

U.S. Department of Transportation
Federal Highway Administration
and
Virginia Department of Transportation

ENVIRONMENTAL ASSESSMENT

Van Buren Road North Extension


Prince William County, Virginia
Federal Project No.: TBD
State Project No.: 0627-076-321;
VDOT UPC: 118643

From: Dumfries Road (Rte 234)
To: Cardinal Drive

Submitted Pursuant to 42 USC 4332(2)(C)

Approved for Public Availability

February 5, 2024
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For Division Administrator
Federal Highway Administration

Van Buren Road North Extension Environmental Assessment

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1. Introduction

In accordance with the Revised (2017) Prince William County Comprehensive Plan (PWCCP) and Revised (2016) Countywide Transportation Plan (CTP)¹, the Prince William County (PWC) Department of Transportation is proposing to extend Van Buren Road on new alignment from its existing termini at the intersection with Dumfries Road (Route 234) north for approximately 2.5 miles to a portion of existing Van Buren Road directly south of Cardinal Drive. The project would construct a four-lane divided urban collector roadway. Construction of a 10-foot wide shared-use path and a 5-foot wide sidewalk would be included to provide transportation alternatives. Van Buren Road would be completed in accordance with Urban Collector Street (GS-7) criteria with a design speed of 40 mph. The typical section for these improvements generally varies from 102 feet to 105 feet along the proposed corridor and includes curb and gutter and a raised median. The project would also include construction of an approximately 235' bridge spanning Powells Creek perpendicular to the waterway and associated stormwater management facilities. The project area is located in the southeastern region of Prince William County, Virginia (**Figure 1.1**).

The NEPA document and study phase of this project is currently being funded by previously allocated local Northern Virginia Transportation Authority (NVTA) funds. In 2022, the project received NVTA approval for funding the preliminary engineering design phase of the project per the NVTA FY2022-2027 Six Year Program. In addition, the project was recently included in both the National Capital Region Transportation Planning Board FY 2021-2024 Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP).

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, an Environmental Assessment (EA) has been determined to be the appropriate level of documentation to evaluate the Van Buren Road North Extension project. This EA was prepared in accordance with FHWA's regulations implementing NEPA (23 CFR §771.119).

1.1 Study Area

The project study area for the proposed roadway spans approximately 286 acres in area and extends approximately 2.7 miles in total length, encompassing approximately 2.5 miles of new-alignment roadway and 0.2 miles of existing roadway between Van Buren Road's existing termini at the intersection with Dumfries Road (Route 234) north to a portion of existing Van Buren Road directly south of Cardinal Drive, which would connect to Benita Fitzgerald Drive. The project study area is located in the southeastern region of Prince William County, approximately 16 miles east of Manassas Regional Airport and approximately 16 miles southeast of the City of Manassas.

¹ Throughout the document the 'Revised 2017 Prince William County Comprehensive Plan and Revised 2016 Countywide Transportation Plan' (<https://pwcgov.maps.arcgis.com/apps/MapSeries/index.html?appid=e6a8f3ca604745c485790f0f677e46fa>) will be referred to as the 'PWCCP' and 'CTP' respectively.

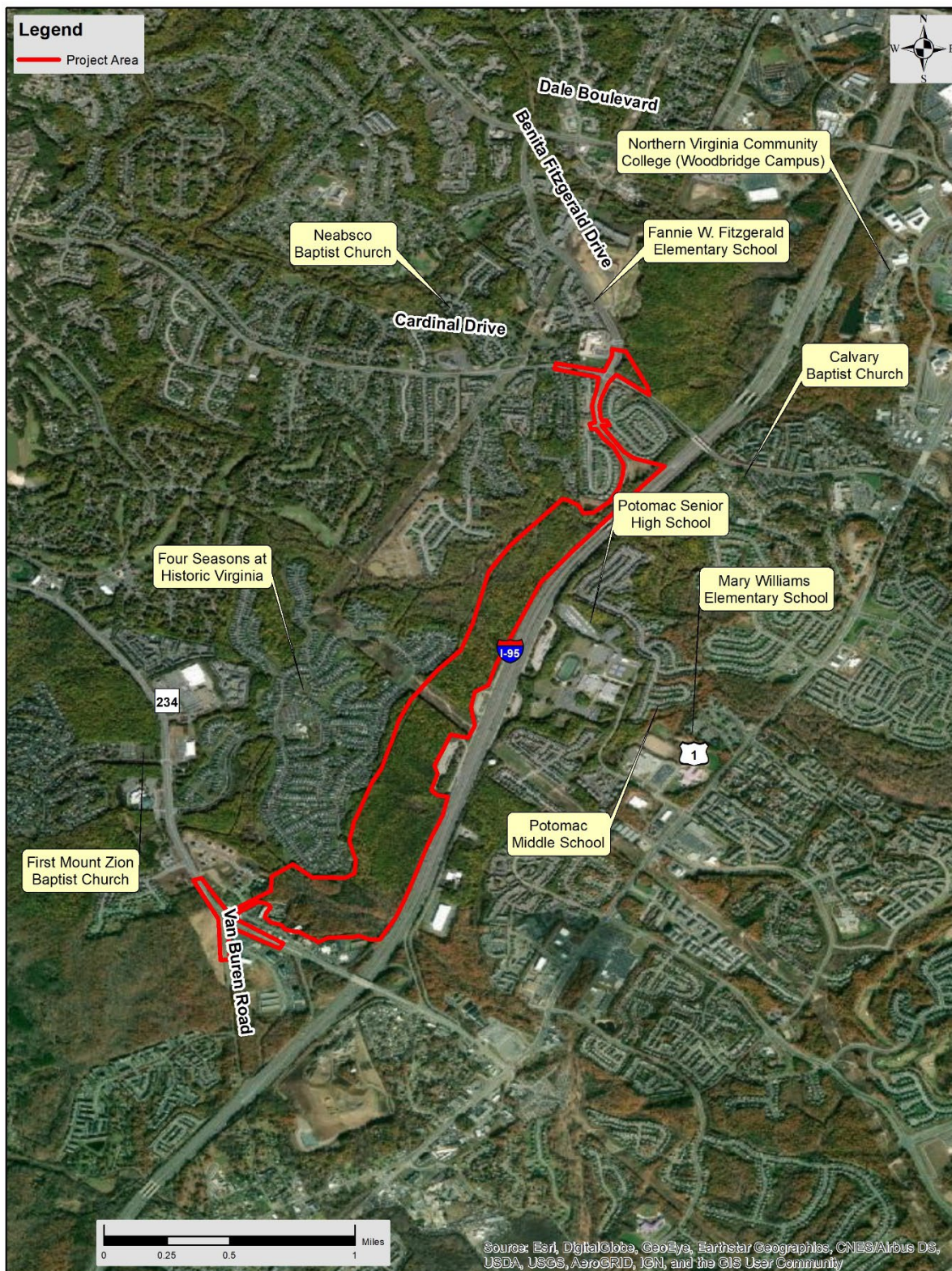


Figure 1.1 - Map of the Van Buren North Extension Project Area and Local Landmarks

2. Purpose and Need

2.1 Project History

In March of 2016, an update to the Prince William County CTP was completed. The intent of the CTP is to provide regional plans for a multi-modal transportation network (including roadways, transit facilities, and services, as well as non-motorized options) that allows for the safe and efficient movement of goods and people throughout the County and into surrounding jurisdictions. It also works to provide a basic framework for meeting the existing and future transportation needs of PWC. Within the CTP, the Van Buren North Extension is listed under the 'Major Collectors' functional class and is recommended to have right-of-way corresponding with the MC-1 standard typical section provided within the County's Design and Construction Standards Manual (DCSM). This project is included in Visualize 2045 Long-range Transportation Plan for the National Capital Region, and the study phase of the Van Buren North Extension project was included in the TIP as an amendment in March of 2021. In 2022, the project received NVTA approval for funding the preliminary engineering design phase of the project per the NVTA FY2022-2027 Six Year Program. The Van Buren North Extension project would provide an alternate north-south route for the neighboring communities and remove local traffic from the adjacent portion of I-95.

2.1.1 Adjacent Roadway Improvements

Several large-scale transportation projects have occurred over the last decade in southeastern Prince William County that have required Environmental Assessment (EA) level NEPA documents. The U.S. Department of Transportation, Federal Highway Administration (FHWA) and Virginia Department of Transportation (VDOT) completed an Environmental Assessment (EA) for the Route 1 Improvements Project A in February 2003. The intent of the project was to investigate a possible solution to the growing traffic and commute concerns along the Route 1 Corridor. This corridor extends through the connection with I-95 that the Van Buren North Extension project would also help alleviate traffic congestion from, thus increasing Level-of-Service (LOS) for adjacent roads within the proposed project corridor.

The U.S. Department of Transportation, FHWA and VDOT completed an EA for the I-95 HOT Lanes Project in 2011. The intent of the project was to reduce existing and future traffic and commute concerns to and from Washington D.C. This corridor extends through the I-95 corridor adjacent to the project area for the Van Buren North Extension.

2.1.2 Van Buren North Extension Project Development

After its inclusion in the 2016 update to the CTP, the Van Buren North Extension was presented to the PWC Board of County Supervisors (BOCS) in the PWC Department of Transportation (PWCDOT) Mobility Bond Work Session on May 7, 2019. This work session presented projects that would help meet the goal of "decreasing the percentage of residents commuting out of the County" by investing in the local secondary road systems, pedestrian/bicycle infrastructure and accommodations, and transit. The factors considered when developing the list of potential projects included in the Mobility Bond Work Session were:

- 1) If a project was included in the Prince William County Comprehensive Plan;
- 2) If a project was in line with the Prince William County Strategic Plan;
- 3) If a project was previously prioritized by the Board of County Supervisors (BOCS) and had been submitted for funding requests or grants;
- 4) If a project would improve the Level-of-Service (LOS) on the roads; and
- 5) If a project was multimodal, improved safety, and showed geographic diversity.

The Van Buren North Extension project's purpose, as presented in the Mobility Bond Work Session, would be to create an internal parallel route to I-95 and Route 1 between Dale Boulevard and Route 234. The project was proposed to include a 4-lane extension of Van Buren Road that included bike/pedestrian

facilities. Preliminary project costs, project duration, existing funding status for the project, and the pros and cons were identified for the project.

In April of 2020, the Planning Commission reviewed the Van Buren North Extension project as part of the Fiscal Year 2021 Capital Improvement Plan (CIP). The Prince William County Board of Supervisors, through the CIP, budgeted and appropriated \$2,000,000 in Northern Virginia Transportation Authority (NVTA) 30% funding to the Van Buren North Extension Environmental Study Project. Due to the size and complexity of the project, anticipation of federal funding for the project, and the anticipated impact on the transportation network, the Virginia Department of Transportation is to provide review and oversight from subject matter experts.

In August of 2020, Prince William County accepted the scope of services and fees proposed by Dewberry Engineers Inc. for Van Buren North Extension NEPA documentation, as provided under the County's On-Call Engineering, Design, and Construction Administration/Management Services contract. In addition, in August of 2020, the Van Buren North Extension project was evaluated via a traffic operational analysis in order to rank the project among other statewide Smart Scale transportation projects.

In February of 2021, the Commonwealth Transportation Board (CTB) approved the Van Buren North Extension project as an addition to the Six-Year Improvement Program (SYIP) of projects and programs for Fiscal Years 2021 through 2026. In April of 2021, Prince William County staff recommended the PWC BOCS authorize the execution of a project administration agreement with VDOT for oversight of the Van Buren North Extension Environmental Study. The project was recently included in both the National Capital Region Transportation Planning Board FY 2021-2024 Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP). The TIP is required by the Federal Highway Administration (FHWA) as a basis and condition for all federal funding assistance to state, local and regional agencies for transportation improvements within the Washington planning area. The STIP is Virginia's federally required four-year program that identifies transportation projects that will utilize federal transportation funding or require approval from the Federal Highway Administration (FHWA). Including this project in the TIP and STIP shows the County's commitment to continue to identify funding for the project to include federal resources. On July 22, 2021, a Virtual Public Information Meeting was held to present the proposed project alignment and in-progress environmental study to the public and solicit feedback regarding the study phase of the project. Most recently, in 2022, the project received NVTA approval for funding the preliminary engineering design phase of the project per the NVTA FY2022-2027 Six Year Program.

Table 2.1 - Previous Environmental Documentation and Transportation Planning in Southeast Prince William County, Virginia

Year	Date	Document	Description/Action
2003	February 20 th	Route 1 Improvements Project A Environmental Assessment	Environmental Assessment and Reevaluation documents for the Route 1 Improvements project extending along the existing Route 1 alignment from the Stafford County Line northward approximately 11.4 miles to the Route 123 interchange in Woodbridge.
2011	September 8 th	I-95 HOT Lanes Project Environmental Assessment	EA for the I-95 HOT Lanes Project which includes the portion of I-95 adjacent to the project area
2016	March 15 th	Prince William County Updated Countywide Transportation Plan	Report illustrating the intended projects and growth of Prince William County; Van Buren North Extension included as a proposed ‘Major Collector’ Project
2017	January 24 th	Prince William County Strategic Plan	Prince William County BOCS adopts the Strategic Plan, which identifies Mobility as a strategic priority
2019	May 7 th	Mobility Bond Work Session	Presentation about availability funding and proposed projects in Prince William County, including the Van Buren North Extension project
2020	April 28 th	N/A	Planning Commission reviewed the project as part of the Fiscal Year 2021 Capital Improvement Plan (CIP). Prince William County Board of County Supervisors, through the CIP budgeted and appropriated 30% funding for the environmental study
	August 10 th	T3 Design Van Buren Road Extension – Smart Scale Technical Memorandum	Technical memorandum presenting the planning level traffic operational analysis results for the Van Buren North Extension Smart Scale project in Prince William County, Virginia.
	August 21 st	N/A	Prince William County accepted Dewberry Engineers Inc. scope of services and fees for Van Buren North Extension NEPA documentation.
2021	February 17 th	N/A	CTB included the Van Buren North Extension project as an addition to the SYIP.
	April 6 th	Project Administration	Prince William County staff recommended the Board authorize the execution of a project administration agreement with VDOT for oversight of the Van Buren North Extension Environmental Study Project.
	June	Federal Fiscal Years 2021-2024 STIP Report	The Preliminary Engineering phase of the Van Buren Road Extension project is added to the Statewide Transportation Improvement Program (STIP) Federal Fiscal Years 2021-2024 Report
	July 22 nd	Van Buren Road North Extension Informational Brochure & Comment Sheet	The proposed alignment and on-going environmental study for the Van Buren Road North Extension project were presented during a Virtual Public Information Meeting to facilitate public education and outreach concerning the project.
2022	September 28 th (submittal date)	N/A	The project received NVT A approval for funding the final design phase of the project per the NVT A FY2022-2027 Six Year Program.

2.2 Needs

2.2.1 Congestion Relief & Regional Growth Accommodation– Existing Conditions

On-going commercial and residential developments and recent job growth in Prince William County have spurred population growth and resulted in worsening traffic congestion. Previous studies, including the EA for the I-95 HOT Lanes Project previously discussed, have illustrated the need for transportation improvements in the region and specifically within the areas around the proposed project area. Therefore, there is a need to provide congestion relief and regional growth accommodation.

In the southeast portion of the County, a lack of alternative north-south routes between communities presents a challenge for local commuters. Near the Van Buren North Extension project area, heavily-trafficked portions of I-95 and Route 1 represent the only arterial connections between Dumfries Road and Dale Boulevard. Residential developments located along Cardinal Road lack direct, alternative access routes to existing commercial developments along Dumfries Road, such as those located off Fettle Park Drive, Old Stage Road and the Fortuna Center Plaza, as well as the Dumfries Commuter Lot located south of Dumfries Road and east of I-95. Conversely, the residences along Dumfries Road lack direct, alternative access to the commercial developments along Dale Boulevard (see **Figure 2.1**).

The limited connections between communities west of the I-95 corridor leads to localized delays during AM/PM Peak hours along I-95 and Route 1 as well as high traffic loads for the existing arterial roads adjacent to the project area. According to VDOT’s 2019 traffic analyses, existing portions of Van Buren Road experience Average Daily Traffic (ADT) loads of 9,700 Vehicles Per Day (VPD) south of Dumfries Road and 3,200 VPD north of Dumfries Road; Dumfries Road ranges from 39,000 VPD to 49,000 VPD between US 1 and Country Club Drive; and Cardinal Drive is 18,000 VPD between Route 1 and Beau Ridge Drive. Additional existing (2020) peak hour traffic information (LOS) is shown in the tables below. These delays and traffic volumes may encourage increased usage of less-direct adjacent through-roads to the west such as Waterway Drive and Spriggs Drive/Minnieville Road.

Table 2.2 - 2020 Existing Peak Hour Traffic Loads

Road	Roadway Segment	AM Peak Hour	PM Peak Hour
Van Buren Road	Dumfries Road to Cardinal Drive	N/A	N/A
	South of Dumfries Road	943	1,357
Dumfries Road	East of Van Buren Road	4,619	4,196
	West of Van Buren Road	4,717	4,506
Benita Fitzgerald Drive	North of Cardinal Drive	1,308	1,632
Cardinal Drive	East of Benita Fitzgerald Drive	1,350	2,067
	West of Benita Fitzgerald Drive	1,416	1,994

Table 2.3 - 2020 Existing Intersection Levels of Service

Intersection Number	Intersection Name	Control Type	AM Peak	PM Peak
			Delay (sec) (LOS)	Delay (sec) (LOS)
1	Dumfries Road/Four Seasons Drive	Signalized	25.8 (C)	14.8 (B)
2	Dumfries Road/Van Buren Road/Old Stage Road	Signalized	36.6 (D)	68.7 (E)
3	I-95 SB Entrance Ramp/Dumfries Road	Signalized	4.9 (A)	3.0 (A)
4	Van Buren Road/Benita Fitzgerald Drive/Cardinal Drive	Signalized	34.1 (C)	36.6 (D)

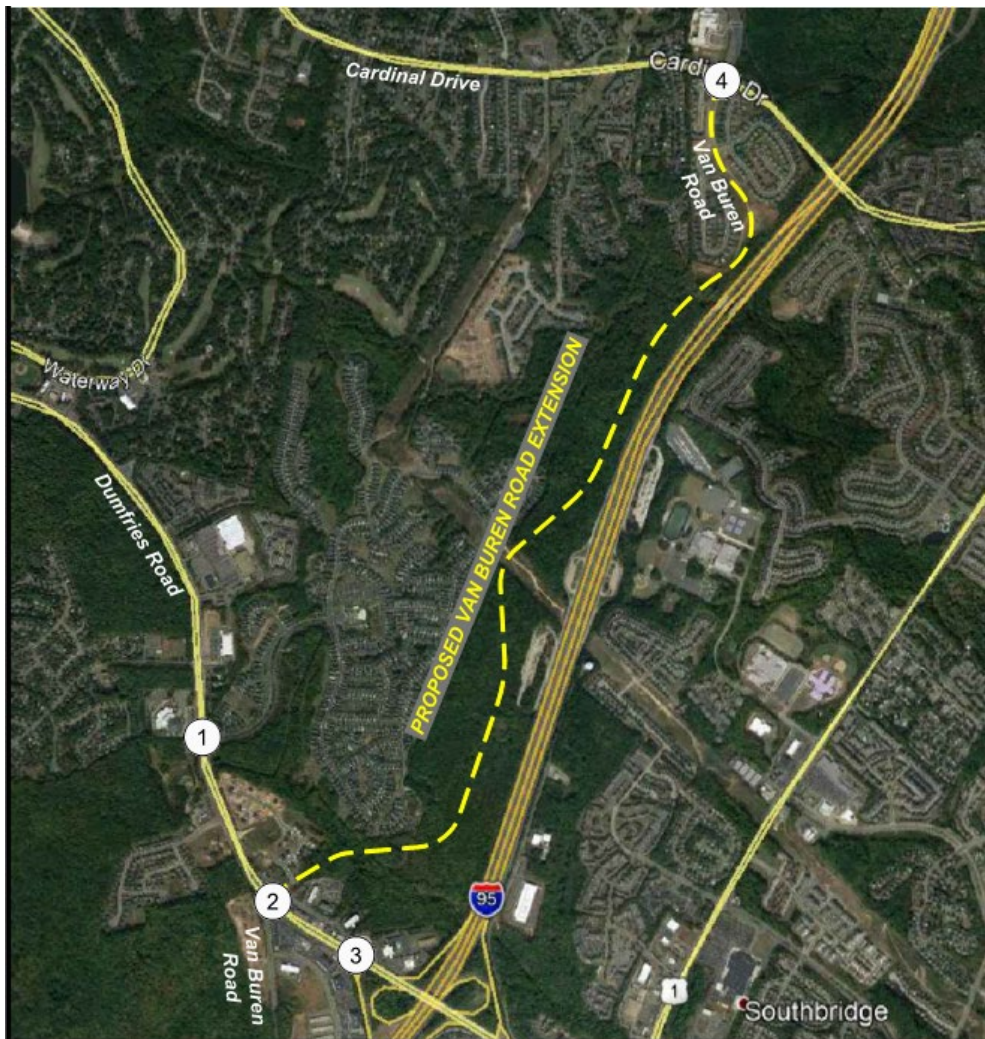


Figure 2.1 - Map of Intersections Studied during the Van Buren Road Traffic Study

2.2.1.1 Congestion Relief & Regional Growth Accommodation – Future Conditions

Due to anticipated growth in the County and along the I-95 corridor within the Greater Washington D.C. Area, traffic is expected to worsen within the Woodbridge/Dumfries area. Existing and planned commercial developments located south of Dumfries Road and west of I-95 will continue to lack direct connections to residential communities between Dumfries Road and Cardinal Road. Several intersections in the vicinity of the project area are projected to have worsening Levels-of-Service (LOS) by 2040. The 2025 and 2040 No-Build traffic analysis overall intersection delay and LOS is shown in **Table 2.6**. In 2025 and 2040, the intersection of Dumfries Road and Van Buren Road/Old Stage Road is anticipated to operate at LOS E and LOS F, respectively, during the PM peak for the No-Build conditions. New roadways are anticipated to be necessary to meet demands associated with the aforementioned proposed developments in the project area and to provide alternative travel choices to existing parallel north-south corridors. The 2025 and 2040 Build traffic analysis overall intersection delay and LOS is shown in **Table 2.7**. In 2025 and 2040, the intersection of Dumfries Road and Van Buren Road/Old Stage Road is anticipated to operate at LOS E and LOS F, respectively, during the PM peak with slight improvement in delay from No-Build conditions.

Table 2.4 - 2025 & 2040 No-Build Peak Hour Traffic Loads

Road	Roadway Segment	2025 No-Build Traffic Loads		2040 No-Build Traffic Loads	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Van Buren Road	Dumfries Road to Cardinal Drive	N/A	N/A	N/A	N/A
	South of Dumfries Road	785	1,383	785	1,383
Dumfries Road	East of Van Buren Road	3,729	4,857	4,897	6,310
	West of Van Buren Road	3,892	5,082	5,060	6,535
Benita Fitzgerald Drive	North of Cardinal Drive	816	1,752	816	1,752
Cardinal Drive	East of Benita Fitzgerald Drive	885	1,409	1,052	1,664
	West of Benita Fitzgerald Drive	928	1,817	1,095	2,072

Table 2.5 - 2025 & 2040 Build Peak Hour Traffic Loads

Road	Roadway Segment	2025 Build Traffic Loads		2040 Build Traffic Loads	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Van Buren Road	Dumfries Road to Cardinal Drive	337	1,024	390	1,118
	South of Dumfries Road	1,325	1,936	1,514	2,145
Dumfries Road	East of Van Buren Road	3,290	4,954	4,317	6,254
	West of Van Buren Road	3,824	5,932	4,893	7,231
Benita Fitzgerald Drive	North of Cardinal Drive	1,170	2,336	1,149	2,438
Cardinal Drive	East of Benita Fitzgerald Drive	1,254	1,988	1,698	2,182
	West of Benita Fitzgerald Drive	1,240	2,578	1,365	2,771

Table 2.6 - 2025 & 2040 No-Build Intersection Levels of Service

Intersection Number	Intersection Name	Control Type	2025 No-Build		2040 No-Build	
			AM Peak	PM Peak	AM Peak	PM Peak
			Delay (sec) (LOS)	Delay (sec) (LOS)	Delay (sec) (LOS)	Delay (sec) (LOS)
1	Dumfries Road/Four Seasons Drive	Signalized	18.2 (B)	16.0 (B)	25.1 (C)	86.4 (F)
2	Dumfries Road/Van Buren Road/Old Stage Road	Signalized	20.2 (C)	69.1 (E)	25.5 (C)	176.7 (F)
3	I-95 SB Entrance Ramp/Dumfries Road	Signalized	5.9 (A)	3.4 (A)	6.9 (A)	3.2 (A)
4	Van Buren Road/Benita Fitzgerald Drive/Cardinal Drive	Signalized	28.7 (C)	30.5 (C)	25.4 (C)	32.9 (C)

Table 2.7 - 2025 & 2040 Build Intersection Levels of Service

Intersection Number	Intersection Name	Control Type	2025 Build		2040 Build	
			AM Peak	PM Peak	AM Peak	PM Peak
			Delay (sec) (LOS)	Delay (sec) (LOS)	Delay (sec) (LOS)	Delay (sec) (LOS)
1	Dumfries Road/Four Seasons Drive	Signalized	22.6 (C)	51.8 (D)	29.5 (C)	148.4 (F)
2	Dumfries Road/Van Buren Road/Old Stage Road	Signalized	26.5 (C)	64.1 (E)	35.1 (D)	174.9 (F)
3	I-95 SB Entrance Ramp/Dumfries Road	Signalized	4.0 (A)	3.65 (A)	3.8 (A)	4.0 (A)
4	Van Buren Road/Benita Fitzgerald Drive/Cardinal Drive	Signalized	27.0 (C)	53.9 (D)	28.7 (C)	54.7 (D)

2.2.2 Local Access to Community Facilities – Existing Conditions

The communities around the project area are currently serviced by three public elementary schools (John F. Pattie Elementary School, Henderson Elementary School and Fannie W. Fitzgerald Elementary School), two public middle schools (Graham Park Middle School and Rippon Middle School) and three public high schools (Forest Park High School, Potomac Senior High School and Freedom High School) (see **Figure 2.2**). In addition, the Northern Virginia Community College (Woodbridge Campus) is located just northeast of the project corridor.

