

**Preliminary Noise Analysis  
Technical Report  
Route 28 Widening, Fairfax County**

**From: Prince William County Line at the Bridge over Bull Run  
To: Route 29 in Centreville**

**FCDOT Project 2G40-100-000  
VDOT UPC 108720**

HMMH Report No. 308560.001  
December 2018

Prepared for:  
Fairfax County Department of Transportation  
Transportation Design Division

Prepared by:



**HMMH**  
77 South Bedford Street  
Burlington, MA 01803

In Association with:  
**WSP USA**  
13530 Dulles Technology Drive, Suite 300  
Herndon, VA 20171

## EXECUTIVE SUMMARY

This report describes the details of a noise impact assessment and preliminary noise abatement evaluation performed for the Route 28 Widening project in Fairfax County, Virginia. The study was prepared for the Fairfax County Department of Transportation (FCDOT). The noise analysis was conducted in accordance with Federal Highway Administration (FHWA) and Virginia Department of Transportation (VDOT) noise assessment regulations and guidelines, both of which were revised and updated significantly in 2011. The FHWA regulations are set forth in 23 CFR Part 772. VDOT’s revised policy was updated most recently on February 20, 2018.

The Route 28 Widening Project being studied in the noise assessment proposes to widen Route 28 to eight lanes from Route 29 to south of New Braddock Road, then gradually transition to seven lanes and six lanes before meeting the existing four lane section near the southern terminus. This Build Alternative is referred to as the Hybrid 6-7-8-lane Option.

The study involved monitoring of existing noise conditions and modeling of existing (2016) and design year (2040) noise conditions in the study area with the FHWA-approved computerized Traffic Noise Model. Modeling accounted for the existing terrain and buildings, and for existing and proposed roadways with projected loudest-hour traffic. Noise impact was assessed for the 2040 Build alternative and is summarized by FHWA land use activity category in the table below. Traffic noise projections are preliminary and will be reevaluated during the final design noise analysis.

The proposed Project is not related to the interstate system, nor does it result in a “constructive use” of a Section 4(f) property. Consequently, this preliminary noise study does not include an analysis of traffic noise levels for the design year No-build (2040) alternative, consistent with VDOT’s State Noise Abatement Policy.

### Noise Impact Summary

Alternative	Impact Type	Number of Impacted Units by Land Use and FHWA Activity Category				
		Residential Exterior (B)	Recreational Exterior (C)	Institutional Interior (D)	Commercial Exterior (E)	Total
Existing	NAC	23	4	0	0	27
Build	NAC	62	6	0	0	68

Note The FHWA Activity Category is shown in parenthesis.

Noise abatement must be considered where noise impact is predicted to occur with the 2040 Build alternative. Noise abatement is evaluated to determine if it is warranted, feasible and reasonable. The following table summarizes the total length, estimated cost and benefits that would be provided by the potential noise barriers evaluated in this study that were found to be feasible and reasonable.

**Summary of Potential Noise Barriers Found to be Feasible and Reasonable**

Barrier ID	Number of Impacted Receptors	Impacted & Benefited Receptors	Non-Impacted & Benefited Receptors	Noise Barrier Parameters				Surface Area/Benefited Receptor (SF/BR) <sup>1</sup>
				Length (feet)	Height (feet)	Surface Area (sq feet)	Cost at 42/sq feet	
D1	20	20	6	1028	18	18,504	\$777,168	712
I	26	24	33	1,175	14	16,450	\$690,900	289

This report presents the results of a preliminary noise evaluation; a more detailed review will be completed during the final design of the Project. As such, noise barriers that are found to be feasible and reasonable during the preliminary noise analysis may not be found to be feasible and reasonable during the final design noise analysis. Conversely, noise barriers that were not considered feasible and reasonable may meet the established criteria and be recommended for construction. Barriers D1 and I, shown in the table above, would likely be found to be feasible and reasonable during the final design evaluation. If so, the viewpoints of the residents and property owners benefited by the barriers would be surveyed. Majority approval is required for the barrier to receive final approval.

Construction activity may cause intermittent fluctuations in noise levels. During the construction phase of the project, all reasonable measures will be taken to minimize noise impact from these activities.