NOISE STUDY

From: Hudnall, Ross (VDOT)
To: Heustess, Aaron
Subject: Re: UPC 120650 - Rt 258/Rt 10 Intersection Improvements Noise Screening Analysis
Date: Thursday, June 6, 2024 7:54:25 PM
Attachments: image001.png
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Thank you for following up, Aaron. I've reviewed the revised memo and have no additional comments or concerns.

T. Ross Hudnall
Noise Abatement Coordinator / Environmental Division
Virginia Department of Transportation
804-371-6829
Ross.Hudnall@VDOT.Virginia.gov

From: Heustess, Aaron <Aaron.Heustess@kimley-horn.com>
Sent: Thursday, June 6, 2024 4:46:34 PM
To: Hudnall, Ross (VDOT) <ross.hudnall@vdot.virginia.gov>
Subject: RE: UPC 120650 - Rt 258/Rt 10 Intersection Improvements Noise Screening Analysis

Hey Ross, just wanted to check in on your review. Did you have any final questions or comments?

-Aaron

From: Heustess, Aaron
Sent: Friday, May 17, 2024 2:53 PM
To: Hudnall, Ross (VDOT) <ross.hudnall@vdot.virginia.gov>
Subject: RE: UPC 120650 - Rt 258/Rt 10 Intersection Improvements Noise Screening Analysis

Ross,

Thanks for your review and comments. I've made the updates to the attached report, and I'll send you a separate email with the TNM files attached. Let me know if you have any additional comments or questions.

-Aaron

From: Hudnall, Ross (VDOT) <ross.hudnall@vdot.virginia.gov>
Sent: Friday, April 26, 2024 3:27 PM
To: Heustess, Aaron <Aaron.Heustess@kimley-horn.com>
Subject: RE: UPC 120650 - Rt 258/Rt 10 Intersection Improvements Noise Screening Analysis

Good afternoon, Aaron. I've completed my review of the screening analysis completed for the Route 10 Intersection Improvements project. Please see the attached pdf with my comments. If you have

any questions or concerns, please let me know.

Thank you,

T. Ross Hudnall
Noise Abatement Coordinator / Environmental Division
Virginia Department of Transportation
804-371-6829
Ross.Hudnall@VDOT.Virginia.gov

From: Heustess, Aaron <Aaron.Heustess@kimley-horn.com>
Sent: Friday, April 26, 2024 10:34 AM
To: Hudnall, Ross (VDOT) <ross.hudnall@vdot.virginia.gov>
Subject: RE: UPC 120650 - Rt 258/Rt 10 Intersection Improvements Noise Screening Analysis

Good morning Ross,

Following up on this screening analysis: do you have everything you need for your review?

-Aaron

From: Heustess, Aaron
Sent: Friday, April 12, 2024 8:53 AM
To: Ross Hudnall <ross.hudnall@vdot.virginia.gov>
Subject: UPC 120650 - Rt 258/Rt 10 Intersection Improvements Noise Screening Analysis

Good morning Ross,

We have prepared the attached noise screening analysis for the subject project in Smithfield, VA. Let me know if you'd like to see the traffic report or any of the TNM files we used for the analysis. I'm happy to schedule a call to walk through the methodology or the results if that's helpful.

Let me know if you have any questions or comments as you complete your review,
Aaron

Aaron M. Heustess, P.E. (KY, NC, SC, VA)
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Kimley»Horn

May 17, 2024

To: T. Ross Hudnall
Noise Abatement Coordinator
Virginia Department of Transportation
Ross.hudnall@vdot.virginia.gov

From: Aaron M. Heustess, P.E. (KY, NC, SC, VA)

Subject: ***Main Street/Rt 258 at Route 10 Bypass Intersection Improvement Project Screening Analysis***