The geographic composition of the current school districts largely limits the necessity for local residents to travel on the most congested north-south arterial routes to reach their assigned school. However, this

conversely increases reliance on local east-west arterials that currently experience significant traffic volumes. As previously discussed, the intersections of Dumfries Road with Van Buren Road/Old Stage Road and Cardinal Drive with Van Buren Road/Benita Fitzgerald Drive experience poor LOS during AM/PM peak hours that overlap with school commutes. Additionally, there is limited access to Northern Virginia Community College (Woodbridge Campus), as the routes from communities on the western side of I-95 adjacent to Dumfries Road (Rt 234) lack a direct route to the campus outside of utilizing I-95.

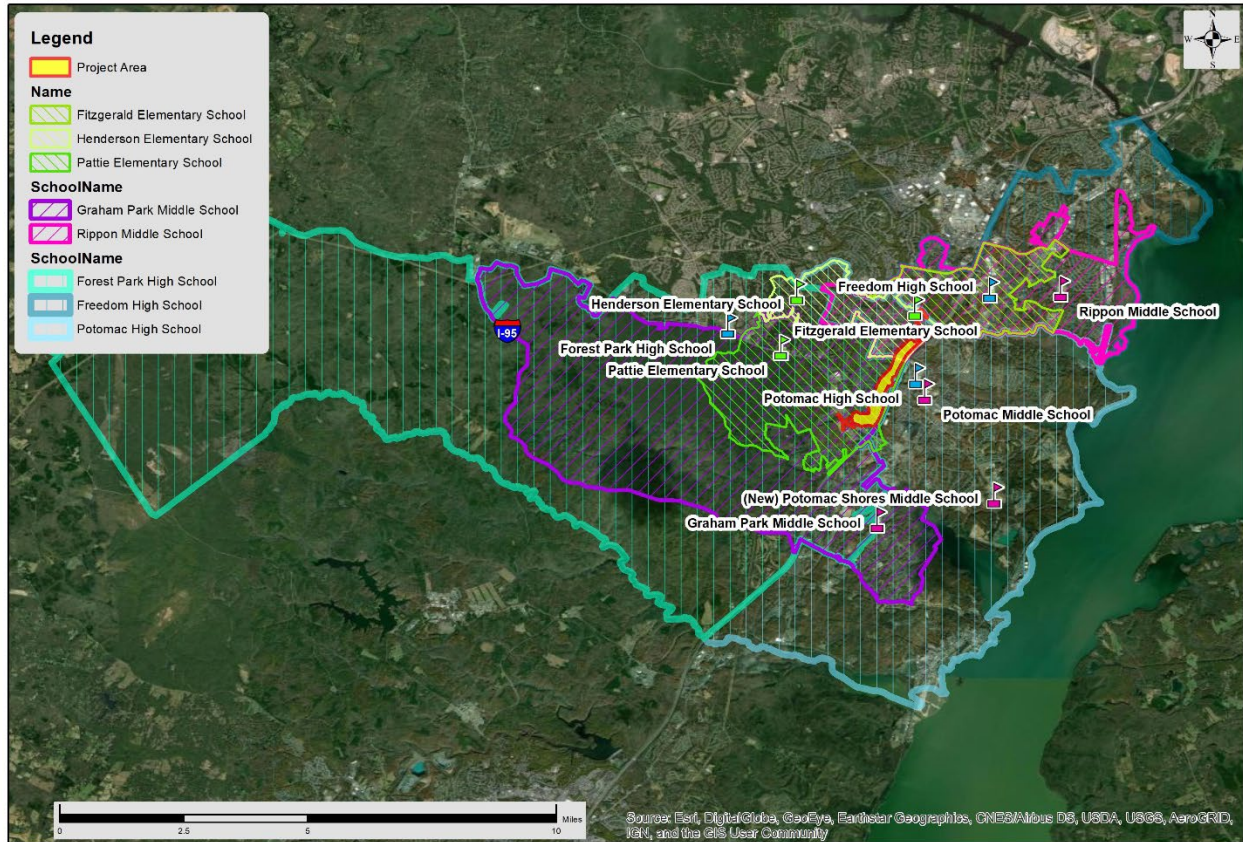


Figure 2.2 - PWCS School Districts Within the Project Area for the 2020-2021 School Year[^].

[^]During the 2021-2022 School Year, Potomac Middle School and the new Potomac Shores Middle School will also serve the project area, while Rippon Middle School will not.

Currently the communities along Cardinal Drive do not have direct access to First Mount Zion Baptist Church. Similarly, residents in the Forest Park Community and other communities along Dumfries Road west of I-95 do not have direct access to Calvary Baptist Church and Neabsco Baptist Church.

2.2.2.1 Local Access to Community Facilities – Future Conditions

As the Prince William County population continues to increase, the number of school aged children, and the need for additional schools, will also increase. According to the 2018 American Community Survey, the population of Prince William County was approximately 457,000 in 2018 and included over 91,000 school-age children (Ages 5-17). The Metropolitan Washington Council of Governments (MWCOC) 9.1 Cooperative Forecast predicts that the County population will grow to over 569,000 by the year 2040. If the number of school-age children increase proportionally to the rest of the population, that would result in nearly 114,000 school children by the year 2040, approximately a 25% increase.

Population growth around the project area has already necessitated the addition of a middle school. During the 2021-2022 school year, Potomac Shores Middle School will be added to the school district, rearranging the local districts such that Potomac Middle School's district will be altered to include the proposed project area and Rippon Middle School will no longer serve the residents immediately adjacent to the project area (Figure 2.3).

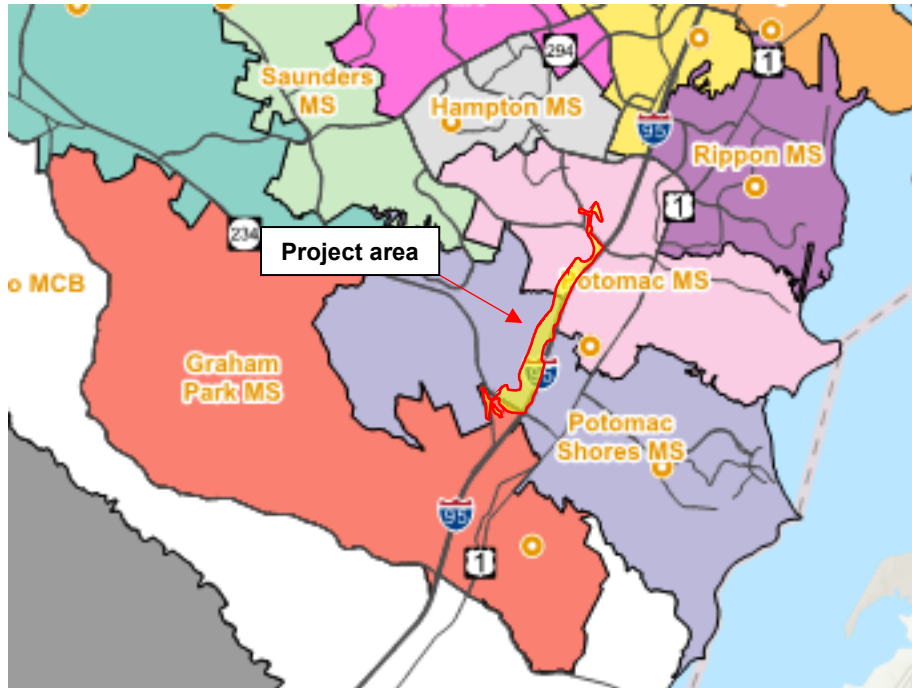


Figure 2.3 - PWCS Middle School Districts Within the Project Area for the 2021-2022 School Year.

Excerpt from the 2021-22 Middle School Attendance Areas map available at:
https://www.pwcs.edu/UserFiles/Servers/Server_340140/File/Facilities/Publications/2020-21/5_2021-22_MS_Attendance_Area_Map.pdf

Continued increases in populations of school-aged children in the vicinity of the project area would challenge the County school system to continue to shift and balance individual school districts in response to changing neighborhood demographics. The lack of a significant connection between communities along Dumfries Road and Cardinal Road west of I-95 would limit the feasibility of shifting local school districts north or south and may result in some residents experiencing significant challenges in commuting to school during AM and PM peak hours.

As population in the area continues to grow and traffic congestion along local corridors is expected worsen, residents along Cardinal Drive would experience increasing difficulty reaching First Zion Baptist Church as they continue to have to travel along the busy I-95 and Route 1 corridors. Additionally, without an alternate route for residents living along the existing Van Buren Road south of Route 234, communities within and adjacent to the Forest Park area would similarly experience limited routing options and increased travel times to reach Calvary Baptist Church and Neabsco Baptist Church.

2.2.3 Emergency & Maintenance Vehicle Access – Existing Conditions

Currently, access to the Sentara Medical Center, located approximately 2 miles northeast of the project area, is restricted for much of the Montclair and Eagle Pointe communities to the heavily-travelled I-95 and US 1 corridors, which are subject to periods of substantial delays as discussed above in Section 2.2.1. Emergency vehicles traveling north or south in the area may experience significant delays during peak traffic periods due to a general lack of alternative north-south arterials.

2.2.3.1 Emergency & Maintenance Vehicle Access – Future Conditions

Future development and population growth in the area would result in an increase of traffic on the existing north-south routes and additional vehicle travel on smaller neighborhood routes, which is anticipated to add congestion on emergency vehicle routes and hinder response times.

2.3 Summary

The purpose of the project is to improve local roadway access connections throughout the surrounding area.

The needs for this project include:

- Provide an additional north-south travel corridor and reduce local congestion;
- Provide access to the parcels and proposed developments within the project corridor;
- Improve emergency and state maintenance vehicle access and response time; and
- Improve community access to local schools and adjacent commercial centers.

3. Alternatives

3.1 Introduction

This section details the conceptual alignments reviewed and analyzed for the project, including a No-Build alternative. Conceptual alignments were similar due to existing constraints; the project is restricted to the same roadway corridor with the exception of a small portion of Old Stage Road where two options are discussed in further detail. The analysis focuses on alignment options within the defined project corridor that would meet the roadway classification criteria (including design speed), avoid major utility corridors, minimize right-of-way impacts and acquisitions, minimize impacts on communities and natural resources, and be consistent with the Prince William County Comprehensive Plan and Countywide Transportation Plan (CTP).

Constraints along the project corridor include residential communities, the I-95 corridor, major utilities (including power transmission) and wetlands/WOUS. The Four Seasons at Historic Virginia residential community resides along the western boundary of the project area and the I-95 corridor resides along the eastern boundary. Overhead powerlines run east to west in the middle of the project area. A FEMA regulated floodplain associated with Powells Creek runs east-to-west in the northern portion of the project area, along with a number of identified streams and wetlands throughout the project area (**Figure 3.2**). The following sections describe the use of the previously mentioned constraints as screening criteria for the alternatives.

3.2 Alternatives Development

The flowchart below (**Figure 3.1**) depicts the general approach used for screening the Van Buren Road North Extension project and Old Stage Road connection alternatives using the defined purpose and need of the proposed action along with the screening criteria listed in the previous section.

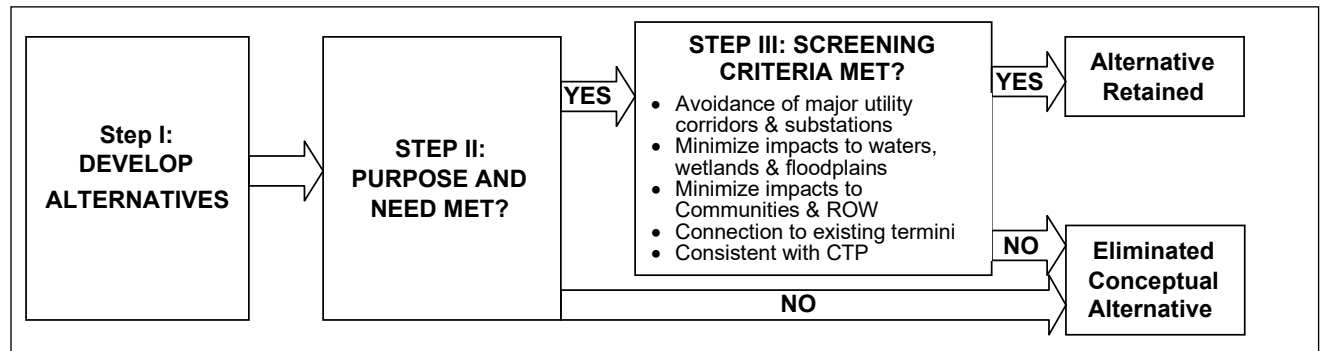


Figure 3.1 - Process for Evaluating Project Alternatives

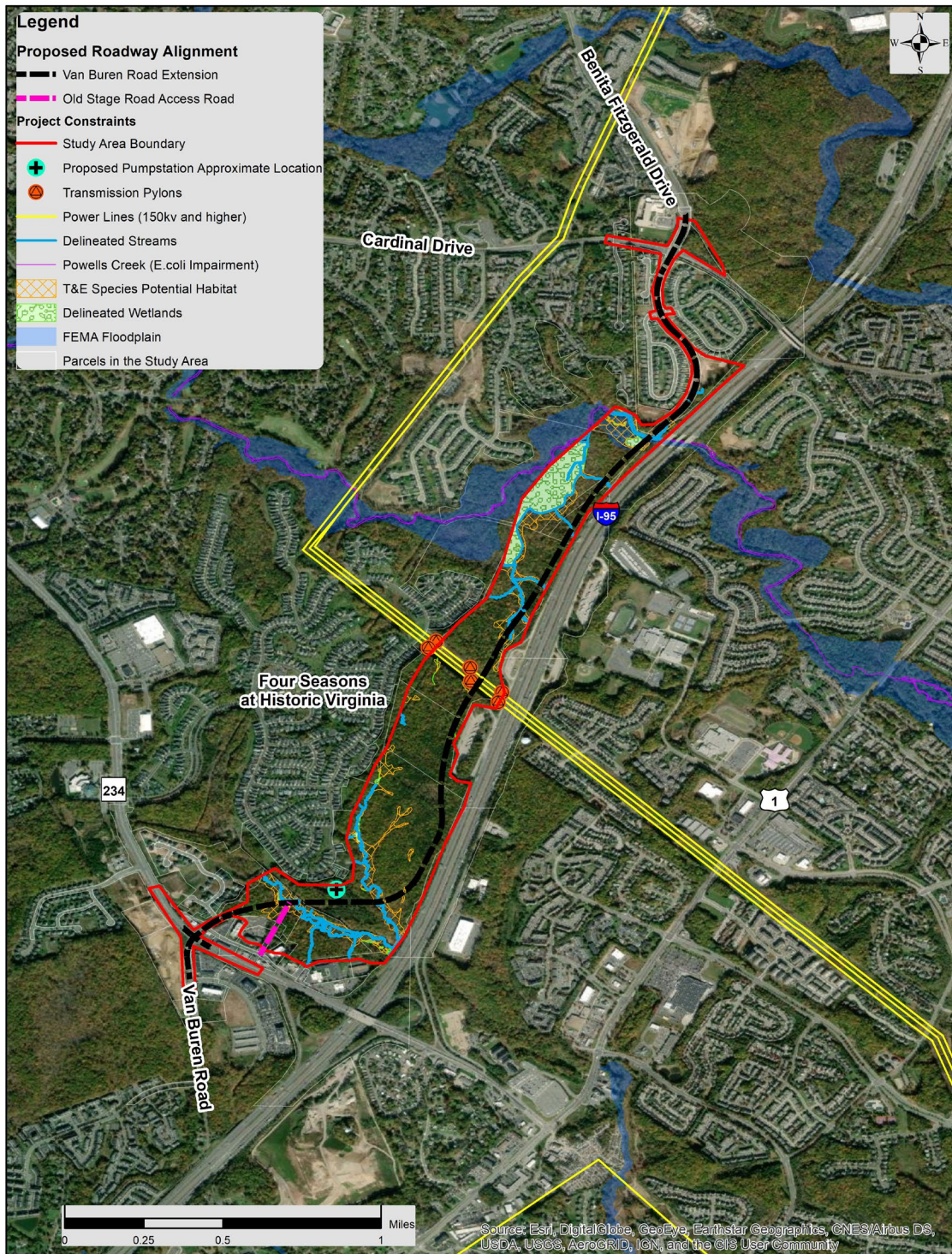


Figure 3.2 - Constraints Map for the Van Buren Road North Extension Project

3.3 No-Build Alternative

The No-Build Alternative would not result in a new roadway extension or connection. The No-Build Alternative would not impact residential properties, minority and low income populations, natural resources including WOUS, wetlands, threatened and endangered species, floodplains, or forests. Additionally, the No-Build would have no effect on archaeological or architectural cultural resources. The No-Build Alternative has been carried forward as an alternative under consideration and as a baseline for comparison, despite failing to address the purpose and need identified in Section 2.

3.4 Build Alternative

The Build Alternative (as shown in **Figure 3.2**) would extend Van Buren Road on new alignment from its existing termini at the intersection with Dumfries Road (Route 234) north for approximately 2.5 miles to connect with the portion of Van Buren Road directly south of Cardinal Drive, which would connect to Benita Fitzgerald Drive. The total length of the improved Van Buren Road is approximately 2.7 miles. The project would construct a four-lane divided urban collector roadway. Construction of a 10-foot wide shared-use path and a 5-foot wide sidewalk would be included to provide transportation alternatives. Van Buren Road would be completed in accordance with Urban Collector Street (GS-7) criteria with a design speed of 40 mph. The typical section for these improvements generally varies from 102 feet to 105 feet along the proposed corridor and includes curb and gutter and a raised median. The project would also include construction of an approximately 235' bridge spanning Powells Creek perpendicular to the waterway. Stormwater management designs would be completed utilizing the Virginia Department of Environmental Quality IIB stormwater management criteria for water quality and quantity requirements. All stormwater management facilities would be designed using specifications from the Virginia BMP Clearinghouse. Locations of stormwater management basins would be identified to minimize right-of-way and natural resource impacts. The project received NVTA approval for funding the final design phase of the project per the NVTA FY2022-2027 Six Year Program.

The Build Alternative satisfies the purpose and need as outlined in Section 2 of this document. Specifically, the proposed roadway design would create a new north-south corridor in the region, connecting Benita Fitzgerald Drive and existing portions of Van Buren Road and providing an alternate route between Dumfries Road and Cardinal Drive. The new roadway would establish direct access to the parcels along the proposed alignment and additional connections to communities and commercial centers north and south of the alignment. In addition, the build alternative minimizes impacts to utilities, natural resources and adjacent parcels and communities within the constraints of the project location.

The proposed design for Van Buren Road includes a right-in-right-out intersection with Old Stage Road which would be necessary due to the proximity of this intersection to the proposed intersection of Van Buren Road and Dumfries Road. In order to provide more direct access to eastbound Dumfries Road from Old Stage Road and to provide an additional ingress to the businesses located along Old Stage Road, an access road has been proposed to outlet Old Stage Road to a signaled intersection along the Van Buren extension. The proposed access road would run between the existing Hampton Inn (Dumfries/Quantico) and Comfort Inn located on Old Stage Road.

This portion of the design is preferred for highway safety and provides residents with better access to the businesses along Old Stage Road. The additional stretch of roadway would result in additional impacts to trees and an RPA around the mapped stream channel adjacent to the proposed Van Buren Road alignment; however, it is anticipated these impacts would be minimal. In addition, this increases accessibility to parcels adjacent to the proposed alignment.

3.5 Alternatives Not Advanced: Additional Roadway Design and Corridor Shift Options

Several alternatives to the proposed roadway alignment were considered, but not advanced due to their failing to meet the screening criteria previously defined (**Figure 3.1**). These alternatives are briefly described below with accompanying rationale for not advancing them.

3.5.1 Alternative Design Speed

Van Buren Road is a planned roadway that is part of the Prince William County Comprehensive Plan and is required to be a 40-mph urban collector. A design speed of 50 mph was briefly studied but due to the diverse topography along the corridor there would have been significant impacts to surrounding properties due to the vertical geometry requirements for a 50-mph roadway. This concept was not advanced.

3.5.2 Project Alignment Shifts

Additional options which incorporated minor alignment shifts were considered wherever possible, but given the existing roadway connections, existent development along the proposed alignment and numerous constraints, alternative options were significantly limited. One location where an alternative alignment was feasible is a section of the corridor approximately 900' north of Dumfries Road where minor shifts in the proposed alignment could potentially be accommodated. This area is located between the businesses located along Old Stage Road and the southern end of the Four Seasons residential community. However, once project designs were reviewed for impacts to adjacent communities, future access to adjacent parcels, alignment constraints presented by the existing electrical transmission lines, a proposed PWC Service Authority pump station and federal right-of-way for I-95, it was determined that alternative options to the proposed alignment through this area were not practicable and therefore were not investigated further.

3.5.3 Old Stage Road Connection – Dedicated U-Turn Area

One other location where additional options were considered is the area associated with the Old Stage Road connection described above. This option would eliminate the proposed access road to Old Stage Road from the new Van Buren Road extension and instead provide a dedicated U-turn area to allow traffic from Old Stage Road access to eastbound Dumfries Road. This dedicated U-turn area would be located approximately 1000' north from the Dumfries Road intersection along the new alignment. This option would not incur additional impacts to tree canopy and the mapped RPA adjacent to the proposed alignment. However, this design would result in restricted access to businesses along Old Stage Road. In addition, traffic safety along the proposed new roadway corridor would not be improved. Since commercial impacts were not eliminated with this concept, and the design did not address traffic safety issues, this option was not advanced.

4. Existing conditions and environmental consequences

The following section is a summary of environmental conditions present within the project area and anticipated environmental consequences resulting from the Build and No-Build Alternatives. Potential impacts enumerated in this document are estimations from the Build Alternative’s proposed construction boundaries. Environmental impacts would continue to be evaluated when details of alignment, construction impacts and stormwater management are determined during permitting. Additional information regarding resources are provided in technical reports.

4.1 Summary of Environmental Issues

A summary of existing environmental conditions and potential impacts to each resource is provided in **Table 4.1**.

Table 4.1 – Summary of Environmental Issues

Environmental Resource	Existing Conditions & Potential Effects
Socioeconomics	The project is in a populous area of Virginia that has experienced increases in population and housing in recent years and is expected to increase into the future. Implementation of this project would help accommodate the sustained growth and support <i>Prince William County’s Comprehensive Plan</i> (see Section 4.2).
Right-of-Way	Acquisitions of property are required for the implementation of the Build Alternative. Right-of-way acquisitions are based off engineering judgments for the implementation of the project (see Section 4.2)
Land Use	The land use within the project area is transitional, consisting of land zoned as light industrial. The implementation of the project would provide a direct route between Cardinal Drive and Dumfries Road (Route 234) supporting <i>Prince William County’s Comprehensive Plan</i> (see Section 4.2).
Environmental Justice (EJ)	This project has been evaluated in accordance with Title VI of the Civil Rights Act of 1964, as amended, Executive Order (EO) 12898, <i>Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations</i> , Department of Transportation (DOT) Order 6610.2(a), and the VDOT Instructional & Informational Memorandum IM-ED-714.1 Environmental Justice Identification, Outreach and Analysis Requirements (September 1, 2022). Minority and low-income populations have been identified but are not expected to experience disproportionately high and adverse effects as a result of the build alternative (see Section 4.3).

