

Performance Measurement in Regional Long-Range Plans

August 13, 2013

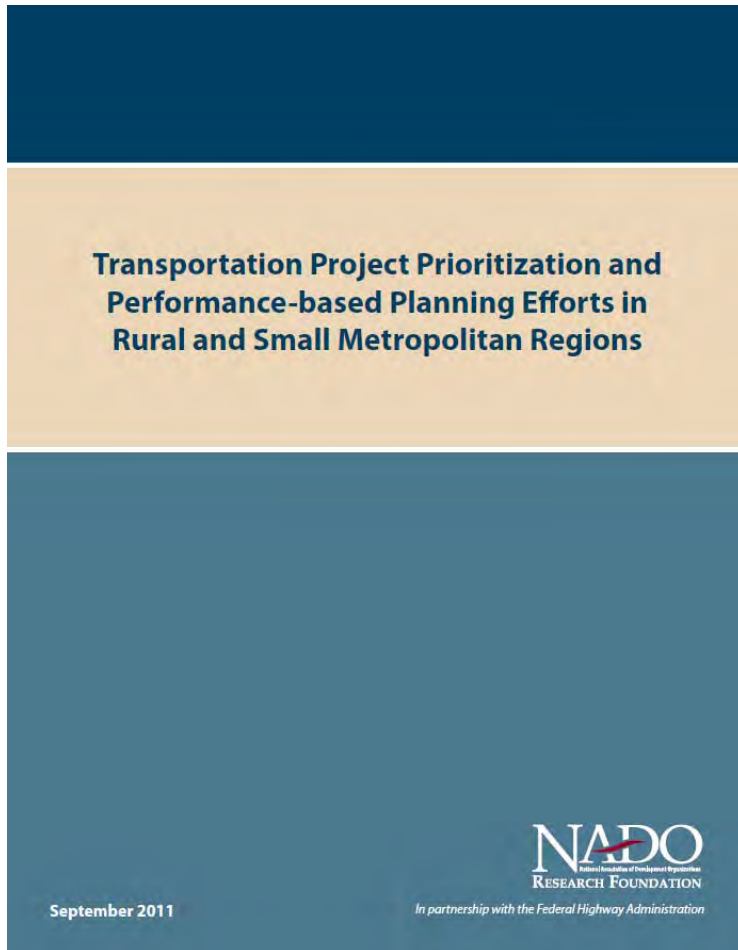
2 – 3 p.m. (ET)



About NADO

- National association for 540 regional development organizations, including emerging network of regional transportation planning organizations
- Promote public policies that strengthen local governments, communities and economies through the regional strategies

More Resources



- Report published in 2011 on RTPOs efforts in:
 - Project Prioritization
 - Performance-based Planning
- Available online at www.RuralTransportation.org

Webinar Information

- This webinar is supported under a cooperative agreement with the Federal Highway Administration
- Webinar recording and speakers' slides will be posted to www.RuralTransportation.org and www.NADO.org
- 1 AICP CM credit available
- Type comments into the Question box in the GoToWebinar panel at any time, and speakers will respond after all the presentation is finished

Webinar Speakers

- Egan Smith
 - Federal Highway Administration
- Jody McCullough
 - Federal Highway Administration
- Fred Bowers
 - Federal Highway Administration
- Darrel Johnson
 - Virginia Department of Transportation
- Elijah Wood
 - New River Valley Planning District Commission



U.S. Department of Transportation
Federal Highway Administration

FHWA Updates

NADO Webinar
August 13, 2013

Egan Smith, Jody Mccullough and Fred Bowers
FHWA - Office of Planning



MAP-21 – Impact on Planning

Transportation planning:

- Metropolitan and statewide transportation planning processes are continued and enhanced to incorporate performance goals, measures, and targets – along with reporting on the overall effectiveness of Performance-Based planning
- Public involvement remains a hallmark of the planning process



Performance-Based Planning and Programming

Performance-based planning and programming website presents the information that FHWA, FTA and our partners have developed to date featuring:

- Case Studies
- PBPP White Paper
- Recurring Newsletter
- Workshop Reports

www.fhwa.dot.gov/planning/pbp/

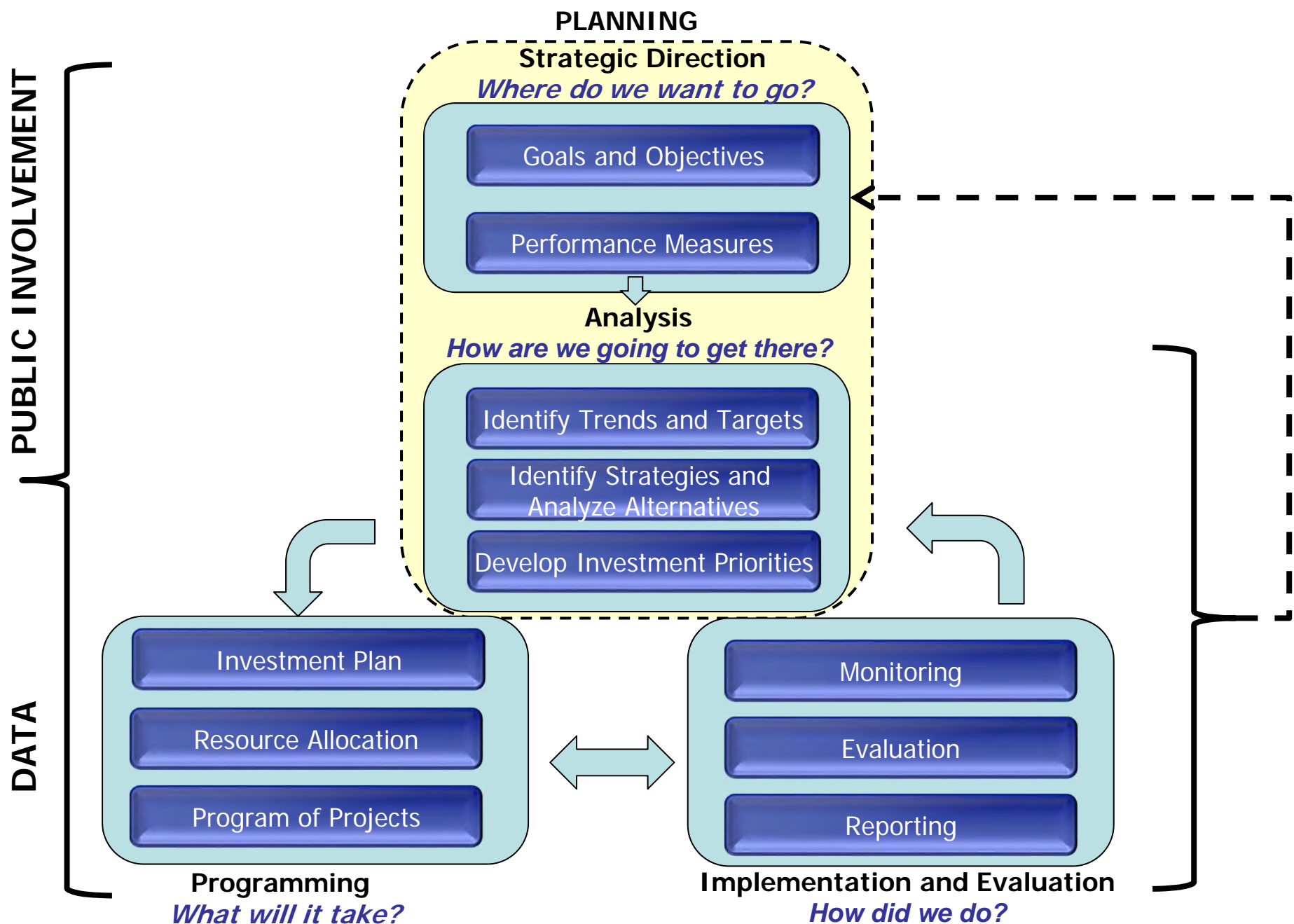
Performance Based Planning Activities

- Peer Exchange with AASHTO on Performance Measurement, Planning, and Programming - AASHTO Annual Meeting, Palm Desert, CA - October 22 -23, 2009
- National Conference on Performance Based Planning and Programming - Dallas, TX - September 13-15, 2010
- National Workshop on Performance Based Planning and Programming, Chicago, IL - September 21-22, 2011
- Regional Workshops on Performance-based Planning and Programming
 - Atlanta, Georgia – March 29, 2012
 - Providence, RI – June 19, 2012
 - Denver, CO – September 18, 2012
 - Raleigh, NC – June 20-21, 2013
 - Portland, OR – July/August, 2013
 - Minneapolis, MN – Fall, 2013 (tentative)



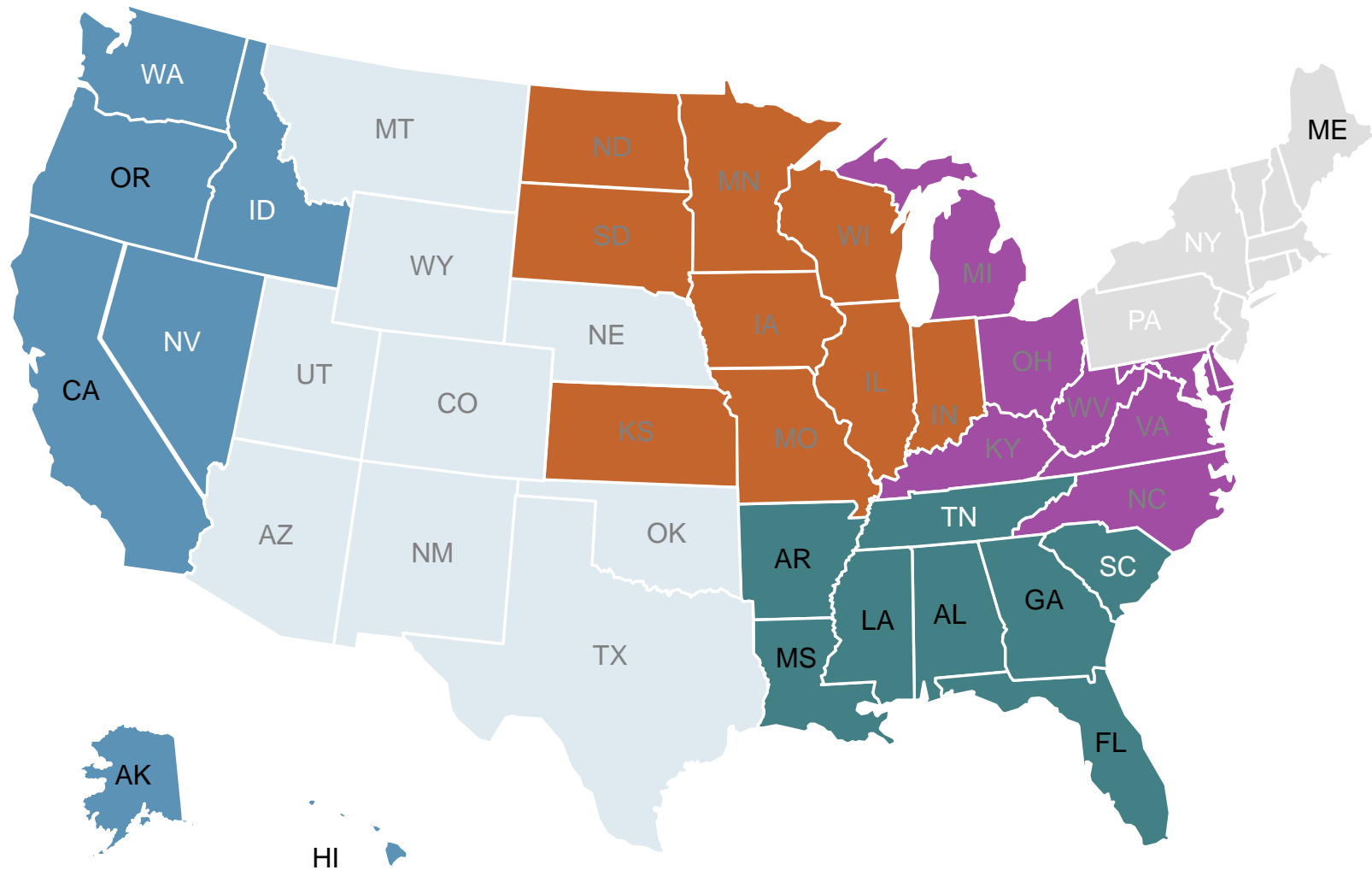
The PBPP Guidebook Series

- **The PB PP Guidebook Series includes -**
 - Performance Based Planning and Programming (PBPP) Guidebook, and
 - Model Long-Range Transportation Plans: A Guide for Incorporating Performance Based Planning (LRTP)
 - Performance Based Electronic STIP (E-STIP)



PERFORMANCED-BASED PLANNING AND PROGRAMMING

What's Next - Additional Regional Workshops



State Specific Workshop: Modules

1. Introduction to Performance Based Planning and Programming
2. Elements of Performance Based Planning and Programming
 - Goals, objectives and performance measures
 - Targets, resource allocation, and reporting
3. Complementary Performance-based Plans
4. Data and Tools
5. Action Plan Exercise



Integrating Performance-Based Plans into the Planning Process

- Strategic Highway Safety Plans
- Transportation Asset Management Plans - Highway
- Congestion Management Process
- Transit Asset Management Plans
- Transit Safety Plans
- Optional State Freight Plans
- Other Performance-Based Plans



Transportation Planning Capacity Building Planning for a Better Tomorrow

Search for Resources

Sign up for TPCB Updates

FHWA > HEP > TPCB

Home

About TPCB

Peer Learning

TPCB Focus Areas

Publications & Resources

Training & Education

Special Features

MAP-21

The 2012 Transportation Act transforms the way we build, maintain, and manage our Nation's transportation network. Find out what this means for [FHWA](#) and [FTA](#).

