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FEDERAL HIGHWAY ADMINISTRATION
and
VIRGINIA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL ASSESSMENT

University Boulevard Extension Project

Prince William County, Virginia

Federal Project No.: RSTP-5B01(576)

State Project No.: 840-076-R21

VDOT UPC: 118313

From: Devlin Road

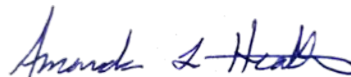
To: Wellington Road

Submitted Pursuant to 42 USC 4432(2)(C)

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ACRONYMS

ACRONYM	DEFINITION
AADT	Annual Average Daily Traffic
ADA	Americans with Disabilities Act
ADT	average daily traffic
APD	Accessible Pedestrian Detectors
APE	Area of Potential Effects
APS	Accessible Pedestrian Signals
ASTs	aboveground storage tanks
ASTM	American Society of Testing and Materials
Bay Act	Chesapeake Bay Preservation Act
BCOS	Board of County Supervisors
BER	Business Environmental Risk
BFE	Base Flood Elevation
BMPs	Best Management Practices
CAA	Clean Air Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CLOMR	Conditional Letter of Map Revision
CNE	Common Noise Environment
CO	carbon monoxide
CWA	Clean Water Act
CZMP	Coastal Zone Management Program
DCSM	Design and Construction Standards Manual
DNH	Division of Natural Heritage
EA	Environmental Assessment
EFH	Essential Fish Habitat
EO	Executive Order
ESA	Environmental Site Assessment
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FIS	Flood Insurance Study
FONSI	Finding of No Significant Impact

ACRONYM	DEFINITION
FPPA	Farmland Protection Policy Act
FY	fiscal year
GIS	Geographic Information System
H&H	Hydrology and Hydraulics
HEC-RAS	Hydrologic Engineering Center's River Analysis System
HUC	hydrologic unit code
IPA	Initial Project Assessment
IPaC	Information, Planning, and Conservation
LAP	Locally Administered Projects
LOD	limits of disturbance
LOMR	Letter of Map Revision
L RTP	Long Range Transportation Plan
LWCF	Land and Water Conservation Fund
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MPO	Metropolitan Planning Organization
MSATs	Mobile Air Source Toxics
MWCOG	Metropolitan Washington Council of Governments
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NCRTPB	National Capital Region Transportation Planning Board
NEPA	National Environmental Policy Act
NHP	Natural Heritage Program
NHPA	National Historic Preservation Act
NLEB	Northern Long-Eared Bat
NOAA	National Oceanic and Atmospheric Administration
NO ₂	nitrogen dioxide
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O ₃	ozone
PA	Programmatic Agreement
Pb	lead
PCBs	polychlorinated biphenyls
PEM	palustrine emergent
PFO	palustrine forested

ACRONYM	DEFINITION
PM10	particulate matter less than 10 microns in diameter
PM2.5	particulate matter less than 2.5 microns in diameter
PRTC	Potomac and Rappahannock Transportation Commission
PSS	palustrine scrub shrub
PWC	Prince William County
Q&A	question and answer
RECs	recognized environmental conditions
RMA s	Resource Management Areas
RPA	Resource Protection Area
RTE	Rare, Threatened, & Endangered
SAV	Submerged Aquatic Vegetation
SDWA	Safe Drinking Water Act
SF	Square foot
SHPO	State Historic Preservation Office
SO2	sulfur dioxide
STIP	Statewide Transportation Improvement Program
SUP	Shared Use Path
SYIP	Six-Year Improvement Program
TIP	Transportation Improvement Program
TNM	Traffic Noise Model
TOYR	Time of Year Restrictions
TSM	Transportation System Management
US EPA	United States Environmental Protection Agency
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USTs	underground storage tanks
VaFWIS	Virginia Fish and Wildlife Information Service
VDACS	Virginia Department of Agriculture and Consumer Services
VDCR	Virginia Department of Conservation and Recreation
VDEQ	Virginia Department of Environmental Quality
VDH	Virginia Department of Health
VDHR	Virginia Department of Historic Resources

ACRONYM	DEFINITION
VDOF	Virginia Department of Forestry
VDOT	Virginia Department of Transportation
VDWR	Virginia Department of Wildlife Resources
VMRC	Virginia Marine Resources Commission
VMT	vehicle miles traveled
VOF	Virginia Outdoors Foundation
WOTUS	Waters of the United States
WQIA	water quality impact assessment

1 PURPOSE AND NEED

1.1 INTRODUCTION

The Prince William County (County) Department of Transportation, in coordination with the Virginia Department of Transportation (VDOT) and Federal Highway Administration (FHWA), as lead federal agency, is studying a connection of two existing sections of University Boulevard (Route 840) in Prince William County, Virginia. 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 analyze the potential social, economic, and environmental effects associated with the proposed University Boulevard Extension project (Project) between Devlin Road and Wellington Road.

The Project is being administered by the County and is being developed in accordance with applicable VDOT guidelines and requirements, including the Locally Administered Projects (LAP) program. This EA was prepared in accordance with FHWA's regulations implementing NEPA (23 Code of Federal Regulations [CFR] §771.119) as well as United States Department of Transportation (USDOT) Order 5610.1C (Procedures for Considering Environmental Impacts) and VDOT's NEPA Program Manual (VDOT 2025b), which includes an outline and guidance for the preparation of environmental assessments.

1.2 STUDY AREA

Figure 1-1 shows the location of the Project study area, which is located in the north-western region of Prince William County in the census-designated areas of Gainesville and Linton Hall. This area of the County is experiencing rapid growth, including that related to the Innovation Technology Park to the south-east as well as several new industrial developments. On its northern end, University Boulevard connects to Route 29 and the Express Lanes of I-66. On its southern end, University Boulevard connects to Prince William Parkway and Route 28 via Godwin Drive. Between US 29 and US 28, University Boulevard runs roughly parallel to Wellington Road and Linton Hall Road, which carry intra-county traffic between the western and eastern portions of Prince William County as well as serving local land uses. There are also three commuter parking lots that study area roadways provide access to including directly on University Boulevard between Route 29 and I-66 (2,050 spaces) as well as on Cushing Road between Prince William Parkway and I-66 (433 spaces) and on Limestone Drive south of Wentworth Green Drive (199 spaces) (PWC 2025). In addition to serving more regional roadway access, these commuter lots also offer OnmiRide public transit services.

The study area generally encompasses the area along University Boulevard between Wellington Road to the north/west and Devlin Road the south/east, north of Linton Hall Road. The existing northern portion of University Boulevard currently terminates near the southern entrance of the Gainesville High School and the existing southern portion terminates at a three-legged intersection with Devlin Road. There is a gap of approximately 1.5 miles between these two existing end points within the study area. The lands within this area are currently undeveloped/forested land and also include two existing utility corridors and a tributary of Rocky Branch and associated floodplains and wetlands. Otherwise, land use in and surrounding the study area is mixed and primarily consists of commercial and industrial properties, schools, retail stores, a concert amphitheater, industrial uses, office/business/commerce centers, shopping plazas, park and ride lots, institutions, recreational fields, and residential properties. The residential areas are primarily located east of Devlin Road and south of Linton Hall Road, though the Amberleigh Station development is located north of it. The entire study area is also located within the County's Data Center Opportunity Zone Overlay District (PWC 2025).

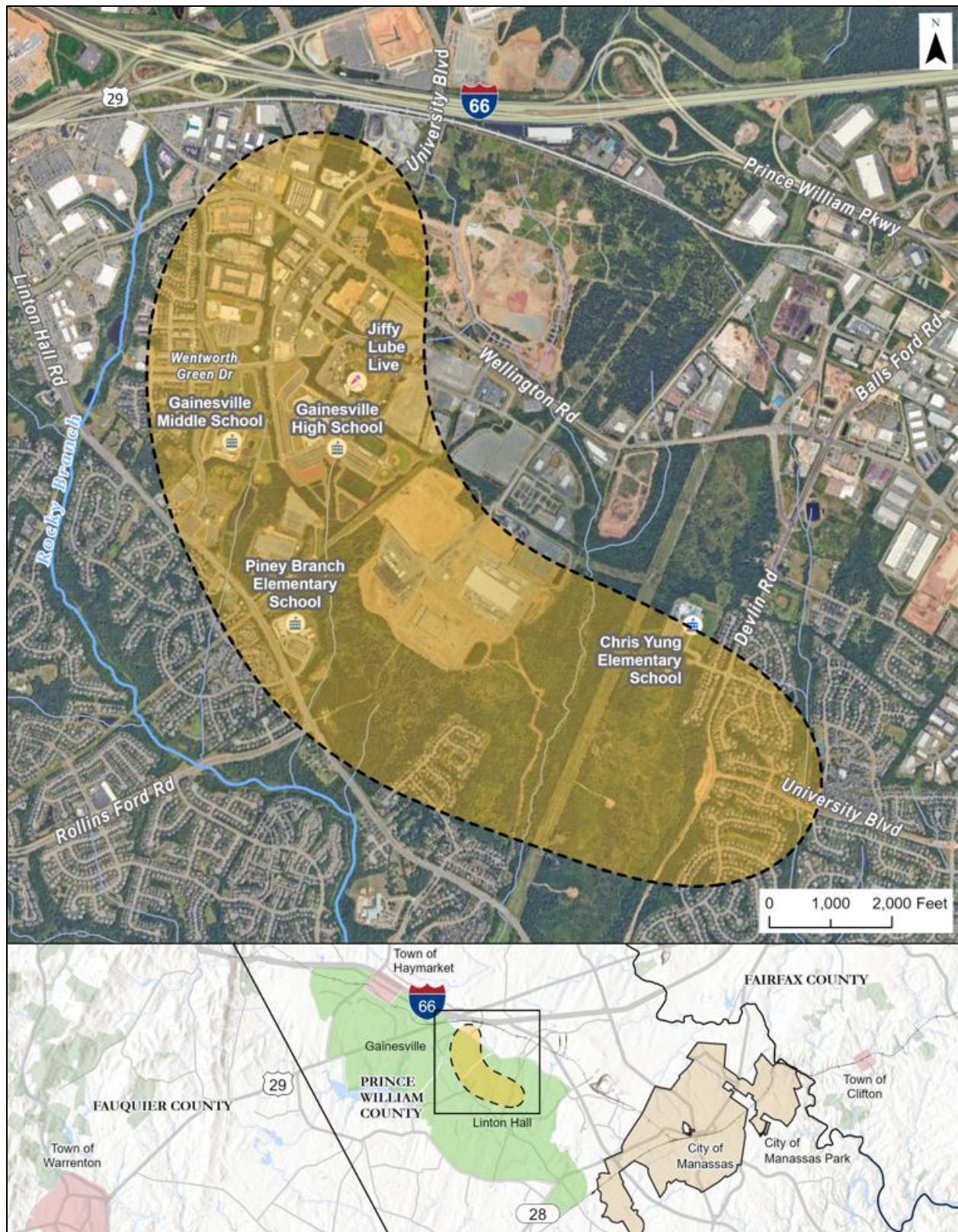


Figure 1-1. Project Location and Study Area

1.3 PROJECT HISTORY

The County's 2040 Comprehensive Plan, which is intended to guide residential, commercial, and infrastructure development over the next 20 years, was approved by the Board of County Supervisors (BCOS) in December 2022 (PWC 2022). Its Long-Range Land Use Plan designates lands along the undeveloped portion of the study area as tech-flex industrial. This designation is defined as suburban areas of employment on individual sites with primary uses including light manufacturing, warehousing, and data centers to promote a diverse tax base, encourage economic vitality, and support employment. Land use along the existing portion of the roadway is also industrial as well as public land for the Gainesville Middle and High Schools. To serve travel demand associated with this designation, the Roadway Plan¹ in the Mobility portion of the Comprehensive Plan provides for University Boulevard as a four-lane minor arterial from Route 29 to Godwin Drive near Route 28. It recommends that the proposed roadway would have right-of-way in compliance with the MA-1 standard typical section provided within the County's Design and Construction Standards Manual (DCSM). The associated Countywide Trails Plan provides for a planned shared-use path along the full extent of University Boulevard, including through the Project study area. Additionally, part of the County's mobility goal to enhance and expand the transit network and supporting infrastructure includes supporting County and regional commuter programs, which includes commuter lots.

The National Capital Region Transportation Planning Board (the Metropolitan Planning Organization for the region) included the Project in the Transportation Improvement Program for the Washington Metropolitan Region Fiscal Year (FY) 2023 – 2026 (MWC0G 2022), as updated in FY 2024. The Project is also programmed in the financially constrained element of Visualize2045, the associated approved long-range transportation plan for the region. It is also included in VDOT's Statewide Transportation Improvement Program (STIP) and Six-Year Improvement Program (SYIP) (VDOT 2025a).

History of University Boulevard in the County's Comprehensive Plan. The full planned alignment of University Boulevard from Route 29 to Godwin Drive near Route 28 first appeared on mapping in the County's 1998 Comprehensive Plan, though under different nomenclatures. University Boulevard was named initially Route 3100, then Route 840, then East-West Connector, and finally University Boulevard. It has formally been listed as a four-lane roadway since at least the 2003 Comprehensive Plan, which indicated that it was a modified version of a new road suggested in the 1989 Linton Hall Road/Route 28 Area Plan and that a centerline study had been developed for the proposed roadway. The planned four-lane alignment has appeared in each subsequent update to the Comprehensive Plan since that time.

Construction of Existing Portions of University Boulevard. The County completed construction of the original portion of University Boulevard in 1997. The original extents were from Godwin Drive to Devlin Road (i.e., the eastern portion of the roadway as it exists today), though it was primarily rural and undeveloped with limited infrastructure at that time. In 2006, the County added the first extension from Wellington Road north to US 29, which is still the northern limit today. Another extension occurred in the eastern section in 2013 between Hornbaker Road and Sudley Manor Drive. Then, to support the construction of the new school, in 2021 University Boulevard was extended south from Wellington Drive to Gainesville High school. Finally, in September 2024, construction of the extension of University Boulevard from Edmonston Drive to Sudley Manor Drive, with limited improvements at the Devlin Road intersection, was completed. Finally, in October 2024, improvements to the intersection of University Boulevard and Prince William Parkway to provide a new jughandle turn were completed. These projects were funded locally and did not require NEPA documentation. The study corridor represents the final "missing link" to complete the University Boulevard corridor. The portions of the University Boulevard are shown below in Figure 1-2.

¹ The intent of the County's Mobility Plan is to provide an accessible, safe, comprehensive, multimodal transportation network that allows for the safe and efficient movement of goods and people throughout the County and into surrounding jurisdictions. As a part of that, the Roadway Plan provides a basic framework for providing the necessary roadway infrastructure to address existing and projected traffic demands in the County.



Figure 1-2. Existing Portions of University Boulevard

Adjacent Rezonings and Associated Dedicated Right-of-Way along University

Boulevard. As part of the ongoing redevelopment in this area of the County, there are three sites within the study area that required rezoning to allow for the development of data center campuses, which are shown in **Figure 1-3**. Each includes transportation right-of-way dedication to the County for the future extension of University Boulevard, consistent with the alignment shown in the County's 2040 Comprehensive Plan. Below is a brief summary of each of the sites per their approved General Development Plans.

- Aura Development (approximately 260-acre parcel owned by NOVA Mango Farms; currently under construction with an estimated completion date of summer 2026). The General Development Plan (REZ2017-00023) was approved by the BCOS in October 2017 and includes data center facilities consisting of up to 2.5 million gross square feet and associated electrical infrastructure, including a substation in the northeastern portion of the site. The approved plan includes right-of-way dedication to the County for the future extension of University Boulevard to access the site.
- Devlin Technology Park (three parcels comprising approximately 270 acres owned by Stanley Martin Homes; detailed site plans submitted and pending approval). The General Development Plan (REZ2022-00022) was approved by the BCOS in November 2023 and includes the development of up to 4.2 million gross square feet of data center facility and associated electrical infrastructure, which would be constructed on the two parcels that are located south of, and accessed by, proposed University Boulevard. The approved plan shows the northern parcel (approximately 85 acres) to be open space, which could be developed as a park, and an approximate location for a proffered future shared-use trail on the west side of the existing transmission lines. The approved plan also includes transportation right-of-way dedication to the County for the future extension of University Boulevard to access the site.
- Hunter Property (three parcels comprising approximately 196 acres owned by LHR Gainesville LLC; detailed site plans submitted and pending approval). The General Development Plan for the site was approved by the BCOS in September 2021 and includes approximately 4 million gross square footage of data center development in four different areas within the site. The

development includes transportation right-of-way dedication to the County upon request for the future extension of University Boulevard. Site access would be from the future extension of Rollins Ford Road to the proposed extension of University Boulevard.

SMARTScale Applications. SMARTScale is a process in Virginia that prioritizes projects based on factors such as safety, congestion reduction, accessibility, land use, economic development, and the environment (Virginia SMART Portal 2025). This information is used by the Commonwealth Transportation Board to help guide and inform their project selection decisions to allocate limited tax dollars to projects. There was an application for SMARTScale funding for the University Boulevard Extension from Devlin Road to Wellington Road for FY 2020 for construction of a two-lane roadway (as part of an ultimate, future four-lane roadway). Subsequently, there was an application for funding in FY 2022 for the current four-lane Project. The concepts developed as part of the SMARTScale applications followed the alignments based on the right-of-way dedications from the three approved rezoning site plans, as noted above. The SMARTScale applications included needs justification and were used as a basis for the development of this Purpose and Need, updated as needed.

1.4 NEEDS – EXISTING CONDITIONS

Capacity, Transportation Demand, and Safety. University Boulevard functions as an important multimodal route for vehicles, bicycles, and pedestrians. Over the course of the past 30 years, the population of Prince William County has more than doubled from 215,700 in the 1990's to approximately 496,300 in 2024 (PWC 2024). The ongoing population growth and expansion of residential and industrial development have increased demands on transportation infrastructure. Within the study area, Wellington Road is classified as a major collector roadway with an Annual Average Daily Traffic (AADT) of 16,000 vehicles, and Linton Hall Road is classified as a minor arterial roadway with an AADT of 27,000 to 47,000 vehicles (VDOT 2022; Virginia Data Open Portal 2023). The existing portions of University Boulevard are classified as a major collector roadway with an AADT of 6,000 vehicles. At the eastern side of the study area at the termini of existing University Boulevard, Devlin Road is classified as a minor arterial roadway with an AADT of 10,000 vehicles, serving north-south traffic between Linton Hall Road, Wellington Road, and north to Prince William Parkway and beyond. Within the study area along existing University Boulevard, there is also an intersection with a local roadway (Wentworth Green Drive, which provides access to a residential community and a school bus storage facility) as well as two entrances to the Gainesville High School campus. As noted above, construction of a large industrial site is currently underway. As typical for such uses, schools and industrial uses generate a fair amount of vehicular and truck traffic in the study corridor. The schools and nearby residential areas also generate demand for bicycles and pedestrian traffic. Within the study area, the existing northern portion of University Boulevard provides a shared-use path on the eastern side of the two-lane roadway, which provides access to, and between, the Gainesville Middle and High Schools. Outside of the study area, the existing portions of University Boulevard typically have sidewalk and/or shared-use paths along its extent. There is also sidewalk on many of the adjacent residential streets. However, there are no facilities for safe east-west pedestrian or bicycle travel through the study area.

