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MEMORANDUM

TO: Fauquier County Board of Supervisors

FROM: Joseph Costello, Transportation Planner

DATE: April 28, 2020

SUBJECT: SMART SCALE Projects FY 2022-2028

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 by April 17, 2020, and submitted by August 17, 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 (4) 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 and the Virginia Department of Transportation (VDOT) have identified several projects to submit for funding through the FY 2022-2028 SYIP. Since no other localities in the planning district have requested that the RRRC submit applications for them, staff has asked to submit three additional applications through the RRRC for a total of seven (7) applications.

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

Note: *Each of the PDC 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 number is likely to be reduced by the time of final application submittal for some of the projects.

PSI (Potential for Safety Improvement)- *The PSI is the expected number of crashes for the site minus the predicted number of crashes based on the SPF for that facility type. Sites with high PSI values should be considered high priority for improvement..*

SPF (Safety Performance Function)- *Is a mathematical relationship (model) between crash frequency and site characteristics such as traffic volume, segment length, and other roadway attributes.*

1. I-66 EB Exit 28 Ramps & Route 17 Intersection, R-CUT Redesign

Description:
This project redesigns/reconfigures the intersection with an R-CUT. The Restricted Crossing U-Turn has Low to Moderate ROW impact as it would include constructing the SB U-Turn 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**

Discussion Items:
During the last round of SMART SCALE, a dual roundabout concept was submitted for SMART SCALE funding at the I66 & 17 Exit 28 EB and 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 RCUT. The 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 RCUT compared with the roundabout improvement. The RCUT would still provide an estimated 63% reduction in crashes from the current condition. Operationally, the RCUT redesign will be slightly worse than the current condition. However, although less efficient operationally, a roundabout design would be even less operationally efficient and the expected 63% reduction in crashes from the R-CUT redesign provides a much needed safety improvement. There have been 36 crashes at the intersection with 42 injuries over the last six years.

2. I66 WB Exit 28 Ramps & Route 17 Intersection, Roundabout Redesign

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**

Discussion Items:
Last cycle a dual roundabout concept was submitted for SMART SCALE funding at the I66 & 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. The WB intersection will remain a roundabout and provides acceptable operations at the location while significantly reducing the expected crashes (by 63%). It also has the benefit of reducing the queuing of the Northbound Route 17 to Westbound I66 Traffic that currently backs through the Eastbound ramp intersection.

3. Route 29 & Lees Mill Rd (651) Intersection Improvements

Description:
Project will restrict the intersection at Lees Mill (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**

Discussion Items: The Restricted Crossing U-Turn provide the best combination of Operations and Crash reductions and at a reasonable cost compared with other potential solutions such as a continuous green T and a roundabout.

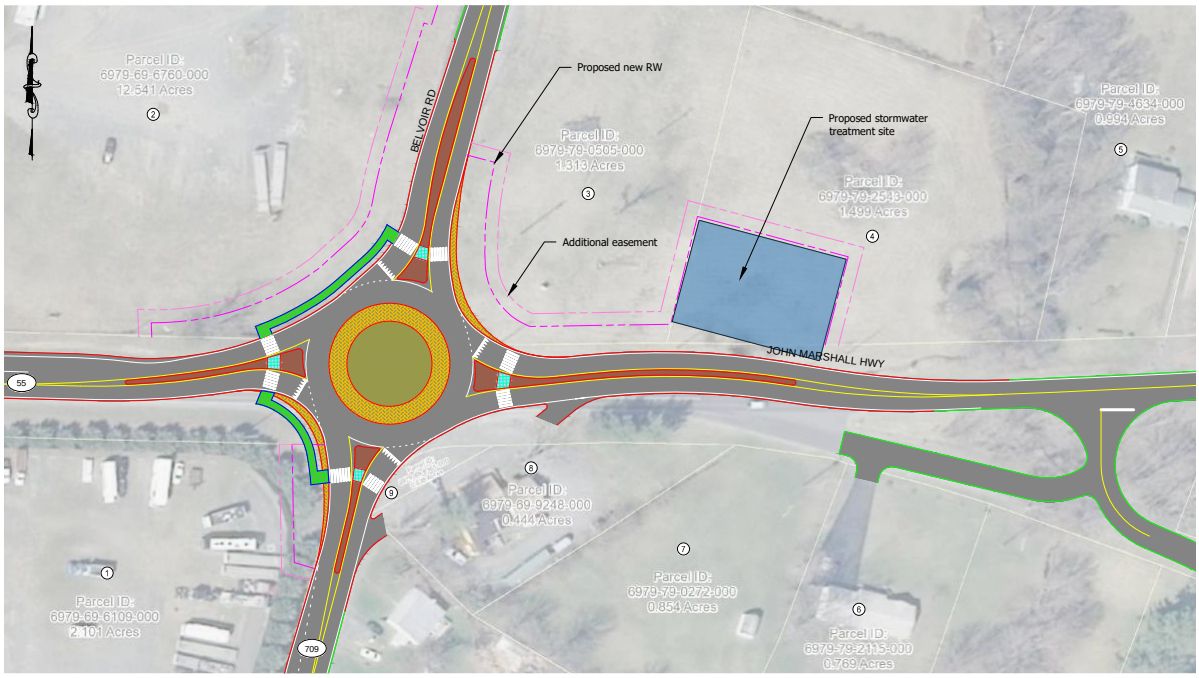
The county is submitting the following four (4) applications:

Note: *Each of the county 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 number is likely to be reduced by the time of final application submittal for some of the projects.*

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

   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**

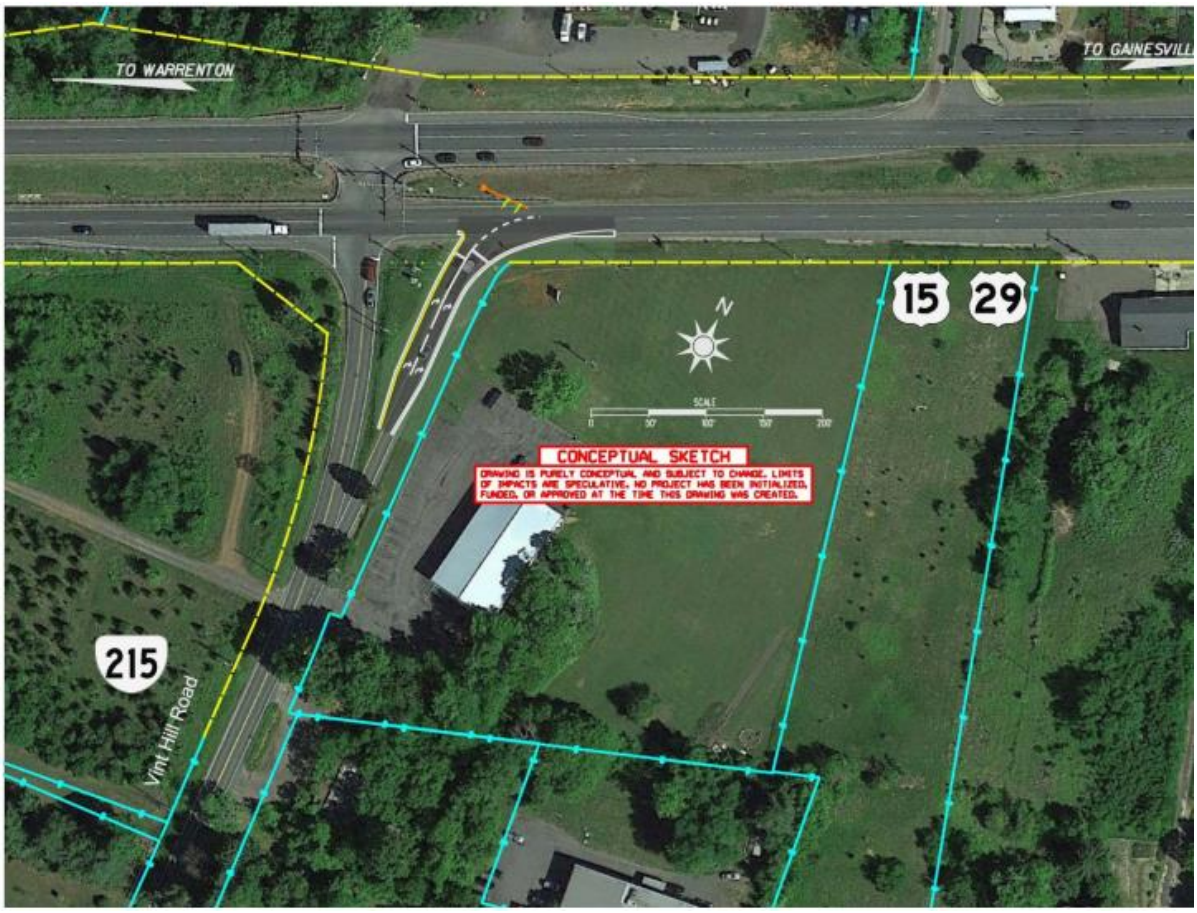


   Discussion Items:
   This project is included in the County's Comprehensive Plan and was submitted last round in SMART SCALE; however, it was not selected to be funded. There was a fatality at the intersection since the last SMART SCALE round. The intersection is the number 8 psi intersection in the county and continues to have a high number of crashes. The improvements are expected to reduce crashes by 82% at the intersection.

