December 2018

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
and
VIRGINIA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL STUDIES DOCUMENT

Route 7 Corridor Improvements
Fairfax County, Virginia
State Project: 0007-029-128, B610 ,C501, P102, R202; UPC: 52328
Federal Project: DEMO-5A01(432)
EA-FONSI Date: November 15, 2017
From: Reston Avenue
To: Jarrett Valley Drive

Submitted Pursuant to 42 U.S.C. 4332(2) (C)

Approved for Public Availability:

1/10/19

Date

John Dimkins

Federal Highway Administration

Table of Contents

List of Tables

List of Figures

Appendices

1. INTRODUCTION

In accordance with the National Environmental Policy Act (NEPA) and § 23 CFR 771.129(c), the Virginia Department of Transportation (VDOT) has prepared this environmental evaluation to determine whether the impacts resulting from changes in the *Route 7 Corridor Improvement Project* are significant. This evaluation focuses on design changes to the Build Alternative for the project since the Finding of No Significant Impact (FONSI) decision from the Federal Highway Administration (FHWA) on November 15, 2017.

2. BACKGROUND

Widening of the Leesburg Pike (Route 7) corridor from four to six lanes west of Tysons Corner to the Loudoun County line has been contemplated since 1975 and is included in Fairfax County's *Comprehensive Plan 2013 Edition (as amended)* for Transportation (Fairfax County, 2017c). VDOT, in coordination with FHWA, initiated preparation of an EA to evaluate widening of Route 7 to six lanes along a seven mile section of Route 7 between Reston Avenue and Jarrett Valley Drive in Fairfax County, Virginia. The Project is intended to address capacity deficiencies resulting from existing and future traffic demand and address access management deficiencies. The typical section (Figure 3) for the proposed improvements is a total of six 11-foot lanes with curb and gutter divided with a 16-foot raised median. A multi-purpose trail and turn lanes at intersections are also proposed. Existing un-signalized median crossovers not meeting traffic signal warrants would either be closed or the median converted to a left turn lanes. A bridge replacement is proposed for the Difficult Run stream crossing with the wider typical section. The study area is bounded by Reston Avenue to the west and Dulles Toll Road to the east.

FHWA approved the *Route 7 Corridor Improvement* EA for public review and comment on October 6, 2016. The Public Hearing for the project was held on November 15, 2016. The EA was subsequently finalized and a FONSI was issued on November 15, 2017. Additional information regarding the project's timeline and other project related information can found on the Project website http://connectroute7.org/learn_more/default.asp.

Following completion of the Revised EA and subsequent FONSI decision, the Project was administered through the design-build project delivery process. A Request for Proposals (RFP) was advertised on November 21, 2017 with the closing date for Project submittals of March 28, 2018. However, none of the offers received from the prospective design-build teams were within the established competitive price range and award was delayed until revisions to the Build Alternative design were investigated to reconcile the Project estimate with the budgeted allocation while ensuring the purpose and need of the Project still remained intact. The proposed partial interchange of Route 7 at Baron Cameron Avenue/Springvale Road was modified to an at-grade intersection. Offers received based on this revision were within the established competitive price range and the Project was awarded on July 18, 2018.

3. PROPOSED ACTION

A design change to the Build Alternative was made to replace the proposed partial interchange of Route 7 at Baron Cameron Avenue/Springvale Road (Figure 1) with an at-grade intersection (Figure 2) upon which is the basis of this supplemental evaluation. VDOT has conducted additional traffic analyses to determine how the proposed changes would affect the anticipated operations of the proposed improvement. The at-grade intersection constitutes a diminishment from the 2040 operational performance (LOS and the safety performance) of the 2040 partial interchange. However, the at-grade intersection still provides a better operational performance over the 2040 No-Build alternative. **Table 2** compares the Existing (2011), Future (2040) No-Build, Future (2040) Build (Partial Interchange) and Future (2040) Build (At-grade Intersection) AM and PM Delay and LOS for the signalized intersection at Route 7 and Baron Cameron Avenue.