UPC: ***120650***
Project No.: ***0258-046-740***

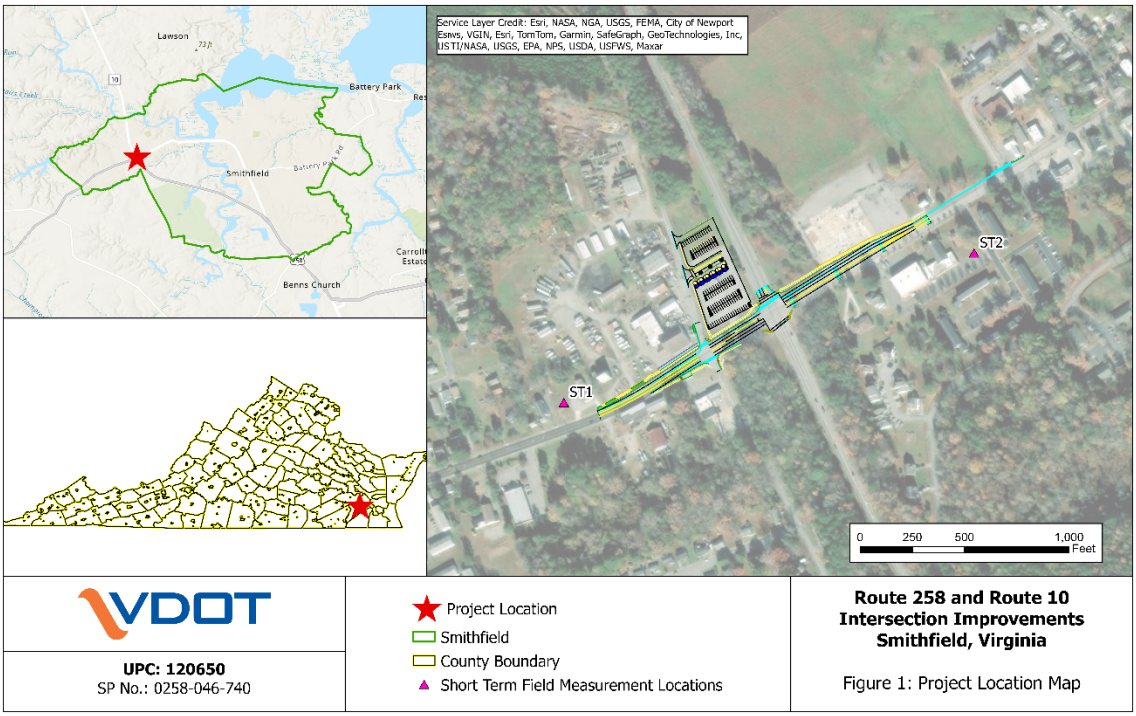
Kimley-Horn and Associates, Inc. ("Kimley-Horn") is working with Isle of Wight County and the Virginia Department of Transportation (VDOT) to consider the proposed park and ride lot and intersection improvements at the intersection of Main Street/Route 258 and Route 10 Bypass in Smithfield, Virginia. Traffic noise has been analyzed in the area surrounding the project to consider existing and potential future noise impacts due to the proposed project and to meet the requirements set forth by the National Environmental Policy Act (NEPA). The purpose of this memorandum is to summarize the results of the noise analysis for the above-mentioned project. This analysis has been completed in accordance with the VDOT *Highway Traffic Noise Guidance Manual* (February 2022), the State Noise Abatement Policy (SNAP), and Title 23 Code of Federal Regulations, Part 772 (23 CFR 772).

Isle of Wight County received Smart Scale funding for the design and construction of the Main Street/Route 258 at Route 10 Bypass Intersection Improvement Project. The project will widen Main Street / US 258 on both sides of the Route 10 Bypass intersection from a single thru lane in each direction to two through lanes in each direction and restore the existing left and right turn lanes at the intersection. The proposed improvements will be consistent with the concept submitted with the Smart Scale application and consist of roadway widening, curb and gutter improvements, drainage and stormwater management improvements, pedestrian accommodations, and traffic signal and pedestrian signal improvements. The improvements also consist of the design of a new park and ride lot on the northwest corner of the intersection, featuring 109 parking spots with an additional 8 ADA spots.

Per the Federal noise regulations and the SNAP, this project qualifies as a Type I project due to the expansion of the existing park and ride lot. Since part of this project meets the Type I criteria, the entire project is considered a Type I improvement, requiring the evaluation of noise impacts and potential abatement for all receptors within 500 feet of the proposed edge of pavement. Although traffic-noise related impacts were anticipated with the proposed project, noise abatement was clearly not feasible due to the presence of driveways along Route 258 (Main Street). Therefore, a screening

noise analysis was completed. This memo has been prepared to provide an overview of traffic noise analysis results. **Figure 1** shows the project location.

Figure 1: Project Location Map



A review of the project area was completed to identify areas of frequent human use using Google Street View, NearMaps Aerial Imagery data, and a site visit. These areas were studied in this noise analysis. The noise-sensitive sites along the proposed project corridor include residences along Main Street to the far west and far east side of the project impact area. There is also a church on the southeast corner of the intersection and the Schoolhouse Museum. Noise-sensitive receptors are shown in **Figure 2**. Several not noise-sensitive receptors (i.e., NAC Category F) are also located within the project area.

