B. Expansion of Existing BRT Corridors – **Tier 2**
   C. Light Rail Corridors – **Tier 2**
   D. New Transit Hubs/Centers/Transfer Stations – **Tier 2**

E. Relocated Transit Hubs/Centers/Transfer Stations – **Tier 2**
F. Significant upgrade to exiting transit infrastructure (10 million dollars or more) - **Tier 2**
G. Large Scale Fleet Expansion (10 million dollars or more) - **Tier 1**

4. Transportation Demand Management (TDM) projects

A. New Park & Ride lots with 100 spaces or more - **Tier 3**
B. Park & ride lot expansions to existing lots that require 100 or more new spaces. - **Tier 2**
C. Large-scale initiatives that aim to reduce single-occupancy vehicle travel and promote the use of alternative modes on a regional level (10 million dollars or more) - **Tier 1**

5. Active Transportation Projects

A. Development of multi-use trails that connect significant destinations across Richmond region. - **Tier 1**
B. Major extensions or enhancements to existing regional trails. - **Tier 1**
C. Implementation of protected bike lanes that serve regional travel needs. - **Tier 1**
D. Construction of bicycle and pedestrian bridges or underpasses on the LRTP Road Network. - **Tier 1**

6. Freight and Passenger Rail Projects

A. Capacity enhancements to rail corridors. - **Tier 3**
B. Grade separations on the rail corridors to improve safety and traffic flow. - **Tier 3**
C. Projects that provide new rail line access to Port of Virginia, airports, rail yards and industries - **Tier 3**
D. New or relocated Passenger Rail Stations – **Tier 3**
E. Improvement/Construction of roadways that function as intermodal connectors (that provide access to POV, RIC, Passenger Railway Stations, etc.) (10 million dollars or more) - **Tier 2**
F. Port of Virginia Capital Improvement Projects (10 million dollars or more) - **Tier 3**

Highway

Ashland

P2F_001

U.S. Route 1 Safety Improvements - England Street to Northern Town Limit

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.01	0.00	11.36	1664.03	499.42	89.63	133.83	0.00
Benefit Score	**1.82**											
Project Cost	**$36.8M**											
Cost Benefit Score	**0.50**											

Highway

Ashland

P2F_002

U.S. Route 1 Safety Improvements - Ashcake Road to Southern Town Limit

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.01	0.00	10.01	1128.31	356.61	136.70	0.00	0.00
Benefit Score	**1.72**											
Project Cost	**$35.1M**											
Cost Benefit Score	**0.49**											

Highway

Ashland

P2F_003

West Vaughan Road Grade Separation

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	20.24	2308.76	675.22	401.27	15204.20	0.00
Benefit Score	**11.76**											
Project Cost	**$23.8M**											
Cost Benefit Score	**4.95**											

Highway

Ashland

P2F_004

Ashcake Road Grade Separation

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	2393.22	26.13	179.57	56.37	26.28	0.00	0.00
Benefit Score	**1.29**											
Project Cost	**$9.1M**											
Cost Benefit Score	**1.41**											

Travel Demand Management

Hanover

P2F_005

Park and Ride on US 301 Corridor

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	13.41	0.00	0.00	0.00	0.00	0.00
Benefit Score	**0.00**											
Project Cost	**$13.7M**											
Cost Benefit Score	**0.00**											

Highway

Hanover

P2F_007

US-33 Road Widening - Winns Church Rd to Ashland Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.18	2.60	0.01	570.84	26.29	602.84	196.10	13.64	484.92	0.00
Benefit Score	**1.29**											
Project Cost	**$43.1M**											
Cost Benefit Score	**0.30**											

Highway

Hanover

P2F_008

Creighton Rd Road Widening - I-295 to Cold Harbor Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.14	6.41	0.00	411.13	27.89	318.59	192.00	12.34	89.90	0.00
Benefit Score	**1.22**											
Project Cost	**$15.4M**											
Cost Benefit Score	**0.79**											

Highway

Hanover

P2F_009

I-295 Auxiliary Lane - I-95 Southbound Branch to Chamberlayne Rd (Exit- 41) off ramp

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	60.95	6.67	0.00	0.00	0.01	94.68	35.77	1120.02	456.48	79.65	691.32	0.00
Benefit Score	**2.14**											
Project Cost	**$585.0K**											
Cost Benefit Score	**36.65**											

Highway **Hanover**

P2F_010

I-295 & Creighton Rd Interchange Modification - I-295 NB to Creighton Rd NB

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	12.60	2.80	0.00	0.00	0.00	142.31	39.99	85.74	24.95	10.20	5.14	0.00
Benefit Score	**0.35**											
Project Cost	**$3.3M**											
Cost Benefit Score	**1.05**											

Highway

Hanover

P2F_011

Pole Green Rd Road Widening - Rural Point Rd to Walnut Grove Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.57	16.02	0.01	590.06	28.15	275.01	112.50	4.19	0.00	0.00
Benefit Score	**0.76**											
Project Cost	**$31.2M**											
Cost Benefit Score	**0.24**											

Highway

Hanover

P2F_012

Pole Green Rd Road Widening - Walnut Grove Rd to US-360

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	1.00	22.70	0.01	757.39	27.99	157.15	44.41	10.29	0.00	0.00
Benefit Score	**0.58**											
Project Cost	**$35.6M**											
Cost Benefit Score	**0.16**											

Highway

Hanover

P2F_013

Ashland Rd Road Widening - Henrico Co. Line to US-33

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.64	17.83	0.00	2555.62	26.57	1222.71	564.86	64.99	520.04	0.01
Benefit Score	**4.20**											
Project Cost	**$74.9M**											
Cost Benefit Score	**0.56**											

Highway

Hanover

P2F_014

Ashland Rd Road Widening - US-33 to Blanton Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	1.30	0.01	0.00	28.04	728.34	626.46	29.02	572.30	0.01
Benefit Score	**2.91**											
Project Cost	**$47.5M**											
Cost Benefit Score	**0.61**											

Highway

Hanover

P2F_015

Rural Point Rd Road Widening - US-301 to Studley Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.11	0.81	0.01	748.02	37.38	1312.68	399.02	100.68	580.67	0.00
Benefit Score	**2.19**											
Project Cost	**$53.4M**											
Cost Benefit Score	**0.41**											

Highway

Hanover

P2F_016

Rural Point Rd Road Widening - Studley Rd to Pole Green Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	2571.71	34.35	182.56	86.49	3.54	0.00	0.00
Benefit Score	**1.50**											
Project Cost	**$37.1M**											
Cost Benefit Score	**0.40**											

Highway

Hanover

P2F_017

Meadowbridge Rd Road Widening - Henrico Co. Line to Atlee Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.02	4579.60	35.85	190.16	211.84	25.79	225.51	0.00
Benefit Score	**2.49**											
Project Cost	**$17.3M**											
Cost Benefit Score	**1.44**											

Highway

Hanover

P2F_018

Pouncey Tract Rd Road Widening - Henrico Co. Line to Ashland Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	2.60	0.01	0.00	26.14	15.96	12.93	2.50	17.63	0.00
Benefit Score	**0.05**											
Project Cost	**$3.3M**											
Cost Benefit Score	**0.16**											

Travel Demand Management

Hanover

P2F_019

Lewistown Rd/Lakeridge Pkwy or Ashland Park and Ride

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	15.30	120.00	0.00	0.00	0.00	0.00
Benefit Score	**0.04**											
Project Cost	**$5.0M**											
Cost Benefit Score	**0.08**											

Highway

Hanover

P2F_020

US 301 Widening - Hanover HS to Peaks Rd/Georgetown Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	836.27	27.15	1246.99	525.31	123.20	0.00	0.00
Benefit Score	**2.21**											
Project Cost	**$54.5M**											
Cost Benefit Score	**0.41**											

