



## **Route 151 Corridor Study**

Public Information Meeting

May 16, 2013

# Goals and Vision

## Vision Statement

*“We envision a Route 151 corridor that serves the needs of all users and stakeholders while maximizing safety; preserving the corridor’s rural character, local sense of place, and high quality of life; and promoting place-based economic vitality.”*

# Goals and Vision

## Goals

- **Obtain public input through public meetings.**
- **Identify corridor improvements, with an emphasis on context-sensitive solutions, that:**
  - Improve Safety for all Users,
  - Enhance Operations and Access Management,
  - Provide Safe Multimodal Opportunities,
  - Retain Two-lane Cross-Section, and
  - Promote Appropriate Economic Opportunities.
- **Preserve and Incorporate the Corridor's Cultural Heritage and Historical Resources.**

# Purpose

## Present Preliminary Draft Findings

- Provide recommendations to address safety and operations at key intersections along the corridor
- Provide recommendations for the corridor

## Obtain Public Input and Feedback to finalize Recommendations

# Study Progress

## Where We Are

- **Performed operational analysis and safety assessment of key intersections along the corridor, including site visit in February**
- **Presented Preliminary Findings of the Existing Conditions Assessment on March 14th**
- **Reviewed and incorporated comments as appropriate**
- **Performed operational analysis of potential recommendations at key locations**
- **Developed preliminary recommendations for short-, mid- and long-term improvements**

# Safety Data

## 111 reported crashes in corridor (2008-2011)

- 53 injuries
- 2 fatalities

## Crash Rates

- Total rate: 81.5 crashes per 100 million VMT
- Injury rate: 38.9 injuries per 100 million VMT
- Fatality rate: 1.5 deaths per 100 million VMT
- Corridor rates are slightly lower than Statewide Averages for similar facilities
- Segment from Afton Mountain Road to US 250 has a slightly higher injury rate than the Statewide Average

**Also considered information of more recent crashes**

# Safety Data

Segment	Number of			Rate		
	Crashes	Injury	Fatality	Crash	Injury	Fatality
Beech Grove Road to River Road	22	7	1	58.71	18.68	2.67
River Road to Afton Mountain Road	67	22	1	99.37	32.63	1.48
Afton Mountain Road to US 250	22	24	0	70.13	76.51	0
Entire Corridor	111	53	2	81.45	38.89	1.47
Statewide Statistics for Rural Minor Arterial	5,868	3,580	101	109	67	1.8

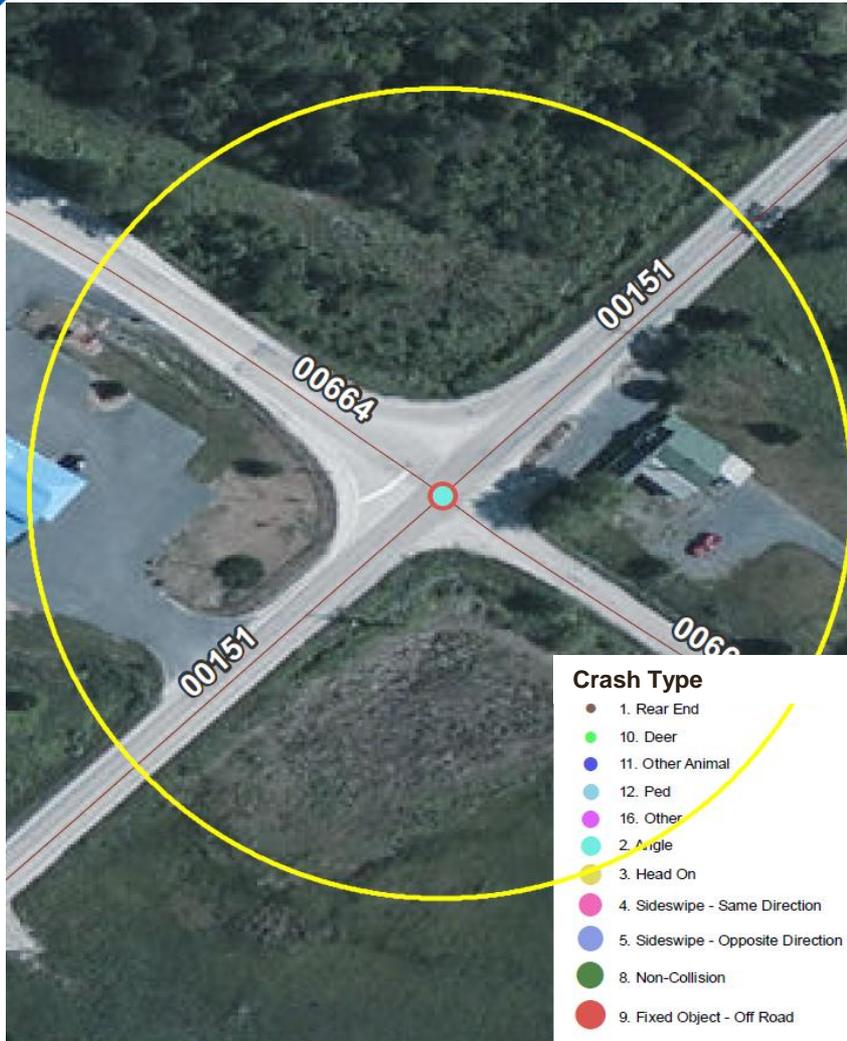
# Safety Data

**Nearly 25 percent of all crashes occur on Saturday**

**Top four crash types comprise of nearly 85 percent of all crashes**

- **Rear end**
- **Deer/wildlife**
- **Angle**
- **Fixed Object/Off-road**

# 1) Rte. 151 at Rte. 664 (Beech Grove Road)



## Two crashes

- Angle
- Off-road

# 1) Rte. 151 at Rte. 664 (Beech Grove Road)

## Issues:

- Heavy southbound right turn traffic
- Overgrown vegetation
- Confusing signage

## Preliminary Recommendations:

- Add southbound offset right turn bay
- Trim vegetation in northwest quadrant
- Adjust signage along northbound Rte. 151

