

**BOARD OF SUPERVISORS
BUSINESS MEETING
ACTION ITEM**

SUBJECT: Rural Primary Roads (Routes 7, 9, 15, 50, and 287) Safety and Operational Studies (pursuant to the June 29, 2017 Transportation Summit)

ELECTION DISTRICT(S): Blue Ridge, Catocin, Dulles, and Leesburg

CRITICAL ACTION DATE: At the pleasure of the Board

STAFF CONTACT(S): Kelly Griffin, Transportation and Capital Infrastructure
Joe Kroboth, III, Transportation and Capital Infrastructure

PURPOSE: To provide as requested by the Board of Supervisors (Board) at their June 29, 2017 Transportation Summit a priority order for the initiation of the Safety and Operational Studies of the Rural Primary Roads (Routes 9, 15 South, 7, 50, and 287).

RECOMMENDATION(S): Staff recommends that Safety and Operational Studies are initiated for the Rural Primary Roads in the following priority order: 1) Route 9; 2) Route 15 South of Leesburg; 3) Route 7; 4) Route 50; 5) Route 287.

BACKGROUND: At the June 29, 2017 Transportation Summit, an information item¹ was presented regarding the Rural Primary Roads (Routes 7, 9, 15, 50, and 287). At this meeting, staff was directed to initiate safety and operational analyses for the above mentioned Rural Primary Roads similar to the one that is currently being conducted for Route 15 North of Leesburg². A brief summary of each road segment is provided below; for comparison purposes, a summary table is also provided in Table 1 (page 5). A map depicting the location of these roads is provided in Attachment 1.

Route 9 (Charles Town Pike) – Route 7 West to the West Virginia Line (approximately 13 miles):

Route 9 is a two-lane roadway from the West Virginia line to the Route 7 interchange where it becomes four lanes approaching two traffic circles which were constructed as part of the VDOT Route 7 Truck Climbing Lane and Operational Improvements project that was completed in 2015. Route 9 was designated as a Virginia Byway by the Commonwealth Transportation Board (CTB) in March 2002 in recognition of the corridor's aesthetic and cultural value.

¹ [June 29, 2017 Transportation Summit Rural Primary Roads Information Item](#)

² [June 29, 2017 Transportation Summit Meeting Summary](#)

Pursuant to the Loudoun County Countywide Transportation Plan (CTP), the ultimate configuration of Route 9 is currently planned to be a rural two-lane undivided rural arterial road. Roundabouts are planned at Route 719 (Stony Point Road), Route 690 (Hillsboro Road), and Route 287 (Berlin Turnpike). The planned roundabouts at Routes 719 and 690 are located within the Town of Hillsboro and these projects will be managed by the Town. The planned roundabout at Route 287 is included in the Capital Improvement Program (CIP); design is underway. Any improvements to Route 9 are required to be in conformance with the Heritage Resources Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

According to the daily traffic volumes published by VDOT for 2016, the average daily traffic volume on Route 9 ranges from 15,000 trips at the West Virginia line to 21,000 at Hamilton Station Road. Historically, the traffic volume on Route 9 has remained fairly stable with the exception of the western portion of the road near the West Virginia line, which increased by 25% between 2012 and 2016.

Between 2012 and 2016, there were 617 reported crashes on Route 9, including five fatalities. The crashes are spread through the corridor; 30% of the crashes caused injury and 70% were property damage only. Note that this crash data was accurate up to the June 29, 2017 Transportation Summit. Since June 29, 2017, several additional crashes have occurred which include some fatalities.

Route 15 (James Monroe Highway) - South of Leesburg to Prince William County (approximately 12 miles):

Route 15 is mainly a two-lane rural arterial roadway, except the Route 15 Bypass located in the Town of Leesburg, which is a median-divided four-lane roadway from Gleedsville Road to the northern extension of Battlefield Parkway. South of Loudoun County, Route 15 has been widened to four lanes, after Route 234 in Prince William County. North of Loudoun County, Route 15 remains a two-lane road from the bridge at Point of Rocks, MD to Route 340. In October 2009, Route 15 was designated as a National Scenic Byway. Additionally, The Journey Through Hallowed Ground National Heritage Area also encompasses Route 15; the area now extends across Route 15 to Morven Park.