Environmental Resource	Existing Conditions & Potential Effects
<p>Community Facilities & Protected Open Space</p>	<p>There are no community facilities within the project area; however, there are three fire stations (Prince William County Department of Fire & Rescue – Station 23, Dale City Volunteer Fire Department – Station 13, and Dumfries-Triangle Fire Department), several places of worship and a few schools located in the vicinity of the project area. No impacts to community facilities are anticipated. A portion (8.8 acres) of a proffered or platted protected open-space privately owned by the Four Seasons Community HOA is anticipated to be impacted by the project. Access to existing schools is anticipated to be improved by the build alternative, and the proposed roadway would increase connectivity of the pedestrian and bicycle network through the construction of the Shared Use Path (SUP) associated with the roadway (see Section 4.2).</p>
<p>Historic Properties</p>	<p>A Phase I Cultural Resources Survey has been completed to support the project’s NEPA documentation. No architectural resources were identified within or adjacent to the project’s direct area of potential effect (APE). Seven (7) previously recorded archaeological resource sites were identified within the APE. The Phase I survey identified four previously unrecorded sites as well, and it was determined that two of these sites warranted additional study. A Phase II survey was conducted on Site 44PW2104 and 44PW2105. (See Section 4.4 and ‘Phase I Cultural Resource Survey of the ±37.2-Hectare (±91.8-Acre) Van Buren Road Extension Project Area and Phase II Archaeological Evaluation of Sites 44PW2104 and 44PW2105’). A supplemental Phase I survey did not identify any additional historic or cultural resources (see ‘Phase I Cultural Resources Survey of a Proposed Realignment of the Van Buren Road Expansion Project’). A DHR determination of No Adverse Effect was received from DHR on 6/23/23 (see Section 4.4 and Appendix B).</p>
<p>Section 4(f) & Section 6(f)</p>	<p>Section 4(f) of the U.S. Department of Transportation Act of 1966, as amended (49 USC 303 (C) , 23 CFR 774), protects publicly owned parks, recreation areas, wildlife or waterfowl refuges, and public or privately owned historic sites listed on or eligible for the National Register of Historic Places (NRHP). No impacts to Section 4(f) properties are anticipated and no Section 4(f) properties are located in the project area (see Section 4.5)</p> <p>Section 6(f) of the Land and Water Conservation Fund (LWCF) Act of 1965, as amended (16 U.S.C. 4601, 36 CFR 59.3) protects lands purchased within LWCF funds. No impacts to Section 6(f) properties are anticipated and no Section 6(f) properties are located in the project area (see Section 4.5).</p>

Environmental Resource	Existing Conditions & Potential Effects
Air Quality	The proposed improvements were assessed for potential air quality impacts and conformity consistent with all applicable air quality regulations and guidance. All models, methods and assumptions applied in modeling and analyses were made consistent with those provided or specified in the VDOT Resource Document. The assessment indicates that the project would meet all applicable federal and state transportation conformity regulatory requirements as well as air quality guidance under the National Environmental Policy Act (NEPA). As such, the project would not cause or contribute to a new violation of the national ambient air quality standards (NAAQS) established by the US Environmental Protection Agency (US EPA). (See Section 4.6 and Air Quality Technical Report: Van Buren Road Extension (Appendix D)).
Noise	The noise analysis identified impacts to four Common Noise Environments (CNEs) within the project area but determined highway traffic noise abatement considerations were not feasible (see Section 4.7 and The Preliminary Design Noise Impact Analysis Technical Report, Van Buren Road Extension (Appendix C)).
Wetlands and Streams	Powells Creek crosses east to west in the northern portion of the project area. Stream and wetland systems were identified throughout the project area. A wetland and stream delineation was conducted in 2020 and the USACE issued an Approved Jurisdictional Determination (AJD) NAO 2021-00347-rdb, dated May 18, 2021. Wetlands within the study area include palustrine forested (PFO) wetlands. The streams in the project area include ephemeral, intermittent and perennial channels. Avoidance and minimization efforts were included in the preliminary design and would be refined during the final design and permitting phase of the project to reduce impacts (see Section 4.8 for wetlands and Section 4.9 for streams, and Appendix F).
Floodplains	There are roughly 17 acres of FEMA-mapped floodplain of Powells Creek within the project area. Preliminary designs indicate one set of piers for the proposed bridge would be located within the floodplain. The bridge would not result in a rise in the floodplain water surface elevation. Minimal impacts to the floodplain are anticipated (see Section 4.10).
Prime, Unique, or Important Farmland	Farmland, as defined by the Farmland Protection Policy Act (FPPA) of 1981 (7 USC § 4201, et seq.), has not been defined in the study area. The proposed project area does not contain prime farmland. Though the soils are appropriate for prime farmland, the zoning and current land-use does not fit the USDA definition of prime farmland due to the built-up nature of the area (consisting of numerous residences, utility structures and other buildings; the USDA states that prime farmland is “land that has the best combination of physical and chemical characteristics for producing food...and is available for these uses...but is not urban, built-up land or water areas.”) (see Section 4.2).

Environmental Resource	Existing Conditions & Potential Effects
<p>Wildlife and Wildlife Habitat</p>	<p>The proposed project area contains forested lands, and existing roadway and is adjacent to residential areas as well as the I-95 corridor.</p> <p>No Threatened & Endangered (T&E) species waters occur within a 2-mile radius of the project area. There are no known eagle nests, roosts, or concentration areas near the project area. No conservation easements exist within the project area (see Section 4.11 and Appendix F).</p>
<p>Threatened, Endangered, and Special Status Species</p>	<p>A review of the U.S. Fish and Wildlife Service's (USFWS) Online Information, Planning, and Conservation (IPaC) system identified four federally listed endangered, candidate, or proposed species potentially occurring in the project area: the Northern Long-eared Bat (NLEB), Tricolored Bat, Monarch Butterfly, and the small whorled pogonia. No critical habitat for the NLEB was identified within the project area and no documented roost trees or hibernacula were identified in the vicinity of the proposed project area. Habitat assessments for Harperella and the Small Whorled Pogonia were completed and identified potential habitat for each species within the study area; species surveys will be conducted during the next available survey period to confirm the presence or absence of the Small Whorled Pogonia. Reviews of the Virginia Department of Wildlife Resources Virginia Fish and Wildlife Information System (VDWR VaFWIS) and the Virginia Department of Conservation and Recreation Natural Heritage Data Explorer (VDCR NHD) confirmed no federal and state T&E species have been documented within the project area. Additional coordination would be conducted with federal and state wildlife agencies during project permitting, and any conditions or Time of Year Restrictions (TOYR) would be incorporated into the construction of the project. The project would follow state and federal regulations in order to identify and conserve state and federally threatened and endangered species. Best management practices would be implemented to avoid impacts to state and federally threatened, endangered and rare species to the greatest extent feasible (see Section 4.12 and Appendix F).</p>
<p>Hazardous Materials</p>	<p>A search of federal and state databases identified one recognized environmental condition (REC) within the study area; this site is not anticipated to be impacted by the proposed project. Phase I Environmental Site Assessments (ESA) per the American ASTM would be conducted on any properties to be acquired for this project (see Section 4.13).</p>

Table 4.2 – Inventory of Environmental Resources in the Study Area

Category	Inventory
Total Area (acres)	292
Vacant Land tax parcels (no.)	32
Residential tax parcels (no.)	18
Business tax parcels (no.)	15
Institutional/ROW tax parcels (no.)	18
Community Facilities (no.)	0
Minority Population (%)	0*
Population Below Poverty Level (%)	30*
Farmland or Farmland Soils (acres)	0
Section 4(f) Property (acres)	0
Historic Properties (no.)	27
Noise Receptors (no.)	250
Streams (linear feet)	17,369
Wetlands (acres)	17
Floodplains (acres)	17
Forested Habitat (acres)	243
Threatened and Endangered Species Identified (no.)	3
Documented Hazardous Material Sites (no.)	1

*EJSCREEN data further detailed in Section 4.3 and Table 4.10

Table 4.3 – Summary of Planning-Level Design Impacts

Category	Units of Impact	Anticipated Impacts	
		No-Build	Build-Alternative
Right-of-Way Property Acquisitions	parcels	0	11
	acres	0	24
Residential Displacements	no.	0	0
Business Displacements	no.	0	0
Institutional Displacements	no.	0	0
Community Facilities	no.	0	0
Section 4(f) Property Uses	acres	0	0
Farmland Converted	acres	0	0
Noise Receptors	no.	10	28
Streams	linear feet	0	4,872
Wetlands	acres	0	1.1
Floodplains	acres	0	1.5
Forested Habitat	acres	0	77.4
Hazardous Material Sites	no.	0	0

4.2 Socioeconomic and Right-of-Way

4.2.1 Existing Conditions

Socioeconomics

Population

The population of Prince William County, Virginia has grown by over 16% in the last decade, from 402,002 in 2010 to an estimated 467,900 in 2020. By 2040 the estimated population is projected to grow an additional 21% to 569,300. Prince William County’s 2019 per capita income was 20% higher than the national average, and the county’s 2019 median household income was 70% greater than the national average.

Table 4.4 – Metropolitan Washington Council of Governments (MWCOC) Forecasts

Year	Population	Households	At-Place Employment
2020	467,900	153,900	164,800
2025	503,600	167,100	184,500
2030	529,600	177,000	203,800
2035	551,400	185,200	222,500
2040	569,300	191,900	240,900
2045	584,000	197,200	257,000

**This information is from Metropolitan Washington Council of Governments (MWCOC) 9.1 Cooperative Forecasts for Prince William County. October 2018.*

Table 4.5 – Annual Population Estimates by Magisterial District (as of Quarter 4 2020 (12/31/2020))

Magisterial District	Housing Unit Types						
	Square Miles	Single-Family Detached	Single-Family Attached	Multi-Family	Total Housing Units	Population Estimate 12/31/2019	Population Density (estimate)
Brentsville	85.19	64.00%	23.90%	12.10%	22,903	71,414	838.3
Coles	50.36	79.60%	13.10%	7.30%	22,335	70,887	1,407.60
Gainesville	71.2	49.00%	24.20%	26.80%	25,060	73,000	1,025.30
Neabsco	12.32	59.20%	26.40%	14.40%	18,381	55,819	4,530.80
Occoquan	27.1	44.20%	36.50%	19.30%	22,104	65,673	2,423.40
Potomac	81.52	59.90%	26.60%	13.50%	21,338	67,051	822.5
Woodbridge	19.64	31.40%	25.50%	43.10%	25,020	68,081	3,466.40

**The information presented in the table is from the Prince William County demographic database, these estimates specifically were produced by the Prince William County Department of Information Technology’s Geospatial Technology Services*

The Van Buren project area is located entirely within the eastern portion of the Potomac Magisterial District. There are currently no residences within the project area, making the population within the project area zero.

Public Transportation

Prince William County offers multiple methods of public transportation in the vicinity of the project area. The OmniLink bus system has several lines and stops in the vicinity of the project area and offers an off-route trip pickup if a stop is not accessible to you. Additionally, there is a Virginia Railway Express (VRE) station 4.7 miles from the project area and a planned commuter train station in the Potomac Shores area (constructed anticipated to begin in 2024) 4.5 miles from the project area.

It is estimated that 4.5% of residents in the Dale City demographic block regularly use public transportation (2016 ACS statistics). In the surrounding demographic block representing portions of the Dumfries community, 4.5% of residents used public transportation regularly.

Community Facilities & Protected Open Space

Community facilities include schools, libraries, post offices, hospitals, government facilities, emergency service facilities (i.e. police and fire stations), places of worship, museums, and performing arts centers, and sports facilities. None of the community public facilities exist within the project area, but several others, Fannie W. Fitzgerald Elementary School, Potomac Senior High School, Calvary Baptist Church, First Mount Zion Baptist Church, and Neabsco Baptist Church, are located in the immediate vicinity (within 0.5 miles). A proffered or platted protected open space belonging to the Four Seasons Community Homeowners Association is located in the southern portion of the project area.

Table 4.6 – Summary of Community Areas

Facility Name	Facility Location	Description
Within the Project Area		
None		
Adjacent to the Project Area		
Fannie W. Fitzgerald Elementary School	15500 Benita Fitzgerald Dr, Woodbridge, VA 22193	School
Potomac Senior High School	3401 Panther Pride Dr, Dumfries, VA 22026	School
Calvary Baptist Church	15880 Crest Dr, Woodbridge, VA 22191	Place of worship
First Mount Zion Baptist Church	16622 Dumfries Rd, Dumfries, VA 22025	Place of worship
Neabsco Baptist Church	15557 Neabsco Church Way, Woodbridge, VA 22193	Place of worship

Land Use and Right-of-Way

The project area is located within an area where development is guided by the Prince William County Comprehensive Plan, which includes the Countywide Transportation Plan. The project area resides within the Potomac Magisterial District and within the census-designated place (CDP) of Montclair. The majority of the project area falls within a Suburban Policy Area, which seeks to offer a mix of lower density residential, neighborhood-oriented commercial and smaller scale employment uses (Prince William County, 2017). Specifically, the project area includes parcels designated for rural and suburban residential developments and planned communities, planned business districts and mixed residential developments, as well as light industrial and general business developments. The parcels within the project area are located between existing home-owners’ associations and the I-95 corridor and currently lack direct access to the local transportation network.

The planned areas currently zoned for M-2: Light Industrial Zoning District, PMR: Nonresidential Uses and Performance Standards, B-1: General Business District, R-4: Residential-low, Suburban Residential-moderate, and Community Employment Center Land Use, and R-16: Suburban Residential District are intended to accommodate future development. For a more detailed breakdown of zoning and land use in the project area, refer to **Figure 4.1** and **Table 4.7** below.



Figure 4.1 - Zoning within the Van Buren Project Area

Table 4.7 – Zoned Land Use

Zoned Land Use	Total Acreage within Study Area	Percent of Total Acreage within Study Area
A-1: Agricultural	15.3	5.2%
B-1: General Business District	32.7	11.2%
M-2: Light Industrial Zoning District	134.4	46.0%
PBD: Planned Business District	1.0	0.3%
PMR: Planned Mixed Residential	26.9	9.2%
R-4: Residential-low, Suburban Residential-moderate, and Community Employment Center Land Use	76.1	26.0%
R-16: Suburban Residential District	1.4	0.5%
RPC: Residential Planned Community	4.7	1.6%
Planned Land Use	Total Acreage within Study Area	Percent of Total Acreage within Study Area
Commercial/Employment Centers	167.9	57.4%
Environmental Resources	60.4	20.7%
Public Land	0.4	0.1%
Residential (Suburban/Planned Community)	63.8	21.8%

Table 4.7 – Any necessary acquisition of property and the relocation of residents, businesses, farms, and non-profit organizations would be conducted in accordance with all applicable Federal laws, regulations and requirements, including but not limited to, 23 CFR Part 710, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended and its implementing regulations found in 49 CFR Part 24. All persons displaced on Federally-assisted projects will be treated fairly, consistently, and equitably so that they do not suffer disproportionate injuries as a result of projects that are designed for the benefit of the public as a whole. Relocation resources will be available to all residential and business relocates without discrimination.

4.2.2 Environmental Consequences

Socioeconomics

No-Build

The No-Build Alternative would not result in any project-related construction and, as a result, would not result in new property acquisitions or impacts.

Build Alternative

Property acquisitions and relocations would be required for the construction of the Van Buren North Extension. The type of acquisition would be determined by existing tax parcel mapping and records obtained from Prince William County. Necessary acquisitions for this project may include the following:

- Full Acquisition – purchase of the entire property which results in displacement of the current land use;
- Partial Acquisition – partial purchase of a property. This does not impact or affect the ability for the parcel to support existing or planned future land uses. (If there is a need for a portion of the property that was determined to affect the ability of the parcel to support existing or planned future land uses, a full acquisition would be made of that property); and
- Relocation – this results from full acquisitions and the conversion of land use to a transportation use. Relocations are measured by housing unit or business, not tax parcel (e.g. acquisition of an eight unit apartment building on one tax parcel would result in eight residential displacements, or relocations).

The Build Alternative would result in the acquisition of Right-of-Way from a number of vacant land tax parcels but would not result in the displacement of any businesses, industrial facilities, or residences. The Build Alternative would likely improve traffic patterns and accessibility in the vicinity of the project area, which is anticipated to improve the local economy and employment by decreasing traffic congestion and increasing accessibility to local businesses and public facilities. In addition, the extension of Van Buren Road between Dumfries Road and Cardinal Drive would provide an ideal corridor for future public transportation route within the Montclair and Dale City communities. Though no bus routes have currently been proposed for the Van Buren Road Extension, the new route would provide an important alternative public transportation route to the congested Route 1. The proposed project is not expected to generate substantial traffic through residential areas and is anticipated to decrease cut-through traffic within Montclaire residential developments.

Land Use and Right-of-Way

No-Build

The No-Build Alternative would not cause any project-related construction and, as a result, would not result in alterations or impacts to the existing land use in the project area. Land use is not anticipated to remain the same; several parcels are currently undergoing planned development.

Build Alternative

Right of Way acquisitions required for the Build Alternative are summarized in **Table 4.8**. The proposed project facilitates the planned land use set forth and recommended in the *Prince William County Comprehensive Plan (2008)* and updated *Long-Range Land Use Plan (adopted 2012)*. The project is not expected to alter the multiple types of zoning classifications present within the project area. The proposed Van Buren Road Extension is intended to support current and anticipated land use within the area. Outside of the limited roadway boundaries, this project is not expected to alter the existing land use designations and is in compliance with policy and design guidelines defined by the Land Use goals defined in the *Long-Range Land Use Plan*. No existing business or residential properties would be subject to a complete take/Right-of-Way acquisition or impacted substantially during construction.

Table 4.8 – Build Alternative Right-of-Way Acquisition

Alternative	Anticipated Right-of-Way Acquisition (Acres)	Properties Subject to Full Acquisitions	Properties Subject to Partial Acquisitions	Relocations
No Build	0	0	0	0
Build Alternative	24	0	11	0

**Right-of-Way acquisitions do not include any permanent or temporary easements determined necessary during future design phases of the project.*

Community Facilities & Protected Open Space

No-Build

The No-Build Alternative would not cause any project-related construction and, as a result, would not result in alterations or impacts to existing community facilities or protected open spaces. It is anticipated that the surrounding community would experience increasing traffic congestion and would subsequently have more difficulty accessing community facilities. Worsening traffic conditions would hinder rescue responders travelling to and from the Prince William County Department of Fire & Rescue facilities in the adjacent communities.

Build Alternative

No impacts to community facilities are anticipated as part of the build alternative. Approximately 8.8 acres of protected open space privately owned by the Four Seasons Community HOA is anticipated to be acquired to construct the roadway; this open space and associated dirt trails are not a protected Section 4(f) property. It is expected that the surrounding community would experience an overall beneficial impact from the improved movements along local road (due to eased traffic conditions) and subsequent improved access to community facilities. Improved traffic conditions would directly benefit rescue responders travelling to and from the Prince William County Department of Fire & Rescue – Station 23, Dale City Volunteer Fire Department – Station 13, and Dumfries-Triangle Fire Department.

4.3 Environmental Justice & Title VI

FHWA defines Environmental Justice (EJ) as “identifying and addressing disproportionately high and adverse effects of the agency’s programs, policies, and activities on minority populations and low-income populations to achieve an equitable distribution of benefits and burdens” (FHWA, 2015). The EJ analysis in this EA has been prepared in accordance with the definitions, methodologies, and guidance provided in Executive Order (EO) 12898; the Council on Environmental Quality (CEQ) Environmental Justice Guidance Under the National Environmental Policy Act; US Department of Transportation (USDOT) Order 5610.2(a); FHWA EJ Order 6640.23A; FHWA memorandum Guidance on Environmental Justice and NEPA; the FHWA Environmental Justice Reference Guide; the FHWA Technical Advisory T6640.8A; and the VDOT Instructional & Informational Memorandum IM-ED-714.1 Environmental Justice Identification, Outreach and Analysis Requirements (September 1, 2022).

As defined by Title VI of the Civil Rights Act of 1964 (Title VI) and in the guidance for implementing EO 12898, minority populations include citizens or lawful permanent residents of the U.S. who, as defined by FHWA Order 6640.23A, are:

- Black: a person having origins in any of the black racial groups of Africa;
- Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central, or South American or other Spanish culture or origin, regardless of race;
- Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent;
- American Indian and Alaskan Native: a person having origins in any of the original people of North America or South America (including Central America) and who maintains cultural identification through tribal affiliation or community recognition; or
- Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

In the sections below, existing vulnerable populations within the project area are identified, including population above the age of 64 and linguistically isolated households, and potential effects on each are defined.

Table 4.9 – 2021 Poverty Guidelines for the 48 Contiguous States and the District of Columbia – Effective January 13, 2021 (USDHHS, 2021)

Persons in Family/Household	Poverty Guidelines
1	\$12,880
2	\$17,420
3	\$21,960
4	\$26,500
5	\$31,040
6	\$35,580
7	\$40,120
8	\$44,660
For families with more than 8 persons, add \$4,420 for each person.	

Populations with Limited English Proficiency (LEP)

Federal agencies are required to identify and provide services needed by those with Limited English Proficiency (LEP), or linguistically isolated populations, as stated by Executive Order 13166 (“Improving Access to Services for Persons with Limited English Proficiency”). It is further required that systems be developed and implemented that allow LEP populations to have meaningful access to these public services to avoid discrimination based on national origin and meet the requirements of Title VI and EO 13166. The Prince William County Office of Housing and Community Development policies are written to ensure meaningful access to the Housing Choice Voucher program and its activities by LEP populations (Prince William County OHCD Administrative Plan, 2021).

Individuals over the Age of 64

Individuals over the age of 64 do not necessarily belong to a population protected under EJ statutes; however, this population represents a key demographic group that is associated with increased susceptibility to environmental issues. In particular, elderly populations have shown elevated sensitivity to particulate matter exposure (EPA, 2009). Inclusion of this population in these analyses supports the EPA’s EJ goal of emphasizing potential effects on public health to “ensure the fair treatment and meaningful involvement of all people” ([https://www.epa.gov/sites/production/files/201505/documents/ejscreen technical document 20150505.pdf](https://www.epa.gov/sites/production/files/201505/documents/ejscreen_technical_document_20150505.pdf)).

Methods Utilized in Identifying Environmental Justice Populations

Data on minority and low-income populations was collected from 2010 U.S. Census Tract and 2014-2018 American Community Survey (ACS) databases utilizing EPA’s online EJSCREEN tool (EPA, 2021b). Demographic information for twenty-seven census blocks falling within 1 mile of the project area (the EJ study area) was evaluated to characterize the population adjacent to the project area; this information is listed in **Table 4.13** and depicted in **Figure 4.2**. The demographic composition of census blocks adjacent to the project area was compared to state averages to identify communities with significant EJ populations. Demographic attributes associated with EJ populations, such as those discussed above, were evaluated in relation to proximity to the project area, potential to be impacted by the proposed build alternative and existing conditions within their communities to evaluate existing vulnerabilities within local communities and the potential for adverse impacts to EJ populations from the project alternatives.

In accordance with the VDOT IM-ED-714.1, EJSCREEN was also used to more narrowly assess the demographics of the population relative to the project area. In accordance with the September 1, 2022 agreement on a programmatic approach for identification of and outreach to areas that meet the definition for an EJ community, reached by the VDOT Environmental Division and the FHWA Virginia Division, information on low-income and minority populations within and immediately adjacent to the project area was analyzed as these parameters constitute an EJ community. This information is listed in **Table 4.10** and depicted in **Figure 4.3** and **Figure 4.4**. The project limits encroached into 6 Block Groups; the demographic index of these Blocks was determined by averaging 2 demographic indicators including low-income and minority populations. The demographic indicators resulting from the EJSCREEN tool are from the U.S. Census Bureau's ACS 2017-2021 5-year Summary, and socioeconomic data for all territories are from the Census 2020 Demographic Profile Summary File, published in October 2022 by the U.S. Census Bureau. The results of these analyses and the determination of how the project interacts with population demographics are discussed further below.

4.3.1 Existing Conditions

The majority of the project area consists of large parcels zoned and planned for future development. These parcels are currently undeveloped, mostly wooded parcels with utility clearings and dirt access roads. The project area extends into the two existing terminus of Van Buren Road in the northern portion of the project area when it intersects with Cardinal Drive and in the southern portion of the project area when it intersects with Route 234. However, the anticipated project area in these areas does not extend past existing Right-of-Way. Due to the largely unoccupied nature of the project area, potential impacts to Environmental Justice populations from activities within the project area would be anticipated to be minimal and indirect.