MAP-21

Moving Ahead for Progress in the 21st Century



FHWA MAP-21 Site



FTA MAP-21 Site

Training and Events Calendar

Event	Date
TRB Webinar: High to Low Speed Transition Zone Design and Mitigation	8/8/2013
(SR500) TAP Implementation Roundtable Discussion	8/12/2013
TRB Webinar: Entering Records into the Research in Progress (RIP) Database	8/14/2013
Tribal Transportation Planning Module Training Series Webinar: Project Prioritization	8/19/2013
Transportation Planning Information Exchange Webinar on TPEA	8/22/2013

Check the Calendar



New Publications

Publications:

- ▶ Moving Together in the 21st Century: How Ridesharing Supports Livable Communities
- ▶ Developing a Regional Approach to Transportation Demand Management and Nonmotorized Transportation: Best Practice Case Studies
- ▶ Metropolitan Area Transportation Planning for Healthy Communities

Peer Reports:

- ▶ National Scenario Planning Peer Exchange Report - July 8-10, 2012
- ▶ Scenario Planning Peer Workshop Report - Denver, Colorado
- ▶ Louisiana Planning & Development Districts Peer Exchange on Resiliency and Evacuation Planning

TPCB Key Resources

Key Issues

The Transportation Planning Process: Key Issues



A Briefing Book for Transportation Decisionmakers, Officials, and Staff

Data

Search the MPO Database



Find the name and contact information of the designated MPO for any metropolitan area over 50,000 in the nation.

Focus Areas

- ▶ Bicycle and Pedestrian
- ▶ Congestion and Transportation Demand Management
- ▶ Fiscal Constraint
- ▶ Metropolitan
- ▶ Performance-Based
- ▶ Public Engagement
- ▶ Public Lands
- ▶ Rural and Small Community
- ▶ Statewide
- ▶ Transit at the Table
- ▶ Tribal



Upcoming Events

- Next Stakeholders meeting August 14th, Washington DC
 - FHWA/FTA conduct quarterly Stakeholder meetings to help coordinate the activities of all major Stakeholders including NADO Representatives
- Broad Area Announcement
 - For FY 2014 FHWA will advertise a new BAA on FedBizOps this announcement once again includes research on Rural Transportation issues as one of the main topic areas. For those interested look for the announcement in October of 2013

Contacts

For Capacity Building

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- Fred Bowers – frederick.bowers@dot.gov
- Rae Keasler – rae.keasler@dot.gov
- Michelle Noch – michelle.noch@dot.gov
- Dave Harris (New!) – David.Harris@dot.gov

For Stewardship and Oversight

- Harlan Miller – harlan.miller@dot.gov
- Jody Mccullough - jody.mccullough@dot.gov
- Spencer Stevens – spencer.stevens@dot.gov
- Egan Smith (Performance Measures) – egan.smith@dot.gov



New River Valley
Planning District Commission

Virginia's Rural Long-Range Transportation Plan

Performance Measurements in Regional Long Range Plans

August 13, 2013

Darrel Johnson, VDOT
Rural Planning Program Manager

Elijah Sharp, NRVPDC
Director of Planning & Programs

Overview of Rural Program

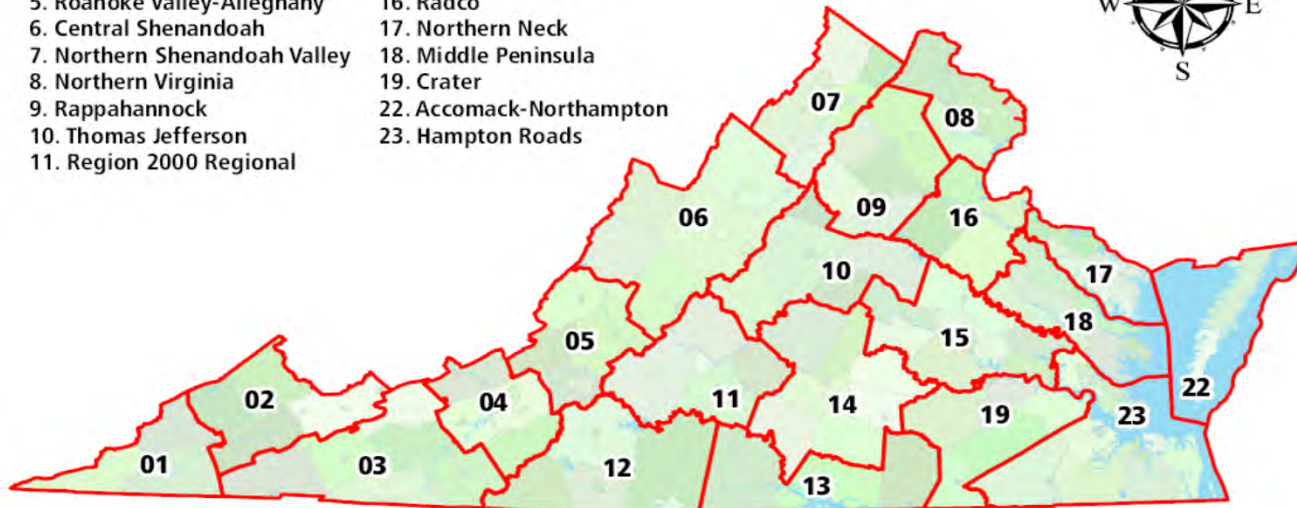
- The Rural Transportation Planning Program was created by VDOT's Transportation and Mobility Division (TMPD) in 1993 to provide funding to the 20 rural regions for transportation planning
- Each Rural Planning Districts Commission (PDC) receives \$58,000 from VDOT and the PDC provides \$14,500 in local match for a total of \$72,500 annually to support rural transportation planning
- In 2008, VDOT and the 20 Rural PDCs began a joint effort in the development of Rural Regional Long Range Transportation Plans



Overview of Rural Program

Virginia Planning District Commission Boundaries

- | | |
|-------------------------------|--------------------------|
| 1. Lenowisco | 12. West Piedmont |
| 2. Cumberland Plateau | 13. Southside |
| 3. Mount Rogers | 14. Piedmont |
| 4. New River Valley | 15. Richmond Regional |
| 5. Roanoke Valley-Alleghany | 16. Radco |
| 6. Central Shenandoah | 17. Northern Neck |
| 7. Northern Shenandoah Valley | 18. Middle Peninsula |
| 8. Northern Virginia | 19. Crater |
| 9. Rappahannock | 22. Accomack-Northampton |
| 10. Thomas Jefferson | 23. Hampton Roads |
| 11. Region 2000 Regional | |



Virginia Department of Transportation - Transportation and Mobility Planning Division 2008

Roles of VDOT

- **Coordinate activities among the rural PDCs across Virginia**
- **Review the PDCs' rural work programs and submit to FHWA for approval**
- **Provide technical assistance to the PDCs as needed**

Statewide Goals

- Goal 1:** Provide a transportation system that facilitates the efficient movement of people and goods
- Goal 2:** Provide a safe and secure transportation system
- Goal 3:** Retain and increase business and employment opportunities
- Goal 4:** Improve quality of life and minimize potential impacts to the environment
- Goal 5:** Preserve the existing transportation system and promote efficient system management

(* The goals are from a combination of VTrans2025 surveys and COFT)



Virginia's New River Valley



Role of Regional Commission (PDC)

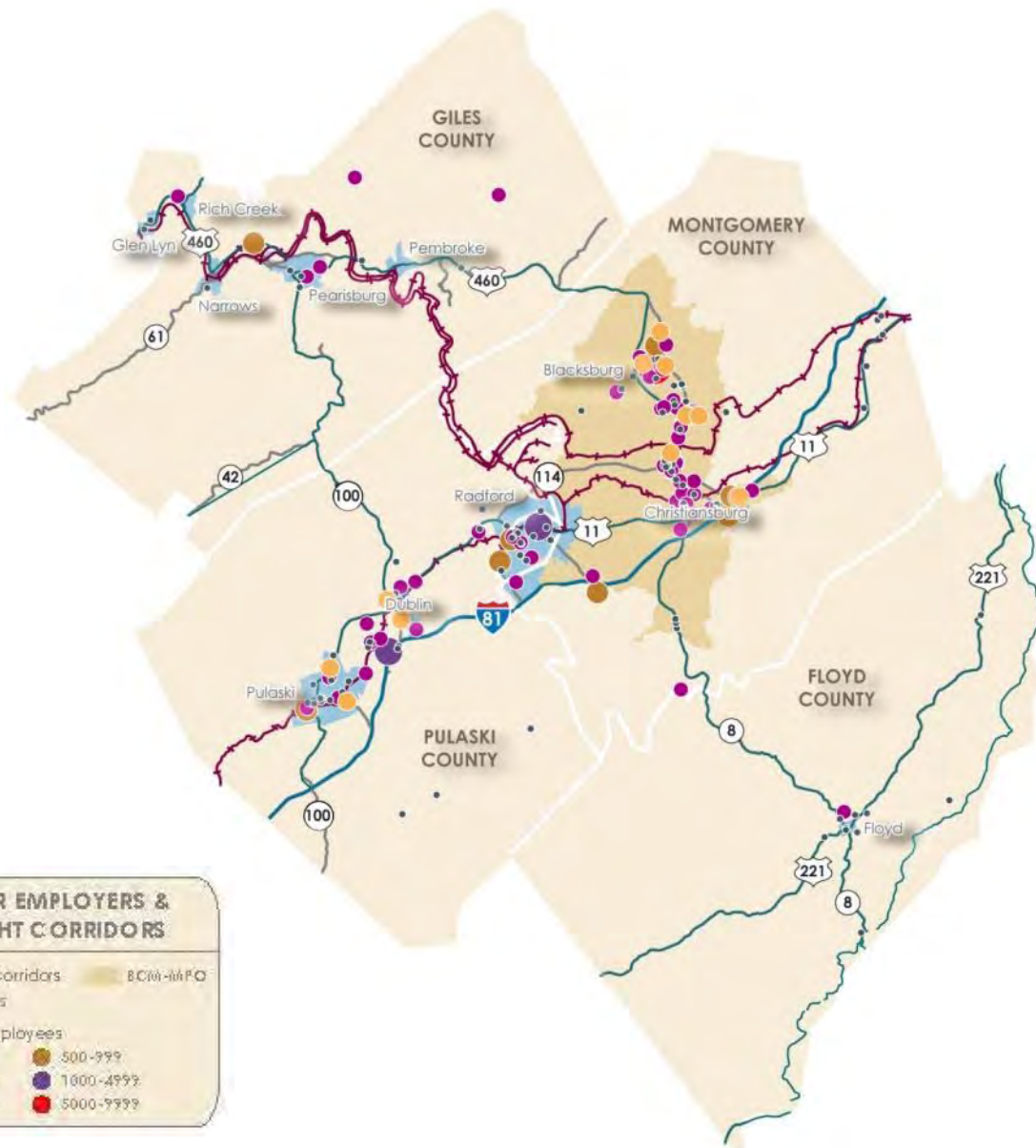
- **Coordination**
 - **Each Jurisdiction (NRV = 15)**
 - **Existing Multijurisdictional TAC**
- **Data Sharing**
 - **Integrating existing plans**
- **Review + Approve**