Highway

Hanover

P2F_021

US 301 Widening - Peaks Rd/Georgetown Rd to US-54

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	5.05	0.00	1661.07	32.67	904.28	531.15	144.23	394.91	0.00
Benefit Score	**3.06**											
Project Cost	**$54.6M**											
Cost Benefit Score	**0.56**											

Highway

Hanover

P2F_022

Pole Green Widening - Bell Creek Rd to Rural Point

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.01	0.00	23.44	446.82	230.45	29.86	160.00	0.00
Benefit Score	**0.70**											
Project Cost	**$41.7M**											
Cost Benefit Score	**0.17**											

Highway

Hanover

P2F_023

Rt. 33 Widening Ph. 1 - Chickahominy River to Winns Church Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.82	23.46	0.00	3569.88	26.05	335.05	370.12	11.69	56.50	0.00
Benefit Score	**3.42**											
Project Cost	**$20.5M**											
Cost Benefit Score	**1.67**											

Highway

Henrico

P2F_024

Charles City Rd Widening - Laburnum to Monahan

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.01	163.49	10.00	41.89	12.35	7.36	0.00	0.00
Benefit Score	**0.15**											
Project Cost	**$17.5M**											
Cost Benefit Score	**0.08**											

Highway

Henrico

P2F_025

Charles City Rd Widening - Williamsburg to Eastport

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.01	0.00	9.21	206.45	58.70	13.36	0.00	0.00
Benefit Score	**0.23**											
Project Cost	**$26.8M**											
Cost Benefit Score	**0.09**											

Highway

Henrico

P2F_026

Church Rd Widening - Three Chopt Rd to John Rolfe Pkwy

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.45	6.25	0.01	1937.99	11.09	1577.45	451.51	22.53	55.80	0.00
Benefit Score	**2.95**											
Project Cost	**$33.5M**											
Cost Benefit Score	**0.88**											

Active Transportation

Henrico

P2F_027

Cox Rd - Separated Bike Lane

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	69.44	4.64	23.18	8.06	0.00	0.50	1.62	1.62	77.83	0.00	6.25	0.00
Benefit Score	**1.33**											
Project Cost	**$9.0M**											
Cost Benefit Score	**1.48**											

Highway

Henrico

P2F_028

Creighton Rd Widening - Cedar Fork Rd to Hanover County Line

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	1522.19	50.53	394.01	171.52	13.62	0.00	0.00
Benefit Score	**1.62**											
Project Cost	**$36.1M**											
Cost Benefit Score	**0.45**											

Highway

Henrico

P2F_029

Creighton Rd Widening - Sandy Ln to Richmond City Limits

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	166.70	12.45	341.75	108.45	11.53	0.00	0.00
Benefit Score	**0.97**											
Project Cost	**$25.0M**											
Cost Benefit Score	**0.39**											

Highway

Henrico

P2F_030

Darbytown Rd Widening - City limits to Laburnum Ave

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.04	0.00	0.01	2268.69	15.76	1443.90	451.34	68.64	224.72	0.00
Benefit Score	**3.23**											
Project Cost	**$70.2M**											
Cost Benefit Score	**0.46**											

Highway

Henrico

P2F_031

Glenside Drive and Horsepen Road Safety Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	62.25	27.17	0.18	6.33	0.01	404.14	6.40	192.80	68.75	6.02	0.00	0.00
Benefit Score	**0.86**											
Project Cost	**$21.5M**											
Cost Benefit Score	**0.40**											

Highway

Henrico

P2F_032

I- 64 & N. Gayton Rd New Interchange

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	6.29	104.59	0.03	15177.83	21.00	14895.63	4334.63	222.39	422.12	0.01
Benefit Score	**22.23**											
Project Cost	**$133.0M**											
Cost Benefit Score	**1.67**											

Highway

Henrico

P2F_033

I-295 Auxiliary Lane from I-64 WB on-ramp to Nuckols Road SB (Exit 51)

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	31.05	2.61	0.00	0.00	0.00	0.00	10.50	504.20	168.73	6.05	0.00	0.00
Benefit Score	**1.18**											
Project Cost	**$29.0M**											
Cost Benefit Score	**0.41**											

Highway

Henrico

P2F_034

I-295 Interchange Modification (Exit 43)

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	4.50	0.93	0.13	3.41	0.00	608.85	9.84	1103.03	398.92	26.65	81.93	0.00
Benefit Score	**1.34**											
Project Cost	**$10.0M**											
Cost Benefit Score	**1.34**											

Highway

Henrico

P2F_035

I-295 Interchange Modification - Exit 43 to end of Collector-Distributor Lane

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	47.25	6.46	0.00	0.00	0.00	27.63	13.75	940.21	325.99	184.21	0.00	0.00
Benefit Score	**2.34**											
Project Cost	**$10.0M**											
Cost Benefit Score	**2.34**											

Travel Demand Management

Henrico

P2F_036

I-295 at US-60-Technology Blvd - New Park and Ride Lot

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	30.88	72.00	0.00	0.00	0.00	0.00
Benefit Score	**0.02**											
Project Cost	**$5.0M**											
Cost Benefit Score	**0.05**											

Highway

Henrico

P2F_037

I-64 & Gaskins Rd Interchange Modification

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	115.50	9.87	0.00	0.00	0.01	0.00	4.68	1846.02	596.75	35.93	92.29	0.00
Benefit Score	**1.76**											
Project Cost	**$136.0M**											
Cost Benefit Score	**0.13**											

Highway

Henrico

P2F_038

I-64 & Parham Rd Interchange Modification

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	69.75	14.12	0.00	0.00	0.00	0.00	4.32	253.21	73.96	7.51	0.00	0.00
Benefit Score	**0.49**											
Project Cost	**$25.0M**											
Cost Benefit Score	**0.19**											

Highway

Henrico

P2F_039

I-64 & US-250 Interchange Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	123.00	9.53	0.00	0.00	0.01	0.00	3.56	637.04	162.28	6.31	0.00	0.00
Benefit Score	**1.30**											
Project Cost	**$148.2M**											
Cost Benefit Score	**0.09**											

Highway

Henrico

P2F_040

I-64 at I-295 in Short Pump - New Park and Ride Lot

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	259.69	3699.38	0.00	0.00	6.76	1425.27	414.99	432.13	0.00	0.00
Benefit Score	**23.05**											
Project Cost	**$7.0M**											
Cost Benefit Score	**32.92**											

Travel Demand Management

Henrico

P2F_041

I-64 Auxiliary Lane - Between Exit 178 and Exit 180 (both directions) & US-250 EB to I-64 EB ramp widening

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	210.45	26.17	0.50	10.58	0.01	1467.24	7.90	1200.40	626.16	15.81	59.11	0.00
Benefit Score	**3.06**											
Project Cost	**$75.3M**											
Cost Benefit Score	**0.41**											

Highway

Henrico

P2F_042

I-64 Auxiliary Lane - Between Exit 180 and Exit 181

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	47.15	5.59	0.00	0.00	0.01	0.00	8.24	321.63	227.98	3.06	4.87	0.00
Benefit Score	**0.46**											
Project Cost	**$21.8M**											
Cost Benefit Score	**0.21**											

Highway

Henrico

P2F_043

I-64 Auxiliary Lane - Between Exit 181 and Exit 183

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	94.50	6.20	0.00	0.00	0.00	225.01	8.55	1478.64	815.10	18.76	0.00	0.00
Benefit Score	**2.57**											
Project Cost	**$51.4M**											
Cost Benefit Score	**0.50**											

Highway

Henrico

P2F_044

I-64 Auxiliary Lane - Between Exit 183 and Exit 185 Westbound

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	413.70	18.83	3.64	57.22	0.00	1650.78	12.01	3542.04	1606.09	71.65	0.00	0.00
Benefit Score	**5.01**											
Project Cost	**$28.0M**											
Cost Benefit Score	**1.79**											