Table 1: Comparison Traffic Analysis of Future (2040) No-Build and Build, Future (2040) Build (Partial Interchange) & (2040) Build (At-grade Intersection) AM/PM Delay and LOS at Route 7 and Baron Cameron Avenue / Springvale Road

Signalized Intersection	*AM*						*PM*					
	2040 No build		*2040 Build (Partial Interchange)*		*2040 Build (At Grade)*		*2040 No build*		*2040 Build (Partial Interchange)*		*2040 Build (At Grade)*	
	Delay (s/veh)	*LOS*	*Delay (s/veh)*	*LOS*	*Delay (s/veh)*	*LOS*	*Delay (s/veh)*	*LOS*	*Delay (s/veh)*	*LOS*	*Delay (s/veh)*	*LOS*
Baron Cameron Avenue / Springvale Road	*236.0*	*F*	*23.9*	*C*	*82.9*	*F*	*113.6*	*F*	*37.7*	*D*	*100.5*	*F*

The extent of this design revision is approximately from the Riva Ridge Drive intersection to approximately 680 feet west of the Delta Glen Court intersection. Figure 3 represents the revised typical section for the proposed at-grade intersection of Route 7 with a new triple left turn movement from Route 7 westbound to Baron Cameron Avenue southbound.

Figure 1: Public Hearing Conceptual of the Partial Interchange of Route 7 at Baron Cameron Avenue / Springvale Road

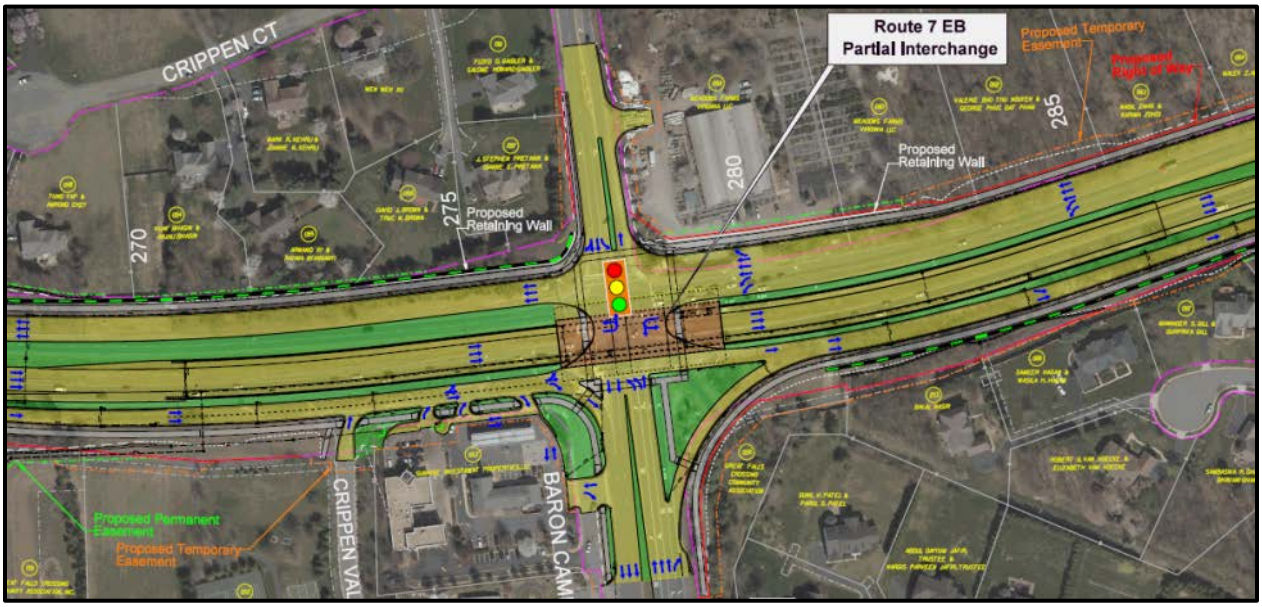


Figure 2: Revised Conceptual of the At-grade Intersection of Route 7 at Baron Cameron Ave / Springvale Road

