Welcome to the Virginia Department of Transportation’s (VDOT) public information meeting on concepts being studied to assess potential safety and operational improvements along two miles of Centreville Road (Route 28) between Blooms Quarry Lane and the Fairfax County line. The concepts being studied may include roundabouts, overpasses, improved traffic signal timing and operations, turn lane improvements, access management and pedestrian enhancements.

This meeting is being held to inform the public on the progress of the STARS Study, present alternatives and solutions developed and solicit input from the public on the alternatives to determine what solutions are preferred and will be recommended for further consideration.

VDOT strives to ensure that all members of the community have the opportunity to participate in public decisions on transportation projects and programs affecting them.

VDOT representatives are here to discuss the concepts being studied and answer your questions. Residents and drivers of the corridor in the study area are asked to take a short online survey to provide feedback and vote on proposed concepts. The survey is available until December 2, 2019 at www.virginiadot.org/centrevilleroadstudy. All comments received on this study will be reviewed and the final concepts based on public input will be made available on the VDOT study website.

**Public Information Meeting**

**Study at a Glance**

**Purpose:** Assess potential safety and operational enhancements for drivers and pedestrians.

**Lengths and Limits:** Two miles of Centreville Road (Route 28) between Blooms Quarry Lane and the Fairfax County Line.

**Phase:** Study

**Begin Date:** July 2019

**Completion Date:** Winter 2019/20

**Cost:** $284,000
### Study Overview

This study is assessing potential safety and operational enhancements for drivers and pedestrians along two miles of Centreville Road (Route 28) between Blooms Quarry Lane and the Fairfax County line.

Currently, this segment of Centreville Road experiences severe congestion in the morning and evening peak periods.

The concepts studied will be developed based on public input and may include improving:
- Traffic signal timing and operations
- Turn lanes
- Access management for properties along the corridor including new medians

Other concepts being studied may also include Innovative Intersections (potential examples include roundabouts and overpasses) and pedestrian enhancements including crosswalks and new sidewalks.

### Environmental Review

Potential environmental impacts will not be included as part of this study. When the operational concepts are finalized and carried forward into a future project design development, VDOT will coordinate with the appropriate federal, state and local agencies as part of the environmental review and approval process.

### Right of Way

Preliminary study concepts presented on the displays are conceptual and may change as the study and concepts are refined. Property owners would be informed of the exact location of any easements during the right of way acquisition process and prior to construction if projects should be developed as a result of this study.

Information about right of way purchase is discussed in VDOT’s brochure, “Right of Way and Utilities: Guide for Property Owners and Tenants.” Copies of this brochure are also available online at: [www.virginiadot.org/business/row-default.asp](http://www.virginiadot.org/business/row-default.asp).

### Contact Information

**Primary Contact:**
Terrell Hughes, P.E.
Transportation and Mobility Planning
1401 East Broad Street
Richmond, VA 23219
804-343-9025

**Virginia Department of Transportation**

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As part of this study, we request your input by taking an online survey. The survey can be accessed on the study webpage (www.virginiadot.org/centrevilleroadstudy). You may also give comments at the meeting or submit them by December 2, 2019, to Mr. Terrell Hughes, P.E., Virginia Department of Transportation, 1401 East Broad Street, Richmond, VA 23219.

### COMMENT SHEET

All comments are subject to public disclosure.

<table>
<thead>
<tr>
<th>Name (optional):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Address (optional):</td>
<td></td>
</tr>
<tr>
<td>Email (optional):</td>
<td></td>
</tr>
</tbody>
</table>

1. Which alternative(s) do you prefer as part of this study?

2. Do you have any concerns with the alternatives presented?

3. Please provide us with any additional information or suggestions that will assist VDOT in developing the final concepts of this study.

4. How did you hear about this meeting?

   - [ ] Newspaper  - [ ] Social Media  - [ ] Website  - [ ] Other ___________________________
Postal Service will not deliver without a stamp.