An *Operational and Safety Analysis (Appendix A)* was conducted for the Project to review the traffic conditions on University Boulevard between Wellington Road and Devlin Road to determine and evaluate measures to reduce congestion and improve safety and recommend multimodal improvements. Traffic operations were analyzed at five intersections, which are shown on **Figure 1-3**, using SimTraffic to evaluate overall performance of the study intersections for 2024 and 2048 conditions. As shown in Table 1-1, for existing conditions (2024), the intersections with Wellington Road and Wentworth Green Drive experience moderate levels of delay (between 31 and 53 seconds of delay per vehicle) and all other intersections operate well in morning and evening peak hours. The *Operational and Safety Analysis* for the Project also evaluated crash data for the most recent five years (January 2019 – May 2024). There was a total of 28 crashes within the study area during that time, with the majority occurring at the intersections with Wellington Road and Devlin Road. There were no fatal crashes nor crashes with pedestrians. Of these crashes, 11 (39%) involved angle crashes and 9 (32%) were rear end crashes.

1.5 NEEDS – FUTURE CONDITIONS

Capacity, Transportation Demand, and Safety. The Project study area is located in one of the fastest growing portions of the County. While population growth is projected to grow from 2020 to 2050, an average of approximately 1% per year (19.8% increase for a total of an additional 95,700 residents), employment growth is projected to significantly increase (MWCOC 2023). By 2050, there is projected to be an additional 84,700 jobs, which is an increase of more than 50% compared to 2020. This rate of employment growth is also over 20% more than other jurisdictions in the Metropolitan Washington region. As the area grows, University Boulevard will continue to serve vehicle, bicycle, and pedestrian travel. The expanding population and employment opportunities along the corridor, which are in line with County redevelopment goals, need to safely accommodate future traffic volumes and ensure adequate levels of accessibility and mobility to serve the travelers, residents, businesses, and communities of the County. The future need to provide safe multimodal facilities to accommodate increased demands is supported by County transportation planning documents, as discussed in Section 1.3 above, which includes planning for the full extent of University Boulevard to include a sidewalk and shared-use path. Without any improvements, the study area will continue to lack a safe, accessible east-west pedestrian and bicycle route to accommodate future multimodal needs, particularly for access to the growing residential areas and nearby schools.

As documented in the *Operational and Safety Analysis (Appendix A)*, by 2048 volumes on all study area roadways are projected to grow, with the most significant increases on Devlin Road north of University Boulevard (increase of 115%) and Wellington Road west of University Boulevard (increase of almost 80%). Volumes on the existing portion of University Boulevard are projected to increase to an average daily traffic (ADT) of 11,600 vehicles, which is an increase of over 85%. During peak hours of travel, the roadways are projected to experience more significant congestion as shown in Table 1-1. By 2048, the main intersections of University Boulevard with Wellington Road and Devlin Road are projected to experience significant delays during both the morning and evening peak hours, with intersection delays ranging from 109 to 151 seconds per vehicle. The intersection with Wentworth Green Drive is also projected to experience significant delays during the morning peak hour (139 seconds of delay per vehicle). The study area would continue to lack an east-west route to serve existing and future development, including the two approved industrial sites, for local vehicular travel and connecting bicycle and pedestrian facilities (**Figure 1-3**). This would be exacerbated by the continued growth in the area, and multimodal accessibility and connectivity in and through the study area would be constrained.

Table 1-1. Intersection Operations – 2024 Existing and 2048 No Build Conditions

INTERSECTION	TYPE	2024 EXISTING		2048 NO BUILD	
		AM Peak Hour Delay (sec)	PM Peak Hour Delay (sec)	AM Peak Hour Delay (sec)	PM Peak Hour Delay (sec)
1. University Boulevard & Wellington Road	Signalized	31.7	33.4	143.0	109.9
2. University Boulevard & Wentworth Green Drive	Unsignalized	53.3	6.4	139.6	19.3
3. University Boulevard & High School Northern Entrance	Unsignalized	3.0	1.5	1.7	1.6
4. University Boulevard & High School Southern Entrance	Unsignalized	3.8	2.4	2.8	2.3
5. Devlin Road & University Boulevard	Signalized	15.8	11.5	151.9	135.4

Note: Intersection color coding is based on Highway Capacity Manual delay thresholds and the associated levels of service. Green (best), yellow and red (worst) colors were assigned to delay thresholds for each study intersection to provide a comparative measure of traffic performance. See the Operational and Safety Analysis for full detail (Appendix A).

1.6 PURPOSE AND SUMMARY

Based on the needs identified in Sections 1.4 and 1.5, the purpose of the proposed Project is:

- To provide additional capacity to the roadway system to alleviate traffic congestion for existing and future traffic demand on local roads and intersections;
- To be consistent with existing and planned local development and County plans and goals to support growth; and
- To safely improve multimodal connection and accessibility between the western and eastern portions of Prince William County to support existing and future vehicle, pedestrian, and bicycle mobility.



Figure 1-3. Traffic Intersections Studied in the Project Study Area

2 ALTERNATIVES

2.1 INTRODUCTION

This section discusses the range of alternatives considered, the process used to identify and screen the alternatives, alternatives considered and eliminated from further consideration, and alternatives carried forward for detailed study. The No Build Alternative was retained for detailed study to serve as a baseline for alternatives comparison. A preferred Build Alternative has been identified and is described in detail.

2.2 ALTERNATIVES DEVELOPMENT

The flowchart below (Figure 2-1) depicts the general approach used for screening the University Boulevard Extension Project. This approach uses the defined Project purpose and need along with screening criteria to determine the preferred Build Alternative. The intent of this alternatives development process is to develop a preferred Build Alternative that meets roadway classification criteria, avoids and minimizes impacts to right-of-way and the environment, and is consistent with the Prince William County Comprehensive Plan and planned development.

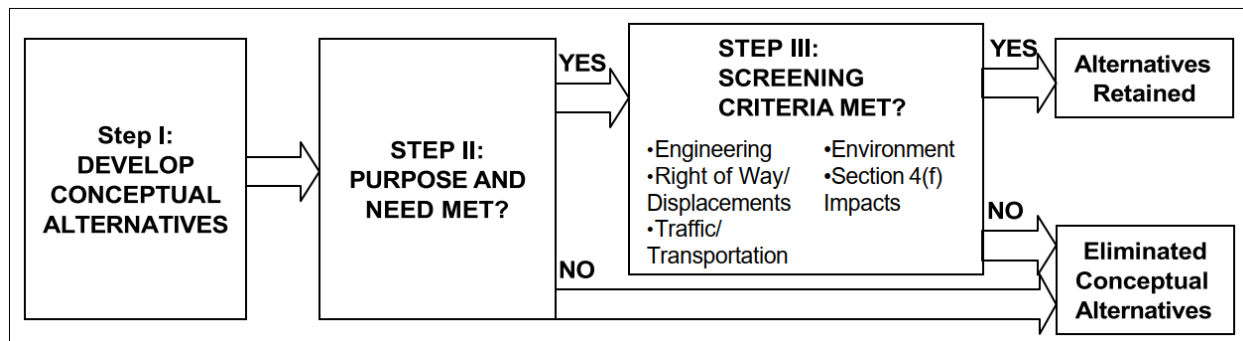


Figure 2-1. Process for Screening Project Alternatives

The alternatives and development screening process was based on several planning, engineering, environmental, and development considerations. The fixed tie-in locations at the existing endpoints of University Boulevard, and existing and planned development, limit the potential for new alignment options. The northern portion of the study area, along the existing two-lane roadway, is surrounded by existing development along both sides of the roadway, including a County-owned water tower and the Gainesville Middle and High Schools. The southern tie-in point connects to an existing intersection in a residential neighborhood. The preliminary alignment for the Project was first established based on the alignment from the 2040 Comprehensive Plan and right-of-way proffers from three adjacent parcels with approved site development plans (see Section 1.3). Slight variations of the proffered alignment were considered, particularly in the area of the Rocky Branch tributary and associated wetlands and floodplains. Similarly, stormwater management facilities were shifted relative to the locations shown in previous studies. The proffered alignment would also be shifted, as needed, to accommodate a future intersection at Rollins Ford Road and additional turn lanes along University Boulevard, which were newly required elements of the current Project.

Additionally, there are two other nearby projects that are in the planning phase, related to the alignment of the proposed extension of University Boulevard:

- Widening of Devlin Road from Devlin Road and University Boulevard intersection to Linton Hall Road
- Rollins Ford Road extension from Linton Hall Road to University Boulevard extension

All of the identified considerations were avoided to the maximum extent practicable to reduce Project costs, coordination, and schedule.

2.3 ALTERNATIVES NOT RETAINED FOR ANALYSIS

Through the alternatives screening process including previous plans and studies, several concepts and alternatives were eliminated from further consideration and not carried forward for further study in the environmental process. Table 2-1 lists the eliminated alternatives and reasons for their elimination.

Table 2-1. Alternatives Eliminated from Further Consideration

CONCEPT	BASIS FOR ELIMINATION
Transportation System Management (TSM) Alternative	“TSM” generally means implementation of relatively low-cost actions to improve efficiency of existing transportation systems. Examples include traffic controls, signal synchronization, turn lanes, parking management, access management, operational modifications, flexible work hours, van pools, transit scheduling, bicycle, and pedestrian improvements, and modifying driver behavior with incentives, pricing, or restrictions. Although such actions are important elements in the overall transportation plan for any growing area, there are none that would meet the identified needs for this Project because they would not provide the needed roadway capacity, meet transportation planning and development plans, nor safely improve east-west connection in the County for multimodal mobility.
Mass Transit Alternative	The identified purpose of this Project, which includes safely improving east-west connection and accessibility for vehicles, bicycles, and pedestrians through the study area cannot be met by bus or rail mass transit services. It also would not be consistent with approved transportation planning and development plans to support growth.
Smaller cross section (i.e., 2 lanes)	A road with a smaller cross section would not have sufficient capacity to carry the forecasted traffic volume and therefore would not fully meet the purpose and need of the Project. Additionally, the County Comprehensive Plan identifies University Boulevard as a four-lane cross section, so a smaller cross section would not be consistent with local plans.
Project Alignment Shifts	Additional options which incorporated minor alignment shifts were considered wherever possible, but given the existing roadway connections, existing development along the proposed alignment and numerous constraints, alternative options were quite limited, less compatible with existing terrain, and would incur higher right-of-way impacts and costs.
Intersection Alternatives	The <i>Operational and Safety Analysis (Appendix A)</i> that was conducted for the Project considered but dismissed innovative intersection and interchange types that were generally not appropriate or constructible for the study intersection locations. It also evaluated roundabout configurations at all locations in detail, which were subsequently eliminated from further study due to minimal operational benefits with increased right-of-way impacts and higher costs compared to conventional lane configurations.

2.4 ALTERNATIVES CARRIED FORWARD

2.4.1 No Build (No Action Alternative)

Description. Under the No Build Alternative, the University Boulevard Extension roadway and associated improvements would not be constructed, and all roadway facilities would remain in their current configuration.

Ability to Meet Needs. The No Build Alternative would not impact any social, economic, or environmental resources. However, it would not satisfy the identified transportation needs because it would not alleviate congestion for existing and future traffic demand nor safely improve multimodal connection and accessibility through the study area. The No Build Alternative would also fail to achieve the existing and planned local development and County goals. Notwithstanding, the No Build Alternative will be carried forward in the EA as a baseline for comparison to assess environmental impacts attributable to the proposed action.

2.4.2 Build Alternative

Description. The Build Alternative would extend University Boulevard for approximately 2.5 miles, encompassing approximately 1.75 miles of new-alignment roadway and reconstruction of approximately 0.75 miles of existing roadway, as detailed below:

- At the north end of the Project, which is developed, the existing two-lane portion of University Boulevard would be widened to four lanes between Wellington Road and the Gainesville High School south entrance on existing University Boulevard.
- The new portion of the alignment, which would run across largely undeveloped/forested land, would be extended between the southern entrance of Gainesville High School and Devlin Road, with intersection improvements as needed to accommodate the extension.

Typical Section. The University Boulevard Extension roadway would be completed in accordance with Minor Arterial collector criteria with a design speed of 50 mph. The typical section is shown in Figure 2-2. The Build Alternative would include construction of a four-lane divided roadway, with two lanes in each direction separated by a raised grass median. The typical section would include a 10-foot-wide shared-use path for pedestrians and cyclists and a 5-foot-wide sidewalk for the full Project limits. The right-of-way width to accommodate these improvements is 128 feet along the proposed corridor. Wider portions of the roadway would be provided for turn lanes and pedestrian refuge at specific crossing locations that include Wentworth Green Drive, the northern and southern entrances to Gainesville High School, Rollins Ford Road, and Devlin Road.

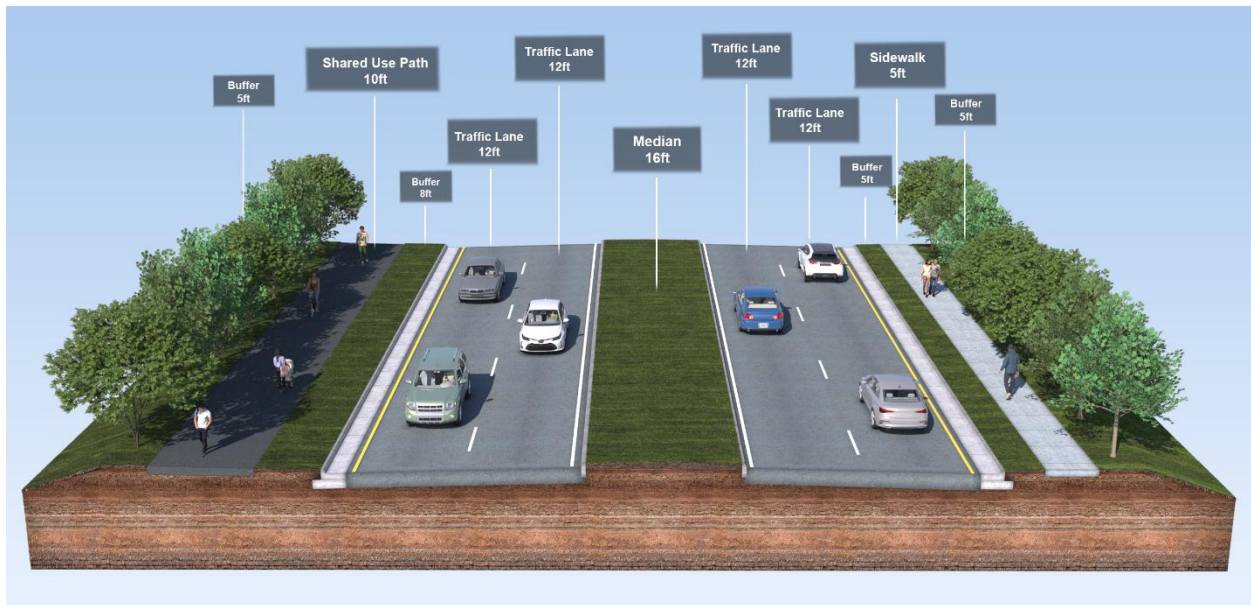


Figure 2-2. Build Alternative Typical Section

Horizontal Alignment. The horizontal alignment of the Build Alternative is shown in **Appendix B**. The proposed alignment would run roughly parallel to Wellington Road and Linton Hall Road. It would connect to the south with an existing section that terminates at Devlin Road and to the north with an existing section that terminates at Wellington Road.

From the northern end of the Project area, the Build Alternative would maintain the existing condition along University Boulevard for approximately 900 feet south of the intersection at Wellington Road. At this point, the Build Alternative alignment would transition from an undivided four lane roadway to the divided four lane roadway, separated by a raised grass median per the proposed typical section. The proposed alignment would maintain the existing alignment in the northbound direction to the southern entrance of

the Gainesville High School. The southbound direction would be new construction on the shifted alignment in this area to account for the wider proposed typical section.

From the southern entrance of the high school, east of the existing T-intersection with Devlin Road, the Build Alternative would be new construction. It would primarily follow the proposed alignment set by the County Comprehensive Plan and right-of-way dedications from the approved site development plans along the corridor (see Chapter 1) and the considerations listed at the beginning of this chapter. In this section of roadway, the proposed Build Alternative alignment would cross two existing utility corridors as well as a tributary of Rocky Branch, before tying into Devlin Road at the southern Project terminus.

Vertical Alignment. The vertical alignment of the Build Alternative would maintain the existing elevation from Wellington Road to the southern entrance of the Gainesville High School. Along the new alignment, the proposed vertical alignment would be as close to the existing ground as possible to minimize the amount of grading beyond the proffered right-of-way while still meeting appropriate design criteria. The vertical alignment of the Build Alternative would have three high points: near the high school along the existing alignment; east of the future Rollins Ford Road extension; and approximately halfway between the utility corridor and Devlin Road.

The proposed profile at the bridge crossing the tributary of Rocky Branch would be designed to ensure that the lowest point of the bridge would have the proper clearance above the 100-year water surface elevation. East of the bridge, the proposed vertical alignment would slope down longitudinally to the intersection of University Boulevard and Devlin Road, creating a depth of cut through the existing hill of approximately 32-feet at its deepest.

Structures. The Build Alternative would also include construction of two two-span bridges approximately 400 feet long to carry the south and northbound roadway. While the proposed structure would span the tributary to Rocky Branch perpendicular to the waterway, each bridge is anticipated to have a pier located in the floodway. The total proposed width of the bridge typical section is anticipated to be approximately 97 feet wide.