Highway

Henrico

P2F_045

I-64 Auxiliary Lane - Between Exit 183 and Exit 185 Eastbound

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	269.85	12.45	0.42	4.30	0.01	1939.64	10.77	3709.21	1562.76	62.30	0.00	0.00
Benefit Score	**5.47**											
Project Cost	**$27.0M**											
Cost Benefit Score	**2.02**											

Travel Demand Management

Henrico

P2F_046

I-64/US-60 at Laburnum Rd - New Park and Ride Lot

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	11.22	72.00	0.00	0.00	0.00	0.00
Benefit Score	**0.02**											
Project Cost	**$5.0M**											
Cost Benefit Score	**0.05**											

Transit

Richmond

P2F_047

Southside Transfer Center

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00
Benefit Score	**0.35**											
Project Cost	**$10.0M**											
Cost Benefit Score	**0.35**											

Transit

Richmond

P2F_048

Downtown Transfer Center

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	3.38	0.00	0.00	0.00	0.00	0.00
Benefit Score	**0.96**											
Project Cost	**$50.0M**											
Cost Benefit Score	**0.19**											

Transit

Henrico / Richmond

P2F_049

Northside Transfer Center

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	9.00	0.00	0.00	0.00	0.00	0.00
Benefit Score	**0.66**											
Project Cost	**$10.0M**											
Cost Benefit Score	**0.66**											

Transit

Richmond

P2F_050

North-South BRT - Phase 1 - Azalea to Downtown to Stonebridge

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	16419.06	443.88	38.49	607.91	0.00	0.00	6.16	1399.73	407.55	300.42	0.00	0.00
Benefit Score	**24.34**											
Project Cost	**$400.0M**											
Cost Benefit Score	**0.61**											

Transit

Henrico

P2F_051

Western BRT Extension - Phase 1 - Willow Lawn to Parham

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	3591.08	186.91	11.05	266.95	0.02	4309.70	4.58	263.22	76.64	65.05	0.00	0.00
Benefit Score	**8.11**											
Project Cost	**$65.0M**											
Cost Benefit Score	**1.25**											

Transit

Henrico / Richmond

P2F_052

Eastern BRT Airport Extension - Rocketts Landing to Airport

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	2925.37	177.40	28.45	215.55	0.02	1749.38	6.52	342.05	99.59	89.55	0.00	0.00
Benefit Score	**6.97**											
Project Cost	**$100.0M**											
Cost Benefit Score	**0.70**											

Transit

Henrico

P2F_053

North-South BRT (VCC to Azalea) - Phase 2a

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	2999.75	115.31	49.93	650.62	0.00	0.00	9.03	771.18	224.54	448.16	770.41	0.00
Benefit Score	**12.20**											
Project Cost	**$85.0M**											
Cost Benefit Score	**1.44**											

Transit

Chesterfield

P2F_054

North-South BRT (Stonebridge to Walmart Way) - Phase 2b

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	4737.70	122.74	49.59	930.48	0.00	0.00	4.86	995.11	289.74	500.43	0.00	0.00
Benefit Score	**15.36**											
Project Cost	**$100.0M**											
Cost Benefit Score	**1.54**											

Transit

Henrico

P2F_055

Western BRT Extension - Phase 2 - Parham to Short Pump

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	6100.00	223.34	13.92	286.37	0.00	0.00	6.18	860.67	250.46	497.60	2497.74	0.00
Benefit Score	**13.62**											
Project Cost	**$85.0M**											
Cost Benefit Score	**1.60**											

Transit

Henrico / Richmond

P2F_056

West End South BRT

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	10172.82	251.63	0.00	0.00	0.01	70.86	5.78	1503.35	437.73	749.54	1211.42	0.00
Benefit Score	**18.00**											
Project Cost	**$300.0M**											
Cost Benefit Score	**0.60**											

Transit

Hanover / Henrico / Richmond

P2F_057

Mechanicsville Turnpike BRT

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	9293.04	181.55	4.44	146.88	0.00	0.00	9.98	1256.39	365.82	453.30	0.00	0.00
Benefit Score	**14.65**											
Project Cost	**$175.0M**											
Cost Benefit Score	**0.84**											

Highway

New Kent

P2F_058

Route 106 Widening (2L to 4L): City Center/I-64 DDI to Parrish Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.04	7.46	0.00	0.00	33.10	2.49	18.60	1.87	180.72	0.00
Benefit Score	**0.59**											
Project Cost	**$14.6M**											
Cost Benefit Score	**0.41**											

Active Transportation

New Kent

P2F_059

Shared Use Path: Providence Forge to Lanexa along US-60

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	3.98	0.00	0.00	0.21	8.04	8.04	13.36	0.00	7.17	0.00
Benefit Score	**0.35**											
Project Cost	**$26.1M**											
Cost Benefit Score	**0.14**											

Active Transportation

New Kent

P2F_060

Shared Use Path: Eltham to Lanexa

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	62.13	1.81	2.11	0.00	0.00	0.15	7.85	7.85	7.08	0.00	5.26	0.00
Benefit Score	**0.29**											
Project Cost	**$32.2M**											
Cost Benefit Score	**0.09**											

Active Transportation

New Kent

P2F_061

Shared Use Path: New Kent Courthouse to Talleysville along 249

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	1.47	0.00	0.00	0.06	7.71	7.71	4.94	0.00	1.91	0.00
Benefit Score	**0.11**											
Project Cost	**$16.4M**											
Cost Benefit Score	**0.07**											

Active Transportation

New Kent

P2F_062

Shared Use Path: Talleysville to Charles City County line along 249/106

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	3.95	0.00	0.00	0.14	7.36	7.36	13.25	0.00	5.48	0.00
Benefit Score	**0.30**											
Project Cost	**$16.4M**											
Cost Benefit Score	**0.18**											

Active Transportation

New Kent

P2F_063

Shared Use Path: Courthouse Rd from Rte 249 to Charles City County Line

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	2.89	0.00	0.00	0.13	8.42	8.42	9.70	0.00	5.06	0.00
Benefit Score	**0.24**											
Project Cost	**$19.9M**											
Cost Benefit Score	**0.12**											

Highway

Richmond

P2F_064

Bryan Park Interchange Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	233.25	7.56	1.66	41.44	0.00	0.00	11.22	446.36	144.28	23.85	0.00	0.00
Benefit Score	**0.91**											
Project Cost	**$80.0M**											
Cost Benefit Score	**0.11**											

Highway

Richmond

P2F_065

Belvidere I-95/I-64 Interchange Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	135.50	22.25	3.28	16.35	0.02	7812.05	3.31	5391.81	2019.11	146.73	0.00	0.00
Benefit Score	**8.78**											
Project Cost	**$80.0M**											
Cost Benefit Score	**1.10**											

Highway

Richmond

P2F_066

Richmond Marine Terminal Interstate Access Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	187.50	14.74	1.30	11.83	0.00	2741.94	3.38	195.66	56.94	19.06	52.79	0.00
Benefit Score	**1.73**											
Project Cost	**$80.0M**											
Cost Benefit Score	**0.22**											

Highway

Richmond

P2F_070

New interchange of I-95 with Bellemeade Road

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	75.00	12.25	4.83	23.75	0.01	5042.80	6.52	941.86	278.52	88.99	0.00	0.00
Benefit Score	**3.68**											
Project Cost	**$250.0M**											
Cost Benefit Score	**0.15**											

Highway

Richmond

P2F_073

Reconnect Jackson Ward - I-95/I-64 Cap

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	2240.00	393.59	0.00	0.00	0.00	0.00	6.18	0.00	0.00	0.00	0.00	0.00
Benefit Score	**3.23**											
Project Cost	**$200.0M**											
Cost Benefit Score	**0.16**											