Table 4.10 – Socioeconomic Indicators (SI) of Low-Income and Minority Populations (EJSCREEN, 2018 ACS data, June 2023)

Block Group	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Minority Populations Across 6 Block Groups					
511539004102	85%	38%	93	39%	86
511539010112	77%	38%	89	39%	82
511539010121	39%	38%	56	39%	58
511539010122	30%	38%	45	39%	49
511539010131	81%	38%	91	39%	83
511539010141	49%	38%	68	39%	65
Averages:	60%	38%	74	39%	71
Low-Income Populations: Across 6 Block Groups					
511539004102	27%	25%	60	31%	49
511539010112	12%	25%	30	31%	22
511539010121	22%	25%	51	31%	41
511539010122	0%	25%	0	31%	0
511539010131	18%	25%	43	31%	33
511539010141	11%	25%	27	31%	19
Averages:	15%	25%	35	31%	27
Low-Income: Study Area					
N/A	0%	25%	0	31%	0

Block Group	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Minority: Study Area					
N/A	30%	38%	45	39%	49

The project area overlaps with 6 Block Groups, which were analyzed for low-income and minority populations. Within the 6 Block Groups, 15% of the population is considered low-income, which is less than the state (25%) and USA (31%) averages. In addition, 60% of the population within the 6 Block Groups are considered minorities, which is greater than the state (38%) and USA (39%) average. The low-income and minority populations for the study area alone are below the state and USA averages, as shown in **Table 4.10**.

Community Outreach & EJ Population Engagement

In March of 2021, scoping letters were sent to federal, state, and local stakeholders to assist in engaging with and identifying communities that may be impacted by and/or are interested in the Van Buren Road North Extension project. In addition, a Virtual Public Information Meeting was held on July 22, 2021 to facilitate education and outreach concerning the proposed project. Further information regarding these efforts can be found in Section 5.0 (Agency Coordination and Comments) of this document. Future efforts to engage EJ communities will include a Location Public Hearing.

Low-Income Populations

Low-income is defined as a household whose income is less than or equal to twice the poverty level and the poverty threshold, defined by the U.S. Census Bureau in 2022, is \$29,678 for a family of four composed of two adults and two children). It is important to note that the poverty level is annually updated by the U.S. Census Bureau and varies by the size and composition of families. Per the EJSCREEN review, 5 out of the 6 Block Groups were below the state and USA averages for low-income populations. EJSCREEN calculates the percent of low-income by using elements in **Table 4.11** below and the following equation:

$$\% \text{ Low Income} = \frac{C17002.001 - C17002.008}{C17002.001}$$

Table 4.11 – American Community Survey (ACS) Income/Poverty Level Table Element Reference – Effective June 2023 (EPA, 2023. EJSCREEN Technical Documentation)

Table Element	Income/Poverty Level
C17002.001	Total Population Whose Poverty Status is Known
C17002.002	People with Ratio of Income to Poverty under .50
C17002.003	People with Ratio of Income to Poverty between .50 -.99
C17002.004	People with Ratio of Income to Poverty between 1.00 - 1.24
C17002.005	People with Ratio of Income to Poverty between 1.25 – 1.49
C17002.006	People with Ratio of Income to Poverty between 1.50 – 1.84
C17002.007	People with Ratio of Income to Poverty between 1.85 – 1.99
C17002.008	People with Ratio of Income to Poverty 2.00 and over

Minority Populations

The percent of individuals in a Block Group that list racial status as a race other than white alone and/or list ethnicity as Hispanic or Latino are classified as minorities. EJSCREEN calculates the percent of minorities by using elements in **Table 4.12** below and the following equation:

$$\% \text{ Minority Populations} = \frac{B03002.001 - B3002.003}{B03002.001}$$

Table 4.12 – American Community Survey (ACS) Hispanic or Latino Origin by Race Table – Effective June 2023 (EPA, 2023. EJSCREEN Technical Documentation)

Table Element	Hispanic Status/ Race Population
B03002.001	Total Population: All races/ethnicities
B03002.002	Total Population: Non-Hispanic
B03002.003	Total Population: Non-Hispanic, White Alone
B03002.012	Total Population: Hispanic

Historically Economically Disadvantaged Communities (HEDC)

As defined in the Virginia Clean Economy Act (VCEA), Historically Economically Disadvantaged communities (HEDCs) are communities in which a majority of the population are people of color or a low-income geographic area (defined as communities with an average estimated Household Income that falls below the Virginia Environmental Justice Act (VEJA) Low Income Threshold). 26 of the 27 census block groups falling within 1 mile of the project area can be considered HEDCs. 25 of the census blocks have a majority population (>50%) of people of color and sixteen of the census blocks within the study area had average household incomes that fell below the VEJA Low Income Threshold calculated for the region² (HUD, 2021a). The results from the EJSCREEN analysis for the project area alone indicated the average populations of minorities (30%) and low-income populations (0%) within the project area were below the state (people of color: 38%, low-income 25%) and USA (people of color: 39%, low-income: 31%) averages (Table 4.10).

Tribal Interests

A review of American Indian tribes with potential interest in the project area, conducted using the U.S. Department of Housing and Urban Development (HUD) Tribal Directory Assessment Tool (TDAT), identified four federally recognized tribes as having interest in Prince William County, Virginia (HUD, 2021b):

- Catawba Indian Nation (South Carolina)
- Chickahominy Indian Tribe (Virginia)
- Delaware Nation (Oklahoma)
- Pamunkey Indian Tribe (Virginia)

² The VEJA Low Income Threshold is considered 80% of the Median Family Income (MFI), or \$103,200. The MFI calculated for Prince William County, Virginia, was determined using FY 2021 information for the Washington-Arlington-Alexandria, DC-VA-MD HUD Metro FMR Area using the HUD FY 2021 Median Family Income Documentation System.

In Virginia, there are currently eleven (11) state recognized tribes: Mattaponi, Pamunkey, Chickahominy, Chickahominy Tribe Eastern Division, Rappahannock, Upper Mattaponi Tribe, Nansemond Indian Nation, Monacan Indian Nation, Cheroenhaka (Nottoway), Nottoway, and Patawomeck. Of these tribes, the only tribes with known potential interests in the project area (i.e. Prince William County) are the Chickahominy and Pamunkey Indian Tribes.

Fence-line Communities

Fence-line communities are defined by the VEJA as communities adjacent to major sources of pollution. As all of the communities within the study area are adjacent to two major north-south transportation corridors, all the identified communities considered here may be defined as fence-line communities subject to vehicle pollutants from the daily traffic volumes on I-95 and Route 1.

Limited English Proficiency Populations

An estimated 14% of the populations of the EJ study area population speaks English “less than very well” (U.S. Census Bureau, American Community Survey 1-Year Estimates, 2014-2018), or is defined as having ‘Limited English Proficiency’ (LEP). Of the 27 census block groups in the project area, 13 had percentages of linguistically isolated households greater than the state average (3%), which are defined as a household where no one over the age of 14 speaks English ‘very well’ (U.S. Census Bureau, American Community Survey 1-Year Estimates, 2014-2018; EPA, 2021b).

Persons Over 65 Years of Age

An estimated 10% of the population within 1 mile of the project area is age 65 or older. All but one of the census blocks falling within 1 mile of the project area has a population of persons 65 or older below the state average (15%). The exception, census block #511539010121, having 41% persons over 65 years of age, is the location of Four Seasons at Historic Virginia retirement community.

Table 4.13 – Van Buren - Historically Economically Disadvantaged Community Census Block Data

CBG ID#	Population	Minorities	%ile in State	%ile in US	Low Income	Avg. Income per Capita	ACS Average Household Income	%ile in State	%ile in US
511539004031	1541	73%	88	80	33%	\$23,448	\$78,646	68	57
511539004042	2438	87%	95	87	46%	\$25,692	\$65,066	85	75
511539004043	1801	88%	95	88	31%	\$28,358	\$60,188	64	54
511539010012	1666	72%	87	79	21%	\$28,827	\$71,813	48	36
511539010011	1425	73%	87	80	48%	\$19,203	\$59,500	86	77
511539010111	2876	53%	72	68	18%	\$49,231	\$137,500	41	29
511539004093	1987	88%	95	89	36%	\$20,891	\$82,917	72	62
511539008012	2724	75%	89	81	11%	\$46,882	\$129,817	26	15
511539008022	781	83%	93	86	33%	\$25,115	\$52,888	69	58
511539008023	4168	88%	95	88	13%	\$36,794	\$106,333	32	20
511539010112	2912	47%	65	64	17%	\$44,739	\$141,905	39	27
511539010013	2057	75%	89	81	23%	\$32,439	\$85,096	52	40
511539010014	1771	54%	73	69	4%	\$59,638	\$159,674	8	3
511539010121	3171	30%	44	49	6%	\$51,156	\$92,240	14	7
511539008021	3744	73%	88	80	21%	\$47,447	\$110,215	47	35
511539009042	2802	80%	92	84	21%	\$34,023	\$109,167	49	37
511539009041	2846	74%	88	80	5%	\$40,782	\$128,688	11	5
511539007012	2479	83%	93	85	36%	\$32,395	\$86,386	72	61
511539004081	1363	59%	77	72	3%	\$40,799	\$123,690	6	2
511539004092	2116	79%	91	83	44%	\$27,519	\$82,448	82	72
511539004102	2031	82%	93	85	25%	\$38,434	\$114,205	56	43
511539005021	4190	72%	87	79	6%	\$53,304	\$118,301	14	7
511539004101	3300	85%	94	87	36%	\$49,038	\$69,022	73	62
511539004032	1054	66%	83	76	39%	\$27,908	\$91,131	76	66
511539010081	4745	85%	94	86	35%	\$26,963	\$81,074	70	60
511539010082	3396	81%	92	84	18%	\$37,860	\$97,011	42	29
511539009012	1288	78%	90	82	11%	\$29,490	\$84,567	28	16

Highlighted Census block values represent Minority Populations that represent a majority (>50%) of the Census Block Group population (VA State average 38%).

Highlighted Census block values represent Estimated Household Incomes that fall below the VEJA Low Income Threshold (\$103,200).

Highlighted Census Group Blocks have Historically Economically Disadvantaged Communities.

Socioeconomic Data obtained from: *EJ Screen ACS 2016 Data and ^EJSCREEN 2010 Census Data (EPA, 2021b). Average household income data for each census block group was obtained from the Prince William County Demographics page and GIS online mapper (Prince William County, 2021b).

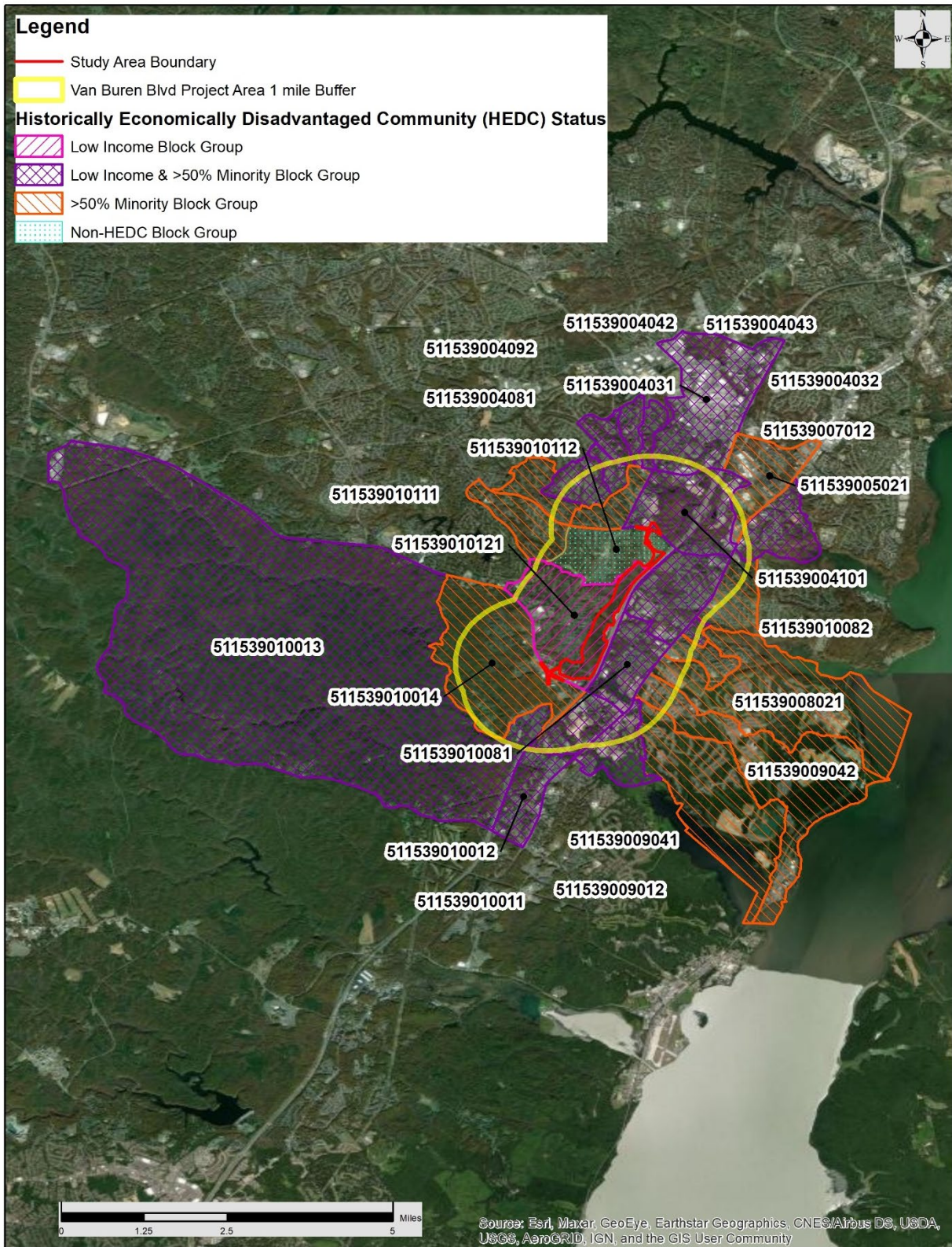


Figure 4.2 - Map of Historically Economically Disadvantaged Communities (Minority and Low Income Population Groups) in the Census Blocks falling within 1 miles of the Project Area

Van Buren Road North Extension Environmental Assessment

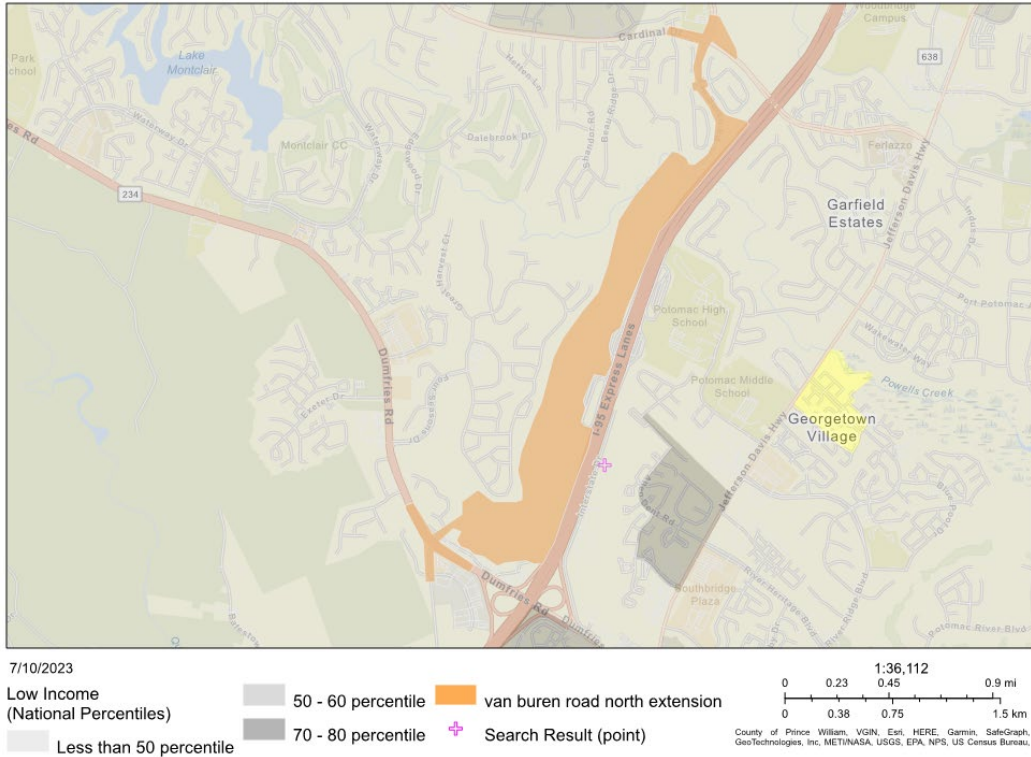


Figure 4.3 – EJSCREEN Map of Low-Income Population Groups and Percentiles within and Adjacent to the Project Area.

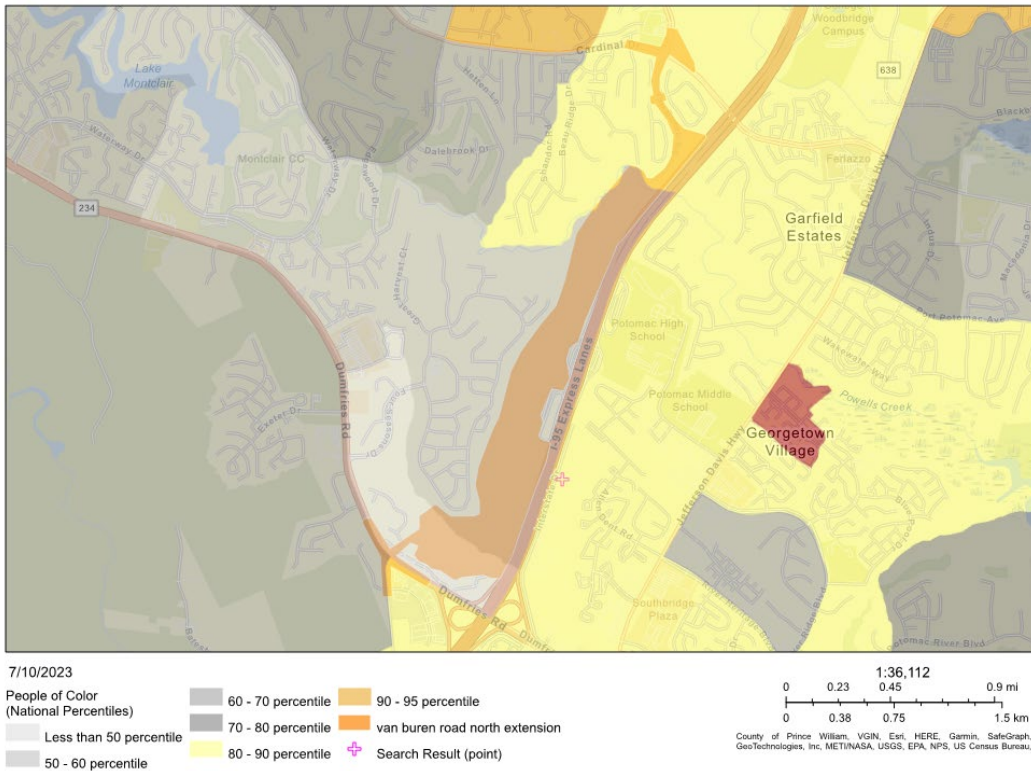


Figure 4.4 – EJSCREEN Map of Minorities Population Groups and Percentiles within and Adjacent to the Project Area.

4.3.2 Environmental Consequences

No-Build

The No-Build Alternative would not produce beneficial or adverse impacts to predominantly minority, linguistically isolated or low-income populations adjacent to the project area. Populations in the vicinity of the project area would continue to lack mobility to jobs and access to public transportation facilities. The transportation hub, Omni Ride Transit Center, is located north of the project area. The only route that currently transports communities south of the project area to the transit center is long and crosses I-95 and goes north on Route 1.

Build Alternative

The majority of the project area is anticipated to fall within existing or previously dedicated Right-of-Way and is expected to require partial strip-takes of existing residential or commercial parcels along the alignment. One full parcel acquisition is anticipated to be needed for a narrow, previously vacant parcel that currently serves as the location of an access road for a future Prince William County Service Authority (PWCSA) pump station. The majority of the project would be constructed on new alignment; this project is not anticipated to cause major traffic disruptions, community disruptions, and/or disruptions to emergency services. Due to the largely unoccupied nature of the project area, impacts to Environmental Justice populations are anticipated to be minimal and indirect in nature and would not be disproportionately higher than effects to the adjacent communities on whole.

The project is not expected to have Disproportionately High and Adverse Effects (DHAE) to EJ populations adjacent to the study area in accordance with the provisions of the E. O. 12898, FHWA Order 6640.23 and VDOT IM-ED-714.1. No business or residential acquisitions are proposed for the anticipated roadway. The project is anticipated to provide improved mobility to jobs and public transportation facilities by providing additional local roadway connections and reducing congestion, as discussed further in Section 4.14.2. EJ populations would benefit from the project as a result of the addition of the SUP/sidewalk, which would improve safety and community access to local schools and adjacent commercial centers. The construction of the SUP/sidewalk would provide additional multi-modal transportation options for EJ populations to utilize. The Van Buren Road Extension project conducted a noise analysis which determined highway traffic noise abatement considerations were not feasible, which is detailed in Section 4.7 (see The Preliminary Design Noise Impact Analysis Technical Report, Van Buren Road Extension for further details; Appendix C). The Van Buren Road Extension would not significantly impact air quality around the project area (see Section 4.6 for further details). It is anticipated that Mobile Source Air Toxic (MSAT) levels would experience a net decrease in the design year of this project while levels of Carbon Monoxide remain under attainment-level standards (see Air Quality Technical Report for further details; Appendix D). This project is anticipated to provide Dumfries-area residents with improved ease-of-access to commercial and public facilities along Dumfries Road and Cardinal Drive. Improved emergency response times and reduced MSAT levels are anticipated to benefit persons over 64 years of age, and improved access to community facilities and schools represent a beneficial impact for LEP populations. In summary, the Van Buren Road Extension is projected to be a net-benefit for the surrounding communities and the Environmental Justice populations within those communities.

4.4 Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 USC 306108) and its regulations (36 CFR Part 800) require federal agencies to consider the effects on historic properties from their undertakings. Historic properties are defined as buildings, structures, sites, districts, and objects that are listed on or eligible for listing on the National Register of Historic Places (NRHP). The Section 106 process is undertaken by federal agencies in consultation with the State Historic Preservation (SHPO), federally recognized tribes as appropriate, representatives of local governments, and other parties with an interest in an undertaking.

4.4.1 Existing Conditions

A Phase I and II Cultural Resources Survey titled 'Phase I Cultural Resource Survey of the ±37.2-Hectare (±91.8-Acre) Van Buren Road Extension Project Area and Phase II Archaeological Evaluation of Sites 44PW2104 and 44PW2105) was completed by Dutton + Associates in August 2022 to support the Section 106 process for this NEPA study. This study evaluated the project's direct area of potential effect (APE), as defined by the limits of proposed ground disturbance associated with construction of the project, and the project's indirect APE, as defined by areas immediately adjacent to the proposed project.

No architectural resources, previously recorded or via reconnaissance during the Phase I study, were located within or immediately adjacent to the project's APE. Seven (7) previously recorded archaeological resources were identified within or immediately adjacent to the project APE. Four additional, previously unrecorded sites were identified via subsurface shovel testing during the Phase I survey. Two of the previously unrecorded archaeological sites (Site 44PW2104 and Site 44PW2105) were recommended as potentially eligible for listing in the National Register of Historic Places (NRHP) while the remaining sites were recommended not eligible for listing. A Phase II survey was conducted on the sites recommended as eligible, while no further work was considered warranted on the remaining sites.

The Phase II evaluation survey of Sites 44PW2104 and 44PW2105 was completed in March and April of 2022 through a combination of detailed historic research and field investigations consisting of the excavation of close interval shovel test pits and test units. Site 44PW2104 was determined to be a late nineteenth early twentieth-century domestic site associated with William Jennings, a freed slave and son to a freed slave who worked for President James Madison in the White House. This site was recommended as not eligible for listing in the NRHP due to shallow, disturbed soils and lack of potential for new or important archaeological data. Site 44PW2105 was identified as a mid-eighteenth-century domestic site likely associated with John Canterbury. This site was recommended as eligible for listing in the NRHP under criterion D due to the presence of significant archaeological deposits with intact soils and structural remains. DHR concurrence for the above determinations was received on November 9, 2022.

During the winter of 2022 and spring of 2023, coordination with DHR resulted in the investigation of methods to avoid adversely affecting Site 44PW2105. In order to accommodate updated design elements, Dutton performed a supplemental Phase 1 cultural resource survey of an expanded limits of disturbance in April of 2023. No additional cultural resources were identified in the expanded survey area, and Dutton recommended that no further archaeological or architectural surveys were warranted in the expanded right-of-way. A copy of Dutton's report for the supplemental survey, entitled "Phase I Cultural Resources Survey of a Proposed Realignment of the Van Buren Road Expansion Project", was submitted to DHR on May 24, 2023. DHR confirmed the supplemental survey met applicable standards and guidelines, and accepted the results of the report, in an effects determination received on June 23, 2023.