Intersections and Access Points. Intersection improvements at Wentworth Green Drive, the southern entrance to Gainesville High School, and Devlin Road would include signalization and appropriate turn lanes. All signalized intersections would have pedestrian facilities such as a 6-foot-wide refuge area in the median, high-visibility crosswalks, Americans with Disabilities Act (ADA)-compliant pedestrian ramps, Accessible Pedestrian Signals (APS), and Accessible Pedestrian Detectors (APD) across all approaches. Additional dedicated right and left turn lanes would be constructed on the University Boulevard extension at other unsignalized intersections within the Project limits. The study area intersections with University Boulevard are described below:

- Wentworth Green Drive: A left turn carrying the southbound University Boulevard to eastbound Wentworth Green Drive movement would be provided. A right turn lane carrying southbound University Boulevard to westbound Wentworth Green Drive movement would also be added. In the northbound direction, there would be one left turn lane carrying the northbound University Boulevard to westbound Wentworth Green Drive movement and a right turn lane would be maintained to carry northbound University Boulevard to eastbound Wentworth Green Drive traffic.
- Northern entrance to Gainesville High School: A left turn lane carrying the southbound University Boulevard to the eastbound school entrance movement would be added and a right turn lane would be maintained to carry northbound University Boulevard to eastbound school entrance traffic.
- Southern entrance to Gainesville High School: A double left turn carrying the southbound University Boulevard to the eastbound school entrance movement would be added and a right turn lane would be maintained to carry northbound University Boulevard to eastbound school entrance traffic. An eastbound lane would be added to the high school's southern entrance.
- Future T-intersection of University Boulevard and Rollins Ford Road: The Build Alternative would include a stub out for this future intersection. The University Boulevard median would be widened to accommodate the northbound double left turn lane to westbound Rollins Ford Road that will be constructed in the future.

- Devlin Road: A left turn lane carrying the southbound University Boulevard to the eastbound Devlin Road movement would be added and a right turn lane would be added to carry southbound University Boulevard to westbound Devlin Road traffic.

Right-of-Way Impacts. Based on the preliminary design, no displacements or relocation of residential or commercial properties will be required. The Build Alternative would require easements and/or minor acquisition of property from parcels adjacent to the proposed right-of-way. Additional right-of-way would be required along University Boulevard at the intersections of Wentworth Green Drive, the southern entrance to the high school, and at Rollins Ford Road to accommodate the proposed intersection improvements at each location. Right-of-way would be required at the proposed storm water management facilities located west of the Rollins Ford Road intersection and on either side of the bridge crossing the tributary of Rocky Branch. As the Project's design progresses, additional easements for maintenance, drainage, and utility relocations may be required beyond the proposed easements required for construction.

Stormwater Management and Drainage Design. Drainage and stormwater management for the Project would consist of water quality and quantity control facilities as well as erosion control measures. The design would meet applicable VDOT and County requirements while minimizing construction costs, right-of-way impacts, and long-term maintenance costs. Three stormwater ponds are anticipated along the southern side of the roadway corridor: one west of the Rollins Ford Road future extension and two on either side of the proposed bridge, outside of the floodway. An existing stormwater management pond on the west side of Devlin Road at the intersection with University Boulevard would also need to be rebuilt as part of the Project.

Cost. From a combination of local, state, and federal funds, a total Project budget of \$135 million is programmed for the design, engineering, environmental, right-of-way, and construction phases (VDOT 2025a). The Project is funded for preliminary engineering (currently underway), right-of-way (scheduled FY 2028), and construction (scheduled FY 2029). The Project is anticipated to be delivered through a design-build method which combines engineering services and construction services under one contract.

Ability to Meet Needs. Completion of this intra-county connector would meet the purpose and need of the Project. As documented in the *Operational and Safety Analysis (Appendix A)*, volumes on University Boulevard south of Wellington Road are projected to have an ADT of 30,900, which is an increase of over 150% compared to No Build Conditions. Otherwise, traffic volumes on other study area roadways – including Wellington Road, Devlin Road, and Linton Hall Road – are projected to decrease as the new roadway adds capacity to the network and attracts rerouted trips from other roadways. The operational analysis of future (2048) build conditions at the study area intersections, including the planned intersection at the extension of Rollins Ford Road, is summarized in Table 2-2. The intersections of University Boulevard and Wellington Road during the PM peak hour, University Boulevard and Wentworth Green Drive during the AM peak hour, and University Boulevard and Devlin Road during both peak hours, all show significant decreases in average intersection delays for the Build condition compared to the No Build condition. The four-lane cross section of the Build Alternative would provide adequate capacity to handle forecasted travel demand. The Build Alternative would provide the “missing link” between two existing sections of University Boulevard, which would provide for a valuable east-west link in the transportation system and accommodate the expansion of the pedestrian and bicycle network. The Project includes bicycle and pedestrian facilities that would connect with existing facilities on University Boulevard to enhance access. Additionally, the proposed roadway design took into account recommendations from the operational analysis as well as mitigating factors that could potentially contribute to crashes. Improving the roadway capacity is expected to mitigate traffic congestion which will in turn reduce crashes thus improving safety along University Boulevard.

The Build Alternative, as described above, is consistent with local planning efforts and approved site development plans. As stated in the 2040 Comprehensive Plan, University Boulevard is designed to carry residential traffic from the Linton Hall/Sudley Manor areas to the planned employment areas at Innovation Park and Gainesville. Additionally, it states that the completed roadway would create a major intra-county connector between Route 29 and Route 28, as well as new access from the south and east to the Gainesville Middle and High Schools.

Table 2-2. Traffic Operations - 2048 No Build and Build Conditions

INTERSECTION	BUILD CONDITION	2048 NO BUILD		2048 BUILD	
		AM Peak Hour Delay (sec)	PM Peak Hour Delay (sec)	AM Peak Hour Delay (sec)	PM Peak Hour Delay (sec)
1. University Boulevard & Wellington Road	Signalized	143.0	109.9	183.3	43.1
2. University Boulevard & Wentworth Green Drive	Signalized	139.6	19.3	47.7	21.9
3. University Boulevard & High School Northern Entrance	Signalized	1.7	1.6	20.8	3.1
4. University Boulevard & High School Southern Entrance	Unsignalized	2.8	2.3	38.3	8.7
5. Devlin Road & University Boulevard	Signalized	151.9	135.4	102.8	41.1
6. University Boulevard & Rollins Ford Road (planned)	Signalized	N/A	N/A	51.4	21.3

*Note: Intersection color coding is based on Highway Capacity Manual delay thresholds and the associated levels of service. Green (best), yellow and red (worst) colors were assigned to delay thresholds for each study intersection to provide a comparative measure of traffic performance. See the Operational and Safety Analysis for full details (**Appendix A**).*

3 ENVIRONMENTAL CONSEQUENCES

This section describes the environmental conditions present within the Project study area and anticipated potential direct and reasonably foreseeable environmental consequences resulting from the Build and No Build Alternatives.

The environmental data and findings presented herein were gathered from coordination with federal, state, and local agencies; previous area studies; existing literature and websites; aerial photography; County geographic information system (GIS) databases (PWC 2025); and site visits to the Project study area. Additional information about data and/or studies conducted for environmental analysis is provided in the technical reports and memoranda listed in the Table of Contents of this EA and referenced throughout this chapter. References are provided at the end of this document.

3.1 OVERVIEW OF ENVIRONMENTAL ISSUES

Table 3-1 summarizes environmental resources and their relevance to the Project.

Table 3-2 quantifies and compares the potential impacts between the No Build and Build Alternative. Issues that are pertinent to the Project are addressed in more detail in the sections following the tables. For resources that are either not impacted or that do not have a reasonable possibility for impacts, no further discussion is required. Discussion of reasonably foreseeable effects of all environmental resources are presented at the end of this chapter. During construction, temporary environmental impacts usually can be controlled, minimized, or mitigated through careful attention to prudent construction practices and methods; potential temporary construction impacts and preventive practices are discussed throughout the sections in this chapter.

Table 3-1. Summary of Environmental Resources

RESOURCE/ISSUE	REMARKS
Socioeconomics	The Project study area is experiencing rapid growth, both in terms of population and employment (as documented in Chapter 1 of this EA). Implementation of this Project would help accommodate the sustained growth and support Prince William County's Comprehensive Plan. As the area grows, University Boulevard will continue to serve vehicle, bicycle, and pedestrian travel. There are several schools within the study area, including Gainesville High School and Middle School, both of which are located directly along the existing portion of University Boulevard and have recreational fields and courts. Piney Branch Elementary School and Chris Yung Elementary School are also located nearby. Otherwise, no other community facilities or community services are located in the vicinity of the Project. Since the Build Alternative would provide the "missing link" between two existing sections of existing University Boulevard, community cohesion, connectivity, and accessibility would be increased. The Project would not disrupt access to any properties nor would displace any residents, businesses, or other facilities. <i>See Section 3.2 for a detailed discussion of right-of-way and land use, and Section 3.3 for the recreational facilities at the schools.</i>
Right-of-Way & Relocations	Permanent and temporary partial property acquisitions would be required for the construction of the Build Alternative. No relocations would be required. Right-of-way acquisitions are based off of engineering judgements for the implementation of the Project to the 30% design level. <i>See Section 3.2 for a detailed discussion of estimated right-of-way requirements. Appendix B provides the Build Alternative Exhibit, which includes existing and proposed right-of-way.</i>
Land Use	The Project is consistent with current and planned local land use, including the 2040 Prince William County Comprehensive Plan. Other than the conversion of currently undeveloped areas to developed ones to accommodate ongoing growth in the County, the adjacent parcels to University Boulevard include commercial, industrial, institutional, and utility land uses and are generally anticipated to remain in their current use. The entire study area is also located within

RESOURCE/ISSUE	REMARKS
	the County's Data Center Opportunity Zone Overlay District. <i>See Section 4.2 for a detailed discussion of current and future planned land use.</i>
Agricultural/Forestal Districts, Prime Farmlands and Soils, and Open Space Easements	Virginia State Code authorizes localities to designate Agricultural and Forestal Districts as a means of establishing rural conservation zones to protect working farms and forest lands for the production of agricultural products, timber, and the maintenance of open space land. There are no agricultural or forestal districts within the Project study area (PWC 2025). Established under Virginia's Open-Space Land Act (VA Code §10.1-1700 et seq), open space easements are legal agreements among landowners and public bodies, such as the Virginia Outdoors Foundation (VOF), that place perpetual deed restrictions on properties to limit development, while allowing the continued management and use of the land for family, forestry, recreational, wildlife habitat, and other conservation uses. There are no open space easements within the vicinity of the Project study area (VOF 2025; VDOF 2025). The Farmland Protection Policy Act (FPPA), implemented by the U.S. Department of Agriculture (USDA) under 7 CFR Part 658, requires consideration of the potential effects of a federal action on important farmland and discourages activities that would convert farmland to non-agricultural purposes. However, since the Project is already in urban use and is an area that is not zoned for agriculture (see Section 3.2), coordination with the Natural Resources Conservation Service (NRCS) on this topic is not required. Therefore, it was determined that this action does not have the potential for impacts to this resource, so further discussion is not included in the document.
Parks and Recreational Areas, including Section 4(f) and Section 6(f)	No public parks or recreational areas, or protected open spaces, are present or planned within the study area. Recreational facilities are present at both the Gainesville High School and Gainesville Middle School, including multiple sport fields, courts, and tracks on both properties on either side of the existing portion of University Boulevard; however, these resources would not be impacted by the Project. No parks, recreational areas, or refuges that qualify as Section 4(f) properties are located within the environmental limits of disturbance (LOD); therefore, there is no Section 4(f) use associated with the Project. There are no areas that qualify as Section 6(f) of the Land and Water Conservation Fund (LWCF 2025) within the study area. <i>See Section 3.3 for detailed discussion of parks and recreational facilities, including additional explanation of Section 4(f) involvement.</i>
Historic Properties	A <i>Phase IA Cultural Resource Study</i> and supporting memorandum were prepared to support this EA document. Because the entire study area has been covered by previous cultural resource surveys, the conclusions were based on preexisting work. A Phase I archaeological survey completed in 2006 led to the identification of two archaeological sites within the University Boulevard Area of Potential Effects (APE); the surveyors recommended that one site, 44PW1590, is not eligible for listing on the National Register of Historic Places (NRHP), while site 44PW1594 required further testing. The Virginia Department of Historic Resources (VDHR) concurred with this recommendation in a letter dated March 30, 2006. As mentioned, site 44PW1594 is located within the APE of the current Project. Site 44PW1594 includes a known, small cemetery (as well as its Cemetery Preservation Area buffer); this cemetery has been carefully delineated and it is located on the Hunter Property (see Chapter 1), well outside of the limits of construction for the Project. A Phase II study of site 44PW1594 was carried out in 2022, and it was found to be not eligible for listing in the NRHP; however, the Phase II study was never submitted to VDHR for review. At VDHR's request a memorandum further evaluating site 44PW1594 was prepared and submitted to VDHR on October 31, 2025. The memorandum recommended no further archaeological investigation, to which VDHR concurred in a December 9, 2025 letter, conditioned on preparation of a full technical report, which was subsequently submitted on January 9, 2026. After review of the report, on February 5, 2026, VDHR concurred with the County's determination that the historic properties in the area of potential effects would not be adversely affected by the Project, thereby fulfilling the requirements of the Section 106 process. On February 26, 2026, the County notified DHR of FHWA's intention to issue a <i>de minimis</i> impact finding pursuant to Section 4(f). No other eligible or potentially eligible above-ground historic resources are present in or adjacent to the APE.

RESOURCE/ISSUE	REMARKS
	The most significant nearby cultural resource is the corridor along Linton Hall Road associated with the campaign of Second Manassas, but given the distance to the Project area and the current configuration of the neighborhood, the University Boulevard Extension would not have an impact on the Civil War resource. See Section 3.4 for a detailed description of the cultural resources coordination and findings; copies of the documentation are provided in Appendix C.
Air Quality	The air quality analysis included coordination with VDOT. A scoping/air quality protocol document was prepared per Section 3.1 of the VDOT guidelines and submitted for review and approval. Once approved, a draft air quality analysis was prepared and submitted using VDOT's September 2025 "Project-Level Analysis Template Report for NEPA Documentation". VDOT provided one comment on the air quality analysis and approved the document. In the analysis, the proposed improvements were assessed for potential air quality impacts and conformity consistent with all applicable air quality regulations and guidance. The assessment indicated that the Build Alternative would meet all applicable federal and state transportation conformity regulatory requirements as well as federal air quality guidance. As such, the Project would not cause or contribute to a new violation of the national ambient air quality standards (NAAQS) established by the United States Environmental Protection Agency (US EPA). See Section 3.5 for a summary of the air quality evaluation. <i>The methodologies and findings for the air quality analysis described in detail in the Air Quality Technical Memorandum in Appendix F.</i>
Noise	A noise analysis was conducted to assess potential impacts from the Project to adjacent communities in conformity with all applicable noise regulations and requirements. The study involved monitoring existing noise conditions and modeling existing and future design year (2048) "build" and "no-build" noise conditions at all receptor locations identified in the study area using the FHWA-approved computerized Traffic Noise Model (TNM v.2.5). To determine the severity of traffic noise impacts on human activity for the planning and design of roadways, FHWA established the Noise Abatement Criteria (NAC) to determine the degree of impact noise will have for different categories of land use. Two noise barriers are proposed that preliminarily meet feasibility and reasonableness criteria found in the VDOT Traffic Noise Policy. A more detailed analysis will be completed during project final design. <i>The methodologies, analysis of all traffic noise impacts, and consideration of noise abatement measures for feasibility and reasonableness are described in detail in the Preliminary Noise Report in Appendix G.</i>
Wetlands and Streams	Waters of the United States (WOTUS) were identified through a wetland and stream delineation that was conducted in March and July 2025. Wetlands and streams were identified through a combination of desktop review and field delineation that was performed to identify non-tidal streams and wetlands in accordance with all applicable regulatory requirements. The streams in the study area include ephemeral, intermittent, and perennial channels. Wetlands are primarily associated with the intermittent and perennial stream systems. Wetland and stream impacts are unavoidable during the construction of the Project. Impacts were avoided and minimized as practicable as part of the preliminary 30% design. Impacts would be further refined during final design and permitting. <i>Methodologies and findings for the evaluation of water resources are summarized in Section 3.7 and described in detail in Appendix D.</i>
Water Quality	The Build Alternative would not be expected to impact any drinking water or groundwater in the study area. As recommended by the Virginia Department of Health (VDH), Best Management Practices (BMPs) during construction would include, as typical for this type of Project, Erosion & Sedimentation Controls and Spill Prevention Controls & Countermeasures. Construction materials would be managed while on site and during transport to prevent impacts to nearby surface waters. The Build Alternative would not be expected to increase bacteria levels within waterways because sources typically include permitted point sources, sanitary sewer and septic systems, wildlife, and pets and the Project would not introduce or cause an increase to any of these sources. As recommended by the US EPA, during final design, opportunities to reduce the impacts of stormwater runoff by minimizing impervious areas and incorporating low-impact

RESOURCE/ISSUE	REMARKS
	design principles and green stormwater infrastructure for both hardscaped and landscaped areas would be further evaluated. During construction, non-point source pollutants could possibly enter groundwater or surface water from storm water runoff. To minimize these impacts, appropriate erosion and sediment control practices will be implemented in accordance with VDOT's current Road and Bridge Specifications. The Build Alternative would encroach on two Resource Protection Area (RPA) buffers associated with the two larger unnamed tributaries to Rocky Branch. Authorization for any tree clearing or land disturbing activities within these areas is enforced at the local level. While construction of public roads (and therefore this Project) is exempt from compliance with Chesapeake Bay Preservation Area Overlay District requirements, compliance with Erosion and Sediment Control Law, Stormwater Management Act of the Code of Virginia, and Design and Construction Standards Manual are required. The alignment and design of the road should also minimize encroachment into the RPA and minimize adverse effects on water quality. A water quality impact assessment (WQIA) would be required, as determined by the County, and would be prepared during final design and coordinated with the County at that time. <i>Methodologies and findings for the evaluation of water resources are summarized in Section 3.7 and described in detail in Appendix D.</i>
Floodplains	There are approximately 1.15 acres of Federal Emergency Management Agency (FEMA)-mapped floodplains and 0.89 acre of regulatory floodway extending out from the unnamed tributary to Rocky Branch, which would be bridged by the Build Alternative. A <i>Floodplain Hydrology and Hydraulics (H&H) Analysis</i> was conducted to assess the hydraulic impacts associated with the proposed Project. In order to comply with Executive Order (EO) 11988 and to secure the necessary in-water permits from the United States Army Corps of Engineers (USACE), a practical bridge design will likely require a pier within the FEMA-designated floodway to maintain feasible span lengths. As a result, the future design-build contractor would need to pursue a Conditional Letter of Map Revision (CLOMR) and subsequent Letter of Map Revision (LOMR). In addition, to comply with Prince William County floodplain management criteria, a detailed hydrologic study of the unnamed tributary to Rocky Branch watershed would be required during final design. <i>See Section 3.8 for a summary of the H&H Analysis, which is provided in Appendix E.</i>
Wildlife and Wildlife Habitat	The Project study area encompasses areas that are potentially suitable aquatic and terrestrial habitats for wildlife since undeveloped land would be cleared and converted to transportation use and there are streams and wetlands present. As part of Section 7 coordination with the United States Fish and Wildlife Service (USFWS), it was estimated that approximately 19.25 acres of forested tree cover that could provide quality terrestrial habitat are present. Opportunities to reduce tree removal will be explored as the Project advances in final design but are limited due to the nature of the new connection through a currently undeveloped area. Similarly, impacts to wetlands and streams would result in a loss of potential aquatic habitat in the study area and additional design methods to reduce impacts to habitat, aquatic, and terrestrial resources would be evaluated during final design and permitting of the Project. <i>For a full inventory of wildlife population resources and associated habitat that were reviewed within the Project area, see Section 3.9 and the Natural Resources Technical Report (Appendix D) that was prepared for the Project.</i>
Threatened, Endangered, and Special Status Species	A review of the USFWS Online Information, Planning, and Conservation (IPaC) review process, Virginia Department of Wildlife Resources (VDWR) databases, and Virginia Department of Conservation and Recreation (VDCR) databases was utilized to obtain an initial list of special status species with the potential to occur in the vicinity of the study area. Subsequent coordination regarding threatened and endangered species with each agency identified species for further review. Section 7 consultation with USFWS was completed on September 16, 2025, through submittal of a Self Certification form and Final Determination table. <i>See Section 3.10 and Appendix D.</i>

RESOURCE/ISSUE	REMARKS
Hazardous Materials	A Limited Phase I Environmental Site Assessment (ESA) was performed to identify the potential for encountering recognized environmental conditions (RECs) associated with the construction of the Project, assess potential risks, and prescribe mitigation or minimization to protect the environment and human health, if needed. All analyses were performed in accordance with applicable regulations. The assessment determined that the construction of the Build Alternative is anticipated to have limited exposure to hazardous materials since no known hazardous sites would be impacted by construction. See Section 3.11 for a summary of the Limited Phase I ESA, which is provided in Appendix H .