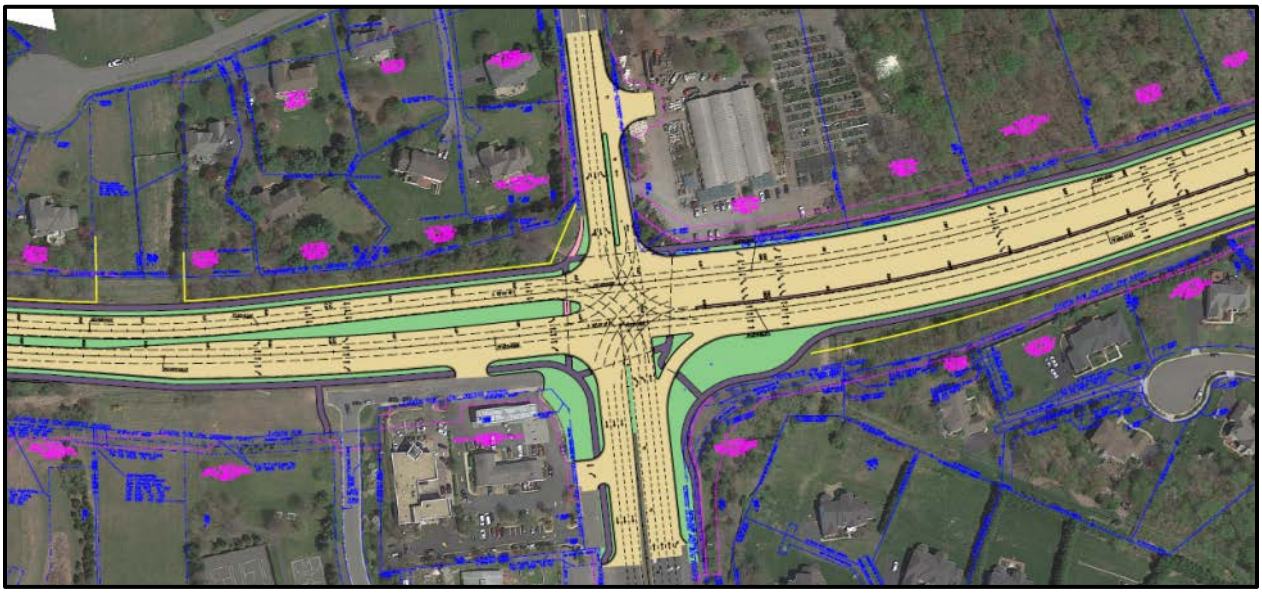
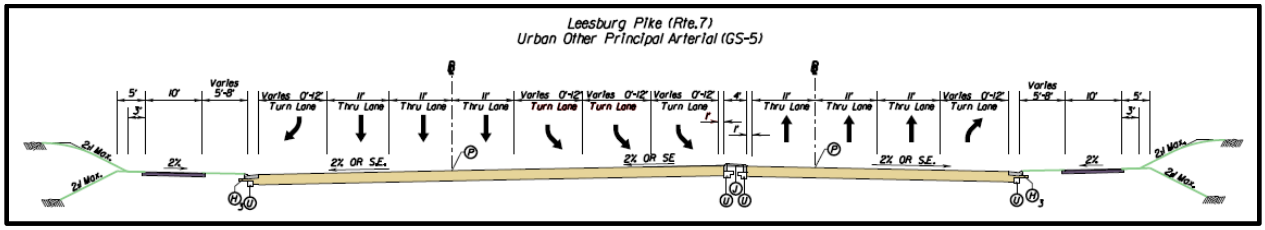


Figure 3: Revised Typical Section of the At-grade Intersection of Route 7 at Baron Cameron Ave / Springvale Road



4. ENVIRONMENTAL SUMMARY

Transportation projects have the potential to affect social, economic, physical, and natural resources; therefore, it is essential that the existing environmental conditions and potential project related impacts are identified and understood. An inventory of the environmental resources and updated analysis in the EA that informed the FONSI was undertaken to the evaluate the regulatory setting, existing conditions, and potential environmental consequences of the proposed scope reduction at the intersection of Baron Cameron Avenue/Springvale Road and Route 7. **Table 2** summarizes the environmental conditions within the project's study area and the changes in in the potential environmental impacts, where applicable, as a result of the design revision for an at-grade intersection.

