Multimodal Prioritization
Overview

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Virginia Department of Transportation
AASHTO SCOD Annual Meeting June 22, 2016
Agenda

- Background
- Summary of the SMART SCALE Process
- Results from Round 1
- Lessons Learned from Round 1
- Annual Cycle
- Looking Ahead
House Bill 2 (SMART SCALE) Background

- 2013 General Assembly passed HB 2313 - Funding Increase
  - Eliminated 17.4 ¢/gallon gas tax
  - Replaced with a 3.5 % and 6% wholesale tax on gas and diesel including a floor on tax
  - Increased the tax on sale of motor vehicles
  - Increased sales and use tax from 4% to 4.3%
  - Provided for increase in fuel tax (1/1/15) if Congress failed to pass Marketplace Equity Act.
House Bill 2 (SMART SCALE) Background

• 2014 Bill directed the Commonwealth Transportation Board to develop a statewide prioritization process
  – Board must use quantifiable and objective measures for 6 factor areas
  – Board must consider highway, transit, rail, road, operational improvements and transportation demand management projects

• From 2014 to June 2015, staff worked closely with regional stakeholders, potential applicants, industry experts, and district staff to develop the SMART SCALE prioritization process

• First round of applications were received by October 1, 2015 for funding in the FY2017-FY2022 SYIP

• Second round of SMART SCALE will begin in August 2016 with the open period for applications, but pre-application discussions and planning should begin now
Strategic Framework for Funding the Right Projects

How it’s planned.

How it’s scored.

How it’s funded.
VTrans Needs Screening

- Eligibility and screening:
  - Corridors of statewide significance
  - Regional networks
  - Urban development areas
Eligible Applicants – High Priority Projects

<table>
<thead>
<tr>
<th>High Priority Projects</th>
<th>Regional Entities</th>
<th>Local Governments</th>
<th>Transit Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corridors of Statewide Significance</td>
<td>Yes</td>
<td>Yes, with support from regional entity</td>
<td>Yes, with support from relevant regional entity</td>
</tr>
<tr>
<td>Regional Networks</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes, with support from relevant entity</td>
</tr>
</tbody>
</table>

Projects must be located within the boundaries of the applying agency

Commonwealth Transportation Board may choose to submit up to 2 projects for consideration per solicitation
Eligible Applicants – Construction District Grants

- Only local governments may submit projects for consideration
- Project must be located within the boundary of the relevant local government
- Local governments may submit a joint application for projects that cross the boundary of a single local government
Application Process – Screening Process

- **High Priority Projects** – Project must meet a need identified for
  - Corridor of Statewide Significance
  - Regional Network

- **Construction District Grant Programs** – Project must meet a need identified for—
  - Corridor Statewide Significance
  - Regional Network
  - Urban Development Area
  - Safety
Factor Area Measures

- Forward looking
- Available Data Everywhere
- Understanding Measures Will Change
How a project will be measured
Factor Areas

- Safety
- Congestion mitigation
- Accessibility
- Environmental quality
- Economic development
- Land use and transportation coordination (areas with over 200,000 people)
Developing Project Scores

- Screen SMART SCALE Project
- Calc. of SMART SCALE Measures
- Internal and External Review for QA/QC
- Measure Values/Weighting
- Factor Weighting
- Project Scoring
- Project Cost
- Advance List of Scored Projects to CTB for Prioritization
Measures Selection

• **Transparent and understandable process**
  - Easy to communicate to project sponsors
  - Ability to evaluate projects with available resources

• **Measures applicable statewide and across modes**

• **Meet implementation schedule**
  - Establish process that can be implemented in Year 1 and improved over time
Factor Areas
Goals that guided measure development

- **Safety** – reduce the number and rate of fatalities and severe injuries
- **Congestion** – reduce person hours of delay and increase person throughput
- **Accessibility** – increase access to jobs and travel options
- **Economic Development** – support economic development, improve goods movement, and improve travel time reliability
- **Environmental Quality** – improve air quality and avoid impacts to the natural environment
- **Land Use** – support transportation efficient land development patterns
Evaluation Measures – Safety

- 50% based on expected reduction in fatal and severe injury crashes on the facility (100% of score for transit projects)