Virginia Department of Transportation
Terrell Hughes, P.E.
1401 East Broad Street,
Richmond, VA 23219
CENTREVILLE ROAD (ROUTE 28) SAFETY AND OPERATIONAL IMPROVEMENTS STUDY
(PRINCE WILLIAM COUNTY)
A Study undertaken as part of VDOT’s Strategically Targeted and Affordable Roadway Solutions (STARS) Program

Terrell Hughes, VDOT, Transportation and Mobility Planning Division

November 20, 2019
Presentation Outline

1. Introductions
2. Meeting Objectives
3. Centreville Road (Route 28) Safety and Operational Improvements Study
4. Alternative Concepts
5. Safety & Operational Analysis Results
6. Next Steps
7. Questions
2. Objectives for this Public Informational Meeting

• Inform the public on the progress of the Strategically Targeted and Affordable Roadway Solutions (STARS) Program Study

• Share results from previous survey

• Describe alternatives that were studied

• Solicit input from the public on the alternatives to determine what solutions are preferred
3. STUDY OVERVIEW
Study Area

Centreville Road (VA 28) -
between Prince William / Fairfax County line at the bridge over Bull Run and
Blooms Quarry Lane / Old Centreville Road intersection at the Prince William County / City of Manassas Park line

- High traffic volumes: 2,500-2,700 vehicles per hour in northbound in AM and southbound in the PM
- 100 driveways over 2 miles
- 5 lane cross-section with center two-way left turn only lane
Crashes Reported on Centreville Road within Study Limits

Average Annual Crash Rates between 2013 and 2018 ranged from 193 to 242 crashes per 100 million vehicle miles.
- 50 to 78% higher than Average Annual Crash Rates for Primary Highways in VDOT NOVA District.
- 50 to 88% higher than Statewide Average Rates

Fatal injuries include deaths which occur within thirty days following injury in a motor vehicle crash. "A Injury" Severe injuries include skull fractures, internal injuries, broken or distorted limbs, unconsciousness, severe lacerations, severe burns, and unable to leave the scene without assistance. "B Injury" Moderate injuries include visible injuries such as a “lump” on the head, abrasions, and minor lacerations. "C Injury" Minor injuries include hysteria, nausea, momentary unconsciousness, and complaint of pain without visible signs of injury. "PDO" No fatality or injury; property damage only above a set threshold
Travel Times on Centreville Road / VA Route 28

Travel Time (Minutes) for NB Centreville Road (Rte 28) between Compton Road (Rte 658) and Prescott Ave/Sudley Road September 03, 2018 through August 30, 2019 (Every weekday)

- 95% Travel Time
- 75% Travel Time
- Average Travel Time
- 25% Travel Time
- 5% Travel Time

Travel Time (Minutes) for NB Centreville Road (Rte 28) between Compton Road (Rte 658) and Prescott Ave/Sudley Road September 03, 2018 through August 30, 2019 (Every weekday)

- 95% Travel Time
- 75% Travel Time
- Average Travel Time
- 25% Travel Time
- 5% Travel Time

Centreville Road (Route 28) Safety and Operational Improvements Study (Prince William county)
Public Involvement

- Public Information Meeting – September 30th
  - About 100 attendees
- Online Survey – September 20th – October 7th
  - Participants – 647
  - Comments – 987
  - Total Data Points* – 18,277

*A data point is one user input. A user survey response will typically have multiple data points
Public Involvement Takeaways