Table 3-2. Summary of Environmental Impacts

CATEGORY	UNITS OF IMPACT	ANTICIPATED IMPACT WITHIN ENVIRONMENTAL LOD	
		No Build	Build
Environmental LOD	acres	0	69
Residential Relocations	no.	0	0
Business Relocations	no.	0	0
Non-Profit Business (tenant)	no.	0	0
School Relocations	no.	0	0
Community Facilities	no.	0	0
Section 4(f) Property Use	acres	0	0
Wetland Impact	acres	0	10
Stream Impact	linear feet	0	3,150
100-Year Floodplains	acres	0	1
Cultural Resources	no.	0	0
Federally Threatened and Endangered Species	no.	0	2
Forest Land Displaced	acres	0	19.25
Farmland Displaced	acres	0	0
Impacted Noise Receptors	no.	0	23
Documented Hazardous Materials Sites	no.	0	0

Potential direct impacts to environmental resources are described and estimated in this EA from an environmental LOD based on the Build Alternative described in Section 2 and shown in **Appendix B**, which has been developed to the 30% design level. The environmental LOD was established to accommodate construction of the proposed typical section and associated infrastructure as well as the areas required for construction including but not limited to construction access and grading (cut and/or fill limits). Overall, a buffer of approximately 50 feet beyond the typical section limits for the new alignment

was generally used, with variations to accommodate infrastructure such as stormwater management and to minimize impacts along the existing portion of the roadway and tie-in locations. The environmental LOD is shown on the figures throughout this section and the construction limits associated with the Build Alternative are shown in **Appendix B**. Use of this planning-level LOD for the purposes of this EA is intended to provide an opportunity for continued design refinement as the Project progresses to the design-build and construction phases.

3.2 LAND USE AND RIGHT-OF-WAY (INCLUDING RELOCATIONS)

Existing and planned land use is governed by local comprehensive planning and zoning regulations and ordinances. Potential right-of-way impacts include both acquisitions, and associated relocations, and easements, as summarized below.

- Full Acquisition – Purchase of the entire property (i.e., tax parcel) which results in displacement of the current land use.
- Partial Acquisition – Purchase of a portion of a property that 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).
- 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).
- Permanent Easement – Legal right granted for use of a specific area of land for transportation purposes, typically directly adjacent/connecting to the roadway facility, that does not impact or affect the ability for the parcel to support existing or planned land use. There is no transfer of ownership.
- Temporary Easement – Legal agreement that allows for use of a portion of a privately-owned property for a specific period and purpose, such as temporary construction access. There is no transfer of ownership.

The type of acquisition would be determined by existing tax parcel mapping and records obtained from Prince William County. Anticipated right-of-way impacts are estimated from the parcel information and construction limits from the preliminary 30% design plans, which encompass approximately 48 acres within the larger environmental LOD.

Existing Conditions. As documented throughout Chapter 1 of this EA, this portion of the County is experiencing rapid growth; the expanding population and employment opportunities along the corridor are in line with County redevelopment goals and future land use and zoning plans, including the Data Center Opportunity Zone Overlay District. There are 26 tax parcels with 14 property owners that are located along the proposed alignment in the Project study area. Existing right-of-way and property lines are shown in the Build Alternative Exhibit in **Appendix B**. Along the existing portion of University Boulevard, the adjacent parcels include commercial, industrial, institutional, and utility land uses, which are generally anticipated to remain in their current use per the 2040 Comprehensive Plan. There are no existing housing/residential land uses within the study area. The southern portion of the study area is currently undeveloped/open space and, per the recent rezonings and associated dedicated right-of-way (see Section 1.3), will become transportation right-of-way and industrial land use in the future.

For a more detailed breakdown of existing and future land use in the Project study area, see Figure 3-1 and Table 3-3.

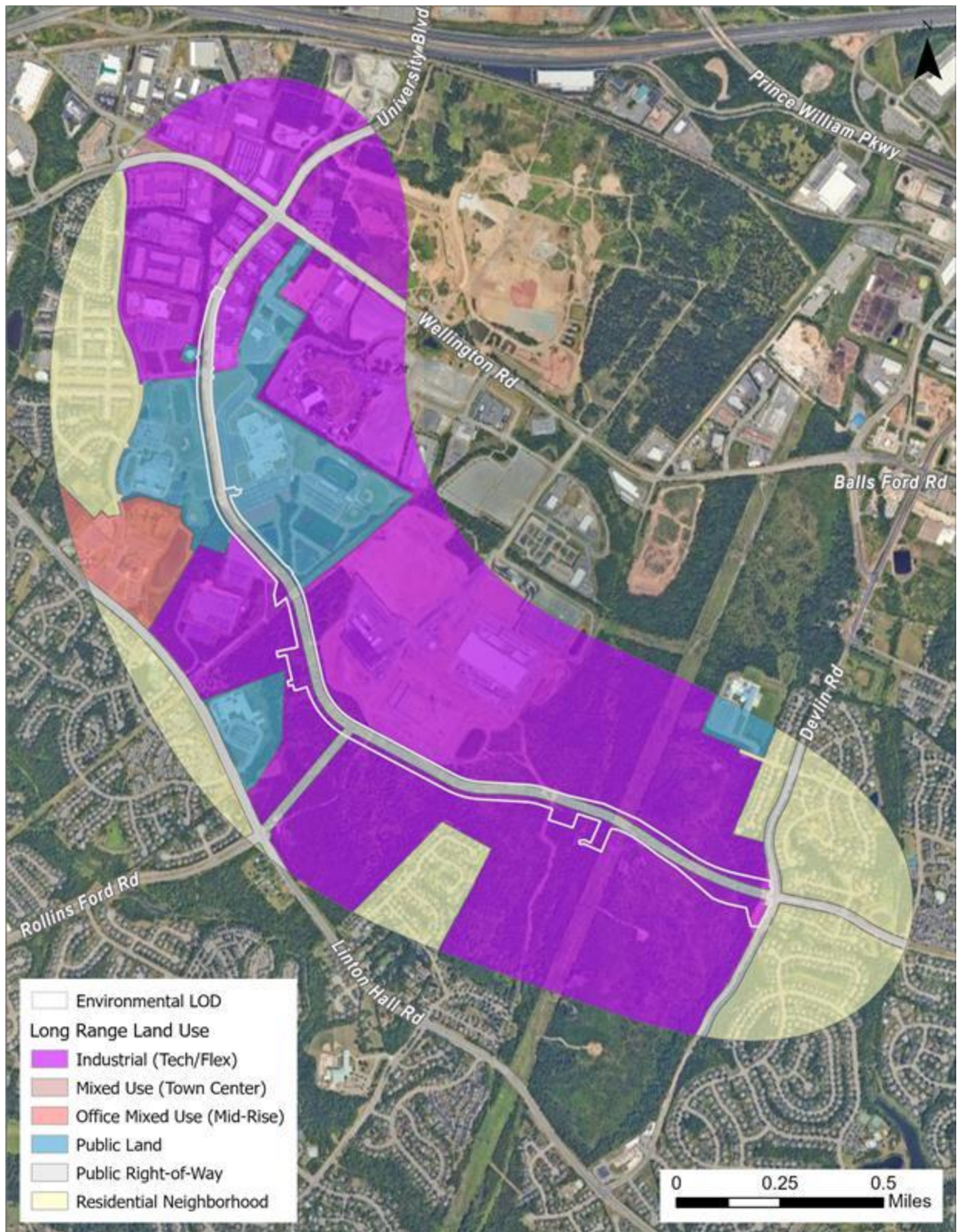


Figure 3-1. Long Range Land Use within the Study Area

Table 3-3. Existing and Future Land Use within the Environmental LOD

CATEGORY		TOTAL ACREAGE WITHIN ENVIRONMENTAL LOD	PERCENTAGE OF TOTAL
Existing Land Use	Commercial	0.31	0.4%
	Industrial	0.05	0.1%
	Institutional	3.81	5.6%
	Non-Recreational Public Land	13.43	19.6%
	Undeveloped/Open Space	50.85	74.1%
	Utility	0.14	0.2%
Long Range Land Use	Industrial	28.14	41.0%
	Public Land	4.36	6.4%
	Public Right-of-Way	36.08	52.6%

Note that the 2040 Comprehensive Plan includes a “Parks and Open Space” designation on the Long Range Plan for a parcel that is currently owned by the County School Board. The County confirmed that no such future development is planned, so that parcel was kept as institutional/public land for the purposes of Figure 3-1 and Table 3-3. See Section 3.3 for more information.

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

Build Alternative. The Build Alternative would support the current and planned land use set forth and recommended in 2040 Comprehensive Plan and associated Long-Range Land Use Plan.

Along the existing portion of University Boulevard, less than 1 acre of partial acquisition would be required from 5 parcels, located at the existing intersections with Wentworth Green Drive and the southern entrance to the high school, to accommodate intersection improvements and associated infrastructure. The only change in land use resulting from the Project would be the fee take of this property for permanent transportation use. Other property impacts include just over 1 acre of permanent easement from 9 total parcels along the existing portion of University Boulevard, generally in narrow linear strips along one or both sides of the alignment to maintain infrastructure such as drainage facilities. Additionally, 2.7 acres of temporary easement would be required along the existing alignment for short-term use to accommodate construction-related activities. Neither the permanent nor temporary easement would result in changes to land use as a result of the Project. Right-of-way impacts are summarized in Table 3-4 and proposed right-of-way lines are shown in the Build Alternative Exhibit in **Appendix B**. The Build Alternative would not require any full property acquisitions or relocations and, as described above, is anticipated to have minimal impacts to current or future land use and zoning.

The right-of-way estimates in Table 3-4 exclude property acquisition from the three data center developments along the proposed alignment (i.e., Aura Development, Devlin Technology Park, and Hunter Property) since each includes existing or proffered transportation right-of-way dedication to the County for the Project (see Section 1.3). In addition to proffered right-of-way to accommodate the typical section, the preliminary design plans show just over 3 acres of permanent easement (approximately 2 acres for drainage and approximately 1 acre for floodplain) and 6.5 acres of temporary easement for construction from these parcels. The County would coordinate any permanent or temporary right-of-way needs for the Project directly with the developments during final design.

The construction limits of the Project and associated right-of-way acquisition estimates would be further refined during final design. All efforts would be made to continue to avoid and minimize relocations and right-of-way acquisition. The acquisition of right-of-way and the relocation of displacements, if needed, would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Under the law, the purchase price for property acquired would be fair

market value as determined by an appraisal prepared by a qualified appraiser. Assurance is given that relocation resources will be available to all displaced, if needed, without discrimination.

Table 3-4. Summary of Required Right-of-Way

CATEGORY	UNITS OF IMPACT	ANTICIPATED IMPACT	
		No Build	Build
Full Acquisition	no. parcels / acres	0 / 0	0 / 0
Partial Acquisition	no. parcels / acres	0 / 0	5 / 0.90
Displacement	no. parcels / no. units	0 / 0	0 / 0
Permanent Easement	no. parcels / acres	0 / 0	9 / 1.08
Temporary Easement	no. parcels / acres	0 / 0	11 / 2.69

Note: The required right-of-way totals reported above do not include any property acquisition from the three data center developments along the proposed alignment (i.e., Aura Development, Devlin Technology Park, and Hunter Property), which include existing or proffered transportation right-of-way dedication to the County for the Project (see Section 1.3). Anticipated impacts are estimated from the parcel information and construction limits from the preliminary 30% design plans, as shown in Appendix B.

3.3 PARKS AND RECREATIONAL AREAS

The Project study area was examined for any existing publicly owned parks, recreation areas, wildlife and waterfowl refuges, and open-space easements, including those associated with public schools. This information was used to determine the applicability of Section 4(f) of the USDOT Act of 1966, as amended (49 USC 303 (C), 23 CFR 774), which protects publicly owned parks, recreation areas, wildlife or waterfowl refuges, and public or privately owned historic sites listed on or eligible for the NRHP (see Section 3.4).

Existing Conditions. Recreational facilities are present at both the Gainesville High School and Gainesville Middle School, including multiple sport fields, courts, and tracks on both properties on either side of the existing portion of University Boulevard. The schools are identified in Chapter 1 of this EA.

The Prince William County Countywide Trails Map, which is dated January 17, 2023, and is part of the 2040 Comprehensive Plan (PWC 2022), shows a planned recreational trail through the study area between Linton Hall Road and Wellington Road near the existing utility corridor. However, the County confirmed that no trail in that location is currently planned, and any trail in that location would need be proffered as part of the ongoing site developments (see Section 1.3). Additionally, as a proffered trail, the County would address the location and design elements as future site plans are submitted but, as of the date of this evaluation, the County had not received any site plans for this trail or other potential recreational facilities with the private developers or landowners. Therefore, for the purposes of this EA, it was assumed that no existing or planned trail is under consideration at this location.

Also in the Comprehensive Plan, the Long Range Land Use Plan identifies one parcel that is currently owned by the Gainesville Middle School as “Park/Open Space.” This parcel is an approximately 3-acre, currently undeveloped/forested property that is located south of the school fields and north of the utility property. The County has confirmed that there is no formal long-range plan for this site to change from its current use, including as a park or recreational facility, and that the parcel will remain owned by the School Board. Since no change or development is known or planned from the County’s perspective, for the purposes of this EA it is assumed to remain in its current institutional use for all scenarios.

No other public parks or recreational areas, or protected open spaces, are present or planned within the study area.

No Build Alternative. The No Build Alternative would not cause any project-related construction and, as a result, would not result in alterations or impacts to parks and recreational facilities.

Build Alternative. The Build Alternative would impact the property owned by the Prince William County School Board, including 0.03 acre of permanent partial acquisition, 0.66 acre of permanent easement, and 0.99 acre of temporary easement during construction. Permanent and temporary easements would generally be in narrow linear strips along one or both sides of the alignment to maintain infrastructure such as drainage facilities or at the existing intersections to accommodate intersection improvements and associated infrastructure. Proposed right-of-way lines are shown in the Build Alternative Exhibit in **Appendix B**. Coordination with the schools has been ongoing during the development of the preliminary design of the Project, including potential impacts to their properties. The County also confirmed that there are no plans to expand the recreational facilities at either school, so impacts to the schools' recreational facilities are not anticipated as a result of the Build Alternative. 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.

Section 4(f) Involvement. In accordance with FHWA's Section 4(f) policy guidance (FHWA 2012), Section 4(f) eligibility of recreational facilities associated with schools applies only to the recreational facilities themselves and not the entire campus (unless the campus is a significant historic site). Since the right-of-way required for the construction of the Build Alternative from the school property would not directly impact any recreational facilities, and the school properties are not historic, there is no Section 4(f) use associated with the Project. No parks, recreational areas, or refuges that qualify as Section 4(f) properties are located in the environmental LOD and therefore, no impacts to Section 4(f) properties are anticipated.

3.4 HISTORIC PROPERTIES

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 NRHP. The Section 106 process is undertaken by federal agencies in consultation with the State Historic Preservation Office (SHPO), federally recognized tribes as appropriate, representatives of local governments, and other parties with an interest in an undertaking. VDHR is Virginia's SHPO.

As described further below, as part of the current undertaking, the *Phase IA Cultural Resource Study University Boulevard Expansion* and supporting documentation were compiled in June 2025 through January 2026. These documents, which provide the methodologies and findings for the cultural resource investigations, as well as correspondence with VDHR, are provided in **Appendix C**.

