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
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


• 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

**Strategic Direction**
*Where do we want to go?*

- Goals and Objectives
- Performance Measures

**Analysis**
*How are we going to get there?*

- Identify Trends and Targets
- Identify Strategies and Analyze Alternatives
- Develop Investment Priorities

**Programming**
*What will it take?*

- Investment Plan
- Resource Allocation
- Program of Projects

**Implementation and Evaluation**
*How did we do?*

- Monitoring
- Evaluation
- Reporting

**DATA**

**PUBLIC INVOLVEMENT**

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

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

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.
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).
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
- 5 columns for local review
- 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
Using SPS to determine needs - Highway Capacity / LOS
Needs Analysis

Run Number - 144 on 08/26/2010 8:00:02 AM
The need level was MODERATE
Lanes were NON-CONSTRUCTED

Summary Levels
- Estimated total cost
- Deficient lane miles

Select Another Need Run
Deficiencies up to 2035

Percent of Estimated Total Cost
- Northern Virginia 28%
- Richmond 17%
- Hampton Roads 18%
- Fredericksburg 7%
- Culpeper 8%
- Bristol 5%
- Salem 7%
- Staunton 8%
Using SPS to determine needs - Needs Analysis Run

<table>
<thead>
<tr>
<th>Juris. No.</th>
<th>Route</th>
<th>Seq.</th>
<th>Route Type</th>
<th>Analysis Type</th>
<th>2035 VPD</th>
<th>Need Year</th>
<th>LOS Threshold</th>
<th>Improve Type</th>
<th>Typical Section</th>
<th>No-Build LOS</th>
<th>Build LOS</th>
<th>No-Build Speed</th>
<th>Build Speed</th>
<th>Est. Total Cost (1,000's)</th>
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</tbody>
</table>

- Congestion
- Geometric
- Bridge
- Safety
- Pavement

Needs (True/False)
Corridor Analysis

Quick Corridor Performance Analysis

System: Primary
Route Prefix: US
Route Number: 00001
Route Suffix: 
From: HENRICO CL
To: CAROLINE CL

Relies on valid ROUTE ID and milepoints!

Allow Manual MP's

Total Distance: 14.73

Select Analysis Year: 2035

Build Analysis Given Most Recent Planned Improvements Along Route

Select Measures:
- Average Annual Daily Traffic
- Peak Hour Traffic
- Flow Rate
- Volume / Capacity Ratio
- Congested Speed
- Level of Service

Average:
- AADT: 19431
- VPH: 1702.5
- Flow Rate: 714
- VC Ratio: 0.39
- Cong. Speed: 39.5
- LOS: 1.85

Weighted Average:
- AADT: 16250
- VPH: 1409.8
- Flow Rate: 633.47
- VC Ratio: 0.32
- Cong. Speed: 44.38
- LOS: 1.44

Lowest:
- AADT: 8000
- VPH: 712
- Flow Rate: 241
- VC Ratio: 0.11
- Cong. Speed: 20.78
- LOS: 1

Highest:
- AADT: 29300
- VPH: 2696
- Flow Rate: 1477
- VC Ratio: 0.87
- Cong. Speed: 52.42
- LOS: 4

Total VMT: 239358
Total VHT: 6060

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

Clear Grid | Analyze | Close
Using SPS to determine needs - SPS build analysis tool

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.
Level Of Service - What If Analysis

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.
Performance Summary
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)

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  
15%

100%

(* The goals are from a combination of VTrans2025 surveys and COFT)
<table>
<thead>
<tr>
<th>Prioritization Performance Measures</th>
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<tbody>
<tr>
<td><strong>Goal 1:</strong> Provide a system that facilitates the efficient movement of people and goods.</td>
</tr>
<tr>
<td><strong>A.</strong> Weighted Level of Service (Peak Hour)</td>
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<tr>
<td><strong>B.</strong> Weighted Volume to Capacity Ratio (Peak Hour)</td>
</tr>
<tr>
<td><strong>C.</strong> Weighted Flow Rate</td>
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<tr>
<td><strong>D.</strong> Reduction in Travel Delay (under development)</td>
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<tr>
<td><strong>Goal 2:</strong> Provide a safe and secure transportation system</td>
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<tr>
<td><strong>A.</strong> Crash Rate (fatal + injury)</td>
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<tr>
<td><strong>B.</strong> Strategic Highway Network/Emergency Evacuation Route</td>
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<tr>
<td><strong>Goal 3:</strong> Improve Virginia’s economic vitality and provide access to economic opportunities for all Virginians</td>
</tr>
<tr>
<td><strong>A.</strong> Weighted Daily Volume of Trucks</td>
</tr>
<tr>
<td><strong>B.</strong> ARRA Economically Distressed Areas</td>
</tr>
<tr>
<td><strong>Goal 4:</strong> Improve quality of life and minimize potential impacts to the environment</td>
</tr>
<tr>
<td><strong>A.</strong> Potential Environmental or Cultural Impacts</td>
</tr>
<tr>
<td><strong>B.</strong> Potential Right-of-Way Impacts (High, Medium, Low)</td>
</tr>
<tr>
<td><strong>Goal 5:</strong> Preserve the existing transportation system and promote efficient system management</td>
</tr>
<tr>
<td><strong>A.</strong> Pavement Deficiency</td>
</tr>
<tr>
<td><strong>B.</strong> Inclusion of Other Modes</td>
</tr>
<tr>
<td><strong>C.</strong> Structurally Deficient Bridges</td>
</tr>
<tr>
<td><strong>D.</strong> Cost Effectiveness</td>
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</tbody>
</table>
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