- 50% based on expected reduction in the rate of fatal and severe injury crashes on the facility
Evaluation Measures - Congestion Mitigation

• 50% based on expected reduction in person hours of delay up to posted speed limit

• 50% based on expected increase in person throughput in the corridor
Evaluation Measures - Accessibility

- 60% based on cumulative increase in access to jobs in the region

- 20% based on cumulative increase in access to jobs for disadvantaged populations in the region

- 20% based on increase in access to multimodal choices:
  - Projects receive points based on features that enhance multimodal access (Transit, Park and Ride, Bike/Ped, etc.)
Evaluation Measures - Environmental

• 50% on the degree to which the project is expected to reduce air emissions and greenhouse gases
  - Points awarded based on:
    ▪ Providing bicycle or pedestrian facilities
    ▪ Improvements for transit
    ▪ Addressing freight bottlenecks
    ▪ New or expanded Park and Ride lot
    ▪ Provisions for hybrid/electric vehicles or
    ▪ Energy efficient infrastructure

• 50% on potential impact to natural, cultural and historic resources from the project (based on acres of land impacted)
Evaluation Measures - Economic Development

- **60% based on support for economic development plans**
  - Points awarded based on consistency with local/regional economic development strategy
  - For each project, development sites are identified that the project supports – used to weight ED points

- **20% based on expected improvements to travel time reliability of the facility**

- **20% based on improved intermodal access and efficiency**
Evaluation Measures – Land Use

• 100% on the support of transportation efficient land use patterns
  – Points awarded based on:
    ▪ Promoting walkable bicycle friendly mixed use development
    ▪ Supporting in-fill development
    ▪ Having an adopted corridor/access management plan
  – Points scaled by projected population and employment density
Factor Weighting Categories by MPO and PDC
## Factor Weighting Framework

<table>
<thead>
<tr>
<th>Factor</th>
<th>Congestion Mitigation</th>
<th>Economic Development</th>
<th>Accessibility</th>
<th>Safety</th>
<th>Environmental Quality</th>
<th>Land Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category A</td>
<td>45%</td>
<td>5%</td>
<td>15%</td>
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<tr>
<td>Category B</td>
<td>15%</td>
<td>20%</td>
<td>25%</td>
<td>20%</td>
<td>10%</td>
<td>10%</td>
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<tr>
<td>Category C</td>
<td>15%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Category D</td>
<td>10%</td>
<td>35%</td>
<td>15%</td>
<td>30%</td>
<td>10%</td>
<td></td>
</tr>
</tbody>
</table>
How will cost affect the HB2 score?

• House Bill 2 requires that benefits produced by a project be analyzed on a basis of relative costs.

• Results to be provided to CTB based on:
  • Benefits relative to HB2 costs
  • Benefits relative to Total costs

Benefit Score
Cost
How Scoring Works

Everything is Relative
Prioritizing Is Interesting Work

Balance Rural and Urban Needs - Make It Work for All

• Beware of Unintended Consequences
• Measure the “Big Buckets”
• Keep the Measures Understandable
• Involve All Interested Parties
• Measure for Results
It’s about Efficiency, Effectiveness, and Competition
Summary of Applications Received

• 321 applications submitted

• 131 entities submitted at least one application

• Requested $6.95 billion in SMART SCALE funds

• Applications include other funding equal to $7.93 billion

• 84% of projects identified highways as the principal improvement type
# Summary of Applications

<table>
<thead>
<tr>
<th>District</th>
<th>#Apps</th>
<th>SMART SCALE $ (billions)</th>
<th>Total $ (billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bristol</td>
<td>32</td>
<td>$0.22</td>
<td>$0.23</td>
</tr>
<tr>
<td>Culpeper</td>
<td>17</td>
<td>$0.31</td>
<td>$0.32</td>
</tr>
<tr>
<td>Fredericksburg</td>
<td>22</td>
<td>$0.37</td>
<td>$0.45</td>
</tr>
<tr>
<td>Hampton Roads</td>
<td>45</td>
<td>$1.86</td>
<td>$6.37</td>
</tr>
<tr>
<td>Lynchburg</td>
<td>38</td>
<td>$0.20</td>
<td>$0.23</td>
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<tr>
<td>NOVA</td>
<td>46</td>
<td>$2.11</td>
<td>$5.19</td>
</tr>
<tr>
<td>Richmond</td>
<td>54</td>
<td>$0.77</td>
<td>$0.85</td>
</tr>
<tr>
<td>Salem</td>
<td>38</td>
<td>$0.70</td>
<td>$0.80</td>
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<tr>
<td>Staunton</td>
<td>29</td>
<td>$0.40</td>
<td>$0.44</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>321</td>
<td><strong>$6.95</strong></td>
<td><strong>$14.88</strong></td>
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</table>
Average SMART SCALE $ Requests:

- High Priority = $26 million
- District Grant = $16 million

Average Total Project Cost:

- High Priority = $52 million
- District Grant = $29 million
Applications by VTrans Need Category

SMART SCALE $ Request by Market (billions)

- CoSS: $4.66
- RN: $6.32
- UDA: $2.21
- Safety: $3.72

Market Only, 2 Markets, 3 or more Markets
## Funds Available for HB 2
*(in millions)*

<table>
<thead>
<tr>
<th>HB 1887 Grant Programs</th>
<th>Percentage</th>
<th>Round 1 Total</th>
<th>Reserved for Round 2 (FY2022)</th>
</tr>
</thead>
<tbody>
<tr>
<td>District Grant Program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bristol</td>
<td>7.0%</td>
<td>$62.2</td>
<td>$10.5</td>
</tr>
<tr>
<td>Culpeper</td>
<td>6.2%</td>
<td>$54.9</td>
<td>$9.2</td>
</tr>
<tr>
<td>Fredericksburg</td>
<td>6.9%</td>
<td>$60.5</td>
<td>$10.2</td>
</tr>
<tr>
<td>Hampton Roads</td>
<td>20.2%</td>
<td>$178.0</td>
<td>$30.0</td>
</tr>
<tr>
<td>Lynchburg</td>
<td>7.1%</td>
<td>$63.1</td>
<td>$10.6</td>
</tr>
<tr>
<td>Northern Virginia</td>
<td>20.7%</td>
<td>$183.1</td>
<td>$30.8</td>
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<tr>
<td>Richmond</td>
<td>14.4%</td>
<td>$127.4</td>
<td>$21.4</td>
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<tr>
<td>Salem</td>
<td>9.6%</td>
<td>$84.9</td>
<td>$14.3</td>
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<tr>
<td>Staunton</td>
<td>7.8%</td>
<td>$68.9</td>
<td>$11.6</td>
</tr>
<tr>
<td>High Priority Projects Program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program (Statewide)</td>
<td></td>
<td>$833.1</td>
<td>$148.6</td>
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<tr>
<td>Total</td>
<td>100.0%</td>
<td>$1,716.2</td>
<td>$297.2</td>
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SMART SCALE Round 1
Funding Scenario

• Step 1
  – Fund top scoring projects w/i each district eligible for DGP funds using DGP funds until remaining funds are insufficient to fund the next highest scoring project, excluding any project originally included solely because it does not have an environmental impact

• Step 2
  – Fund top scoring projects using HPP funds w/i each district that would have otherwise been funded with DGP funds, but were not because they are only eligible for HPP (as long as their SMART SCALE cost<total DG funds available)

• Step 3
  – In any district where unallocated DGP funds are available, co-mingle remaining DGP funds with HPP funds to fund the next highest scoring project eligible for both programs

• Step 4
  – Fund projects with an SMART SCALE score over 1.0 based on the highest project benefit until funds are insufficient to fund the unfunded project with the highest project benefit
SMART SCALE
Round 1 Results