## 2) Rte. 151 at Rte. 627 (Spruce Creek Lane)



### Three crashes

- Angle
- Off-road
- Wildlife

## 2) Rte. 151 at Rte. 627 (Spruce Creek Lane)

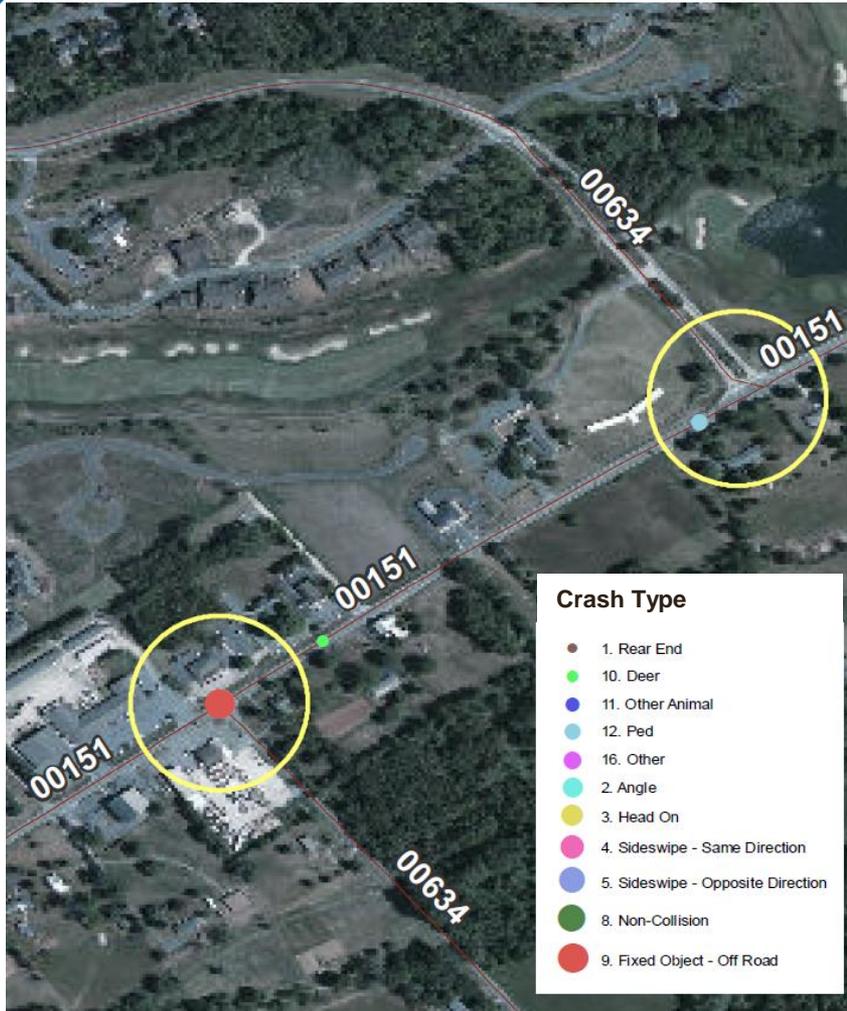
### Issues:

- Poor sight distance
- Odd alignment of Rte. 627 affects turning traffic
- Location of driveways within intersection area
- Potential historic structure (mill foundation)

### Preliminary Recommendations:

- Reconstruct intersection to realign Rte. 627 and modify embankment in southwest quadrant
- Add intersection-ahead signage with flashers on the northbound approach
- Monitor traffic volumes and crashes after improvements implemented to determine whether a signal is needed

# 3) Rte. 151 at Rte. 634 (Nellysford area)



## Three crashes

- Pedestrian
- Off-road
- Wildlife

## 3) Rte. 151 at Rte. 634 (Nellysford area)

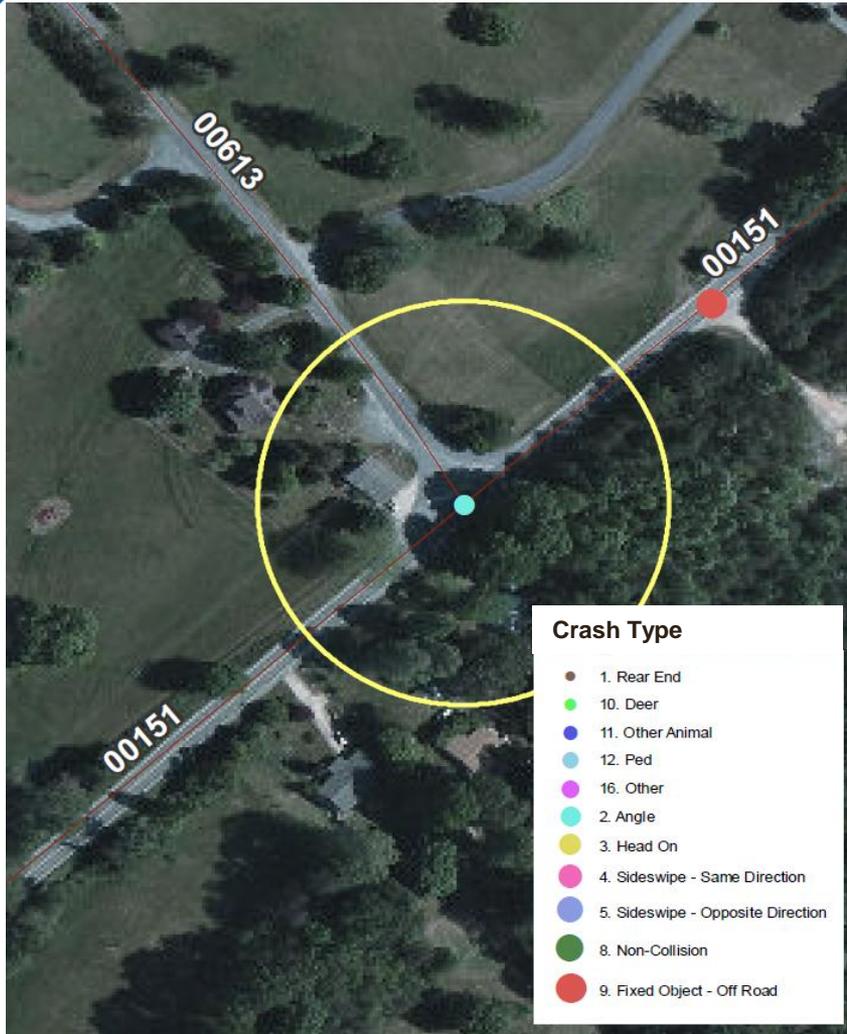
### Issues:

- Lack of pedestrian facilities
- Access Management/Poor inter-parcel connectivity
- Vegetation on Rte. 634 (Adial Road) limits sight distance approaching Rte. 151

### Preliminary Recommendations:

- Add sidewalks for pedestrians
- As new development or re-development occurs, improve access management and inter-parcel connectivity
- On Adial Road, trim vegetation and relocate stop sign
- Perform detailed speed study to determine feasibility of reducing speed limit to 35 mph through Nellysford commercial area

# 4) Rte. 151 at Rte. 613 (Rodes Farm and Lodebar Estates)



## Two crashes

- Angle
- Off-road

## 4) Rte. 151 at Rte. 613 (Rodes Farm and Lodebar Estates)

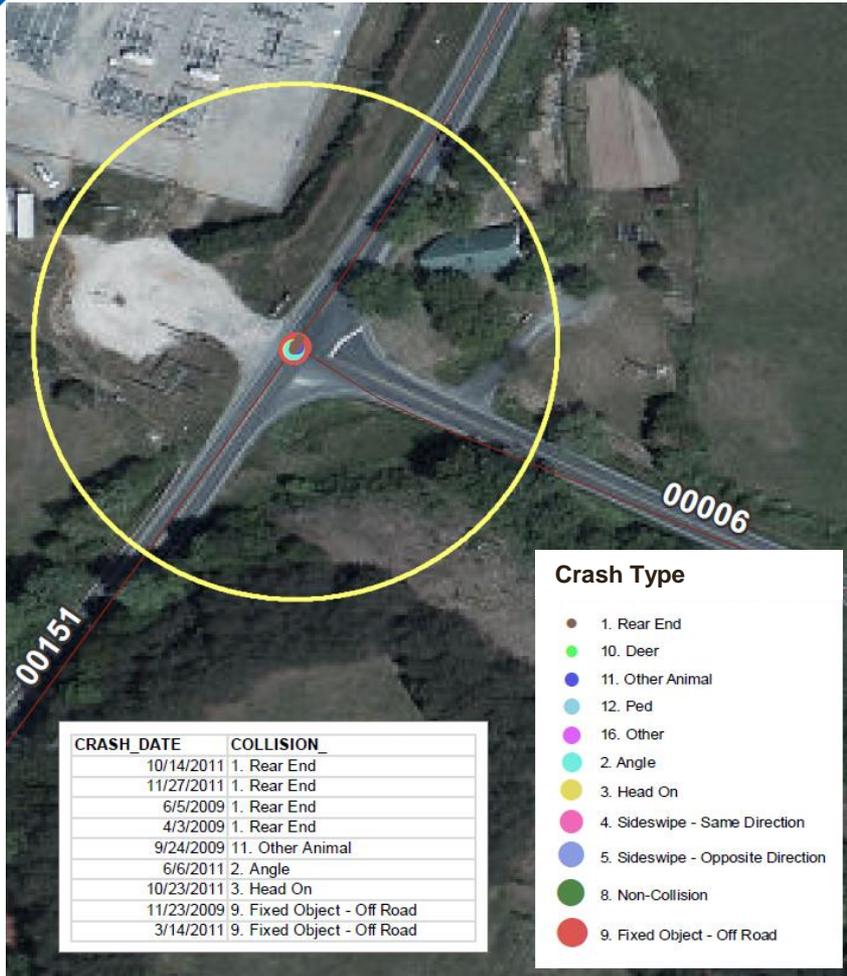
### Issues:

- Crest in road between Rodes Farm Road and Lodebar Estates limits sight distance
- Embankment along east side of Rte. 151 also contributes to sight distance issues
- Drivers have to be aggressive turning onto Rte. 151
- Commercial signage may be within VDOT right-of-way

### Preliminary Recommendations:

- Review commercial signage to ensure not in VDOT right-of-way
- Regrade roadway in area to improve sight distance
  - Reduce crest of hill
  - Regrade embankment

# 5) Rte. 151 at Rte. 6 (River Road)



## Multiple crashes

- 4 Rear-end
- 1 Angle
- 2 Off-road

## 5) Rte. 151 at Rte. 6 (River Road)

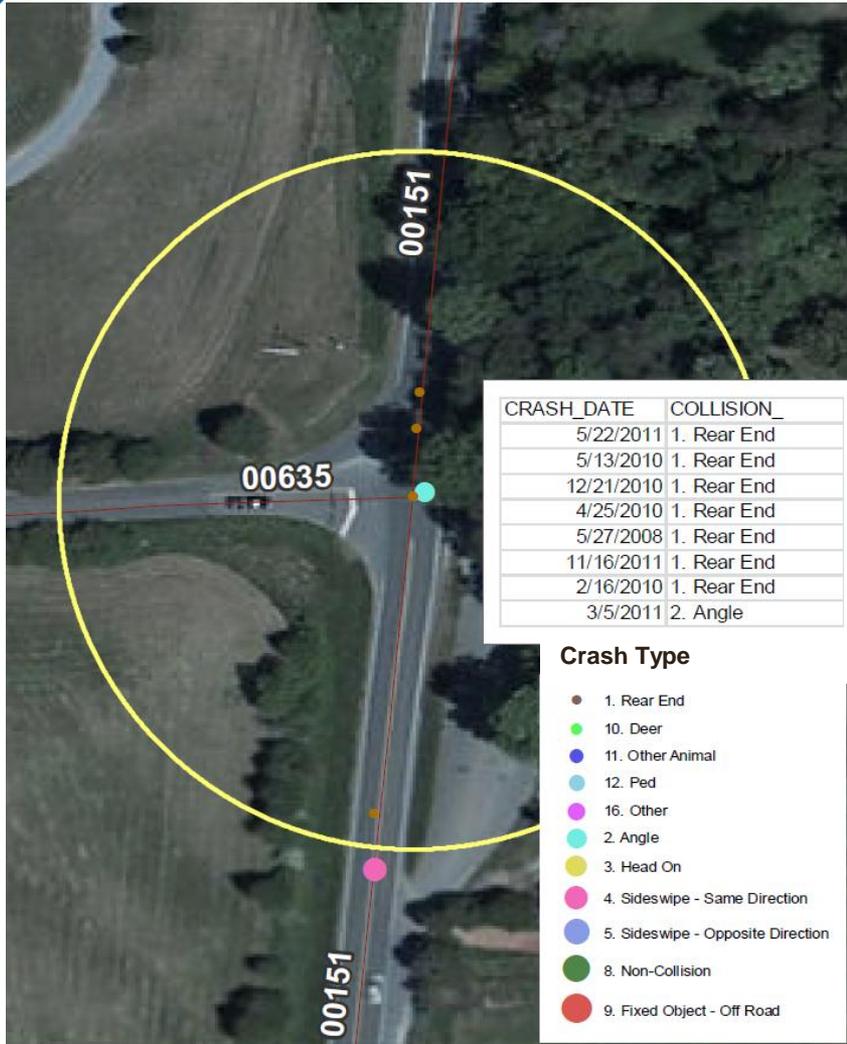
### Issues:

- Heavy turning truck traffic
- Lack of turn lane
- Narrow receiving area, vehicles are crossing yellow lines (traveling into opposite lane)

### Preliminary Recommendations:

- Widen east leg of intersection for wider receiving area to accommodate turning vehicles
- Consider roundabout or a southbound left turn lane

# 6) Rte. 151 at Rte. 635 (Rockfish School Lane)



## Multiple crashes

- 7 Rear-end
- 1 Angle

## 6) Rte. 151 at Rte. 635 (Rockfish School Lane)

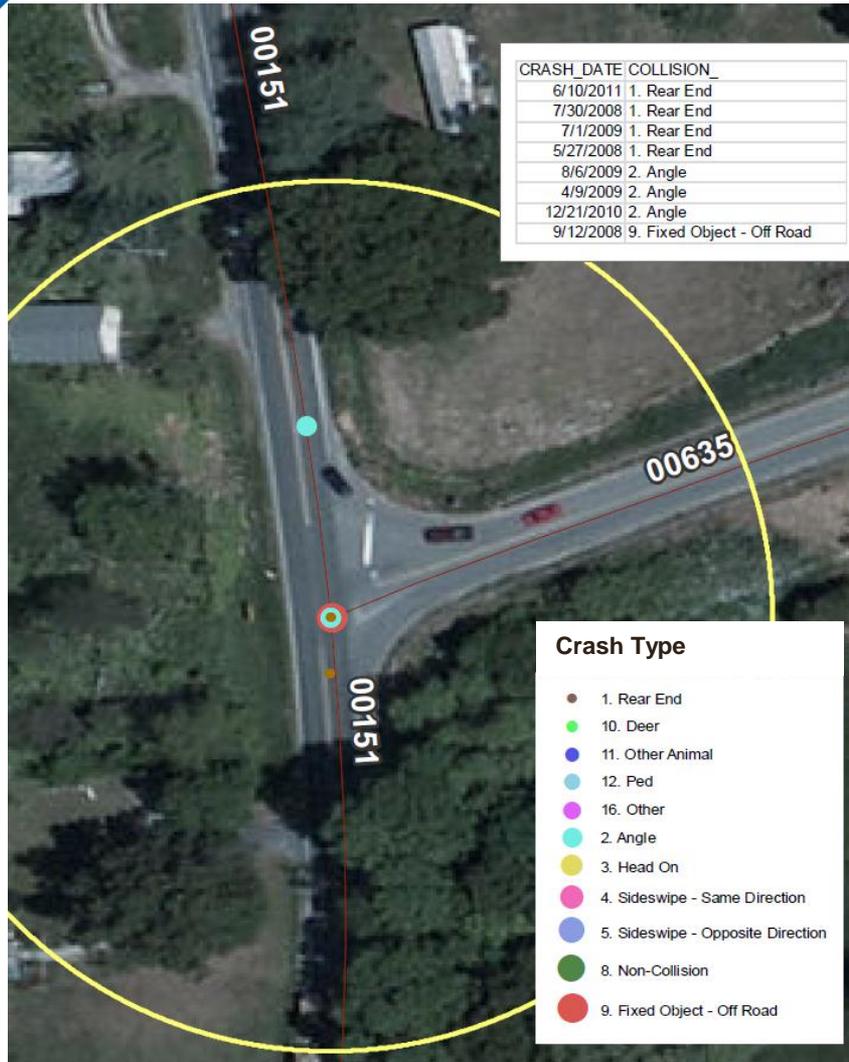
### Issues:

- **Increased in crashes last two years (2010/2011)**
  - Due to addition of Recycling Drop-off at Community Center
  - Park activities generate high traffic: soccer fields, horse and dog shows
- **Lack of turn lanes**

### Preliminary Recommendations:

- **VDOT has approved a Highway Safety Improvement Program (HSIP) grant for construction of the northbound left turn lane on Route 151, preliminary start date of construction is October 2016**

# 7) Rte. 151 at Rte. 635 (Greenfield Road)



## Multiple crashes

- 4 Rear-end
- 3 Angle
- 1 Fixed object/off-road
- Most in 2008 & 2009

## 7) Rte. 151 at Rte. 635 (Greenfield Road)

### Issues:

- Location recently improved
- Short northbound right turn bay

### Preliminary Recommendations:

- Extend northbound right turn bay

# 8) Rte. 151 at Rte. 729 (Creek Road)

## Multiple crashes

- 3 Rear-end
- 2 Angle



## 8) Rte. 151 at Rte. 729 (Creek Road)

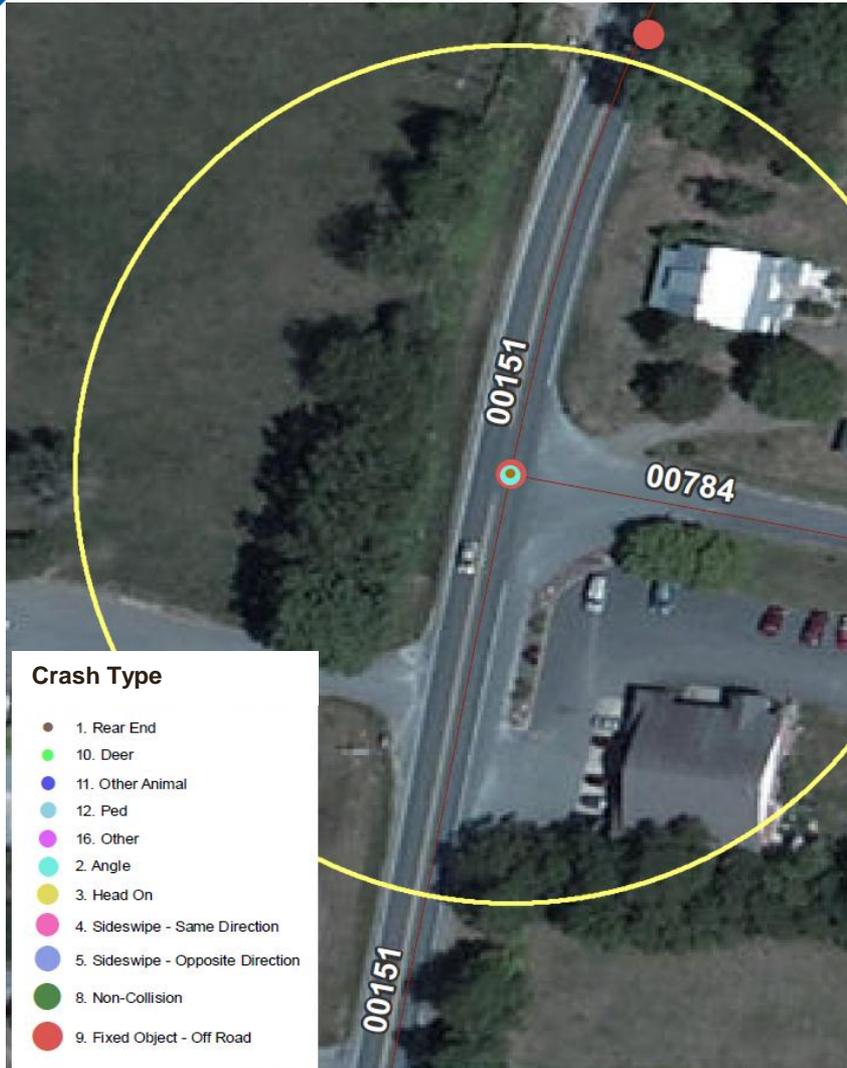
### Issues:

- Turning traffic and lack of turn bays
- Heavy traffic generator (store)

### Preliminary Recommendations:

- Restripe roadway to provide northbound left turn bay into the store's southern access
- Add a southbound right turn bay onto Creek Road

# 9) Rte. 151 at Rte. 784 (Bland Wade Lane)



## Multiple crashes

- 1 Rear-end
- 1 Angle
- 2 Off-road

## 9) Rte. 151 at Rte. 784 (Bland Wade Lane)

### Issues:

- Limited sight distance due to hill in northeast quadrant affects Bland Wade and southbound left turn traffic
- Limited sight distance due to dip in road to the south
- Traffic cuts through Fitness Center parking lot

### Preliminary Recommendations:

- Regrade hill to improve sight distance, eliminate dip in road, and add a northbound right turn bay; or
- Relocate Bland Wade Lane south of the Fitness Center

# 10) Rte. 151 at Rte. 760 (Sunrise Drive)

**No reported crashes for analysis years**

- **Crash debris present south of intersection during site visit**
- **Guardrail condition indicates two accidents**



## 10) Rte. 151 at Rte. 760 (Sunrise Drive)

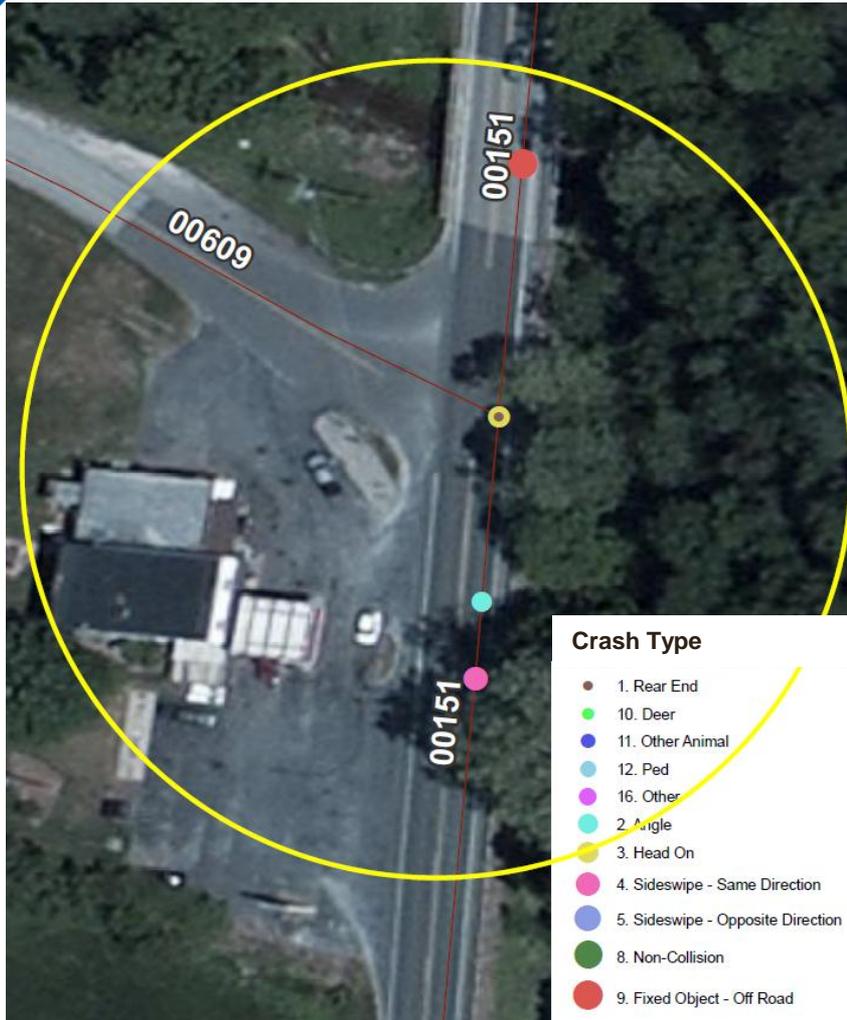
### Issues:

- Limited sight distance due to crest in roadway to the south
- Portion of guardrail in poor condition

### Preliminary Recommendations:

- Rehabilitate guardrail and improve drainage
- Regrade roadway to reduce crest
- Modify embankment in southwest quadrant