Table 2: Summary of Environmental Conditions

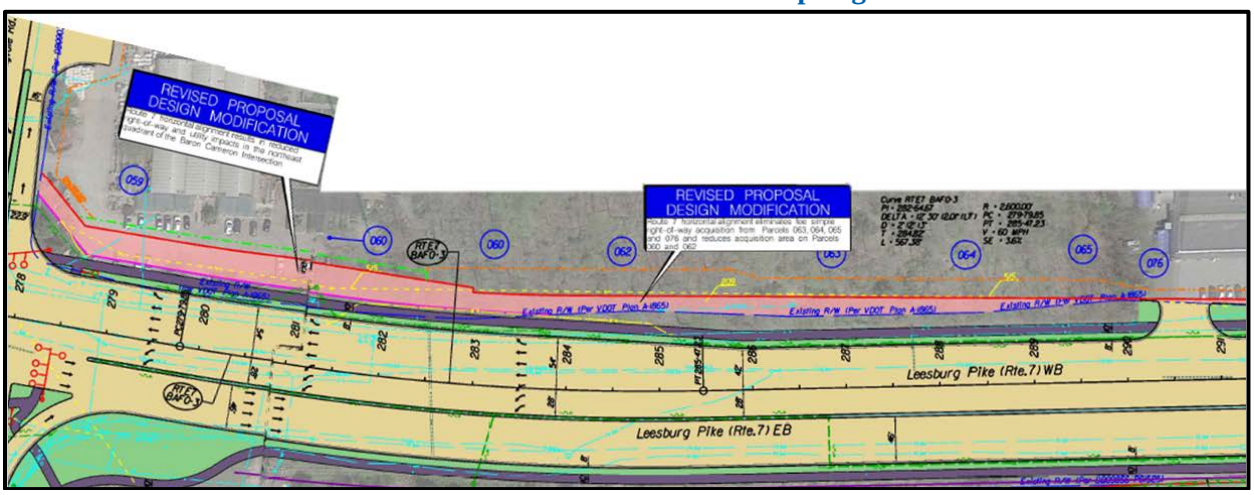
Environmental Resource	Resource Summary
Land Use	No changes in impacts.
ROW and Relocations	The reduced scope offers a reduction in impacts due to right of way acquisition. For additional information refer to **Section 4.1**.
Community Facilities	No changes in impacts.
Environmental Justice	No changes in impacts.
Prime Farmland and Soils	No changes in impacts.
Open-Space Easements/Agricultural and Forestal Districts	No changes in impacts.
Section 6(f)	No changes in impacts.
Section 4(f)	No changes in impacts.
Historic Properties	No changes in impacts.
Noise	An addendum of the preliminary noise analysis has been prepared for the project to evaluate noise impacts associated with the scope change. The addendum analyzes the Common Noise Environments (CNE) adjacent to the Route 7 and Baron Cameron Avenue / Springvale Road intersection; CNE C, E, F and G. For additional information refer to **Section 4.2**.
Air Quality	This project is located within a Moderate Ozone Nonattainment area, a Fine Particulate Matter (PM2.5) Nonattainment area, and a volatile organic compounds (VOC) and oxides of nitrogen (NOx) Emissions Control Area. As such, the project is not expected to cause or

Environmental Resource	Resource Summary
	contribute to a new violation, increase the frequency or severity of any violation, or delay timely attainment of the applicable National Ambient Air Quality Standards. For additional information refer to Air Quality Analysis **Section 4.3**.
Wetlands and Streams	No changes in impacts.
Floodplains	No changes in impacts.
Wildlife and Habitat	No changes in impacts.
Threatened and Endangered Species	No changes in impacts.
Hazardous Materials	No changes in impacts.