HPP and DGP Funds

SMART SCALE $ vs Total $

Number of Projects By District

Avg Score/SMART SCALE Cost

$3.2 B Total Cost all Projects

$10.7 M
## SMART SCALE Round 1 Summary

<table>
<thead>
<tr>
<th>District</th>
<th>Count</th>
<th>HP Allocated</th>
<th>DG Allocated</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bristol</td>
<td>10</td>
<td>$8,925,584</td>
<td>$62,239,019</td>
<td>$71,164,603</td>
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<tr>
<td>Culpeper</td>
<td>11</td>
<td>$25,559,585</td>
<td>$54,872,548</td>
<td>$80,432,133</td>
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<tr>
<td>Fredericksburg</td>
<td>19</td>
<td>$144,115,767</td>
<td>$60,504,406</td>
<td>$204,620,173</td>
</tr>
<tr>
<td>Hampton Roads</td>
<td>21</td>
<td>$154,384,282</td>
<td>$178,033,507</td>
<td>$332,417,789</td>
</tr>
<tr>
<td>Lynchburg</td>
<td>23</td>
<td>$22,668,708</td>
<td>$63,096,890</td>
<td>$85,765,598</td>
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<tr>
<td>NOVA</td>
<td>19</td>
<td>$339,798,423</td>
<td>$183,055,970</td>
<td>$522,854,393</td>
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<tr>
<td>Richmond</td>
<td>22</td>
<td>$72,351,951</td>
<td>$127,411,522</td>
<td>$199,763,473</td>
</tr>
<tr>
<td>Salem</td>
<td>20</td>
<td>$28,572,777</td>
<td>$84,868,412</td>
<td>$113,441,188</td>
</tr>
<tr>
<td>Staunton</td>
<td>18</td>
<td>$36,855,128</td>
<td>$68,917,727</td>
<td>$105,772,855</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>163</strong></td>
<td><strong>$833,232,205</strong></td>
<td><strong>$883,000,000</strong></td>
<td><strong>$1,716,232,205</strong></td>
</tr>
</tbody>
</table>
Lessons Learned

• Conducted Key Lessons Learned Activities
• External Review Group
  – Review of measures development and scores
• Internal and External Stakeholder Surveys
  – Surveys focused on application in-take process, screening and validation
• Regional Workshops (included OIPI, DRPT, VDOT staff)
  – Workshops focused on all aspects of process
Areas for Improvement Identified by External Review Group

- Consider approach to scale cost to avoid bias of low cost projects
- Consider modifications to accessibility measure to include non-work accessibility
- Provide additional feedback to applicants to improve application quality in future rounds
- Process was transparent and a great deal of information was made available to facilitate understanding
SMART SCALE Lessons Learned

- Two stakeholder surveys were conducted in December 2015/January 2016, focusing on the application intake, screening and validation processes:
  - External Survey, for Applicants and Sponsors, received 114 responses
  - Internal Survey, for VDOT and DRPT staff, received 84 responses
- Internal workshop with VDPT/DRPT staff involved in SMART SCALE process
- Feedback helps us improve the process and better understand what worked and what didn’t work
- As a result of the lessons learned, identify possible changes to the process and policy
Survey Results - Challenges

- **Application Timing.** Insufficient time given to complete all the required collaboration, application preparation, and submission

- **Process Consistency.** Changing rules, process, and guidelines as the process evolved

- **Data & Documentation Collection.** Significant data collection requirements for the pre-application and application, including “information, documentation, site plans, etc.”

- **Time/Staffing Requirements.** Time required for applicants to collect data and prepare application, travel and attend training sessions, and understand all SMART SCALE material on top of their daily work activities

- **Economic Development Factor.** Understanding the ED factor along with “trying to estimate future economic benefit”

- **Jurisdictional Equity.** Ability to compete against other jurisdictions that had other local funding sources
Survey Results - Successes

- **VDOT/DRPT Staff Assistance.** VDOT /DRPT staff praised for developing and implementing such a comprehensive process in such a short timeframe, and subsequent assistance and over-and-beyond helpfulness.

- **SMART SCALE Outreach and Training.** VDOT/DRPT staff lauded by applicants for provision and helpfulness during SMART SCALE outreach and training. Several District staff were specifically mentioned by applicants as being especially “easy to work with”, “helpful”, “reassuring”, and “quick responding.”

- **SMART SCALE Online Application Tool.** SMART SCALE Online Application Tool was “user-friendly,” “making use of technology for ease of use,” “easy-to-follow,” and “the ability to save work and resume at a later time without losing data or time.”