Documentation & Coordination. The goal of the Phase IA Study was to determine whether the study area is known to contain, or has the potential to contain, potentially significant cultural resources. Because the entire study area has been covered by previous cultural resource surveys, the conclusions were based on preexisting work. Previous cultural resource studies and previously recorded cultural resources were reviewed for an area extending one mile from the proposed alignment for the Project. The APE for archaeological sites was a corridor roughly 200 feet wide. The Phase IA Study documented that numerous above-ground resources had been recorded within one mile of the Project corridor, including old houses, barns, and cemeteries, and a portion of a Civil War battlefield, which are shown in the documentation in **Appendix C**. Of note, Linton Hall Road is considered part of the Civil War battlefield of Second Manassas or Second Bull Run; however, most of these resources are a considerable distance from the proposed Project and screened by existing conditions. The currently developed section of the proposed alignment was subject to cultural resource survey before the area was developed. The undeveloped section was also surveyed for cultural resources in 2005, which resulted in the recording of three architectural structures and 11 archaeological sites. As described further below, none of the above-ground resources were determined potentially eligible for listing in the NRHP, but several of the archaeological sites were.

Archaeological Resources. One of the potentially eligible sites, site 44PW1594, is located within the APE of the current Project. Site 44PW1594 includes a known, small cemetery (as well as its Cemetery Preservation Area buffer); this cemetery has been carefully delineated and it is located on the Hunter Property (see Chapter 1), well outside of the limits of construction for the Project. The *Phase II Archaeological Evaluation of Sites 44PW1588, 44PW1590, 44PW1592, and 44PW1594, Prince William County, Virginia*, study including site 44PW1594 was carried out in 2022. Site 44PW1594 was found to be not eligible for listing in the NRHP, but the report was not forwarded to VDHR at that time. The *Phase IA Cultural Resource Study* and supporting documentation – which included the previous Phase II study as an attachment – was submitted to VDHR on June 11, 2025, with the assessment and recommendation that no eligible or potentially eligible historic resources are present in or adjacent to the Project corridor. Based on VDHR review and request for additional detail, a memorandum further evaluating site 44PW1594 was prepared and submitted to VDHR on October 31, 2025. The memorandum recommended no further archaeological investigation of this site, to which VDHR concurred in a December 9, 2025 letter, conditioned on the preparation of a full technical report. The *Additional Phase II Archaeological Testing of Site 44PW1594, University Boulevard Extension*, which is dated January 9, 2026 and included in **Appendix C**, was prepared and submitted to VDHR. In a letter dated February 5, 2026, VDHR confirmed that the report met the necessary technical requirements (see Effects Determination section below).

Above-Ground Resources. During review of the *Phase IA Cultural Resource Study* and supporting documentation, on July 2, 2025, VDHR also requested additional information on above-ground resources, notably a Phase I architectural survey of the APE to determine the status of previously recorded resources and identify any other resources 45 years or older. VDHR also requested the 2005 Phase II study, which was resubmitted. Subsequently, in a meeting with VDHR on July 29, 2025, it was agreed that, given the relatively flat terrain and screening effect of recent development, an appropriate APE for above-ground resources would extend 500 feet in each direction from the centerline of the proposed roadway. An *Above-Ground Resources Memorandum* was then prepared based on the revised 1,000-foot APE. Within this APE, the only above-ground resource is the small historic cemetery located within the previously-noted archeological site 44PW1594. At present, this area is forested. The County confirmed that the current Hunter Property development site plans will preserve the cemetery in place during construction and after construction of the data center is complete, the cemetery will be protected by a fence and buffer area. At the request of VDHR, the memo also further documented that given the distance and the current configuration of the neighborhood along Linton Hall Road, the Project would not have an impact on the Civil War resource associated with the campaign of Second Manassas. The *Above-Ground Resources Memorandum along University Boulevard Extension*, which is dated July 31, 2025, and included in **Appendix C**, was attached to the Project's online review application to VDHR on August 14, 2025.

Effects Determination. In a letter dated February 5, 2026, VDHR concurred with the County's determination that the historic properties in the area of potential effects would not be adversely affected by the Project. This finding of No Adverse Affect fulfilled the requirements of the Section 106 process for the Project. A copy of this letter, as well as all technical documentation, is provided in **Appendix C**.

No Build Alternative. The No Build Alternative would not result in construction or disturbances within the APE and subsequently would not impact any architectural or archaeological resources.

Build Alternative. The Build Alternative would not cross any eligible or potentially eligible archaeological sites. The only eligible or potentially eligible above-ground cultural resource within the APE is the small cemetery at archeological site 44PW1594. The Build Alternative would not directly impact the cemetery, which is located approximately 155 feet from what would be the limits of construction for the Project, providing an adequate buffer between the cemetery and the new roadway. The cemetery is being preserved in place by an adjacent development project, which would provide a low iron fence, and it would largely be screened from the proposed University Boulevard extension by vegetation, since the area between the cemetery and the roadway is designated for tree preservation in the adjacent development plans. As described in the Effects Determination in the above section, VDHR concurrence was received on February 5, 2026, confirming that the Project as proposed would not result in adverse effects to historic and cultural resources (see **Appendix C**).

During construction, should the discovery of archaeological, paleontological, or rare mineralogical articles occur, work would be suspended immediately. VDOT's Road and Bridge Specifications establish the protocol that would be followed should a "late discovery" occur.

Section 4(f) Involvement. Properties listed on or eligible for listing on the NRHP are subject to the provisions of Section 4(f) of the USDOT Act of 1966. Following DHR's concurrence with the project's No Adverse Effect determination for the portion of Site 44PW1594 within the University Boulevard Extension project, on February 26, 2026, the County notified DHR of FHWA's intent to issue a *de minimis* impact finding pursuant to Section 4(f) of the U.S. Department of Transportation Act, consistent with the requirements of 23 CFR 774. FHWA concurred with the *de minimis* determination on March 5, 2026. All correspondence is provided in **Appendix C**.

3.5 AIR QUALITY

In accordance with NEPA, air quality impacts of transportation improvement projects must be considered at both the regional and local level. The Clean Air Act (CAA) requires the US EPA to set NAAQS (40 CFR part 50) for six principal pollutants ("criteria" air pollutants) which can be harmful to public health and the environment (EPA 2025). These criteria air pollutants are: 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). The US EPA also designates areas where air quality meets standards as being in "attainment" while areas that do not meet standards are called "non-attainment areas." In compliance with the CAA amendments, states are required to define the status of all areas within their borders in accordance with their compliance with the 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. The methodologies and findings for the air quality analysis are summarized below and described in detail in the *Air Quality Technical Memorandum (Appendix F)*.

Existing Conditions. The Project is located in Prince William County, which falls within the Washington, District of Columbia-Maryland-Virginia 2015 8-hour ozone nonattainment area as defined by the US EPA. Prince William County meets attainment standards for all other criteria pollutants under the NAAQS, including CO, PM_{2.5} and PM₁₀, NO₂, SO₂, and Pb.

No Build Alternative. The No Build Alternative would not have impacts to air quality.

Build Alternative. As detailed below, the analysis indicates that the Build Alternative would meet all applicable air quality requirements of NEPA and federal and state transportation conformity regulations. As such, the Project would not cause or contribute to a new violation, increase the frequency or severity of any violation, or delay timely attainment of the NAAQS established by the US EPA.

Transportation Conformity. Under the CAA and 40 CFR Part 93, federally funded transportation projects in nonattainment areas are subject to federal conformity requirements to be listed in a conforming transportation plan and program. As detailed in Section 1.3 of this EA, the University Boulevard Extension Project is included in the current approved Transportation Improvement Program (TIP) and Visualize 2045, the Long Range Transportation Plan (LRTP) developed by the designated Metropolitan Planning Organization (MPO) for the region, the National Capital Region Transportation Planning Board (NCRTPB). With approval of this EA from FHWA, the Project will meet state and federal transportation conformity requirements.

Discretionary CO Analysis. As this Project is located within a region in attainment of the CO NAAQS, it is not subject to project-specific transportation conformity requirements defined by the US EPA. Further, the *September 2020 FHWA-VDOT Programmatic Agreement (PA) for Project-Level Air Quality for Carbon Monoxide* eliminates the need for project-specific analyses of potential CO impacts for all projects undergoing environmental studies for purposes of NEPA.

Mobile Source Air Toxics (MSATs). The Project qualifies as a Tier 2 project, or a project with "Low Potential MSAT Effects" under FHWA guidance. Projects of this tier are subject to qualitative analysis of

potential differences for MSAT emissions, for which it was assumed that localized MSAT emissions would be proportional to the vehicle miles traveled (VMT). VMT for the Build Alternative in the study area would be higher compared to the No Build Alternative because the additional roadway capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. Therefore, it is estimated that localized MSAT emissions might increase due to localized increase in VMT along University Boulevard for the Build Alternative as well as a corresponding decrease in MSAT emissions along parallel routes. The localized emissions increase could also be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Overall, national control programs implemented by the US EPA are anticipated to reduce annual MSAT emissions by over 76 percent between 2020 and 2060. The US EPA's vehicle and fuel regulations, coupled with fleet turnover, over time will cause substantial reductions that, in almost all cases, would cause region-wide MSAT levels for the Build Alternative to be significantly lower than today.

Construction Emissions. Air quality impacts from construction, consisting of emissions from diesel-powered construction equipment, burning of debris, fugitive dust, and the use of cutback asphalt (particularly during the months of April through October), would be temporary. This Project would comply with all applicable local, state, and federal regulations. The following Virginia Department of Environmental Quality (VDEQ) air pollution regulations must be adhered to during the construction of this project: 9 VAC 5-130, Open Burning restrictions; 9 VAC 5-45, Article 7, Cutback Asphalt restrictions; and 9 VAC 5-50, Article 1, Fugitive Dust precautions.

3.6 NOISE

Per FHWA Title 23 CFR 772.5(2) and the 2022 *VDOT Highway Traffic Noise Guidance Manual*, each Type I highway project must be analyzed for predicted traffic noise impacts. The proposed Project is "Type I" due to the addition of travel lanes on new location. A noise analysis was conducted to assess potential impacts from the Project to adjacent communities for this EA in conformity with all applicable noise regulations and requirements. The study involved monitoring existing noise conditions and modeling existing and future design year (2048) "build" and "no-build" noise conditions at all receptor locations identified in the study area using the FHWA-approved computerized Traffic Noise Model (TNM v.2.5). To determine the severity of traffic noise impacts on human activity for the planning and design of roadways, FHWA established the Noise Abatement Criteria (NAC) to determine the degree of impact noise will have for different categories of land use. Noise levels that are predicted to approach or exceed the absolute FHWA/VDOT NAC design year build scenario, or if they increase by 10 decibels or more at any receptor constitute an impact and warrant a noise abatement evaluation.

The methodologies, analysis of all traffic noise impacts, and consideration of noise abatement measures for feasibility and reasonableness are summarized below and described in detail in the *Preliminary Noise Report* (Appendix G).

Existing Conditions. Ambient sound data was collected to one to two times at four 20-minute short-term measurement locations on March 19, 2025, and one long-term measurement on March 18-19, 2025, to identify existing conditions and baseline data. Using the worst hour traffic data, the TNM model was used to predict Existing 2024 traffic noise levels at all receptor locations identified within the study area limits. This noise study area does contain one existing noise barrier. It should be noted that while the existing noise barrier was not yet constructed at the time of the study, it was formally approved meeting all feasibility and reasonableness criteria under a different project (UPC 118253; Devlin Road widening 2 to 4 lane), therefore, it is treated as an existing barrier for modeling purposes as part of this Project. Under existing conditions, noise levels ranged from 43 to 69 dB(A) for all CNEs.

No Build Alternative. The No Build Alternative would not result in construction of the project; therefore, there would be no noise impacts.

Build Alternative. The maximum number of receptors in the Build Alternative predicted to become impacted by future traffic noise is shown in Table 3-5. Table 3-5 includes those receptors expected to experience traffic noise impacts by either approaching or exceeding the FHWA Noise Abatement Criteria or by a substantial increase in exterior noise levels as defined in the VDOT Traffic Noise Policy.

Table 3-5. Traffic Noise Impact Summary for 2048 Build Condition

REASON FOR NOISE IMPACT	IMPACTED RECEPTORS BY ACTIVITY CATEGORY							All Activity Categories
	A	B	C	D	E	F ⁵	G ⁶	
Based on NAC Criteria Only ¹	0	14	0	0	0	0	0	14
Based on Substantial Increase Criteria Only ²	0	0	6	0	0	0	0	6
Based on Both Criteria ³	0	0	3	0	0	0	0	3
Total Build Alternative Impacts ⁴	0	14	9	0	0	0	0	23

¹ Predicted traffic noise level impacts due to design year worst hour build-condition noise levels approaching or exceeding the VDOT NAC.

² Predicted design year worst hour noise levels exceeding existing worst hour noise levels by 10 dB(A) or greater (VDOT Substantial Increase Criteria).

³ Predicted traffic noise level impacts due to both 1 and 2 above.

⁴ Only one of the Note 1 or Note 2 conditions must be met for an impact to exist.

⁵ There are no impact criteria for land use facilities in this activity category and no analysis of noise impacts are required.

⁶ There are no impact criteria for undeveloped lands, but information regarding noise level contours needs to be provided to local officials to aid them in future land use planning efforts.

Table 3-6 provides detailed traffic noise contour estimates. All distances are based on the Build Design Year 2048 Alternative. To minimize the potential for incompatible land use, noise sensitive land uses should be located beyond these distances. It should be noted that this information is only for general informational purposes and that noise studies should be performed based on specific project locations and proposed development grading plans and survey information to determine more finite results.

Table 3-6. Design Year 2048 Build Alternative Traffic Noise Contours

ROADWAY SEGMENT	MAXIMUM CONTOUR DISTANCES (FEET FROM EDGE OF NEAREST TRAVEL LANE)	
	66 dB(A)	71 dB(A)
North of University Boulevard, west of Devlin Road	70	40
South of University Boulevard, west of Hickory Hill Road	70	40
South of University Boulevard, southwest of proposed Rollins Ford Road	80	30

Traffic Noise Abatement Measures. Measures for reducing or eliminating the traffic noise impacts were considered for all impacted receptors. The primary noise abatement measures evaluated for highway projects include highway alignment changes, traffic system management measures, establishment of buffer zones, noise barriers, and noise insulation (NAC D only). For each of these measures, benefits versus allowable abatement quantity (reasonableness), engineering feasibility, and other factors were included in the noise abatement considerations.

Noise Barriers. Noise barriers include two basic types: earthen berms and noise walls. These structures act to diffract, absorb, and reflect highway traffic noise. For this project, earthen berms are not found to be a viable abatement measure because the additional right of way, materials, and construction costs.

A noise barrier evaluation was conducted for this project utilizing the TNM software developed by the FHWA. Table 3-7 summarizes the results of the evaluation.

Table 3-7. Noise Abatement Acoustical Feasibility and Reasonableness Evaluation Summary

CNE	BARRIER ID	# OF BENEFITED RECEPTOR UNITS	COMBINED NOISE BARRIER LENGTH (FT)	AVERAGE NOISE BARRIER HEIGHT (FT)	SQUARE FOOTAGE (SF)	NET SF PER BENEFITED RECEPTOR	FEASIBLE?	REASONABLE?
1	NW1	10	603	14.0	8,469	847	Yes	Yes
1	NW2	19	1,432	12.3	17,608	927	Yes	Yes
2	NW3-1 & NW3-2	14 (4.2 NRR)	945	15.3	14,418	2,884	Yes	No
2	NW4	2	539	12.0	6,474	3,237	Yes	No

Summary. A traffic noise evaluation was performed that identified two noise barriers that preliminarily meet feasibility and reasonableness criteria found in the VDOT Traffic Noise Policy. A more detailed analysis will be completed during project final design. Noise barriers evaluated during the preliminary noise analysis may not be found to be feasible and reasonable during the final design noise analysis due to changes in proposed project alignment and other design considerations, surrounding land use development, or utility conflicts, among other factors. Conversely, noise barriers that preliminarily were not considered feasible and reasonable may meet the established criteria and be recommended for construction.

In accordance with VDOT Traffic Noise Policy, the Federal/State governments are not responsible for providing noise abatement measures for new development for which building permits are issued after the Date of Public Knowledge. The Date of Public Knowledge of the proposed highway project will be the approval date of the Finding of No Significant Impact (FONSI). VDOT strongly advocates the planning, design and construction of noise-compatible development and encourages its practice among planners, building officials, developers, and others.

3.7 WATER RESOURCES

Water resources are regulated by the US EPA and USACE under the federal Clean Water Act (CWA), Safe Drinking Water Act (SDWA), and Water Quality Act of 1987. Section 404 of the CWA regulates discharges of dredged or fill material into WOTUS. WOTUS can be generally defined as all navigable waters and waters that have been or can be used for interstate or foreign commerce, their tributaries, and any waters that, if impacted, could affect the former. WOTUS include surface waters (streams, lakes, bays, etc.) and their associated wetlands (inundated or saturated areas that support vegetation adapted for life in wet soils). Protection of wetlands is further mandated by the federal government under the provisions of EO 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. The US EPA, USACE, VDEQ, and the Virginia Marine Resources Commission (VMRC) all participate in the issuance of permits for various activities in, under, and over WOTUS in the Commonwealth of Virginia. Additionally, the Project will be subject to review by the Prince William County Local Wetlands Board.

The study area contains wetlands, streams, and FEMA-mapped floodplains, which were identified through a combination of desktop review and field delineation and avoided and minimized as practicable as part of the preliminary 30% design. In March and July 2025, a field delineation was performed within the environmental LOD to identify non-tidal streams and wetlands in accordance with all applicable regulatory requirements. The methodologies and findings for the evaluation of water resources are summarized below and described in detail in the *Natural Resources Technical Report (Appendix D)*, which includes site photos, mapping, and datasheets in a field delineation memorandum.

All practical measures to avoid and minimize harm to waters and wetlands will be implemented as part of the Project. Potential permitting requirements and mitigation measures required for unavoidable impacts to WOTUS are described in Section 3.7.4 at the end of this section.

3.7.1 Streams

Existing Conditions. Within the Potomac-Shenandoah major watershed, the Project lies within the Middle Potomac-Anacostia-Occoquan boundary (eight-digit hydraulic unit code [HUC] 02070010). Surface waters draining the study area consist of smaller unnamed watercourses crossing through and within the environmental LOD that drain south to Rocky Branch, which is located south of and generally parallel to Linton Hall Road, outside of the study area. There are no navigable waterways, no rivers registered with the Nationwide Rivers Inventory, no state-designated scenic rivers, and no Exceptional State Waters within the vicinity of the study area.