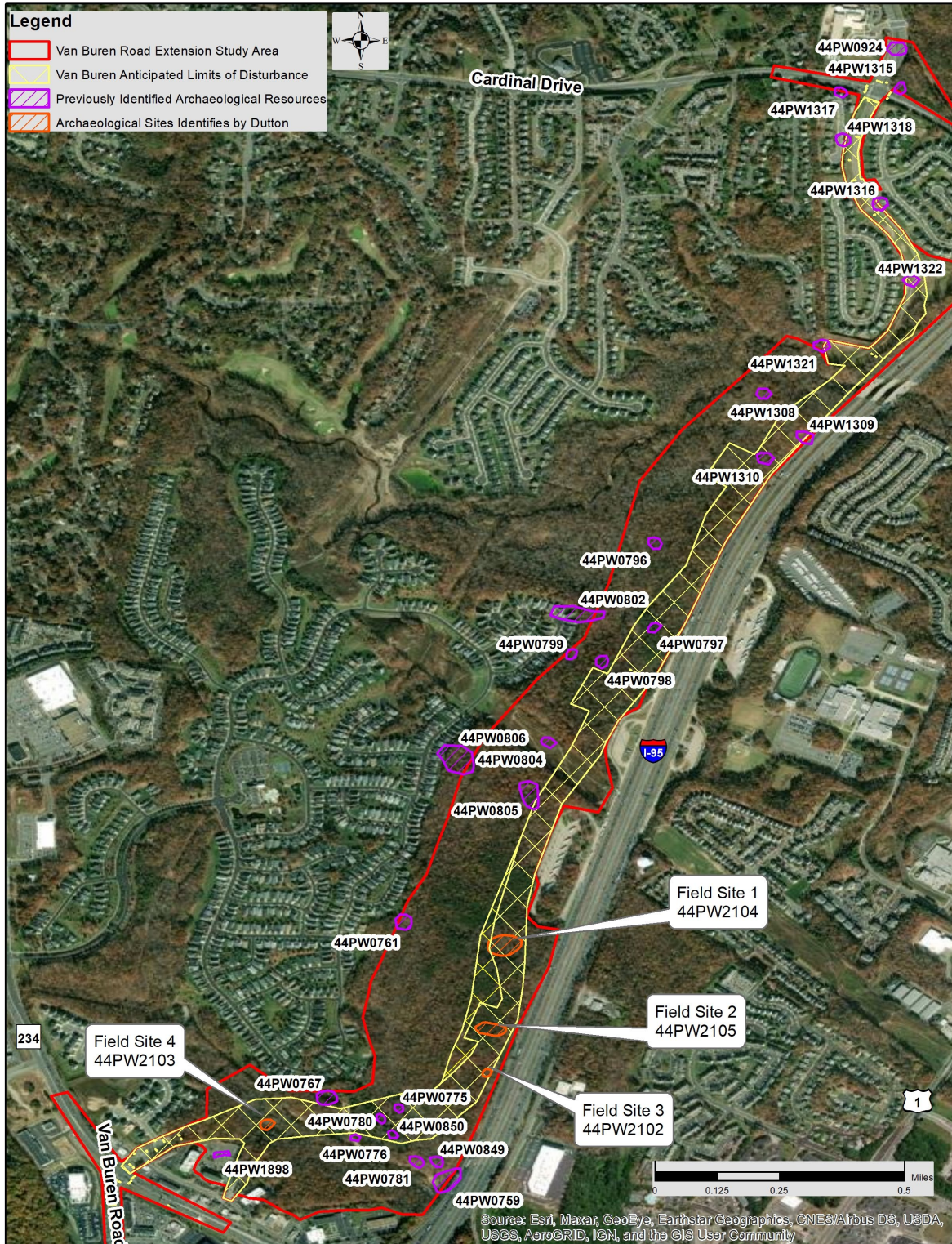


Figure 4.5 - Archaeological Resources Identified within the Project Area

4.4.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in construction or disturbances within the project area and subsequently would not impact any architectural or archaeological resources identified within or adjacent to the study area.

Build Alternative

As no architectural resources were identified within or immediately adjacent to the project area, it is anticipated the proposed project would not have any adverse impacts to architectural resources.

The majority of the archaeological resources identified within the project area were determined not to be eligible for listing in the NRHP. The proposed design avoids Site 44PW2105, preventing adverse effects to the resource. In addition, a commitment has been made to highlight the site for avoidance on construction drawings and mark the site in the field with orange safety fencing. DHR concurrence was received on June 23rd, 2023 confirming that the project as proposed would not result in adverse effects to historic and cultural resources providing the proposed conservation measures for Site 44PW2105 are implemented.

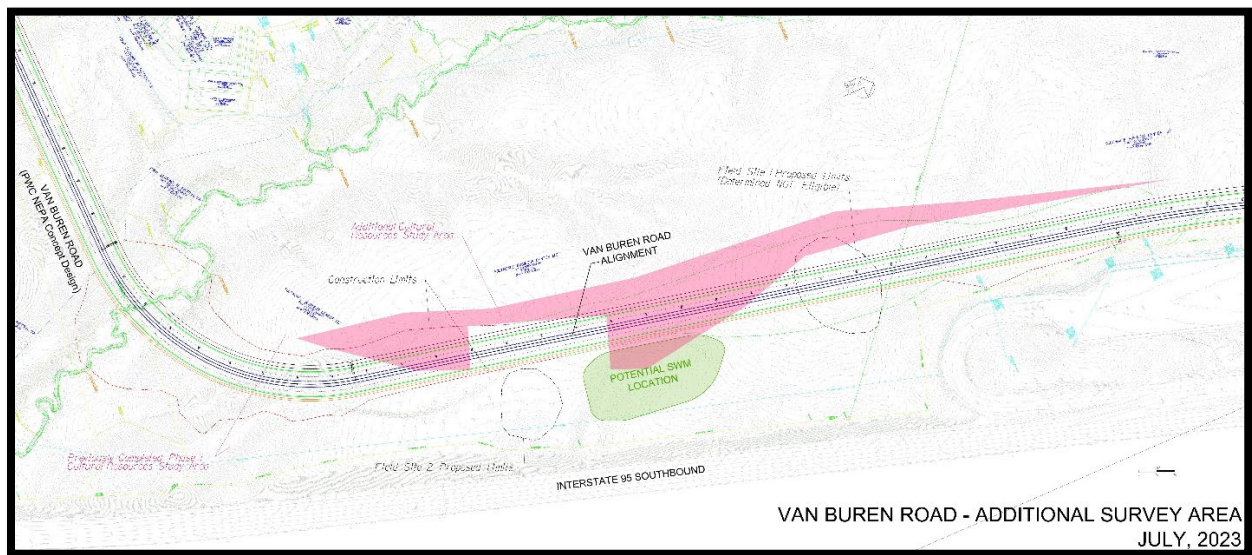


Figure 4.6 – Additional Cultural Resources Survey Area Relative to Proposed Roadway Alignment and Identified Archaeological Resource

4.5 Section 4(f) and 6(f)

Section 4(f) of the USDOT Act of 1996, as amended (49 USC 303(c), 23 CFR 774), applies to publicly owned parks, recreational areas, wildlife, or waterfowl refuges, and public or private historic sites. If a determination is made that there is no feasible and prudent alternative to the use of the land from the property, and the action includes all possible planning to minimize harm to the property resulting from such use; or the use of the property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) committed to by the applicant will have a *de minimis* impact, as defined in 23 CFR § 774.17, on the property, then the use of the Section 4(f) property may be approved.

Section 6(f) of the Land and Water Conservation Fund (LWCF) Act of 1965, as amended (16 U.S.C. 4601, 36 CFR 59.3) protects lands purchased within LWCF funds.

4.5.1 Existing Conditions

No Section 4(f) properties are located in the project area and no impacts to Section 4(f) properties are anticipated.

No Section 6(f) properties are located in the project area and no impacts to Section 6(f) properties are anticipated.

4.5.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in construction and would therefore not result in impacts to Section 4(f) and Section 6(f) properties.

Build Alternative

This project is not anticipated to have adverse impacts on Section 4(f) or Section 6(f) properties. There are no Section 4(f) or Section 6(f) properties within the project area.

4.6 Air Quality

In accordance with the Clean Air Act (CAA), as last amended in 1990, the EPA has established National Ambient Air Quality Standards (NAAQS; 40 CFR part 50; EPA, 2021b) for pollutants that are considered harmful to people as well as the environment. NAAQS are categorized as primary standards, which provide for protection of public health (particularly for “sensitive” populations such as children, the elderly and asthmatics), while secondary standards address public welfare, which includes the protection of animals, crops, vegetation, buildings and general visibility from pollutant-associated damage. NAAQS are currently defined for six principle, or ‘criteria’, pollutants: carbon monoxide (CO), lead (Pb), ozone (O₃), nitrogen dioxide (NO₂), particulate matter (PM_{2.5} for particulate pollutants <2.5µm in diameter; PM₁₀ for particulate pollutants <10µm in diameter) and sulfur dioxide (SO₂). Standards are periodically reviewed and occasionally revised.

Air quality may be influenced by a number of variables including weather, topography and the type and amount of the pollutants being emitted. The significance of a pollutant’s concentration is determined by comparing the outdoor ambient air conditions of a locality to federal and state air quality standards, such as those listed above (**Table 4.14**). The EPA designates areas where air quality meets standards as being in ‘attainment’, while areas that do not meet standards are called ‘non-attainment areas’. Non-attainment areas that improve air quality to meet NAAQS are redesignated by the EPA as ‘maintenance’ areas in accordance with redesignation requirements in the CAA (Section 107(d)(3)(E)).

Pursuant to the CAA Amendments (1990), states are required to define the status of all areas within their borders in accordance with their compliance to NAAQS. The attainment status was identified for the study area and is discussed in the sections below. A qualitative air quality analysis was performed for this EA in conformity with all applicable air quality regulations and requirements. Methods and assumptions applied during the study were defined to be consistent with standards defined in the VDOT Resource Document.

Table 4.14 – EPA National Ambient Air Quality Standards**

Pollutant	Averaging Time	Standard	Standard Level	Form
Carbon Monoxide (CO)	8 HRs	9 ppm	Primary	Not to exceed more than once per year
	1 HR	35 ppm		
Lead (Pb)	3 Month Average (Rolling)	0.15 µg/m ³ ⁽¹⁾	Primary and Secondary	Not to exceed
Nitrogen Dioxide (NO ₂)	1 HR	100 ppb	Primary	98 th percentile of 1 HR Daily Max. concentrations, averaged over 3 years
	1 Year	53 ppb	Primary and Secondary	Annual Mean
Ozone (O ₃)	8 HRs	0.070 ppm ⁽²⁾	Primary and Secondary	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM _{2.5})	1 Year	12.0 µg/m ³	Primary	Annual mean, averaged over 3 years
	1 Year	15.0 µg/m ³	Secondary	
	24 HRs	35 µg/m ³	Primary and Secondary	98 th percentile, averaged over 3 years
Particle Pollution (PM ₁₀)	24 HRs	150 µg/m ³	Primary and Secondary	Not to exceed more than once a year on average over 3 years
Sulfur Dioxide (SO ₂)	1 HR	75 ppb ⁽³⁾	Primary	99 th percentile of 1 HR Daily Max. concentrations, averaged over 3 years
	3 HRs	0.5 ppm	Secondary	Not to exceed more than once per year

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m³ as a calendar quarter average) also remain in effect.

(2) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O₃ standards additionally remain in effect in some areas. Revocation of the previous (2008) O₃ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

(3) The previous SO₂ standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO₂ standards or is not meeting the requirements of a SIP call under the previous SO₂ standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

**The information from this table references the EPA NAAQS Table available online at <https://www.epa.gov/criteria-air-pollutants/naaqs-table> (EPA, 2021c).

4.6.1 Existing Conditions

The project area is currently located in an 8-Hour Ozone Nonattainment Area; all other National Ambient Air Quality Standards (NAAQS) are listed as in attainment. Due to its location in a non-attainment area for ozone, the Van Buren Road Extension project is subject to federal conformity requirements (i.e. those enumerated in 40 CFR 93.114 and 40 CFR 93.11) to be listed in a conforming transportation plan and

program. The Van Buren Road Extension is included in its study phase and preliminary engineering design phase in the Transportation section of the *Prince William County 2008 Comprehensive Plan* (as amended March 15, 2016; Prince William County, 2021a) as well as the *FY2021-2024 Statewide Transportation Improvement Program for the National Capital Region* (March 18, 2020; MWCOG, 2020), and the National Capital Region Transportation Planning Board's *Visualize 2045* report (MWCOG, 2018).

4.6.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in construction and therefore no construction related activities would result in emissions. Emissions contributed by current traffic congestion would remain and likely worsen with continuing population growth and increasing congestion levels. However, it is unlikely a No-Build scenario would result in future additional violation of NAAQS. As the Van Buren Road Extension project is not located within a maintenance area for CO, and an EIS is not planned, the project meets the criteria for the 2009 FHWA-VDOT No-Build Agreement (VDOT, 2009); therefore project-specific air-quality modeling of the no-build alternative is not required.

Build Alternative

Carbon Monoxide (CO)

As this project is located within a region in attainment of the CO NAAQS, it is not subject to project-level hot-spot transportation conformity requirements defined by the EPA. To meet applicable NEPA standards, the Federal Highway Administration (FHWA)-VDOT Programmatic Agreement for Project-Level Air Quality Analysis for Carbon Monoxide was applied to this project. The Van Buren Road Extension qualifies for this programmatic agreement because the project is consistent with the project types and conditions listed in the agreement between FHWA and VDOT (see Appendix D, Van Buren Road Extension Air Quality Technical Report for detailed descriptions of criteria). A project-specific qualitative assessment determined that this project would not cause or contribute to a future violation of NAAQS for CO.

Mobile Source Air Toxics (MSATs)

The Van Buren Road Extension qualifies as a Tier 2 project, or a project with 'Low Potential MSAT Effects', under FHWA MSAT Guidance (FHWA, 2017). Projects of this tier are subject to qualitative analysis of potential differences for MSAT emissions for project alternatives. MSAT's remain a developing area of research, and therefore continue to be considerable uncertainties associated with estimation of the potential health impacts of MSATs, dose-response relationships for MSAT compounds, and acceptable levels of risk. Predicted differences in impacts of alternatives considered for this project are likely to be smaller than levels of uncertainty currently inherent in the predictions. However, for the purposes of evaluating this project, general characterizations of potential effects have been described. It is estimated that localized MSAT emissions might increase due to a localized increase in Vehicle Miles Travelled (VMT) resulting from the build alternative and decrease due to increased travel speeds along local roadways. Overall, national control programs implemented by the EPA are anticipated to reduce annual MSAT emissions by over 80 percent by the design year, resulting in net reductions in MSAT levels for the build alternatives.

Green House Gas Emissions

The proposed roadway project was determined to be relatively minor in scope compared to the larger set of highway, transit and rail projects that were assessed in a statewide build/no-build analysis for the year 2040. The GHG effects of the statewide build scenario compared to the no-build were found to be small (less than 0.2 percent increase) and are much smaller than the forecast 20 percent decrease in GHG emissions between 2015 and 2040 as a result of cleaner and more efficient vehicles. A project-specific quantitative analysis of GHG impacts was not performed on the proposed project because its potential

impacts are expected to be much smaller than the collective impacts of the projects included in the statewide analysis, and the level of effort in quantifying these impacts would be disproportionate to the value of the information provided.

Construction Emissions & Conclusions

A qualitative assessment of indirect and cumulative impacts concluded that the project is not expected to significantly impact the air quality designations for the region, which in part already reflect the accumulated mobile source emissions from past and present actions. Construction-related emissions are anticipated to occur and, though they would be temporary in nature, they would be restricted by standards defined by the VDOT Road and Bridge Specifications (VDOT, 2020) and additional VDEQ air pollution regulations (9 VAC 5-130 – Open Burning Restrictions; 9 VAC 5-45 – Article 7 – Cutback Asphalt Restrictions; 9 VAC 5-50 Article 1 – Fugitive Dust Precautions). Overall, the assessment concluded that the Van Buren Road Extension would meet all applicable air quality requirements of state and federal transportation conformity regulations as well as air quality guidance under the National Environmental Policy Act (NEPA).

4.7 Noise

A noise analysis was conducted to assess potential project impacts to the communities adjacent to the proposed alignment. The proposed Build Alternative and No-Build Alternative were assessed in accordance with Federal Highway Administration (FHWA) regulations set forth in 23 Codes of Federal regulations (CFR) Part 772 and the February 2018 Virginia Department of Transportation (VDOT) noise assessment guidelines (VDOT 2018b). Existing and design year build condition traffic noise conditions were predicted using the FHWA's approved computerized Traffic Noise Model (TNM), version 2.5, the latest approved version. The TNM uses acoustic algorithms to predict noise levels at selected receptors using accepted sound propagation standards such as intervening ground barriers, building rows, and existing dense vegetation. Future TNM runs were developed by modifying existing conditions models, such as future terrain models, to account for the proposed roadway.

The study involved monitoring existing noise conditions and modeling existing (2020) and future design year (2040) noise conditions in the study area with the FHWA-approved computerized TNM. The worst-case noise hour was predicted to occur at 4:00 P.M.

The noise report, *Preliminary Design Noise Impact Analysis Technical Report, Van Buren Road Extension From Route 234 (Dumfries Road) to Cardinal Drive, UPC 118643, Prince William County, VA*, can be found in Appendix C.

To determine the severity of traffic noise impacts on human activity, the FHWA established the Noise Abatement Criteria (NAC) to determine the degree of impact noise will have on human activities for different categories of land use (See **Table 4.15**). Noise levels that are predicted to approach or exceed the absolute FHWA/VDOT NAC design year build scenario at any receptor constitute an impact and warrant a noise abatement evaluation.

Table 4.15 – FHWA Noise Abatement Criteria: Hourly A-Weighted Sound Level Decibels [Leq(h) in dBA]

Activity Category	Activity Category Leq(h)	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B*	67	Exterior	Residential.
C*	67	Exterior	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E*	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	-	-	Agricultural, airports, bus yards, emergency services, industrial, logging maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water re-sources, water treatment, electrical) and warehousing.
G	-	-	Undeveloped lands that are not permitted.
Source: CFR Part 772 *Includes undeveloped lands permitted for this activity category.			

4.7.1 Existing Conditions

The study area, defined as an approximately 500-foot-wide corridor adjacent to both the proposed northbound and southbound lanes of the Van Buren Extension, include noise-sensitive land-uses consisting of residential areas, trails, commercial properties, and public & institutional buildings as well as non-noise-sensitive undeveloped lands. The majority of the area surrounding the study corridor is comprised of residential and commercial developments. Seven Common Noise Environments (CNEs), or noise-sensitive land uses characterized as similar in acoustic environment, were identified within the study area corridor. Evaluated CNEs are shown on Figure 2 of the Noise Report found in Appendix C.

Noise impacts were assessed for existing and future conditions in the study area for each CNE. The worst-case noise hour was determined to occur at 4:00 P.M. **Table 4.16** summarizes the range of predicted noise levels by CNE. The tables includes a description of each CNE and its land use, the FHWA Activity Category, and the loudest-hour traffic.

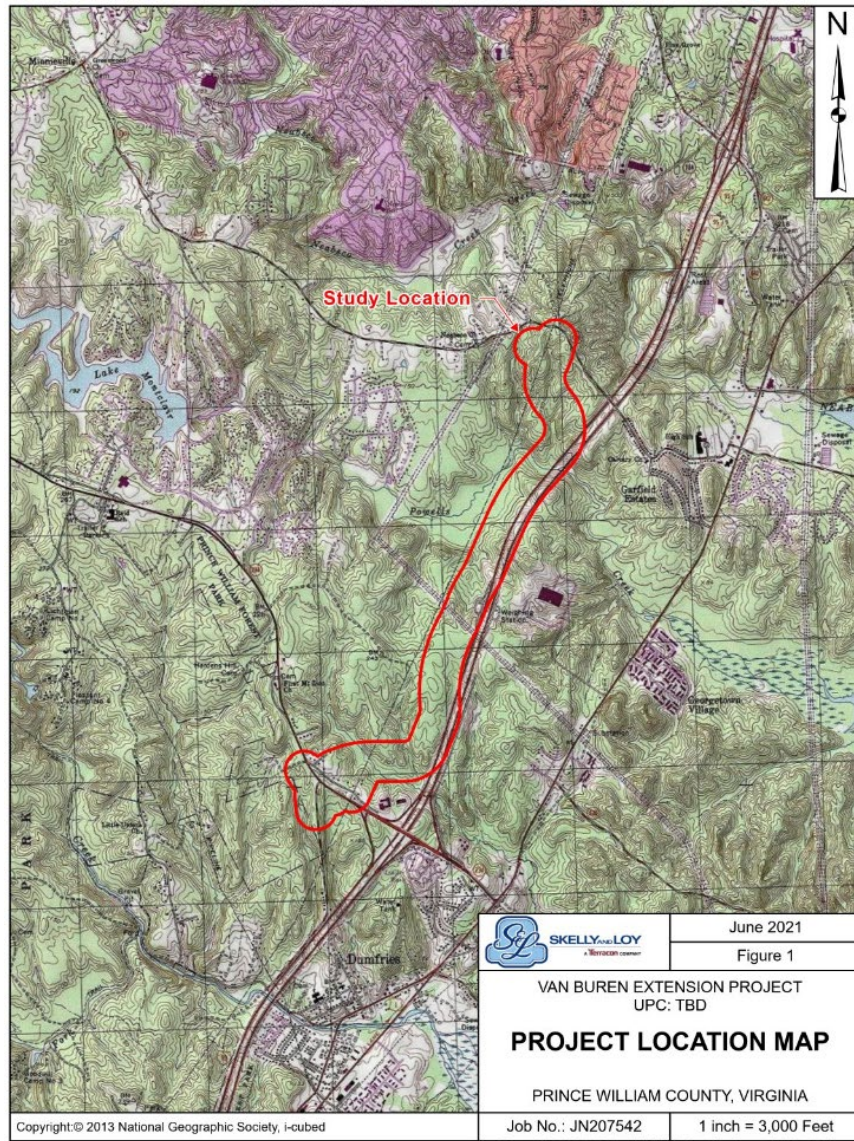


Figure 4.7 – Noise Study Project Area for Skelly and Loy, Inc.
The project limits defined for the project corridor encompass 6 distinct geographic areas containing noise-sensitive land uses.

4.7.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in construction and would not increase noise levels via construction-related activities, or the subsequent traffic associated with the new road.

Build Alternative

As previously noted, **Table 4.16** provides a summary of existing and future noise levels and impacts for each CNE in the study area. On average, sound levels were projected to increase by an average of 3 dBA over existing conditions throughout the study area. Table 7 in the Noise Report (Appendix C) offers a more

detailed enumeration of all of the computed sound levels at all the modeled receptors included in the noise assessment.

Table 4.16 – Summary of Predicted Exterior Noise Levels for the Worst Hour

CNE	Land Use Description	Activity Category	Range of Predicted Exterior Noise Levels and Impacts for the Worst Hour			
			Existing		2040 Build	
			Sound Level (dBA) Min/Max	Number of Impacts	Sound Level (dBA) Min/Max	Number of Impacts
A	Single Family Residences in the Copper Mill Estates	B	51/65	0	55/67	1
B	Single Family Residences in the Four Seasons Community	B	44/56	0	45/59	0
	Four Seasons Community Trail	C	43/53	0	50/65	3
C	Single Family Residences in the Cardinal Grove Community north of Van Buren Road	B	45/71	7	48/74	15
D	Single Family Residences in the Cardinal Grove Community south of Van Buren Road	B	45/66	2	49/69	7
E	Single Family Residences along Choate Court	B	49/68	1	51/70	2
	Fannie W Fitzgerald Elementary School (Interior)	D	41	0	42	0
F	Hotel Patios at Comfort Inn and Hampton Inn Hotels	E	49/52	0	55/58	0
Total Impacted Receptor Units				10		28

There are 28 noise-sensitive receptor sites where future design-year noise levels are predicted to approach or exceed the NAC for the applicable Activity Category. Of these receptors, 25 were Residential Exterior receptors and 3 were Recreational Exterior receptors. A number of predicted noise impacts were identified to be the result of increased traffic volume on roadways adjacent to Van Buren Road, such as I-95, Dumfries Road and Cardinal Drive. Since improvements to these adjacent roads is not being proposed as part of this project, per the VDOT State Noise Abatement Policy, abatement measures were not evaluated on these roadways (VDOT, 2011). Noise barriers were evaluated for CNE B, C and D but determined not to be feasible for any of these three cases. The results of this noise evaluation are preliminary, and a more detailed analysis would be performed during the final design stage.