Pursuant to the Loudoun County CTP, the ultimate configuration of Route 15 is planned (for the most part) to remain a two-lane rural arterial road; the CTP calls for the road to be widened to four lanes between Route 704 (Harmony Church Road) and the Route 15 Bypass. On March 6, 2017, CPAM-2017-0002 was approved, which amended the CTP to revise the segment of Route 15 between North King Street and Montesor Road from a rural two-lane local access undivided rural arterial roadway to a four-lane median-divided facility.

According to the daily traffic volumes published by VDOT for 2016, the average daily traffic volume on Route 15 ranges from 15,000 trips at the Prince William County line; 13,000 trips at the midpoint of the segment; and 17,000 near the southern limits of the Town of Leesburg. Historically, the traffic volume on Route 15 has remained fairly stable during the past five years.

Between the years of 2012 and 2016, there were 822 reported crashes on Route 15 south of Leesburg, including eight fatalities. The crashes are spread along the corridor; 27% of the crashes caused injury and 73% were property damage only.

To obtain a more comprehensive review of the congestion issues on Route 15, the County issued a task order contract to Kimley-Horn to prepare a Route 15 Congestion Report (“the Report”). The Report³ study area encompasses four intersections on Route 15: Battlefield Parkway, North King Street, Tutt Lane, and Whites Ferry Road/Raspberry Drive; and two intersections on North King Street: Smarts Mill Middle School/Frances Hazel Reid Elementary School and Dry Hollow Road/Tuscarora High School. The Report was presented to the Board on May 18, 2017, and identified a series of incremental improvements that could be implement in phases to alleviate congestion and provided a cost estimate for each improvement.

At the May 18, 2017 Board Business Meeting, the Board directed staff (8-0-1, Meyer absent) to expand the Report to include the safety and operational uses on Route 15 between Whites Ferry Road and the Maryland State line to identify progressive improvements that can be implemented. Because the current study encompasses approximately ten miles from Whites Ferry Road to the Maryland State line, staff recommends that the future Route 15 Safety and Operational Study limits are Whites Ferry Road to the Prince William County line.

Route 7 (Harry Byrd Highway) – Town of Leesburg to the Clarke County Line (approximately 15 miles):

Route 7 is designated as a principal arterial highway running east-west through Loudoun County. Currently, Route 7 eastbound has two lanes which extend from the Clarke County line to Route 7 Business (East Market Street) in the Town of Leesburg. Westbound Route 7 also has two lanes, except for the section between West Market Street and Route 9, which was widened to three lanes as part of the Virginia Department of Transportation’s (VDOT) Route 7 Truck Climbing Lane and Operational Improvements project that was completed in 2015.

Pursuant to the Loudoun County Countywide Transportation Plan (CTP), the ultimate configuration of Route 7 is currently planned to be an eight-lane principal arterial highway between Route 7 Business (West Market Street) and Route 9 (Charles Town Pike); a six-lane principal arterial between Route 9 and Round Hill; and a four-lane principal highway from Round Hill to the Clarke County Line. There are two projects currently included in the Adopted FY 2019 – 2024 CIP for this corridor: Route 7/287 interchange improvements and an interchange at Route 7/690.

According to the daily traffic volumes published by VDOT for 2016, the average daily weekday traffic volume on Route 7 ranges from 29,000 trips at the Clarke County line to 68,000 at the Route 9 interchange; the traffic volume on Route 7 has increased by 25% more trips between 2012 and 2016.

³ [May 18, 2017 Route 15 Congestion Report Board Item](#)

Between 2012 and 2016, there were 1,220 reported crashes on Route 7, including seven fatalities. The crashes are spread through the corridor; 26% of the crashes caused injury and 74% were property damage only.

US Route 50 (John Mosby Highway) – Northstar Boulevard to Fauquier County (approximately 12 miles):

Route 50 is a four-lane median-divided roadway from the future intersection with Northstar Boulevard and transitions west into a two-lane roadway west of the Fleetwood Road/Lenah Mill Boulevard intersection (Attachment 1).