4.1 Right of Way and Relocations

The revised Build Alternative design concept reduces fee-simple right-of-way acquisition on Parcel 059 and 060 by 0.23 acres and 0.12 acres respectively, and by 0.09 acres on Parcel 062. It also eliminates fee-simple right-of-way acquisition from Parcels 063, 064, 065, and 076. No additional relocations are required as result of the revised design.

Figure 4: Reduction in Right of Way as Result of the Revised Build Alternative at the intersection of Route 7 and Baron Cameron Avenue / Springvale Road



4.2 Noise Impacts

The Preliminary Noise Analysis (PNA), dated September 2016, for the entire corridor, including the CNE's adjacent to the Route 7 and Baron Cameron Avenue / Springvale Road intersection, concluded noise mitigation is warranted, feasible and reasonable for CNE E and G, pending a final design analysis. No impacts were noted in CNE C (Great Falls Community Center) or CNE F (commercial tree nursery).

The Noise Reevaluation for the Preliminary Noise Analysis (PNA), dated November 2018, concluded noise mitigation is warranted, feasible and reasonable for CNE E and G, pending a final design analysis. The design change would result in an impact at Receptor C86 in CNE C; however, it is highly unlikely that a noise barrier in this area would be reasonable. No impacts were noted in CNE F (commercial tree nursery). For additional information refer to ***Appendix A: Route 7 Corridor Improvements at Baron Cameron Avenue: Noise Reevaluation.***

Further study will be conducted during Final Design to refine the abatement options consistent with design refinements. This will be documented in the Final Noise Analysis and Technical Report and implemented into the final design.

4.3 Air Quality

This project is one of a class of projects that is listed as exempt from regional and project level emission requirements under the federal transportation conformity rule. As such it is exempt from conformity and NEPA requirements (40 CFR 93.126 & 127). The scope change has not affected the purpose and need regarding safety and therefore still qualifies for this exemption.

4.4 Public Involvement and Coordination

Additional information regarding public involvement leading up to November 15, 2016 Public Hearing can found on the project website http://connectroute7.org/learn_more/default.asp. The draft Environmental Studies Document will be made available on this website and will be advertised for public availability within three local newspapers to provide the public the ability to review and send in comments concerning the updated environmental documentation.

APPENDIX A: NOISE MEMORANDUM

2601 North Front Street
Harrisburg, PA 17110-1185

E-mail: skellyloy@skellyloy.com
Internet: www.skellyloy.com

SKELLY AND LOY
ENGINEERING - ENVIRONMENTAL CONSULTANTS

Phone: 717-232-0593
800-892-6532

Fax: 717-232-1799

MEMORANDUM

To: **Steve Kuntz, PE, Dewberry**

From: **Bill Kaufell, Skelly and Loy**

Date: **11/15/18**

Subject: **Route 7 Corridor Improvements at Baron Cameron Avenue: Noise Reevaluation**

This memorandum summarizes the impact of design changes made to the intersection of Route 7 and Baron Cameron Avenue to the conclusions reached in the September 2016 Preliminary Noise Analysis. This intersection was originally designed to be grade separated for the eastbound lanes of Route 7. The eastbound lanes passed under Baron Cameron Avenue. This intersection has been redesigned to serve as a conventional at-grade intersection and the eastbound lanes are now at the same elevation as the remainder of the signalized intersection.

There are 4 Common Noise Environments (CNEs) adjacent to the intersection; CNE C, E, F and G. The Preliminary Noise Analysis (PNA), dated September 2016, concluded noise mitigation is warranted, feasible and reasonable for CNE E and G, pending a final design analysis. No impacts were noted in CNE C (Great Falls Community Center) or CNE F (commercial tree nursery). Figure 1 contains a clip from the PNA for the Route 7/Baron Cameron intersection, including noise impacted areas, receptor and barrier locations and results. Note that Baron Cameron Avenue changes name to Springvale Road north of Route 7.