Construction activity may cause intermittent fluctuations in noise levels from use of equipment such as dump trucks, graders, bulldozers, etc. During the construction phase of the project, all reasonable measures would be taken to minimize noise impacts from these activities. The contractor would be required

to be in compliance with applicable state (VDOT Road and Bridge Specifications Section 107.16(b) (3); VDOT, 2020) and Prince William County noise ordinances and specifications to reduce the impact of construction noise on the surrounding community. These measures include, but are not limited to:

- Restricting work that may produce objectionable levels of noise between 10 PM and 6 AM
- Limiting exterior noise levels to no greater than 80 decibels during noise-sensitive activities; applying corrective actions if activities exceed this level
- Minimizing impacts from hauling activities by establishing haul routes that direct vehicles away from developed areas to the extent practicable.

4.8 Wetlands

Protection of wetlands is mandated by the federal government under the provisions of Executive Order 11990, which specifies that all federal agencies must minimize the destruction, loss, or degradation of wetlands in order to preserve the natural functions they provide. These functions may include sediment and toxin retention, nutrient removal, groundwater discharge and providing wildlife habitat. Wetlands are characterized as areas which are inundated or saturated for frequencies and/or durations sufficient to support a prevalence of vegetation adapted for life in saturated soils (40 CFR 230.41(a)(1)).

In December 2020, a wetland delineation was performed within the proposed project corridor to identify non-tidal streams and wetlands. The boundaries, classification and jurisdictional status of each wetland was verified by the US Army Corps of Engineers; results are reported in Approved Jurisdictional Determination (AJD) NAO-2021-00347-rdb, dated May 18, 2021. The Delineation Report and AJD can be found in Appendix E.

4.8.1 Existing Conditions

The existing wetlands are shown in **Figure 4.8** and demarcated in further detail on the Wetland Delineation Report found in Appendix E. Jurisdiction wetlands were classified via the Cowardin system as defined in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979). In total, 17 acres of wetlands were surveyed and verified as jurisdictional (see Appendix E for further details). All wetlands within the project area are located within the Potomac River-

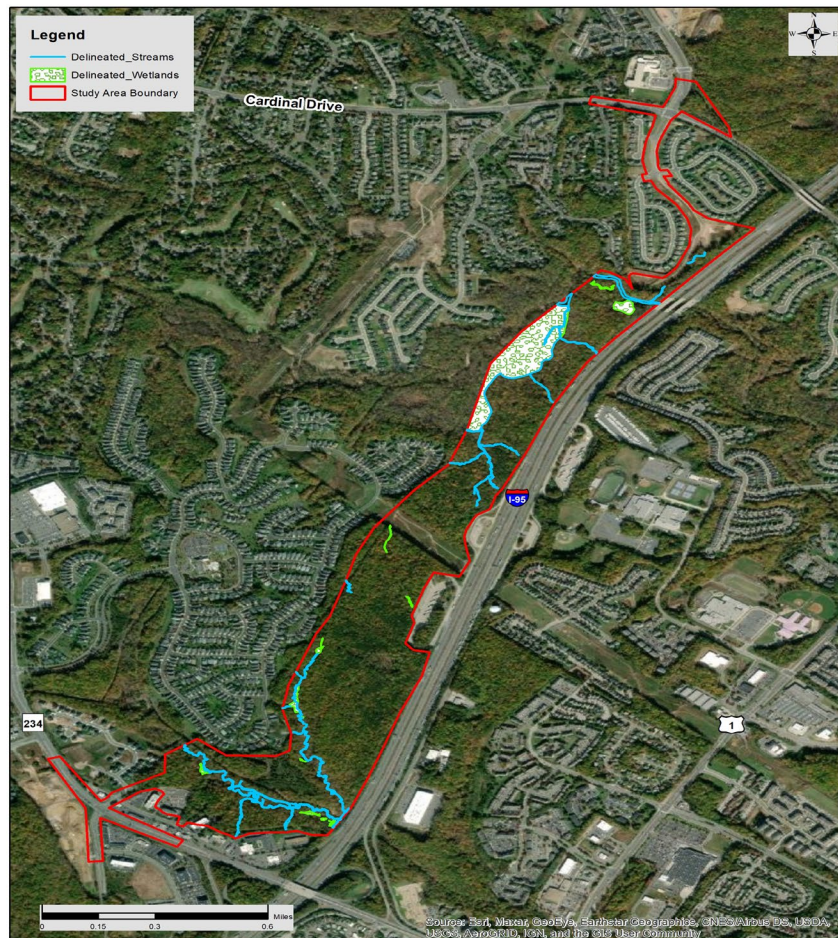


Figure 4.8 – Wetlands Delineated in the Van Buren Road

Quantico Creek watershed (ten-digit Hydrologic Unit Code (HUC) 0207001101). One type of palustrine wetlands were identified in the project corridor: Palustrine Forested (PFO) wetlands (**Table 4.17**).

As noted in the field studies included in Appendix B and Appendix F, the project area topography is characterized by several well-defined finger ridges that overlook Powells Creek and tributaries of Dewey’s Creek. Modest relief and low slopes are associated with the Mesozoic lowlands subprovince of the Piedmont region. The area is underlain by Mesozoic sedimentary and igneous rocks. A well-dissected, dendritic drainage pattern occurs throughout this region with broad, low ridge, extensive upland “flats” and shallow, sluggish drainage ways. The elevation of the project area ranges from approximately ±15.8 meters (52 feet) Above Mean Sea Level (AMSL) in the lower-lying areas of the project APE to ±66.1 meters (217 feet) AMSL in the northern upland portions of the project APE. The study area largely follows along the western boundary of the interstate I-95 corridor in a north to south direction (see Figure 1). The property consists of nearly level to moderately steep topography with overall drainage to the southeast towards either Powells Creek (on the northern half) or unnamed tributaries of Quantico Creek (on the southern half), themselves tributaries of the Potomac River. Powells Creek drains across the site in a west to east direction near the northern end of the study area. Some areas of extensive, non-tidal wetlands were observed in association with the floodplain of this river. The lower, approximate three-quarters of the site supported mostly medium to mature mixed hardwoods with some areas of pine. The northern approximate quarter of the study area was in a developed state with an existing access road, several stormwater management basins and associated grassed areas. The far northern and southern limits of the site supported existing, paved roadways to which the planned Van Buren Road Extension will be connected. A large power line right of way bisected the approximate middle of the site in an east-west direction.

Additional information including a description of the existing forest community can be found in Section 4.11.1.

Table 4.17 – Estimated Wetland Acreage in the Project Study Area and Acreage of Anticipated Impacts

Watershed	Cowardin Abbreviation	Cowardin Classification	Acreage within Study Area	Acreage of Anticipated Impacts
Potomac River – Quantico Creek (HUC 0207001101)	PFO	Palustrine, Forested	17.0	1.1
	Total Wetlands		17.0	1.1
	Total Study Area		278	

4.8.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in construction and would not result in impacts to wetlands.

Build Alternative

The Build Alternative would result in approximately 1.1 acre of total wetland impacts, affecting the Palustrine Forested (PFO) wetlands delineated within the project area (**Table 4.17**). Direct impacts would result from grading, fill, conversation and hydrological isolations/loss of function. Hydraulic isolation/alteration and conversion of vegetative type is less impactful to system function than grading and filling. Further evaluation of the nature of impacts to jurisdictional features including hydrologic alteration would occur during the forthcoming permitting process. The anticipated wetland impacts are concentrated in the southern and northern ends of the project area.

Wetland impacts are anticipated to occur during the construction of this roadway. As may be required, compensation for unavoidable wetland impacts associated with the construction of this project would be made in accordance state and federal regulations. The following wetland compensatory mitigation ratios would be utilized for unavoidable impacts to wetlands (note: these ratios are subject to change during permitting as a result of coordination with regulatory agencies): 2:1 for PFO wetlands impacts, 1.5:1 for Palustrine Scrub Shrub (PSS) wetlands impacts, 1:1 for Palustrine Emergent (PEM) wetlands impacts, 1:1 for PFO to PEM wetlands conversion impacts.

The potential for avoiding impacts to wetlands is restricted by numerous constraints within the project corridor including tie-ins to existing sections of Van Buren Road, existing utilities, proffers within the project area, and location of streams and wetlands. Further evaluation of wetlands, including wetland functional assessments and the Norfolk District Wetland Attribute Form, would be completed during the forthcoming permitting process. Efforts to minimize impacts would be explored in later stages of design and permitting. Wetland mitigation requirements would be developed in concert with the designated State and Federal agencies during the permitting process for this project. Prince William County would coordinate with USACE, DEQ and the Virginia Marine Resources Commission (VMRC) to obtain all required permits.

Unavoidable wetland and WOUS impacts would be mitigated, as required, through the forthcoming permitting process with USACE, DEQ, and VMRC. Mitigation would be satisfied by the purchase of credits from approved private mitigation banks within the same service area as the project as the preferred option. It is acknowledged that credits within the same service area may be limited; if sufficient credits are not available for purchase in the same service area, it is proposed that the remainder of credits required be purchased from approved mitigation banks within the adjacent service area. If credits are not available from private mitigation banks, the project will seek out credits from the Virginia Aquatic Resource Trust Fund (VARTF) in lieu fee program. If credits are not available from private mitigation banks or VARTF, the project would coordinate with the regulatory agencies regarding the use of Permittee Responsible Mitigation (PRM).

4.9 Streams and Water Quality

Surface waters draining the project area consist of Powells Creek, which runs from west to east in the northern portion of the project area. There are also several smaller tributaries of Powells Creek. In the southern portion of the project area there are several unnamed tributaries that eventually drain into Dewey's Creek. The entire project corridor lies within the Potomac River – Quantico Creek watershed (ten-digit HUC 0207001101).

In December 2020, a wetland delineation was performed within the proposed project corridor to identify non-tidal streams and wetlands. In total, approximately 17,369 linear feet of stream were mapped within the project corridor. Stream boundaries were verified and confirmed as jurisdictional by USACE Approved Jurisdictional (AJD) Determination NAO-2021-00347-rdb, dated May 18, 2021. The Delineation Report and AJD can be found in Appendix E.

The water quality of rivers, streams, and waterbodies contained within the study area was evaluated in the recent 303(d) and 305(b) integrated reports released by Virginia and Maryland. Water quality condition data from the Final 2020 305(b)/303(d) Water Quality Assessment Integrated Report (WQAIR), released by VDEQ in 2020, was used to determine the status of impaired waters within the study area (VDEQ, 2020).

4.9.1 Existing Conditions

During the delineation survey, streams in the inventory corridor were classified as either ephemeral (R6), intermittent (R4) or perennial (R3). Ephemeral streams were generally located in areas with the smallest drainage areas, or areas that had drainage diverted away from them. Perennial streams have a much larger watershed. Streams in the study area were found to be relatively undisturbed. All streams were found to have a significant nexus to offsite navigable waters and are therefore considered jurisdictional under the Clean Water Act (CWA). **Table 4.18** shows the approximate total stream lengths within the study area for the watershed, categorized by flow persistence (as defined in Classification of Wetlands and Deepwater Habitats of the United States (Cowardin *et al.*, 1979)). Additional information on the existing stream connections is further documented and detailed in Appendix E. The United Stream Methodology (USM) would be utilized during the permitting phase of the project to determine the amount of stream credits required to mitigate for unavoidable impacts to streams.

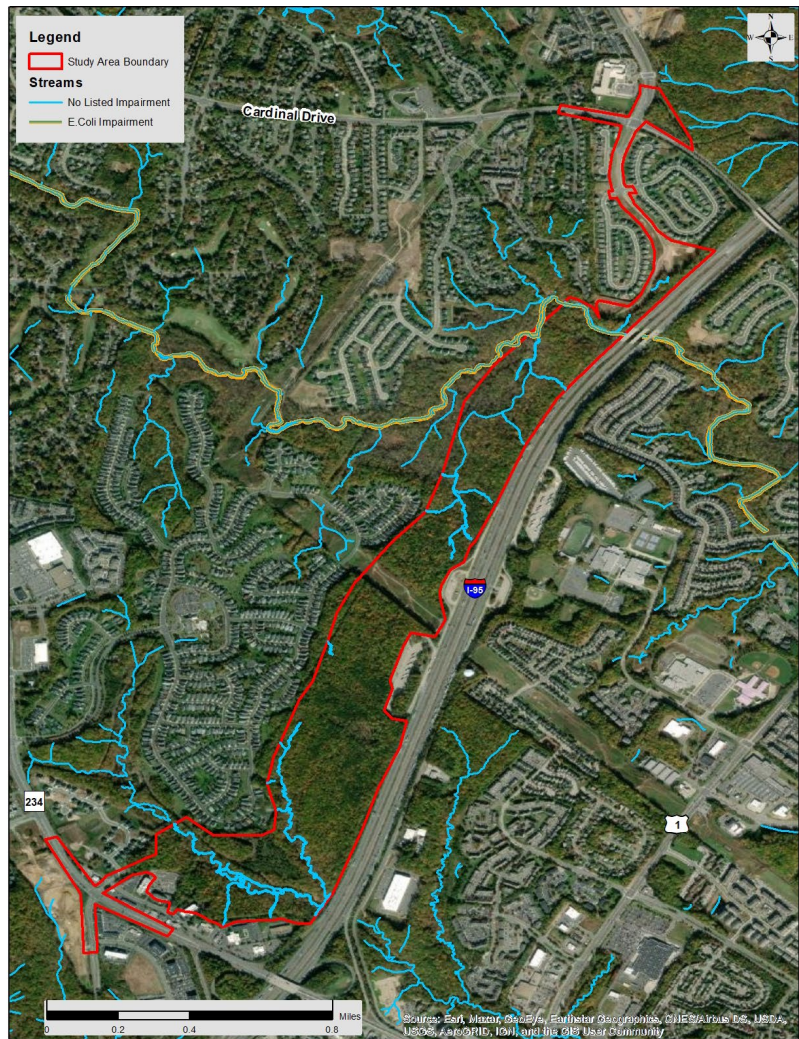


Figure 4.9 – Assessed and Impaired Stream Map

This map shows waterways in the vicinity of the project area that were assessed for water quality. The portion of Powells Creek passing through the project area was classified as impaired.

The most substantial waterway in the project area, Powells Creek, was designated impaired for *E. coli* in 2006 and has an approved Total Maximum Daily Load (TMDL) from 2014 (The Potomac River Tributaries bacteria TMDL for the Powells Creek Watershed, Fed. ID 53801). *E. coli* monitoring for Powells Creek was not performed for the 2020 assessment; for the purposes of the 2020 WQIAR, monitoring data has been carried over from the 2018 monitoring period. No other impairment criteria were listed for surface waters within or immediately downstream of the project area.

Table 4.18 – Estimated Streams in the Project Area

Watershed	Cowardin Abbreviation	Cowardin Classification	Linear Feet within Study Area	Linear Feet of Anticipated Impacts
Potomac River / Quantico Creek/ Chopawamsic Creek (HUC 02070011)	R3	Perennial	11,164	3,128
	R4	Intermittent	5,193	977
	R6	Ephemeral	1,012	767
	Total Stream Impacts			4,872
	Total Streams within the Study Area		17,369	

4.9.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in construction and would not cause impacts to streams or water quality.

Build Alternative

The Build Alternative would result in approximately 4,872 linear feet of stream impacts (**Table 4.18**). Direct impacts would result from grading and the application of fill for the roadway, as well as placement of structures such as culverts. Where required, in-stream culverts would be countersunk to maintain flow through the project area during low flow events. Countersinking of culverts would be addressed during permitting and likely required for stream-to-stream connections for newly installed culverts to allow for aquatic habitat connectivity. The forthcoming final design would evaluate the inclusion of open bottom and/or oversized structures/bridges that may reduce impacts to streams and preserve passage and habitat connectivity. This level of detail would be evaluated as the design progresses during the permitting of the Project. Due to tie-in constraints to the existing sections of Van Buren Road, design requirements and location of streams, there is limited potential to further minimize impacts to streams in the project area. Efforts to minimize impacts would be explored in later stages of design and permitting and all efforts would be coordinated with the appropriate regulatory agencies.

The Van Buren Road Extension would be bridged over Powells Creek and the associated floodplain. The Powells Creek floodplain currently encompasses a forested riparian buffer, which contributes to protecting water quality. Design methods would be implemented to minimize impacts to riparian buffers surrounding the non-impacted streams, thus maintaining a functioning water quality buffer. The current alignment of the proposed roadway runs parallel to the existing I-95 corridor, which minimizes impacts to jurisdictional features. At the southern terminus of the proposed project, the roadway alignment was designed to avoid

multiple stream crossings. The majority of the stream crossings are perpendicular, which minimizes the required length of culverts and direct impacts to the existing stream channels.

During construction, non-point source pollutants have the potential to enter groundwater or surface water from stormwater runoff. Stormwater runoff from the roadway would be captured in stormwater management basins to address water quantity and treat water quality. These basins would be engineered and designed following the 2013 Virginia Stormwater Best Management Practice (BMP) Clearing House criteria, and the Stormwater Management Plan for the project would be subject to the IIB technical criteria. To minimize impacts, appropriate erosion and sediment control practices, as outlined in the 1992 Virginia Erosion and Sediment Control Handbook as amended (DEQ, 1992), would be utilized as well as Best Management Practices (BMP) in accordance with the Virginia Stormwater Management Program (VSMP) permit Stormwater Pollution Prevention Plan (SWPPP) and water quality permits. In addition, permits and associated monitoring would be obtained as determined necessary to meet County MS-4 Regulations. Should the contractor encounter potential hazardous materials during construction, they would be required to notify the proper authorities and address all hazards as directed. There is potential for invasive species to become established along the limits of disturbance of the project during and following construction. Section 244.02(c) of VDOT's Road and Bridge Specifications (2016) includes provisions intended to control noxious weeds (which includes non-native and invasive species). While rights-of-ways may be at risk from invasive species colonization from adjacent properties, implementing the above provisions would reduce or minimize potential for introduction, proliferation, and spread of invasive species. Additionally, the implementation of BMPs for erosion/sediment control and abatement of pollutant loading would minimize indirect impacts to adjoining communities and habitat by reducing excess nutrient loads that could encourage invasive species proliferation.

4.10 Floodplains

In an effort to reduce losses and impacts associated with flooding and preserve the beneficial natural functions of floodplains, federal Floodplain Management mandates outlined in Executive Order 11988 require all federally-funded projects to assess the potential hazards of any action occurring within a floodplain. For the purposes of these mandates, a floodplain is defined as a relatively flat lowland adjacent to inland and coastal waters that are "subject to a one percent or greater chance of flooding in any given year" (E.O. 11988 Amended, 2015). The Federal Emergency Management Agency (FEMA) identifies and maps the nation's flood-prone areas through the development of Flood Insurance Rate Maps (FIRM). Digital floodplain data from the National Flood Hazard Layer was obtained from the FEMA Flood Map Service Center and plotted to determine the location and extent of floodplain areas within the project area (FEMA, 2020).

4.10.1 Existing Conditions

There are approximately 17.2 acres of Federal Emergency Management Agency (FEMA)-mapped floodplains and 6.3 acres of regulatory floodways in the project corridor extending out from Powells Creek. The floodplain resides in the northern portion of the project area. The approximate locations of the 100-year floodplain limits and regulatory floodways in the project area are provided in **Figure 4.10**. Each locality in the study area is required to practice floodplain management and all development within the respective floodplains is restricted for certain activities, such as those associated with private and public utilities, SWM facilities, and road crossings.

4.10.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not involve construction activities and would not result in impacts to the existing floodplain function, values, or elevations.

Build Alternative

The Build Alternative would not result in impacts to the existing floodplain function or values and would not result in a rise in elevation. The Van Buren Road Extension would include a bridge over Powells Creek and the adjacent floodplain to minimize impacts to the 100-year floodplain. One set of piers for the proposed bridge would be located within the floodplain; however, the bridge would not result in a rise in the floodplain water surface elevation.

Implementation of a new bridge over Powells Creek and the temporary impacts associated with construction activities for the roadway would be expected to encroach upon approximately 1.5 acres of the 100-year floodplain and 0.7 acres of regulatory floodways. All applicable sections of VDOT's *Road and Bridge Specifications* (VDOT, 2020), as well as relevant state and federal stormwater management regulations, would be complied with to address stormwater runoff and elevated downstream flood risk concerns. Overall, substantial floodplain encroachment (as defined by 23 CFR 650.115) is not anticipated during construction associated with the Build Alternative and is not anticipated to result in a rise to the floodplain elevation.

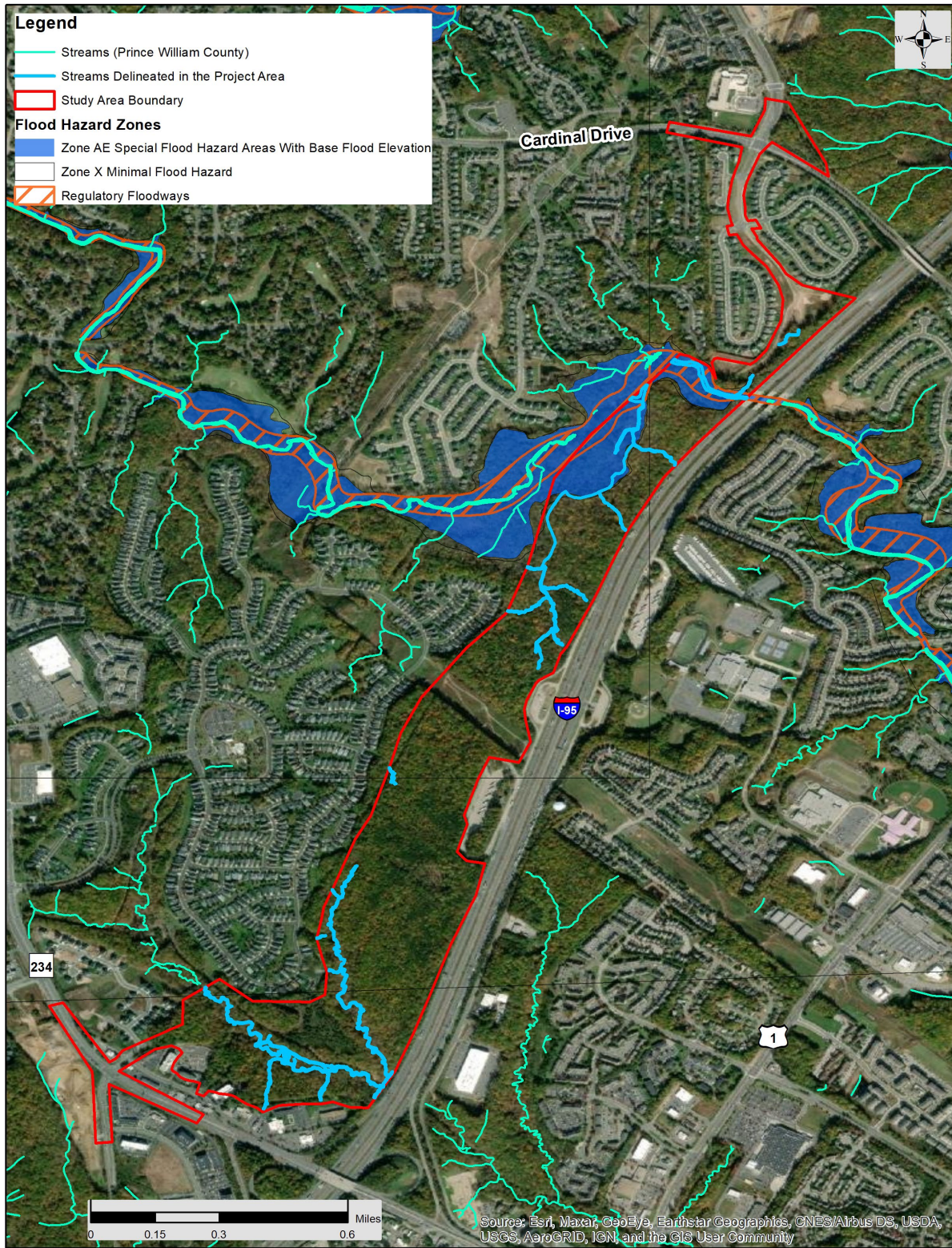


Figure 4.10 – Van Buren Road Extension Project Area Floodplains

This map shows the floodplains of waterways in the vicinity of the project area. Powells Creek runs west to east along the northern section of the project area.

4.11 Wildlife and Wildlife Habitat

The study area encompasses areas that represent suitable aquatic and terrestrial habitats for wildlife. Descriptions of wildlife habitat present in the project area were developed through review of remote imaging resources including aerial imagery and forest cover data obtained from the Prince William County mapper (2022) as well as field observations obtained during the wetland field survey. The Virginia Department of Wildlife Resources (VDWR) Virginia Fish and Wildlife Information Service (VaFWIS) was used to obtain a list of species confirmed as being present within a two-mile buffer of the study area (VDWR, 2022).