**Interstate System Recommendations**

**Prioritization Criteria Applied**

- Interstate Recommendations Ranked Statewide
- Other System Recommendations Ranked by District / Statewide

**Other System Recommendations**

**Prioritization Criteria Applied**

- Review Team
  - DA
  - PIM
  - DP
  - ROD
  - PE Manager

**Draft Candidate List**

- Apply Federal Strategy

- Present to CTB for potential inclusion in draft SYIP
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 restricts 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 crosswalk 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.
Floyd County, VA
Proposed Route 221 & 642 Improvements

Description of Safety Deficiencies:
Stop sign setback too far from stop bar due to existing intersection configuration. Exposed box culvert in southwest quadrant of the intersection. Sharp horizontal curve alignment on south-leg of US 221 and vacant building in southwest limit sight distance for westbound VA 642 drivers. Lack of left turn lanes increases potential for rear-end accidents particularly given sight distance limitations.

Congestion Deficiencies:
None

Recommendations:
Short Term:
Enclose box culvert. Remove vacant building to improve sight distance. Install advance warning sign and paint "STOP" on westbound VA 642 approach to alert drivers to stop ahead.

Intermediate Term:
Install north/southbound turn lanes on US 221.

Long Term:
Reconstruct intersection to improve sight distance and functionality.
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 30, 2012 the Virginia Department of Transportation held site visits in the Floyd Area. Meeting attendees included:

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

The purpose of the meeting was to fulfill tasks outlined in the District Commission’s Rural Transportation Work Program, Core Program Requirements, Work Plan, and Divisional Plan.

The purpose of the visit was to discuss transportation issues in the area. The trip helped build relationships and provided insights into transportation challenges.

Section 2 – Floyd County

2.1 Location Descriptions

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

- Route 683 (Roger Road) – Slope Stabilization
- Route 681 (Franklin Pike) and Route 661 (Stoner Road) – Stormwater
- Route 761 (Sugar Tree Road) – Stormwater
- US 221 and Route 642 Intersection – Adder

Route 683, 681, and 761 are primarily maintenance issues. Christiansburg Residency, recorded the information.

The intersection of US 221 and Route 642 is a major safety concern. The intersection is obstructed by an existing structure, existing vegetation.

2.2 Potential Recommendations

Route 683 is currently a narrow gravel road that traverses a rock outcrop. There are visible signs of erosion. Local citizens are concerned that the slope could fail in several days. The Board Members were concerned about the stability of the slope. Mr. Clarke discussed how much it was costing the property owner to repair the slope. The County was not willing to pay. VDOT would simply have to clear the debris.

The intersection of Route 681 and Route 661 is currently filled with trees and dense vegetation, along an old fence line. A pole enters Route 681. The intersection is located in a county-owned right-of-way to clear the overgrown trees.

Route 761 currently floods during heavy rainfall periods. The roadway parallels the roadway before passing through a new culvert located in a natural sump that collects runoff from the surrounding area. The options to improve the conditions are minimal. The roadway after heavy rainfall periods.

The intersection of US 221 and Route 642 is a major safety concern. The intersection is located in a county-owned right-of-way. VDOT recommends an avoidance maneuver (decrease) to a stopping sight distance of 495 ft. Pole shifting the intersection to the north or south, acquiring structure, or installing traffic calming measures along the road.

Mr. Yoder, who is also a volunteer firefighter, described the area. A vehicle was entering US 221 and struck the pole. The impacted car was thrown over 100 ft. into a gravel pit. The map on the next page illustrates a potential intersection, however, the intersection could be an issue. Based on a sight distance, the intersection would most likely need improvement 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
QUESTIONS?

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