Regional Goals

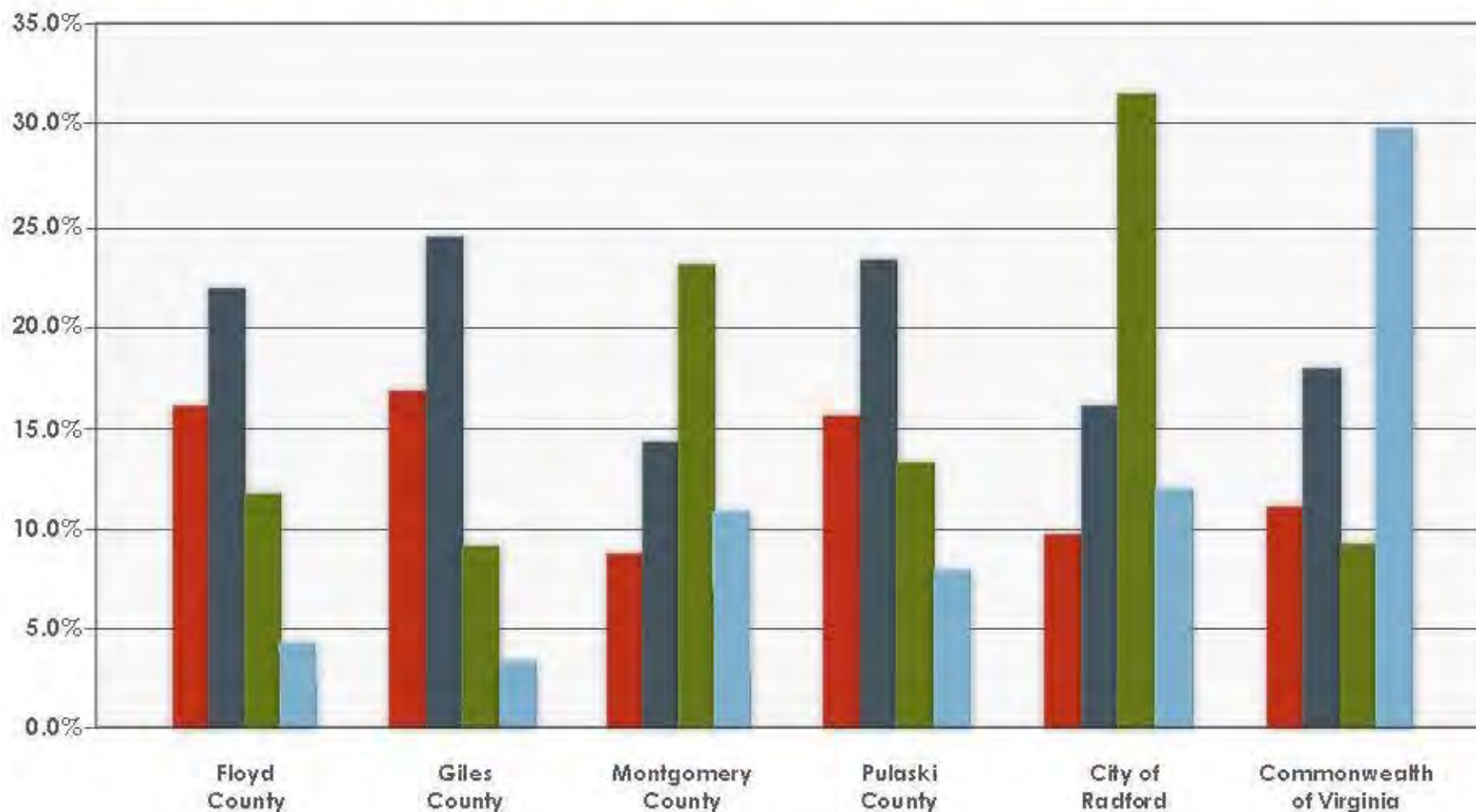
- Support & improve economic vitality
- Provide a safe system
- Preserve existing network
- Promote efficient system management
- Enhance links between modes
- Land use and transportation measures

Regional Goals

- **Support & improve economic vitality**
 - **Identified major employers**
 - **Identified major freight corridors**
 - **Evaluated demographic trends**



Elderly, Disability, Low-Income, and Minority Populations in the New River Valley Planning District Commission



LEGEND

Elderly
Disability
Low-Income
Minority



Source: US Census, 2000.
Note: People with disabilities is based on the population over 5 years of age. Low-income is a percentage of the population for whom poverty is determined.



New River Valley
Planning District Commission

Regional Goals

- **Provide a safe system**
 - **Identified Roadway system deficiencies**
 - By Intersection and Segment
 - Capacity (LOS)
 - Safety (sight distance, access management, signage, etc)
 - Geometric (width, curvature, etc)
 - Bridge (functionality, structural, etc)

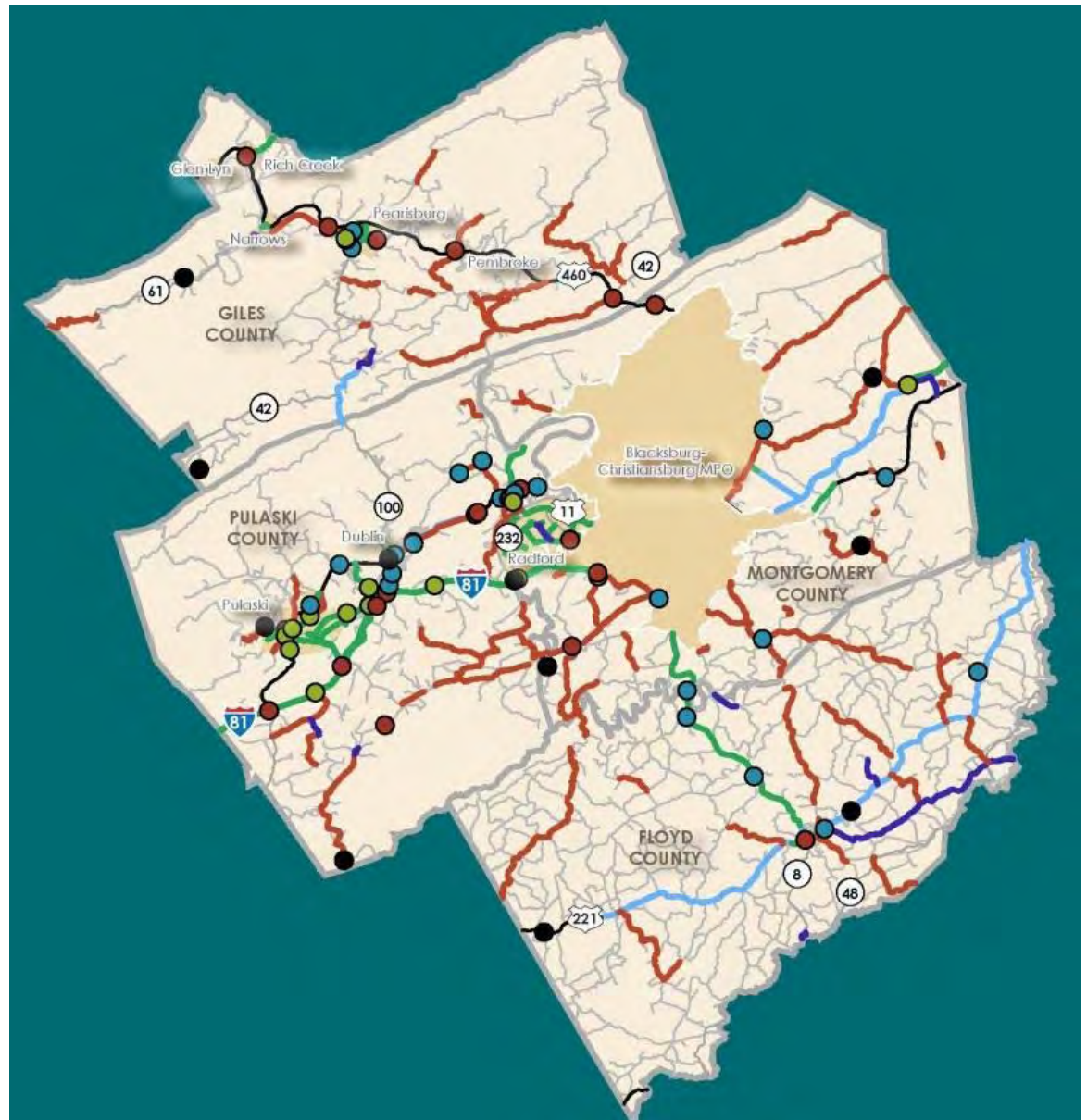
ROADWAY SYSTEM DEFICIENCIES

Intersection Deficiency

- Operation Deficiency
- Safety Deficiency
- Both Deficiencies
- Other Deficiencies

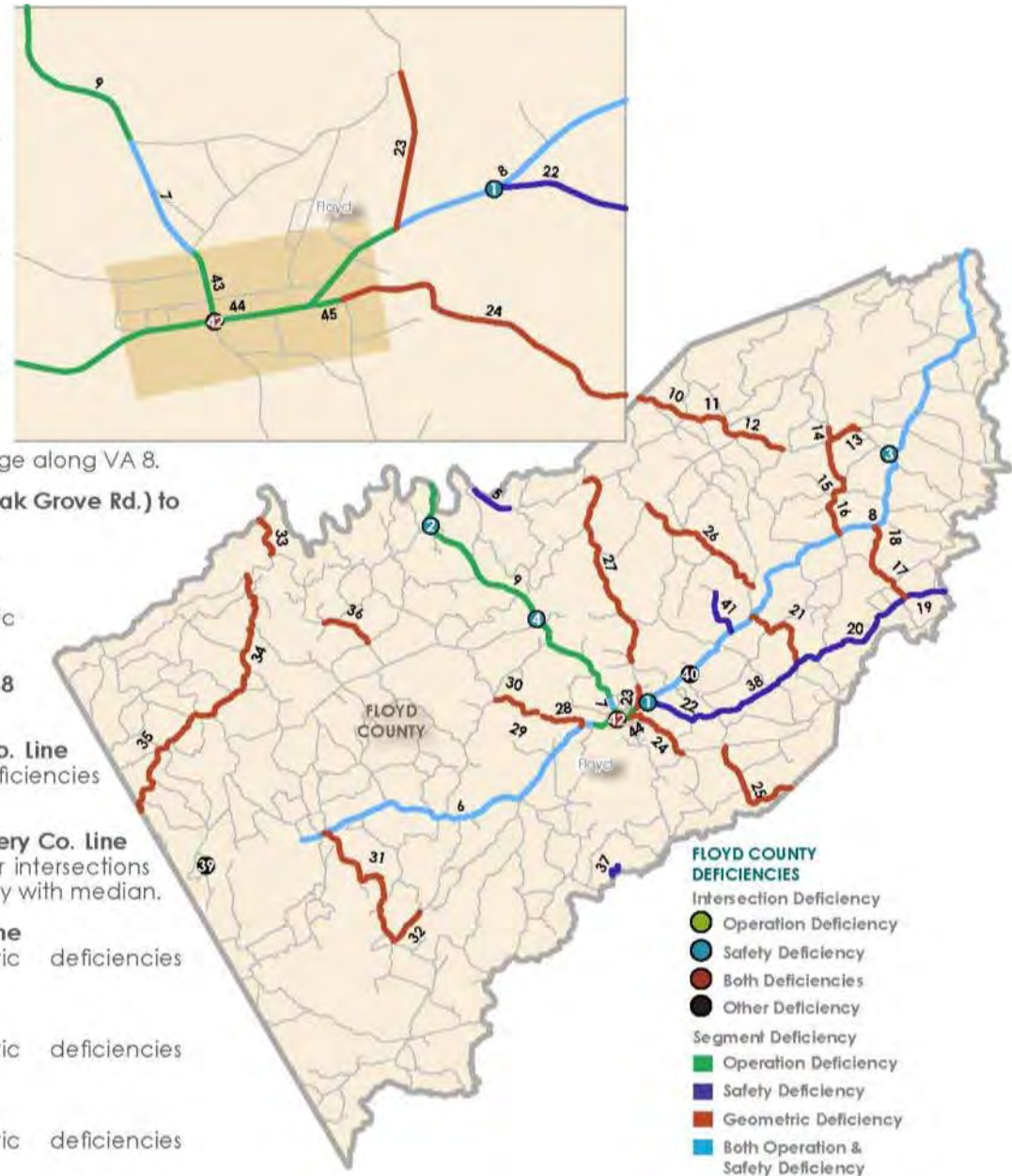
Segment Deficiency

- Operation Deficiency
- Safety Deficiency
- Geometric Deficiency
- Both Operation and Safety Deficiency