4.11.1 Existing Conditions

Terrestrial lands with natural, unmanaged vegetative cover, including forests, account for approximately 242.6 acres of the inventory corridor. Habitat adjacent to the study area has been significantly fragmented by residential, commercial and industrial developments and significant roadways, including the I-95 corridor to the east. Habitat fragmentation in these developed areas has created an abundance of low-quality edge habitat. The proposed roadway poses little to no barrier to crossings by terrestrial species due to the lack of sound walls and fence lines that would otherwise separate the respective sides of the road and prevent wildlife from crossing once constructed. The edge habitat along the proposed roadway would see little degradation in quality of habitat once constructed.

The inventory corridor is dominated by a mix of hardwood tree species with an understory containing herbaceous and vine vegetation. Shrub vegetation was largely absent, most likely from over-browsing due to whitetail deer. The forests in the study area, which were composed primarily of Red Maple (*Acer rubrum*), White Oak (*Quercus alba*) and American Beech (*Fagus grandifolia*), represent potential habitat for many of the typical urban terrestrial wildlife species inhabiting this region. The wildlife species most capable of adapting to habitat fragmentation due to urban and suburban development include but are not limited to: rabbits (*Sylvilagus floridanus malurus*), whitetail deer (*Odocoileus virginianus*), eastern gray squirrels (*Sciurus carolinensis carolinensis*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor lotor*), striped skunk (*Mephitis mephitis*), and many common migratory and non-migratory bird species (VDWR, 2022).

Fish species recorded in area streams have included herrings (*Alosa pseudoharengus* and *Alosa aestivalis*), blacknose dace (*Rhinichthys atratulus*), and common carp (*Cyprinus carpio*). Game fish species observed include the bluegill (*Lepomis macrochirus*), largemouth bass (*Micropterus salmoides*), and chain pickerel (*Esox niger*) (VDWR, 2022). Minimal impacts to stream quality are anticipated (see Section 3.9), culverts for perennial waters are anticipated to require countersinking and, subsequently, impacts on local fish species are expected to be negligible.

4.11.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in construction and would not result in impacts to habitat or wildlife.

Build Alternative

The build alternative is anticipated to result in the clearing and conversion of 74.4 acres of forested terrestrial habitat. Vegetation cleared for the project would result in the fragmentation of the existing contiguous forest stand located within the study area. The road would result in minimal additional restriction of wildlife movement through the study area. Though some reduction of movement is expected between the east and west portions of the study area due to traffic-related restrictions, significant movement restrictions already exist from the I-95 corridor adjacent to the proposed roadway alignment. The proposed bridging of the roadway over Powells Creek would provide an east-west corridor for wildlife movement through the project area as well as access to the floodplain adjacent to Powells Creek.

Some aquatic habitats would be lost due to roadway crossings and roadway fill. These losses would be minimized by utilizing design methods for roadway crossings, such as countersinking instream culverts, that would maintain continuity of aquatic habitat throughout the project area. Utilizing a bridge crossing over Powells Creek reduces the loss of aquatic habitat and terrestrial habitat in the surrounding floodplain. Design methods to avoid altering natural streams bottoms and riparian areas would be implemented as practicable to further reduce impacts to habitat. In addition, the proposed bridge may provide habitat for bats and migratory birds protected under the Migratory Bird Treaty Act. The potential for proposed bridges and structures to provide habitat for species of bat and nesting birds is undetermined at this early stage in the project design; this level of detail would be evaluated as the design progresses. It is not anticipated that VDOT and USFWS protocols would be necessary regarding Bridge/Structure Bat Inventories as there are no existing structures to be demolished. Additional design methods to reduce impacts to habitat, aquatic and terrestrial resources would be implemented and explored during the design and permitting of the Build Alternative.

4.12 Threatened, Endangered, and Special Status Species

The Endangered Species Act (ESA), as enforced by the U.S. Fish and Wildlife Service (USFWS), prohibits the taking of endangered and threatened species except under Federal permit. Similarly, the Virginia Department of Agriculture and Consumer Services (VDACS) regulates the conservation of threatened and endangered species of plants and insects in Virginia, while the Department of Wildlife Resources (VDWR) legally authorizes preservation of threatened and endangered vertebrate and non-insect invertebrate species in the state. To remain in compliance with species conservation and preservation plans adopted by these agencies, it is necessary to determine the presence of at-risk species in the project area. The information discussed below was obtained from a review of the USFWS Online Information, Planning and Conservation (IPaC) review process, VDWR databases, and Virginia Department of Conservation and Recreation (DCR) databases and is summarized in **Table 4.19**. The table includes species currently listed as threatened or endangered that are known to occur, or have the potential to occur, within the vicinity of the study area in addition to each species' listed status and listing informational source.

Table 4.19 – Potential Threatened and Endangered Species

Species (common name)	Scientific Name	Status*	Tier+	Source^
Monarch Butterfly	<i>Danaus plexippus</i>	FC	IIIa	USFWS & VDWR
Atlantic Sturgeon	<i>Acipenser oxyrinchus</i>	FE, SE	Ib	VDWR
Harperella	<i>Ptilimnium nodosum</i>	FE, SE	-	VDACS
Small Whorled Pogonia	<i>Isotria medeoloides</i>	FT, SE	-	USFWS & VDACS
Northern long-eared bat	<i>Myotis septentrionalis</i>	FE, ST	Ia	USFWS & VDWR
Yellow lance	<i>Elliptio lanceolate</i>	FT, ST	IIa	VDWR
Little brown bat	<i>Myotis lucifugus</i>	SE	Ia	VDWR
Tri-colored bat	<i>Perimyotis subflavus</i>	FP, SE	Ia	USFWS & VDWR
Brook floater	<i>Alasmidonta varicosa</i>	SE	Ib	VDWR
Wood turtle	<i>Glyptemys insculpta</i>	ST	Ia	VDWR
Peregrine falcon	<i>Falco peregrinus</i>	ST	Ia	VDWR
Loggerhead shrike	<i>Lanius ludovicianus</i>	ST	Ia	VDWR
Henslow's sparrow	<i>Ammodramus henslowii</i>	ST	Ia	VDWR
Migrant loggerhead shrike	<i>Lanius ludovicianus migrans</i>	ST	-	VDWR

Species listed in bold were identified for further consideration

*FE = Federally Endangered; FT = Federally Threatened; SE = State-Endangered; ST = State Threatened; FP = Federal Proposed; FC = Federal Candidate

+Tier represents the conservation need as defined by the VA Wildlife Action Plan. Tier I – Critical Conservation Need; Tier II – Very High Conservation Need; a = On the ground management strategies/actions exist and can be feasibly implemented; b = On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.

^VDWR = Virginia Department of Wildlife Resources, Fish and Wildlife Information Service; USFWS = U.S. Fish and Wildlife (USFWS) Online Information, Planning, and Conservation (IPaC); VDACS = Virginia Department of Agriculture & Consumer Services

4.12.1 Existing Conditions

According to an October 2023 review of the U.S. Fish & Wildlife Service's (USFWS) Online Information, Planning and Conservation (IPaC) system, four federally-listed species were reported in the vicinity of the Van Buren Road project area: the Northern Long-Eared Bat (*Myotis septentrionalis*), Tricolored Bat (*Perimyotis subflavus*), Monarch Butterfly (*Danaus plexippus*), and the Small Whorled Pogonia (*Isotria medeoloides*). An October 2023 review of the VDWR online Virginia Fish and Wildlife Information Service (VaFWIS) database listed 12 threatened or endangered species as potentially occurring in or near the project area. None of the species listed in **Table 4.19**, including the Northern long-eared bat (NLEB), are listed as having confirmed records of presence within, or in a two-mile radius, of the project area centroid. One of the species listed in **Table 4.19**, Wood Turtle (*Glyptemys insculpta*), is listed as having potential presence within, or in a two-mile radius, of the project area. Additionally, the majority of the listed species have no known or suitable habitat within the project area and critical habitat was not identified. However, the range of the NLEB overlaps with the project area, and portions of the project area fall within a 3-mile buffer of an NLEB capture site. In addition, suitable habitat for Harperella (*Ptilimnium nodosum*) and Small Whorled Pogonia (*Isotria medeoloides*) was observed within the project corridor. See below for further discussion regarding these species. The Tricolored Bat is currently listed as a proposed federally endangered species and the Monarch Butterfly is currently listed as a federal candidate species, under which no current protections are afforded by the ESA. Supporting documentation can be found in Appendix F.

Harperella (Ptilimnium nodosum; Federally Endangered/State Endangered)

Habitat assessments for Harperella were completed in March of 2021 by Rouse Environmental Services; potential habitat for the species was identified along the portion of Powells Creek running through the project corridor. A habitat assessment for Harperella was determined necessary based upon the species being identified as potentially present in the project area during the preliminary IPaC review in November of 2020. This species was not identified in the 2023 IPaC database reviews and will not be evaluated further.

Small Whorled Pogonia (Isotria medeoloides; Federally Threatened/State Endangered)

Habitat assessments for Small Whorled Pogonia were completed in March of 2021 by Rouse Environmental Services; potential habitat for the species was identified throughout the project corridor. A habitat assessment for the Small Whorled Pogonia was determined necessary based upon the species being identified as potentially present within the project area during the preliminary IPaC review in November of 2020. This species was also identified in the June 2023 IPaC database review. Species surveys will be conducted during the next available survey window to confirm the presence or absence of Small Whorled Pogonia within the project area.

Northern Long-Eared Bat (NLEB; Myotis septentrionalis; Federally Endangered/State Threatened)

The USFWS IPaC conducted for this project lists the NLEB as having the potential to be present within the project area as this project falls within the known range of the species. The project area contains approximately 242 acres of potentially suitable roosting habitat within the contiguous forested patches within the project corridor. According to VDWRs VaFWIS database, the NLEB has not been observed within, or in a 2-mile radius, of the centroid of the project area. However, VDWR's NLEB Regulatory Buffer Interactive Tool indicates that the southern portion of the project area falls within a 3-mile buffer of an NLEB capture location, and that there are known NLEB occupied maternity roosts approximately 1.75 miles south of the project area in Prince William Forest Park.

Bald Eagles (Haliaeetus leucocephalus)

Bald Eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), enacted in 1940, making it necessary to account for the presence of eagles in and adjacent to the project area. Database searches were conducted in order to identify Bald eagle nests and concentration areas in the vicinity of the project area (CCB, 2021; USFWS, 2018b). The nearest documented Bald eagle nest is located approximately 3.8 miles from the project area and the closest Bald eagle concentration area is approximately two miles from the proposed project area (maps located in Appendix F).

Essential Fish Habitat

The potential presence of Essential Fish Habitat (EFH) was determined through a review of the NOAA Fisheries Essential Fish Habitat Mapper. A small portion of the southern end of the project area is shown as overlapping with a defined EFH buffer area for a number of Mid-Atlantic and New England species. However, no EFH waters are identified in the project area and there are no tidal waters within this area either. In addition, as noted in the documentation in Appendix F, there are no confirmed or potential anadromous fish waters within the project area.

Natural Heritage Resources

A project review of Natural Heritage resources within the Van Buren Road Northern Extension project area was completed in April 2021 using the Virginia Department of Conservation & Resources (DCR) online Natural Heritage Program (NHP) database. A search of the project area as well as areas within 2 miles of the project site identified a potential for Small Whorled Pogonia to occur within the project area. In addition, DCR identified the project area as an Ecological Core habitat as modeled in the Virginia Natural Landscape Assessment. No additional natural heritage resources or predicted suitable habitat was identified within or adjacent to the project area (documentation is in Appendix F). An updated project review using the DCR online NHP database would be conducted during the permitting phase of the project to re-confirm the presence or absence of natural heritage resources or predicted suitable habitats.

4.12.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in construction and would not result in impacts to threatened, endangered, or special status species.

Build-Alternative

Harperella

This project has the potential to temporarily impact Harperella habitat identified around Powells Creek within the project area. However, permanent impacts to this habitat is not anticipated as the crossing over Powells Creek would be bridged. Shading effects may decrease habitat suitability for portions of suitable habitat directly under the bridge.

Small Whorled Pogonia

This project has the potential to impact Small Whorled Pogonia habitat identified within the project area. Portions of suitable habitat would be eliminated within the footprint of the roadway; however, of the 27.9 acres of potential habitat identified within the project study area, the roadway is anticipated to impact approximately 8.1 acres, or less than 30%, of the identified habitat within the project corridor. Species surveys and further agency coordination will be conducted during the next available survey window to confirm the presence or absence of Small Whorled Pogonia within the project area and any necessary mitigation measures.

Northern Long-Eared Bat

The project area consists of approximately 242 acres of potential NLEB summer roosting habitat. The habitat is located throughout the project alignment as the majority of the project location is currently forested. Approximately 74.4 acres of forest are anticipated to be cleared for the Build Alternative. The project would not require removal of a known occupied maternity roost tree or tree removal activities within 150 feet of a known occupied maternity roost tree or within 0.25 miles of hibernacula. According to the VDWR NLEB Winter Habitat and Roost Trees Map tool, there are no known hibernacula or roosting trees within or adjacent to the project area.

This project would impact more than 20 acres of suitable habitat per 5 miles of roadway; therefore, it is not anticipated to qualify under the FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat. Using the IPaC NLEB Rangewide Determination Key, a determination of 'May Affect' was reached for the project. It is anticipated that this project would abide by applicable Time-of-Year-Restrictions for tree removal to mitigate potential impacts to the NLEB. Steps to complete the Section 7 re-consultation process during the permitting phase of the project would be taken. These steps would likely include:

- Updating the database searches to list current species;
- Performing informal consultation with the USFWS to determine if the species or critical habitat is potentially present;
- Determining what effect the project may have on the species or its habitat;
- Conducting additional presence/absence surveys, as determined necessary; and
- Preparing a Biological Assessments for any species to support Section 7 formal consultation, as determined necessary.

Bald Eagle

As no documented Bald Eagle nests or concentration areas were identified within one mile of the proposed project area, it is not anticipated that the project would result in adverse impacts Bald Eagle nests or documented bald eagle concentration areas.

Essential Fish Habitat

There are no habitats appropriate for marine and/or anadromous aquatic species within the project area. EFH would not be adversely affected by the proposed project.

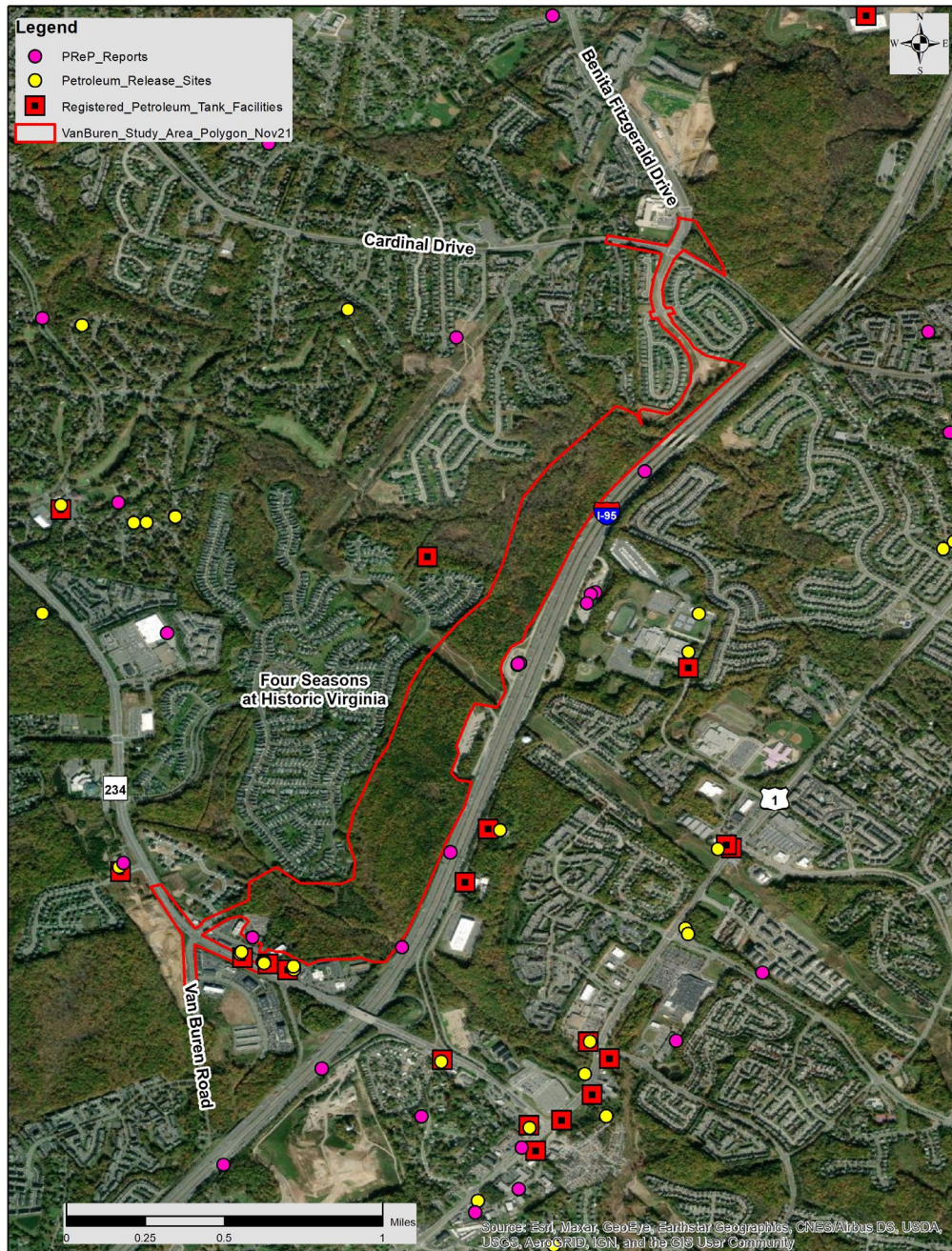
4.13 Hazardous Materials

A search of Federal and State regulatory agency databases was performed to identify the potential for encountering recognized environmental conditions (RECs) within the project area.

4.13.1 Existing Conditions

There are six (6) Resource Conservation and Recovery Act (RCRA) registered sites within or immediately adjacent to the project area; four (4) gas stations, one (1) dry cleaners, and one (1) Truck Repair facility (Ken’s Truck Repair). The majority of these facilities are located along Dumfries Road at the southern end of the project corridor. All four gas stations are registered as active tank facilities, while the Truck Repair facility is registered as a closed/inactive tank facility.

Between 1987 and 2019, there have been nine (9) Petroleum releases recorded at the gas stations along Dumfries Road. All cases are closed. An additional petroleum release was recorded at Ken’s Truck Repair in 1999; this case has also been closed. No other releases have been recorded within or adjacent to the project area (see **Figure 4.11**).



Eleven (11) Pollution Response Program (PReP) incident sites have been recorded in the vicinity of the project area between 2019 and 2021; the majority of the records are associated with the I-95 corridor and adjacent facilities and fall outside of the project study area. The one record falling within the study area was for an unknown odor from the Comfort Inn off of Old Stage Road. All records are reported as closed (see **Figure 4.11**).

4.13.2 Environmental Consequences

No-Build Alternative

The No-Build Alternative would not result in construction and would therefore not disturb soil or groundwater that might have been impacted by existent hazardous material sites.

Build Alternative

During the final design and permitting phases of the project, a Phase I Environmental Site Assessment (ESA) would be performed in general accordance with the provisions of ASTM (American Society for Testing and Materials) E1527-13, *Standard Practice for Environmental Site Assessment Process* (ASTM International, 2013). The purpose of the Phase I ESA would be to evaluate the subject property's history and existing conditions to help identify past or current environmental impacts onsite, which could have an impact on the proposed project.

None of the identified RCRA facilities or petroleum release sites are anticipated to be impacted by the proposed project as work adjacent to the facilities/sites is not expected involve regrading or any extensive ground disturbance.

Should the contractor encounter areas of potential contamination during construction of the roadway, the contractor would be required to notify the appropriate state and local authorities and may be required to develop and implement appropriate procedures for the proper management and coordinated removal, disposal, and/or treatment of contaminated materials, as determined necessary. The project would meet compliance requirements of the VSMP by incorporating best management practices, as is required in the Stormwater Pollution Prevention Plan.

4.14 Indirect and Cumulative Effects

4.14.1 Indirect Effects

The Council for Environmental Quality (CEQ) defines indirect effects as effects caused by the action which are removed in distance or time but still reasonably foreseeable (40 CFR 1508.8(b)). Indirect effects may include effects, such as development-inducing effects, related to "induced changes in land-use patterns, population density or growth rate, and related effects on natural resources, including ecosystems" (40 CFR 1508.8(b)). A more detailed discussion of the methodology for the analysis of indirect effects can be found in the Indirect and Cumulative Effects Technical Analysis Consultant Guidance (VDOT, 2016).

Table 4.20 – Summary of Potential Indirect Effects and Cumulative Impacts

Resource Category	Potential Indirect Effects	Type of Potential Impact	Level of Impact	Potential Cumulative Impact	Type of Potential Impact	Level of Impact
No Build Alternative						
Land Use and Planned Development	Continued local development consistent with County planned land uses and zoning	Negative	Minimal	Potential alteration of local land use objectives	Negative/Positive	Slight
Right-of-Way and Property Acquisitions	Reduction in right-of-way acquisitions	Positive	Minimal	Increase in property values from additional local development	Positive	Minimal
Socio-economics	Continued development without complimentary transportation improvements; diminished access to community facilities	Negative	Moderate	Increased development and job opportunities; decreased mobility to jobs, community facilities	Positive/Negative	No expected net effect
Air Quality	Increase in local traffic congestion & delays	Negative	Slight	Increased production of pollutants associated with traffic congestion	Negative	Slight
Noise	-	-	-	No increase in traffic noise; increases in noise associated with planned developments in project area and loss of forest buffer from I-95 corridor.	Negative	Slight
Aquatic Resources	Increases in impermeable surfaces and downstream runoff	Negative	Slight	Continuation of development in Powells Creek watershed in accordance with County's Long Range Plan, leading to loss of wetlands, stream channels and impacts to water quality	Negative	Slight

Resource Category	Potential Indirect Effects	Type of Potential Impact	Level of Impact	Potential Cumulative Impact	Type of Potential Impact	Level of Impact
<i>No Build Alternative continued</i>						
Natural Resources	Continued development resulting in loss of natural vegetated habitat, including forested areas	Negative	Minimal	Continuation of activities resulting in fragmentation and degradation of natural wildlife habitat	Negative	Slight
<i>Build Alternative</i>						
Land Use and Planned Development	Potential alterations to current land use plans and zoning	Negative	Minimal	Facilitation of planned development	Positive	Moderate
Right-of-Way and Property Acquisitions	Reduction in privately-owned land	Negative	Minimal	Increase in property values from access provided by roadway	Positive	Minimal
Socio-economics	Improved road network conditions for commuters, shoppers, community	Positive	Moderate	Increased mobility, local development and job opportunities for community	Positive	Slight
Air Quality	Increase in overall traffic passing through the area/decrease in local traffic congestion	Positive/ Negative	No net effect	Lower net production of air pollutants due to less congestion/idling vehicles	Positive	Slight
Noise	-	-	-	Elevated noise impacts due to slight overall increases in local traffic & development; loss of forest buffer from I-95 corridor.	Negative	Slight

Resource Category	Potential Indirect Effects	Type of Potential Impact	Level of Impact	Potential Cumulative Impact	Type of Potential Impact	Level of Impact
<i>Build Alternative continued</i>						
Aquatic Resources	Increases in impermeable surfaces and downstream runoff	Negative	Slight	Continuation of development in Powells Creek watershed, leading to loss of wetlands, stream channels and impacts to water quality	Negative	Slight
Natural Resources	Induced development resulting in loss of natural vegetated habitat, including forested areas	Negative	Minimal	Continuation of activities resulting in fragmentation and degradation of natural wildlife habitat	Negative	Slight

No-Build Alternative

It is anticipated that land development would continue to occur in the Southbridge and Montclair, VA areas under the No-Build Alternative. The rapid population growth and increase in job opportunities in Prince William County is expected to continue (as discussed in Section 4.2.1), and complementary development is anticipated to continue to meet market demands. The majority of the land within the project area is zoned as Industrial and Residential by Prince William County and existing proffers would be expected to result in development within the project area. The No-Build Alternative is not anticipated to spur development that is not already in process, planned, or previously zoned.

Potential effects of development that would occur with a No-Build Alternative include parcel development with parcel-specific infrastructure, and potentially displacements for existing and proffered future projects. Property relocations and displacements would not be anticipated to significantly degrade the cohesiveness or stability of the surrounding neighborhoods as the communities continue to adopt development and improvement projects.