Active Transportation

Richmond

P2F_074

Shared Use Path: Fall Line Trail - Richmond Sections

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	628.66	12.65	160.37	0.00	0.02	13.03	5.78	5.78	538.45	0.00	989.18	0.02
Benefit Score	**18.71**											
Project Cost	**$45.0M**											
Cost Benefit Score	**4.16**											

Highway

Chesterfield / Richmond

P2F_075

Chippenham Parkway at US-60/Midlothian Turnpike Interchange Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	131.25	12.60	0.36	16.26	0.00	0.00	9.98	554.22	186.56	5.24	0.00	0.00
Benefit Score	**0.66**											
Project Cost	**$50.0M**											
Cost Benefit Score	**0.13**											

Highway

Chesterfield / Richmond

P2F_076

Chippenham Parkway at US-360/Hull St Interchange Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	108.00	11.87	0.07	0.00	0.00	2356.87	33.10	943.76	372.54	15.70	0.00	0.00
Benefit Score	**1.98**											
Project Cost	**$50.0M**											
Cost Benefit Score	**0.40**											

Highway

Richmond

P2F_077

Route 1 Great Streets Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	923.25	199.47	2.44	37.24	0.01	1305.93	3.83	3814.52	1021.35	94.94	0.00	0.00
Benefit Score	**5.28**											
Project Cost	**$150.0M**											
Cost Benefit Score	**0.35**											

Highway

Richmond

P2F_078

Hull Street Intersection & Pedestrian Improvements - Hull Street at Midlothian Turnpike & Clopton Street

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	518.70	3460.13	0.00	0.00	0.01	0.00	2.78	269.10	85.64	5.99	229.65	0.00
Benefit Score	**8.40**											
Project Cost	**$27.0M**											
Cost Benefit Score	**3.11**											

Highway

Richmond

P2F_079

Walmsley Boulevard Extension & Shared Use Path

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	1.87	23.47	0.01	1705.65	7.39	942.04	274.13	70.08	0.00	0.00
Benefit Score	**1.94**											
Project Cost	**$82.0M**											
Cost Benefit Score	**0.24**											

Highway

Richmond

P2F_081

US-60 & Belt Blvd Interchange Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	226.20	157.03	1.75	27.26	0.01	1499.14	4.70	83.07	52.33	1.76	3.95	0.00
Benefit Score	**1.43**											
Project Cost	**$24.0M**											
Cost Benefit Score	**0.60**											

Highway

P2F_082

Richmond

VA-10 & Walmsley Blvd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	234.00	555.40	0.00	0.00	0.01	0.00	6.90	26.36	23.08	0.40	9.70	0.00
Benefit Score	**1.50**											
Project Cost	**$12.9M**											
Cost Benefit Score	**1.16**											

Highway

P2F_083

Richmond

VA-161 & Broad Rock Blvd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	109.20	154.92	0.00	0.00	0.00	0.00	3.80	64.98	26.68	1.54	83.97	0.00
Benefit Score	**0.56**											
Project Cost	**$12.9M**											
Cost Benefit Score	**0.44**											

Highway

Richmond

P2F_084

VA-161, Brookland Pkwy & Westwood Ave

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	117.00	272.62	1.43	45.24	0.01	0.00	2.17	449.98	143.16	15.07	0.00	0.00
Benefit Score	**1.43**											
Project Cost	**$11.1M**											
Cost Benefit Score	**1.29**											

Highway

Hanover

P2F_085

New Ashcake Rd Road Extension from New Ashcake Rd to Air Park Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	2959.02	19.59	2535.63	678.28	179.80	853.00	0.00
Benefit Score	**4.51**											
Project Cost	**$29.7M**											
Cost Benefit Score	**1.52**											

Highway

Henrico

P2F_086

I-95 & Parham Rd Interchange Modification

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	19.50	1.65	0.00	0.00	0.00	2243.41	6.45	1150.26	428.93	31.39	172.68	0.00
Benefit Score	**2.14**											
Project Cost	**$39.0M**											
Cost Benefit Score	**0.55**											

Highway

Henrico

P2F_087

Lauderdale Dr Widening - Westbriar to Edenbury

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.46	10.39	0.00	2593.30	32.41	86.12	45.12	1.72	25.99	0.00
Benefit Score	**1.66**											
Project Cost	**$8.6M**											
Cost Benefit Score	**1.93**											

Active Transportation

Henrico

P2F_088

Shared Use Path: Fall Line Trail to Virginia Center Commons

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	8.97	0.00	0.00	0.02	3.04	3.04	30.12	0.00	1.00	0.00
Benefit Score	**0.41**											
Project Cost	**$2.2M**											
Cost Benefit Score	**1.86**											

Highway

Henrico

P2F_089

Masonic Ln/Brittles Ln Widening

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.01	3272.97	11.54	1179.75	361.14	45.95	53.64	0.00
Benefit Score	**2.51**											
Project Cost	**$28.1M**											
Cost Benefit Score	**0.89**											

Active Transportation

Henrico

P2F_090

Mountain Rd - Shared Use Path

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	17.08	0.00	0.00	0.35	3.91	3.91	57.36	0.00	14.55	0.00
Benefit Score	**1.04**											
Project Cost	**$13.0M**											
Cost Benefit Score	**0.80**											

Highway

Henrico

P2F_091

N Gayton Rd Widening

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.01	1821.73	14.52	411.23	124.20	4.50	51.77	0.00
Benefit Score	**1.09**											
Project Cost	**$24.8M**											
Cost Benefit Score	**0.44**											

Highway

Henrico

P2F_092

Nuckols Rd Widening with pedestrian facilities - Shady Grove Rd - Springfield Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	3.15	59.56	0.01	7447.51	11.84	4902.11	2349.89	76.89	759.52	0.02
Benefit Score	**14.28**											
Project Cost	**$30.0M**											
Cost Benefit Score	**4.76**											

Highway

Henrico

P2F_093

Pemberton Rd Widening with pedestrian facilities - Quioccasin Rd to US-250

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.40	7.67	0.01	2904.20	9.59	5628.16	1443.82	47.56	365.17	0.01
Benefit Score	**7.44**											
Project Cost	**$42.0M**											
Cost Benefit Score	**1.77**											

Highway

Henrico

P2F_094

Pouncey Tract Rd Widening with pedestrian facilities - N Gayton Rd to Grey Oaks Park Dr

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.21	13.97	0.01	1222.74	17.56	84.96	105.57	1.72	11.51	0.00
Benefit Score	**1.06**											
Project Cost	**$13.0M**											
Cost Benefit Score	**0.82**											

Highway

Henrico

P2F_095

Pouncey Tract Rd Widening with pedestrian facilities - W Broad St to N Gayton Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	1.66	34.44	0.01	7199.66	13.08	3474.55	1274.13	30.30	173.09	0.01
Benefit Score	**9.34**											
Project Cost	**$25.6M**											
Cost Benefit Score	**3.65**											

Highway

Henrico

P2F_096

Pouncey Tract Rd Widening with bike & pedestrian facilities - Nuckols Rd to Grey Oaks Park Dr

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.01	1429.86	15.03	39.98	40.23	0.14	0.00	0.00
Benefit Score	**0.66**											
Project Cost	**$10.0M**											
Cost Benefit Score	**0.66**											

Highway

Henrico

P2F_097

Richmond Henrico Tpk Widening with bike & pedestrian facilities - Hanover line to Railroad Crossing

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	51.24	46.16	89.92	6.16	0.00	0.00
Benefit Score	**0.16**											
Project Cost	**$66.0M**											
Cost Benefit Score	**0.02**											

Highway

Henrico

P2F_098

River Rd Widening with pedestrian facilities - Sleepy Hollow to VA-150

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.01	0.00	20.45	134.39	91.63	0.97	0.00	0.00
Benefit Score	**0.16**											
Project Cost	**$22.5M**											
Cost Benefit Score	**0.07**											

