



SMART SCALE

*Funding the Right
Transportation Projects
in Virginia*

Staff recommendations for improving the process for Round 3

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Purpose



- SMART SCALE is the nation's first outcome-based prioritization process
- 'Look Back' on round 1 and round 2
- First 2 rounds of implementation resulted in the identification of potential changes to improve process
 - Administrative process
 - Modifications to measures

'Look Back' on Rounds 1 & 2



- Weighting frameworks were a big topic of discussion – how are they driving outcomes?
- Is there a bias towards projects of a particular size? Big? Small?
- What types of projects are being funded through SMART SCALE? Where?

‘Look Back’ – Weighting Frameworks



Examined what would happen to staff recommended scenario from Round 2 if weighting frameworks were modified

- 2 categories – ‘urban’ (A and B combined), ‘rural’ (C and D combined)
- 1 category – congestion and safety
- 1 category – safety and economic development
- 1 category – all measures are weighted equal

Factor	Congestion Mitigation	Economic Development	Accessibility	Safety	Environmental Quality	Land Use
Category A	45%	5%	15%	5%	10%	20%
Category B	15%	20%	25%	20%	10%	10%
Category C	15%	25%	25%	25%	10%	
Category D	10%	35%	15%	30%	10%	

'Look Back' – Weighting Frameworks



Test 1 – Two Categories

- Combines Area Types A/B and C/D
- Area Type B increases emphasis on congestion
- Area Type A increases emphasis on safety
- 5 projects were added to the funding scenario
- 5 projects were dropped from the funding scenario

Two Categories			
Area Type	Add	Drop	Net
A	1	0	1
B	1	3	(2)
C	1	0	1
D	2	2	0

Factor	Congestion Mitigation	Economic Development	Accessibility	Safety	Environmental Quality	Land Use
Category A	40%	5%	15%	20%	10%	10%
Category B	40%	5%	15%	20%	10%	10%
Category C	15%	25%	20%	30%	10%	
Category D	15%	25%	20%	30%	10%	

* Red indicates a change from the current weighting framework

‘Look Back’ – Weighting Frameworks



Test 2 – Congestion and Safety

- Urban emphasis on congestion placed for all area types
- Safety emphasis for rural areas
- 10 projects were added to the funding scenario
- 20 projects were dropped from the funding scenario

Urban			
Area Type	Add	Drop	Net
A	3	7	(4)
B	2	8	(6)
C	3	1	2
D	2	4	(2)

Factor	Congestion Mitigation	Economic Development	Accessibility	Safety	Environmental Quality	Land Use
Category A	40%	10%	10%	30%	10%	---
Category B	40%	10%	10%	30%	10%	---
Category C	40%	10%	10%	30%	10%	
Category D	40%	10%	10%	30%	10%	

* Red indicates a change from the current weighting framework

‘Look Back’ – Weighting Frameworks



Test 3 – Safety and Econ Dev

- Emphasis on economic development and safety placed for all area types
- Excludes land use as not available in categories C and D
- 18 projects were added to the funding scenario
- 17 projects were dropped from the funding scenario

Rural			
Area Type	Add	Drop	Net
A	4	8	(4)
B	4	6	(2)
C	5	0	5
D	5	3	2

Factor	Congestion Mitigation	Economic Development	Accessibility	Safety	Environmental Quality	Land Use
Category A	15%	30%	15%	30%	10%	---
Category B	15%	30%	15%	30%	10%	---
Category C	15%	30%	15%	30%	10%	
Category D	15%	30%	15%	30%	10%	

* Red indicates a change from the current weighting framework

'Look Back' – Weighting Frameworks



Test 4 – All Measures are Equal

- Weights congestion, economic development, accessibility, safety, and environmental quality equally
- Excludes land use as not available in categories C and D
- 14 projects were added to the funding scenario
- 18 projects were dropped from the funding scenario

Equal			
Area Type	Add	Drop	Net
A	4	7	(3)
B	3	7	(4)
C	4	0	4
D	3	4	(1)

Factor	Congestion Mitigation	Economic Development	Accessibility	Safety	Environmental Quality	Land Use
Category A	20%	20%	20%	20%	20%	---
Category B	20%	20%	20%	20%	20%	---
Category C	20%	20%	20%	20%	20%	
Category D	20%	20%	20%	20%	20%	

* Red indicates a change from the current weighting framework

‘Look Back’ – Weighting Frameworks



Summary of Scenarios

- **5 projects** were added to the funding scenario for all scenarios
- **4 projects** were added to the funding scenario for three scenarios
- **12 projects** were removed from the funding scenario for three scenarios
- Area Type B was negatively impacted the most from all scenarios
- Area Type C received the biggest improvement

All Scenarios			
Area Type	Add	Drop	Net
A	12	22	(10)
B	10	24	(14)
C	13	1	12
D	12	13	(1)

*See handout for project details

'Look Back' – Weighting Frameworks Conclusions



- Major changes to weighting frameworks results in a 7-25% change in projects selected
- Between all four tests:
 - 43 projects were 'added' to the funding scenario – 9 projects represent 75% of the additions
 - 53 projects were 'cut' from the funding scenario – 12 projects represent 67% of the cuts
- Measures appear to have greater influence over whether a project is funded than weighting frameworks

“Look Back” – Is there a bias in project size?



- The number of projects by size funded through SMART SCALE is in line with the number of projects by size funded in the FY06-11 Six-Year Improvement Program

	<=\$5,000,000	>\$5,000,000 <\$20,000,000	>=\$20,000,000
FY2006 SYIP	65%	23%	12%
Round 1*	53%	32%	15%
Round 2	63%	23%	14%

* Analysis excludes Transform 66

“Look Back” – Is there a bias in project size?



- The amount of funding going to projects of a certain size funded through SMART SCALE is in line with the amount of funding going to projects of a certain size funded in the FY06-11 Six-Year Improvement Program

	$\leq \$5,000,000$	$> \$5,000,000$ $< \$20,000,000$	$\geq \$20,000,000$
FY2006 SYIP	10%	28%	62%
Round 1*	11%	32%	57%
Round 2	17%	24%	59%

* Analysis excludes Transform 66

“Look Back” – Funding By District By Project Type



Funding by Project Type - Round 1 Selected (millions)						
District	Bike/Pedestrian	Bus Transit	Highway	Rail Transit	TDM	Grand Total
Bristol	\$ 0	\$ 1.3	\$ 69.9	\$ 0	\$ 0	\$ 71.2
Culpeper	\$ 29.5	\$ 0	\$ 49.2	\$ 0	\$ 1.8	\$ 80.4
Fredericksburg	\$ 1.9	\$ 0	\$ 175.5	\$ 0	\$ 27.2	\$ 204.6
Hampton Roads	\$ 0	\$ 6.4	\$ 325.5	\$ 0	\$ 0.6	\$ 332.4
Lynchburg	\$ 0	\$ 0.5	\$ 85.3	\$ 0	\$ 0	\$ 85.8
Northern Virginia*	\$ 7.1	\$ 4.5	\$ 200.8	\$ 10.0	\$ 0.5	\$ 222.9
Richmond	\$ 0.5	\$ 13.6	\$ 185.7	\$ 0	\$ 0	\$ 199.8
Salem	\$ 6.7	\$ 0.4	\$ 106.4	\$ 0	\$ 0	\$ 113.4
Staunton	\$ 1.1	\$ 0	\$ 104.7	\$ 0	\$ 0	\$ 105.8
Grand Total	\$ 46.7	\$ 26.5	\$ 1,302.9	\$ 10.0	\$ 30.1	\$ 1,416.2