The No-Build Alternative results in adverse indirect effects to local traffic, natural resources and safety that would be exacerbated over time. Traffic congestion along the surrounding roadway corridors would remain and, with further development in the area, traffic volumes would increase, resulting in more substantial delays and greater levels of congestion.

Build Alternative

As with the No-Build Alternative, development in the project area and the surrounding communities is expected to continue. Many current and planned developments in the Montclair, Dale City and Dumfries communities do not require the implementation of the proposed roadway as they can be accessed by the existing roadway network. Implementation of the Van Buren Boulevard Extension is intended to improve accessibility to growth that is already planned and/or in progress. The Build Alternative would add another north-south connection to an increasingly developed area. This connection, providing an alternative route for local and regional traffic through the Dumfries/Montclair area, would decrease commute times, reduce que times at area intersections and improve overall accessibility of community features. Benefits from the alternative north-south route would be utilized by the surrounding communities.

As this is a roadway on a new alignment, the acquisition of Right-of-Way would be required for the majority of the project with the exception of the proposed tie-ins at Dumfries Road and Cardinal Drive. No complete parcel acquisitions or relocations would occur and there are no anticipated direct impacts to EJ populations. Indirect effects from increased noise levels and degraded visual aesthetics for the surrounding area are anticipated.

Indirect effects to wetlands, streams, water quality, wildlife habitat and threatened and endangered species could potential occur due to construction activities. Hydrologic patterns resulting from increased run off could potentially affect downstream water quality. Stormwater management would be implemented to minimize impacts to water quality within the applicable drainage basins. Proper measures, including erosion and sediment controls, implemented during construction in compliance with state and federal regulations would be strictly adhered to in efforts to minimize adverse impacts.

4.14.2 Cumulative Effects

The cumulative effects of a proposed project are defined by the CEQ as environmental impacts that result from “incremental impact of the action when added to other past, present, and reasonably foreseeable future actions” regardless of the party implementing the tangential actions. Cumulative effects may be the culmination of numerous individually minor actions which gain significance when viewed collectively (40 CFR § 1508.7). The cumulative effects analysis utilized here is defined as that outlined in FHWA’s Guidance: Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process (FHWA, 2014). Based on the five-part evaluation process outlined in Fritiofson v. Alexander, 772 dF.2d 1225 (5th Cir. 1985), cumulative effects are evaluated using the following criteria:

- a. the geographic area affected by the proposed action;
- b. the resources affected by the action;
- c. past, present, and reasonably foreseeable actions that have impacted the identified resources;
- d. specific impact to those resources; and
- e. overall impact on the identified resources by the accumulated actions?

No-Build Alternative

The No-Build Alternative would not contribute to the long-term efforts of Prince William County to improve its transportation system with an additional arterial north-south roadway. Continued growth in the county and surrounding region would result in additional congestion along local roadways. The need for additional throughways would increase and result in the relocation of the proposed north-south corridor to another location, potentially resulting in the widening and/or improvement of existing roadways.

The project area would be developed by encroaching residential and industrial uses in accordance with the zoning for the area. Neighborhoods in the Dumfries, Dale City and Montclair area would continue to lack direct through access between Route 234 and Cardinal Drive and expansion of these neighborhoods would continue without sufficient ingress or egress. Community facilities and businesses, including local schools in the area (i.e. Fannie W. Fitzgerald Elementary School, Potomac Senior High School, Calvary Baptist Church, First Mount Zion Baptist Church, and Neabsco Baptist Church), would be increasingly inaccessible due to congestion on smaller local roads.

Traffic Conditions & Considerations

Arterial roads within the Montclair/Dumfries area currently experience high volumes of traffic due to the growth in southern Prince William County. As noted in VDOT’s 2019 traffic data publication (VDOT, Dumfries Road (Rt. 234) had an Average Daily Traffic (ADT) volume of between 39,000 and 49,000 between US Route 1 and Country Club Drive. Cardinal Drive experienced ADT volumes of 18,000 for the portion between US Route 1 and Beau Ridge Drive. The existing portion of Van Buren Road south of Dumfries Road experienced ADT volumes of 9,700. These traffic volumes are expected to increase with anticipated continued population and job growth in Prince William County (see **Table 2.4**).

Currently, the geography of school districts in the Montclair/Dumfries area is limited based on direct access to either Dumfries Road or Cardinal Drive due to a lack of connections between the two east-west corridors. Residents in communities along Dumfries Road have limited travel options to local schools, the many of which are located adjacent to or north of Cardinal Drive, subjecting them to difficult commutes along the limited north-south corridors in the area. These limited travel choices also apply to residents attending the Woodbridge Campus of the Northern Virginia Community College. The No-Build Alternative would not provide an alternative route for local commuting students.

The Sentara Medical Center, located northeast of the project area, represents the largest proximate medical facility for the Montclair and Eagle Point communities. Presently these neighborhoods must use the heavily-trafficked I-95 and US Route 1 corridors to access this facility, subjecting residents to significant delays during peak travel times. In addition, nearby rescue squads located along Cardinal Drive and Dale Boulevard, including Prince William County Fire Stations numbers 10 and 17 and the Garfield Station, currently have limited options for reaching communities along Dumfries Road, subject to the same heavily-trafficked north-south corridors.

Build Alternative

Historic and recent development has led to the fragmentation of natural resources and communities in the Montclair/Dumfries area. One consequence of this fragmentation is decreased accessibility of community facilities and businesses to the surrounding community. The Build Alternative would provide enhanced connectivity and improved access to local features, including local places of worship (First Mount Zion Baptist Church, Calvary Baptist Church and Neabsco Baptist Church), numerous local schools (including Fitzgerald Elementary School, Potomac Middle School and Potomac High School), and local commercial centers along Dumfries Road and Dale Boulevard. The Build Alternative would facilitate present and future planning and development in the project area by providing a planned alternative north-south travel corridor and access to proffered parcels adjacent to the proposed roadway.

The Build Alternative would contribute to cumulative impacts to wildlife habitat, wetlands, streams, threatened and endangered species, and historic resources that have occurred in the past within study area. These effects would be minimized through implementation of best management practices and avoidance and minimization during the final design of the alternative. The majority of the wetland and stream systems in the project area would be maintained up and downgradient of the project.

Traffic Conditions and Considerations

It is anticipated that 116,100 new individuals, 43,300 new households and 92,200 new jobs would be added to the region between now and 2040 (MWCOC, 2018). The construction of the Van Buren Road Extension is anticipated to serve new demand associated with projected development and growth in the project area and to provide alternative travel choices to existing parallel north-south corridors. The Van Buren Road Extension – NEPA Traffic Analysis dated July 2, 2021 (Appendix A) studied the anticipated effects on existing traffic upon the construction and opening of the proposed section of Van Buren Road as part of the project's traffic operations analysis.

Though the proposed roadway is not anticipated to reduce overall traffic loads within the Montclair/Dumfries area, it is expected to re-direct north-south traffic in the area off of smaller residential roads such as Waterway Drive and Spriggs Drive. In addition, anticipated LOS for the intersection of Dumfries Road and Van Buren Road/Old Stage Road under the Build alternative is anticipated to operate at LOS E and LOS F in 2025 and 2040, respectively, during the PM peak with slight improvement in delay from No-Build conditions. New roadways such as the proposed Van Buren Road Extension are anticipated to be necessary to meet demands associated with proposed developments in the project area and to provide alternative travel choices to existing parallel north-south corridors.

As the population of Prince William County continues to increase, the number of school aged children, and the need for additional schools, will also increase. In 2018, there were approximately 91,000 school

aged children (Ages 5-17) in Prince William County; by 2040, that demographic is expected to grow by about 25% to more than 114,000 potential students (MWCOCG, 2018). In attempting to serve these growing student populations, a new middle school (Potomac Shores Middle School) was opened for the 2021-2022 school year. The Van Buren Road Extension would facilitate adjustments to school districts in the Montclair/Dumfries communities, such as those necessary with the addition of Potomac Shores Middle School, to accommodate shifting neighborhood demographics without substantially increasing commuting times for students. Likewise, students from these communities who attend the nearby Woodbridge Campus of the Northern Virginia Community College would be able to commute to school more efficiently with improved access to another arterial north-south route.

The Van Buren Road Extension would provide direct access from neighboring communities and improve emergency response within the Montclair/Dumfries communities and facilitate better access for residents of these communities to the Sentara medical facilities. Providing alternative routes would relieve congestion and divert traffic away from smaller residential roads, including Waterway Drive and Spriggs Drive. Reducing congestion on smaller routes and providing an alternate north-south corridor would also allow emergency vehicles to travel those routes unimpeded when necessary and reach communities along Dumfries Road more quickly.

Socioeconomics and Community Facilities

The implementation of the project would result in beneficial impacts within the study area by increasing mobility, relieving congestion and increasing mobility to local development. The increased mobility would also support the planned use and development of the area. Minority populations would benefit and equally experience the project benefits. This project would additionally further facilitate the population growth as well as a result of jobs and economic benefits associated with development.

Foreseeable transportation and development projects would continue to increase in the project area. This project would provide beneficial impacts, both directly and indirectly, to the surrounding communities, including minority populations, by providing improved access to local neighborhoods, schools, business, and emergency facilities.

Land Use and Planned Development

Implementing the proposed project would require acquisitions of Right-of-Way, resulting in partial takes of a number of properties. Other present and reasonably foreseeable future actions from development within the project area are not anticipated to require additional Right-of-Way. Planned developed in the reasonably foreseeable future will continue as the majority of the project area is zoned for industrial and residential uses.

Aquatic Resources

Numerous wetlands have been identified in the project area, which is located within the Powells Creek subwatershed. Present and past development has degraded the Powells Creek watershed and will continue to impact wetlands. Wetland impacts would be subject to mitigation in accordance with state and federal regulations. This project is expected to have adverse impacts to WOUS, wetlands and water quality and contribute to cumulative wetland impacts, though these impacts are anticipated to be comparable to those of other transportation projects in the area. Avoidance and minimization of wetland impacts would be implemented during final design and permitting stage, which would include the development of a restoration plan for temporary impacts that would be coordinated with the regulatory agencies.

Multiple unnamed tributaries to Powells Creek and Quantico Creek are located within the project area, and all are associated with the Potomac River-Quantico Creek watershed (ten-digit HUC 0207001101). Present and reasonably foreseeable future actions would impact streams in the area. Resulting stream impacts would be avoided and minimized to the greatest extent feasible and mitigated where avoidance is not feasible and the restoration plan would address any temporary impacts to the tributaries. The 100-year

floodplain associated with Powells Creek is located within the project area; no significant impacts to the floodplain are anticipated.

Due to proposed developments, water pollutants from roadway run off and salts are anticipated to increase. Potential impacts to water quality from the proposed roadway would be addressed through the implementation of stormwater management Best Management Practices (BMP). As all future developments would be subject to state and federal regulations protecting streams, wetlands and water quality, it is anticipated that subsequent development would have limited impacts to aquatic resources.

Natural Resources

The proposed project, including present and future actions, are expected to continue to alter and convert natural wildlife habitat to other uses. Alteration of wildlife habitat would further result in fragmentation of habitat, thus, wildlife species and the quantity of species would change in the area. The majority of the subject area has already experienced fragmentation due to adjacent developments. Species remaining within the project area are highly adaptable and are expected to remain as development continues.

Federally and state listed threatened and endangered species have the potential to be present within the project area. The proposed Van Buren North Extension project would implement all practicable efforts to protect and conserve listed species.

5.0 – Agency and Stakeholder Coordination and Comments

5.1 Agency & Tribal Coordination

In March of 2021, scoping letters and questionnaires were mailed to state, federal, and local agencies and organizations to obtain pertinent information and data related to potential environmental impacts within the Van Buren North Extension project area. Below is a list of agencies with which coordination has occurred/been attempted to this point in time for the proposed project.

Local/Regional Entities:

- Fannie W. Fitzgerald Elementary School
- Mary Williams Elementary School
- Neabsco District Supervisor
- Northern Virginia Community College (Woodbridge Campus)
- Northern Virginia Regional Commission
- Potomac District Supervisor
- Potomac Middle School
- Potomac and Rappahannock Transportation Commission
- Potomac Senior High School
- Prince William County Board of Supervisors
- Prince William County Chamber of Commerce
- Prince William County Department of Community Services
- Prince William County Department of Economic Development
- Prince William County Department of Fire and Rescue
- Prince William County Department of Parks & Recreation
- Prince William County Department of Planning and Zoning
- Prince William County Department of Public Works
- Prince William County Department of Social Services
- Prince William County Health District
- Prince William County Office of Executive Management
- Prince William County Office of Historic Preservation
- Prince William County Public Schools
- Prince William County Service Authority
- Woodbridge District Supervisor

State Agencies & Organizations:

- Virginia Department of Conservation and Recreation
- Virginia Department of Environmental Quality
- Virginia Department of Forestry
- Virginia Department of Health
- Virginia Department of Historic Resources
- Virginia Department of Mines, Minerals and Energy
- Virginia Department of Transportation
- Virginia Department of Wildlife Resources
- Virginia Marine Resource Commission
- Virginia Outdoors Foundation
- Virginia Railway Express

Federal Agencies:

- U.S Army Corps of Engineers Northern Virginia Field Office

- U.S. Department of Agriculture – Natural Resources Conservation Service
- U.S. Environmental Protection Agency, Region 3 (Mid-Atlantic)

Tribal Entities:

- Chickahominy Indian Tribe
- Delaware Nation
- Monacan Indian Nation
- Nansemond Indian Nation
- Pamunkey Indian Tribe
- Rappahannock Tribe
- Upper Mattaponi Indian Tribe

5.1.1 Agency Scoping Responses

A number of responses to the scoping letters were received identifying transportation needs, environmental resources and other relevant factors to be analyzed as part of this environmental assessment. **Table 5.1** below provides a summary of the responses received. Copies of the correspondence are provided in Appendix G.

Table 5.1 – Summary of Responses to the Scoping Letter

Agency/Organization	Scoping Response	Date Response Received
Virginia Department of Wildlife Resources (DWR)	We recommend that you conduct a preliminary desktop analysis to evaluate your project’s potential impacts upon the Commonwealth’s wildlife resources by accessing our online information system, the Virginia Fish and Wildlife Information Service (VaFWIS) and using the Geographic Search function to generate an Initial Project Assessment (IPA) report.	March 16, 2021
Pamunkey Indian Tribe	No comment but asked to be notified in the event of inadvertent discovery.	March 11, 2021
Monacan Indian Nation	At this time, the Nation does not wish to actively participate in this consultation project, because this project is outside their ancestral territory. They would like to be contacted if sites associated with native history may be impacted by this project; Adverse effects associated with this project are identified; Human remains are encountered during this project; Unanticipated native cultural remains are encountered during this project; Other tribes consulting on this project cease consultation; or the project size or scope becomes larger or more potentially destructive than currently described.	March 18, 2021

Agency/Organization	Scoping Response	Date Response Received
U.S. Department of Agriculture – Natural Resources Conservation Service	A state soil scientist stated that the proposed project area is considered urbanized area and is not subject to the Farmland Protection Policy Act (FPPA) and therefore he agreed that there are no affected Prime Farmlands in the project area.	March 22, 2021
Rappahannock Tribe	The Rappahannock Tribe does not wish to be a consulting party for this project because the project area is outside their general region of concern, which is the historic and contemporary homeland of the Rappahannock Tribe.	March 23, 2021
Virginia Department of Environmental Quality (DEQ)	The response did not address scoping concerns (the office responding does not participated in scoping efforts) but instead gave directions for how to submit NEPA documentation and solicited responses from other state and local agencies. In addition, the response listed numerous databases that might be utilized for preparing NEPA documents.	March 26, 2021
Virginia Department of Historic Resources (DHR)	The response summarized the historic resources Dewberry presented in their scoping letter and explained how they would like to review and comment on the Phase 1 Archeological Survey that will be conducted for this project. The project has been assigned DHR File # 2021-0073 and all further correspondence and submissions for this project to DHR should be provided via hard copy.	March 30, 2021
Prince William Service Authority	Plans and maps of existing and proposed Service Authority utilities have been provided to Mr. Mark Brewer of Dewberry on February 23, 2021. All potential utility conflicts with Service Authority water and sanitary mains will need to be addressed and mitigated as necessary with the design and construction of the roadway.	March 30, 2021

Agency/Organization	Scoping Response	Date Response Received
Prince William County Department of Public Works - Environmental Services	<p>The response presented the following:</p> <ul style="list-style-type: none"> - Prince William County Mapper depicts Resource Protection Area (RPA), Floodplain, and FEMA Floodway throughout the extent of the project. - All due diligence should be followed in terms of the identification of any wetlands or other environmental features of concern. - All subsections of Section 700 of the Design and Construction Standards Manual (DCSM) that are germane to the project should be addressed. This should include Perennial Flow Determinations (PFD), Preservation Area Site Assessment (PASA), and Water Quality Impact Assessments (WQIA), etc. - This list is by no means all-encompassing nor should it be limited to the items above. It is based upon desk-top analysis of layers from County Mapper, and the potential that features depicted should be addressed per Section 700 of the DCSM 	April 7, 2021
Virginia Marine Resources Commission (VMRC)	<p>The response indicated that the project is within the jurisdictional areas of the VMRC and a subaqueous permit will be required from the Commission. Additionally, jurisdictional impacts will be reviewed by the commission during the JPA process.</p>	April 13, 2021
Virginia Department of Conservation and Recreation (VDCR)	<p>The response indicated that there is potential for Small whorled pogonia to occur within the project area if suitable habitat exists on site. DCR recommends that field surveys for this species be conducted in the project area between June 1 and July 20. DCR notes that the proposed project will fragment an Ecological Core (C5) area. DCR recommends efforts to minimize edge in remaining fragments, retain natural corridors between fragments and designing the intervening landscape to minimize hostility to native wildlife. Lastly, DCR indicates that there are no State Natural Area Preserves in the project vicinity.</p>	April 15, 2021
Fannie W. Fitzgerald Elementary School	No response to the scoping letter was received.	N/A
Mary Williams Elementary School	No response to the scoping letter was received.	N/A
Neabsco District Supervisor	No response to the scoping letter was received.	N/A

Agency/Organization	Scoping Response	Date Response Received
Northern Virginia Community College (Woodbridge Campus)	No response to the scoping letter was received.	N/A
Northern Virginia Regional Commission	No response to the scoping letter was received.	N/A
Potomac District Supervisor	No response to the scoping letter was received.	N/A
Potomac Middle School	No response to the scoping letter was received.	N/A
Potomac and Rappahannock Transportation Commission	No response to the scoping letter was received.	N/A
Potomac Senior High School	No response to the scoping letter was received.	N/A
Prince William County Board of Supervisors	No response to the scoping letter was received.	N/A
Prince William County Chamber of Commerce	No response to the scoping letter was received.	N/A
Prince William County Department of Community Services	No response to the scoping letter was received.	N/A
Prince William County Department of Economic Development	No response to the scoping letter was received.	N/A
Prince William County Department of Fire and Rescue	No response to the scoping letter was received.	N/A
Prince William County Department of Parks & Recreation	No response to the scoping letter was received.	N/A
Prince William County Department of Planning and Zoning	No response to the scoping letter was received.	N/A
Prince William County Department of Social Services	No response to the scoping letter was received.	N/A

Agency/Organization	Scoping Response	Date Response Received
Prince William County Health District	No response to the scoping letter was received.	N/A
Prince William County Office of Executive Management	No response to the scoping letter was received.	N/A
Prince William County Office of Historic Preservation	No response to the scoping letter was received.	N/A
Prince William County Public Schools	No response to the scoping letter was received.	N/A
Woodbridge District Supervisor	No response to the scoping letter was received.	N/A
Virginia Department of Forestry	No response to the scoping letter was received.	N/A
Virginia Department of Health	No response to the scoping letter was received.	N/A
Virginia Department of Mines, Minerals and Energy	No response to the scoping letter was received.	N/A
Virginia Department of Transportation	No response to the scoping letter was received.	N/A
Virginia Outdoors Foundation	No response to the scoping letter was received.	N/A
Virginia Railway Express	No response to the scoping letter was received.	N/A
U.S Army Corps of Engineers (USACE) Northern Virginia Field Office	No response to the scoping letter was received.	N/A
U.S. Environmental Protection Agency (EPA), Region 3 (Mid-Atlantic)	No response to the scoping letter was received.	N/A
Chickahominy Indian Tribe	No response to the scoping letter was received.	N/A
Delaware Nation	No response to the scoping letter was received.	N/A
Nansemond Indian Nation	No response to the scoping letter was received.	N/A

Agency/Organization	Scoping Response	Date Response Received
Upper Mattaponi Indian Tribe	No response to the scoping letter was received.	N/A

5.2 Public Involvement

Providing meaningful opportunities for public participation is an essential part of the NEPA process for every publicly funded and permitted project. Involvement of the public in the decision-making process provides transparency and facilitates better and more informed decisions. For this proposed project, public involvement will involve a public hearing as well as an open comment period on this EA to solicit input from all potential stakeholders.

5.2.1 Public Information Meeting

A Virtual Public Information Meeting was held on July 22, 2021 at 7 pm to facilitate public education and outreach concerning the Van Buren Road North Extension project. The presentation identified the proposed project alignment, which consists of extending Van Buren Road from Route 234 to the existing connection at Cardinal Drive, and the environmental study for this improvement. The public was given an opportunity to review project exhibits, review a tentative project schedule, and provide feedback to the County to assist in finalizing the environmental study.

The public was also invited to ask questions prior to the meeting, during the meeting, and a comment sheet was provided to submit questions and comments outside of the meeting by close of business on August 5, 2021. Twenty-six comments were submitted prior to or after the meeting via mail and email. Sixty-four comments were received during the meeting. Both sets of comments have been addressed via mail/email and during the meeting, respectively. A transcript of the meeting is provided in Appendix G.

5.2.2 Location Public Hearing

The Prince William County Department of Transportation, in partnership with Dewberry Engineers Inc. and VDOT, will hold a Location Public Hearing to provide a discussion forum between the public and project team, and obtain input and comments from the community. Information provided at the Public Hearing will include: a preliminary project schedule, preliminary property impact information, right of way information and relocation assistance, and this EA for the proposed project. It should be noted that relocation assistance is not anticipated to be necessary as no residential, commercial or industrial takes are required. All presented information will be available for public review and comment. Comments received during the public hearing will become part of the public hearing record. This hearing will be publicly advertised in a local periodical twice prior to the meeting as well as through mailings to all previously determined stakeholders.

5.2.3 Additional Coordination Efforts

All communications and public events will be designed to comply with Title VI and Title VII of the Civil Rights Act of 1964 to ensure nondiscrimination and equal employment. Special accommodations will be provided for persons with disabilities or limited English proficiency. Efforts will be made to accommodate those who cannot attend the public hearing and those who do not wish to speak at the hearing. Contact information will be provided for those who wish to email or mail comments and questions concerning this proposed project. In addition, public and agency comments received during the 30-day comment period that follows

the release of the EA will be taken into consideration and incorporated, as appropriate, in revisions to this EA. All comments received during the public comment period will become part of the public hearing record.

6.0 – References

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- 23 U.S. Code (USC) 138 and 49 U.S. Code 303, Section 4(f) of the Department of Transportation Act of 1969, as amended.
- 23 Code of Federal Regulations (CFR), Chapter I, Subchapter G, Part 650, Subpart A, Section 650.115: Design Standards;
- 40 Code of Federal Regulations (CFR), Chapter I, Subchapter H, Part 230, Section 404(b)(1), Subpart E, Section 230.41: Wetlands;
- 40 Code of Federal Regulations (CFR), Chapter V, Part 1508, Section 1508.7: Cumulative Impact.
- 40 Code of Federal Regulations (CFR), Chapter V, Part 1508, Section 1508.8: Effects.
- 42 U.S. Code (USC) 4601 et seq., Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.
- 42 U.S. Code (USC) 7401 et seq., Clean Air Act.
- 54 U.S. Code (USC) 2003 et seq., Land and Water Conservation Fund.
- 7 U.S. Code (USC) 4201 et seq., Farmland Protection Policy Act of 1981.
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APPENDIX A

Van Buren Road Extension: NEPA Traffic Analysis

APPENDIX B

**Van Buren Road Extension
Cultural Resources Surveys & Documentation
Prince William County, Virginia
VDHR File No. 2021-0073**

APPENDIX C

Preliminary Design Noise Impact Analysis Technical Report:

Van Buren Road Extension

From Route 234 (Dumfries Road) to Cardinal Drive

APPENDIX D

Air Quality Technical Report: Van Buren Road Extension

APPENDIX E

Van Buren Road Extension Approved Jurisdictional Determination & Wetland Delineation Report

APPENDIX F

Van Buren Road Extension Natural Resources Reports and Maps

APPENDIX G

Van Buren Road Extension Public Outreach