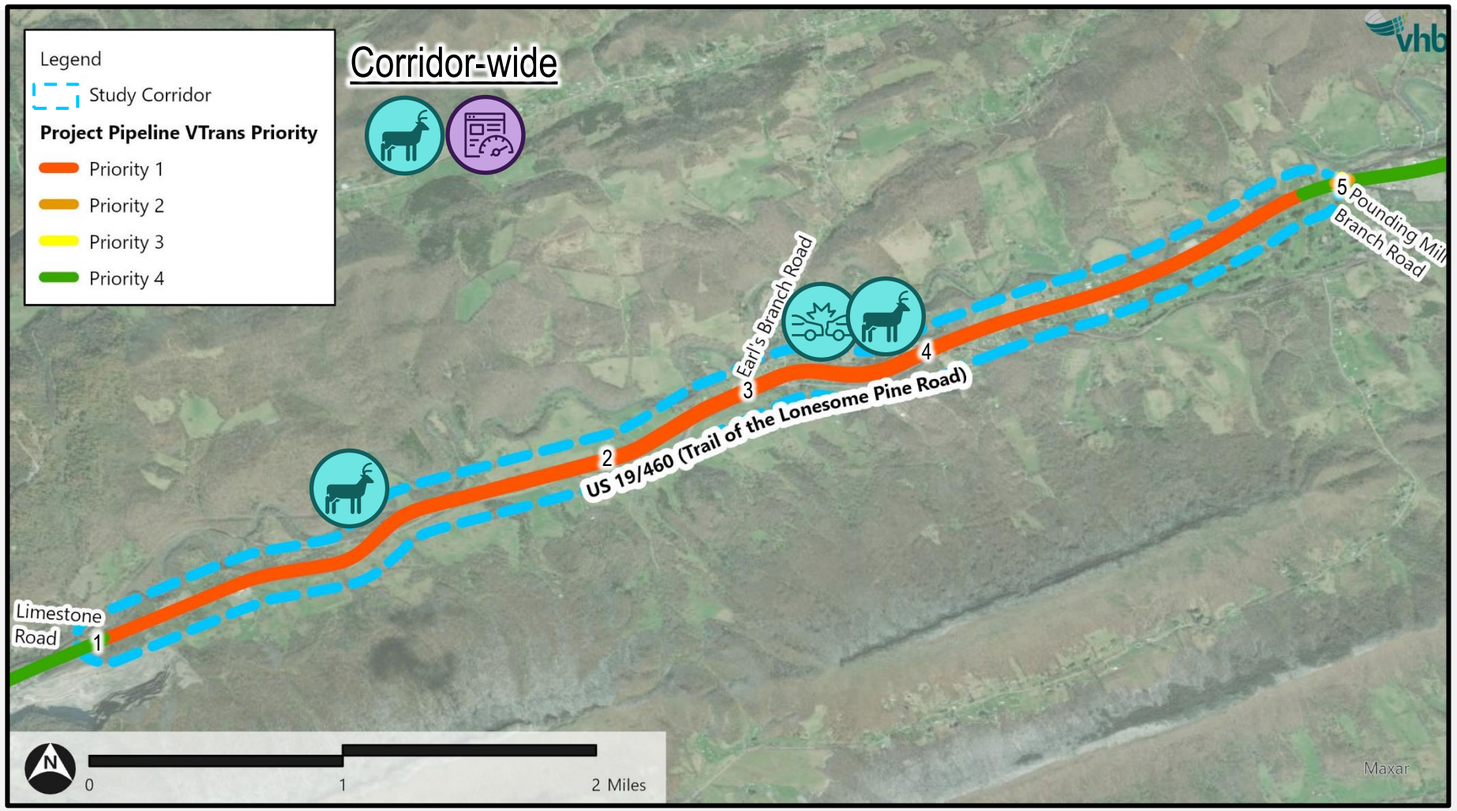
Project Overview | BR-23-09

US 19/460 (Trail of Lonesome Pine Road / Gov. George C. Peery Highway)
between Limestone Road and Pounding Mill Branch Road



Issues in the Study Area

Pattern of fixed-object crashes in "S" Curve east of Earl's Branch Road. Contributing factors include vertical and horizontal curvature, lack of warning signs, narrow shoulders, lack of centerline rumble strips, and operating speeds above curve design speeds.

Large animal crashes (i.e., deer, bear, and cow) accounted for 48% of all crashes reported throughout the study corridor between 2018-2022. Large animal crashes were reported along the corridor with clusters nearest to water sources. Animal crashes were primarily reported in June, November, and December.

Speeding is an observed issue on this corridor. The 85th percentile speed along the corridor is 71MPH, which is higher than the 60MPH speed limit and higher than some curve design speeds.