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

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**

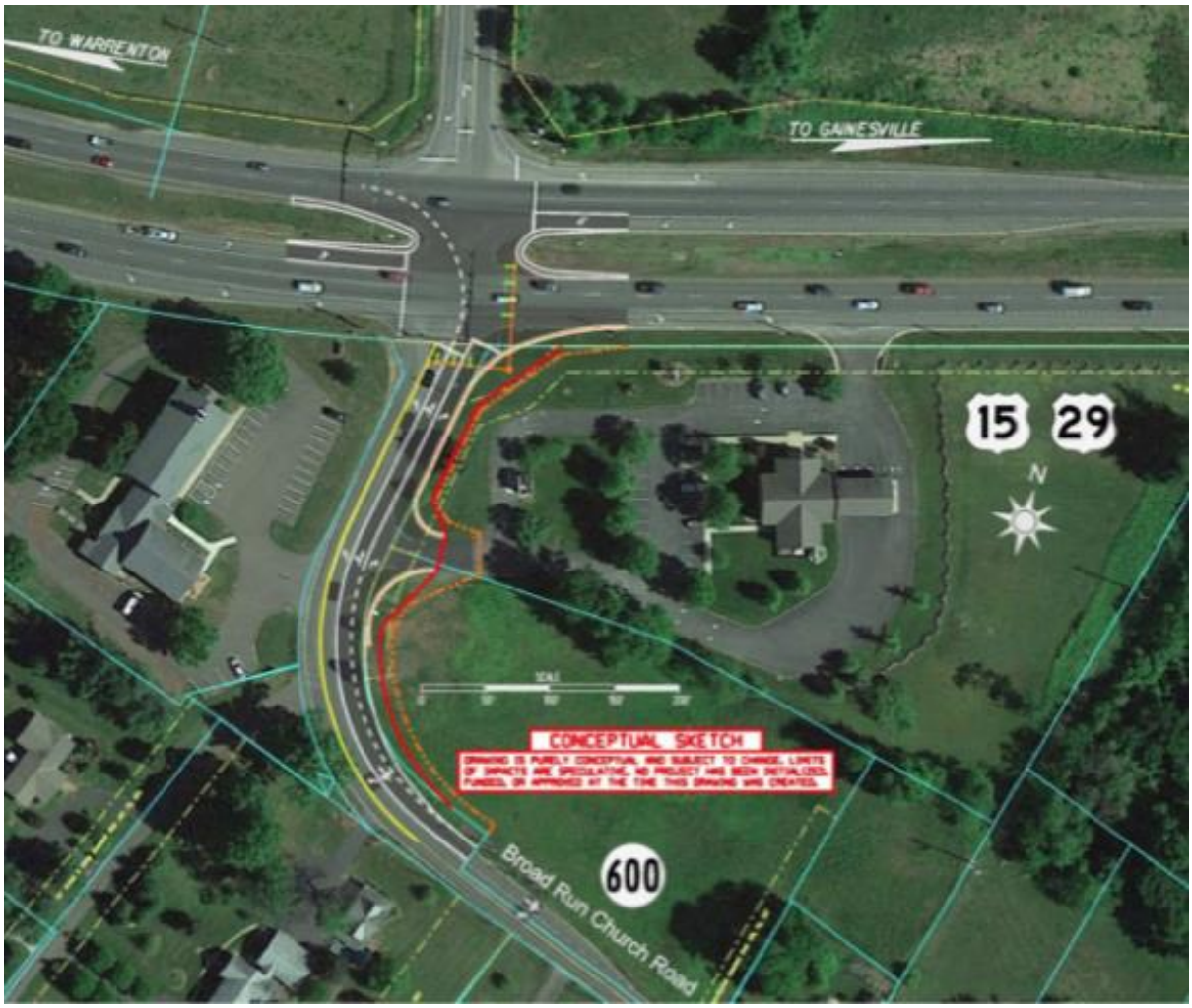


Discussion Items:
This is the #1 psi intersection in Fauquier County and in the Culpeper District. The Route 29 Advisory Committee in coordination with VDOT recommended adding a second right turn lane as the number 3 priority for the corridor. SMART SCALE funding is considered a backup or secondary funding 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

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

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



Discussion Items:
The Route 29 advisory committee working with VDOT identified this project as the #2 priority project for the corridor. The intersection is number seven on the psi list for the County. 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

Description:
The Restricted Crossing U-Turn 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**

Discussion Items:
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 RCUT would reduce crashes at the intersection by an estimated 63%. The intersection is the number 16 on the district psi list.