**Travel Time Reliability**
- 374 (78%)
- 59 (12%)
- 16 (3%)
- 18 (4%)
- 12 (3%)

Times ranked: 479
Average rank: 1.403

**Vehicular Traffic Safety**
- 53 (12%)
- 180 (41%)
- 122 (26%)
- 59 (13%)
- 26 (6%)

Times ranked: 440
Average rank: 2.602

**Difficulty Making Turns**
- 18 (5%)
- 120 (31%)
- 133 (34%)
- 83 (21%)
- 35 (9%)

Times ranked: 389
Average rank: 2.992

**Public Transit**
- 12 (5%)
- 38 (17%)
- 44 (20%)
- 55 (25%)
- 74 (33%)

Times ranked: 223
Average rank: 3.632

**Roadway Aesthetics**
- 6 (3%)
- 32 (16%)
- 43 (21%)
- 47 (23%)
- 74 (37%)

Times ranked: 202
Average rank: 3.748

**Pedestrian Safety**
- 10 (4%)
- 26 (10%)
- 52 (20%)
- 87 (33%)
- 88 (33%)

Times ranked: 263
Average rank: 3.825

**Bicycle Safety**
- 5 (5%)
- 5 (5%)
- 21 (23%)
- 22 (24%)
- 39 (42%)

Times ranked: 92
Average rank: 3.924

**Property Access**
- 4 (2%)
- 16 (7%)
- 33 (15%)
- 80 (36%)
- 89 (40%)

Times ranked: 222
Average rank: 4.054
Route 28 Widening (Fairfax County)

- Widening from four lanes to six lanes from Route 29 to bridge over Bull Run
- Cost: $86,480,000
- Anticipated Schedule:
  - Start Construction – Fall 2020
  - Finish Construction – Spring 2023
Route 28 Bypass / Widening Update

**Purpose:** Construction of a bypass or widening of existing Route 28 to relieve congestion between the City of Manassas and Fairfax County

- **Description:** 4-lane limited access road, extending from Flat Branch to Route 28 near the Fairfax/Prince William County Line and one bike/ped facility or widening of existing Route 28 to 6 lanes.

- **Approximate Project Cost:** $300,000,000

- **Proposed Bond Authorization:** $200,000,000
  - The approved bond referendum authorizes the Board of County Supervisors to use general obligation bonds to fund this project.
  - The Board of County Supervisors will still need to approve and identify sources to finance the project as part of the annual budget process.

- **Existing Funding:** $95 million in NVTA funds.

- **Project Duration:** 5 to 7 years

- **Pros:** Relieves congestion, improves capacity, regional project, bike/ped access, improves travel time, transit reliability

- **Cons:** Cost, environmental impacts, ROW impacts, large wall construction, neighborhood impacts, alignment TBD
4. ALTERNATIVE CONCEPTS
Overview of Alternative Options

- Option 1 - Minor Improvements
- Option 2 - Innovative Intersections
- Option 3 - Innovative Intersections with Continuous Median
- Option 4 – Flyovers and Roundabouts

Improvements Common to All Alternatives
- 10 ft-wide Multi-purpose Path at North End
- Flashing Yellow Arrows for Left Turns
- High Visibility Backplates
- High Visibility Crosswalks across Rt 28
- CCTV Cameras
- Arterial Performance Monitoring
Option 1 – Improvements Overview

• Lower-Cost Intersection Improvements targeted at specific signalized intersections

• Considered restricting some movements and minor geometric improvements

• Pedestrian Accommodations include sidewalk and crosswalks at spot locations
Option 2 – Improvements Overview

• Goal is to minimize property impacts while improving safety and reducing congestion

• Primary focus for option is using innovative intersections at signalized intersection locations.
  • [http://www.virginiadot.org/innovativeintersections/](http://www.virginiadot.org/innovativeintersections/)

• Pedestrian Accommodations focus on filling in missing sidewalk connections on east side of Route 28 and providing pedestrian crossings
Option 3 – Improvements Overview

- Similar Intersection Treatments as Option 2 with Innovative Intersection Treatments
- Modified locations for U-Turns to accommodate access
- Addition of median throughout corridor to improve safety
- Pedestrian Accommodations include 10 ft-wide Shared-Use Path
Option 4 – Improvements Overview

• Look into additional options such as flyovers and roundabouts to improve safety and reduce congestion at intersections

• Additional options were investigated at spot intersection locations.
Car/Van Pool Options

- Recommend a study of locations for Park & Ride/Commuter Lots
- Recommend a study of north/south transit – especially to Chantilly
OPTION 1 – MINOR IMPROVEMENTS
Option 1 – Orchard Bridge Drive