Traffic Noise Model version 2.5 (TNM2.5) files from the 2016 PNA were edited to reflect the design change. The design year TNM mitigation files were modified vertically to replicate an eastbound at-grade intersection. The retaining walls associated with the underpass were eliminated and the receptors adjacent to the interchange were analyzed to determine the significance of the design change on peak noise levels. There are no changes to the traffic forecasts from the intersection redesign; hence traffic forecasts from the PNA were applied. The results are outlined in Table 1, including a comparison to the PNA results.

The sound levels increased by approximately 2 dBA on the southern side of Route 7 in CNE C. The design change would result in an impact at Receptor C86 (representing a picnic table) since the sound level increased from 64 dBA in the PE, to 66 dBA for the at-grade design. It is highly unlikely that this area would receive noise mitigation. A sound barrier was preliminarily analyzed along the eastbound turning lane (refer to Figure 1). The wall was optimized to achieve a 7 dBA insertion loss at the impacted Receptor C86. This wall would be approximately 825’ in length and range in height from 16 to 20 feet (average 18.7). This wall is 15,400 square feet (SF) and results in 1 benefitted receptor (BR), Receptor C86. The remainder of the park

2601 North Front Street
Harrisburg, PA 17110-1185
E-mail: skellyloy@skellyloy.com
Internet: www.skellyloy.com

SKELLY AND LOY
ENGINEERING - ENVIRONMENTAL CONSULTANTS

Phone: 717-232-0593
800-892-6532
Fax: 717-232-1799

area would not receive a benefit from the optimized wall and therefore only 1 receptor would be included in the reasonableness calculation. This barrier would be considered feasible, though is not reasonable since it results in 15,400 SF/BR, exceeding the specified 2000 SF/BR threshold.

The sound levels increased approximately 1 dBA on the northern side of Route 7 in CNE E, and therefore the design changes are considered insignificant for CNE E and the same receptors warrant abatement consideration. The PNA sound wall may change slightly in height or termination point to account for the anticipated noise increase.

CNE F represents an outdoor commercial area (tree nursery) and the impact criterion is 71 dBA. The sound levels increase 3 dBA at this location from 67 to 70 dBA, below NAC impact threshold.

The sound levels increased up to 6 dBA on the southern side of Route 7 in CNE G. Two new impacted receptors (Receptor G5 and G11) were noted, representing two homes along Cameron Baron Avenue. The PNA identified a feasible and reasonable barrier for CNE G. The wall may need to be lengthened to capture the additional impacts. The design change would result in changes to the PNA sound wall dimensions (height and termination point). An evaluation of this wall will be completed during the final design noise analysis.