* Excludes Transform 66

“Look Back” – Funding By District By Project Type



Funding by Project Type - Round 2 Recommendation (millions)						
District	Bike/Pedestrian	Bus Transit	Highway	Rail Transit	TDM	Grand Total
Bristol	\$0.0	\$0.0	\$24.0	\$0.0	\$0.0	\$24.0
Culpeper	\$0.0	\$0.0	\$56.1	\$0.0	\$0.0	\$56.1
Fredericksburg	\$1.5	\$0.0	\$23.4	\$0.0	\$0.9	\$25.8
Hampton Roads	\$1.6	\$0.3	\$228.6	\$22.0	\$0.0	\$252.6
Lynchburg	\$0.5	\$0.0	\$36.7	\$0.0	\$0.0	\$37.2
Northern Virginia	\$10.0	\$34.0	\$247.9	\$70.6	\$4.7	\$367.3
Richmond	\$17.6	\$1.9	\$129.6	\$0.0	\$2.9	\$152.1
Salem	\$9.5	\$5.9	\$55.6	\$0.0	\$0.0	\$71.0
Staunton	\$5.9	\$0.0	\$32.6	\$0.0	\$2.2	\$40.7
Grand Total	\$46.7	\$42.1	\$834.6	\$92.6	\$10.8	\$1,026.8

'Look Back' – Round 1



Round 1

Project Type	Funding Scenario				
	Total Submitted	Funded	Success Rate	Total Funding	% of Funding
Bike/Pedestrian	20	14	70%	\$46,714,042	3.30%
Bus Transit	7	7	100%	\$26,510,758	1.87%
Highway	249	132	53%	\$1,302,860,215	91.99%
Rail Transit	3	1	33.33%	\$10,000,000	0.71%
TDM	8	8	100%	\$30,147,190	2.13%
Grand Total	287	167	58.2%	\$1,416,232,205	100.00%

'Look Back' – Round 1



Round 1

Project Type	Selected for Funding				Not Selected for Funding			
	# of Projects	Average SMART SCALE Request	Average Project Benefit	Average SMART SCALE SCORE	# of Projects	Average SMART SCALE Request	Average Project Benefit	Average SMART SCALE SCORE
Bike/Ped	14	\$3,336,717	1.95	19.36	6	\$7,509,265	0.35	0.92
Bus Transit	7	\$3,787,251	3.07	13.78	0	N/A	N/A	N/A
Highway	132	\$9,870,153	3.04	9.09	116	\$47,205,648	2.30	1.15
Rail Transit	1	\$10,000,000	21.13	21.13	2	\$64,815,550	11.71	N/A
TDM	8	\$3,768,399	2.01	19.56	0	N/A	N/A	4.44
All Projects	162	\$8,742,174	3.01	10.78	124	\$45,568,886	2.36	1.14

'Look Back' – Round 2



Round 2

Consensus Funding Scenario					
Project Type	Total Scored	Selected	Success Rate	Total Funding	% of Funding
Bike/Pedestrian	45	23	51.1%	\$ 46,704,429	4.55%
Bus Transit	13	10	77.9%	\$ 42,083,588	4.10%
Highway	336	107	31.8%	\$ 834,598,922	81.28%
Rail Transit	2	2	100%	\$ 92,636,120	9.02%
TDM	8	5	62.5%	\$ 10,789,371	1.05%
Grand Total	404	147	36.4%	\$ 1,026,812,430	100%

'Look Back' – Round 2



Round 2

Project Type	Selected for Funding				Not Selected for Funding			
	# of Projects	Average SMART SCALE Request	Average Project Benefit	Average SMART SCALE SCORE	# of Projects	Average SMART SCALE Request	Average Project Benefit	Average SMART SCALE SCORE
Bike/Ped	23	\$2,030,627	4.02	29.78	22	\$6,506,183	1.71	3.41
Bus Transit	10	\$4,208,359	8.50	28.62	3	\$34,530,344	5.08	1.19
Highway	107	\$7,799,990	6.94	21.42	229	\$31,620,075	3.95	2.10
Rail Transit	2	\$46,318,060	48.6	10.94	0	N/A	N/A	N/A
TDM	5	\$2,157,874	6.38	49.10	3	\$4,763,365	1.27	5.05
All Projects	147	\$6,985,119	7.13	24.02	257	\$29,190,717	3.74	2.24

Administrative Policies and Procedures

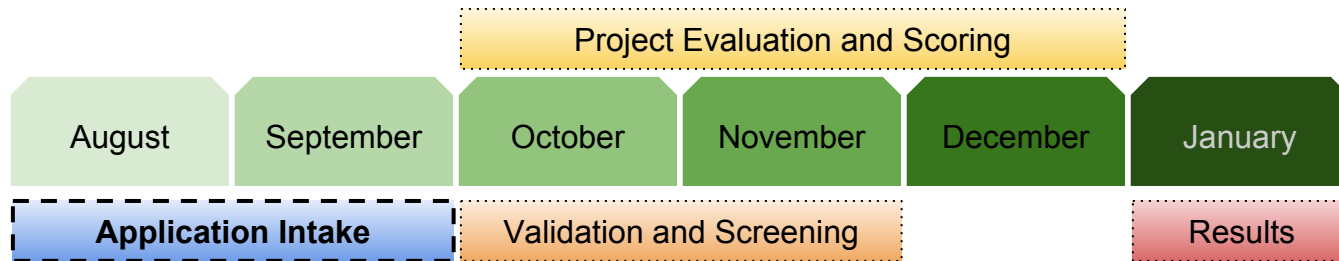


- Biennial schedule
- Number of applications allowed per applicant
- Project readiness
- Project eligibility

Schedule for Rounds 1 and 2



Application Intake

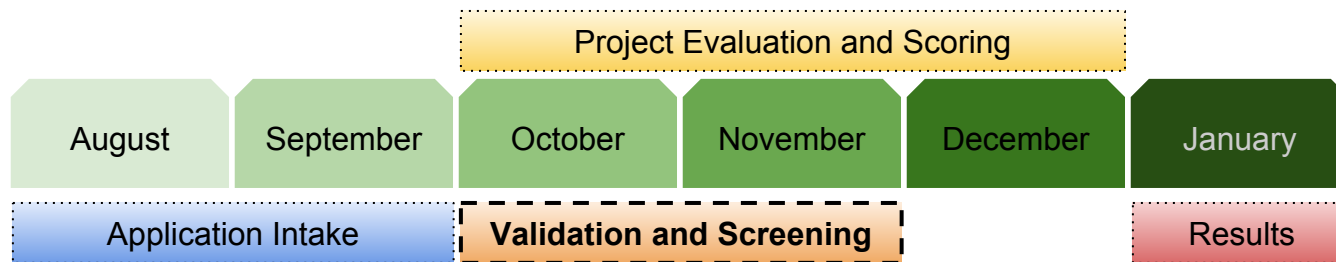


- 2-month application intake period
- Limited time to work with applicants to refine scopes of work to maximize project benefits
- Applicant concern over time completing applications for projects that do not meet a need or which are ineligible

Schedule for Rounds 1 and 2



Validation and Screening



- Limited application intake period, resulted in most of the validation and screening occurring post-submission

Validation

Is project eligible for SMART SCALE?
Is information in application reasonable and accurate?