# 11) Rte. 151 at Rte. 609 (Mill Lane)



## Multiple crashes

- 1 Rear-end
- 1 Angle
- 1 Fixed Object/Off-road
- 1 Sideswipe

# 11) Rte. 151 at Rte. 609 (Mill Lane)

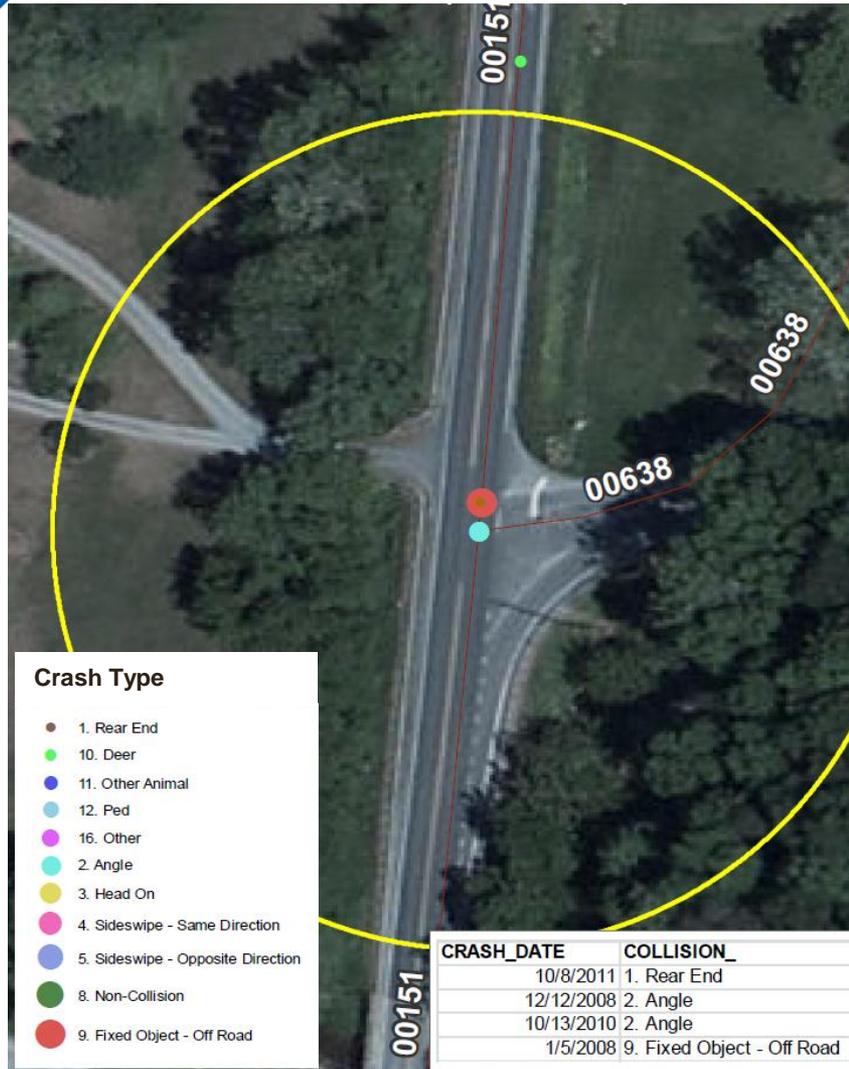
## Issues:

- **Poor sight distance**
  - Goodwins Creek bridge
  - Overgrown vegetation
- **Driveways of gas station in close proximity of intersection**

## Preliminary Recommendations:

- **Trim vegetation**
- **Improve access management**
- **Improve signage on Rte. 151 for Rte. 609**
- **Add stop bar**
- **Widen bridge structure**

# 12) Rte. 151 at Rte. 638 (Avon Road - south)



## Multiple crashes

- 1 Rear-end
- 1 Angle
- 1 Fixed Object/Off-road

## 12) Rte. 151 at Rte. 638 (Avon Road - south)

### Issues:

- Driver inattention
- Overgrown vegetation in southeast quadrant limits sight distance
- Stop bar too far back

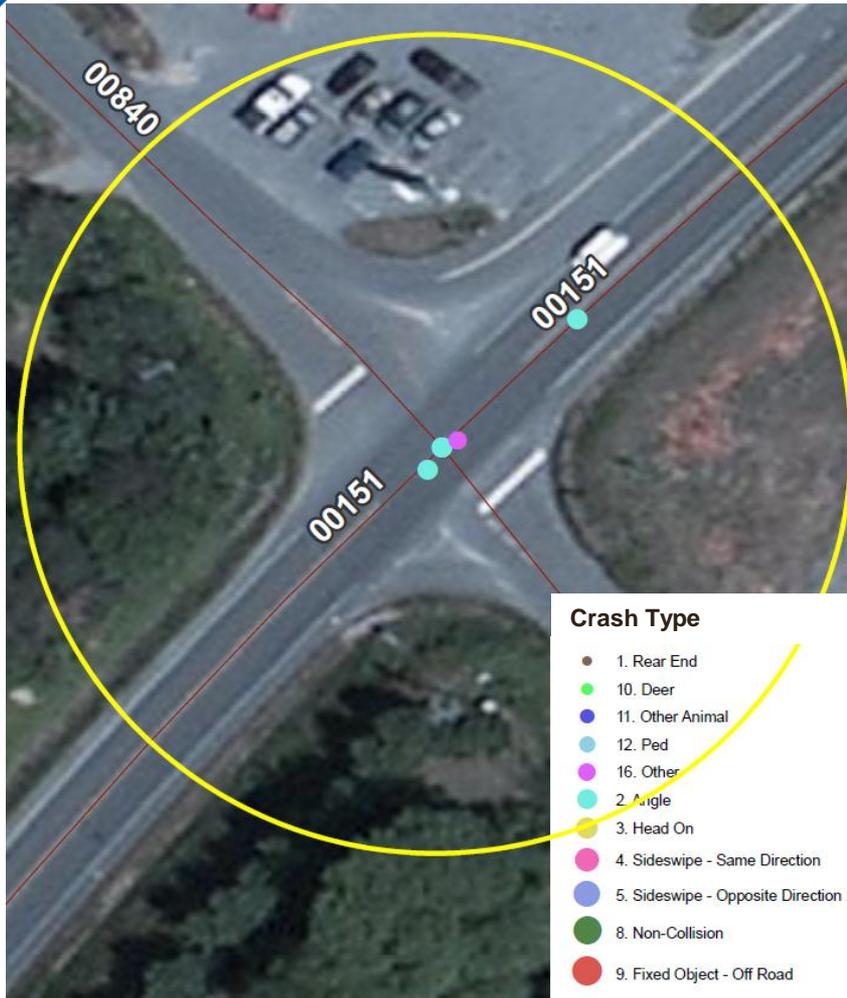
### Preliminary Recommendations:

- Move stop bar closer to the northbound travel lane to improve sight distance
- Trim vegetation

# 13) Rte. 151 at Rte. 840 (Tanbark Road)

## Multiple crashes

- 3 Angle
- 1 other



## 13) Rte. 151 at Rte. 840 (Tanbark Road)

### Issues:

- Site of two fatalities in a 2012 crash
- Center lines and stop bars faded on Tanbark Road
- Crest on Tanbark Road limits approach sight distance
- Embankments limits sight distance