FLOYD COUNTY RECOMMENDATIONS

- 1 **VA 681/US 221**
Short-term maintenance; Mid-term add/improve turn lanes.
- 2 **VA 8/VA 750**
Short term maintenance and add "Intersection Ahead" signage along VA 8; Mid-term add westbound left turn lane.
- 3 **US 221/VA 642**
Short-term maintenance; Mid-term add turn lanes; Long-term reconstruct intersection to improve sight distance and address safety issues.
- 4 **VA 8/VA 730**
Short-term maintenance; add "Intersection Ahead" signage along VA 8.
- 5 **VA 663 (Sowers Mill Rd.) from 0.1 Mi. E. of VA 617 (White Oak Grove Rd.) to 1.0 Mi. E. of VA 617 (White Oak Grove Rd.)**
Long-term reconstruct to rural roadway design standards.
- 6 **US 221 (Floyd Hwy. S.) from VA 787 to T-1004**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
- 7 **VA 8 (Locust St.) from Floyd Northern Town Limit to VA 748**
Long-term widen to urban four-lane roadway.
- 8 **US 221 (Floyd Hwy. North) from VA 615 N. to Roanoke Co. Line**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).
- 9 **VA 8 (Locust St./Webbs Mill Rd.) from VA 748 to Montgomery Co. Line**
Mid-term improve shoulders and add turn lanes at major intersections along corridor; Long-term widen to rural four-lane roadway with median.
- 10 **VA 612 (Stonewall Rd.) from VA 660 to Montgomery Co. Line**
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).
- 11 **VA 660 (Daniel's Run) from VA 612 to VA 610**
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).
- 12 **VA 610 (Daniel's Run) from VA 660 N. to VA 669**
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).



Floyd County

Roanoke

Montgomery

Pulaski

Franklin

Carroll

Patrick



Legend

Base LOS 2035 LOS

A		A
B		B
C		C
D		D
E		E
F		F

0 2.5 5 10 Miles



Regional Goals

- **Preserve existing network**
 - **Reviewed functional classification**
 - **Identified:**
 - Airports
 - Bicycle and pedestrian facilities
 - Park and ride lots (TDM)

Regional Goals

- **Promote efficient system management**
 - **Developed a range of recommendations**
 - Short-term: maintenance
 - Mid-term: low/medium cost
 - Long-term: medium/high cost

46 columns from engineers

Region

5 columns for local review

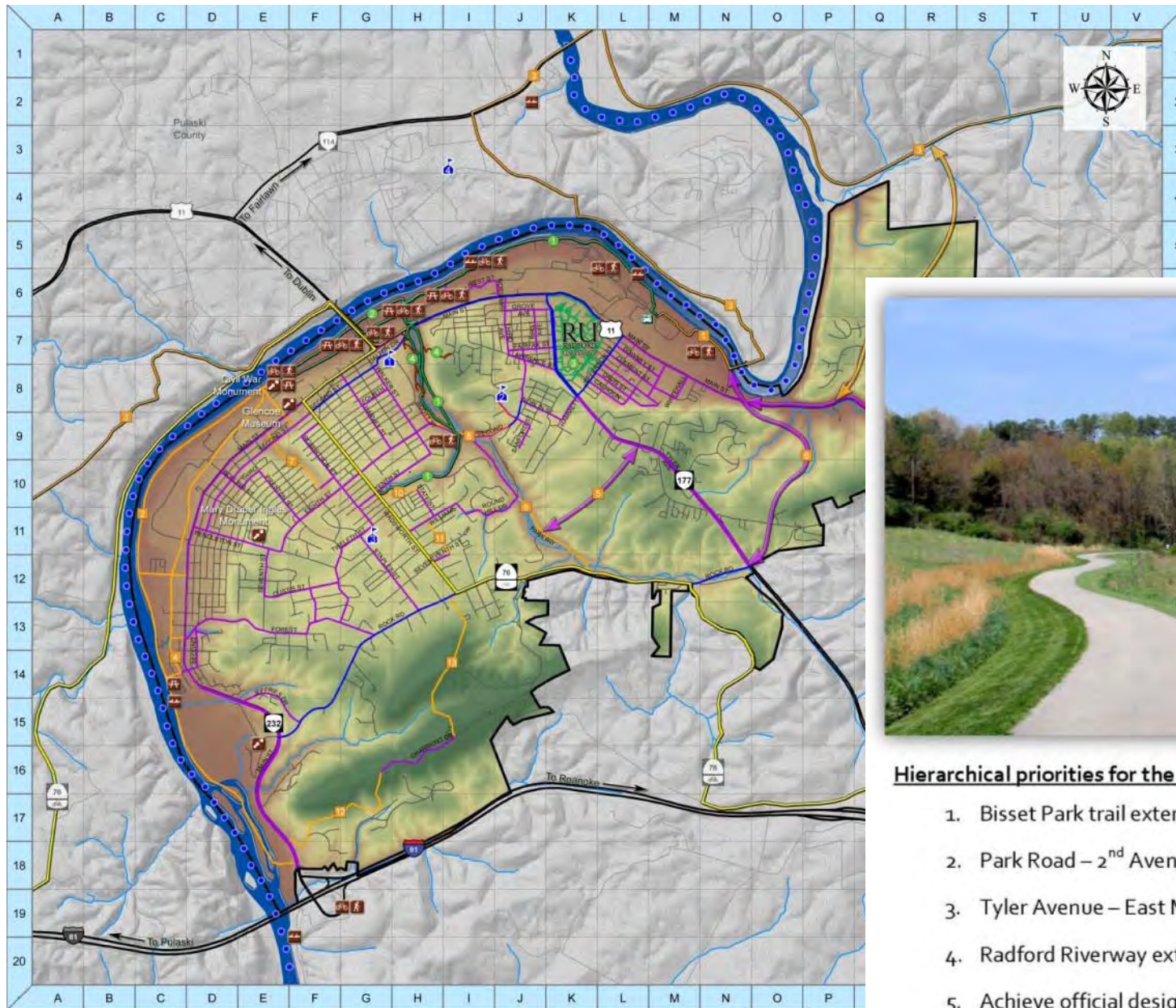
Locality

MAP KEY	LOCATION INFORMATION	DEFICIENCIES	RECOMMENDATIONS -- BLRP DRAFT	ADDITIONAL DISCUSSION
223	VA 177 (Tyler Road) at Rock Road	Safety: Given open, flat and likely high speed conditions along VA 177, the lack of four thousand right turn storage increases potential for rear-end accidents. Congestion: Identified by the county as a congested intersection. (Source: 3)	Short Term: Safety: Repair faded pavement markings. Mid Term: Safety: Install right turn lane on northbound VA 177 to reduce potential of rear-end accidents. Long Term: Congestion: Analysis of intersection shows this is not a high-priority congestion-related location. Continue to monitor roadway for traffic growth or other potential issues. (Source: 3)	
224	US 11 (Main Street) from Memorial Bridge to Street Avenue	Congestion: Identified by the county as a congested intersection. (Source: 1, 3)	Long Term: Congestion: Operations analysis indicates that this roadway segment would accommodate year 2035 travel demands at level of service C. Continue to monitor for issues that may warrant upgrading roadway from the existing seven-foot lanes to twelve-foot lanes. (Source: 3)	
225	US 11 (Main Street) from Street Avenue to VA 177 (Tyler Avenue)	Congestion: Identified by the county as a congested intersection. (Source: 1, 3)	Long Term: Safety: Reconstruct to urban roadway standards and re-align horizontal alignment. Congestion: Reconstruct fourteen two-lanes including sidewalk/bike lanes. (Source: 1, 3)	
226	Park Road from Rock Road to 2nd Avenue	Safety: Deficient horizontal alignment including a short, tight curve. Congestion: Identified by local study for long-term capacity improvements. (Source: 1, 4)	Long Term: Safety: Reconstruct to urban roadway standards and re-align horizontal alignment. Congestion: Reconstruct fourteen two-lanes including sidewalk/bike lanes. (Source: 1, 3)	
227	VA 232 (2nd Street) from Dilling Street to Wirt Street	Congestion: Segment will operate with unacceptable LOS D in 2035. (Source: 3)	Long Term: Congestion: Urban - 4 Lane With Median. (Source: 3)	
227	Rock Rd. from Washworth Street to Park Road	Congestion: Segment will operate with unacceptable LOS D in 2035 and was identified by local study for long-term capacity improvements. (Source: 3, 4)	Long Term: Congestion: Widen to urban four lanes including sidewalk/bike lanes. (Source: 3)	Noted that future travel demand appears to be satisfied, but continue to monitor for warrants of upgrading roadway from 11' to 12'.

Added column for notes and concerns

Regional Goals

- **Enhance links between modes**
 - Integrating multimodal data into DOT system
 - VA = 7 roadway databases