- **SMART SCALE’s Objectivity.** Best part of SMART SCALE is its attempt to “level the playing field” in terms of transportation projects across the State.
Areas for Improvement Identified in Regional Workshops

- **Guidance and Information Sources**
  - Update and improve clarity of Policy Guide and FAQs
  - Add tutorials and include example projects

- **Pre-Application Training and Coordination**
  - Start coordination process now
  - Develop “Train the Trainer” materials on process to ensure consistent guidance statewide
  - Provide clear direction on application requirements, and ensure project readiness before proceeding with application
  - Require completion of the pre-application form

- **Validation/Screening**
  - Define criteria for meeting VTrans needs and project type eligibility

- **Evaluation and Scoring**
  - Provide better definitions of inputs such as mixed-use land use and economic development impacts
  - Potentially consider tiers of projects based on size – so that a turn lane project is not competing against a mega project
Recommendations to Improve Application Process

- Update application tool to allow feedback during application submission (pre-screening and validation)
- Strongly encourage submission of Pre-Application
  - Advance knowledge of the number and types of applications
  - Submission required by August 15th to guarantee technical assistance from VDOT and DRPT

Over half the 321 submitted applications were created the final two weeks
Recommendations to Improve Application Process

- SMART SCALE on-line application tool undergoing improvements based on feedback

- Online application tool will be expanded to include other funding programs:
  - Revenue Sharing Program
  - Transportation Alternatives Program
  - Highway Safety Improvement Program
  - Bicycle-Pedestrian Safety Program
Recommendations for Administrative Process

- Project includes matching funds from other sources then documentation of availability of other funds will be required.
- If project cost at advertisement or award exceeds thresholds in SMART SCALE policy then project SMART SCALE benefits / cost will be re-calculated:
  - IF revised benefits/cost is higher than lowest scoring funded district project then project moves forward.
  - IF revised benefits/cost is lower then funds will be de-allocated unless CTB takes action to retain funding on project and address shortfall.
Recommendations for Factor Areas

- **Environmental Factor**
  - Projects receiving significant amount of points without providing any other benefits

- **Economic Development**
  - Types of projects evaluated do not influence growth over the same impact area
  - In many localities zoning took place 30+ years ago and does not necessarily have relationship to current growth patterns
  - Reliability – INRIX data does not provide statewide coverage
  - Intermodal Access - questionable results when comparing measure scores to project types, specifically with using mainline tonnage
Recommendations for Factor Areas

• **Safety**
  – Focus on fatalities and severe injuries over 3-year period resulted in anomalies with regard to locations and times
  – Some fatal and severe injuries crashes are random and due to factors unrelated to roadway design

• **Land Use**
  – Measure provides points based on projected future density but does not consider whether there is any growth between today and the future

• **Transit**
  • Chicken/Egg problem – all VRE platforms must be extended to add new rail cars to all trains, but only final platform extension would receive benefits under current methodology
VDOT will offer assistance to communities
- Evaluate whether identified need can be addressed through operational improvements or TDM
- Evaluate current scope to determine if there are components that do not address identified need(s)
- Evaluate current scope to determine whether design can be modified or design exceptions utilized to reduce costs
Annual Cycle

**APRIL**
- Release Draft SYIP

**APRIL–MAY**
- Hold SYIP Public Hearings to gather input

**JUNE**
- CTB Adopts Final SYIP

**JULY**
- Early Coordination with VDOT/DRPT on Candidate Projects

**AUGUST–SEPTEMBER**
- Solicit Candidate Projects from Local Governments and Regional Entities

**FEBRUARY–APRIL**
- CTB Considers Evaluated Projects for Inclusion in the Six Year Improvement Program (SYIP)

**JANUARY**
- Release Evaluation of Projects

**OCTOBER–JANUARY**
- Screen and Evaluate Projects per HB2 Process
Schedule and Next Steps

- **June**
  - CTB adopts FY2017-FY2022 SYIP

- **July**
  - CTB approves resolution for revisions to policy
  - Training and outreach for Round 2

- **August**
  - Round 2 application cycle opens
  - August 15th deadline to provide key information to guarantee technical assistance

- **September**
  - Provide CTB recommendations to funding scenario guidelines
  - September 30th deadline to submit Round 2 application

- **October 1st to January 1st**
  - Round 2 analysis and scoring

- **January to June**
  - Round 2 project selection and programming
It’s about Efficiency, Effectiveness, and Competition
Multimodal Prioritization
Overview

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