Table 1 - Route 7/Barron Cameron Ave At Grade/Grade Separated

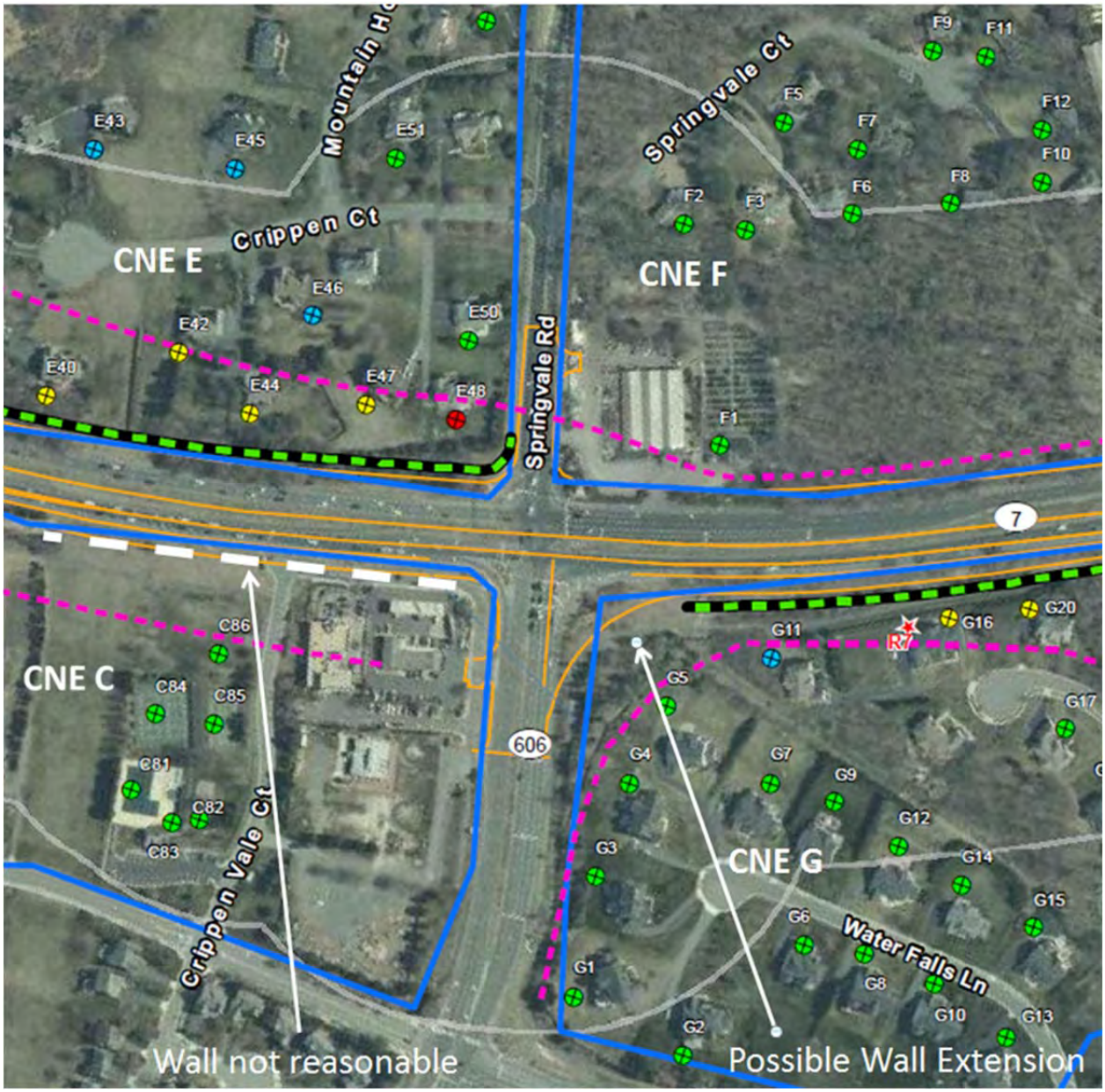
CNE	Receptor ID	Modeled Sound Levels (Leq(h) in dBA)			CNE	Receptor ID	Modeled Sound Levels (Leq(h) in dBA)		
		PNA - Grade Separated	DB - At Grade	Difference			PNA - Grade Separated	DB - At Grade	Difference
CNE C	C78	55	57	2	CNE F	F1	67	70	3
	C79	55	57	2	CNE G	G1	62	63	0
	C80	55	58	2		G2	54	55	1
	C81	57	59	2		G3	63	63	1
	C82	56	58	2		G4	57	60	3
	C83	56	59	2		G5	61	66	6
	C84	59	62	2		G6	52	53	2
	C85	59	62	2		G7	55	59	4
	C86	64	66	3		G8	50	52	2
CNE E	E39	72	72	0		G9	52	56	4
	E40	74	74	0		G10	50	51	1
	E41	65	65	0		G11	64	70	6
	E42	68	68	1		G12	50	54	3
	E43	58	58	0		G13	50	51	1
	E44	72	72	1		G14	50	53	3
	E45	55	56	1		G15	52	52	0
	E46	62	63	1		G16	69	72	3
	E47	67	68	1		G17	59	61	2
	E48	66	67	1		G20	70	71	1
	E49	52	53	1	Note: The difference in sound levels may appear off due to rounding				
	E50	62	63	1					