Highway

Henrico

P2F_099

S Airport Dr Widening with bike & pedestrian facilities - Audubon Dr to Williamsburg Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.28	12.67	0.00	0.00	8.67	123.06	94.46	10.16	4.97	0.00
Benefit Score	**0.55**											
Project Cost	**$5.5M**											
Cost Benefit Score	**1.00**											

Highway

Henrico

P2F_100

Three Chopt Rd Widening with pedestrian facilities - Gaskins to Parham

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.36	6.96	0.01	3996.74	9.81	2741.50	660.93	30.96	0.00	0.00
Benefit Score	**3.61**											
Project Cost	**$35.0M**											
Cost Benefit Score	**1.03**											

Highway

Henrico

P2F_101

Three Chopt Rd Widening with pedestrian facilities - Skipwith to Horsepen

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.41	8.47	0.01	549.95	5.85	624.99	257.71	6.71	82.05	0.00
Benefit Score	**1.42**											
Project Cost	**$15.0M**											
Cost Benefit Score	**0.95**											

Highway

Henrico

P2F_102

Woodman Rd Widening with pedestrian facilities - Hermitage to Hilliard

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.01	0.00	15.47	218.42	185.13	1.23	27.10	0.00
Benefit Score	**0.31**											
Project Cost	**$5.0M**											
Cost Benefit Score	**0.63**											

Highway

Henrico

P2F_103

Woodman Rd Widening with pedestrian facilities - Mountain to Hungary

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.08	0.00	0.01	1517.13	13.13	1635.93	386.17	59.88	0.00	0.00
Benefit Score	**2.69**											
Project Cost	**$80.0M**											
Cost Benefit Score	**0.34**											

Highway

Henrico

P2F_105

Springfield Rd Relocation with bicycle/pedestrian facilities - Francistown to Olde Millbrooke Way

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.01	2564.12	13.67	1541.23	448.50	27.34	0.00	0.00
Benefit Score	**2.30**											
Project Cost	**$37.1M**											
Cost Benefit Score	**0.62**											

Highway

Henrico

P2F_106

Springfield Road Operational & Safety Improvements - Staples Mill Rd to Francistown Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	18.00	14.97	0.16	0.16	0.01	0.00	10.48	76.58	33.68	3.86	14.41	0.00
Benefit Score	**0.16**											
Project Cost	**$17.9M**											
Cost Benefit Score	**0.09**											

Highway

Henrico

P2F_107

Route 60/Route 33/Beulah Rd Roundabout & Gateway Project

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	167.70	241.93	0.00	0.00	0.01	0.00	7.43	10.73	8.05	3.88	37.47	0.00
Benefit Score	**0.76**											
Project Cost	**$13.2M**											
Cost Benefit Score	**0.57**											

Highway **Henrico**

P2F_108

Nine Mile Rd Operational & Safety Improvements - Gordons Ln to Dabbs House Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	434.16	300.89	0.07	0.00	0.01	975.56	7.61	75.23	34.74	8.37	0.00	0.00
Benefit Score	**2.79**											
Project Cost	**$22.3M**											
Cost Benefit Score	**1.25**											

Active Transportation

Henrico

P2F_109

Shared Use Path: Nuckols Rd Trail - Springfield Rd to Francistown Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	62.13	20.37	11.69	0.00	0.00	0.07	2.71	2.71	39.25	0.00	3.14	0.00
Benefit Score	**0.69**											
Project Cost	**$7.3M**											
Cost Benefit Score	**0.95**											

Active Transportation

Henrico

P2F_110

Shared Use Path: Monument Ave - Willow Lawn Dr to Bremo Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	10.96	4.48	15.71	0.00	0.00	0.07	0.88	0.88	52.76	0.00	4.04	0.00
Benefit Score	**0.77**											
Project Cost	**$10.0M**											
Cost Benefit Score	**0.77**											

Active Transportation

Henrico

P2F_111

Shared Use Path: Westham Trail - VA-150 to Goochland County Boundary

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	7.31	1.18	5.82	0.00	0.00	0.19	8.44	8.44	19.53	0.00	10.39	0.00
Benefit Score	**0.43**											
Project Cost	**$30.0M**											
Cost Benefit Score	**0.14**											

Active Transportation

Henrico

P2F_112

Shared Use Path: RF&P Trails - Glen Allen Elementary to Glover Park

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	7.12	0.00	0.00	0.08	4.95	4.95	23.91	0.00	2.63	0.00
Benefit Score	**0.38**											
Project Cost	**$10.8M**											
Cost Benefit Score	**0.35**											

Active Transportation

Henrico

P2F_113

Shared Use Path: New Market Heights Trail - Four Mile Creek Park to Deep Bottom Park

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.84	0.00	0.00	0.02	9.38	9.38	2.83	0.00	0.63	0.00
Benefit Score	**0.06**											
Project Cost	**$32.0M**											
Cost Benefit Score	**0.02**											

Active Transportation

Henrico

P2F_114

Shared Use Path: Wilton on the James Trail

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	6.80	0.00	0.00	0.09	5.74	5.74	22.82	0.00	3.59	0.00
Benefit Score	**0.37**											
Project Cost	**$5.0M**											
Cost Benefit Score	**0.74**											

Highway

Henrico

P2F_115

Williamsburg Rd Operational & Safety Improvements - Randall Ave to Charles City Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	265.32	276.76	0.00	0.00	0.01	0.00	nan	4.50	12.81	1.06	17.16	0.00
Benefit Score	**0.91**											
Project Cost	**$30.0M**											
Cost Benefit Score	**0.30**											

Highway

Henrico

P2F_116

Gayton Rd Operational & Safety Improvements - Pump Rd to John Rolfe Pkwy

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	30.75	16.59	0.00	0.00	0.01	143.03	7.98	295.86	78.43	4.06	31.00	0.00
Benefit Score	**0.36**											
Project Cost	**$10.0M**											
Cost Benefit Score	**0.36**											

Highway **Henrico**

P2F_117

Patterson Ave Operational & Safety Improvements - Three Chopt to Pump Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	184.50	16.61	0.20	14.88	0.00	0.00	6.03	3801.80	1051.03	74.12	0.00	0.00
Benefit Score	**3.47**											
Project Cost	**$30.0M**											
Cost Benefit Score	**1.16**											

Highway

Henrico

P2F_118

Parham Rd Operational & Safety Improvements - St Charles Rd to Chamberlayne Avenue

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	88.50	21.95	0.11	0.00	0.01	3393.66	14.19	2596.80	799.54	222.63	0.00	0.00
Benefit Score	**4.86**											
Project Cost	**$10.0M**											
Cost Benefit Score	**4.86**											

Highway

Henrico

P2F_119

Parham Road Operational & Safety Improvements - Holly Hill to Three Chopt

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	297.48	79.47	0.00	0.00	0.01	232.88	3.62	258.18	89.04	2.44	0.00	0.00
Benefit Score	**0.79**											
Project Cost	**$14.4M**											
Cost Benefit Score	**0.55**											

Highway

Henrico

P2F_120

W. Broad St - I-64 to Goochland line

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	469.50	39.08	1.92	34.38	0.01	1557.66	8.72	1152.80	467.56	22.08	299.21	0.00
Benefit Score	**3.04**											
Project Cost	**$66.0M**											
Cost Benefit Score	**0.46**											

Highway

Henrico

P2F_121

Route 1/Brook Rd Operational & Safety Improvements - Parham to Magnolia Ridge

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	240.00	22.15	0.00	0.00	0.01	0.00	6.86	3919.42	1027.42	235.60	315.11	0.00
Benefit Score	**4.58**											
Project Cost	**$15.0M**											
Cost Benefit Score	**3.06**											

Highway **Henrico**

P2F_122

Route 1/Brook Rd Operational & Safety Improvements - Azalea Ave to Hilliard

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	262.50	29.16	0.00	0.00	0.01	0.00	12.74	585.61	180.48	13.77	0.00	0.00
Benefit Score	**0.85**											
Project Cost	**$45.0M**											
Cost Benefit Score	**0.19**											