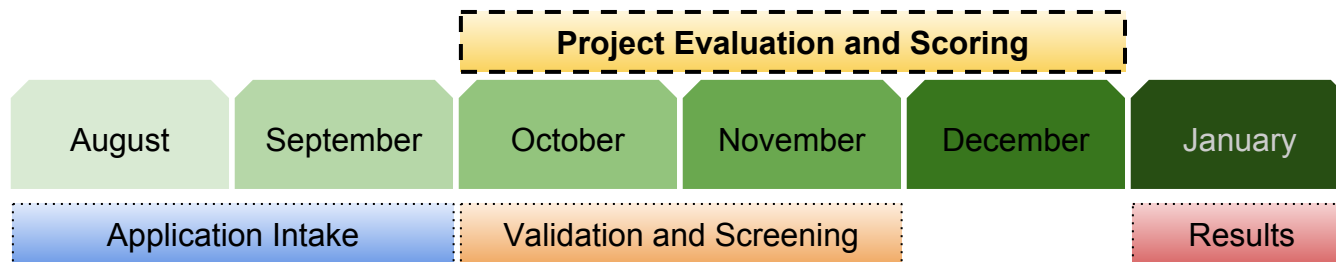
Screening

Does project meet an identified need in VTrans on a Corridor of Statewide Significance, Regional Network, UDA, and/or safety need?

Schedule for Rounds 1 and 2



Project Evaluation and Scoring



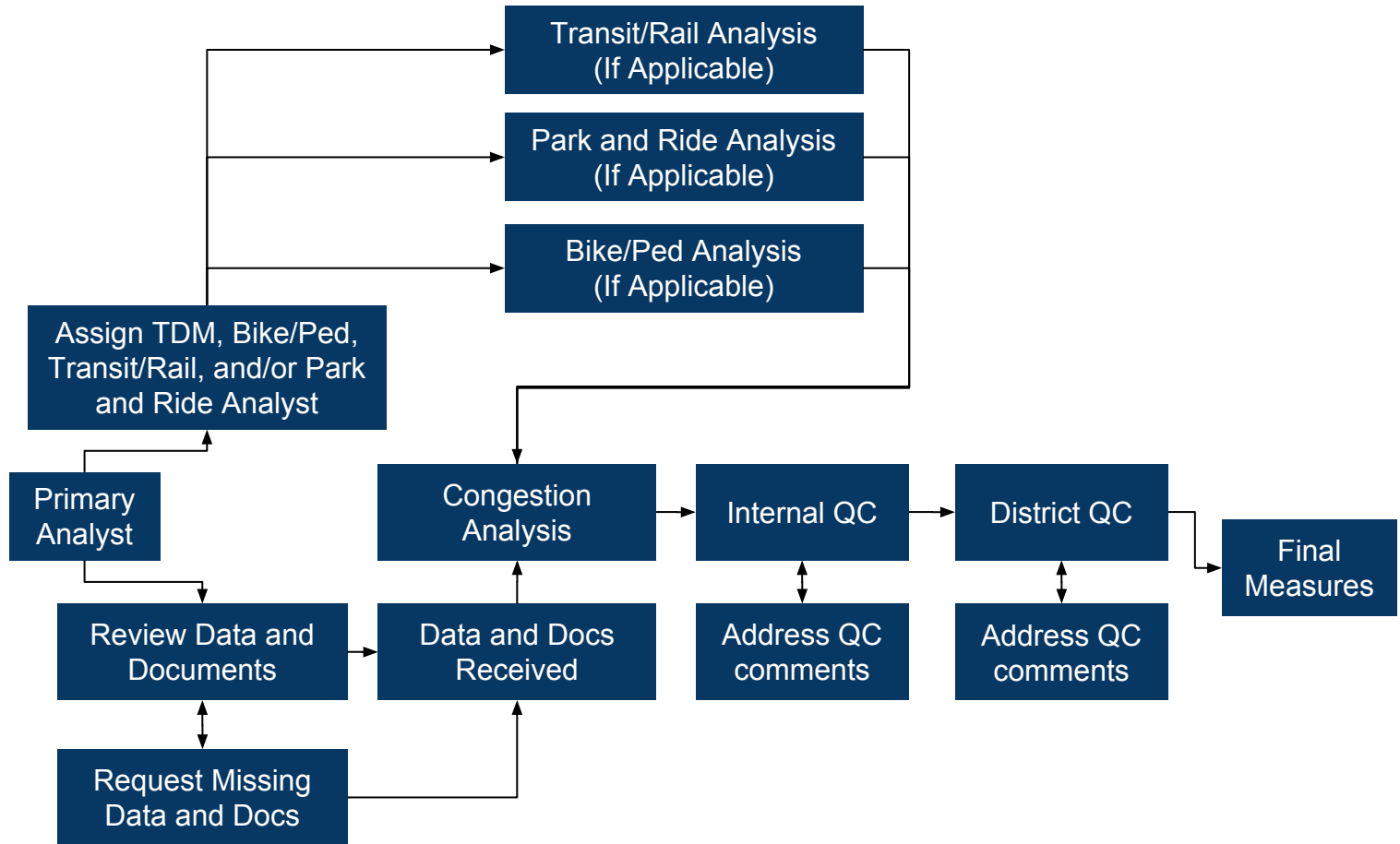
- 3-month project evaluation and scoring period
- Available time reduced due to validation and screening
- Project scoring can be interdependent - eg. Access to Jobs cannot be calculated until congestion analysis is complete
- Scoring is complex and time consuming - consistency is a high priority

Congestion Analysis Steps

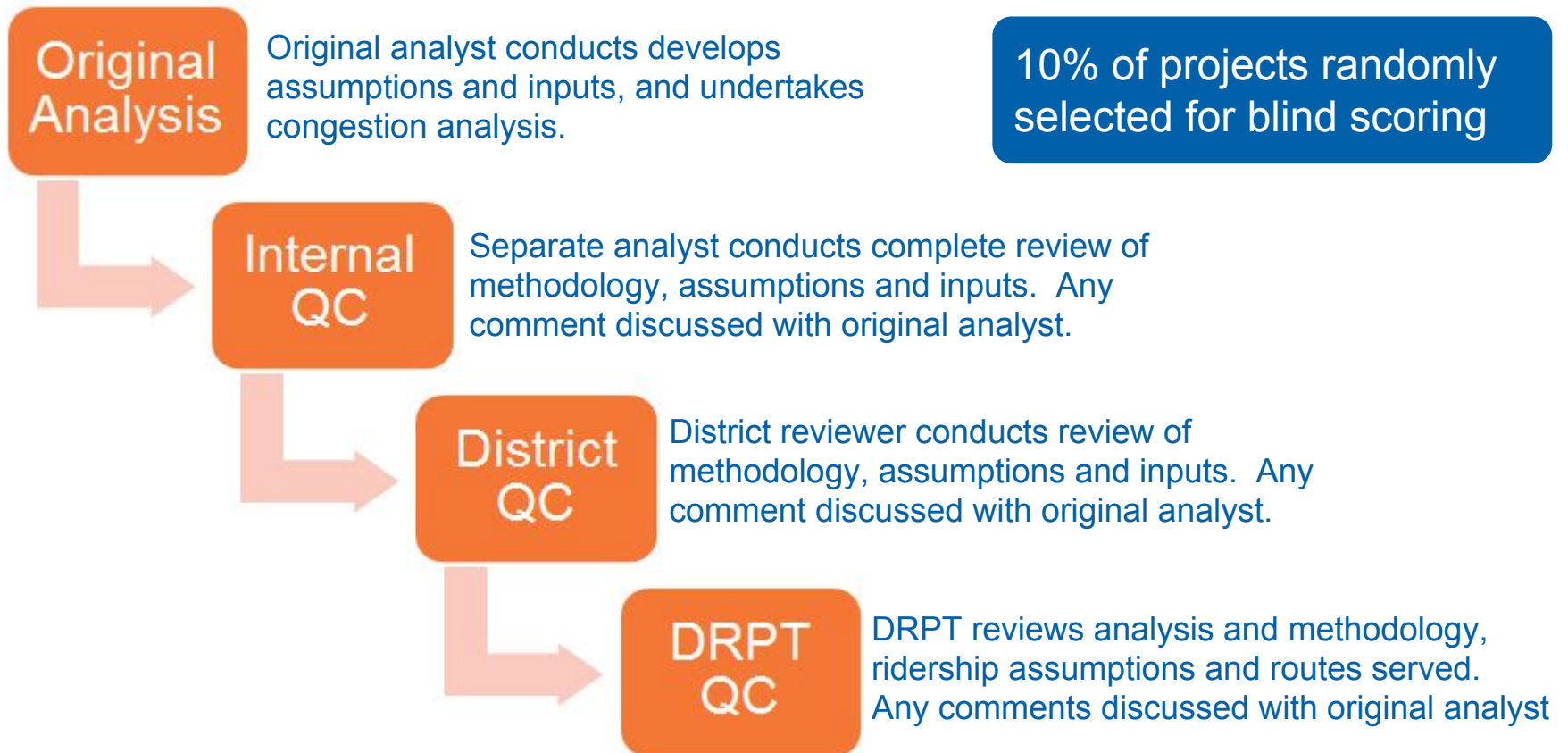


1. Evaluate scope of work and available data
 2. Develop 2025 peak hour volumes and/or ridership
 3. Break project into components for analysis
 - a. Intersections and Interchanges
 - b. Roadway segments (improved or served by transit)
 - c. Bike/ped facilities, park and ride lots, and transit/or rail facilities
 4. Determine peak period expansion factor (INRIX data)
 5. Document assumptions and data sources
 6. Internal QC
 7. District QC
 8. Final measures for scoring
- } 100% of projects go through two levels of QC

Congestion Analysis Steps



Congestion Analysis QAQC



After the completion of VDOT District/DRPT QC, project was sent for Accessibility analysis.

10% Blind Scoring



- 10% of SMART SCALE projects were selected for blind scoring of congestion and safety scoring measures
- Congestion and safety were selected due to the significant number of inputs and complexity of analysis
- Projects are reevaluated independent of initial scoring team member(s)
 - Accomplished with new analyst and new internal QC
 - Reevaluated analysis is compared to the official SMART SCALE analysis
- For Round 2, 45 projects were selected for blind scoring
 - Projects analysis types and locations were distributed across each district

10% Blind Scoring



- Improvements to safety and congestion QC process were identified during Round 1 and were incorporated for Round 2
- Congestion Analysis
 - Standard assumptions document was created
 - Congestion Analysis Tool was developed in-house to track analysis process
 - Created Volume Development tool and hierarchy
- Safety Analysis
 - Safety Analysis Tool was developed to promote more consistency and accuracy
 - Improved workflow and automation of analysis
 - Provided additional layers of QC

10% Blind Scoring



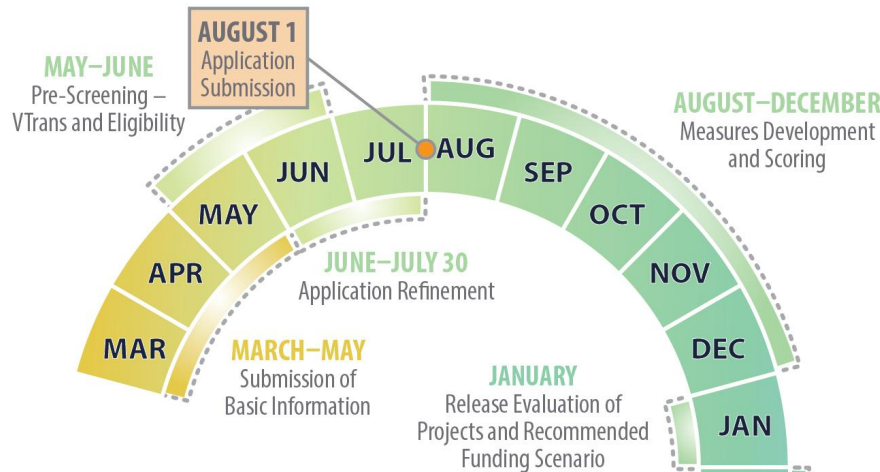
- Congestion
 - Majority of projects had identical throughput and delay measure scores
 - If measure scores differed they were minimal
 - Normalized scores further minimized these differences
 - Measure differences did not impact scoring ranks and would not impact the staff recommended funding scenario
 - Congestion Analysis Tool and methodology significantly reduced scoring differences

10% Blind Scoring



- Safety
 - 75% of projects had minor differences in S1 and S2 scores due to small differences in how the projects were analyzed
 - Normalization process used in scoring minimized these differences in all but two cases
 - Measure differences would not have impacted the staff recommended funding scenario
 - Safety Analysis Tool and methodology significantly reduced scoring differences

Recommended Changes to Schedule for Round 3

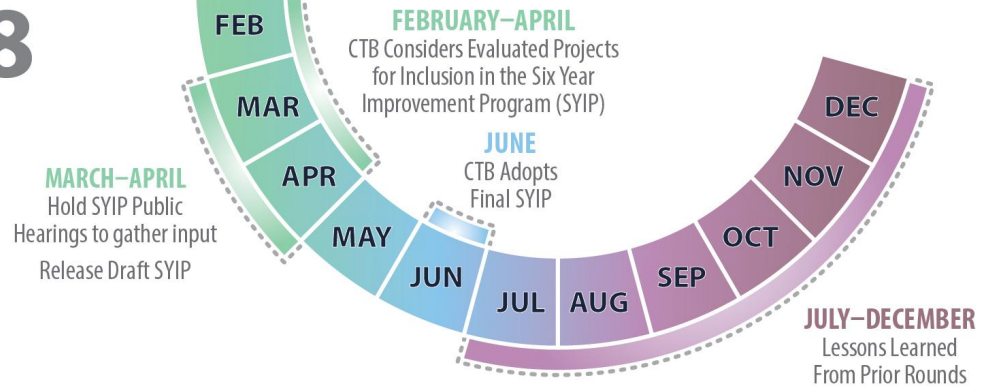


5 month project evaluation and scoring window - 2 more months than previous rounds

5 month application intake window - 3 more months than previous rounds

2018

2019



Number of Applications

	Round 1	Round 2	% Change
Total # Submitted	321	436	36%
Total # Scored	287	404	41%
Average # Application	2.2	2.8	27%
Max # of Applications	12	33	175%

Recommended Limits on Number of Applications



Establish 3 tiers based on population

Tier	Localities	MPOs/PDCs/Transit Agencies	Maximum Number of Applications
1	Less than 50K	Less than 100K	3
2	50K to 150K	100K to 1M	5
3	Greater than 150K	Greater than 1M	10

Recommended Limits on Number of Applications



Tier	No. of Local/Regional Entities	Maximum Number of Applications
1 (3 apps max)	190	570
2 (5 apps max)	49	245
3 (10 apps max)	17	170
Grand Total	256	985

Impact of Recommended on Applicants



Applicants that would be limited based on population 16 applicants impacted

District/Regional Entity	Jurisdiction/Regional Name	Submitted Round 1	Submitted Round 2	Average # Apps Submitted R1 & R2	TOTALPOP_2010	Option #5 Tiered by Population	Tier No.
Bristol	Big Stone Gap	3	4	3.5	5614	3	1
Hampton Roads	Northampton	4	3	3.5	12389	3	1
Culpeper	Louisa	2	6	4	16379	3	1
Richmond	Hopewell	6	4	5	22591	3	1
Bristol	Scott	6	3	4.5	23177	3	1
Richmond	Petersburg	5	2	3.5	32420	3	1
Fredericksburg	Gloucester	4	4	4	36858	3	1
Culpeper	Fauquier	2	6	4	43475	3	1
Staunton	Harrisonburg	3	4	3.5	48914	3	1
Staunton	Frederick	5	9	7	78305	5	2
Hampton Roads	Suffolk	5	7	6	84585	5	2
Richmond	Richmond	15	8	11.5	204214	10	3
MPO	Roanoke Valley TPO	6	5	5.5	231337	5	2
Northern Virginia	Loudoun	6	23	14.5	261968	10	3
Richmond	Chesterfield	6	33	19.5	316236	10	3
Northern Virginia	Prince William	12	14	13	397041	10	3

Project Readiness



ISSUE: Need clear guidance on the required level of planning and supporting documentation needed for major projects.

Applicability:

- Grade Separations
- New Traffic Signals
- New Location Facilities
- Major Corridor Widening projects
- Environmental (NEPA and Permitting)
- Public Support

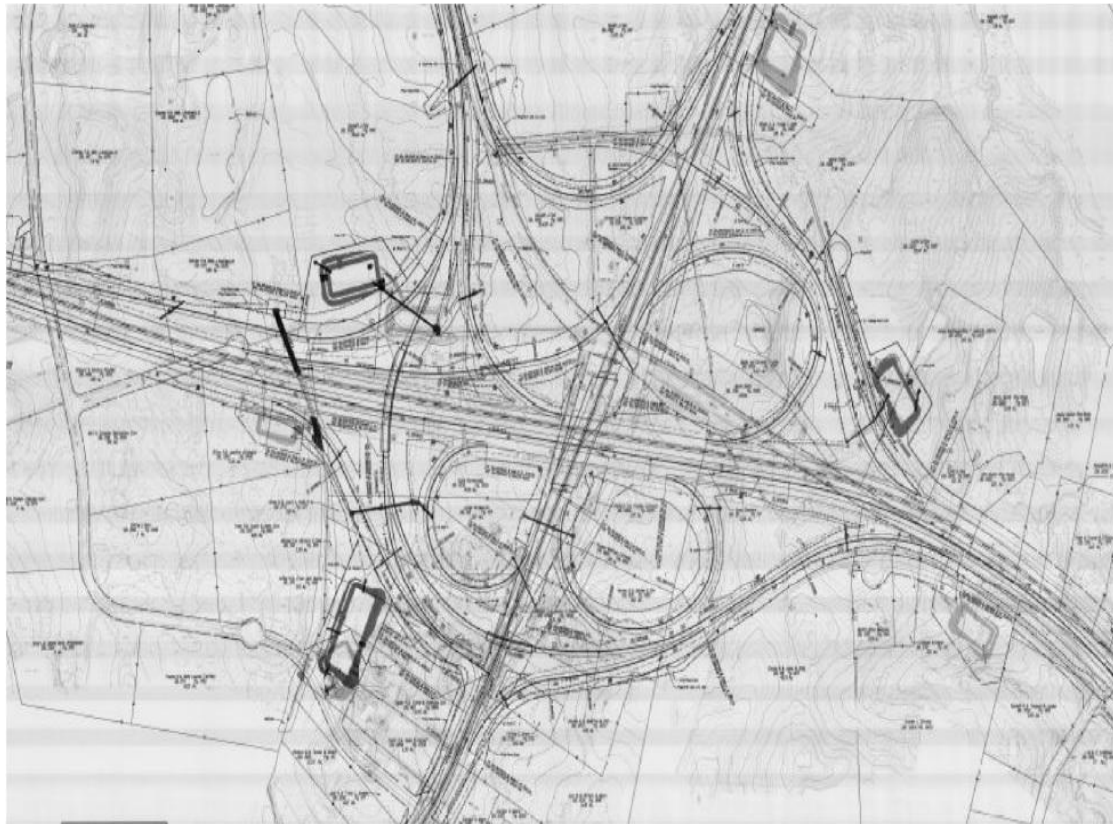
Project Readiness Grade Separations

- **IJR Required**
 - FHWA Approval Required



Project Readiness Grade Separations

- **Grade-Separated Interchange - Dated study**



Project Readiness Major Widenings

- **Major Widening (\$200M)**

- Lack of planning study
- No alternatives analysis
- No evaluation of lower cost alternatives to improve existing capacity



Project Readiness Recommendations



Proposed Changes

- **Grade Separation on all limited access facilities**
 - Require IJR with preferred alternative
- **Grade Separation of at-grade intersection**
 - Require planning level study and alternatives analysis
- **New Traffic Signals**
 - Require Signal Warrant and Justification and evaluation of alternative intersections

Project Readiness Recommendations



Proposed Changes:

- **New Location**
 - Assess requirement for evaluation of multiple alternatives (NEPA/permitting)
- **Major Widening**
 - Ensure alternatives to optimize the existing capacity have been thoroughly evaluated as part of the planning process
- **Public Support**
 - Require local resolution of support as a part of application process
 - Examples
 - North Main Intersection Improvements at 460 Bypass - Blacksburg - Round 1
 - University Drive Extension - City of Fairfax - Round 1

Project Eligibility



ISSUE: Need to provide clear guidance on how to handle projects that may include asset replacement, in addition to a capacity expansion or enhancement improvement.

- A number of projects submitted in Round 1 and Round 2 were mostly asset replacement projects
- Traffic signal system and bridge replacements being the most common examples
- Applicants would often include a minor component that is eligible

Project Eligibility



**SMART
SCALE**

*Funding the Right
Transportation Projects
in Virginia*

- **Asset Replacement Projects - Signal Systems**



Project Eligibility

- Bridge Replacement with Ped Accommodations



Project Eligibility



Proposed Changes

- SMART SCALE is not intended to fund maintenance and State of Good Repair projects
- Clarify eligibility language in the SMART SCALE policy - If a significant portion of the project costs are related to the repair or replacement of existing traffic control devices, structures or bridges asset replacement the project be excluded from consideration in scoring and rating for SMART SCALE.

Project Eligibility



ISSUE: Need to define clear rules regarding projects that are fully funded or committed

- Several project submitted included, in part or whole, proffered improvements
- Some applications leveraged fully funded projects and were asking for minor enhancements or additions
- Risk that applicants could use this approach to game the system (large benefit with reduced \$ request)

Project Eligibility



- Bike/Ped project request leveraging a fully funded widening



Project Eligibility



Proposed Change

- Clarify in the policy that SMART SCALE funding is not intended to replace other committed funding sources such as local funding, proffers, and/or other committed state or federal funding sources
- If an applicant submits an existing fully funded or committed project with independent utility for SMART SCALE funding with intention of requesting additional funds to add additional project features such as landscaping, streetscaping, and/or bicycle and pedestrian infrastructure, then the benefits associated with the fully funded or committed project element(s) should be excluded from consideration in scoring and rating the project for SMART SCALE.

Project Eligibility



ISSUE: Some applicants included project elements that were not clearly related to one another.

- Project features must be associated such that they are contiguous or of the same improvement type (e.g., signal improvements, transit stations, etc.)
 - Concern about potential to circumvent application limits
 - Concern about adding unrelated features to increase benefit

Project Eligibility



Examples

- **App ID 1230 Loudoun Park and Ride Lots**
 - Two park and ride lots are 20 miles apart
 - Project was funded in Round 2
- **App ID 1323 I-95/10 Interchange - Signalize Ramps, Aux.Lanes,PNR Exit 58**
 - Park and ride lot is 3.6 miles away
- **App ID 1165/1506/1294 SB Rte. 288 to WB US 360 Off-Ramp, US 360 PNR Lot**
 - Park and ride lot is 2.2 miles away
 - Application with the park and ride lot was funded

Recommended Modifications to Measures



Changes are intended to address:

- Stakeholder concerns
- Areas where applicants have 'beat the system'
- Areas where project size/impact is not accurately captured
- Improved methodologies

Measure Enhancements Congestion



- Benefits to longer projects may have been impacted
 - Phased improvement projects broken into pieces could score similar results to the entire project
 - Shorter projects have a higher probability of receiving funding

EXAMPLE:

District	Description	Throughput Score
Staunton	Extend SB Deceleration NB Acceleration lanes by <u>150'</u> each, I-81 Exit 296 in Staunton	1175
Salem	Construct <u>1.12 mile</u> auxiliary lane on I-81N between Exit 140 to 141	1664

- Recommend modifying measure to account for increase in person miles travelled allowed by the project within the capacity of the facility

Measure Enhancements

ED.1 - Site Development



Current Method

- Applicant provides all site data used for scoring
- **Transportation Project points (applied to all site)**
 - Consistency with Local Comp Plan/Local Economic Development Strategy – Consistent = 0.5, Referenced = 1.0
 - Consistency with Regional Economic Development Strategy – Consistent = 0.5, Referenced = 1.0
- **Economic Development Site points (site specific)**
 - Consistency with local comp plan/zoning – Consistent = 0.5, Referenced = 1.0
 - Development status – Submitted = 0.5, Approved = 1.0
 - Site utilities – Programmed = 0.5, In-Place = 1.0
- **Up to 5 Points Max - used to weight the square footage of each site**

Measure Enhancements ED.1 - Site Development



Current Method (cont)

- **Adjusting Weighted Square Footage**
 - **Two Adjustments**
 - Distance from project in miles (except sites less than 1 mile)
 - Type of access provided

Project provides a new, direct (physically to the site), primary access to the site that does not exist today	100%
Project improves existing access (or relocates existing access) to the site directly (Site must be physically adjacent to the project)	100%
Project enhances economic development by improving congestion, mobility, access, or operations in the vicinity of the site but the site is not physically adjacent to the project	50%

- **Formula – ((Points) x (Square Footage) / (Distance)) x (Access Adjustment)**

Development Name	Total Points	Square Footage	Distance	Site Access	Access Adjustment	Adjusted Square Footage
Development A	5	250,000	2	Project enhances economic development by improving congestion, mobility, access, or operations in the vicinity of the site but the site is not physically adjacent to the project	50%	312,500
Development B	5	250,000	0.2	Project improves existing access (or relocates existing access) to the site directly (Site must be physically adjacent to the project)	100%	1,250,000

Measure Enhancements

ED.1 - Site Development



- Round 2 results raise concerns about the reasonableness of the results for this measure
- Roundabout project on 2 lane roadway and a cul-de-sac scored highest in the state
- Findings
 - Zoned properties within allowable buffer contributed to anomalous results
 - Gimme points - consistency with plan and utilities

Project - Local Plans

Project - Regional Plan

Site - Zoning

Site - Utilities

Blank	13
Consistent with	833
Referenced in	1145
Grand Total	1991

Blank	344
Consistent with	944
Referenced in	703
Grand Total	1991

Blank	141
Consistent with	1738
Referenced in	112
Grand Total	1991

Blank	289
In place	1676
Programmed	26
Grand Total	1991

Measure Enhancements

ED.1 - Site Development



Recommendations

- Zoned properties must get primary access from project
- Remove 0.5 point for consistency with local and regional plans - project and site must be specifically referenced in local and regional planning documents to get point
- Eliminate site utilities points
- Reduce max buffer to 3 miles

Measure Enhancements

ED.1 - Site Development



Recommendations (cont)

- Distinguish the level of readiness for site plans

Site Readiness	Points
Conceptual site plan submitted	0.5
Conceptual site plan approved	1
Detailed site plan submitted	2
Detailed site plan approved	4

- Consider the establishment of maximum square footage
 - Based on current level of development - cannot exceed x% of total current square footage in jurisdiction(s)

Measure Enhancements

ED.2 - Intermodal Access



Current Method

- Points are awarded based on a project's proximity to freight generators, truck routes, and freight destinations
- Total points are scaled by the maximum freight tonnage within the project area
- While the size of a project may affect its likelihood of falling within the buffer distance of freight facilities, its score does not directly scale by the size of the improvement

Measure Enhancements

ED.2 - Intermodal Access



Current Method

District	Project Description	Total Points	Maximum Freight Tonnage		Intermodal Access Measure
Staunton	Extend SB Deceleration NB Acceleration lanes by <u>150'</u> each, I-81 Exit 296 in Staunton	4	X 290000	=	1,160,000
Salem	Construct 1.12 mile auxiliary lane on I-81N between Exit 140 to 141	3	X 145000	=	435,000

- Intermodal access points are multiplied by the tonnage of freight along the facility being improved

Measure Enhancements

ED.2 - Intermodal Access



Proposed Method

District	Project Description	Total Points	Maximum Freight Tonnage	Improvement Length (miles)	Intermodal Access Measure
Staunton	Extend SB Deceleration NB Acceleration lanes by <u>150'</u> each, I-81 Exit 296 in Staunton	4	290000	0.06	69,600
Salem	Construct 1.12 mile auxiliary lane on I-81N between Exit 140 to 141	3	145000	1.12	487,000

Recommendation

- Scale points by freight tonnage-miles by multiplying the freight tonnage by the length of the improvement

Safety Measures



- Many fatalities and severe injuries are the result of factors unrelated to roadway design
- Vehicle age and age of occupants plays a major role in determining whether a crash results in a fatality or severe injury
 - Statistics from 2013 NHTSA Report
 - 71% more likely to die if car is 18+ years old
 - 50% more likely to die if car is 15-17 years old
 - 2012 AAA Traffic Safety Report
 - Deaths per 100 million VMT decrease from age 16 until age 60 then it increases sharply (survivability)
- Current methodology weights fatalities 18x greater than severe injuries

Safety Measures Recommended Changes



- Roadway improvements often cannot address crashes resulting from driving under the influence
- Have had a project recommended for funding due to single crash over 5-year period that involved alcohol
- Remove crashes that are the result of driving under the influence from consideration in scoring

Safety Measures

Recommended Changes



- Difference between fatality and severe injury often related to age of vehicle and age of occupant
- Many states used a ‘blended’ value for fatalities and severe injuries
- Recommend the use of a ‘blended’ weighting for SMART SCALE similar to other states in Round 3 scoring

Safety Measures

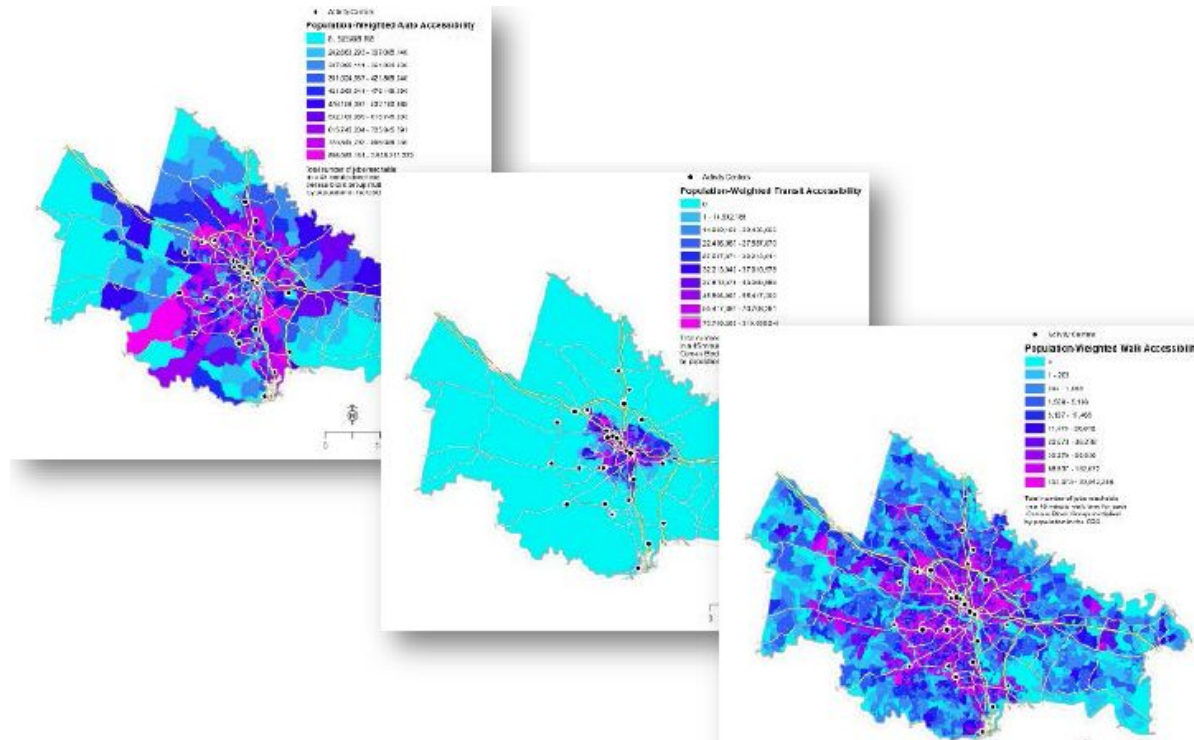
Use of *Reduced* and **Blended** Rates



Agency	Fatal Injury (K)	Incapacitating injury (A)	Moderate Injury (B)	Minor Injury (C)	PDO
Missouri	6.5	3	3	3	1
Oregon DOT	100	100	10	10	1
Massachusetts	10	5	5	5	1
Ohio	37.56	37.56	6.55	4.44	1
Wyoming	110	110	8.5	8.5	1
Kansas	15	15	15	15	1
Illinois	10	9	5	2	1
Hampton Roads, VA	12	3	3	3	1
Iowa	<i>\$1,000,000</i>	<i>\$150,000</i>	\$10,000	\$2,500	\$2,500
Minnesota	<i>\$540,000</i>	<i>\$270,000</i>	\$58,000	\$29,000	\$4,200
Virginia Smartscale	540	30	10	5	1

Access to Jobs Recommended Changes

- Eliminate the 45 and 60 minute cap for auto and transit job access respectively



Land Use



- Focused on projects that support transportation efficient development patterns in urban areas
- Current methodology has limitations
 - Subjectivity
 - Degree to which an area meets certain criteria
- Office of Intermodal Planning and Investment has developed new methodology to measure key characteristics – non-work accessibility

Land Use

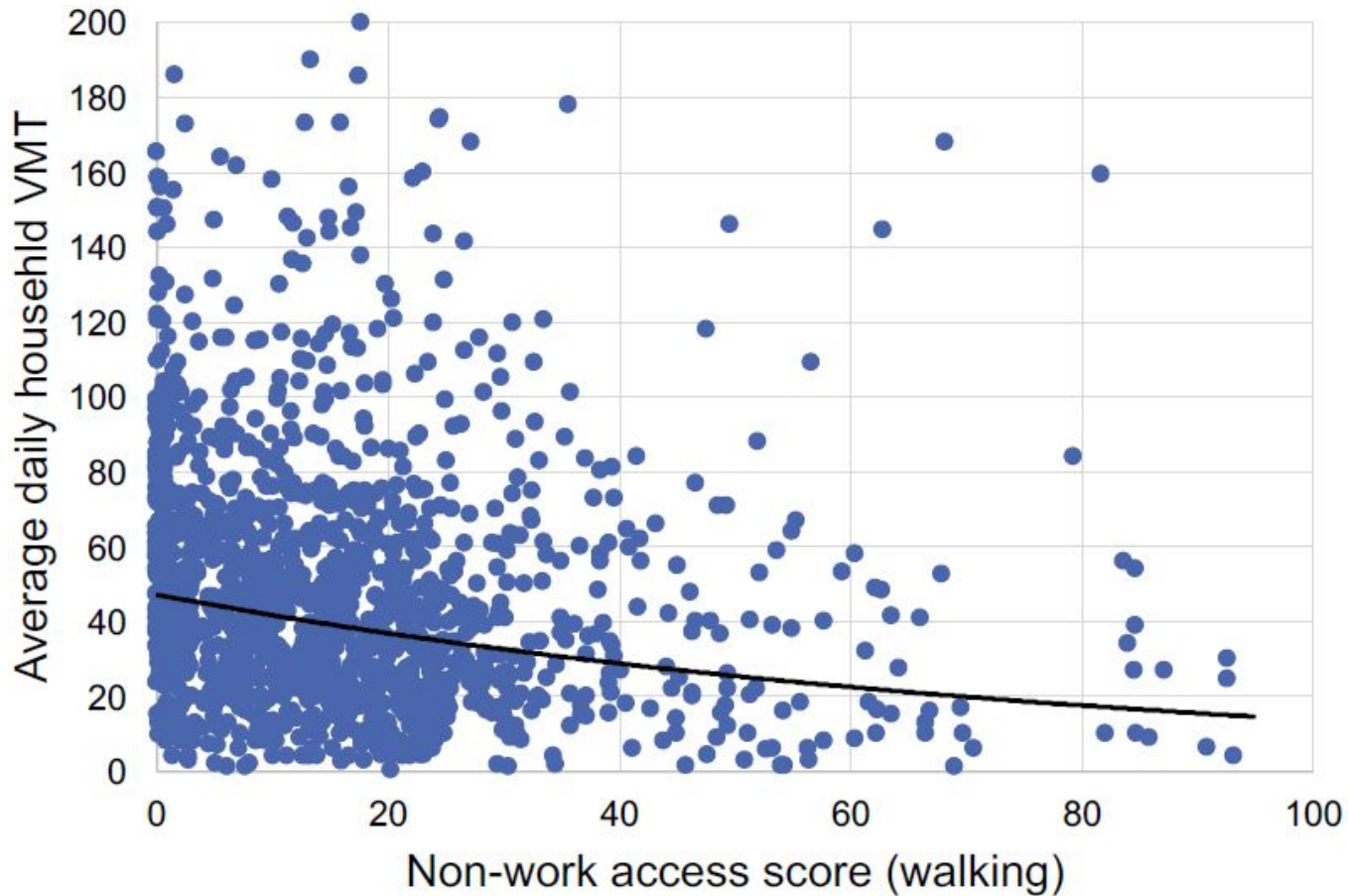
Non-work Accessibility



- Examines accessibility to key non-work destinations such as grocery, healthcare, education, etc
- Targets for destinations established using Virginia observations
- Uses GIS software used for Access to Jobs measures
- Eliminate subjectivity and captures degree to which development patterns meet certain criteria