Pursuant to the Loudoun County CTP, the ultimate configuration of Route 50 varies depending on the area of Route 50. The segment between Northstar Boulevard and Lenah Loop Road is located within the Transition Policy Area; it is planned to be a four-lane median-divided roadway, rural arterial, with a grade-separated interchange at VA Route 659 Relocated. West of the Lenah Loop Road, Route 50 is located in the Rural Policy Area; it is planned to remain a two-lane minor arterial road. Any improvements to the rural portion must be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. The Adopted FY 2019 - FY 2024 CIP includes a project to design and construct a roundabout at Route 50/Everfield Drive; funding for design becomes available in FY 2024. Also, VDOT is currently in the process of designing and installing a traffic signal at this intersection.

According to the daily traffic volumes published by VDOT for 2016, the average daily traffic volume on Route 50 ranges from 16,000 trips near Aldie to 6,100 at the Fauquier County line. There has been little change in the traffic volumes on Route 50 during the past five years.

Between the years of 2012 and 2016, there were 404 reported crashes on the rural segment of Route 50, including two fatalities. The fatalities occurred east of Middleburg; 20% of the crashes caused injury and 80% were property damage only.

Route 287 (Berlin Turnpike) – Maryland State Line to Route 7 (approximately 12.5 miles)

Route 287 is currently a two-lane rural collector road. Within the Town of Lovettsville, Route 287 has been realigned around the town center development.

Pursuant to the Loudoun County CTP, the ultimate configuration of Route 287 is planned to remain a two-lane major collector highway. There are two projects included in the Adopted FY 2019 – 2024 CIP: Route 7/287 interchange improvements and a roundabout at Route 9/287.

According to the daily traffic volumes published by VDOT for 2016, the average daily traffic volume on Route 287 ranges from 4,600 trips at the Maryland line to 9,200 at Route 9. There has been little change in the traffic volumes on Route 287 during the past five years.

Between the years of 2012 and 2016, there were 311 reported crashes on Route 287, with no fatalities. The crashes were spread out along the corridor; 29% of the crashes caused injury and 71% were property damage only.

Table 1. Comparison of Primary Rural Roads

	Route 7	Route 9	Route 15 South	Route 50	Route 287
Approximate Length of Roadway (mi)	15.0	13.0	12.0	12.0	12.5
Existing Configuration	Mostly two lanes; three lanes between W. Market Street and Route 9	Two lanes from WV line to the Route 7 interchange; four lanes from the Route 7 interchange to the two traffic circles	Two lanes, with the exception of the Leesburg Bypass which is four-lane median-divided	Four lanes at the intersection of future Northstar Blvd.; two lanes westbound to the western County line	Two-lane rural collector
Ultimate Configuration	Eight lanes between w. Market St. and Route 9; six lanes between Route 9 and Round Hill, and four lanes from Round Hill to Clarke County Line	Two-lane rural roadway	Mostly two lanes; four lanes between Route 704 and the Leesburg Bypass	Varies; four-lane median-divided roadway with grade-separated interchange and two-lane rural roadway west of Lenah Loop Road	Two-lane major collector
2012-2016 AAWDT*VPD **Range	29,000 to 68,000	15,000 to 21,000	13,000 to 17,000	6,100 to 16,000	4,600 to 9,200
2016 Total Crashes	1220 (7 fatal) approx. 20 crashes per lane/mile	617 (5 fatal) approx. 24 crashes per lane mile	822 (8 fatal) approx. 34 crashes per lane mile	404 (2 fatal) approx. 17 crashes per lane mile	311 (0 fatal) approx. 12 crashes per lane mile
Staff Ranking	3	1	2	4	5

*AAWDT: Average Annual Weekday Daily Traffic

**VPD: Vehicles Per Day

ISSUES: Traffic volumes on most of the primary rural roads exceed the capacity of the road. Congestion on the primary rural roads will worsen as growth in the County and the region continues. Most of the primary rural roads were constructed over fifty years ago and lack the modern design features that increase safety, such as medians and wide shoulders.