As shown in Table 3-8, the field delineation recorded a total of 17 watercourses within the environmental LOD, including 6 perennial, 6 intermittent, and 5 ephemeral watercourses. Almost all are located within the southern, undeveloped/forested portion of the study area. Streams in the study area were found to be relatively undisturbed. There are three significant stream systems with associated wetlands bisecting the Project area: first is the unnamed tributary to Rocky Branch that runs west of and generally parallel to the largest utility corridor near Devlin Road, second, an unnamed tributary also west of the utility corridor, and third, another unnamed tributary running to the south and west of Gainesville High School. Additional information on the existing stream connections, including channel conditions, substrate, flow at the time of observation and detailed Cowardian classifications, is documented in **Appendix D**, which includes a detailed *Wetland and Waterway Delineation Memo*.

No Build Alternative. The No Build Alternative would not result in construction and, therefore, would not cause impacts to streams.

Build Alternative. A total of 3,150 linear feet of streams are located within the environmental LOD, approximately 2,189 linear feet of which are located within the construction limits of the Build Alternative. Most impacts would be to perennial streams (1,139 linear feet) and intermittent streams (1,018 linear feet), which are generally located in association with the perennial streams and wetland complexes on the site. Direct impacts to streams would result from grading and the application of fill for the new alignment of the roadway, as well as placement of structures, such as culverts. While the prevalence of numerous small waterways throughout the forested portion of the study area restricts the ability to avoid impacts, the current alignment of the proposed roadway generally runs perpendicular to the majority of the existing waterways, which would minimize the length of culverts and direct impacts to existing stream channels for any new stream crossings. The Build Alternative would be bridged over the largest tributary of Rocky Branch and its associated floodplain (see Section 3.8). During the future design-build process, efforts to further minimize impacts to streams would occur and all efforts would be coordinated with the appropriate regulatory agencies at that time. This would include the evaluation of the inclusion of open bottom and/or oversized structures/bridges to reduce impacts to streams and preserve wildlife passage and habitat connectivity.

Table 3-8. Estimated Streams Impacts

STREAM TYPE	NO. WITHIN ENVIRONMENTAL LOD	LINEAR FEET WITHIN ENVIRONMENTAL LOD	LINEAR FEET OF ANTICIPATED IMPACT
Perennial	6	1,174	1,139
Intermittent (seasonal flow)	6	1,314	1,018
Ephemeral	5	662	662
Total	17	3,150	2,189

*Note: Anticipated impacts are estimated from the construction limits for the preliminary 30% design plans as shown in **Appendix B**, which encompass approximately 48 acres within the larger environmental LOD. Further evaluation of streams, and efforts to avoid and minimize impacts, would occur during final design in the design-build and permitting process.*

3.7.2 Wetlands

Existing Conditions. As shown in Figure 3-2, a total of 23 wetlands were delineated in the environmental LOD, including 10 palustrine emergent (PEM), 5 palustrine scrub shrub (PSS), and 9 palustrine forested (PFO) wetlands. An in-depth summary of these site findings, including the size, dominant vegetation, hydrological and hydric soil indicators of all wetlands, is documented in **Appendix D**, which includes a detailed *Wetland and Waterway Delineation Memo*. PEM wetlands are characterized by rooted, herbaceous, hydrophytic vegetation (hydrophytes), and can be classified as persistent or nonpersistent. In persistent PEMs, vegetation remains standing until the next growing season. All the PEM wetlands within the study area were classified as persistent. PSS wetlands are dominated by woody vegetation less than 6 meters (19.7 feet) tall such as young trees or shrubby species. PFO wetlands are dominated by vegetation that is over 6 meters (19.7 ft) in height. Commonly, vegetation includes a canopy of mature trees, an understory of younger trees and shrubs, and an herbaceous layer. The PSS wetlands delineated on site are generally located in the central portion of the Project area. The majority of the delineated wetlands are associated with the perennial and intermittent watercourses, although there are some isolated PEM and PSS wetlands located to the east of Rollins Ford Road. In general, the wetlands on site were relatively undisturbed and provide functions including flood attenuation and wildlife habitat.

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

Build Alternative. Wetland impacts are anticipated to occur during the construction of the Project. As shown in Table 3-9, a total of 9.41 acres of wetlands are located within the environmental LOD, approximately 7.21 acres of which are located within the construction limits of the Build Alternative. Direct impacts to wetlands would result from grading, fill, conversion, and hydrological isolations/loss of function. Temporary impacts would also occur, and BMPs will be utilized to protect and restore temporarily impacted wetlands to their original condition after completion of construction. The majority of impacts will be to PEM wetlands (2.84 acres) and PSS wetlands (3.14 acres) that are primarily associated with intermittent and perennial stream systems. Additional evaluation of the nature of impacts to jurisdictional features would occur during the forthcoming permitting process. The potential for avoiding impacts to wetlands is restricted by the prevalence of numerous streams and associated wetlands throughout the forested area as well as other constraints including the tie-ins to existing sections of University Boulevard and proffers of adjacent development within the study area. Further evaluation of wetlands, and efforts to avoid and minimize impacts, would occur during final design in the design-build and permitting process.

Table 3-9. Estimated Wetlands Impacts

WETLAND TYPE	NO. WITHIN ENVIRONMENTAL LOD	ACRES WITHIN ENVIRONMENTAL LOD	ACRES OF ANTICIPATED IMPACT
PEM	10	3.59	2.84
PFO	9	1.98	1.23
PSS	5	3.84	3.14
Total	23	9.41	7.21

*Note: Anticipated impacts are estimated from the construction limits for the preliminary 30% design plans as shown in **Appendix B**, which encompass approximately 48 acres within the larger environmental LOD. Further evaluation of wetlands, and efforts to avoid and minimize impacts, would occur during final design in the design-build and permitting process.*

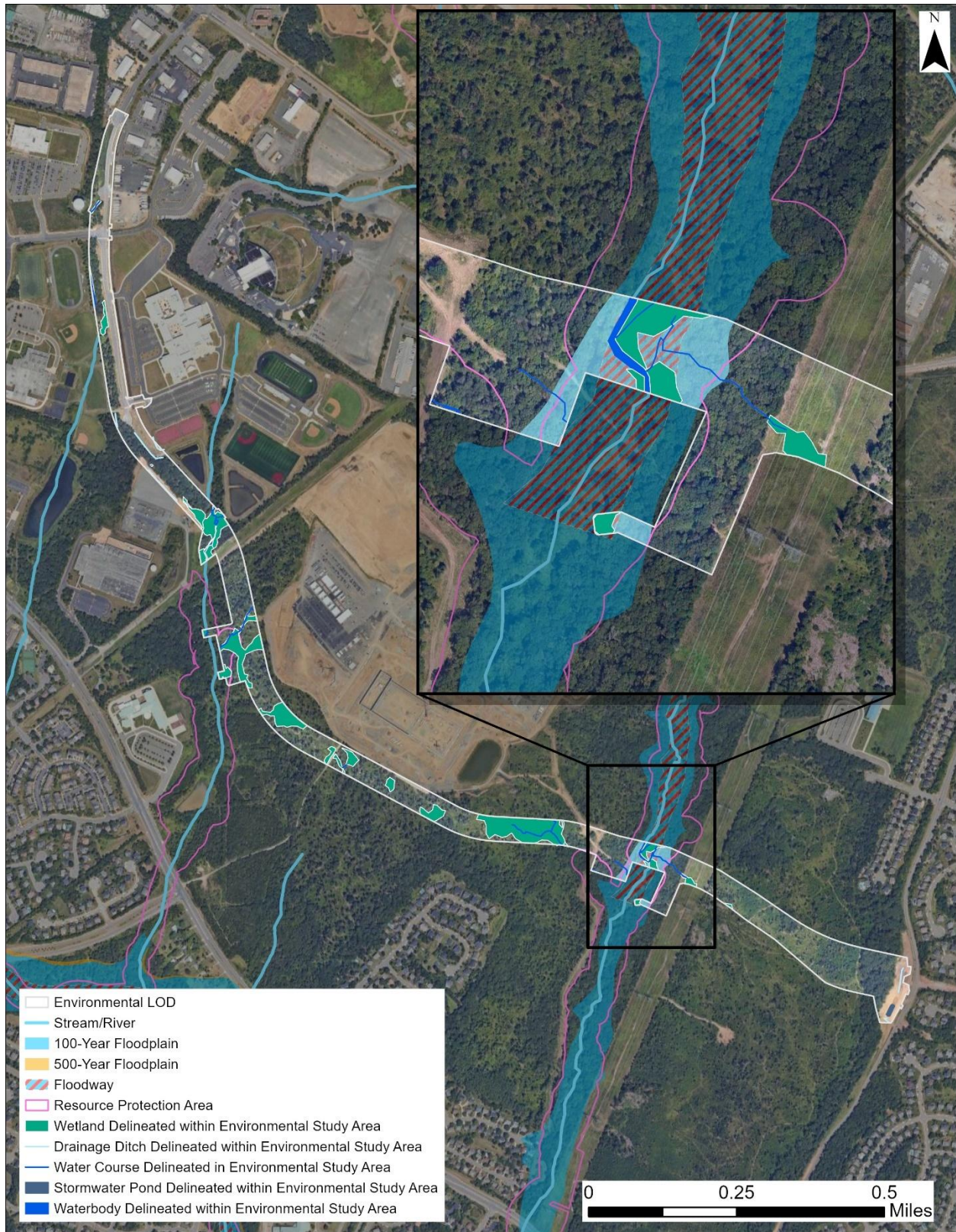


Figure 3-2. Water Resources within the Study Area

3.7.3 Water Quality

Existing Conditions. VDEQ monitors streams for a variety of water quality parameters. Water quality standards designate uses for waters. In Virginia, the six designated uses are aquatic life, fish consumption (i.e., the ability of humans to eat fish from the water body), public water supply, recreation, shellfishing, and wildlife. According to the 2022 305(b)/303(d) Integrated Report released by VDEQ in March 2025, the aquatic life, fish consumption, recreation, and wildlife categories were applicable to the two larger unnamed tributaries to Broad Run that flow through the Project study area. However, none of the categories were assessed by VDEQ or any citizen monitoring organization, and the current water quality of these streams is unknown. In a response received during the scoping process for the Project, the US EPA noted that receiving waterways from the Project study area may be considered impaired due to the presence of polychlorinated biphenyls (PCBs) and E. Coli bacteria. Also, during scoping, the VDH Office of Drinking Water reviewed the Project site to determine if any public drinking water utilities were located within the study area or its vicinity. VDH found that two wells supplying Linton Hall School are within a 1-mile radius of the Project, and the Lake Manassas Dam that supplies drinking water to the city of Manassas is within a 5-mile radius of the Project. VDH also noted that the Project study area passes through the watershed that supplies Fairfax County's Occoquan Reservoir Intake. Scoping responses are provided in **Appendix I**.

The Chesapeake Bay Preservation Act (Bay Act) was enacted by the Virginia General Assembly in 1988 to protect and manage Virginia's coastal zones. The Bay Act requires local governments to include water quality protection measures in their zoning ordinances and comprehensive plans to help reduce the water quality impacts of nonpoint source pollution and improve the health of the Chesapeake Bay. To protect and improve the quality of waterways, sensitive areas along streams have been designated as RPAs and Resource Management Areas (RMAs). RPAs include tidal wetlands, certain nontidal wetlands and tidal shores, and a minimum 100-foot vegetated buffer area located adjacent to and landward of these features and along both sides of any water body with perennial flow. RMAs, which require less stringent performance criteria, include all remaining areas. RPAs that have been designated by Prince William County are shown in Figure 3-2.

No Build Alternative. The No Build Alternative would not result in construction and therefore, would not result in impacts to water quality including impaired waters, drinking water, or groundwater.

Build Alternative. The Build Alternative would not be expected to impact any drinking water or groundwater in the study area. As recommended by VDH, BMPs during construction would include, as typical for this type of Project, Erosion & Sedimentation Controls and Spill Prevention Controls & Countermeasures. Construction materials would be managed while on site and during transport to prevent impacts to nearby surface water. Potential impacts to water distribution systems or sanitary sewage collection systems would be verified by the local utility, if needed, during final design.

The Build Alternative would not be expected to increase bacteria levels within waterways because sources typically include permitted point sources, sanitary sewer and septic systems, wildlife, and pets and the Project would not introduce or cause an increase to any of these sources. As recommended by the US EPA, during final design, opportunities to reduce the impacts of stormwater runoff by minimizing impervious areas and incorporating low-impact design principles and green stormwater infrastructure for both hardscaped and landscaped areas would be further evaluated. During construction, non-point source pollutants could possibly enter groundwater or surface water from storm water runoff. To minimize these impacts, appropriate erosion and sediment control practices will be implemented in accordance with VDOT's current Road and Bridge Specifications. These specifications also prohibit contractors from discharging any contaminant that may affect water quality. In the event of accidental spills, the contractor is required to immediately notify all appropriate local, state, and federal agencies and to take immediate action to contain and remove the contaminant.

The Build Alternative would encroach on two RPA buffers associated with the two larger unnamed tributaries to Rocky Branch and the whole of Prince William County is considered an RMA. There is a total of 4.34 acres of RPA within the environmental LOD, 3.10 acres of which is located within the construction limits of the Build Alternative. Authorization for any tree clearing or land disturbing activities within these areas is enforced at the local level and if not exempt, typically involves a WQIA or other

documentation to show that the Project is not detrimental to water quality, which would occur during final design as needed and coordinated with the County at that time. The regulation of activities within RMAs and RPAs is incorporated into the enforceable policies of Virginia's Coastal Zone Management Program (CZMP) (see Section 3.7.4).

3.7.4 Permits

The Build Alternative would impact wetlands and streams and, therefore, would require authorization from USACE under Section 404 of the CWA, from VDEQ under Section 401 of the CWA, and VDEQ under the Virginia Wetlands Act. Current wetland (7.21 acres) and stream (2,189 linear feet) impact assessments indicate that an Individual Virginia Water Protection permit would be required for the project. The VWP3 for linear transportation projects authorizes impacts up to 2 acres of wetlands and open waters, and/or 1,500 linear feet of stream channel. Additionally, County approval for construction activities within the RPAs in the Project study area may be required. During the scoping phase, VMRC confirmed that an agency permit would not be required. Because more than one acre of land would be disturbed, the project would be required to apply for Construction General Permit coverage from the VDEQ's Erosion and Sediment Control Program. Additionally, as the Project will result in land disturbance greater than 2,500 square feet, the Project will submit an erosion and sediment control checklist and land disturbance plans to Prince William County for review and approval. All required permits would be secured during the final design phase of the project, after the conclusion of the NEPA process.

USACE and VDEQ approve appropriate compensation for wetland and stream impacts on a case-by-case basis during permit development, after final design plans have been developed. As described further below, it is anticipated that stream impacts would be compensated through purchase of mitigation credits from a VDEQ-approved mitigation bank. To achieve state and federal goals of no net loss of wetland acreage and function, the mitigation requirement for impacts to wetlands and streams will be calculated using the mitigation ratios set by VDEQ (below) and the Unified Stream Methodology.

- 2:1 (2 acres compensation for each 1 acre of impact) for forested wetland impacts
- 1.5:1 for scrub-shrub wetland impacts
- 1:1 for emergent wetland impacts
- 1:1 for conversion impacts (ex. forested wetland converted to emergent wetland)
- Project-specific ratios for other surface water impacts such as open waters when necessary

The Project will follow the preferred mitigation hierarchy in Virginia which gives preference to the purchase of wetland and stream mitigation credits from an approved mitigation bank in the impacted watershed. The full preference hierarchy is as follows:

1. Use of an approved mitigation bank
2. Use of an approved in-lieu fee program
3. Permittee-specific mitigation plans

Additionally, the federal Coastal Zone Management Act of 1972 and federal consistency regulations (15 CFR § 930) stipulate that federal activities in Virginia's coastal zone must be consistent with the enforceable policies of the CZMP. VDEQ administers the Virginia CZMP through a network of state agencies and local governments, which share responsibility for administering the enforceable policies. The policies are related to fisheries management, subaqueous lands management, wetlands management, dunes management, non-point source pollution control, point source pollution control, shoreline sanitation, air pollution control, and coastal lands management. Prince William County is located within Virginia's designated coastal zone (VDEQ 2025). Therefore, a consistency determination will be coordinated with VDEQ during the permitting phase. Implementation of the Project will be conducted in a manner that is consistent with the Virginia CZMP to the maximum extent practicable as defined in 15 CFR § 930.32.

3.8 FLOODPLAINS

EO 11988 Floodplain Management directs federal agencies to:

- Assert leadership in reducing flood losses and losses to environmental values served by floodplains;
- Avoid actions located in or adversely affecting floodplains unless there is no practicable alternative;
- Take action to mitigate losses if avoidance is not practicable; and
- Establish a process for flood hazard evaluation based upon the 100-year base flood standard.

For the purposes of this federal mandate, 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.” FEMA identifies and maps the nation’s flood-prone areas through the development of Flood Insurance Rate Maps (FIRM) and/or Flood Insurance Studies (FIS) (FEMA 2025). To determine compliance with EO 11988, a *Floodplain H&H Analysis* and associated scour analysis was conducted to assess the hydraulic impacts associated with the proposed Project (**Appendix E**). Of note, within the eastern portion of the study area that is currently undeveloped, a segment of the unnamed tributary to Rocky Branch is located within a FEMA-designated Zone AE flood hazard area with an established regulatory floodway, as delineated by LOMR Case No. 20-03-0070P, effective 12/03/2020.

The H&H Analysis evaluated existing and proposed conditions in coordination with the preliminary roadway and bridge designs to ensure compliance with applicable floodplain management criteria. The H&H analysis and associated conceptual design are not intended for direct use in construction or permitting at this stage. Instead, and for the purposes of this EA, it serves to inform Prince William County and the future design-build contractor on a feasible bridge crossing solution, with respect to hydraulics, floodplain impacts, easement requirements, and permitting considerations.

During the design-build process, all efforts would be made to continue to assess the feasibility of utilizing bridges or bottomless culverts for new aquatic resource crossings to help reduce impacts, maintain hydrologic connectivity, and avoid permanent impacts to the FEMA-mapped floodplain.