Highway

Henrico

P2F_123

Route 301/Chamberlayne Rd - Azalea Ave to I-95

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	149.25	23.15	0.00	0.00	0.01	0.00	15.12	618.95	153.54	14.17	0.00	0.00
Benefit Score	**0.70**											
Project Cost	**$8.2M**											
Cost Benefit Score	**0.85**											

Highway

Henrico

P2F_124

Nine Mile Rd Operational & Safety Improvements - Dabbs House to Laburnum

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	165.00	46.59	0.00	0.00	0.01	1091.94	7.49	100.65	46.55	7.59	0.00	0.00
Benefit Score	**0.87**											
Project Cost	**$15.0M**											
Cost Benefit Score	**0.58**											

Highway

Henrico

P2F_125

S. Laburnum Ave Operational & Safety Improvements - Williamsburg to Nine Mile

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	363.75	31.87	0.06	4.12	0.00	0.00	5.52	468.89	147.68	25.61	79.47	0.00
Benefit Score	**1.01**											
Project Cost	**$16.2M**											
Cost Benefit Score	**0.62**											

Highway

Henrico

P2F_126

Staples Mill Rd Widening - Hungary Springs to Mountain Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.01	0.00	0.00	0.00	13.49	1504.60	486.36	52.11	212.77	0.00
Benefit Score	**1.67**											
Project Cost	**$13.6M**											
Cost Benefit Score	**1.23**											

Highway

Henrico

P2F_127

Staples Mill Rd & Old Staples Mill Intersection Improvement

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	865.67	6.09	95.30	41.49	2.50	41.11	0.00
Benefit Score	**0.53**											
Project Cost	**$10.0M**											
Cost Benefit Score	**0.53**											

Highway

Henrico

P2F_128

US-1 & E Parham Rd Intersection Improvement

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	48.75	28.04	0.00	0.00	0.00	796.61	5.40	383.04	144.21	22.18	74.73	0.00
Benefit Score	**0.93**											
Project Cost	**$10.0M**											
Cost Benefit Score	**0.93**											

Highway

Henrico

P2F_130

US-250 & Pouncey Tract Rd Intersection Improvement

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.52	5.29	0.01	0.00	4.70	517.81	183.46	7.37	1.15	0.00
Benefit Score	**1.58**											
Project Cost	**$10.0M**											
Cost Benefit Score	**1.58**											

Highway

Henrico

P2F_131

W Broad St and Parham Rd Intersection Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	123.00	24.17	0.00	0.00	0.01	0.00	5.65	170.30	106.10	3.33	0.00	0.00
Benefit Score	**0.39**											
Project Cost	**$14.0M**											
Cost Benefit Score	**0.28**											

Highway

Henrico

P2F_132

Parham Rd & Woodman Rd Intersection Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	7.50	2.51	0.00	0.00	0.00	0.00	5.33	57.65	43.76	1.33	0.00	0.00
Benefit Score	**0.14**											
Project Cost	**$16.2M**											
Cost Benefit Score	**0.08**											

Highway

Richmond

P2F_133

Bryan Park Interchange (I-95, I-64, I-195)

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	4.27	67.62	0.00	0.00	15.14	490.17	299.88	0.00	0.00	0.00
Benefit Score	**1.49**											
Project Cost	**$111.0M**											
Cost Benefit Score	**0.13**											

Travel Demand Management

Henrico

P2F_135

VA Center Commons/I-295/I-95 - New Park and Ride Lot

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	8.45	228.00	0.00	0.00	0.00	0.00
Benefit Score	**0.08**											
Project Cost	**$8.3M**											
Cost Benefit Score	**0.10**											

Travel Demand Management

Henrico

P2F_136

Willow Lawn/Staples Mill - New Park and Ride Lot

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	264.00	4626.73	0.01	0.00	3.92	955.20	278.12	373.51	1139.86	0.00
Benefit Score	**24.71**											
Project Cost	**$6.6M**											
Cost Benefit Score	**37.44**											

Transit

Henrico

P2F_137

W Broad St and Parham Rd area - New Park and Ride Lot & Transfer Station

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	6.64	174.00	0.00	0.00	0.00	0.00
Benefit Score	**0.06**											
Project Cost	**$10.0M**											
Cost Benefit Score	**0.06**											

Active Transportation

Charles City

P2F_140

Shared Use Path: VCT to New Kent County Line on Rte 106

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	1.90	0.00	0.00	0.13	7.94	7.94	6.38	0.00	4.36	0.00
Benefit Score	**0.19**											
Project Cost	**$30.5M**											
Cost Benefit Score	**0.06**											

Active Transportation

Charles City

P2F_141

Shared Use Path: School Complex to New Kent County Line on Rte 155

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	1.04	0.00	0.00	0.04	9.72	9.72	3.48	0.00	1.53	0.00
Benefit Score	**0.06**											
Project Cost	**$30.8M**											
Cost Benefit Score	**0.02**											

Highway

Goochland

P2F_142

River Road West (Route 6) Widening & Shared Use Path

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	226.80	17.01	0.00	0.00	0.00	209.50	37.70	3157.94	900.07	66.49	0.00	0.00
Benefit Score	**3.61**											
Project Cost	**$163.3M**											
Cost Benefit Score	**0.22**											

Highway

Goochland

P2F_143

Ashland Road (Route 623) Widening - South of I-64

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	25.88	206.72	131.49	7.10	121.80	0.00
Benefit Score	**0.33**											
Project Cost	**$45.3M**											
Cost Benefit Score	**0.07**											

Highway

Goochland

P2F_144

Ashland Road (Route 623) Widening - North of I-64

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.25	6.47	0.01	3675.79	23.76	806.24	358.05	46.78	82.89	0.00
Benefit Score	**3.08**											
Project Cost	**$36.7M**											
Cost Benefit Score	**0.84**											

Highway

P2F_145

Goochland

Fairground Road Extension

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	994.14	31.05	409.10	158.00	26.52	0.00	0.00
Benefit Score	**1.37**											
Project Cost	**$99.7M**											
Cost Benefit Score	**0.14**											

Active Transportation

Goochland

P2F_146

Shared Use Path: River Road West (Route 6)

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	62.13	21.31	1.14	0.00	0.00	0.01	5.08	5.08	3.82	0.00	0.44	0.00
Benefit Score	**0.17**											
Project Cost	**$15.3M**											
Cost Benefit Score	**0.11**											

Active Transportation

Goochland

P2F_147

Shared Use Path: East End/West Creek Trail

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	84.06	9.71	14.68	0.00	0.00	0.67	6.75	6.75	49.28	0.00	28.42	0.00
Benefit Score	**1.32**											
Project Cost	**$11.7M**											
Cost Benefit Score	**1.13**											

Highway

Powhatan

P2F_148

Andersons Highway Corridor Safety Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	73.50	7.36	0.93	5.88	0.00	5503.84	16.93	16.73	44.05	0.24	0.00	0.00
Benefit Score	**2.47**											
Project Cost	**$15.0M**											
Cost Benefit Score	**1.65**											

Transit

Richmond

P2F_149

Regional Bus Transit Hub

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	12.26	0.00	0.00	0.00	0.00	0.00
Benefit Score	**0.00**											
Project Cost	**$15.0M**											
Cost Benefit Score	**0.00**											

Highway

Chesterfield

P2F_156

360 (Magnolia Green Pkwy - Powhite Pkwy Extension) Widening

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	6.44	0.00	0.00	30.43	79.83	56.85	12.23	139.83	0.00
Benefit Score	**0.31**											
Project Cost	**$45.0M**											
Cost Benefit Score	**0.07**											