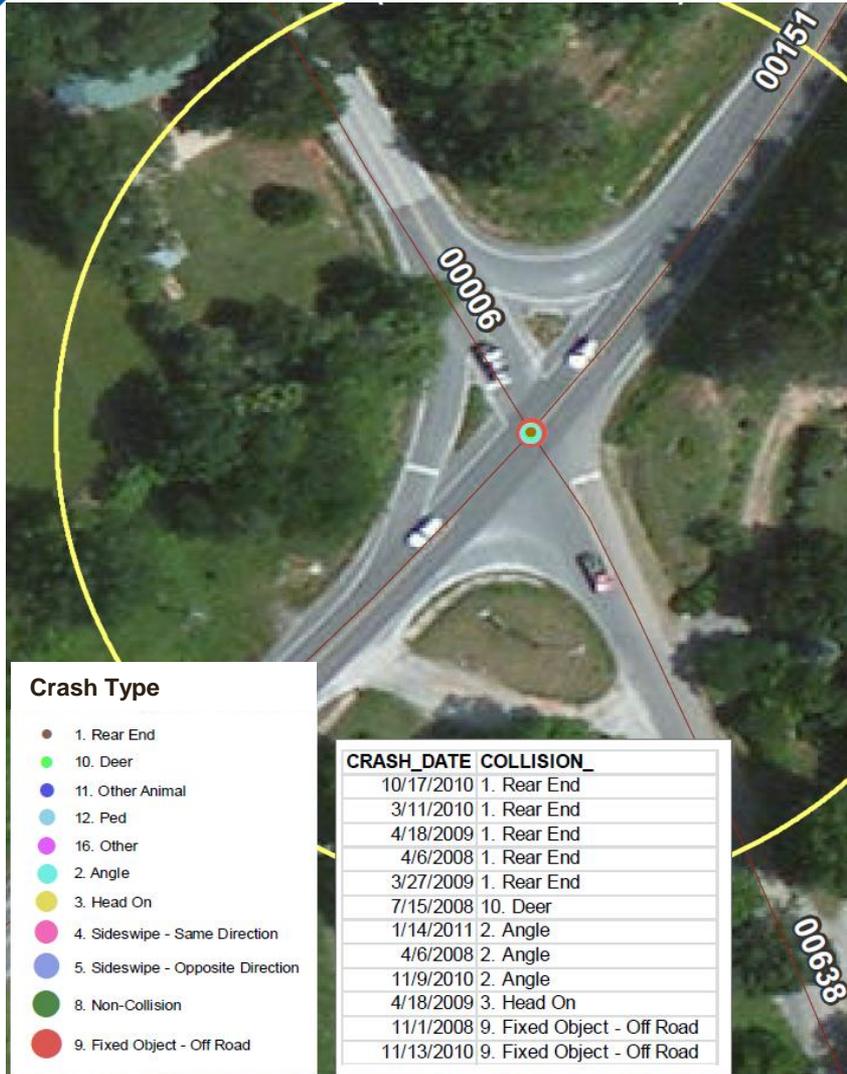
### Preliminary Recommendations:

- Refresh center lines and stop bars and relocate stop sign
- Add intersection ahead signs on Rte. 840
- Add 45mph advisory sign to the existing Intersection Warning Sign
- Regrade Tanbark Road to improve visibility to Rte. 151
- Improve Tanbark Road at Greenberry Road
- Modify embankment in southwest and southeast quadrant

# 14) Rte. 151 at Rte. 6 (Afton Mountain Road)

## Multiple crashes

- 5 Rear-end
- 3 Angle
- 4 other types



# 14) Rte. 151 at Rte. 6 (Afton Mountain Road)

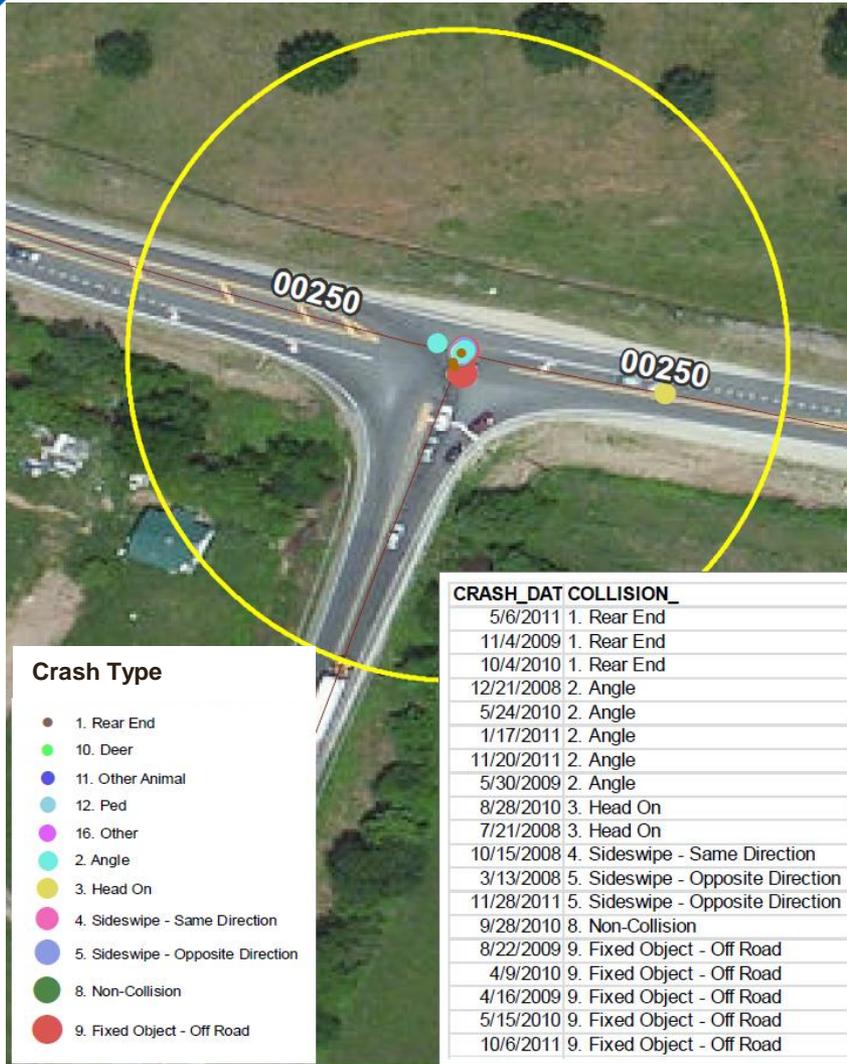
## Issues:

- Minor road dips on approach to Rte. 151, hiding view until vehicles near intersection
- Vegetation in southwest quadrant limits sight distance
- Stop signs are not consistent in size
- Eastbound right turn approach is at an awkward angle, drivers looking over shoulder to see southbound vehicles
- Dip on Rte. 151 to the south limits sight distance
- Heavy turning volume during tourist season

## Preliminary Recommendations:

- VDOT has approved an HSIP grant for construction of Route 151 left turn lanes, preliminary start date of construction is March 2016
- Regrade Rte. 6 to improve sight distance and reconfigure eastbound right turn lane
- Regrade Rte. 638 approach to improve sight distance
- Improve signage