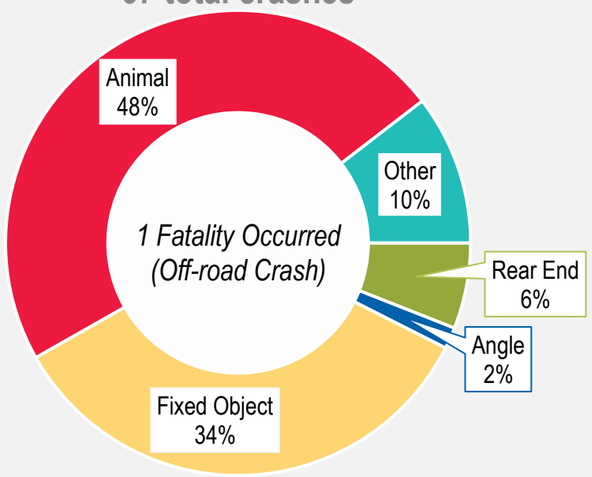
Project Purpose, Goals, & Objectives

Analyze the operational and safety issues identified along US 19/460.

Identify cost-effective preferred improvement alternatives that address the deficient conditions.

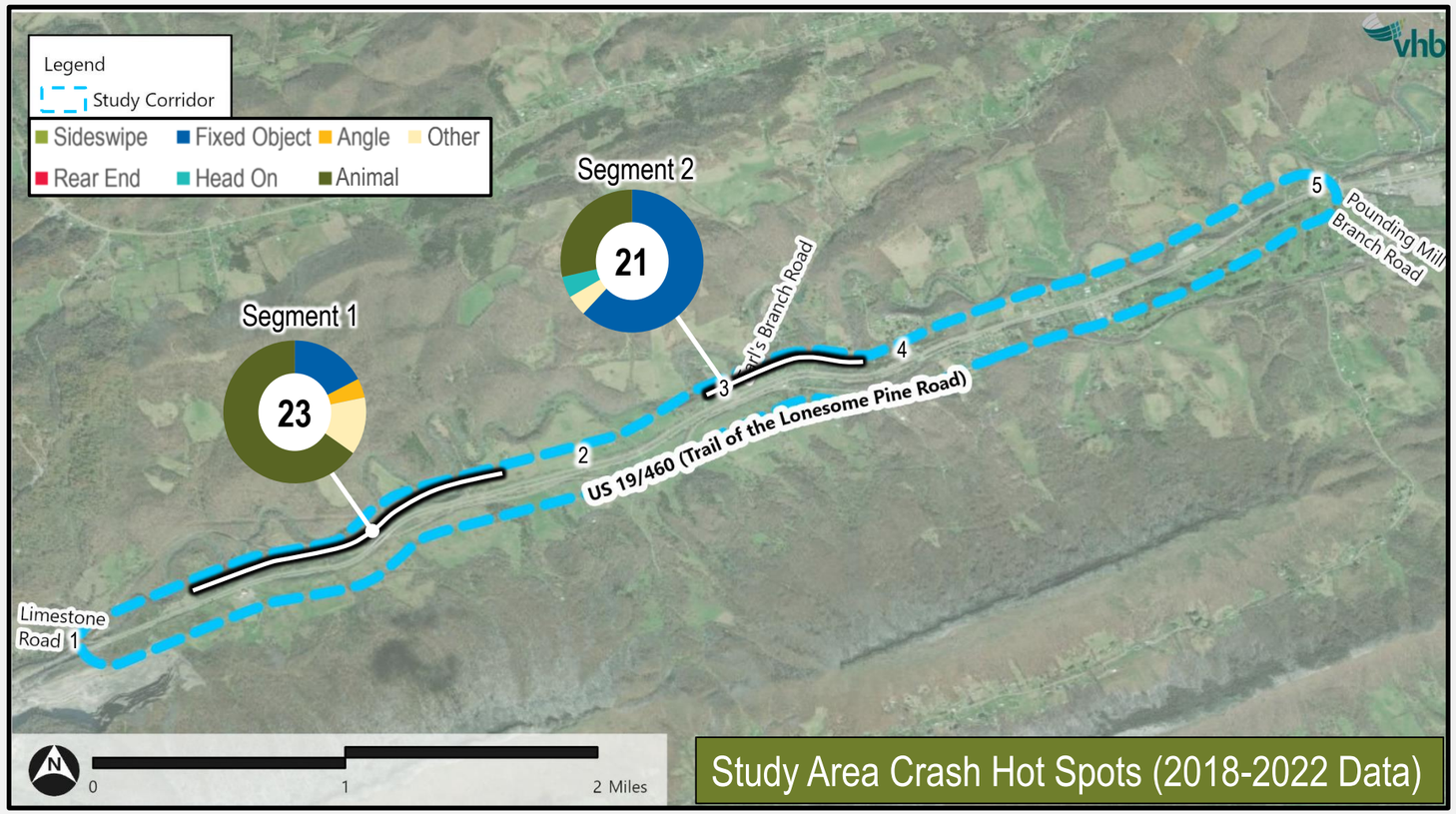
Project Fact Sheet	
VDOT District	Bristol
Locality	Tazewell County
# of Study Intersections	5
Transit Routes	None
Functional Classification	Rural Principal Arterial
Speed Limit	60 MPH