- Remove Northbound Left/U-Turn Lane
- Convert Southbound Left to Single Lane with Flashing Yellow Arrow to allow permissive Left Turns
- Extend Sidewalk to Bull Run Bridge/Tie into Fairfax County Project

Extend Sidewalk & Connect Facilities
Option 1 – Yorkshire Lane

- Restrict Side street Through Movements, approaches become Left/Right Out and reduces side street time requirements
- Add additional outbound lane to Yorkshire Lane
- Improve Pedestrian Crossing
Option 1 – Leland Road

- Restrict Eastbound Approach to Right In/Right Out and remove from signal control to eliminate signal phase
- Add median for access control and safety
- Widen Westbound approach to Two Lanes
- Relocate and Improve/Signalize Pedestrian Crossing
Option 1 – Maplewood Drive

- Restrict Westbound Approach to Ingress Only
- Widen Eastbound approach to Two Lanes
- Extend sidewalk from Shopping Center, consider pedestrian crossing
Option 1 – Browns Lane

- Restrict side street Through movements, approaches become Left/Right Out
- Widen Browns Lane to a two lane approach
- Realign approaches to allow concurrent left turns
- Restrict South Shopping Center entrance to Left In
OPTION 2 – INNOVATIVE INTERSECTIONS
Restricted Crossing U-Turn (RCUT) Intersection

- Restricted Crossing U-Turn (RCUT)
- http://www.virginiadot.org/info/innovative_intersections_and_interchanges/rcut.asp
Median U-Turn (MUT) Intersections

- Median U-Turn (MUT) Intersection
- [http://www.virginiadot.org/info/innovative_intersections_and_interchanges/mut.asp](http://www.virginiadot.org/info/innovative_intersections_and_interchanges/mut.asp)
Benefits of Innovative Intersections – Improved Safety and Traffic Operations
Option 2 – Orchard Bridge Drive

- Convert to RCUT Innovative Intersection
- Access Control to U-Turn Location
- Add 5 feet wide Sidewalk throughout corridor
Option 2 – Yorkshire Lane

- Convert to Median U-Turn (MUT) Innovative Intersection
- Add 5 feet wide Sidewalk
Option 2 – Leland Road

- Convert to RCUT Innovative Intersection
- Add 5 feet wide Sidewalk
- Improve Pedestrian Crossing
- Rugby Road Remains Open within Turnaround Area
Option 2 – Maplewood Drive

• Convert to RCUT Innovative Intersection
• Add 5 feet wide Sidewalk
• Add Pedestrian Crossing
• Utilize Browns Lane/Blooms Quarry for turn around locations
Option 2 – Browns Lane

- Convert to RCUT Innovative Intersection
- Add 5 feet wide Sidewalk
- Add Pedestrian Crossing
- Restrict Mid-Block Shopping Center access to Left-In
- Utilize Shopping Center Access/Blooms Quarry for turn around locations
OPTION 3 –
INNOVATIVE INTERSECTIONS
WITH CONTINUOUS MEDIAN
Option 3 – Orchard Bridge Drive

- Convert to RCUT innovative intersection
- Add 10 feet wide multi-use path through corridor
- Access Management to adjacent intersections
Option 3 – Yorkshire Lane

- Convert to RCUT innovative intersection
- Add 10 feet wide multi-use path
- Maintains Emergency Signal at Patton Lane with traversable median/preemption of RCUT Signals
- Access Management to adjacent intersections
Option 3 – Leland Road

- Convert to RCUT innovative intersection
- Add 10 feet wide multi-use path through corridor
- Access Management to adjacent intersections
Option 3 – Maplewood Drive

- Convert to RCUT innovative intersection
- Add 10 feet wide multi-use path through corridor
- Access Management to adjacent intersections
Option 3 – Browns Lane

- Convert to RCUT innovative intersection
- Add 10 feet wide multi-use path through corridor
- Access Management to adjacent intersections
- Utilize Blooms Quarry/Maplewood Drive turnaround for U-turn locations
OPTION 4 –
FLYOVERS AND ROUNDBOUTS
Left Turn Flyover Alternative at Orchard Bridge Drive

- Fully remove southbound left turn and replace with Grade Separated Flyover (approximately $30M)
  - Minor improvements in delays over existing
  - Similar delay and safety benefits to other improvement options
  - Signal would still need retained for outbound Orchard Bridge Drive
Roundabout Alternative at Yorkshire Lane

• Convert Signalized intersection to Hybrid Roundabout
  • Significant queues and delays in models and analysis performed
5. SAFETY & OPERATIONAL ANALYSIS RESULTS
## Safety Benefits

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Potential Crash Reduction at Intersections</th>
<th>Potential Crash Reduction for Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1 - Minor Geometrics Alternative</td>
<td>5-10%</td>
<td>2-5%</td>
</tr>
<tr>
<td>Option 2 - Innovative Intersections Alternative</td>
<td>15-20%</td>
<td>7-14%</td>
</tr>
<tr>
<td>Option 3 - Innovative Intersections with Continuous Median Alternative</td>
<td>15-20%</td>
<td>40-50%</td>
</tr>
</tbody>
</table>
### Traffic Operational Benefits

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Potential Reduction in Travel Time in the Future Year 2030 AM Peak Hour</th>
<th>Potential Reduction in Travel Times in the Future Year 2030 PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1 - Minor Geometrics Alternative</td>
<td>30-40%</td>
<td>10-20%</td>
</tr>
<tr>
<td>Option 2 - Innovative Intersections Alternative</td>
<td>40-50%</td>
<td>20-25%</td>
</tr>
<tr>
<td>Option 3 - Innovative Intersections with Continuous Median Alternative</td>
<td>40-50%</td>
<td>20-25%</td>
</tr>
</tbody>
</table>
# Pedestrian Accommodation – Alternatives Comparison

<table>
<thead>
<tr>
<th>Enhancements for Pedestrians</th>
<th>Option 1 – Minor Improvements</th>
<th>Option 2 – Innovative Intersections</th>
<th>Option 3 – Innovative Intersections with Continuous Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Visibility Crosswalk at 2 locations and Sidewalk/Trail along east side from Orchard Bridge Rd to bridge over Bull Run</td>
<td>Improved pedestrian crossings, with enhanced safety and reduced delays at 5 locations</td>
<td>Improved pedestrian crossings, with enhanced safety and reduced delays at 5 locations</td>
<td></td>
</tr>
<tr>
<td>Enhanced Ped Safety on 2 locations and 0.4 mile Extension of Trail/Sidewalk</td>
<td>Significantly enhanced pedestrian safety, reduced pedestrian delays, improved refuges and enhanced mobility for the crosswalks across Route 28 and signalized side road approaches</td>
<td>Significantly enhanced pedestrian safety, reduced pedestrian delays, improved refuges and enhanced mobility for the crosswalks across Route 28 and signalized side road approaches</td>
<td></td>
</tr>
<tr>
<td>Rating</td>
<td>Slightly Better</td>
<td>Significantly Better</td>
<td>Significantly Better</td>
</tr>
</tbody>
</table>
## Driveway/Access Impacts – Alternatives Comparison

<table>
<thead>
<tr>
<th>Locations where Safety at Access Locations Enhanced and Potential Conflict Points Reduced</th>
<th>Option 1 – Minor Improvements</th>
<th>Option 2 – Innovative Intersections</th>
<th>Option 3 – Innovative Intersections with Continuous Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 locations</td>
<td>6 locations</td>
<td>Entire Corridor</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Movements removed at intersections</th>
<th>4 locations</th>
<th>5 locations</th>
<th>5 locations</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Left turns removed to/from Driveways</th>
<th>Near new median on Rt 28 on approach to Leland Rd and north of Orchard Bridge Dr</th>
<th>On the approaches to and within the limits of the innovative intersections</th>
<th>The entire corridor, except at designated driveway locations</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Number of Parcels (approximate acreage) impacted for New U-Turn Locations</th>
<th>0 parcels (0 acres)</th>
<th>7 parcels (0.5 acres)</th>
<th>7 parcels (0.5 acres)</th>
</tr>
</thead>
</table>

| Rating | Slightly Better | Moderately Better | Moderately Better |
DRIVEWAY / ACCESS IMPROVEMENTS

EXISTING ACCESS
CONSOLIDATED ACCESS

CONSOLIDATE ACCESS POINTS
CONNECT ADJACENT PROPERTIES

BEFORE
AFTER

DEFINE DRIVEWAYS

LOCATE INTERSECTIONS TO FAVOR THROUGH TRAFFIC AND PROVIDE ADEQUATE SPACE TO DEVELOP DECELERATION Lanes FOR TURNING TRAFFIC

USE TURN LANES TO REMOVE VEHICLES FROM THROUGH TRAFFIC

RIGHT-IN, RIGHT-OUT WITH RAISED MEDIAN
RIGHT-IN, RIGHT-OUT WITH CHANNELIZING ISLAND

SAFE ACCESS IS GOOD FOR BUSINESS

You may be thinking this primer because your state transportation agency or local government has told you about places that will affect access to your business. There may be changes in retail centers, housing developments or commercial developments. So, we don’t just see how the changes that are proposed will affect your business. We don’t see how the changes that are proposed will affect the customers that your business serves. We don’t just see how the changes that are proposed will affect your business. We don’t just see how the changes that are proposed will affect the employees that your business serves. We don’t just see how the changes that are proposed will affect your business. We don’t just see how the changes that are proposed will affect the community that your business serves. We don’t just see how the changes that are proposed will affect the community that your business serves. We don’t just see how the changes that are proposed will affect the community that your business serves. We don’t just see how the changes that are proposed will affect the community that your business serves. We don’t just see how the changes that are proposed will affect the community that your business serves. We don’t just see how the changes that are proposed will affect the community that your business serves.

Whatever the reason, it is important for you to understand the terms of the changes before you have the opportunity to be informed about them. This primer will address questions you may have about access management and its effects on businesses, the community, and local government. It will also provide an understanding of the changes that are proposed and how they are expected to affect your business. For more information about specific changes, please contact your local government or business association. For more information about specific changes, please contact your local government or business association.
## Overall Alternatives Comparison

<table>
<thead>
<tr>
<th>Metric</th>
<th>Minor Improvements Alternative</th>
<th>Innovative Intersections Alternative</th>
<th>Innovative Intersections with Continuous Median Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Operations</td>
<td>Slightly Better</td>
<td>Moderately Better</td>
<td>Moderately Better</td>
</tr>
<tr>
<td>Traffic Safety</td>
<td>Slightly Better</td>
<td>Moderately Better</td>
<td>Significantly Better</td>
</tr>
<tr>
<td>Pedestrian Accommodation</td>
<td>Slightly Better</td>
<td>Significantly Better</td>
<td>Significantly Better</td>
</tr>
<tr>
<td>Driveway/Access Impacts</td>
<td>Slightly Better</td>
<td>Moderately Better</td>
<td>Moderately Better</td>
</tr>
</tbody>
</table>
Next Steps

• We want your feedback: www.virginiadot.org/centrevilleroadstudy

• Comment Deadline – December 2nd, 2019
• Study Completion – Winter 2019/2020
Website Links to FHWA case studies documenting innovative intersections:

- **Restricted Crossing U-Turn (RCUT) intersections**
  
  
  
  RCUT - FHWA Safety - US Department of Transportation

  
  https://www.youtube.com/watch?v=BLwl01NCp9I  
  https://www.youtube.com/watch?v=AxIiLzv-GOA  
  https://www.youtube.com/watch?v=LB5nTDSVEzs

- **Median U-Turn (MUT) intersections**

  
  https://www.youtube.com/watch?v=fshW_O_Xggl  
  https://www.youtube.com/watch?v=fiEhiNyQ4Oo  
  https://www.youtube.com/watch?v=rvazA22vhN0
Thank you!

Your participation and feedback is essential to developing a solution that works for all!

Project Website: www.virginiadot.org/centrevilleroadstudy