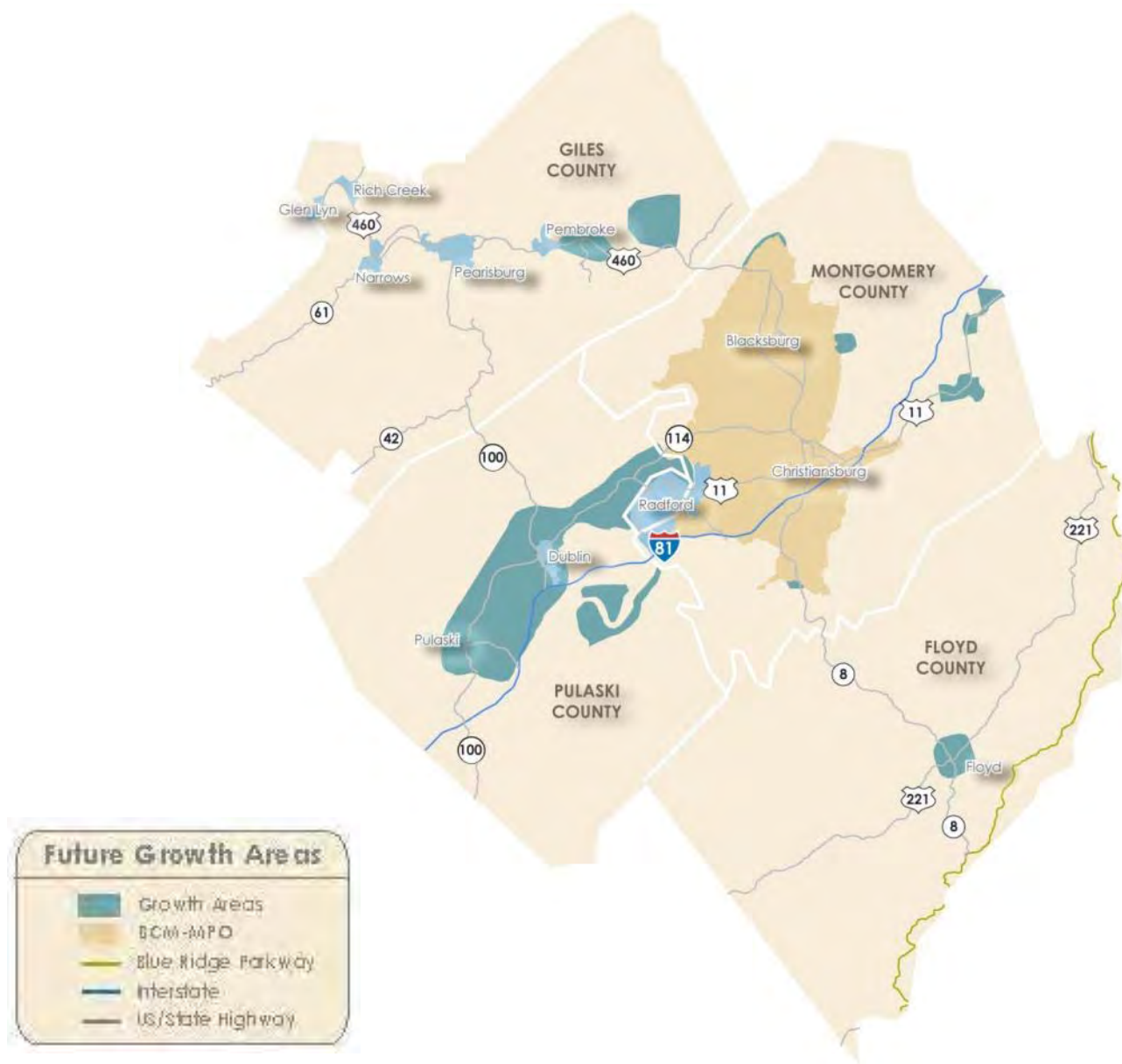


Hierarchical priorities for the Radford area include:

1. Bisset Park trail extension into west Radford
2. Park Road – 2nd Avenue Connector
3. Tyler Avenue – East Main Street Connector
4. Radford Riverway extension to abandoned rail trestle
5. Achieve official designation as a "Bicycle Friendly Community."
 - a. Improve streets and intersections to be more bicycle and pedestrian friendly.

Regional Goals

- **Land use and transportation measures**
 - Identified future growth areas
 - Recommendations by locality
 - Comprehensive plan updates



Regional vs. Statewide Goals

- Support & improve economic vitality
- Provide a safe system
- Preserve existing network
- Promote efficient system management
- Enhance links between modes
- Land use and transportation measures
- Ensure continued quality of life

Applying Statewide Process Locally

- DOT developed over 20 RLRPs
 - PDC/VDOT engaged local partners
 - Coordinate data collection
- Utilized the RLRP for:
 - Comprehensive Plan updates
 - Day-Rides between DOT and locality

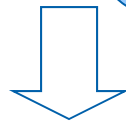
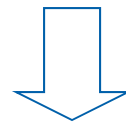
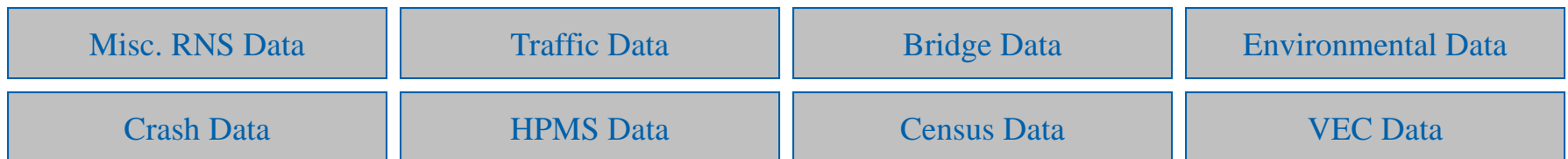
Applying Statewide Process Locally

- **PDC/VDOT engaged local partners**
 - **Select detailed study locations**
 - **Review Recommendations for applicability**
 - **PDC's Technical Advisory Committee**
 - **Public Meetings**
 - **Develop Technical Document**

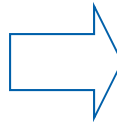
Applying Statewide Process Locally

- **Select detailed study locations**
 - **“Hot Spot” Criteria (Scale = 1 -6):**
 - Regional Connectivity
 - Number of Crashes
 - Land Use: Industrial – Minimal Residential

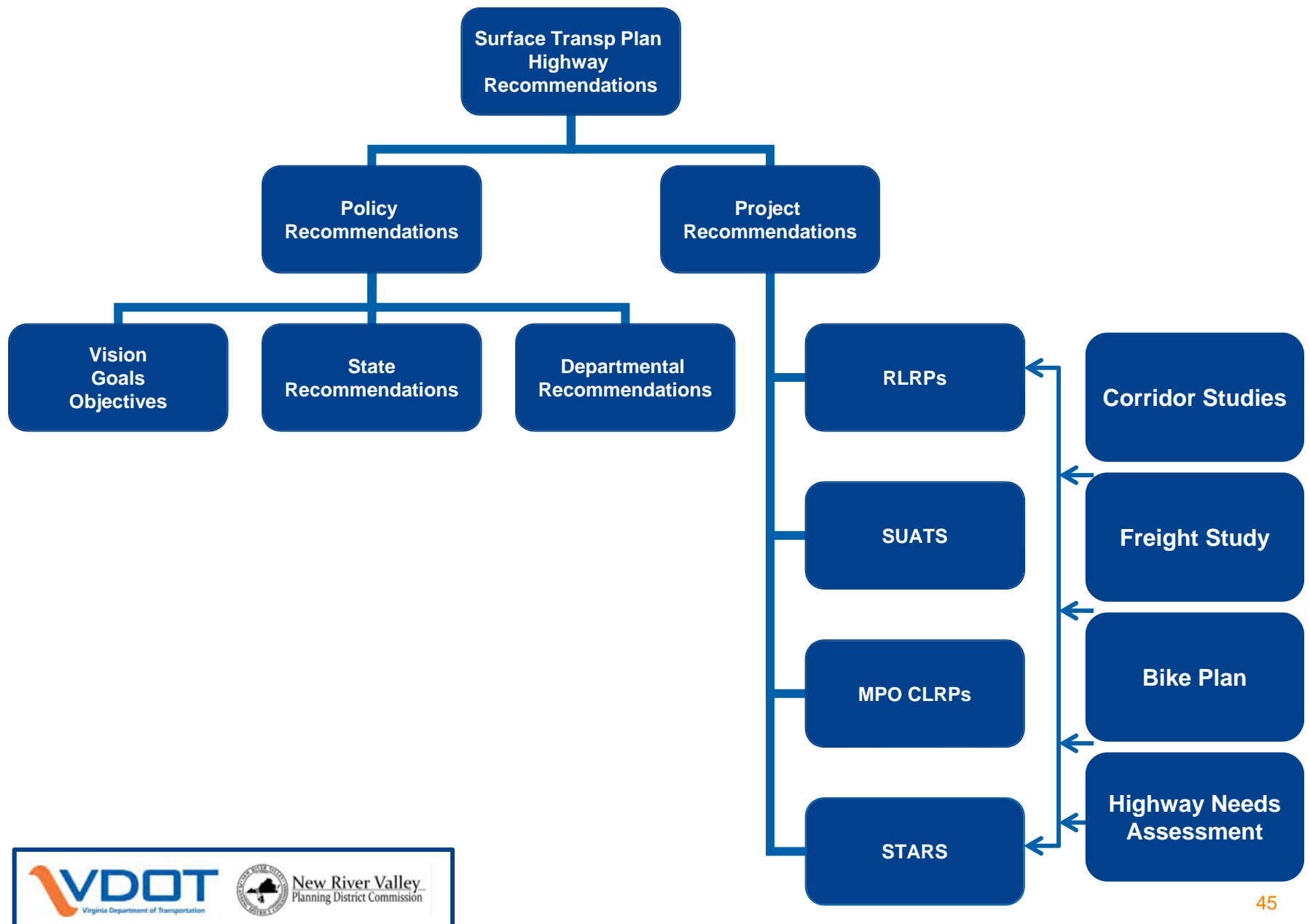
Statewide Planning System (SPS)



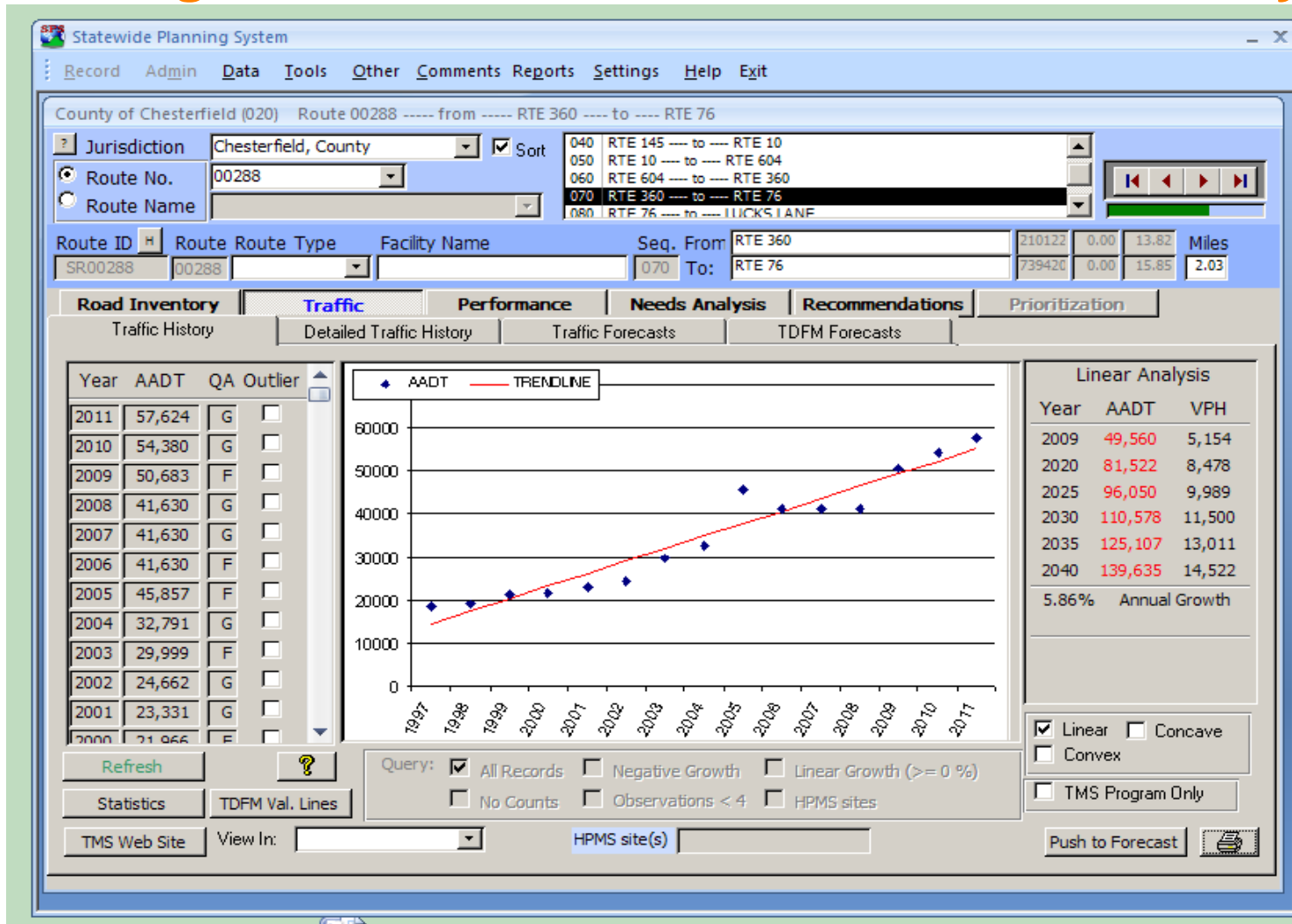
- Detailed Road Inventory
- Historical Traffic Data
- Commuter Lots
- Traffic Forecasts
- Performance Measures
- System Generated Needs
- Recommendations
- Census Data
- Local Land use Data
- Freight Data



- Metropolitan Long-Range Plans
- Air Quality Documents
- Traffic Studies (Corridor, TIA, etc.)
- Highway Needs Assessment
- Rural Long Range Plans
- State Highway Plan
- VTRANS
- Functional Classification
- National Highway System
- Prioritization
- Travel Demand Models



Using SPS to determine needs – Traffic History



Using SPS to determine needs – Traffic Forecast

Statewide Planning System

Record Admin Data Tools Other Comments Reports Settings Help Exit

County of Chesterfield (020) Route 00288 ----- from ----- RTE 360 ---- to ---- RTE 76

Jurisdiction: Chesterfield, County ☒ Sort

Route No.: 00288

Route Name:

040 RTE 145 --- to --- RTE 10
050 RTE 10 --- to --- RTE 604
060 RTE 604 --- to --- RTE 360
070 RTE 360 --- to --- RTE 76
080 RTE 76 --- to --- LUCKS LANE

Route ID: SR00288 Route: 00288 Route Type: Seq. From: RTE 360 To: RTE 76

210122 0.00 13.82 Miles
739420 0.00 15.85 2.03

Road Inventory Traffic Performance Needs Analysis Recommendations Prioritization

Traffic History Detailed Traffic History Traffic Forecasts TDFM Forecasts

Forecast Year VPD % Heavy Trucks Direction Factor K Factor AM Peak Vol. PM Peak Vol. Peak Hour Factor % Right Turns % Left Turns Working Horizon Year (2035) Default Forecast = 79,000 ?

