House Bill 2, approved by the General Assembly on April 6, 2014, created the SMART SCALE prioritization process requiring that transportation projects requesting funding through the Six-Year Improvement Program (SYIP) must be scored and prioritized.

Project applications must be started in the online portal, for pre-application screening review, by April 17, 2020. The full applications must be submitted by August 3, 2020. Submitted projects will be reviewed and scored by January 2021. Based on the project’s score and rank, the Commonwealth Transportation Board (CTB) selects projects to be funded the following spring/summer. Because applications are only submitted in even numbered years, funding is allocated for two (2) years. Selected projects are then added to the State’s Six-Year Improvement Program (SYIP) and funded in the outer years. Projects selected from this application cycle are not expected to be funded until July 1, 2026 or July 1, 2027. Localities with a population of 200,000 or less are limited to submitting no more than four applications. Planning District Commissions serving a population of 500,000 or less are also limited to submitting no more than four (4) applications for localities.

Over the past few months Fauquier County worked with the Virginia Department of Transportation (VDOT) to identify several potential projects to submit for funding through the FY 2022-2028 SYIP. Intersections within Fauquier County that have a high Potential for Safety Improvement (PSI) were considered. PSI is the expected number of crashes for the site minus the predicted number of crashes based on the predicted average number of crashes per year as a function of exposure and site characteristics such as traffic volume, segment length, and other roadway attributes for the facility type. Sites with high PSI values are be considered high priority for improvements, and often score better in the evaluation of SMART SCALE applications.
Seven applications for projects in Fauquier County were submitted for pre-application screening review. Four of these projects were submitted by the County. Staff worked with the Rappahannock-Rapidan Regional Commission (RRRC) to have them submit three applications for projects in Fauquier County. The following is a summary of each of these applications. It should be noted, each of the projects currently has a 25% contingency budget. The high contingency budget accounts for the high level of risk at this early stage of project development. The contingency accounts for all phases of project development and inflation. This project’s cost will be reevaluated prior to submission of the final application.

The county requested RRRC submit the following three (3) applications:

1. **I-66 East Bound (EB) Exit 28 Ramps & Route 17 Intersection, R-CUT Redesign**

   **Intersection Summary: PSI #18**

   - 38 crashes within 300 foot buffer from the intersection of I-66 and Route 17 Eastbound Ramp Intersection
   - 36 crashes categorized as “within” intersection
   - 21 injury crashes, 42 total injuries

   **Project Sketch:**

![Project Sketch](image-url)
Project Description:

This project redesigns/reconfigures the intersection with a Restricted Crossing U-turn (R-CUT). The R-CUT has low to moderate Right-of-Way (ROW) impact as it would include constructing the south bound (SB) U-turn in a location that would impact one parcel south of the interchange. It closes the current interchange crossover moving the two affected movements to the new U-turn intersection. This will significantly reduce the conflict points and expected crashes.

Base Cost: $6,000,000  
Contingency: $1,500,000  
Total Cost: $7,500,000

Estimated Reduction in Crashes: 63%

Discussion Items:

During the last round of SMART SCALE, a dual roundabout concept was submitted for SMART SCALE funding at the I-66 & Route 17 Exit 28 east bound (EB) and west bound (WB) intersections. The dual roundabouts project provided an excellent safety benefit but was too expensive and did not score well enough to receive funding. The redesign concept has been split into two separate applications. The EB intersection is now being redesigned as an R-CUT. This improvement would reduce the amount of conflict points the same as the roundabout redesign at about half the cost, but there is slightly more (20%) expected crashes from the R-CUT compared with the roundabout improvement. Operationally, the R-CUT design will be slightly worse than the current condition; however, it is more operationally efficient than the previously proposed roundabout design.

2. I-66 West Bound (WB) Exit 28 Ramps & Route 17 Intersection, Roundabout Redesign

Intersection Summary:

- 14 crashes within 300 foot buffer from the intersection of I-66 and Route 17 WB Ramp Intersection
- 13 crashes categorized as “within” intersection
- 9 injury crashes, 12 total injuries
Project Sketch:

![Project Sketch Image](image.png)

Description:

This project redesigns/reconfigures the intersection with a roundabout to address safety and operational issues.

Cost: $10,000,000
Contingency: $2,500,000
Total: $12,500,000

Estimated Reduction in Crashes: 82%

Discussion Items:

As previously noted, the last cycle a dual roundabout concept was submitted for SMART SCALE funding at the I-66 and Route 17 Exit 28 intersections. The project provided an excellent safety benefit but was too expensive and did not score well enough to receive funding. The redesign concept has now been split into two separate applications. While the EB intersection proposes an R-CUT, the WB intersection remains proposed to be a roundabout. The concept provides acceptable operations at the location while significantly reducing the expected crashes. It also has the benefit of reducing the queuing of the Northbound Route 17 to Westbound I-66 traffic that currently backs through the eastbound ramp intersection.
3. Route 29 & Lees Mill Road (Route 651) Intersection Improvements

Intersection Summary: PSI #26

- 22 crashes within 300 foot buffer from the intersection of Route 29 and Route 651
- 17 crashes categorized as “within” intersection
- 6 injury crashes, 8 total injuries

Project Sketch:

Description:

This project will restrict the intersection at Lees Mill Road and Route 29 (Mile Post 179.28) to a Right In/Out, Left In (northbound U-Turn location), close the crossovers at Mile Post 179.17 and at Mile Post 179.08 and restrict the intersection at the motel entrance to a Right In/Out, Left In (southbound U-Turn location) to create a superstreet to facilitate safer movements crossing Route 29.

Cost: $4,000,000
Contingency: $1,000,000
Total: $5,000,000

Estimated Reduction in Crashes: 63%
Discussion Items:

The R-CUT provides the best combination of operations and crash reductions at a reasonable cost compared with other potential solutions, such as a continuous green T or a roundabout.

The county is submitting the following four (4) applications:

1. **Roundabout at John Marshall Highway (Route 55) and Belvoir/Zulla Road (Route 709) Intersection.**

   **Intersection Summary:** PSI #31

   - 20 crashes within 300 foot buffer from the intersection of Route 55 and Route 709
   - 20 crashes categorized as “within” intersection
   - 1 fatal crash, 6 injury crashes, 12 total injuries

   **Project Sketch:**

   ![Project Sketch Image]

   **Description:**

   The project will convert the intersection to a ±130' diameter roundabout at Route 55 and Route 709 and will include sidewalks and crosswalks.
Cost: $ 7,125,000  
Contingency: $ 2,734,375  
Total: $10,937,500  

Estimated Reduction in Crashes: 82%  

**Discussion Items:**

This project is included in the County’s Comprehensive Plan and was submitted last round in SMART SCALE; however, it was not selected to be funded. There was a fatality at the intersection since the last SMART SCALE round. The intersection is the number 8 PSI intersection in the county and continues to have a high number of crashes.

2. **Route 29 & Vint Hill Road (Route 215) Dual Right Turn Lanes**

**Intersection Summary:** PSI #31

- 81 crashes within 300 foot buffer from the intersection of Route 29 and Route 215
- 46 crashes categorized as “within” intersection
- 1 fatal crash, 22 injury crashes, 34 total injuries

**Project Sketch:**

![Project Sketch](image-url)
Description:

The project will modify the existing intersection configuration by adding a right turn lane to the WB Route 215 approach and include associated traffic signal modifications.

Cost: $680,000  
Contingency: $170,000  
Total: $850,000

Estimated Reduction in Crashes: Traffic Study being updated by VDOT. Based on the Crash Analysis and Operational review an additional right turn lane on the Route 215 WB approach would benefit the intersection. This improvement works in conjunction with the recently completed “Cut the Hills” project to add capacity to the intersection.

Discussion Items:

This is the number 1 PSI intersection in Fauquier County and in the Culpeper District. The Route 29 Advisory Committee in coordination with VDOT recommended adding a second right turn lane as the number 3 priority for the corridor. SMART SCALE funding is considered a backup or secondary funding option as we are still actively pursuing funding for this improvement with VDOT from other funding sources.

3. Route 29 and Broad Run Church Road Dual Left Turn Lanes

Intersection Summary: PSI #27

- 65 crashes within 300 foot buffer from the intersection of Route 29 and Route 600
- 50 crashes categorized as “within” intersection
- 26 injury crashes, 34 total injuries
**Project Sketch:**

**Description:**

The project will add an additional WB left turn lane to the existing intersection configuration at Broad Run Church Road.

Cost: $2,200,000  
Contingency: $550,000  
**Total:** $2,750,000

Estimated Reduction in Crashes: Traffic Study being updated by VDOT. The project is believed to improve safety and operational performance at the intersection.
Discussion Items:

The Route 29 advisory committee working with VDOT identified this project as the #2 priority project for the corridor. Modifying the intersection with an additional turn lane will increase capacity and enhance safety. SMART SCALE funding is considered a backup or secondary funding option as we are still actively pursuing funding for this improvement with VDOT from other funding sources.

4. Route 17 & Covington’s Corner Road R-CUT Redesign

Intersection Summary: PSI #16

- 23 crashes within 300 foot buffer from the intersection of Route 17 and Route 663
- 17 crashes categorized as “within” intersection
- 9 injury crashes, 12 total injuries

Project Sketch:

Description:

The Restricted Crossing U-Turn (R-CUT) reduces the conflict by more than half and the expected number of crashes by 63%, while having only a minor impact on ROW and a reasonable cost.

Cost: $5,000,000
Contingency: $1,250,000
Total: $6,250,000
Estimated Reduction in Crashes: 63%

**Discussion Items:**

This intersection is a relatively new problem spot. VDOT is currently exploring the implementation of short-term safety measures, such as adding stop bars will be done to try and mitigate some of the safety issues. The R-CUT would reduce crashes at the intersection by an estimated 63%.