Existing Conditions. As shown in Figure 3-2, there are approximately 1.15 acres of FEMA-mapped floodplains and 0.89 acre of regulatory floodway in the environmental LOD extending out from the unnamed tributary to Rocky Branch. The current effective FIS for Prince William County, Virginia and Incorporated Areas is dated August 3, 2015. According to this study, no detailed hydrologic or hydraulic analysis was originally provided for the unnamed tributary to Rocky Branch. However, a subsequent LOMR (Case No. 20-03-0070P), effective 12/03/2020 provides updated hydrology study and hydraulic modeling for this unnamed tributary to Rocky Branch. The revised study reach extends from approximately 2,870 feet upstream of State Route 619 (Union Hall Road) to approximately 6,690 feet upstream of the same roadway. At a location approximately 0.57 mile upstream of Linton Hall Road, the drainage area contributing to the unnamed tributary to Rocky Branch is 1.89 square miles, with a 100-year peak discharge of 4,640 cubic feet per second (cfs). The LOMR includes Base Flood Elevations (BFEs) both with and without consideration of the regulatory floodway.

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

Build Alternative. The H&H analysis focused on the area surrounding the proposed new alignment bridge crossing of the unnamed tributary to Rocky Branch to evaluate hydraulic impacts associated with the Build Alternative.

A hydraulic analysis was conducted using the USACE Hydrologic Engineering Center’s River Analysis System (HEC-RAS) Version 6.6 for the unnamed tributary to Rocky Branch to evaluate the 100-year floodplain impacts associated with the proposed bridge and University Boulevard Extension.

In the proposed conditions HEC-RAS model, the proposed bridge was added between cross sections 6020 and 5881. The area around the bridge abutments is anticipated to be cleared of woody vegetation,

with shading from the bridge reducing the potential for vegetative reestablishment. Additionally, the ground would be stabilized using stone riprap or similar scour protection measures.

For modeling purposes, grading was applied within the bridge opening and extended to the adjacent upstream and downstream cross sections to maintain floodplain continuity and enhance conveyance. Due to the wide span and elevated bridge deck, the bridge does not restrict flow or cause contraction. The modeled water surface elevations remain below the bridge deck under all flow conditions. Flow passes beneath the superstructure without contracting around the abutments and does not impact the flow. The only impediment that causes energy loss is the pier.

Topographic work maps depicting the regulatory 100-year floodplain under both existing and proposed conditions are included in the H&H Analysis (**Appendix E**). A localized rise in the BFE was identified at cross sections 6020 and 5881 in the proposed model, directly resulting from the grading and geometry associated with the proposed bridge construction. These increases are observed not only for the FEMA 100-year flow but also for the StreamStats 100-year event, as well as the more frequent 50-, 25-, and 10-year storm events. No BFE increases are present elsewhere within the study reach. To reflect these localized changes and maintain compliance with regulatory requirements, a floodplain easement has been delineated, as referenced in Section 3.2.

3.8.1 Permits

In order to comply with EO 11988 and to secure the necessary in-water permits from USACE, a practical bridge design will likely require a pier within the FEMA-designated floodway to maintain feasible span lengths. As a result, the future design-build contractor would need to pursue a CLOMR and subsequent LOMR. In addition, to comply with Prince William County floodplain management criteria, a detailed hydrologic study of the unnamed tributary to Rocky Branch watershed will be required to characterize ultimate build conditions.

To accommodate the anticipated rise in water surface elevation greater than 0.1 foot, two permanent floodplain easements would be required: one at 0.465 acre and the other at 0.585 acre.

3.9 WILDLIFE AND WILDLIFE HABITAT

Descriptions of habitat present in the Project study area were developed through review of current aerial imagery, Project survey information from the preliminary design, and field observations obtained during the delineation survey (Section 3.9). The VDWR and 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 2025).

The Project study area encompasses areas that are potentially suitable aquatic and terrestrial habitats for wildlife, which are summarized below. A full inventory of wildlife population resources and associated habitat that were reviewed within the Project area are provided in the *Natural Resources Technical Report* (**Appendix D**).

Existing Conditions. The Project study area falls entirely within the Northern Piedmont ecoregion.

Generally, this ecoregion is dominated by three land cover types: urban, agriculture, and forest cover. Habitat adjacent to the study area has been and will continue to be significantly fragmented by residential, commercial, and industrial developments. The eastern portion of the environmental LOD is predominantly forested, providing habitat for terrestrial species, with perennial streams, providing habitat for aquatic species. It is bisected by a cleared transmission line right-of-way and includes the existing portion of University Boulevard in the western portion of the study area, which is developed.

Common native trees throughout this region are *Quercus alba* (white oak), *Quercus rubra* (northern red oak), *Acer rubrum* (red maple), and *Liriodendron tulipifera* (tuliptree). The terrain is dominated by rolling hills and valleys. Wildlife typical of this type of habitat includes: eastern cottontail (*Sylvilagus floridanus malurus*), whitetail deer (*Odocoileus virginianus*), eastern gray squirrels (*Sciurus carolinensis*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), and common migratory and non-migratory bird species.

Invasive species were found within the environmental LOD during field surveys, which are documented in the *Natural Resources Technical Report (Appendix D)*.

There are no Essential Fish Habitat (EFH) waters, confirmed or potential Anadromous Fish Use Areas, stocked trout waters, or Submerged Aquatic Vegetation (SAV) areas within the watercourses present within the study area.

No wildlife or waterfowl refuges are present within 1.0 mile of the Project (USFWS 2025).

No Build Alternative. The No Build Alternative would not result in the removal or disturbance of terrestrial or aquatic wildlife habitat.

Build Alternative. There are approximately 51 acres of undeveloped land (see Section 3.2) within the environmental LOD that could be cleared during construction of the Build Alternative. As part of Section 7 coordination with USFWS (see Section 3.10 and **Appendix I**), it was estimated that there are approximately 19.25 acres of forested tree cover that could provide quality terrestrial habitat within the environmental LOD, which is shown in Figure 3-3. Additionally, individual trees or smaller tree stands may provide nesting and foraging opportunities for wildlife species typically found in urban and suburban environments, as described above.

Tree clearing required for the construction of the Build Alternative would result in the fragmentation of the existing forest habitat located within the study area; however, the future development along the proposed alignment (notably, the Devlin Technology Park and Hunter Property sites) would impact the majority of the adjacent remaining undeveloped area along the proposed project corridor, including the areas that would be bisected by the Project. The habitat fragmentation and loss resulting from the University Boulevard project in conjunction with proposed future development would result in decreased dwelling space and food sources available for species such as the eastern cottontail, whitetail deer, and red fox. Opportunities to reduce tree removal will be explored as the Project advances in final design but are limited due to the nature of the new connection through a currently undeveloped area.

Impacts to wetlands and streams would result in a loss of potential aquatic habitat in the study area. These losses would be minimized by utilizing design methods for roadway crossings, such as countersinking instream culverts, and design methods to avoid altering natural streams bottoms and riparian areas would be implemented as practicable to further reduce impacts to habitat. Additional design methods to reduce impacts to habitat, aquatic, and terrestrial resources would be evaluated during final design and permitting of the Project.

In accordance with EO 13112, Invasive Species, the potential for the establishment of invasive terrestrial or aquatic animal or plant species during construction of the proposed Project will be minimized by following provisions in VDOT's Road and Bridge Specifications. These provisions require prompt seeding of disturbed areas with mixes that are tested in accordance with the Virginia Seed Law and VDOT's standards and specifications to ensure that seed mixes are free of noxious species. While the proposed right-of-way is vulnerable to the colonization of invasive plant species from other portions of the site and from adjacent properties, implementation of the stated provisions will reduce the potential for the establishment and proliferation of invasive species. Upon completion of the necessary earthwork, all disturbed areas that are not paved would be revegetated using appropriate grass seed mixes in accordance with VDOT's plans and specifications.



Figure 3-3. Forested Area within the Environmental LOD

3.10 THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES

Threatened and endangered species are regulated by the USFWS under Section 7 of the Endangered Species Act (ESA) and by the Virginia Department of Agriculture and Consumer Services (VDACS) and the VDWR in the Commonwealth of Virginia. 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 study area. A review of the USFWS Online IPaC review process, VDWR databases, and VDCR databases was utilized to obtain an initial list of special status species with the potential to occur in the vicinity of the study area. Subsequent coordination regarding threatened and endangered species with each agency identified species for further review and continued coordination throughout the Project. These species that have the potential to occur or have potential habitat within the study area from this coordination are listed in Table 3-10 and summarized in the sections below.

Table 3-10. Potential Threatened and Endangered Species Identified for Further Coordination

SPECIES	STATUS	SOURCE
Tricolored Bat (<i>Perimyotis subflavus</i>)	Federally Endangered (Proposed)	USFWS
Northern Long-Eared Bat (<i>Myotis septentrionalis</i>)	Federally Endangered	USFWS
Yellow Lance (<i>Ellipito lanceolata</i>)	Federally Threatened, State Threatened	VDWR
Monarch Butterfly (<i>Danaus plexippus</i>)	Proposed Threatened	USFWS
Brook Floater (<i>Alasmidonta varicosa</i>)	State Endangered	VDWR
Wood Turtle (<i>Glyptemys insculpta</i>)	State Threatened	VDWR
Torrey's Mountain Mint (<i>Pycnanthemum torreyi</i>)	State Threatened	VDACS

More details on all species as well as subsequent agency coordination is documented in the *Natural Resources Technical Report (Appendix D)*, which includes a detailed *Rare, Threatened, & Endangered (RTE) Species Memo*.

For federally listed species, the USFWS IPaC review process was used to obtain a species resource list, which listed three species: the Northern Long-Eared Bat, the Tri-Colored Bat, and the Monarch Butterfly. No critical habitat was listed for any species within the study area. The IPaC information was used to prepare a Project Review Package per the USFWS Virginia Ecological Services Field Office guidance (USFWS 2025b), which was submitted on July 3, 2025, for further consultation on the two bat species, which have determination keys guidance as part of the IPaC process. The Monarch Butterfly is currently listed as a federal proposed threatened species, under which no current protections are afforded by the ESA. At USFWS's request, additional information about the study area was provided on July 21, 2025. On September 10, 2025, USFWS requested a final revised Determination Table and Self Certification letter. These documents were provided to USFWS on September 16, 2025, and are included as attachments in **Appendix D**, thus finalizing and completing Section 7 consultation with USFWS.

For state-listed species, the VaFWIS Initial Project Assessment (IPA) was utilized to analyze potential for Virginia's endangered and threatened species to occur for a 2-mile buffer around the Project study area. The IPA showed three listed species to be confirmed within the buffer: the yellow lance and brook floater (both species of mussel) and the wood turtle. This information was used to prepare a Project review package for potentially affected state protected species that was submitted to VDWR on August 7, 2025. VDWR responded on September 4, 2025, with recommendation for the threatened and endangered species in the project vicinity including a request to complete mussel surveys for the yellow lance performed no more than 6 months prior to the start of construction. VDWR also included time of year restrictions and best management practices for the species. Prince William County agreed to incorporate mussel surveys in the technical provisions for the design build contractor to meet this recommendation.

The Commonwealth of Virginia also maintains a database (i.e., the VDCR Natural Heritage Data Explorer) for occurrences of natural heritage resources, which are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations, as well as a database of state endangered or threatened species. This database was initially reviewed in early Project coordination. Subsequently, during Project scoping, VDCR provided more detailed information regarding natural heritage resources and associated species that was used in continued Project coordination.

All agency correspondence regarding threatened and endangered species is provided in **Appendix D**.

Existing Conditions. Details of existing conditions – including suitable habitat and description of species – to threatened, endangered, and special status species are discussed below:

- *Tricolored Bat (Perimyotis subflavus)* – *State Endangered; Proposed Federally Endangered*. The tricolored bat was identified in IPaC as having potential to occur within the study area. The tricolored bat is a mammal in the *Perimyotis* family. The tricolored bat has a body length of 3-3.5 inches and a wingspan of 8-10 inches. During the spring, summer, and fall, tricolored bats primarily roost among live and dead leaf clusters of live or recently dead deciduous hardwood trees. During the winter, tricolored bats hibernate in caves and mines; though where caves and mines are sparse, they often roost in road-associated culverts and trees. There are no hibernacula within the study area, however typical summer roosting habitat is present.
- *Northern Long-Eared Bat (Myotis septentrionalis)* – *Federally & State Endangered*. The northern long-eared bat (NLEB) was identified in IPaC as having potential to occur within the study area. The NLEB is a mammal in the *Myotis* family. The NLEB is a medium-sized bat with a body length of 3-3.7 inches and a wingspan of 9-10 inches. Their fur color can be medium to dark brown on the back and tawny to pale on the underside. This bat species typically overwinters in caves and mines and spends the remainder of the year in forested habitats. There are no hibernacula within the study area, however typical summer roosting habitat is present.
- *Monarch Butterfly (Danaus Plexippus)* – *Proposed Federally Threatened*. The monarch butterfly, a species in the *Danaus* family, was identified in the IPaC as having potential to occur within the study area. They have bright orange and black markings which serve as a warning to predators. Monarchs require milkweed (*Asclepias spp.*) and other flowering plants typically found in fields, roadside areas, wet areas, or gardens. There is suitable habitat in the unforested portions of the study area.
- *Yellow Lance (Elliptio lanceolata)* – *State and Federally Threatened*. The yellow lance was listed as a “confirmed species” for the study area in the VaFWIS IPA. The yellow lance is dependent on clean, moderate flowing fresh water, preferring coarse to medium sand at the downstream end of stable sand/gravel bars. Sometimes yellow lances are found near water's edge within inches of exposed substrate or migrating with shifting sands. However, suitable habitat for yellow lance was not observed in the perennial water courses in the environmental LOD during the wetland and water delineation for the Project.
- *Brook Floater (Alasmidonta varicosa)* – *State Endangered*; The brook floater was listed as a “confirmed species” for the study area in the VaFWIS IPA. The brook floater is a mussel species in the *Alasmidonta* family. They have yellowish or greenish shells and grow to a maximum length of 3 inches. The brook floater depends on streams with clean, flowing water, and substrates that they can anchor into while filter feeding. Evidence suggests they are sensitive to high water flows that can dislodge them from stream bottoms. Their habitat is vulnerable to pollution, development, invasive species, and changes in temperature and precipitation patterns resulting from climate change. However, suitable habitat for the brook floater was not observed in the perennial water courses in the environmental LOD during the wetland and water delineation for the Project.
- *Wood turtle (Glyptemys insculpta)* – *State Threatened*. The wood turtle was listed as a “confirmed species” for the study area in the VaFWIS IPA. Wood turtles move between land and water and are found in streams or riparian uplands. They hibernate during the winter in forested streams that have deep pools with sand bottoms. They nest and forage in open grasslands, barrens, and

sandy shores, particularly during the spring. There may be potential suitable habitat for wood turtles in and near the perennial streams with the study area.

- **Torrey's Mountain Mint (*Pycnanthemum torreyi*) – State Threatened.** Torrey's mountain mint was identified as having the potential to occur on site in correspondence from VDCR dated August 1, 2025 (**Appendix I**). Torrey's mountain mint is a plant species in the *Pycnanthemum* family. It has two leaves per node along the stem and the leaves are simple. The flowers are white and have five petals. It prefers intermediate light levels and tends to grow along forest edges.
- **Bald Eagles (*Haliaeetus leucocephalus*).** Bald Eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d). IPaC indicated that bald eagles are likely to be within, or pass through, the study area. The Center for Conservation Biology's Virginia Eagle Nest Locator indicates that the Project is approximately 2 miles away from the closest known eagle nest; this nest was last checked in 2009, and it was last known to be occupied in 2004 (**Appendix D**).

Essential Fish Habitat. The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) established a mandate for federal agencies to identify and protect important marine and anadromous fish habitat. EFH is defined by the Magnuson-Stevens Act as “those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity” (16 U.S.C. 1802 [10]). EFH regulations apply largely to marine fisheries but are also applicable to freshwater spawning waters for anadromous species. EFH waters include aquatic areas and their associated physical, chemical, and biological properties; substrates (natural and unnatural bottoms, structures, and biological communities); and necessary habitat required to support a sustainable fishery. According to the National Oceanic and Atmospheric Administration (NOAA) EFH mapper (**Appendix D**), there are no EFH waters in the University Boulevard Project area.

Natural Heritage Resources. A review of Natural Heritage resources within the Project area was completed in April 2025 using VDCR's online Natural Heritage Program (NHP) database, and in August 2025 through coordination with VDCR (**Appendix I**). According to VDCR, the Vulcan Gainesville Tract Conservation site, and associated plant species and potential suitable habitat, are located within the study area, including a 100-foot buffer. VDCR also identified the potential for rare plants that are typically associated with prairie vegetation and are found in semi-open diabase glades in Virginia to occur in the project area if suitable habitat exists on site. Additionally, VDCR indicated the presence of Ecological Cores as identified in the Virginia Natural Landscape Assessment, which are areas of at least 100 acres of continuous interior, natural cover. Maps of these Natural Heritage Resources are shown in the *Natural Resources Technical Report* (**Appendix D**), which includes mapping of conservations areas and associated habitats as provided by VDCR. VDCR recommended avoidance of impacts to cores or, if avoidance is not possible, concentration of potential impacts to the edges of the cores so that the interior core remains intact. An updated project review of the VDCR NHP information 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, and any additional coordination would occur at that time, if needed.

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

Build Alternative. The following outlines the coordination history with USFWS, VDWR and VDCR:

Coordination with USFWS

- Section 7 coordination package submitted by VDOT (non-federal Project sponsor) to USFWS in July 2025.
- USFWS communicated via email that time of year restrictions on tree removal and drilling/blasting would be required to achieve “not likely to adversely affect” designation for tricolored bat and northern long-eared bat (July 2025).
- Prince William County agreed to implement time-of-year-restrictions (TOYR) on tree removal from April 1-September 30, in addition to TOYR for drilling and blasting from May 15-July 31.

- USFWS requested an updated determination table and self-certification letter, which were submitted by VDOT on September 16, 2025, and are included as attachments in **Appendix D**, thus finalizing and completing Section 7 consultation with USFWS.

Coordination with VDWR

- Threatened and endangered species coordination package submitted to VDWR Project Review in August 2025.
- VDWR reviewed the project and provided comments, including recommendations and guidance for mussel surveys for the yellow lance and brook floater to take place within 6 months of the start of construction, in September 2025.
- Prince William County agreed to incorporate mussel surveys in the technical provisions for the design-build contractor.