Figure 2: Sensitive Receivers



The State Noise Abatement Policy has adopted the Noise Abatement Criteria (NAC) that have been established by FHWA (23 CFR 772) for determining traffic noise impacts for a variety of activity categories. The NAC represent the upper limit of acceptable traffic noise conditions within areas having frequent human use. They do not apply to the entire tract of land on which the activity is based, but only to that portion where the activity takes place. The NAC is given in terms of the hourly, A-weighted, equivalent sound level in decibels [dB(A)]. The NAC noise levels are shown in Table 1 of the State Noise Abatement Policy.

A noise-sensitive receptor is considered to be impacted by traffic noise if either of the following two conditions is met:

- The VDOT State Noise Abatement Policy defines an approach level to be used when determining a traffic noise impact. The “Approach” level has been defined by VDOT as 1 dB(A) less than the Noise Abatement Criteria for Activity Categories A to E.
- The predicted traffic noise levels are substantially higher than the existing noise levels. VDOT defines a substantial noise increase to have occurred when the predicted highway traffic

noise levels exceed existing noise levels by 10 dB(A) or more for all noise sensitive exterior activity categories.

The residences located within the study area are considered NAC Category B. The Schoolhouse Museum and Main Street Baptist Church are NAC Category C. Alvin's Barber Shop was considered NAC Category E.

Traffic data used for the noise analysis was obtained from the *US 258 at Route 10 Bypass Intersection Improvements Traffic Operational Analysis* dated January 3, 2024. This screening analysis used the PM peak period traffic for the 2023 Existing and 2037 Build condition models. TNM version 2.5 was used to calculate predicted sound levels with simplified 2D models.

The existing exterior traffic noise levels in the vicinity of the project area range between 51 dB(A) and 69 dB(A). The design year (2037) build exterior traffic noise levels are predicted to range between 51 dB(A) and 70 dB(A). The noise levels throughout the project area are anticipated to increase less than 1 dB(A) between the existing and design year combined noise levels throughout the project area. **Table 1** contains a summary of the predicted noise levels for each of the modeled noise-sensitive receptors associated with the proposed project.

Table 1: Predicted Noise Levels

Receiver ID	Land Use	Activity Category	NAC [dB(A)]	Dwelling Units	Predicted Noise Levels [dB(A)]	
					2023 Existing Condition [dB(A)]	2037 Build Condition [dB(A)]
1	Residential	B	67	1	**66**	**67**
2	Residential	B	67	1	**69**	**70**
3	Alvin's Barber Shop	E	72	1	67	68
4	Residential	B	67	1	62	61
5	Residential	B	67	2	58	59
6	Residential	B	67	1	61	60
7	Residential	B	67	1	54	54
8	Residential	B	67	8	53	53
9	Residential	B	67	8	52	52
10	Church	C	67	1	60	59
11	Residential	B	67	8	51	51
12	Residential	B	67	8	62	61
13	Residential	B	67	1	61	60
14	The Schoolhouse Museum	C	67	1	63	62

Existing and future traffic noise was predicted to impact two of the studied noise-sensitive receptors in the project area.

Any construction noise impacts that occur as a result of the roadway construction are anticipated to be temporary in nature and will cease upon completion of the project construction phase. The contractor will be required to conform to the construction noise specifications found in VDOT's 2020 Road and Bridge Specifications, Section 107.16(b.3), "Noise."

Two sites, Receiver ID 1 and Receiver ID 2, warranted noise abatement consideration due to the design year noise levels exceeding the NAC. However, abatement was not considered viable due to the safe driveway ingress/egress constraints along the project corridor that would render noise barriers not feasible. Additionally, both sites have limited right of way, overhead utility conflicts, and sidewalk access conflicts which contribute to the decision to not recommend abatement.

In conclusion, this project will not significantly alter the overall noise levels throughout the study area, and noise abatement is not recommended for this project. This analysis completes the traffic noise requirements of 23 CFR 772 and the VDOT SNAP.

Please contact me at (804) 273-8386 or Aaron.Heustess@kimley-horn.com should you have any questions or concerns.

Sincerely,



Aaron M. Heustess, P.E. (KY, NC, SC, VA)