Forecast Year	VPD	% Heavy Trucks	Direction Factor	K Factor	AM Peak Vol.	PM Peak Vol.	Peak Hour Factor	% Right Turns	% Left Turns	Active Date	InActive Date	UPC
2035	79,000									08/08/2007 1:37:13 PM		
												MUSTAIN_WR
												<input checked="" type="checkbox"/> Forecast Exception
2015	62,000									12/31/1994 11:59:59 PM		
												DOE_J
												<input checked="" type="checkbox"/> Forecast Exception

Data Source Graphical View Add Update Copy

Using SPS to determine needs- Highway Capacity / LOS

Statewide Planning System

Record Admin Data Tools Other Comments Reports Settings Help Exit

County of Chesterfield (020) Route 00288 ----- from ----- RTE 360 ---- to ---- RTE 76

Jurisdiction: Chesterfield, County ☒ Sort

Route No.: 00288

Route Name:

040 RTE 145 ---- to ---- RTE 10
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080 RTE 76 ---- to ---- JUCKS LANE

Route ID: SR00288 Route: 00288 Facility Name: Seq. From: RTE 360 To: RTE 76

210122 0.00 13.62 Miles
739420 0.00 15.85 Miles

Road Inventory Traffic Performance Needs Analysis Recommendations Prioritization

No-Build / Build Bicycle LOS

Capacity Analysis Type: Freeway / Expressway

Level of Service Threshold: D Est. Initial Free Flow Speed (mph): 75
Street Class: 1 Est. Free Flow Speed (mph): 70.5

Measures: Base Year Trend Based Upon Most Recent AADT and Working Year Forecast

Buttons will only be enabled if there is: (A) a deficiency (B) SPS recognizes a solution.

Solution Analysis
Build Analysis
Cost Analysis
Push to Recommendation
LOS What if Analysis

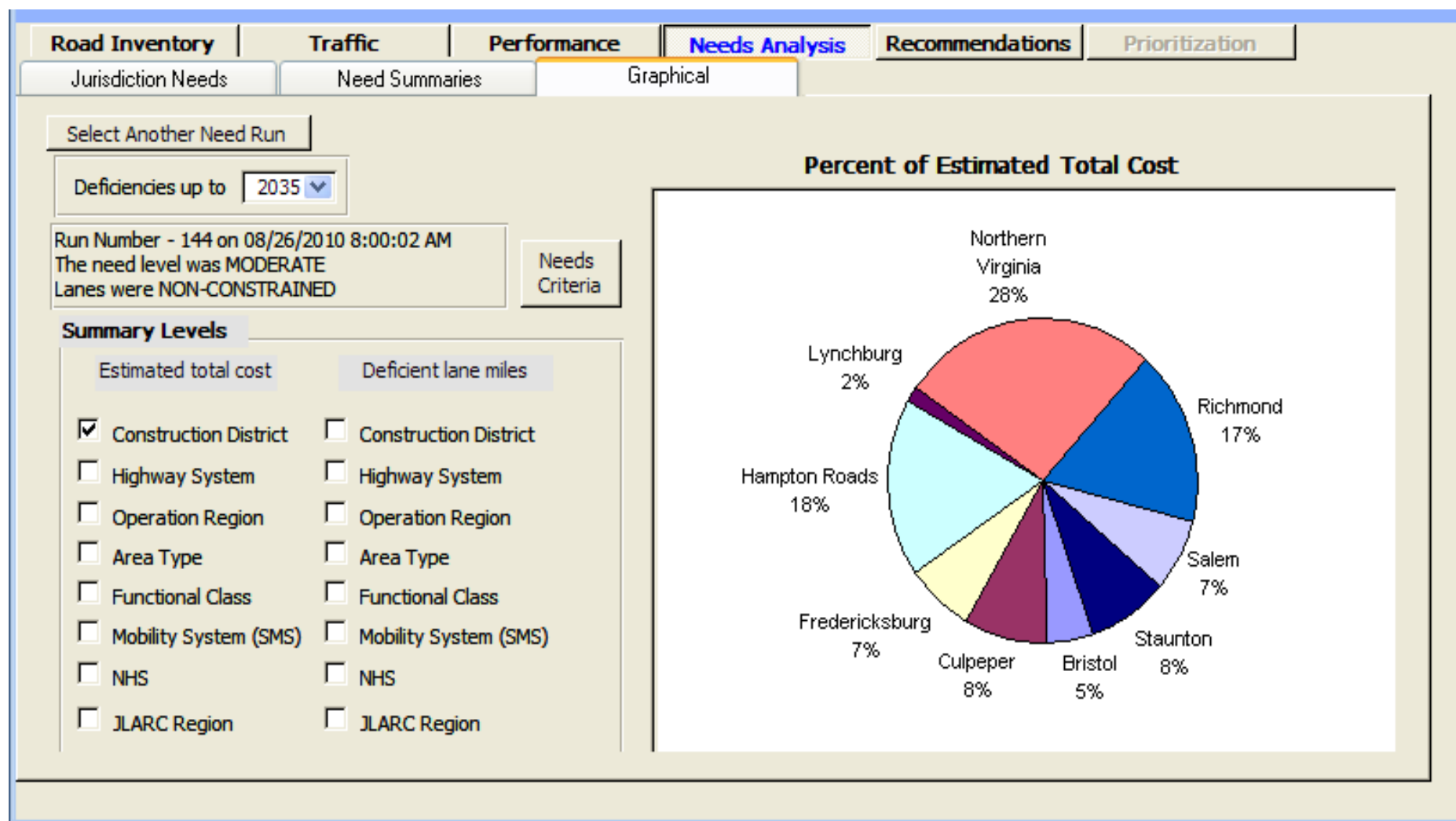
If an item is greyed out, it is not relevant given analysis type.

HCS Inputs

Year	2009	2020	2025	2030	2035	2040
Est. Peak Hour Traffic (v/h)	5,271	6,827	7,290	7,753	8,216	8,679
Heavy Vehicle Factor	0.976	0.980	0.980	0.980	0.980	0.980
Heavy Vehicle Factor Follow						
Flow Rate (pc/h/ln)	2071	2669	2850	3031	3212	3393
Flow Rate Follow (pc/h/ln)						
Density (pc/mi/ln)	30.7	59.4	86.5	129.7	215.6	347.1
Percent Time Following						
Control Delay(seconds/veh)						
Avg. Speed (m/h)	67.5	45.0	33.0	23.4	14.9	9.8
Adj. Sat. Flow Rate (pc/h)						
Capacity (pc/h/ln)	2400	2400	2400	2400	2400	2400
V/C Ratio:	0.86	1.11	1.19	1.26	1.34	1.41
Geometric Deficiency (SLW):						
Operating LOS	D	F	F	F	F	F

Criteria

Needs Analysis



Using SPS to determine needs- Needs Analysis Run

Juris. No.	Route	Seq.	Route Type	Analysis Type	2035 VPD	Need Year	LOS Threshold	Improve Type	Typical Section	No-Build LOS	Build LOS	No-Build Speed	Build Speed	Est.Total Cos' (1,000's)
000	00001	010		UA	84,244	2009	D	W	U6D	F	D	1.62	15.47	4,568
	JEFFERSON DAVIS HIGHWAY				NCL ALEXANDRIA				RTE 120			0	T F F F F	
000	00001	020		UA	63,400	2009	D	W	U6D	F	C	2.39	23.76	5,177
	JEFFERSON DAVIS HIGHWAY				RTE 120				CRYSTAL DRIVE			0	T F F T F	
000	00001	025		UA	63,400	2030	D	W	U8D	F	A	8.76	31.69	8,584
	JEFFERSON DAVIS HIGHWAY				CRYSTAL DRIVE				RTE 233			0	T F F F F	
000	00001	030		UA	67,836	2030	D	W	U8D	F	A	8.96	31.44	31,121
	JEFFERSON DAVIS HIGHWAY				RTE 233				15TH STREET			1	T F F F F	

Congestion

Geometric

Bridge

Safety

Pavement

Needs
(True/False)

Corridor Analysis

Quick Corridor Performance Analysis

System: Relies on valid ROUTE ID and milepoints!

Route Prefix: RouteID:

Route Number:

Route Suffix: ☐ Allow Manual MP's

From:

To:

Total Distance

Select Analysis Year: ☐ Build Analysis Given Most Recent Planned Improvements Along Route

Select Measures:

	AADT	VPH	Flow Rate	VC Ratio	Cong. Speed	LOS
Average:	19431	1702.5	714	0.39	39.5	B
Weighted Average:	16250	1409.8	633.47	0.32	44.38	A-
Lowest:	8000	712	241	0.11	20.78	A
Highest:	29300	2696	1477	0.87	52.42	D
Total VMT:	239358					
Total VHT:	6060					

Weight Based on:

☐ Lane Miles

☒ Center Lane Miles

A long corridor with many selected measures may take a minute or two!

Using SPS to determine needs- SPS build analysis tool

SPS Build Analysis

Year	2009	2020	2025	2030	2035	2040
Rec. Typ. Section		R6D	R6D	R6D	R6D	R8D
Flow rate (pc/h/ln)		1,780	1,900	2,021	2,142	1,697
Avg. Speed (mph)		69	68	67	65	71
Density (pc/mi/ln)		26	28	30	33	24
V/C ratio		0.74	0.79	0.84	0.89	0.71
Operating LOS		C	D	D	D	C

Due to anomalies in data structure, SPS is not always able to find a solution to satisfy the threshold. However, the system will make a recommendation that improves mobility.

