

# HOW TO READ A SCORECARD

A project scorecard is prepared for each project that is evaluated and scored. The scorecard is a snapshot of project information and scoring. The following provides a brief overview of the information contained in the scorecard.



## PROJECT SCORECARD

**Powhite NB at Chippenham Capacity and Safety Improvements** Project ID: 6740

**1** Construct a choice lane on Powhite Parkway NB at the on-ramp from Chippenham SB and extend the third express lane to the Chippenham Interchange; install rumble strips along the outside travel lanes of Powhite Parkway NB from the RT 150 interchange to the toll plaza.

|                   |                               |                              |              |
|-------------------|-------------------------------|------------------------------|--------------|
| <b>2</b> 6.1      | <b>#85</b> OF 397 STATEWIDE   | SMART SCALE Requested Funds  | \$17,169,000 |
| SMART SCALE SCORE | <b>#10</b> OF 75 DISTRICTWIDE | Total Project Cost           | \$17,169,000 |
|                   |                               | Project Benefit              | 10.5         |
|                   |                               | Project Benefit / Total Cost | 6.1          |

- 3** Submitting Entity: Richmond Regional Transportation Planning Organization
- Preliminary Engineering: Not Started
- Right of Way: Not Started
- Construction: Not Started
- Eligible Fund Program: HFP
- Evacuation Route: No
- VTRANS Need: Regional Network



**1 Project Overview:** Includes the project name, a short description of the project, and the application ID.

**2 Score Summary:** Provides the SMART SCALE score, rank, project cost, and benefit.

**3 Project Information:** Provides information about the project, applicant, delivery status, requested funding, and project need.

**4 Project Map:** Helps identify the limits of the project and the location of the project within the Commonwealth of Virginia.

**5 Scoring Table:** Displays detailed information on how the SMART SCALE score was determined. Factor and measure values are shown to allow the reader to follow the calculation steps and better understand how the project performed in each area.

| SMART SCALE Area Type B  |   |                                |                                       |  |                            |   |   |  |                        |  |                                  |  |  |  |
|--|---|--------------------------------|---------------------------------------|--|----------------------------|---|---|--|------------------------|--|----------------------------------|--|--|--|
| Factor   | Congestion Mitigation                     |                                | Safety                                |  | Accessibility              |   |   | Economic Development                                       |                        | Environment                            |                                  | Land Use                                 |  |  |
| Measure  | Increase in Peak Period Person Throughput | Reduction in Peak Period Delay | Reduction in Fatal and Injury Crashes | Reduction in Fatal and Injury Crash Rate | Increase in Access to Jobs | Increase in Access to Jobs for Impaired Populations | Increase in Access to Multimodal Travel Choices | Square Feet of Commercial/Industrial Development Supported | Tons of Goods Impacted | Improvement to Travel Time Reliability | Potential to Improve Air Quality | Impact to Natural and Cultural Resources | Support of Transportation-Efficient Land Development | Support of Transportation-Efficient Land Development |
| Measure Value  | 626.5 persons                             | 51.6 person hrs.               | 3.6 EPDO                              | 65.5 EPDO / 100M VMT                     | 342.4 jobs per resident    | 303.5 jobs per resident                             | 0.0 adjusted users                              | 97,388.6 adj. sq. ft.                                      | 23,862.7 daily tons    | 7,365,620.9 adj. buffer time index     | 0.0 adjusted points              | 0.03 impacted acres                      | 30.6 access <sup>1</sup> pop/dens/h                  | 19.8 access <sup>1</sup> pop/dens/h change           |
| Normalized Measure Value (0-100)                               | 33.6                                      | 8.5                            | 0.6                                   | 0.2                                      | 19.8                       | 15.4  | 0.0   | 0.2  | 1.9                    | 0.1                                    | 0.0                              | 8.7                                      | 46.3   | 30.0   |
| Measure Weight (% of Factor)                                   | 50%                                       | 50%                            | 70%                                   | 30%                                      | 60%                        | 20%   | 20%   | 60%  | 20%                    | 20%                                    | 100%                             | *  | 50%  | 50%  |
| Factor Value   | 21.0                                      |                                | 0.5                                   |  | 15.0                       |   |   | 0.5  |                        | 0.0                                    |                                  | 38.1                                     |  |  |
| Factor Weight (% of Project Score)                             | 15%                                       |                                | 20%                                   |  | 25%                        |   |   | 20%  |                        | 10%                                    |                                  | 10%                                      |  |  |
| Weighted Factor Value  | 3.2                                       |                                | 0.1                                   |  | 3.7                        |   |   | 0.1  |                        | 0.0                                    |                                  | 3.8                                      |  |  |
| Project Benefit  | 10.5                                      |                                |                                       |  |                            |   |   |  |                        |  |                                  |  |  |  |
| SMART SCALE Cost   | \$17,169,000                              |                                |                                       |  |                            |   |   |  |                        |  |                                  |  |  |  |
| SMART SCALE Score (Project Benefit per \$10M SMART SCALE Cost) | 6.1                                       |                                |                                       |  |                            |   |   |  |                        |  |                                  |  |  |  |