Study Area Crashes (2018 – 2022 Data)
67 total crashes

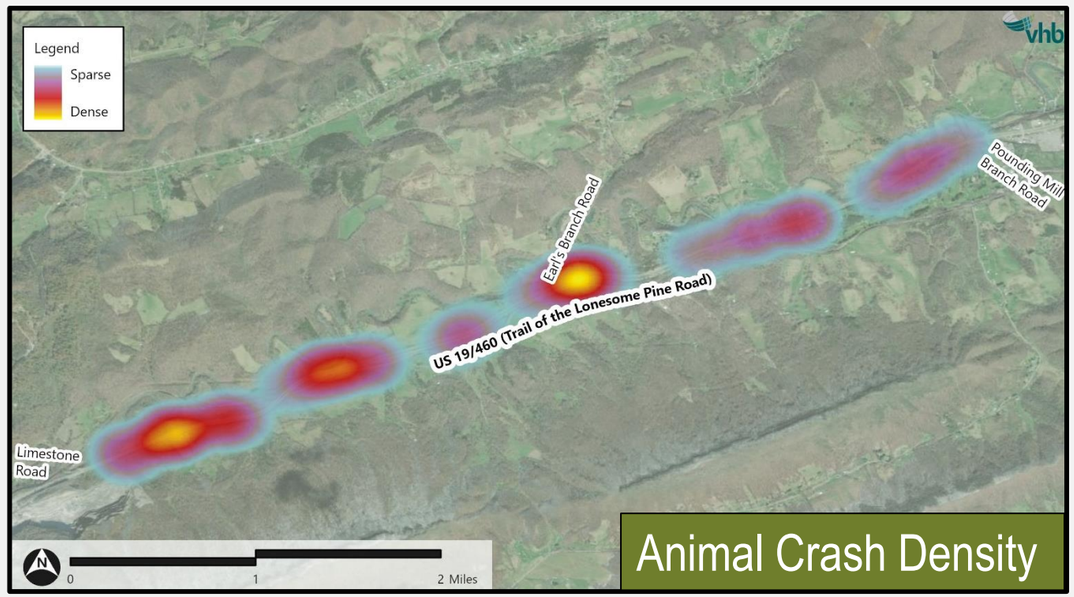


Safety Needs

Needs Identification Summary



Study Area Crash Hot Spots (2018-2022 Data)



Animal Crash Density

VTrans Safety / Reliability Needs

NEED	PRIORITY
Road Safety	Very High
Capacity Preservation	Very High

VDOT 2018-2022 Crash Data

Hot Spot Intersection / Segment	Crashes by Severity					
	K	A	B	C	O	Total
Segment 1	0	0	1	0	22	**23**
Segment 2	1	0	7	0	13	**21**
Total	1	0	8	0	35	**44**