Close

Level Of Service - What If Analysis

LOS What if Analysis: County of Chesterfield, Route 00010, Sequence 010

Capacity Analysis Type	Urban Arterial	
Operation Type	Two-way	
Segment Length (mi)	0.77	(mi/sig) 0.69
Number of Thru Lanes	4	
Average Lane Width (ft)	12	
Shoulder Width (ft)	Left: 6	Right: 6
Distance to Obstruction (ft)	Left: 4	Right: 4
Median Type	Depressed	
Area Type	Urbanized	
Land Use	Medium Density Business	
20 - 29 Access Points Per Mile		
Terrain Type	Level	
Funct. Class	Urban Other Principal Arterials	
Percent No Passing	0	
Number of Signals	1	
Average Cycle Length (Sec.)	110	% Green Time (sec.)
Average Green Time (Sec.)	60	55.0
Speed Limit (mph)	45	(Default = 50)
Measured Free Flow Speed	49	(Default = 62)

Street Class: 1 2 3 4

(FFS Range: ≥ 43 and ≤ 65)

Analysis Year VPD	21,541
Analysis Year VPH	1,896
% Heavy Vehicles (hv)	5
Directional Distribution Factor (dd)	0.50
Peak Hour Percentage Factor (K)	0.09
Peak Hour Factor (phf)	0.90
Percent Exclusive Right Turns	5
Percent Exclusive Left Turns	15

Analysis	
LOS Threshold	D
Flow rate (pc/h/ln)	843
Adj. Sat. Flow rate (pc/h)	1461
Base Free Flow Speed (m/h)	49
Est. Free Flow Speed (m/h)	49.0
Avg. Speed (m/h)	38.2
Percent Time Following	
Density (pc/mi/ln)	
V/C ratio	0.52
Operating LOS	B

Initial data and analysis is based on the current road segment and the most recent traffic. No data is actually altered in the the SPS database.

Close

Performance Summary

Performance Summary Query

Example question this form is designed for: What is the expected percentage of lane miles deficient (LOS E or F) for the year 2025 on the Interstate system distributed by MPO?

Summarize By: System (Funding)
 Interstate
 Primary
 Secondary
 Urban
 Other

Select Analysis Year: 2025

Deficiency Analysis Based on:

LOS Thresholds: ☐ Conservative ☒ Moderate ☐ Aggressive

OR

Level of Service: A B C D E F

OR

VC Ratio > Than:

☒ Only on Statewide Mobility System (SMS)

	AREA:	SYSTEM:	DEFICIENT LANE MILEAGE:	TOTAL LANE MILEAGE:	PERCENTAGE DEFICIENT:
<input type="checkbox"/> Statewide	Bristol	Interstate	278.36	533.18	52.208
<input type="checkbox"/> Jurisdiction	Culpeper	Interstate	142.96	291.72	49.006
	Fredericksburg	Interstate	178.2	281.1	63.394
	Hampton Roads	Interstate	593.09	875.61	67.734
<input checked="" type="checkbox"/> Construction District	Northern Virginia	Interstate	612.97	706.31	86.785
	Richmond	Interstate	642.06	1305.94	49.165
<input type="checkbox"/> MPO	Salem	Interstate	370.2	492.5	75.168
	Staunton	Interstate	375.8	941.28	39.924

This analysis only includes facilities functionally classified minor collector or greater.
 This is a snapshot of data revised nightly.

Project Prioritization Process

The Prioritization Process begins as an objective evaluation reflecting the following goals. The criteria weightings relate to these goals. The findings ideally feed VDOT's and CTB draft SYIP review and selection process, to have the selected candidates initiate their project development process (beginning with PE, and subsequently the R/W and constructions stages)

	<u>Weight*</u>
Goal 1: Provide a transportation system that facilitates the efficient movement of people and goods	29%
Goal 2: Provide a safe and secure transportation system	23%
Goal 3: Retain and increase business and employment opportunities	18%
Goal 4: Improve quality of life and minimize potential impacts to the environment	15%
Goal 5: Preserve the existing transportation system and promote efficient system management	<u>15%</u>
	100%

(* The goals are from a combination of VTrans2025 surveys and COFT)



Prioritization Performance Measures
Goal 1: Provide a system that facilitates the efficient movement of people and goods.
A. Weighted Level of Service (Peak Hour)
B. Weighted Volume to Capacity Ratio (Peak Hour)
C. Weighted Flow Rate
D. Reduction in Travel Delay (under development)
Goal 2: Provide a safe and secure transportation system
A. Crash Rate (fatal + injury)
B. Strategic Highway Network/Emergency Evacuation Route
Goal 3: Improve Virginia's economic vitality and provide access to economic opportunities for all Virginians
A. Weighted Daily Volume of Trucks
B. ARRA Economically Distressed Areas
Goal 4: Improve quality of life and minimize potential impacts to the environment
A. Potential Environmental or Cultural Impacts
B. Potential Right-of-Way Impacts (High, Medium, Low)
Goal 5: Preserve the existing transportation system and promote efficient system management
A. Pavement Deficiency
B. Inclusion of Other Modes
C. Structurally Deficient Bridges
D. Cost Effectiveness

Project Prioritization Process

(cont'd)

- **Review Teams use a combination of technical data and other considerations to identify priorities:**
 - **Results of prioritization (scores and rankings)**
 - **Examples of other considerations:**
 - Whether the priority improves a route that the state has designated as a CoSS.
 - Knowledge of Local and Regional (MPO and/or PDC) Support
 - Availability of funding vs. improvement cost (preliminary planning estimate – not based on PCES)
 - Leveraging of funding sources – maximizing the use of federal/local/potential private funding sources
 - Project development considerations – time it will take to implement the improvement
 - Project phasing - starting the next phase of a multi-phase roadway improvement
 - Route continuity – improvement maintains a logical transition with existing facilities
- **Once priority recommendations are identified, the District Administrators meet with the CTB members to discuss and review the Candidate Lists**
- **These lists become the information presented for preliminary public, local and regional review and comment at Fall Transportation Meetings**

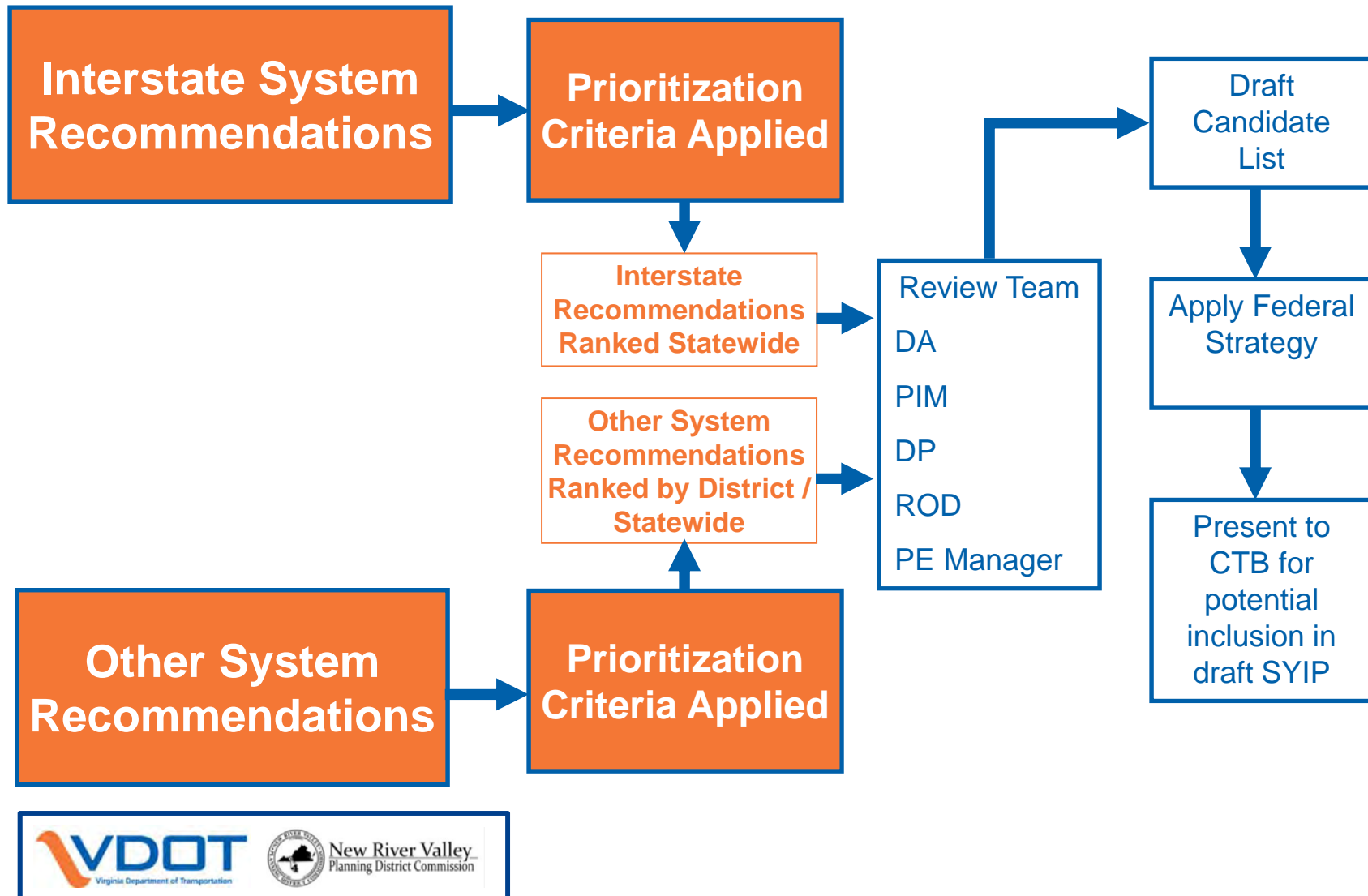
Project Prioritization Process

(cont'd)

- **Nine District review teams are responsible for finalizing the list of prioritized recommendations for the next SYIP**
- **Each team includes the following individuals:**
 - **District Administrator**
 - **District P.E., Construction and Maintenance Engineers**
 - **District ROD**
 - **District Planner**
 - **District Planning and Investment Manager**
 - **CO Statewide Planning (TMPD)**
- **Once priorities are identified, the District Administrator coordinates with the respective CTB member for that district to finalize the candidate improvement list**
- **CTB must address other considerations prior to including projects in the candidate list (local support, inclusion in MPO CLRP)**



Prioritization Process Flow



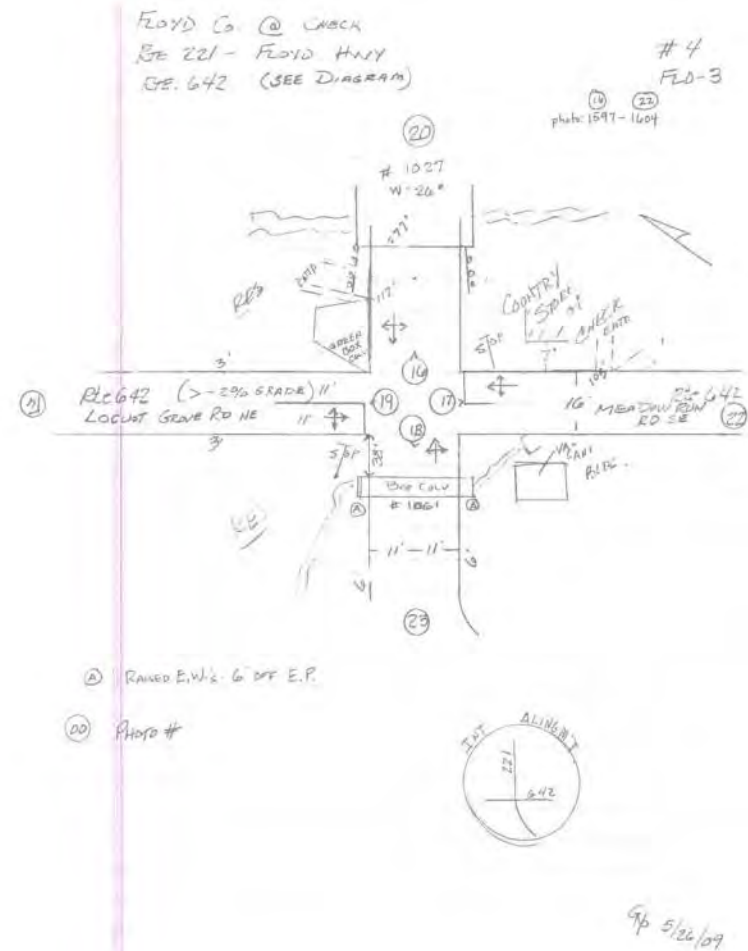
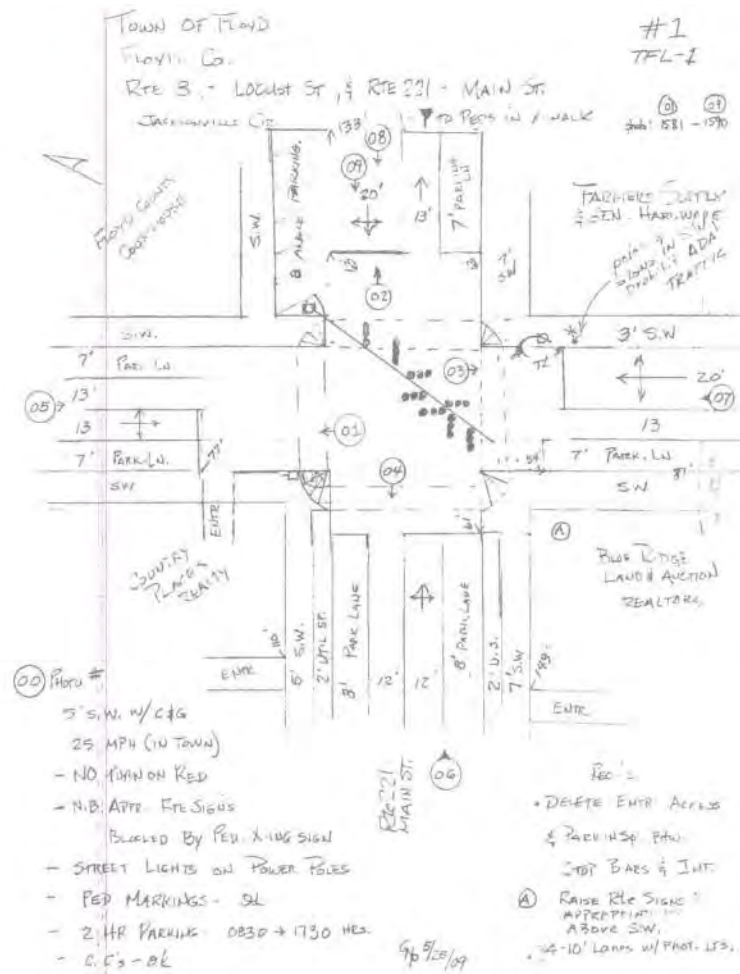
Applying Statewide Process Locally