Nationwide, motor vehicle fatalities increased 7.2% in 2015, which is the largest increase in nearly 50 years. The Commonwealth of Virginia experienced a 7.6% increase in fatalities in 2015. There were 26 fatalities reported between 2012 and 2016 on Loudoun County's primary rural roads.

FISCAL IMPACT: The Scope of Services for the previously initiated Route 15 Safety and Operational Study North of Leesburg encompasses approximately ten (10) miles of roadway and includes the tasks listed below. The initial Scope of Services for the Route 15 Safety and Operational Study was amended to include a more robust public input and stakeholder process, additional data collection, additional future traffic volume forecasting, and evaluation of the additional future traffic volume forecasting. The approximate total cost for Route 15 North of Leesburg Safety and Operational Study is \$700,000, and includes the following tasks:

- Project Management and Meetings
- Data Collection
- Existing Transportation Conditions Assessment
- Public and Stakeholder Input Process
- Development of Future Traffic Volumes
- Improvement Concept Development
- Evaluation of Concepts
- Final Report

Each primary rural road segment contains a unique set of constraints, issues, and roadway analysis. Therefore, for purposes of this item, an approximate cost range of \$700,000 – \$900,000 is assumed for each road segment. To conduct all five studies, total funding in the range of \$3.5 to \$4.5 million is estimated.

The total appropriation for FY 2019 is \$3 million for corridor studies in the Project Management Consulting Services account in the Capital Projects Fund. The FY 2019 appropriation will allow for the initiation of two Safety and Operational Studies on rural primary roadways. The appropriation for FY 2020 for corridor studies in the Project Management Consulting Services account in the Capital Projects Fund is \$3 million. The appropriation will allow for the initiation of the remaining corridor studies.

At the June 5, 2018 Board Business Meeting, the Board directed staff (8-0-1 Supervisor Higgins absent) to submit a Better Utilizing Investments to Leverage Development (BUILD) Grant Application for the Route 9 project referenced in this item. As indicated in the June 5, 2018 item, the application will request funding for approximately 50 percent of the estimated \$900,000 cost.

The selection of winning BUILD Grant Applications is anticipated to occur no later than December 2018.

STAFF RECOMMENDATIONS: Based on analysis of the existing conditions, ultimate CTP planned condition, average daily traffic volume, crash severity/frequency, and the number of crashes per lane mile, staff recommends that Safety and Operational Studies are initiated for the Rural Primary Roads in the following priority order, with no more than two studies initiated in a Fiscal Year:

- 1) Route 9 *
- 2) Route 15 South of Leesburg
- 3) Route 7
- 4) Route 50
- 5) Route 287

* Note: If the Route 9 project receives BUILD Grant funding, the project start date would occur after a contract is in place that meets all the requirements for federal funding.

Route 9 and Route 15 South of Leesburg are both two lane undivided Primary Rural Roads that have high daily traffic volumes. It is noted that both roads have the highest volume of crashes per lane mile and there have been several fatal crashes on each road. Therefore, staff recommends that Safety and Operational Studies be initiated in the next fiscal year for Route 9 and Route 15 South of Leesburg. Route 7 is recommended as third on the list due to the high daily traffic volume, and the number and severity of crashes. Staff recommends that Route 50 be assigned the fourth priority due to its low traffic volume and relatively low crash rate. Route 287 is recommended to be the last road that is studied because it has the lowest traffic volume and lowest crash rate of all the Primary Rural Roads, and it is the only road that has not experienced a fatal crash.

ALTERNATIVES: The Board can decide to implement the priority list as recommended by staff in this report, it may choose to amend the priority list, or the Board may elect to take no action at this time.

DRAFT MOTIONS:

1. I move that the Board of Supervisors direct staff to proceed with Safety and Operational Studies, similar to what is being conducted for Route 15 North of Leesburg, in the following priority order:

- 1) Route 9
- 2) Route 15 South of Leesburg
- 3) Route 7
- 4) Route 50
- 5) Route 287

OR

2. I move an alternate motion.

ATTACHMENT:

1. Vicinity Map



**Transportation Summit
Rural Primary Roads
ATTACHMENT 1**