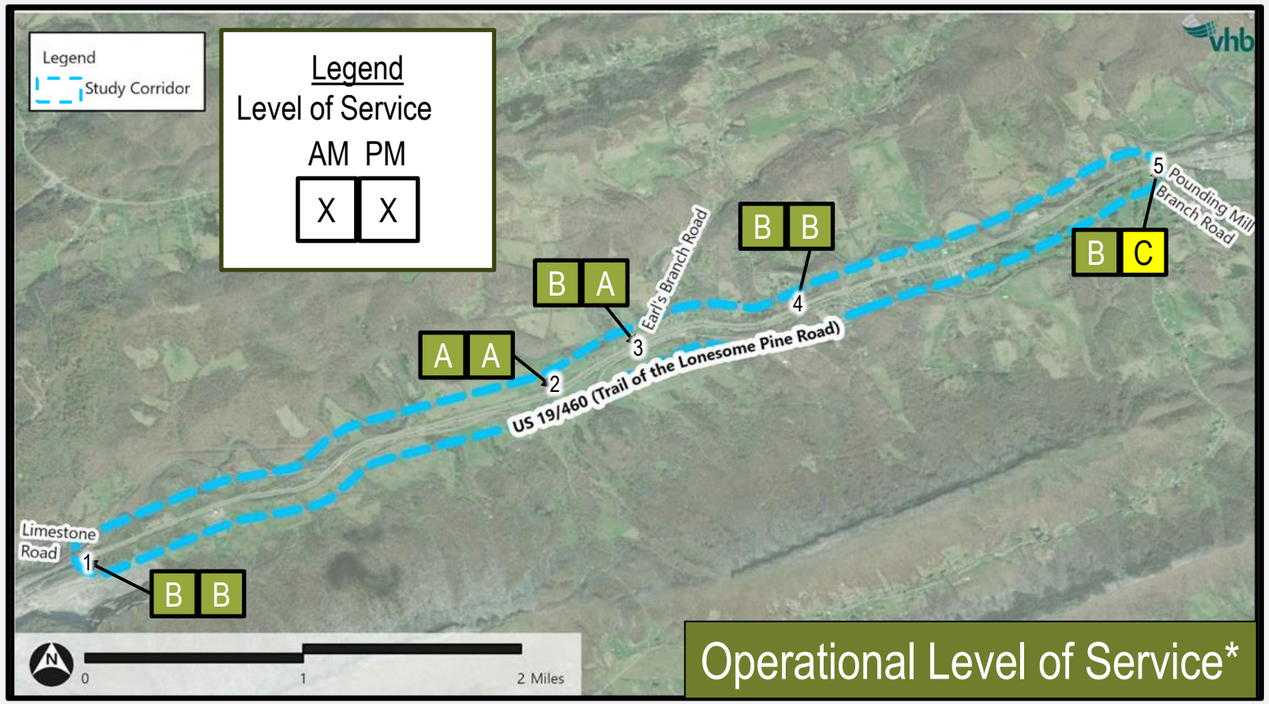
K = Fatal Injury; A = Severe Injury; B = Visible Injury; C = Non-visible Injury; O = Property Damage Only

Safety Summary

- The highest concentration of crashes occurred within the "S" curve east of Earl's Branch Road. Many of the roadway departure crashes in this segment occurred in the eastbound direction of travel, which is on a downgrade and has substandard shoulders. Many of the crashes involved drivers overcorrecting after initially leaving the roadway to one side.
- There were 32 animal-related, reported crashes in a 5-year window. Per VDOT statewide research, animal crashes are sometimes *underreported by up to 500%* (i.e., 5x as many crashes as reported).
- Animal crashes were concentrated in three hot spots, seasonal (June, November, and December), and approximately 75% occurred at night. The densest cluster was 10 crashes within 1.2 miles in a 2-year span.

Operations Needs

Needs Identification Summary



*Intersection LOS is not reported for two-way stop control intersection. LOS reported is worse of side-street approach.

72-Hour Volume and Speed Data Location	Daily Traffic (ADT)	Mean Speed	85th Percentile Speed	Percent of Traffic 10+ MPH over Speed Limit
Between Limestone Road and Cuz's Cabins and Restaurant	11,400	64.7 MPH	71.7 MPH	22.5%
Between Lincoln Street and Mountain Road	10,750	64.8 MPH	70.8 MPH	16.5%

"S" Curve Appropriate Design Speeds* Location	Operating Speed	Design Speed
Westbound "West" Curve	~71 MPH	55 MPH
Eastbound "West" Curve		60 MPH
Westbound "East" Curve		60 MPH
Eastbound "East" Curve		60 MPH

* "S" curve east of Earl's Branch Road. Based on superelevation measurements by VDOT and roadway design plan curve radii.

VTrans Operations / Access Needs	
NEED	PRIORITY
Capacity Preservation	Very High
Transportation Demand Management (TDM)	Low

Operations Summary

- The intersection capacity analysis revealed that drivers do not experience significant delay or queuing on any controlled vehicle movements.
- The traffic volumes indicate that the four-lane cross-section has sufficient capacity to accommodate the volume demand.
- The speed data shows that driver speeding is a significant concern along this corridor as the 85th percentile speed is greater than 10 mph above the posted speed limit.
- Design calculations indicate the operating speed of traffic exceeds the appropriate design speed of certain horizontal curves by 10-15 MPH.
- US 19/490 is a vital corridor for local and regional capacity preservation. While the operations existing data does not indicate a need to enhance the existing capacity, reducing the crash frequency on the corridor would address non-recurring congestion (i.e., incident inducing delays).

Phase 1 Conclusion | BR-23-09

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No.	Proposed Alternatives for Evaluation	VTrans Needs Addressed
1	Curve improvements to lower operating speeds and/or increase design speeds (e.g., illuminated warning signs, shoulder improvements, change to superelevation)	Road Safety, Capacity Preservation
2	Animal detection warning system	Road Safety, Capacity Preservation
3	Seasonal deer advisory signs	Road Safety, Capacity Preservation
4	Systemic curve treatments (e.g., warning signs, shoulder improvements, rumble strips)	Road Safety, Capacity Preservation