Highway

Chesterfield

P2F_157

Charter Colony Pkwy (Rolling Spring Rd - Woolridge Rd) Widening

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.03	0.00	0.01	2670.07	14.53	1508.90	791.98	25.23	1257.51	0.01
Benefit Score	**4.94**											
Project Cost	**$15.9M**											
Cost Benefit Score	**3.11**											

Active Transportation

Chesterfield

P2F_158

Shared Use Path: VA-150 to Jessup Road

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	91.38	5.17	10.80	0.00	0.00	0.09	4.07	4.07	36.26	0.00	4.46	0.00
Benefit Score	**0.66**											
Project Cost	**$1.8M**											
Cost Benefit Score	**3.75**											

Highway

Chesterfield

P2F_160

US 360 Widening - Otterdale Rd to Magnolia Green Pkwy

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	2.40	0.00	0.00	20.25	99.97	222.90	1.01	226.94	0.00
Benefit Score	**0.77**											
Project Cost	**$73.0M**											
Cost Benefit Score	**0.11**											

Highway

Chesterfield

P2F_161

Brandermill Pkwy Widening - Powhite Pkwy to Charter Colony Pkwy

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.01	0.00	16.11	164.92	53.43	5.33	93.70	0.01
Benefit Score	**1.54**											
Project Cost	**$14.1M**											
Cost Benefit Score	**1.09**											

Highway

Chesterfield

P2F_162

VA-150 & Dalebrook Dr Interchange Modification - NB

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	610.00	217.42	0.82	27.51	0.01	1442.26	7.96	125.30	51.60	3.87	0.00	0.00
Benefit Score	**2.19**											
Project Cost	**$5.5M**											
Cost Benefit Score	**3.97**											

Highway

Chesterfield

P2F_163

Powhite Parkway Extension, Phase 2 (4-lane concept) - Woolridge Rd to US 360

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	2.60	71.13	0.02	16960.59	44.36	28816.02	8606.37	524.68	5422.33	0.03
Benefit Score	**40.94**											
Project Cost	**$505.0M**											
Cost Benefit Score	**0.81**											

Highway

Chesterfield

P2F_164

Route 1/Willis Road Intersection Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	63.75	15.07	0.00	0.00	0.00	0.00	7.95	154.07	60.11	0.00	0.00	0.00
Benefit Score	**0.22**											
Project Cost	**$5.0M**											
Cost Benefit Score	**0.45**											

Highway

Chesterfield

P2F_165

Route 10/Route 1 Innovative Intersection

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	47.25	6.86	0.00	0.00	0.01	1537.08	6.71	211.87	81.77	12.65	0.00	0.00
Benefit Score	**0.95**											
Project Cost	**$60.0M**											
Cost Benefit Score	**0.16**											

Highway

Chesterfield

P2F_166

Route 10/Route 288 Interchange Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	29.25	1.57	0.00	0.00	0.01	0.00	12.82	162.68	74.52	2.81	29.21	0.00
Benefit Score	**0.21**											
Project Cost	**$90.0M**											
Cost Benefit Score	**0.02**											

Highway

Chesterfield

P2F_167

VA-150 & Hopkins Rd Interchange Modification

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	229.84	30.44	0.42	15.82	0.00	1494.67	5.66	221.50	142.26	10.04	0.00	0.00
Benefit Score	**1.80**											
Project Cost	**$36.3M**											
Cost Benefit Score	**0.50**											

Highway

Chesterfield

P2F_168

Meadowville Technology Parkway Widening at I-295

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	21.03	410.37	158.97	28.81	80.84	0.00
Benefit Score	**0.56**											
Project Cost	**$23.0M**											
Cost Benefit Score	**0.24**											

Highway

Chesterfield

P2F_169

Rt 60/Woolridge Innovative Intersection

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	33.15	7.40	1.68	24.31	0.01	3528.74	13.55	28.04	39.19	0.31	0.00	0.00
Benefit Score	**1.69**											
Project Cost	**$30.0M**											
Cost Benefit Score	**0.56**											

Highway

Chesterfield

P2F_170

I-95 (Willis Road to Route 10) - Widening (6 to 8)

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	1021.00	18.10	5.32	49.27	0.00	11651.67	13.54	4830.35	2496.48	311.26	453.86	0.01
Benefit Score	**15.22**											
Project Cost	**$88.7M**											
Cost Benefit Score	**1.72**											

Highway

Chesterfield

P2F_171

Powhite Pkwy/Charter Colony Interchange

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	34.20	3.95	0.11	13.60	0.00	0.00	15.91	608.67	351.61	18.47	220.51	0.00
Benefit Score	**0.93**											
Project Cost	**$60.0M**											
Cost Benefit Score	**0.16**											

Highway

Chesterfield

P2F_172

Route 288/Route 1 Interchange Improvement

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	10.85	0.88	0.00	0.00	0.00	0.00	10.21	735.07	270.64	26.70	0.00	0.00
Benefit Score	**0.76**											
Project Cost	**$30.0M**											
Cost Benefit Score	**0.25**											

Highway

Chesterfield

P2F_173

288/360: Route 360/Commonwealth Centre Parkway/Old Hundred Road - Diverging Diamond Interchange

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	56.25	2.57	0.45	0.00	0.00	4295.67	7.32	1033.45	361.97	36.02	0.00	0.00
Benefit Score	**2.88**											
Project Cost	**$142.0M**											
Cost Benefit Score	**0.20**											

Highway

Chesterfield

P2F_174

Powhite Parkway, Chippenham Parkway, Jahnke Road - Access, New Alignment, and Road Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	1.26	18.27	0.01	1715.80	12.36	95.98	52.85	3.85	91.83	0.00
Benefit Score	**0.97**											
Project Cost	**$65.0M**											
Cost Benefit Score	**0.15**											

Highway

P2F_175

Chesterfield

Route 76 ITS Investments

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	322.50	4.01	0.00	0.00	0.00	0.00	8.26	0.00	0.00	0.00	0.00	0.00
Benefit Score	**0.35**											
Project Cost	**$12.0M**											
Cost Benefit Score	**0.29**											

Highway

Chesterfield

P2F_176

Route 288 ITS Investments (Phase 2)

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	792.00	4.62	0.00	0.00	0.00	0.00	11.62	0.00	0.00	0.00	0.00	0.00
Benefit Score	**0.85**											
Project Cost	**$12.0M**											
Cost Benefit Score	**0.71**											

Highway

Chesterfield

P2F_177

Route 150 ITS Investments

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	1205.25	6.67	0.00	0.00	0.00	0.00	8.69	0.00	0.00	0.00	0.00	0.00
Benefit Score	**1.29**											
Project Cost	**$12.0M**											
Cost Benefit Score	**1.08**											

Highway

P2F_178

Chesterfield

I-95 ITS Investments

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	1670.25	6.08	0.00	0.00	0.00	0.00	14.07	0.00	0.00	0.00	0.00	0.00
Benefit Score	**1.79**											
Project Cost	**$12.0M**											
Cost Benefit Score	**1.49**											

Highway

Chesterfield

P2F_179

Sight and Sound Barriers - Routes 76, 288

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	10.53	0.00	0.00	0.00	0.00	0.00
Benefit Score	**0.00**											
Project Cost	**$52.0M**											
Cost Benefit Score	**0.00**											

Highway

Chesterfield

P2F_180

VA-150 & US-1 Interchange Modification

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	78.00	12.32	1.65	25.53	0.00	2930.94	12.62	340.33	129.61	11.61	0.00	0.00
Benefit Score	**1.79**											
Project Cost	**$56.8M**											
Cost Benefit Score	**0.31**											

Highway

Chesterfield

P2F_181

I-95/Willis Road - Interchange Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	1021.63	10.82	149.82	40.51	8.97	0.00	0.00
Benefit Score	**0.58**											
Project Cost	**$150.0M**											
Cost Benefit Score	**0.04**											