\*The second environment measure subtracts up to 5 points from the project benefit score. Because it is subtracted after combining all weighted factors, it has no measure weight and the 10% factor weight is not applied to it.

### How to calculate the SMART SCALE Score using the Scoring Table:

- The *Measure Value* is determined by assessing the data and characteristics of the project and is then normalized as a percentage of the highest *Measure Value* in that year's cohort of projects.
- The *Normalized Measure Value* is then multiplied by the *Measure Weight*.
- Normalized Measure Values* are then summed to equal the *Factor Value*.
- The *Factor Value* is then multiplied by the appropriate *Factor Weight* for the area type of the project.
- Project Benefit* is then calculated from the sum of the *Weighted Factor Values*.
- The *SMART SCALE Score* is calculated by taking the *Project Benefit* and dividing by the *SMART SCALE Cost* (in tens of millions).

### Explanations of Measures Values:

- Congestion Mitigation
  - Person throughput is the projected increase in persons moving through the project limits during the peak period for current year.
  - Delay is the projected reduction in cumulative time for all persons to move through the project limits for current year.
- Safety
  - Reduction of fatal and injury crashes and crash rate is calculated using the Equivalent Property Damage Only (EPDO) methodology used by FHWA. This equates all crash severities on the same scale by assigning a higher weight to fatal and injury crashes than those that are property damage only.
  - Crash rate reduction is determined by the number of crashes per 100 Million Vehicle Miles Traveled (VMT). This measure also uses the EPDO methodology stated in the first safety measure.
- Accessibility
  - Access to jobs is the number of jobs to which each person has access within 45 minutes (60 minutes for transit projects). The total number of jobs divided by the population equates to jobs per person.
  - Access to jobs for disadvantaged populations is calculated in the same manner as the first Accessibility measure, only for a particular subset of the population.
  - Increase to multimodal travel choices is determined by how the project supports travel choices and the connections between modes. Points are assigned based on project characteristics, and are then multiplied by the number of non-single occupancy vehicle users.
- Economic Development
  - Square Feet of Commercial and Industrial development supported uses either 50% or 100% of each development's square footage based on the proximity of the development to the project. A point value is then determined based on how the project fits with local and regional economic plans and policy, and is multiplied by the adjusted square feet of development.
  - Tons of goods impacted determines the amount of daily freight tons impacted by the project and multiplies the tonnage by a point value based on certain criteria.
  - Improvement to travel time reliability uses weather event frequency and impact as well as incident frequency and impact along with a buffer index to evaluate the improvement in travel time reliability. This value is multiplied by corridor Vehicle Miles Traveled (VMT) to scale the results.
- Environment
  - Potential to improve air quality uses specific criteria to assign point values to each project and multiplies them by the number of peak period non-single occupancy vehicle users.
  - The potential natural and cultural acreage impacted uses a buffer around the project limits, and is a subtractive measure based on the total potential sensitive acreage impacted.
- Land Use
  - Future Transportation Efficient Land Use measure reports a project's non-work accessibility scaled by the surrounding area's 2030 population and employment density.
  - Increase in Transportation Efficient Land Use measure reports a project's non-work accessibility scaled by the surrounding area's 2010 to 2030 increase in population and employment density.