Congestion-Related Detailed Study Locations



1: Rt. 8/ Rt. 221 Intersection

Applying Statewide Process Locally



Applying Statewide Process Locally

- **Coordinate data collection**
 - TAC Priority List “Hot Spots”
 - State Mobility System
 - Crash Database
 - Small Urban Area Plans
 - High Risk Rural Roads
 - STARS
 - State Planning System
 - Local Recommendations & Private Developer

Applying Statewide Process Locally

- **Comprehensive Plan updates**
 - **Illustrated Recommendations**
 - **Created “Transportation Menus”**
 - **Short/Long-Term Goal development**
 - **Cost estimates for high priorities**



Town of Floyd, VA

Proposed Route 221 & 8 Improvements

Description of Safety Deficiencies:

Pedestrian sign on northbound approach blocks route signs at the intersection. Vehicles on VA 8 attempting left turns into Country Places Realty cause operational and safety concerns as the entrance is located at the stop bar on the southbound approach. Inadequate ADA provisions on US 221 east of intersection near Blue Ridge Restaurant. Light pole placed in middle of sidewalk in southeast corner restrict safe ADA movement. Diagonal parking along westbound US 221 on north side is too close to functional area of the intersection as vehicles back-out into on-coming traffic or traffic waiting for green light. Crashes at this location exceed the planning threshold (nine crashes over three-year period).

Congestion Deficiencies:

Single lane configuration on all approaches increases delay for vehicles queued behind turning vehicles.

Recommendations:

Short Term:

Raise route signs away from pedestrian signs and to an appropriate height so they are clearly seen by motorists. Relocate light pole on southeast corner to improve ADA requirements.

Intermediate Term:

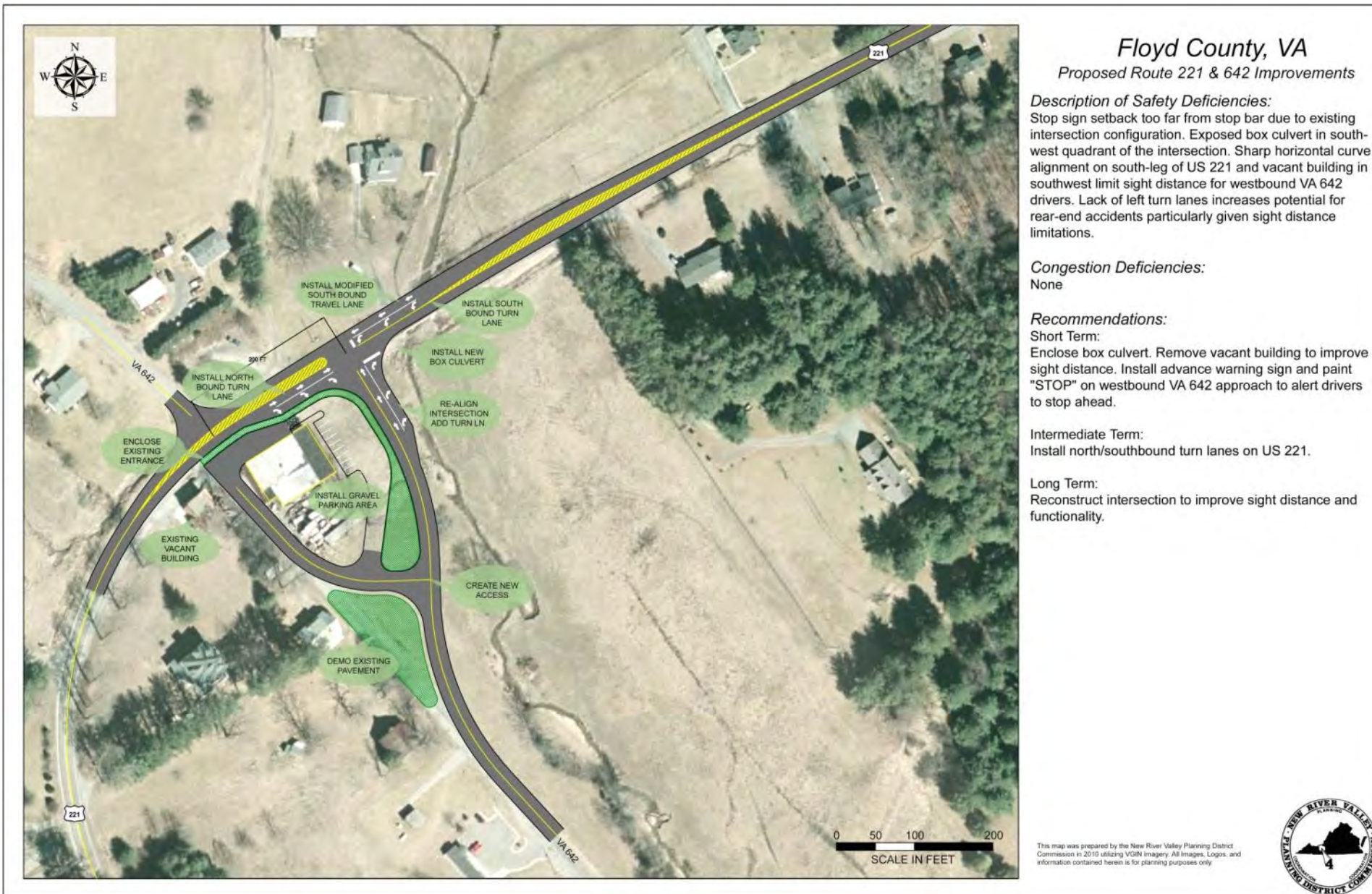
Close access to Country Places Realty on VA 8 and consider access management to provide new access on US 221. Relocate pedestrian cross-walk to east side adjacent to bank and provide required ADA provisions. Eliminate diagonal parking on US 221.

Long Term:

Eliminate parking near intersection to allow for short left-turn bays and allow for protected left-turns if warranted by future traffic volumes.

This map was prepared by the New River Valley Planning District Commission in 2010 utilizing VGN Imagery. All Images, Logos, and information contained herein is for planning purposes only.





Town of Floyd, VA - Transportation Considerations



Applying Statewide Process Locally

- **Day-Rides between DOT and locality**
 - **Local Administrators**
 - **Local elected officials**
 - **DOT District Planning & Maintenance**
 - **Local Planning Staff**
 - **Regional Planning Staff**

Section 1 – Introduction

April 20, 2012 the Virginia Department of Transportation site visits in the Floyd Area. Meeting attendees included:

- Michael Gray, VDOT Transportation Planner
- David Clarke, VDOT Residency Maintenance
- Dan Campbell, Floyd County Administrator
- Virgel H. Allen, Board of Supervisors
- Joe D. Turnman, Board of Supervisors
- Lauren D. Yoder, Board of Supervisors
- Elijah Sharp, PDC Regional Transportation Planner

The purpose of the meeting was to fulfill tasks outlined in the District Commission's Rural Transportation Work Plan. Participants discussed Projects & Core Program Requirements, Work Element jurisdiction, and a day ride to inventory major roads.

The purpose of the visit was to discuss transportation issues. Participants were to include representatives from local government. The trip helped build relationships and provided an opportunity to share perspectives on transportation challenges.

Section 2 – Floyd County

2.1 Location Descriptions

Mr. Campbell directed the group to 4 locations for site visits:

- US 221 and Route 642 Intersection – Address: 642
- Route 683 (Roger Road) – Slope Stabilization
- Route 681 (Franklin Pike) and Route 661 (Sugar Tree Road) – Stormwater

Route 683, 681, and 761 are primarily maintenance roads. The Christiansburg Residency, recorded the information for the intersection of US 221 and Route 642 is a major safety concern. The intersection is obstructed by an existing structure, horizontal sight distance is obstructed by an existing structure, horizontal sight distance is obstructed by an existing structure, horizontal sight distance is obstructed by an existing structure.

2.2 Potential Recommendations

Route 683 is currently a narrow gravel road that travels through a wooded area with visible signs of erosion and rock outcropping. There are visible signs of erosion. Local citizens are concerned that the slope could fail a few days. The Board Members were curious about stability; however, Mr. Clarke was uncertain how much. Ultimately, if the property owner was not willing to pay for the concern, VDOT would simply have to clear the debris.

The intersection of Route 681 and Route 661 currently has trees and dense vegetation, along an old fence line, present on Route 681. The intersection is also located in a field that may not own the right-of-way to clear the overgrown area.

Route 761 currently floods during heavy rainfall periods. The road parallels the roadway before passing through a new culvert located in a natural sag that collects runoff from the area. The close proximity of a home and private driveway, and the options to improve the conditions are minimal. VDOT will consider the roadway after heavy rainfall periods.

The intersection of US 221 and Route 642 is a major safety concern. It has been identified in the local Comprehensive Plan as a Transportation Plan. The posted speed limit along US 221 is 45 mph, the sight distance is about 200 ft. The Transportation Plan recommends an avoidance maneuver (decision) sight distance recommends a stopping sight distance of 495 ft. Potentially shifting the intersection to the north or south, acquiring structure, or installing traffic calming measures along the roadway.

Mr. Yoder, who is also a volunteer fireman, described the incident in the area. A vehicle was entering US 221 and struck the impacted car was thrown over 100 ft. into a grave. The map on the next page illustrates a potential intersection; however, sight distance may still be an issue (based on sight distance, the intersection would most likely need to be north or before the horizontal curve to the south).

Section 4 – Summary

Overall, the County was pleased to see improvements to the roadway network since the Christiansburg Residency became responsible for maintenance. One major concern should be shared with the appropriate divisions of VDOT:

1. Improving the safety at the intersection of US 221 and VA 642

Future Steps

- As a result of the local prioritization process within each region, the PDCs will perform the following tasks in FY-14 :
 - Conduct a small corridor study
 - Conduct an intersection analysis
- VDOT will provide training and assistance to the PDCs to be able to perform the studies and analysis



New River Valley
Planning District Commission

QUESTIONS?

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