Highway

Chesterfield

P2F_182

RT 360/Duckridge/Hancock Village Shopping Center - High Capacity Intersection

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	15.40	3.26	0.00	0.00	0.01	0.00	9.39	36.83	18.23	2.66	54.41	0.00
Benefit Score	**0.10**											
Project Cost	**$17.5M**											
Cost Benefit Score	**0.06**											

Highway

Chesterfield

P2F_183

Route 360/Harbour Pointe Pkwy/Mockingbird Ln - High Capacity Intersection

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	19.80	3.37	0.00	0.00	0.00	584.57	8.91	118.11	89.69	5.33	0.00	0.00
Benefit Score	**0.45**											
Project Cost	**$20.5M**											
Cost Benefit Score	**0.22**											

Highway

Chesterfield

P2F_184

RT 360 at Spring Run Rd/Temie Lee Pkwy - High Capacity Intersection

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	137.50	12.58	0.00	0.00	0.01	0.00	5.32	15.55	66.88	0.48	81.21	0.00
Benefit Score	**0.45**											
Project Cost	**$26.6M**											
Cost Benefit Score	**0.17**											

Highway

Chesterfield

P2F_185

RT 360 at Winterpock Rd/Shopping Center Entrance - High Capacity Intersection

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	78.10	28.75	0.00	12.53	0.01	0.00	5.70	34.91	47.48	1.69	116.73	0.00
Benefit Score	**0.51**											
Project Cost	**$22.0M**											
Cost Benefit Score	**0.23**											

Highway

Chesterfield

P2F_186

Route 360/Deer Run Drive/Harbour View Court - High Capacity Intersection

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	145.20	6.34	0.00	0.00	0.00	0.00	8.01	54.75	65.21	1.40	0.00	0.00
Benefit Score	**0.27**											
Project Cost	**$22.2M**											
Cost Benefit Score	**0.12**											

Highway

Chesterfield

P2F_187

Rt 288 SB (Powhite Pkwy - Route 360) CD Road Extension

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	77.50	3.17	0.00	0.00	0.00	0.00	14.56	1269.04	653.20	42.77	544.85	0.00
Benefit Score	**1.84**											
Project Cost	**$201.0M**											
Cost Benefit Score	**0.09**											

Highway

Chesterfield

P2F_188

Huguenot Rd Capacity & Safety Improvements - Robious Rd to Cranbeck Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	101.20	21.77	0.00	1.01	0.01	2459.42	9.79	257.20	220.83	1.45	34.39	0.00
Benefit Score	**2.12**											
Project Cost	**$32.1M**											
Cost Benefit Score	**0.66**											

Highway

Chesterfield

P2F_189

Rt 60 Corridor Enhancements - Old Otterdale Rd to Woolridge Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	188.40	20.74	0.00	0.00	0.00	0.00	7.51	0.00	0.00	0.00	0.00	0.00
Benefit Score	**0.24**											
Project Cost	**$52.6M**											
Cost Benefit Score	**0.05**											

Active Transportation

Chesterfield

P2F_190

Shared Use Path: Fall Line Trail - Chesterfield Sections

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	595.76	5.80	94.58	8.30	0.01	9.49	4.14	4.14	317.57	0.00	400.12	0.01
Benefit Score	**12.81**											
Project Cost	**$60.7M**											
Cost Benefit Score	**2.11**											

Highway

Chesterfield

P2F_191

Courthouse Rd at Cherylann Rd R-Cut & Bike/Ped Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	50.60	20.58	1.26	33.60	0.00	321.83	7.98	58.29	45.92	1.85	0.00	0.00
Benefit Score	**1.44**											
Project Cost	**$11.7M**											
Cost Benefit Score	**1.23**											

Highway

Chesterfield / Richmond

P2F_192

I-95 SB Auxiliary Lane

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	480.70	22.52	1.27	11.83	0.00	0.00	24.25	137.68	208.45	5.43	1.00	0.00
Benefit Score	**0.96**											
Project Cost	**$37.9M**											
Cost Benefit Score	**0.25**											

Highway

Chesterfield

P2F_193

I-95 from Exit 62 (VA-288) to Exit 64 (Willis Rd) Road Widening) 6-8 lanes

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	433.00	15.67	0.00	0.00	0.01	0.00	13.75	998.29	683.80	52.38	128.75	0.00
Benefit Score	**2.05**											
Project Cost	**$15.5M**											
Cost Benefit Score	**1.33**											

Highway

Chesterfield

P2F_194

Courthouse Rd at Dakins Dr R-Cut and Bike/Ped Improvements

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	72.60	26.61	0.00	0.00	0.01	0.00	7.26	39.42	35.36	1.34	0.00	0.00
Benefit Score	**0.28**											
Project Cost	**$15.0M**											
Cost Benefit Score	**0.19**											

Highway

Hanover

P2F_195

RI-23-11: Hanover County US 301 (Chamberlayne Road)

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	61.50	17.53	0.13	5.09	0.01	0.00	8.54	667.33	230.63	46.94	386.89	0.00
Benefit Score	**1.12**											
Project Cost	**$41.3M**											
Cost Benefit Score	**0.27**											

Highway

Henrico / Richmond

P2F_196

I-64 WB Auxiliary Lane between Exits 185 and 186

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	517.50	15.99	2.14	24.88	0.00	124.58	13.85	330.43	324.40	7.18	0.00	0.00
Benefit Score	**1.32**											
Project Cost	**$16.6M**											
Cost Benefit Score	**0.79**											

Travel Demand Management

Goochland

P2F_197

US 288/US 250 interchange - New Park and Ride

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	24.55	60.00	0.00	0.00	0.00	0.00
Benefit Score	**0.02**											
Project Cost	**$2.5M**											
Cost Benefit Score	**0.08**											

Highway

Ashland

P2F_198

VA-54 Widening - Frances Rd to East Corporate Limits - 2L to 4L

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.67	2.60	0.00	1059.74	30.00	765.62	319.56	122.55	0.00	0.00
Benefit Score	**1.92**											
Project Cost	**$6.1M**											
Cost Benefit Score	**3.16**											

Highway

Chesterfield

P2F_199

288/360: Route 288 NB (Route 360 - Powhite Parkway) CD Road

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	75.50	3.33	0.00	0.00	0.00	715.97	14.56	843.89	464.74	24.82	433.68	0.00
Benefit Score	**2.01**											
Project Cost	**$300.0M**											
Cost Benefit Score	**0.07**											

Highway

Chesterfield

P2F_200

Rte 288 Widening (4L to 6L) - Rt 10 to Courthouse Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	114.00	4.78	0.47	0.00	0.00	825.84	25.65	1689.41	846.49	39.78	53.98	0.00
Benefit Score	**2.35**											
Project Cost	**$50.0M**											
Cost Benefit Score	**0.47**											

Highway

Chesterfield

P2F_201

Route 10 Safety and Operation Improvements - Jessup Rd to Cogbill Rd

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	69.75	12.44	0.00	0.00	0.01	0.00	7.14	237.32	80.95	9.12	41.33	0.00
Benefit Score	**0.38**											
Project Cost	**$70.0M**											
Cost Benefit Score	**0.05**											

Transit

Henrico

P2F_202

Willow Lawn Transfer Facility

Goal	Safety		Sustainability					Reliability			Resiliency	
Weight	25%		35%					25%			15%	
PM	F+I Crash Reduced	F+I Crash Rate	Access to Jobs	Access to Services	VMT per Capita	Air Quality	Impact to Resources	Person Thruput	Person Hours of Delay	Freight Corridor Thruput	Redundant Capacity	Connectivity
Weight	70%	30%	30%	30%	20%	20%	20%*	40%	40%	20%	50%	50%
Points	0.00	0.00	0.00	0.00	0.00	0.00	2.04	0.00	0.00	0.00	0.00	0.00
Benefit Score	**0.00**											
Project Cost	**$10.0M**											
Cost Benefit Score	**0.00**											