# 15) Rte. 151 at US 250 (Rockfish Gap Turnpike)



## Multiple crashes

- 3 Rear-end
- 5 Angle
- 2 Head-on
- 5 Fixed Object/Off-road
- 4 other types

# 15) Rte. 151 at US 250 (Rockfish Gap Turnpike)

## Issues:

- **Heavy turn movements with short turn bays**
  - Eastbound US 250 right turning vehicles block Rte. 151 traffic's view of the through movement
  - Westbound US 250 left turning traffic queue extends into through lane, through vehicles driving around on grass area

## Preliminary Recommendations:

- **Offset the eastbound right turn bay by 12 feet to improve visibility of eastbound through vehicles**
- **Extend the westbound left turn lane**
- **Add a northbound right turn lane with an acceleration lane on US 250 (if signal not installed)**
- **Consider a roundabout or a traffic signal**

# Corridor Recommendations

## Perform Speed Studies, Key Segments:

- Route 6 (Afton Mtn. Rd.) to US 250 - supplement with additional observations on Friday evenings and weekends at key traffic generators
- Route 6 (Afton Mtn. Rd.) to Route 784 (Bland Wade Lane)
- Nellysford Area due to increased land uses

Consider prevailing travel speeds, land uses and geometric deficiencies to set speed limits appropriate for each segment.

# Corridor Recommendations

## Improve Access Management:

- **Ensure new developments comply with VDOT access management guidelines**
- **Consolidate existing driveways that are close to intersections**
- **Consolidate existing driveways for closely spaced businesses (shared driveways) and create inter-parcel connections to limit the number of driveways accessing Route 151**

# Corridor Recommendations

## Develop a community plan for the Village of Nellysford:

- **Create parallel roadway to connect adjacent developments for internal trips**
- **Construct gateways (roundabouts or median islands)**
- **Construct multimodal facilities for pedestrians and cyclists**
- **Apply access management techniques**
- **Improve transit services in coordination with DRPT**

# Corridor Recommendations

## Reconstruct Route 151 to current geometric standards:

- **Retain two-lane cross-section (reserving right-of-way for future turn lanes where appropriate)**
- **Improve sight distances by correcting horizontal and vertical alignments**
- **Consider 11-foot lanes**
- **Construct five-foot paved shoulders for bicyclists and pedestrians accommodations**
  - When intersections are upgraded, include paved shoulders at intersections to provide future connections to corridor improvements of pedestrian/bicyclist facilities

# Corridor Recommendations

## Guardrail installations:

- **VDOT installs new or upgrades existing guardrails as funding becomes available**
- **VDOT does review locations where serious or fatal crashes have occurred and re-prioritizes its guardrail schedule based on need**

# Corridor Recommendations

## Improving signage along corridor:

- **VDOT to improve way-finding and other signage**
- **Nelson County to improve county zoning ordinances**

# Corridor Recommendations

## Improving Corridor Safety from Trucks:

- **Continue to enforce speed limit and oversized regulations**
- **VDOT preparing separate study for I-64/US 29 interchange**
- **Nelson County to continue to work with VDOT on geometric safety issues**

# Operations Review

**Four intersections analyzed for 2020 and 2040 conditions.**

- **No-Build (no improvements) analyzed to provide baseline to measure improvements.**
- **Three intersections need improvements to address safety deficiencies, not operations.**
- **Route 151/US 250 in need of improvements to address operational and safety deficiencies.**

# 2040 No-Build Intersection Level-of-Service (LOS)

LOS provide a “grading” of the operations of intersection using a scale from A to F, with A representing minimal delays and F representing high levels of delay. LOS is a function of the average vehicle delay for all vehicles. LOS C or better is desired.

Intersection	Movement	AM LOS		PM LOS	
		Approach	Overall	Approach	Overall
US 250 (Rockfish Gap Turnpike) at Route 151	EB	A	C	A	D
	WB	A		A	
	NB	E		F	
Route 635 (Rockfish School Lane) at Route 151	EB	C	A	C	A
	NB	A		A	
	SB	A		A	
Route 6 (River Road) at Route 151	EB	C	A	C	A
	WB	C		C	
	NB	A		A	
	SB	A		A	
Route 664 (Beech Grove Road) / Route 627 (Glenthorne Loop) at Route 151	EB	B	A	B	A
	WB	A		A	
	NB	A		A	
	SB	A		A	

# Operations Review

**Improvements needed at Route 151/US 250 to address operational deficiencies, such as:**

- **Offsetting the eastbound right turn lane**
- **Adding a northbound right turn lane**
- **Signalizing the intersection**
- **Constructing a roundabout**

**Signalizing the intersection or constructing a roundabout would provide sufficient LOS**

# Operations Review

## Improvements at other locations:

- A northbound left turn lane at Rockfish School Lane addresses safety needs by providing a safe location for vehicles turning left
- A southbound left turn lane or a roundabout at River Road would improve safety
- A southbound right turn lane at Beech Grove Road improves the safety of the intersection by separating right turns

# Roundabouts

## Benefits:

- Roundabouts slow traffic down and reduce severity of crashes.
- Approaches are treated more equally than a 1-way stop controlled intersection.
- Roundabouts provide comparable LOS to a signalized intersection.

# Route 151 / US 250 with Improvements

**A roundabout or traffic signal would provide comparable LOS**

Intersection	Movement	AM LOS		PM LOS	
		Approach	Overall	Approach	Overall
No-Build	EB	A		A	
	WB	A	<b>C</b>	A	<b>C</b>
	NB	E		F	
with Right Turn Bay	EB	A		A	
	WB	A	<b>A</b>	A	<b>A</b>
	NB	C		E	
Install Signal with Right Turn Bay	EB	A		A	
	WB	A	<b>A</b>	A	<b>A</b>
	NB	A		B	
Construct Roundabout	EB	A		A	
	WB	A	<b>B</b>	B	<b>A</b>
	NB	B		A	

# Public Input

**Provide comments at working tables**

**Submit written comments to:**

- **Mr. Rick Youngblood, Virginia Department of Transportation, 4219 Campbell Avenue, Lynchburg, 24501**
- **Email: [lynchburginfo@vdot.virginia.gov](mailto:lynchburginfo@vdot.virginia.gov)**
  - Include “Route 151 Corridor Study” in the subject line
- **Submit by May 24, 2013**

## Next Steps

**Incorporate public feedback to finalize recommendations for the study locations and for the corridor**

**Prepare Draft Report for Nelson County's input**  
**Finalize Report**