Land Use

Non-work Accessibility

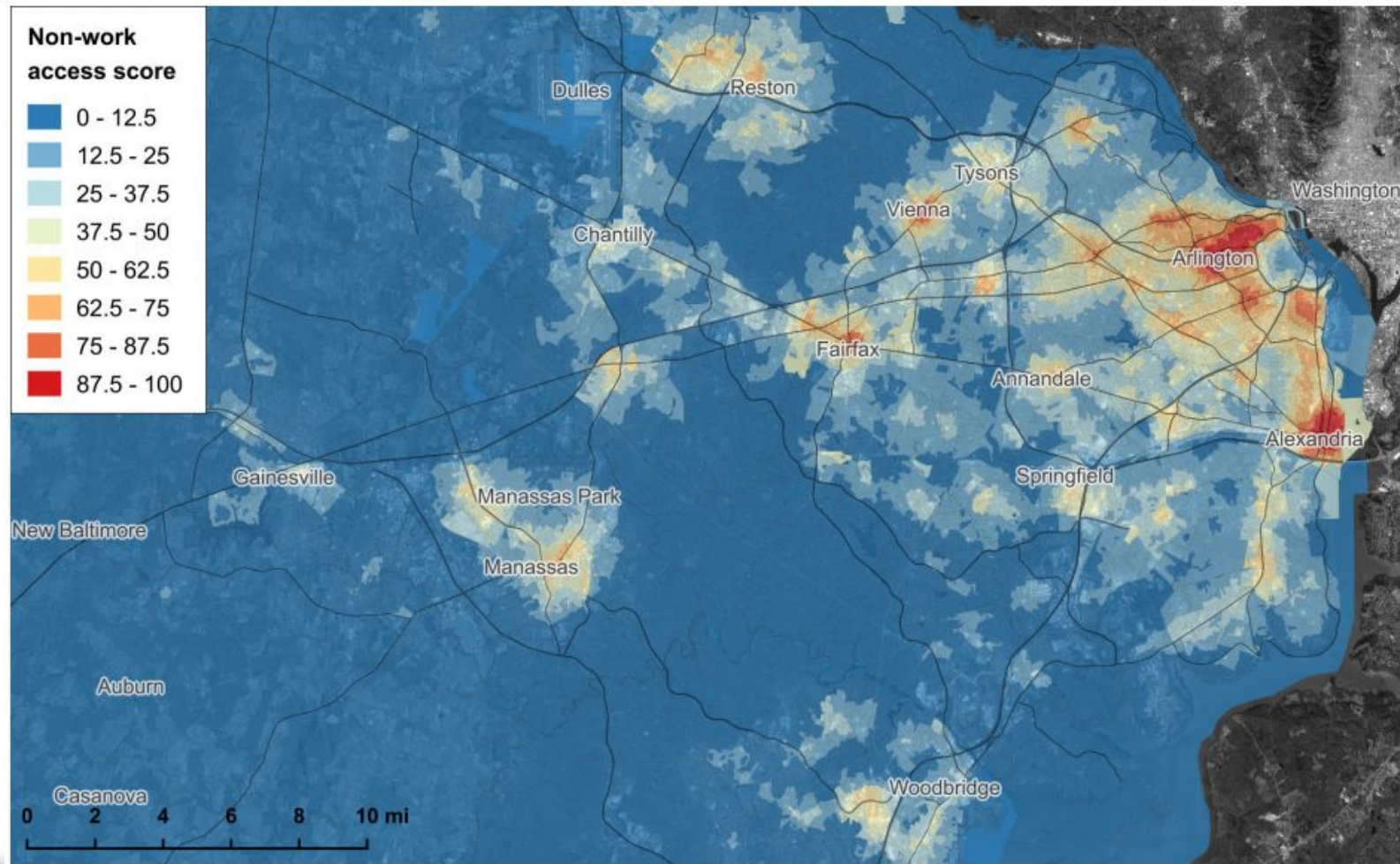


Land Use

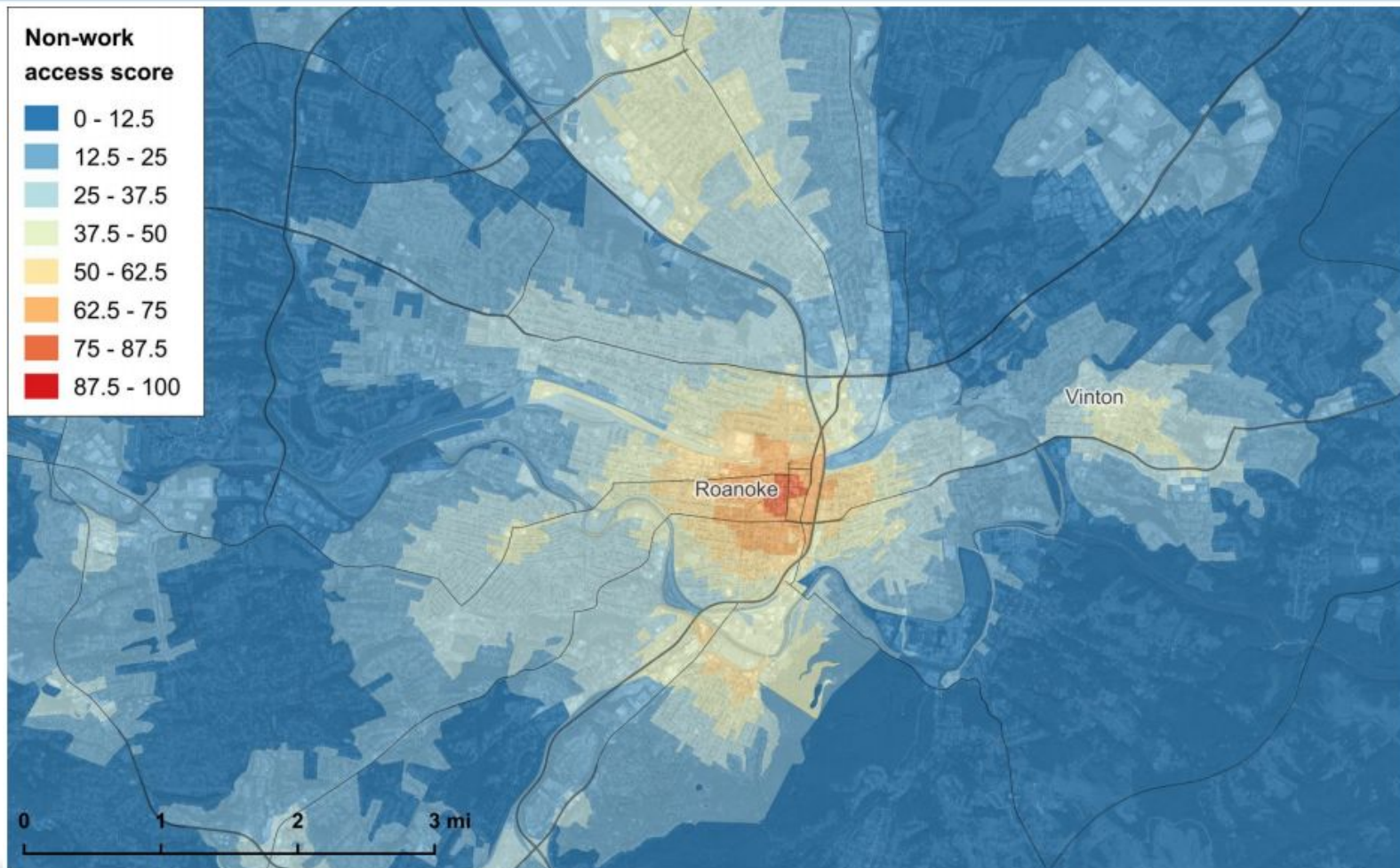
Non-work Accessibility



Land Use – Non-Work Accessibility Northern Virginia



Land Use – Non-Work Accessibility Roanoke



Land Use

Recommended Measures



- **70% of score based on**
 - 2025 population and employment
X
non-work accessibility
- **30% of score based on**
 - Change in population and employment (Current day to 2025)
X
non-work accessibility