Coordination with VDCR

- Coordination package was submitted to VDCR in July 2025.
- VDCR response letter was received in August 2025. The response letter indicated the presence of natural heritage resources in the project area, including the Vulcan Gainesville Tract Conservation site and associated rare plant communities, potentially including Torrey's Mountain mint, listed as a species of concern by USFWS and listed as threatened by the Virginia Department of Agriculture and Consumer Services.
- In this EA, Prince William County is committing to avoiding and minimizing impacts to Natural Heritage Resources within the project area.

Potential impacts from the Build Alternative to threatened, endangered, and special status species are discussed below:

- *Tricolored Bat and Northern Long-Eared Bat*. The environmental LOD area consists of approximately 19.25 acres of forested tree cover that could be potential NLEB summer roosting habitat. The habitat is located throughout the eastern portion of the proposed alignment, which is currently undeveloped. The Build Alternative 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 mile of hibernacula. Per Section 7 consultation with USFWS, to mitigate potential impacts to these two bat species and their habitat, the Project will implement TOYR during construction to avoid tree clearing from April 1 to September 30 and avoid drilling/blasting from May 15 to July 31 (**Appendix D**).
- *Monarch Butterfly*. The Monarch Butterfly is listed as Proposed Threatened and no critical habitat for this species is designated within the project area. If this species is officially listed by USFWS during the duration of this project, coordination with USFWS will take place to obtain a Section 7 determination.
- *Wood Turtle*. To mitigate potential impacts to wood turtles, the Project will implement BMPs recommended by VDWR to include the following: Wood turtles found in uplands within a Project/work area during construction will be moved out of the project area to locations within the nearest stream (adjacent to Project area, within same watershed) no further than a 0.25 mile up or downstream from the Project site. Any relocations will be reported to VDWR with accompanying photos within 72 hours.
- *Torrey's Mountain Mint*. Correspondence from VDCR indicates that Torrey's mountain mint and the diabase glade habitat that supports it has the potential to occur within the Project study area. VDCR recommends avoiding rare plant populations to minimize potential adverse impacts to natural heritage resources and also recommends an inventory of such resources within the study area. Further coordination would be conducted during final design to evaluate the need for a survey of natural heritage resources, including the Torrey's mountain mint, and additional agency coordination may be required at that time.
- *Yellow Lance and Brook Floater*. VDWR indicated in correspondence dated September 4, 2025, that it appears there is suitable mussel habitat in stream WC-1 (**Appendix D**). Because of this, VDWR recommends the following measures be taken:

- Mussel survey to be performed by a qualified, permitted biologist, no more than six months prior to the start of construction. (NOTE: Through discussions with PWC, it was confirmed this survey would be completed by the design-build contractor through incorporation of the requirement into the technical provisions).
- Time of year restrictions for all in-stream work in perennial streams from April 15-June 15 and August 15-September 30, of any year.
- Best Practices for protecting the listed mussels in nearby waters, which PWC will accommodate as feasible during project construction:
 - VDWR recommends maintaining undisturbed naturally vegetated buffers of at least 100 feet in width around all on-site wetlands and on both sides of all perennial and intermittent streams. They recommend maintaining undisturbed naturally vegetated buffers of at least 200 feet in width on all perennial tributaries to Threatened and Endangered Species Waters, and recommend maintaining undisturbed naturally vegetated buffers of at least 300 feet on both sides of Threatened and Endangered Species Waters.
 - VDWR recommends that the stormwater controls for this project be designed to replicate and maintain the hydrographic condition of the site prior to the change in landscape. This should include, but not be limited to, utilizing bioretention areas, and minimizing the use of curb and gutter in favor of grassed swales. Bioretention areas (also called rain gardens) and grass swales are components of Low Impact Development (LID). They are designed to capture stormwater runoff as close to the source as possible and allow it to slowly infiltrate into the surrounding soil. They benefit natural resources by filtering pollutants and decreasing downstream runoff volumes.
 - VDWR recommends conducting any in-stream activities during low or no-flow conditions, using non-erodible cofferdams or turbidity curtains to isolate the construction area, blocking no more than 50% of the streamflow at any given time (minimal overlap of construction footprint notwithstanding), stockpiling excavated material in a manner that prevents reentry into the stream, restoring original streambed and streambank contours, revegetating barren areas with native vegetation, and implementing strict erosion and sediment control measures. They recommend that instream work be designed and performed in a manner that minimizes impacts upon natural streamflow and movement of resident aquatic species. To minimize potential wildlife entanglements resulting from use of synthetic/plastic erosion and sediment control matting, they recommend using matting made from natural/organic materials such as coir fiber, jute, and/or burlap. To minimize harm to the aquatic environment and its residents resulting from use of the Tremie method to install concrete, installation of grout bags, and traditional pouring of concrete, they recommend that such activities occur only in the dry, allowing all concrete to harden prior to contact with open water. Due to future maintenance costs associated with culverts, and the loss of riparian and aquatic habitat, we prefer stream crossings to be constructed via clear-span bridges. However, if this is not possible, they recommend countersinking any culverts below the streambed at least 6 inches, or the use of bottomless culverts, to allow passage of aquatic organisms. They also recommend the installation of floodplain culverts to carry bankfull discharges.
- *Bald Eagle*. Bald Eagle nests or documented bald eagle concentration areas would not be adversely affected by the proposed Project. Since no documented Bald Eagle nests or concentration areas were identified within one mile of the proposed Project, it is not anticipated that the Build Alternative would result in adverse impacts Bald Eagles.
- *Essential Fish Habitat*. There are no habitats appropriate for marine and/or anadromous aquatic species within the study area. Therefore, EFH would not be adversely affected by the Build Alternative.

3.11 HAZARDOUS MATERIALS

Hazardous materials are generally defined as any substance or material that has been determined to be capable of posing an unreasonable risk to the environment and/or humans. The federal government and Commonwealth of Virginia, primarily through the US EPA and the VDEQ, respectively, regulate hazardous materials under multiple statutes.

A *Limited Phase I ESA* was performed to identify the potential for encountering RECs associated with the construction of the Project, assess potential risks, and prescribe mitigation or minimization to protect the environment and human health, if needed. All analysis was performed in accordance with the American Society of Testing and Materials (ASTM) Standard Practice for the Phase I ESA Process (ASTM Designation: E1527-21) and the US EPA Standard Practice for All Appropriate Inquiries (AAI) (40 CFR Part 312). The scope of the ESA included site reconnaissance, records review, and user-provided information or interviews. The methodologies and findings for the hazardous materials analysis are summarized below and described in detail in **Appendix H**.

Existing Conditions. The Phase I ESA did not identify any RECs, controlled RECs, or historical RECs in the properties within the overall Project study area. Several *de minimis* conditions were identified, including municipal refuse along the roadway and adjacent storm drain swales and releases of gasoline at two parcels. A Business Environmental Risk (BER) of nine underground storage tanks (USTs) and seven aboveground storage tanks (ASTs) was identified at a property along existing University Boulevard near Wellington Road; however, the property is located outside of the environmental LOD. It was also noted that pad-mounted transformers were observed along the corridor; while older units may have the potential for PCBs, based on site reconnaissance it was noted that it was unlikely that the electrical equipment contains PCBs.

No Build Alternative. The No Build Alternative would not result in construction and would therefore not disturb soil or groundwater, nor demolish any structures that might have been impacted by existent hazardous material sites.

Build Alternative. Since no known, controlled, or historic RECs or BERs were identified within the environmental LOD, the construction of the Build Alternative is anticipated to have limited exposure to hazardous materials.

Prince William County would provide pre-construction cleanup of solid waste and debris in coordination with the Department of Public Works and ensure verification of PCB testing for any transformers if relocation is required. If the Project limits change and ground-disturbing activities would be required near the site with the USTs/ASTs, a Phase II ESA would be performed prior to construction.

All solid waste material resulting from clearing and grubbing, demolition, or other construction operations would be removed from the Project and disposed of in an appropriate manner, if necessary. If contaminated soils are encountered during construction, VDOT would develop and implement appropriate procedures for their proper management and coordinate the removal, disposal, and/or treatment of the soil, as necessary. If contaminated groundwater is encountered during construction, VDOT would implement appropriate specifications for proper management and treatment of the water, as necessary.

3.12 REASONABLY FORESEEABLE EFFECTS

In addition to the direct impacts discussed above, NEPA requires the consideration of reasonably foreseeable effects of a proposed action. Reasonably foreseeable effects are the incremental effects of the action when added to other past, present, and reasonably foreseeable future actions, regardless of the sponsor of those actions. This section includes a discussion of the reasonably foreseeable effects of the proposed Project.

The Build Alternative, which proposes to provide additional capacity to the roadway system to alleviate traffic congestion and to safely improve multimodal connection and accessibility between the western and eastern portions of Prince William County, would create limited effects due to its design predominately within existing and proffered transportation right-of-way. Some potential effects may result from increased

traffic capacity and improved travel efficiency, which could enhance the attractiveness of adjacent land for development. However, given that most of the surrounding land is already developed, proposed for development (i.e., Aura Development, Devlin Technology Park, and Hunter Property as described in Chapter 1), or protected or constrained by topography, the likelihood of substantial growth-related impacts is greatly reduced. Reasonably foreseeable environmental effects may include incremental increases in impervious surfaces, wetland impacts and traffic noise, minor changes in stormwater runoff patterns, and incremental decreases in wildlife habitat.

As shown in Table 3-11, the Build Alternative would also result in potentially reasonably foreseeable effects that are positive, such as improved travel time, improved accessibility and connectivity, and reduced congestion that could have positive air quality benefits.

Table 3-11. Reasonably Foreseeable Effects for the Build Alternative

RESOURCE CATEGORY	POTENTIAL REASONABLY FORESEEABLE EFFECTS	TYPE OF EFFECT	LEVEL OF EFFECT
Socioeconomics	Improved travel time	Positive	Moderate
Land Use	Incremental change in regional land use pattern is limited as area is nearly fully developed	Neutral	Minor
Right-of-Way and Relocations	Marginal increase in right-of-way acquisition/easements	Negative	Minor
Public Parks, Recreational Areas, and Public Space	No effects anticipated	No Effect	No Effect
Farmlands and Agricultural/Forestral Districts	No effects anticipated	No Effect	No Effect
Historic Properties	No effects anticipated	No Effect	No Effect
Wetlands and Streams	Incremental reduction of existing wetlands	Negative	Minor (based on adherence to mitigation developed through wetlands permitting process)
Water Quality	Incremental localized hydrologic changes and increased impervious surfaces	Negative	Minor (based on adherence to stormwater management requirements)
Floodplains	Incremental decrease in floodplain storage capacity due to combined effects of regional development and floodplain encroachment	Negative	Minor (based on adherence to local, state, and federal floodplain regulations)
Air Quality	Reduced congestion and improved travel times could result in potential reduction in vehicular emissions	Positive	Minor
Noise	No effects anticipated	No Effect	No Effect
Wildlife Habitat	Incremental loss of wildlife habitat and temporary displacement of species	Negative	Moderate
Threatened, Endangered and Special Status Species	Incremental loss of suitable habitat and habitat fragmentation	Negative	Moderate
Hazardous Materials	No effects anticipated	No Effect	No Effect

3.12.1 Avoidance and Minimization

The Build Alternative would take place predominately within existing transportation right-of-way within an area that is almost entirely developed or proposed/approved for future development. However, as noted above, reasonably foreseeable incremental effects could occur. This section outlines strategies that can avoid and minimize those effects.

3.12.1.1 Land Use and Planned Development

Reasonably foreseeable land use changes may result from increased accessibility and regional connectivity. While these changes are generally consistent with local comprehensive plans, Prince William County would coordinate closely with local and regional planning entities to maintain alignment with existing land use goals and zoning.

3.12.1.2 Natural Resources (Wetlands, Streams, Floodplains, and Wildlife)

To minimize potential reasonably foreseeable effects to wetlands and water resources, Prince William County would incorporate stormwater BMPs as outlined in the VDOT Drainage Manual and the Virginia Stormwater Management Handbook. Efforts would be made to avoid encroachments on WOTUS and minimize these encroachments to the maximum extent practicable. Where such impacts are unavoidable, compensatory mitigation would be required in accordance with VDEQ's Virginia Water Protection Permit Program and USACE's Compensatory Mitigation Program.

The County would continue coordination with VDWR, VDCR, and USFWS to evaluate potential impacts to threatened endangered and special status species and develop avoidance and minimization measures consistent with the Natural Resources Technical Report (**Appendix D**). Avoidance and minimization practices would include adherence to seasonal construction restrictions and could include use of previously disturbed areas for staging and construction access as well as restoration of areas used for construction purposes.

Floodplain encroachments would be minimized by compliance with the requirements of EO 11988 and adherence to design standards established in the VDOT Drainage Manual (2023) and VDOT's Resilience Planning Guidance. The proposed Project's design would consider future hydrologic conditions to avoid exacerbating downstream flooding.

Temporary construction impacts to the 17 watercourses within the study area would be mitigated by using sediment and erosion control measures per VDOT Road and Bridge Specification Section 303 and the VDOT Erosion and Sediment Control and Stormwater Management Program Standards and Specifications.

4 COORDINATION & COMMENTS

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures and related environmental requirements. Agency consultation and public participation for this Project have been accomplished through a variety of formal and informal methods, including: Project development meetings, agency scoping, interagency coordination meetings, the Prince William County website, property owner notification, social media, a public information meeting, and a public hearing with comment period. This chapter summarizes the results of the County's efforts to fully identify, address, and resolve Project-related issues through early and continuing coordination.

4.1 AGENCY COORDINATION

In the process of preparing this document, the federal, state, and local agencies listed below were consulted to obtain pertinent information and to identify any key issues regarding potential environmental resources associated with the Project.

- Potomac and Rappahannock Transportation Commission (PRTC) – OmniRide
- Prince William County Department of Economic Development and Tourism
- Prince William County Department of Fire and Rescue
- Prince William County Department of Parks and Recreation
- Prince William County Planning Office
- Prince William County Superintendent of Schools
- Virginia Department of Conservation and Recreation (VDCR), Division of Natural Heritage (DNH)
- Virginia Department of Environmental Quality (VDEQ)
- Virginia Department of Forestry (VDOF)
- Virginia Department of Health (VDH)
- Virginia Department of Historic Resources (VDHR)
- Virginia Department of Wildlife Resources (VDWR)
- Virginia Marine Resources Commission (VMRC)
- US Army Corps of Engineers, Norfolk District
- US Department of Homeland Security, Federal Emergency Management Agency (FEMA)
- US Environmental Protection Agency (US EPA), Region 3
- US Fish and Wildlife Service (USFWS), Virginia Ecological Field Office

Four agency responses to the scoping letters were received identifying potential environmental resources and other relevant factors within the Project study area that have been incorporated into this environmental assessment as appropriate. Table 4-1 provides a summary of the responses received. Copies of the correspondence are provided in **Appendix I**.

In addition to scoping letters, potential environmental impacts were also directly coordinated with USFWS and VDWR in accordance with Section 7 of the ESA and Virginia's Endangered Plant and Insect Species Act (see Section 3.10) and VDHR in accordance with Section 106 of the NHPA (see Section 3.4).

Table 4-1. Summary of Scoping Letter Responses

AGENCY	SCOPING RESPONSE	RESPONSE DATE
VMRC	Confirmation that the Project is outside the jurisdictional limits of VMRC and will not require a permit from the agency.	July 17, 2025
VDH	Identification of known public drinking water sources, including groundwater wells, springs, and surface water intakes, that are in proximity to the study area as well as recommendation of best management practices to utilize during construction pertaining to public surface water.	July 21, 2025
US EPA	Confirmation of US EPA's role in the process and identification of potentially reasonable foreseeable effects of the proposed roadway construction, including wetlands, FEMA-mapped floodplains, and receiving waterways, as well as recommendations for avoidance and minimization measures.	August 1, 2025
VDCR-DNH	Identification of known or potential natural heritage resources in the vicinity of the study area, including a conservation site, rare plant species (most notably, the state-listed Torrey's mountain mint), and habitat within ecological cores, and associated recommendations for additional survey and avoidance and minimization measures. Confirmation that DCR represents VDACS regarding potential impacts on state-listed species.	August 1, 2025

4.2 PUBLIC INVOLVEMENT

Public involvement for this Project includes a public information meeting as well as a public hearing and associated comment period on this EA to solicit input from all potential stakeholders. In addition, notifications were sent to property owners within the study area prior to fieldwork completed in February and March 2025 as part of the environmental and design studies.

All communications, materials, and events were developed to comply with VDOT's public involvement process (VDOT 2021), which integrate FHWA's public involvements requirements to comply with NEPA (23 CFR 771.105(d)) as well as Title VI of the Civil Rights Act of 1964 to ensure nondiscrimination.

4.2.1 Public Information Meeting – March 2025

The PWCDOT held a Public Information Meeting for the University Boulevard Extension Project at the Gainesville High School Cafeteria (13150 University Boulevard, Gainesville, VA 20155) from 6:00 p.m. to 8:00 p.m. on Monday, March 31, 2025. The County advertised the meeting on social media platforms and websites, message boards, and coordination with adjacent homeowners associations. The meeting included a Project overview presentation followed by a question and answer (Q&A) session. Prince William County representatives and Project design staff presented the Project to attendees and answered questions. The presentation provided Project information on: funding, location, design features, typical sections, next steps, anticipated schedule, and contact information for submitting comments. Three topics were discussed during the Q&A session at the meeting: two questions regarding potential connections/intersections along the proposed extension and one comment in regard to existing concerns for school-related traffic. Display boards, a Project information brochure, and a comment form were available materials at the meeting. There were four attendees that signed into the meeting. Public Information Meeting materials are provided in **Appendix I**.

The comment period for the public information meeting extended from March 31 through April 14, 2025. Comments could be sent to PWCDOT via email, mail, phone, or at the public information meeting. No questions or comments were received during the comment period.

4.2.2 *Public Hearing & Comment Period*

The County, in coordination with VDOT, will hold a location and design public hearing for this Project. The purpose of the hearing will be to present the preliminary project design and findings of this EA, provide a discussion forum between the public and project team, and obtain input and comments from the community. All presented information will be available for public review and comment. This hearing will be publicly advertised twice prior to the meeting as well as through mailings to stakeholders and property owners within the study area. Special accommodations will be provided for persons with disabilities or limited English proficiency. Contact information will be provided for those who wish to email or mail comments and questions concerning this proposed project.

There will be a minimum of 30-day public comment period following notice of availability of the EA. Comments received during the comment period, including at the public hearing, will become part of the public hearing record. All information obtained from the public will be considered during FHWA's NEPA decision process.

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