2601 North Front Street
Harrisburg, PA 17110-1185
E-mail: skellyloy@skellyloy.com
Internet: www.skellyloy.com

SKELLY AND LOY
ENGINEERING - ENVIRONMENTAL CONSULTANTS

Phone: 717-232-0593
800-892-6532
Fax: 717-232-1799

Figure 1 – Preliminary Noise Analysis Mapping



APPENDIX B: UPDATED AIR REPORT

Air Report

Project Information

Project Name:	Design/Build: Rte 7 Corridor Improv. (PE Only)		
Project Number:	0007-029-128, B610, C502, P102, R202	**UPC:**	52328
Route Number:	7		
Project Limit - From:	Reston Avenue	**To:**	Jarrett Valley Drive
District	**City/County**	**Residency**	
Northern Virginia	Fairfax	Fairfax	
IPM Project Description:	RTE 7 CORRIDOR IMPROVEMENTS		
Air Quality:	Yes		
Additional Project Description:	The proposed roadway will provide an additional lane on each side of the existing roadway (the additional lane will be on the median side where possible) for a total of six, 12' lanes with curb and gutter, divided with a 16' raised grass median, 12' turn lanes at intersections, and a 10' multipurpose asphalt trail on each side. The project length is 6.9 miles. Service drives will be constructed as needed for access to driveways and to complete connections. Bus shelters and pullouts will be considered in the design. Alternative intersection design will be pursued at some of the intersections to improve intersection operation. The existing vertical profiles of westbound and eastbound Route 7 will be held where possible to reduce impacts to surrounding properties. A bridge is proposed at the Difficult Run major stream crossing. Storm water Management will be provided due to the increase in impervious area.		
Funding Source:	State		

PPTA/LAP

Locally Administered?	**PPTA?**

Traffic Data

Design Year:	2033	**Design Year Traffic ADT:**	
Existing Year:		**Existing Year Traffic ADT:**	
Project Opening Year:			

TASK INFORMATION

Task/Subtask	PED	AED	Assigned To
Air Determination	07/15/2011	07/14/2011	Voigt, Christopher G.
AD Update	12/19/2018	12/07/2018	Voigt, Christopher G.
Air Study	04/30/2013	11/19/2012	Voigt, Christopher G.

I. Air Quality Status and Regional Conformity

Jurisdiction Description: This project is located within a Marginal 8-hour Ozone Nonattainment area. In accordance with 40 CFR Part 93, transportation conformity requirements apply to the project since the project is located in a nonattainment or maintenance area for a transportation-related criteria pollutant (i.e., ozone). In addition, the project is located in a volatile organic compounds (VOC) and nitrogen oxides (NOx) Emissions Control Area. As such, all reasonable precautions should be taken to limit the emissions of VOC and NOx. The following VDEQ air pollution regulations must be adhered to during the construction of this project: 9 VAC 5-130, Open Burning restrictions; 9 VAC 5-45, Article 7, Cutback Asphalt restrictions; and 9 VAC 5-50, Article 1, Fugitive Dust precautions.

II. Exempt Status

- This project is one of a class of projects that is listed as exempt from regional and project level emission requirements under the federal transportation conformity rule. As such it is exempt from conformity and NEPA requirements(40CFR 93.126 & 127). Therefore, CO, PM, and MSAT analyses are not required for either conformity purposes (per EPA regulation) or NEPA (per FHWA guidance, and VDOT programmatic agreements with FHWA and corresponding protocols specified in the VDOT Resource Document.)

Comments: Exempt under 40 CFR 93.126, Safety - Projects that correct, improve, or eliminate a hazardous location or feature. The project purpose and need references safety (see Revised_RTE_7STATEMENT_OF_PURPOSE_and_NEED_020212.pdf".) Additionally, a safety study dated February 14, 2013 and entitled "Extended Executive Summary, Phase I, Safety Performance Assessment for Virginia Department of Transportation State Route 7 Widening Project" documents safety issues and notes in its general findings (p.5-1) that "[t]he impact of crashes on the study corridor, measured in fatalities, injuries and societal costs are high."

Comments

General Comments: