ENVIRONMENTAL ASSESSMENT

Pungo Ferry Road Improvements

June 2026

U.S. Department of Transportation
Federal Highway Administration

U.S. Department of Transportation

Federal Highway Administration

Environmental Assessment

Pungo Ferry Road Improvements

PREPARED FOR

City of Virginia Beach
Department of Public Works/Engineering
484 Viking Drive, Suite 200
Virginia Beach, VA 23452

June 2026

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For Division Administrator

Federal Highway Administration

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Purpose and Need

Introduction

The City of Virginia Beach (City), in coordination with the Federal Highway Administration (FHWA) as the lead federal agency, is evaluating improvements to Pungo Ferry Road in Virginia Beach, VA that would elevate the roadway to account for future flood conditions and enhance safety. The City has secured federal funding through the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) grant program, which is administered by FHWA. Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, and in accordance with FHWA regulations (42 USC §4332(c); 23 CFR §771), this Environmental Assessment (EA) is being prepared to analyze the potential social, economic, and environmental effects associated with the improvements being evaluated. In addition to complying with NEPA, the City must also submit a joint permit application for a Department of Army permit in accordance with Section 404 of the Clean Water Act (CWA), which is administered by the U.S. Army Corps of Engineers (USACE). The Section 404(b)(1) Guidelines require consideration of practicable alternatives that would have less adverse impact on the aquatic ecosystem. As such, USACE cannot issue a permit if a practicable alternative exists that would have less adverse impact (known as the Least Environmentally Damaging Practicable Alternative [LEDPA]), provided that the LEDPA does not have significant adverse environmental consequences.

Study Area

Pungo Ferry Road is an existing two-lane road in Virginia Beach, VA, that serves as an important route for local traffic, with more than 4,700 vehicles traveling the corridor per day. The area consists primarily of agricultural lands. The roadway is within Virginia Beach's Southern Rivers Watershed and is one of a few east-west connections in this part of Virginia Beach. Pungo Ferry Road is in a low-lying area where marshes, water bodies, and other natural conditions limit east-west connectivity. The project improvement area is focused on 1.5 miles of Pungo Ferry Road between Blackwater Road and the west side of the Pungo Ferry Bridge. See Figure 1 for a map of the project vicinity.

Figure 1. Project Location Map

Pungo Ferry Road Improvements | Virginia Beach, Virginia

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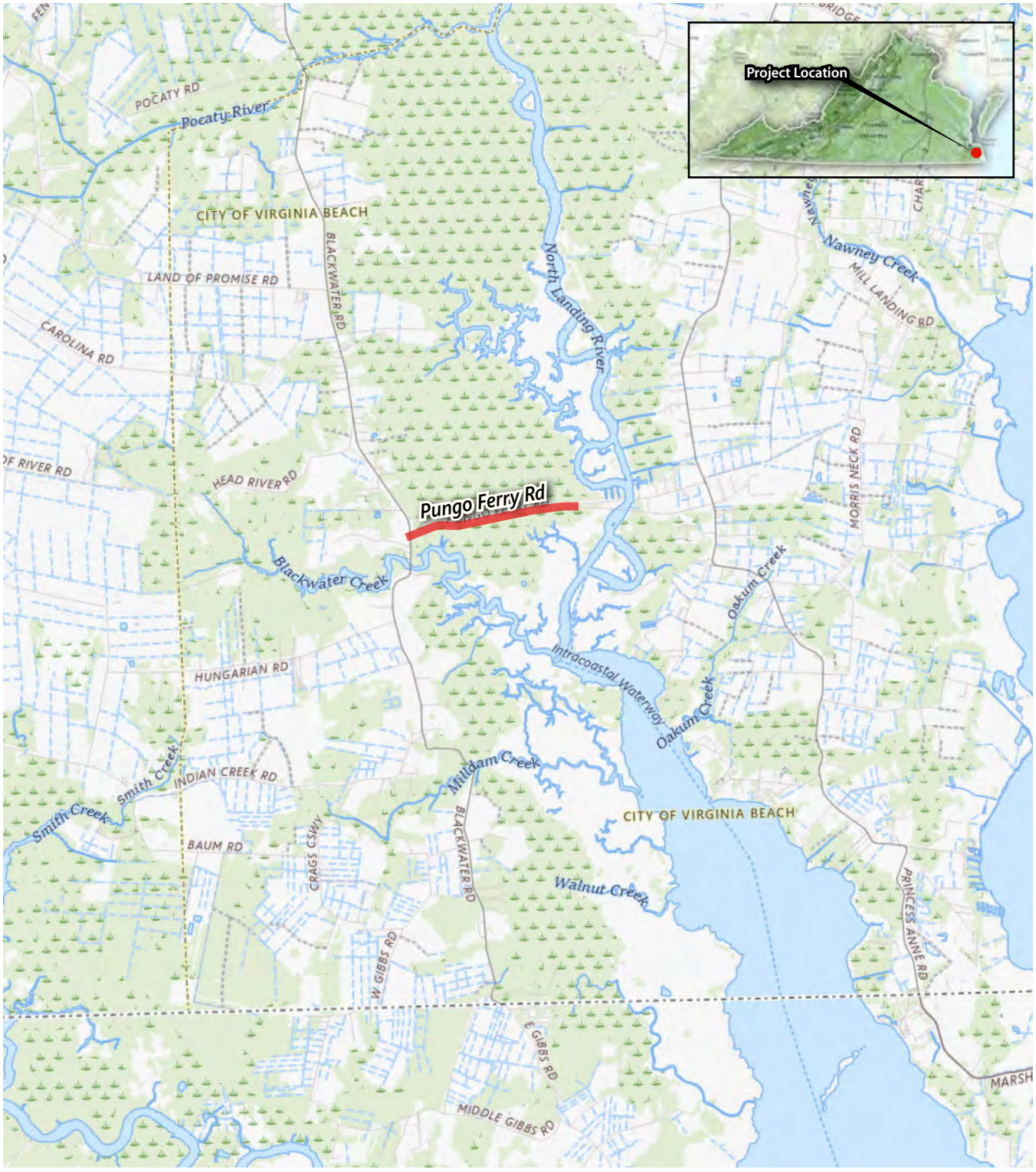

Source: USGS The National Map; USGS 7.5 minute Creeds, Virginia Quadrangle

Project History

Pungo Ferry Road faces multiple challenges as a result of its low-lying elevation and saturated soils. Due to the road's location in the Lower Southern Rivers Drainage Basin, it also faces a unique combination of flood hazards from conditions such as storm surge, rainfall, and wind-driven tides. These conditions result in frequent flooding of the roadway, causing closures and traffic disruptions and jeopardizing emergency vehicle response times in critical situations.

The existing Pungo Ferry Road has two 11-foot-wide travel lanes with graded shoulders that range from 4 to 6 feet wide. Property outside of the existing Pungo Ferry Road right-of-way (ROW) is privately owned on both sides of the road for approximately 0.5 mile out of the total 1.5-mile project length, with the remaining areas under the ownership of the Virginia Department of Conservation and Recreation (VDCR), the Nature Conservancy, or both where the North Landing River Natural Area Preserve is located.

The goal of the project is to elevate the roadway and improve safety conditions by raising the vertical profile of approximately 1.5 miles of roadway between the Pungo Ferry Bridge and Blackwater Road by elevating the centerline to approximately 6.5 feet (NAVD88). This improvement would increase the serviceability of the road by making it passable by a vehicle during 100-year storm events and account for 1.5 feet of future flooding conditions as determined by the City of Virginia Beach Public Works Design Standards Manual (PWDSM) (8.3.C.1) (City of Virginia Beach 2022). Currently, the roadway is subject to frequent flooding during rain events, in addition to flooding due to wind-driven tides on sunny days. When it's unusable because of flooding, travelers must use the nearest east-west connection (which is also subject to flooding and could be impassable), resulting in a detour of approximately 40 miles or more round-trip.

Needs for the Project

Pungo Ferry Road provides vehicular access from Chesapeake and the western portion of Virginia Beach to the eastern portion of Virginia Beach for residents and businesses in rural southeast Virginia Beach and northeast North Carolina. It is one of a few east-west connections in this part of Virginia Beach and is a low-lying area where marshes, water bodies, and other natural conditions limit east-west connectivity. From the east, access to Pungo Ferry Road is via Princess Anne Road; to go west from there, travelers must first cross the Pungo Ferry Bridge over the North Landing River and then continue along Pungo Ferry Road to Blackwater Road.

Pungo Ferry Road between the Pungo Ferry Bridge and Blackwater Road runs through a low-lying, waterlogged area, at an elevation that ranges from 1.7 to 4 feet (NAVD88) in the middle section, to approximately 10 feet at either end. As a result, Pungo Ferry Road is subject to flooding during rain events, but also to frequent flooding due to wind-driven tides on sunny days. The low elevation of the road relative to the ordinary high water elevation (+1.5 feet NAVD88), means that flooding occurs frequently, even with minor rain or winds. Wind-driven tidal flooding frequently occurs under normal weather conditions and on sunny days, when drivers are not anticipating any weather hindrances. Since the City began keeping records, Pungo Ferry Road has flooded more than 1,000 times including 133 times that were categorized as "Deep Water" flooding. Over the 2018-2025 period, Pungo Ferry Road flooded 31 times according to recorded City Public Works Operations data. This does not include frequent nuisance flooding events, which are not recorded.

This situation will become worse as frequent and continuous localized flooding intensifies. Water levels have been rising in Virginia Beach at almost twice the global rate. Based on the City's water observation stations, the rate of rising water elevations in Virginia Beach is among the top 10 percent in the nation. Hurricanes, tropical storms, or other rain-driven events are becoming more common and more detrimental as global weather patterns shift. Models predict hurricanes will cause more intense rainfall and higher storm surges.

The southeastern area of Virginia Beach, while within an urban jurisdiction, is rural and lacks connectivity to the transportation infrastructure of the more developed portions of the City. There is no existing transit service in this portion of Virginia Beach, nor does Hampton Roads Transit show plans for increased service to this area in the future. So, transportation via automobile is heavily relied upon. If roadway connections become impassable, residents cannot reach community facilities and the community becomes even more vulnerable and isolated. When Pungo Ferry Road is flooded, a major east-west connection in Virginia Beach becomes unsafe or unavailable. Travelers must use the nearest east-west connection (which is also subject to flooding and could be impassable), resulting in a detour of approximately 40 miles round trip (see Figures 2 and 3). Also, Pungo Ferry Road is classified as a secondary evacuation route by Virginia Beach. In the event of a hurricane or another disaster that requires evacuation, all available east-west links to these rural locations are critical so that smaller communities in both southeastern Virginia and northeastern North Carolina do not become isolated. Reliable connectivity is also critical for emergency services to access these locations. Frequent flooding jeopardizes emergency services response times.

In its current condition, Pungo Ferry Road consists of two 11-foot-wide travel lanes with graded shoulders that range from 4 to 6 feet wide. The shoulder is soft material and does not support vehicles either for recovery or emergency pull-off. This existing road design does not meet the current Virginia Department of Transportation (VDOT) and City clear zone standards. These safety standards require an unobstructed area outside of the travel lanes for errant vehicles to recover. The existing clear zone is approximately 10 feet, compared to the 30-foot VDOT minimum standard that should be provided.

Figure 2. Project Vicinity Map (Aerial)

Pungo Ferry Road Improvements | Virginia Beach, Virginia

03/19/26

Source: Nearmap Imagery dated Oct 23, 2025

Figure 3. Project Vicinity Map (Quad)

Pungo Ferry Road Improvements | Virginia Beach, Virginia

03/19/26

0 1,000 2,000 feet

Source: Nearmap Imagery dated Oct 23, 2025

Project Purpose

The purpose of this road improvement project is to:

1. Increase the resiliency of city infrastructure to the negative impacts of shifting weather patterns and progress the City's Flood Protection Program, "The Ripple Effect," by raising the road to minimize recurrent flooding.
2. Bring Pungo Ferry Road up to VDOT and City design standards and maintain an important east-west connection by minimizing the number of times when the road is unavailable due to flooding.
3. Reduce roadway safety hazards and correct roadway deficiencies.

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Alternatives

This chapter provides detailed descriptions of the range of alternatives considered, the alternatives development process, and options considered but dismissed from further consideration. The options carried forward for detailed analysis include the No Build Alternative and two action alternatives: the Northern Shift Alternative and the Retaining Wall Alternative. In accordance with NEPA (at 42 USC §4332(c)), the No Build Alternative has been retained for detailed analysis and serves as a benchmark for comparison with the other action alternatives.

Alternatives Development Process

Five preliminary alternatives were developed and considered in a 2024 Draft Preliminary Engineering Report (PER) (attached as Appendix A). Four of these alternatives were presented to City residents during a Citizen Information Meeting held in October 2024. Following this outreach, an interdisciplinary team (IDT) comprising City staff, FHWA, USACE, and consultants, continued internal conversations and an in-person workshop to advance alternatives development. Through this process, the IDT worked to develop an additional alternative (Retaining Wall Alternative) that would be constructed within the existing City right-of-way (ROW) and privately held ROW. For additional detail on the alternatives development process, see Appendix B.

Alternatives Dismissed from Detailed Analysis

The following alternatives were considered during initial planning discussions but were dismissed from further consideration because they were not practicable and reasonable. Per Section 404(b)(1) Guidelines, “Practicable” means that the alternative is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose.

Existing Alignment Alternative

This alternative proposes keeping the current roadway alignment for the 1.5-mile stretch of Pungo Ferry Road between Blackwater Road and the west side of Pungo Ferry Bridge. Both travel lanes would be widened to 12 feet each, with 4 feet of paved shoulder and another 4 feet of graded shoulder on each side. The centerline of the road would be raised approximately 6.5 feet

to minimize recurrent flooding. This elevation would require raising the profile between 3 and 5 feet along much of the corridor.

This alternative would require the least amount of ROW but would require the acquisition of VDCR property.

The estimated duration of construction would be approximately two years. During construction, Pungo Ferry Road would be closed to traffic, causing commuters and emergency response vehicles to travel along a 40-mile round trip detour. Agricultural vehicles would also be unable to move between farms along the road during this time. The IDT determined that this alternative was against the interest of the public due to the substantial increase in commute times associated with the detour; therefore, this alternative was dismissed from further consideration.

Bridge Alternative

Under the Bridge Alternative, the existing centerline of a 1.5-mile stretch of Pungo Ferry Road between Blackwater Road and the west side of Pungo Ferry Bridge would remain on the existing alignment utilizing a combination of bridge and at-grade infrastructure. Both travel lanes would be widened to 12 feet each, with 4 feet of paved shoulder and another 4 feet of graded shoulder on each side along the at-grade infrastructure. The bridge would raise the road to approximately 8 feet while the at-grade portion of the roadway would be approximately 6.5 feet to minimize recurrent flooding. Drainage from the bridge would be periodically collected and discharged through bridge scuppers in a manner to minimize any erosive impacts and meet the water quantity criteria.

This alternative would require the least amount of ROW (same as the Existing Alignment Alternative) but would require the acquisition of VDCR property.

The estimated duration of construction would be approximately 2 years. During construction, Pungo Ferry Road would be closed to traffic, causing commuters and emergency response vehicles to travel an approximate 40-mile round trip detour. Agricultural vehicles would also be unable to move between farms along the road during this time. The IDT determined that this alternative was against public interest due to the substantial increase in commute times associated with the detour and that it was not practicable due to its exponentially higher construction cost compared to the other alternatives; therefore, this alternative was dismissed from further consideration.

Alternatives Carried Forward for Analysis

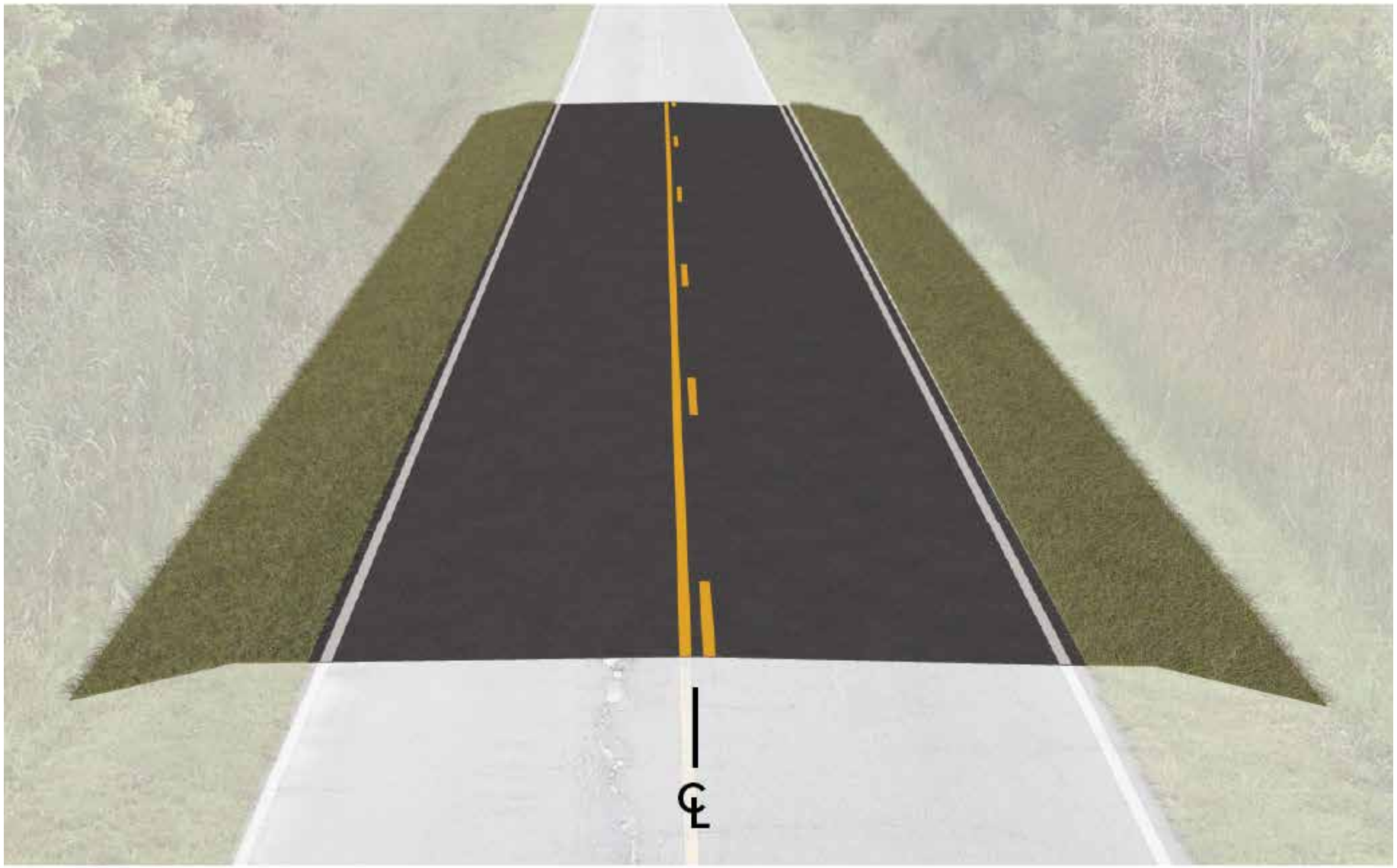
No Build Alternative

Under the No Build Alternative, Pungo Ferry Road would not be raised and frequent flooding would continue to occur, limiting vehicular access along the road. The road would continue to be maintained by the City under existing maintenance schedules but would not be improved. The existing road design would continue to be out of compliance with VDOT safety standards and the soft shoulders would limit recoverability for errant vehicles. See Figure 4 for additional detail.

Figure 4. No Build Alternative Rendering

Pungo Ferry Road Improvements | Virginia Beach, Virginia

03/19/26



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Northern Shift Alternative

When the City originally began considering alternatives, there were two separate options that shifted the road alignment northward (described as Alternatives A and B in the Alternatives Development Memo [Appendix B]). It was determined that there would be no meaningful difference in the adverse impacts of these alternatives, therefore, a combined alternative was created. This combined alternative captures the range of development footprint associated with both northern shift alternatives.

Under the Northern Shift Alternative, the existing centerline of a 1.5-mile stretch of Pungo Ferry Road between Blackwater Road and the west side of Pungo Ferry Bridge would be shifted to the north of its current alignment, between 9 and 32 feet. Both travel lanes would be widened to 12 feet each, with 4 feet of paved shoulder and another 4 feet of graded shoulder on each side. The centerline of the road would be raised approximately 6.5 feet to minimize recurrent flooding. This elevation would require raising the roadway profile between 3 and 5 feet along much of the corridor.

In order to construct the new road segment, the City would first need to acquire the existing ROW from VDCR and private landowners. Therefore, the ROW acquisition timeline has a direct effect on construction start dates. Construction for this alternative would be broken into phases and take approximately 2.5 to 3 years to complete.

Shifting the new road footprint north by 9 feet to be adjacent to the existing ROW would preclude the maintenance of continuous two-way traffic during construction. Therefore, alternating one-way traffic 24 hours a day would need to be implemented during construction. In order to manage one-way traffic most effectively and to accommodate traffic coming to and from nearby private residences, the project would be constructed in short segments of approximately 1,200 to 1,800 feet to reduce the duration of each construction phase. The application of temporary signals could be used to manage traffic flow safely and efficiently along the road segment currently under construction. This phasing, however, would contribute to a longer development timeline because phasing would lengthen earthwork efforts to allow for required settlement during construction. It would also increase the number of transitions between the existing road and the completed sections, an activity that would require temporary pavement for these areas.

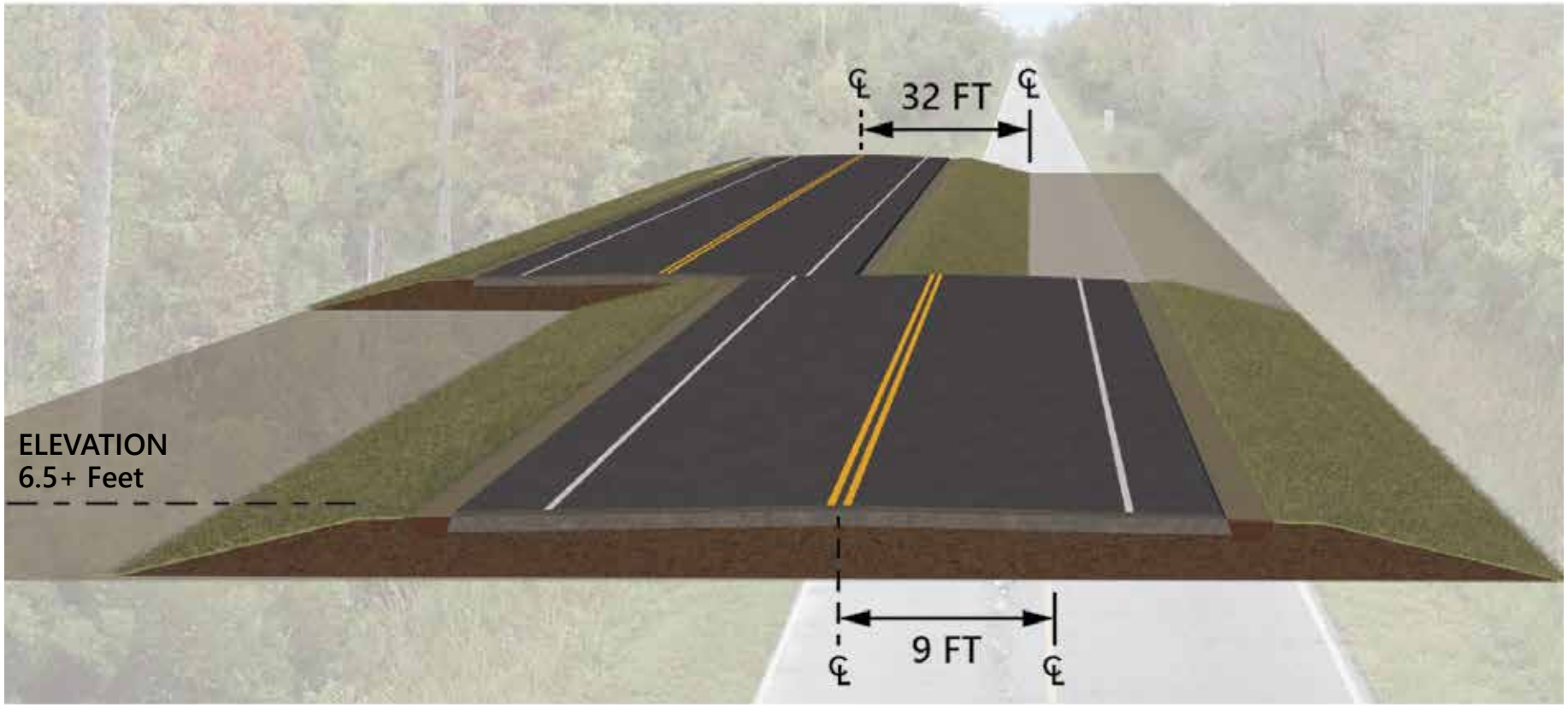
Shifting the roadway 32 feet to the north would allow for the maintenance of two-way traffic on the existing alignment while construction takes place in the ROW of the proposed new alignment. Tie-ins (the connection of the new road segment to the old, existing road) at each end of the corridor would be constructed under single lane closures where flaggers would alternate two-way traffic in a single open travel lane. Traffic would then be moved onto the new roadway, after which the existing roadway would be demolished and the eastbound side slope would be constructed. As design progresses, maintenance of traffic measures would be further refined.

In the area south of the previous roadbed, any acreage outside of the existing ROW could be considered in a land swap with VDCR to mitigate ROW impacts, if applicable. See Figure 5 for a preliminary design of this alternative.

Figure 5. Northern Shift Alternative Rendering

Pungo Ferry Road Improvements | Virginia Beach, Virginia

03/19/26



Retaining Wall Alternative (Preferred Alternative)

Under the Retaining Wall Alternative, the existing centerline of a 1.5-mile stretch of Pungo Ferry Road between Blackwater Road and the west side of Pungo Ferry Bridge would be shifted 15 feet to the north of its current alignment with a series of retaining walls installed along approximately 1 mile of the roadway on the northern edge. Both travel lanes would be widened to 12 feet each, with 8-foot shoulders (combined paved and graded) on both sides. On the western end of the roadway, the shoulders would consist of 4 feet of paved shoulders, with another 4 feet of graded shoulders on both sides of the road. It would then transition to 8 feet of paved shoulder on the northern side of the road adjacent to the wall and continue with 4 feet of paved shoulders and another 4 feet of graded shoulders on the southern side. The centerline of the road would be raised approximately 6.5 feet to minimize recurrent flooding. This elevation would require raising the profile between 3 and 5 feet along much of the corridor.

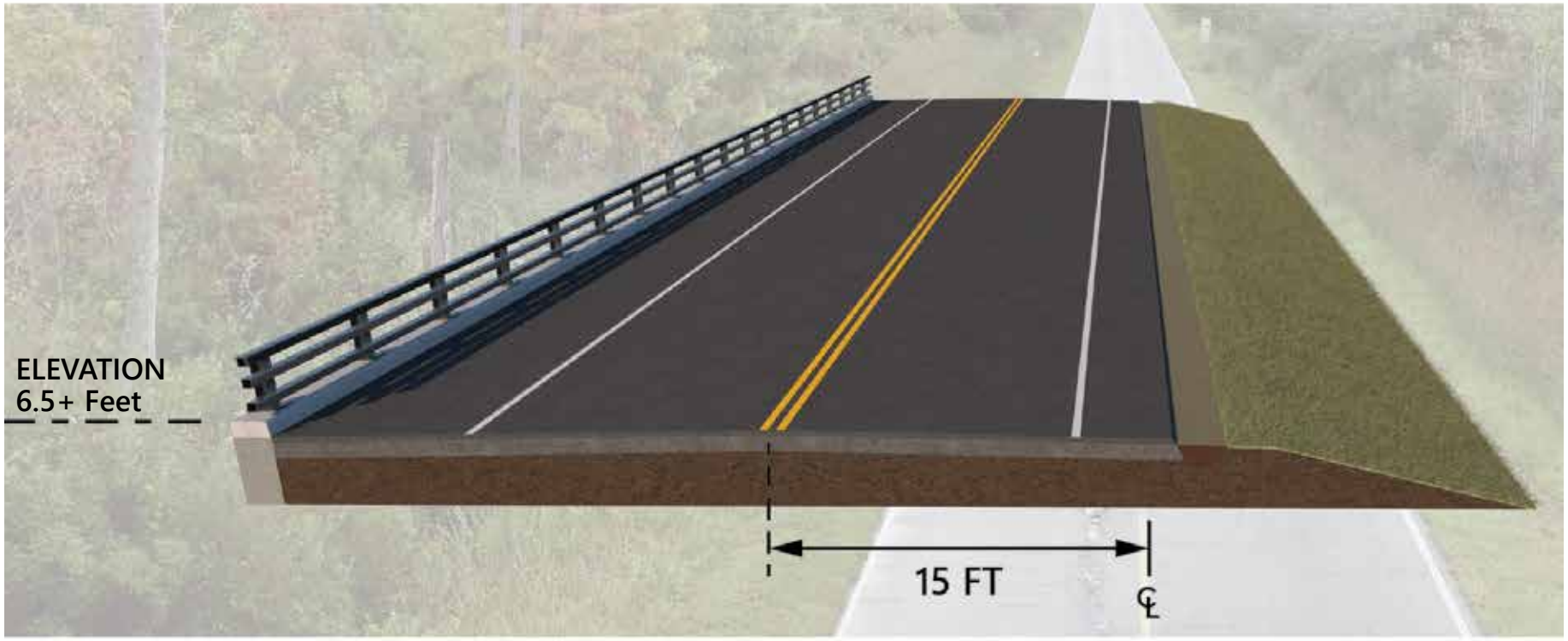
This alternative was designed to eliminate the need to acquire ROW from VDCR. Additionally, this alternative reduces wetland impacts. The Retaining Wall Alternative is both the applicant's preferred alternative and the preliminary LEDPA.

Construction for this alternative would be broken into phases to maintain at least one lane of travel and would take approximately 3.5 years to construct. Since the new road footprint would be adjacent to the existing ROW, both lanes of traffic could not be maintained continuously during construction. Alternating one-way traffic 24 hours a day would need to be implemented for all phases of construction. Temporary signals would be used to manage traffic flow along the road segment currently under construction (approximately 1,200-1,800 feet at one time); applying temporary signals to a short segment length rather than the full corridor length would help maximize safety and provide for efficient vehicle operations. In order to manage one-way traffic most effectively, the project would be constructed in short segments of approximately 1,200-1,800 feet to reduce the duration of each construction phase. This phasing, however, would contribute to a longer project time because phasing would lengthen earthwork efforts to allow for required settlement during construction. It would also increase the number of transitions between the existing road and completed sections, an activity that would require temporary pavement for these areas. See Figure 6 for a preliminary design of this alternative. If feasible as design progresses, a maintenance of traffic plan that would maintain two lanes of traffic during construction activities would be developed.

Figure 6. Retaining Wall Alternative Rendering

Pungo Ferry Road Improvements | Virginia Beach, Virginia

03/19/26



3

Existing Conditions and Environmental Consequences

Introduction and Overview of Environmental Issues

This chapter describes the current environmental conditions in and surrounding the project as they relate to each impact topic retained for detailed analysis. These conditions serve as a baseline for understanding the resources that could be impacted by implementing the project.

Impact topics identify resources within the project area that could be affected, either beneficially or adversely, by the range of alternatives. Table 1, below, summarizes potential environmental consequences to various resources for the No Build Alternative and the action alternatives. As described in the table, those impact topics not deemed to have substantial effects from the alternatives have been dismissed from detailed analysis. Topics retained for detailed analysis are further discussed in this chapter. Where appropriate, mitigating measures for adverse impacts are also described and incorporated into the evaluation of impacts.

Table 1. Summary of Environmental Issues

Environmental Resource	Summary of Potential Environmental Consequences	Retained for Detailed Analysis?
Land Use, Public Lands and Section 4(f), 6(f) Properties	ROW acquisition would occur and the land would be converted from undisturbed land to roadway. However, the overall conversion amount is minimal within the broader context of the agricultural landscape as it would not change the residential and rural nature of the area, nor the overall agricultural zoning designation. The overall land use and function would not be substantially impacted since the roadway already exists in this area.	Yes

Table 1. Summary of Environmental Issues

Environmental Resource	Summary of Potential Environmental Consequences	Retained for Detailed Analysis?
Historic Preservation	Coordination with the Virginia Department of Historic Resources (VDHR) is ongoing and a Phase I archaeology and architectural survey is underway. While nominal impacts are anticipated, a final determination of impacts will be made upon completion of the survey.	Yes
Water Resources › Floodplains › Surface Water & Hydrology › Water Quality	The build alternatives would be consistent with federal policies and procedures for the location and hydraulic design of highway encroachments on floodplains contained in 23 CFR Part 650 Subpart A. Based on modeling developed by the Danish Hydraulic Institute (MIKE), it is anticipated that the potential floodplain encroachments would not be a "significant encroachment" as defined in 23 CFR Part 650.105(q) (additional detail is provided in the "Water Resources" section below). The surface water flow is expected to discharge toward the North Landing River due to the proposed build alternatives rather than overtop the road as it occurs under existing conditions. Although the elevation of the proposed roadway alters the flow path, the effects on water levels north and south of the road are negligible when compared with existing conditions. The site's permeable soil allows groundwater to move between marshes and provide baseflow to the North Landing River. According to the Viriginia Runoff Reduction Method V4.1, the build alternatives would require the removal of 5.5 pounds/year of phosphorus to achieve water quality compliance. For stormwater sheet flow, run-off would intersect with a proposed gravel diaphragm before continuing down a constructed fill slope This buffer (primarily characterized as wetlands) would meet the intent of the conserved open space area. To supplement it, a wet swale is proposed at the western end of the project area. A level spreader would be constructed on the downstream end to ensure water velocities are slowed before draining onto adjacent DCR property.	Yes
Natural Resources	Wetlands would be avoided to the maximum extent practicable. Compensatory mitigation credits would	Yes

Table 1. Summary of Environmental Issues

Environmental Resource	Summary of Potential Environmental Consequences	Retained for Detailed Analysis?
› Waters of the US › Soils › Protected Species › Migratory Birds	be purchased through a mitigation bank to compensate for unavoidable permanent wetland impacts. Disturbance to the soil would occur throughout the project area. The primary disturbance type would be from fill material and grading during roadway construction. Areas of fill and disturbed soils would be stabilized immediately upon final grading with erosion control blankets and seeding. Vegetation would be re-established within 30 days post-disturbance. The build alternatives would cause adverse effects to protected species and their habitats, as suitable habitat would be lost when vegetated areas within the project area would be cleared. The state-protected canebrake rattlesnake, if present on site, is anticipated to be most affected by temporary impacts as the species is less mobile. Through consultation with USFWS Determination Key, the Northern long-eared bat and tricolored bat have been identified as species that the project is "Not Likely to Adversely Affect." Time-of-year-restrictions (TOYR) for federally protected bat species would be required for tree clearing within the project area. This TOYR would partially overlap with VDWR's recommended TOYR for resident and migratory songbird nesting, therefore reducing potential effects. Birds are better protected from construction-related incidental take than other species as they can fly to disperse and avoid equipment and obstacles.	
Socioeconomics › Safety › Travel Patterns › Community Considerations	During construction, there would be temporary adverse impacts to safety if one-way traffic must alternate using automated signals. To mitigate this risk, clear and obvious signage would be posted well in advance of approaching the construction zone and work would be completed in short segments to reduce the overall length of the potential lane closure. Long-term, road safety would be improved through the creation of a larger clear zone and recovery area. Raising the roadway to approximately 6.5 feet would also allow for the continued operation of the roadway during heavy precipitation or strong winds. This is	Yes

Table 1. Summary of Environmental Issues

Environmental Resource	Summary of Potential Environmental Consequences	Retained for Detailed Analysis?
	particularly important due to the roadway classification as a secondary evacuation route. Improved resiliency would also enable both the local community and emergency responders to take the most efficient route when traveling. Construction would result in short-term adverse impacts through the disruption of typical travel patterns in this area. Private property owners in the project area would especially be inconvenienced while the western segment of the road is under construction because it would take longer for them to access their property and construction would be directly adjacent to their property entrances. During the construction, it is anticipated that access to community amenities would take longer due to potentially alternating one-way traffic. Implementing traffic controls would not restrict existing access, although it may increase travel times. The local economy and industries in the community would not be substantially impacted by the construction in the short-term. Long-term, completing this project to raise the road would ensure more reliable access to local services and the broader Virginia Beach community by reducing flooding occurrences along the road that would otherwise delay or endanger drivers.	
Air Quality	The project is located within an attainment area for criteria pollutants. Pursuant to the Federal Clean Air Act of 1970, the EPA is required to set National Ambient Air Quality Standards for pollutants considered harmful to public health and welfare. Federal actions must not cause or contribute to any new violation of any standard, increase the frequency or severity of any existing violation, or delay timely attainment of any standard or required interim milestone. Because the project area is in attainment, it is not subject to transportation conformity regulations. Furthermore, per 43 CFR 93.123(c)(5), "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined	No

Table 1. Summary of Environmental Issues

Environmental Resource	Summary of Potential Environmental Consequences	Retained for Detailed Analysis?
	as those which occur only during the construction phase and last five years or less at any individual site." Emissions generated by construction equipment, such as exhaust and fugitive dust, would temporarily increase adverse air quality impacts in the project vicinity during construction activities. However, these temporary impacts would be localized and would not last more than five years. Furthermore, even if the project had been subject to transportation conformity rules, it would not have required a quantitative air quality assessment. Therefore, none of the alternatives have the potential to result in long-term adverse impacts.	
Noise	The Noise Control Act of 1972 authorized federal agencies to adequately control noise that may endanger the health and welfare of the nation's population (42 USC 4901 et seq.). Sound is the rapid fluctuations in air pressure above and below ambient pressure levels. Noise is defined as unwanted or excessive sound. Sound becomes unwanted when it interferes with normal activities such as sleep, work, communication, or recreation. None of the alternatives have the potential to result in adverse noise impacts, as noise is only expected to temporarily increase during construction.	No
Hazardous Materials	Preliminary research did not identify any hazardous materials within the project area (VDEQ 2026). If soils are identified onsite with constituents above applicable federal screening levels, disposal at an appropriate landfill or soil treatment would be proposed according to the requirements of the appropriate federal, state, or local oversight agency. Additionally, a Hazardous Waste Contingency Plan could be prepared to address handling of hazardous materials in case they are encountered during construction.	No

Discussion of Environmental Issues

Land Use, Public Lands, and Section 4(f), 6(f) Properties

FHWA reviewed current landownership to determine government jurisdiction within the project area, as well as other relevant land uses in the vicinity. Part of this review also included a search for Section 4(f) and 6(f) properties, which are federally protected from construction (described

further below). Land uses were evaluated to determine existing conditions and anticipated changes within the project area and adjacent areas. This includes conversion of land uses through ROW acquisition.

Section 4(f) of the Transportation Act of 1966 requires the protection of parks, wildlife refuges, and historic resources when considering federally funded roadway construction. It provides that the U.S. Department of Transportation (USDOT) shall not approve any program or project that requires land from a public park, recreation area, wildlife or waterfowl refuge, or historic (including archaeological) sites of national, state, or local significance, unless there is no feasible and prudent alternative to the use of such land and such program or project includes all possible planning to minimize harm resulting from the use; or, if it is determined that the use of the property, including any measures to minimize harm, will have a *de minimis* impact on the property.

The Land and Water Conservation Fund Act (Section 6(f)) established a land and water conservation fund (LWCF) to assist local, state, and federal agencies in meeting the demand for present and future outdoor recreation sites. This is done through grants for land acquisitions, park amenities, and other park development costs. Once a city, county, or agency has used Section 6(f) funds, either the land or the park amenities cannot be eliminated or acquired without coordination with the National Park Service and the substitution of the property proposed for replacement is of reasonable equivalent usefulness and location as that being converted.

The existing land use conditions were gathered from the City of Virginia Beach's VBMap, which is an online Geographic Information System (GIS) application that provides public access to the City's GIS information.

Existing Conditions

Current land use within the project area consists of residential, recreational/conservation, agricultural, and City transportation/road ROW. Residential properties abut the western end of the project area and include rural single-family homes. The existing Pungo Ferry Road ROW varies from 40 to 100 feet along the project area.

To the north and south of the project area is the VDCR property, North Landing River Natural Area Preserve. This property qualifies as a Section 4(f) wildlife refuge. Comprising almost 3,500 acres, the preserve protects 5 known rare wetland communities and supports at least 11 rare species of plants and animals. It also provides habitat for overwintering and breeding waterfowl (VDCR 2026b). The preserve is open for public recreation and offers trails, interpretive signage, and a boardwalk with an overlook, allowing visitors to experience nature and a sense of wildness (VDCR 2026b). There are no known Section 6(f) properties near the project area.

The surrounding area has been zoned as AG-1 and AG-2 by the City, which are agricultural districts. The purpose of these zones are to "protect and preserve agricultural lands for agricultural functions, including agritourism and the direct sale of agricultural and agricultural-related products to the public, and to protect and preserve agricultural lands and activities in the rural areas of the city in harmony with reasonable levels of rural residential development and in keeping with the special rural character, environmental protection needs and limited rural infrastructure available." (City of Virginia Beach 2014). See Figure 7 for a map of existing land uses.

Figure 7. Existing Land Use

Pungo Ferry Road Improvements | Virginia Beach, Virginia

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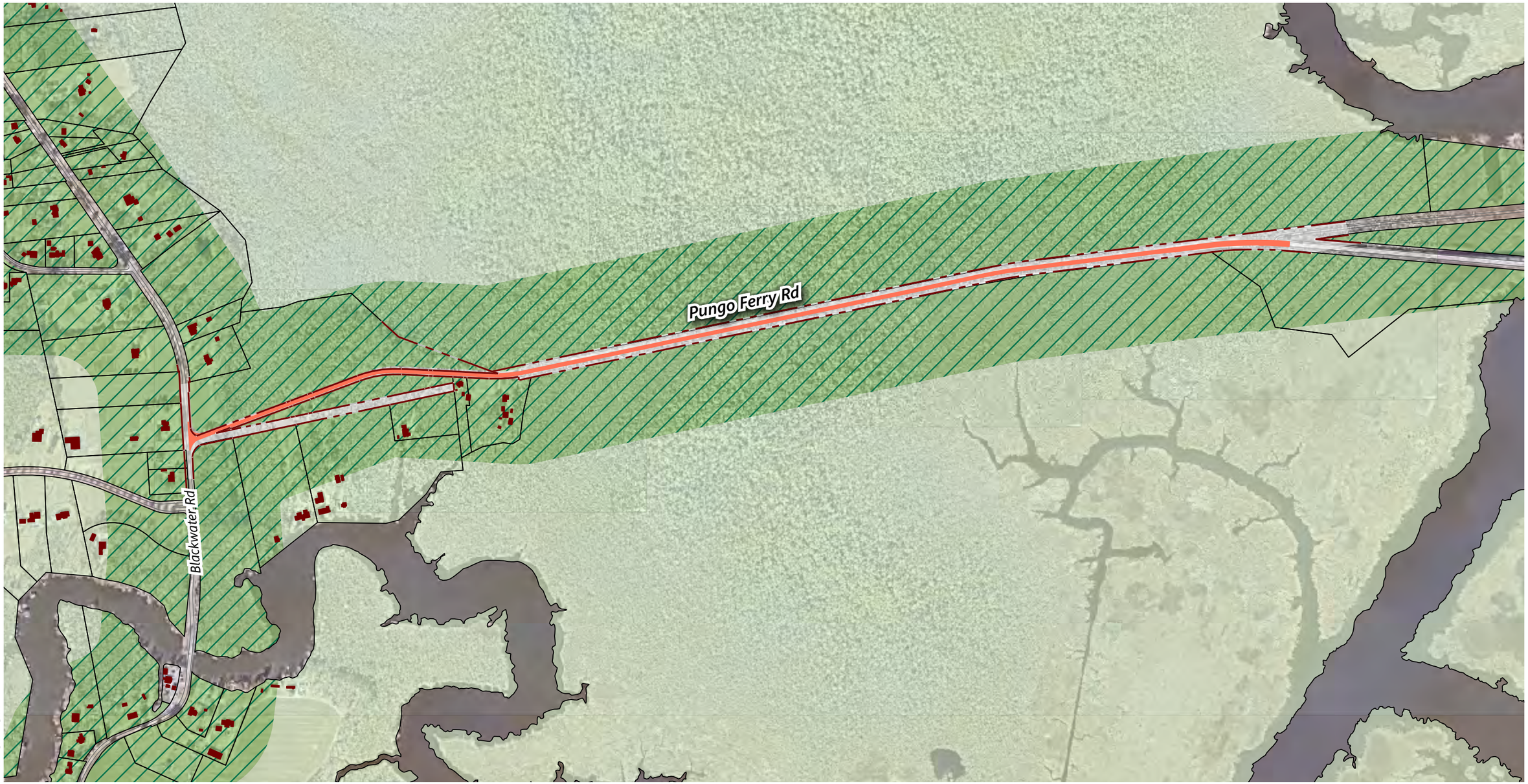


Legend

- Existing Right of Way
- Existing Pavement
- Parcels
- Buildings

Zoning

- Agricultural District - 1 (AG-1)
- Agricultural District - 2 (AG-2)

0 100 200 feet

SCALE 1" = 200 feet

Source: Nearmap Imagery dated Feb 13, 2026

34723_Pungo_EA_Figures

Environmental Consequences

No Build Alternative

Under the No Build Alternative, no project-related construction would occur, and therefore no changes to the surrounding properties or their existing uses would result.

Northern Shift Alternative

Depending on how far north the roadway alignment is shifted, a range of 4.3 to 7.6 acres of ROW would need to be acquired from 2 to 4 property owners, including 1.1 to 4 acres of permanent use of the North Landing River Natural Area Preserve. Because this property qualifies under Section 4(f), if this alternative were selected as the applicant's preferred, FHWA would complete an analysis to justify the selection of this property and describe relevant avoidance/minimization measures as well as mitigation to compensate for the loss of refuge area.

Permanent conversion of up to 4 acres from nature preserve to roadway would decrease the overall land designated as natural resource and wildlife conservation, as well as the internal pattern and edge of preserve land. This would change the area from habitat to disturbed roadway; the effects of habitat loss are described further in the "Natural Resources" section. To offset the amount of VDCR land converted, the City may choose to offer any acreage outside of the existing ROW (south of the previous roadway) in a land swap. Doing so would reduce the overall acreage taken from the preserve. However, considering the overall size of the preserve at nearly 3,500 acres, this change would be minor and account for less than 1 percent of the total preserve area. Acquisition of other private property along the corridor would not change the residential and rural nature of the area, nor the overall zoning designation.

Furthermore, since the roadway already exists in this area, the overall land use and function would not be substantially impacted. The general route of the roadway corridor and anticipated traffic volume would remain as is, continuing to bisect the preserve. The existing land use zones and development patterns would also be unlikely to change since the road is an existing condition. In addition, no new ingress/egress points or intersections would be added to this segment of Pungo Ferry Road, thereby retaining the same level of access as the existing roadway. See Figure 8 for a map of this alternative in the context of existing land uses.

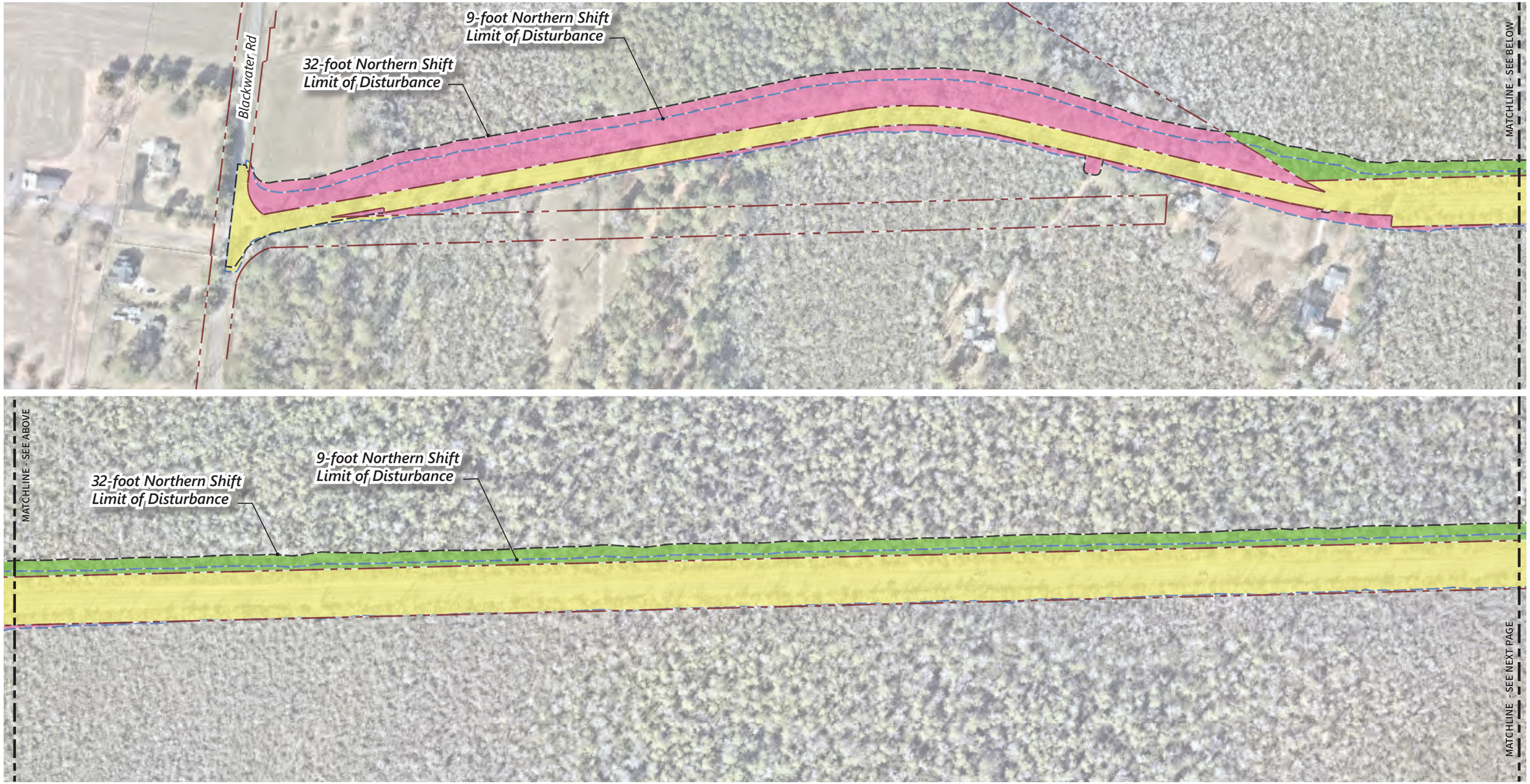
Retaining Wall Alternative (Preferred Alternative)

Under the retaining wall alternative, a total of 3.5 acres of ROW would need to be acquired from 3 property owners along the western end of the project corridor. No land would need to be acquired from VDCR to accommodate a ROW acquisition. Although this acreage from residential property owners would be converted from undisturbed land to roadway, the overall conversion amount is minimal within the broader context of the agricultural landscape. Acquisition of this private property would not change the residential and rural nature of the area, nor the overall agricultural zoning designation. Similar to anticipated impacts under the Northern Shift Alternative, the overall land use and function would not be substantially impacted since the roadway already exists in this area. See Figure 9 for a map of this alternative in the context of existing land uses. Impacts related to ingress/egress to adjacent residences are further discussed in the "Socioeconomics" section of this chapter.

Figure 8. Northern Shift Alternative Land Use Impacts (Panels 1-2)

Pungo Ferry Road Improvements | Virginia Beach, Virginia

05/22/26



Legend

- Existing Right of Way
- 9-foot Northern Shift Limit of Disturbance
- 32-foot Northern Shift Limit of Disturbance

Land Use Impacts

- DCR (1.68 to 4.62 acres)
- Existing Right of Way (15.10 to 15.48 acres)
- Private (3.31 to 3.76 acres)

0 100 200 feet

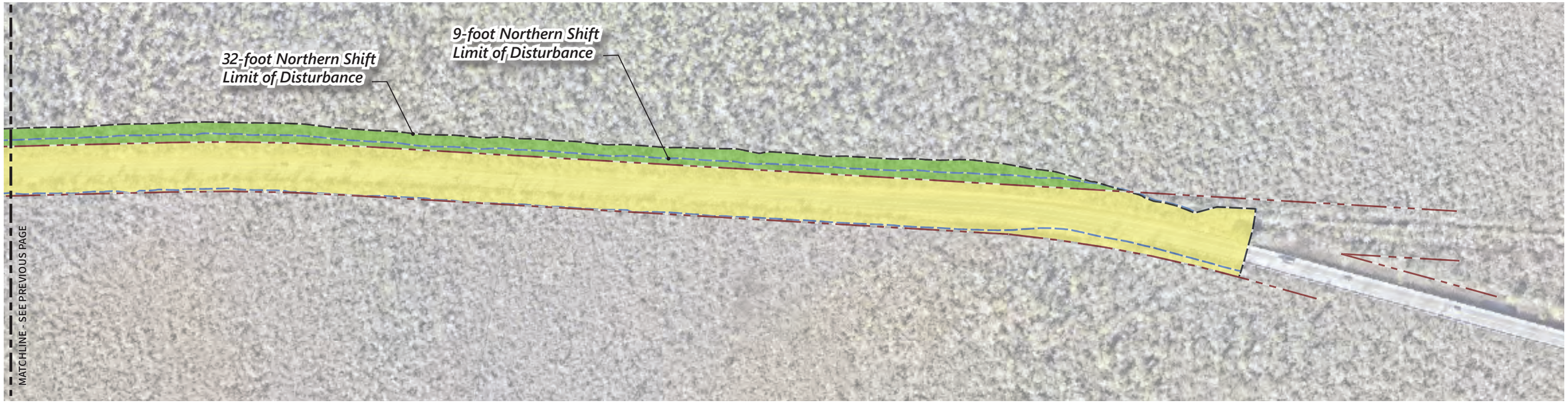
SCALE 1" = 200 feet

Source: Nearmap Imagery dated Feb 13, 2026

Figure 8. Northern Shift Alternative Land Use Impacts (Panel 3)

Pungo Ferry Road Improvements | Virginia Beach, Virginia

05/22/26



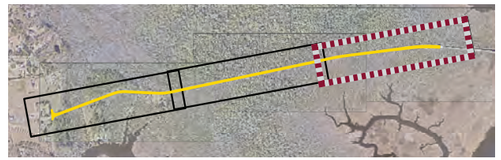
34723_Pungo_EA_Figures

Legend

- Existing Right of Way
- 9-foot Northern Shift Limit of Disturbance
- 32-foot Northern Shift Limit of Disturbance

Land Use Impacts

- DCR (1.68 to 4.62 acres)
- Existing Right of Way (15.10 to 15.48 acres)
- Private (3.31 to 3.76 acres)



0 100 200 feet

SCALE 1" = 200 feet

Source: Nearmap Imagery dated Feb 13, 2026

Figure 9. Retaining Wall Alternative Land Use Impacts (Panels 1-2)

Pungo Ferry Road Improvements | Virginia Beach, Virginia

05/22/26

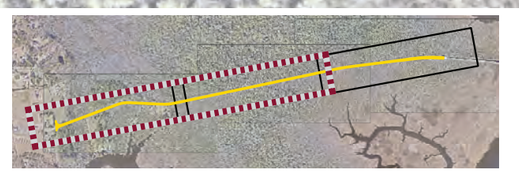
3472.3_Pungo_EA_Figures

Legend

- Existing Right of Way
- Retaining Wall Alternative Limit of Disturbance

Land Use Impacts

- Existing Right of Way (12.48 acres)
- Private (3.56 acres)



0 100 200 feet

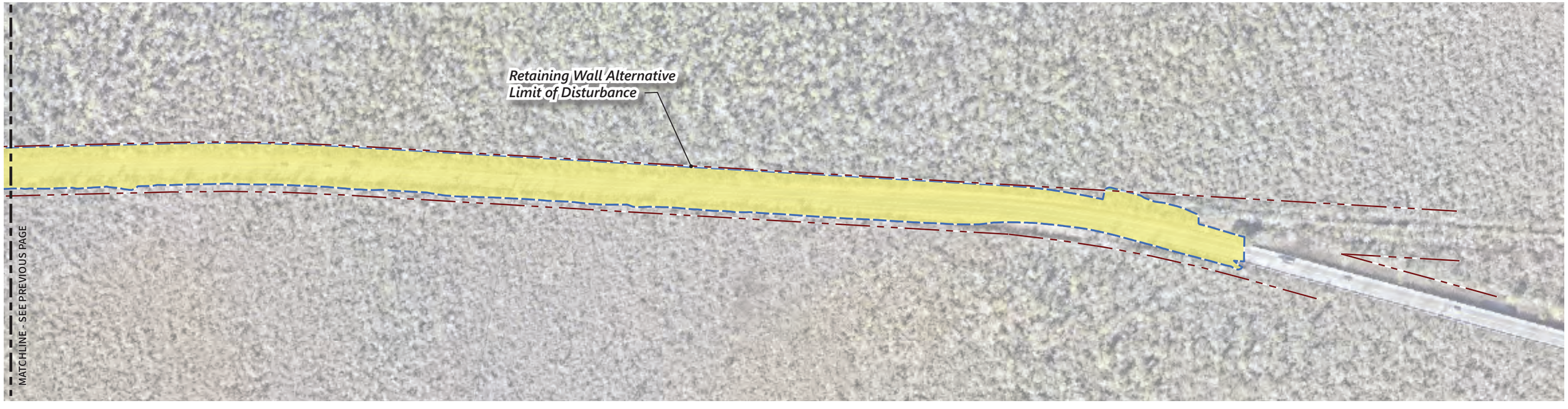
SCALE 1" = 200 feet

Source: Nearmap Imagery dated Feb 13, 2026

Figure 9. Retaining Wall Alternative Land Use Impacts (Panel 3)

Pungo Ferry Road Improvements | Virginia Beach, Virginia

05/22/26



34723_Pungo_EA_Figures

Legend

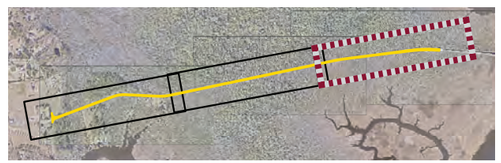
Existing Right of Way

Retaining Wall Alternative Limit of Disturbance

Land Use Impacts

Existing Right of Way (12.48 acres)

Private (3.56 acres)



0 100 200 feet

SCALE 1" = 200 feet

Source: Nearmap Imagery dated Feb 13, 2026

Historic Preservation

As required by Section 106 of the National Historic Preservation Act (NHPA) (54 USC 306108), potential impacts on cultural resources are evaluated based on changes to the character-defining features of the resources, which are the characteristics of a historic property that qualify it for inclusion in the National Register of Historic Places (National Register). This approach is derived from the Secretary of the Interior's Standards for the Treatment of Historic Properties and the regulations of the Advisory Council on Historic Preservation implementing provisions of the NHPA (36 CFR Part 800). Character-defining features contribute to a property's integrity, which is composed of its location, design, setting, materials, workmanship, feeling, and association. FHWA is coordinating compliance with Section 106 of the NHPA with VDHR; this coordination remains ongoing throughout the NEPA process. During initial discussions, VDHR recommended that FHWA conduct a Phase I archaeological survey where ground-disturbing activities are anticipated within the project Area of Potential Effects (APE), as well as a Phase I architectural survey of all architectural features 45 years old or older within the APE. This included a total of four resources, three of which are residential and one is agricultural.

The purpose of the surveys is to locate, identify, and evaluate the significance of any historic and archaeological resources within the affected environment and to determine if these resources are eligible for listing in the National Register.

In May 2026, City contractors, on behalf of FHWA, conducted a Phase I architectural survey of properties within the APE. A Phase I archaeology survey is planned for June 2026. Following the completion of these surveys, this EA will be updated to describe survey results and any potential environmental consequences associated with the project.

Existing Conditions

FHWA identified both a direct and indirect APE, which are the geographic areas that may be directly or indirectly affected by the project (Figure 10). For this project, the direct APE encompasses the proposed limits of disturbance, while the indirect APE considers areas that may experience indirect effects such as visual or auditory changes.

Per VDHR's Virginia Cultural Resource Information System (V-CRIS) database, there are no previously recorded historic structures, buildings, or districts within or immediately adjacent to the project area. To date, no architectural resources or archaeological sites have been recorded in the VDHR V-CRIS database either within the project area or within the project's Area of Potential Effect.

Environmental Consequences

At the time of this assessment, preliminary findings suggest that impacts to cultural resources are not anticipated from any of the alternatives analyzed. However, as a Phase I survey is currently underway, a final impact determination will be made upon completion of field studies.

No Build Alternative

Under the No Build Alternative, no construction activities would occur. The Pungo Ferry Road alignment would remain the same; therefore, no impacts would result.

Northern Shift Alternative

Anticipated impacts to architectural resources within the project area would include temporary visual and noise impacts during construction, as well as a temporary change in setting resulting from the presence of construction equipment and a work zone environment near property entrances. However, these impacts would cease once construction is complete. Potential permanent impacts to these structures would be minor as the roadway alignment would be shifted further north and even farther from the existing entrances of three properties south of the APE. There would be a slight modification to the viewshed from some properties since the roadway would be shifted north, but this would not meaningfully impact the setting of the area.

As noted above, impacts to archaeological resources within the APE are not anticipated but will be further described following completion of the Phase I survey.

Retaining Wall Alternative (Preferred Alternative)

The Retaining Wall Alternative would have similar short-term and long-term impacts on historic preservation as the Northern Shift Alternative.

Figure 10. Area of Potential Effect (APE) Map

Pungo Ferry Road Improvements | Virginia Beach, Virginia

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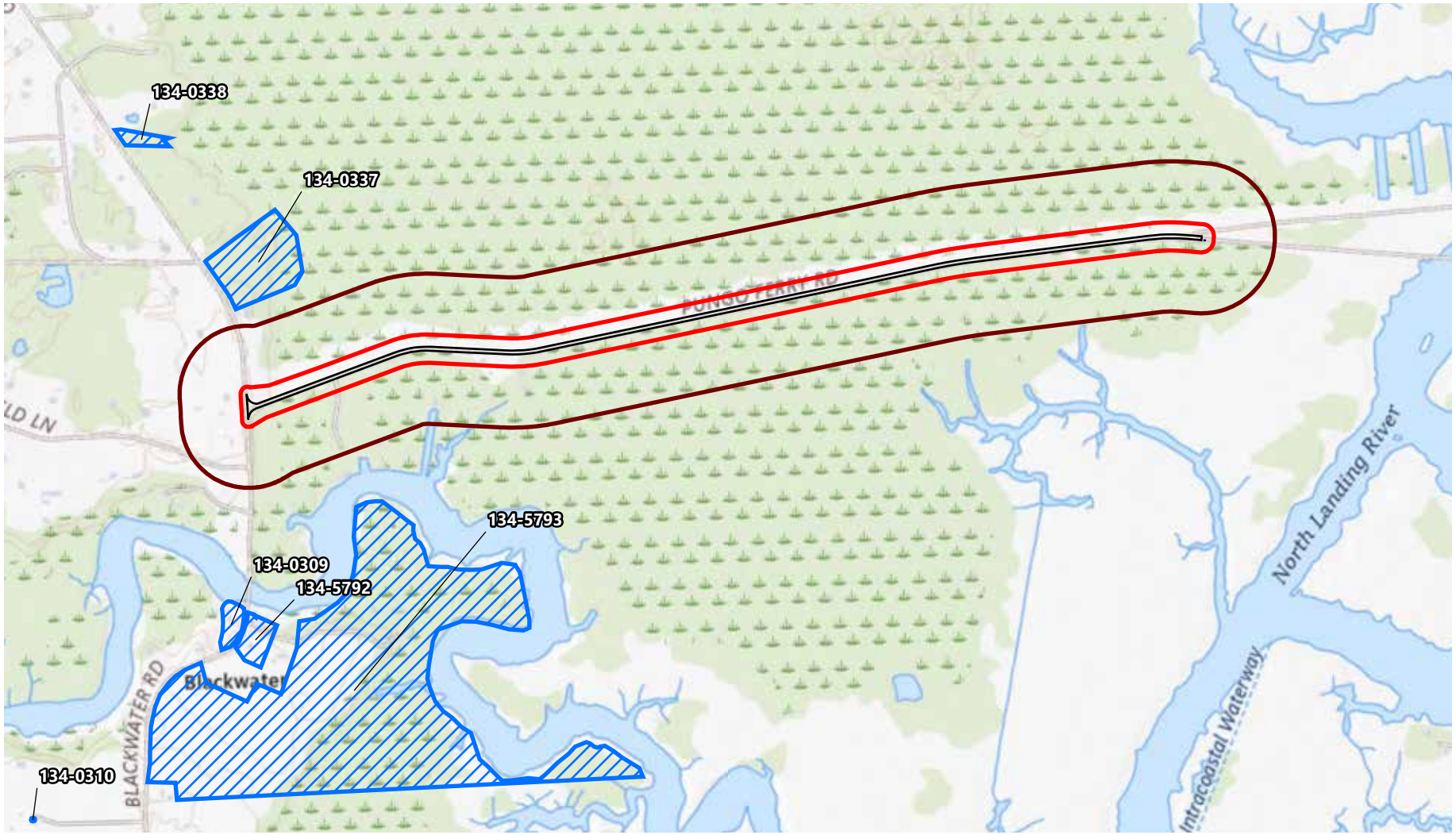

Legend

- Project Location
- Direct Effects APE (43.63 ac)
- Indirect Effect APE
- VCRIS Resource

N

0 625 1,250 feet

Source: USGS 7.5 minute Creeds, Virginia Quadrangle;
VDHR Virginia Cultural Resources Information System (VCRIS) (accessed 1/15/2026)

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Water Resources

Floodplains

Floodplains are regulated by local, state, and federal rules and regulations. Executive Order (EO) 11988, *Floodplain Management* (1977), requires federal agencies to "avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative." The Federal Emergency Management Agency (FEMA) has primary federal jurisdiction over the administration of EO 11988. FEMA guidance for compliance with EO 11988 is found at 44 CFR Part 9.

Due to funding being provided by FHWA, the proposed project must also comply with 23 CFR 650 Subpart A, Location and Hydraulic Design of Encroachment on Flood Plain. Its purpose is to prescribe FHWA policies and procedures for the location and hydraulic design of highway encroachments on floodplains. This policy "encourage(s) a broad and unified effort to prevent uneconomic, hazardous or incompatible use and development of the Nation's flood plains," as well as "minimize impacts of highway agency actions which adversely affect base flood plains."

The Virginia Flood Damage Reduction Act of 1989, VA Code 10.1-600 et seq., was enacted to improve Virginia's flood protection programs and place related programs under one agency, VDCR. VDCR is the manager of Virginia's floodplain program, serving as coordinator for all flood protection programs and activities in Virginia as well as the designated coordinating agency of the National Flood Insurance Program. Under VA Code 10.1-602, VDCR works with localities to establish and enforce floodplain management zoning.

The City of Virginia Beach Code Appendix K Floodplain Ordinance, Section 4.10B.1.a states "Notwithstanding any provision of this ordinance to the contrary, no filling shall be permitted, including filling with material excavated from the same floodplain except for: The purpose of public roadway or other similar public works construction undertaken by the Department of Public Works or Virginia Department of Transportation, or their agent for construction. This construction includes flood protection and flood mitigation projects."

Existing Conditions

The project area is bordered by forested and scrub-shrub wetlands to the north and south, as identified during a wetland delineation performed by VHB in February 22, 2023. The project area is identified on the current FEMA Flood Insurance Rate Map (FIRM) as Zone AE, upstream of the defined Limit of Moderate Wave Action (LIMWA) along North Landing River with Base Flood Elevation (BFE) of 4 feet NAVD88 (FIRM 5155310230G and 5155310235G, dated January 16, 2015, for the City of Virginia Beach). See Figure 11 for a FIRM map. A no-rise analysis is not required for federal floodplain compliance as the proposed project lies within the Virginia Beach, Virginia FEMA Coastal Flood (Flood Insurance) Study limits and within a FEMA Special Flood Hazard Area, requiring a floodplain development permit. However, based on FEMA's analysis of the Back Bay flood source, the project aera is not within a designated floodway. As the elevations provided by FEMA analyses are statistical probabilities calculated by historic trends, and, thus, do not account for anticipated future water levels nor increased storm frequency, hydrologic and hydraulic modeling was performed for resilient design purposes.

Figure 11: FEMA Floodplain Map

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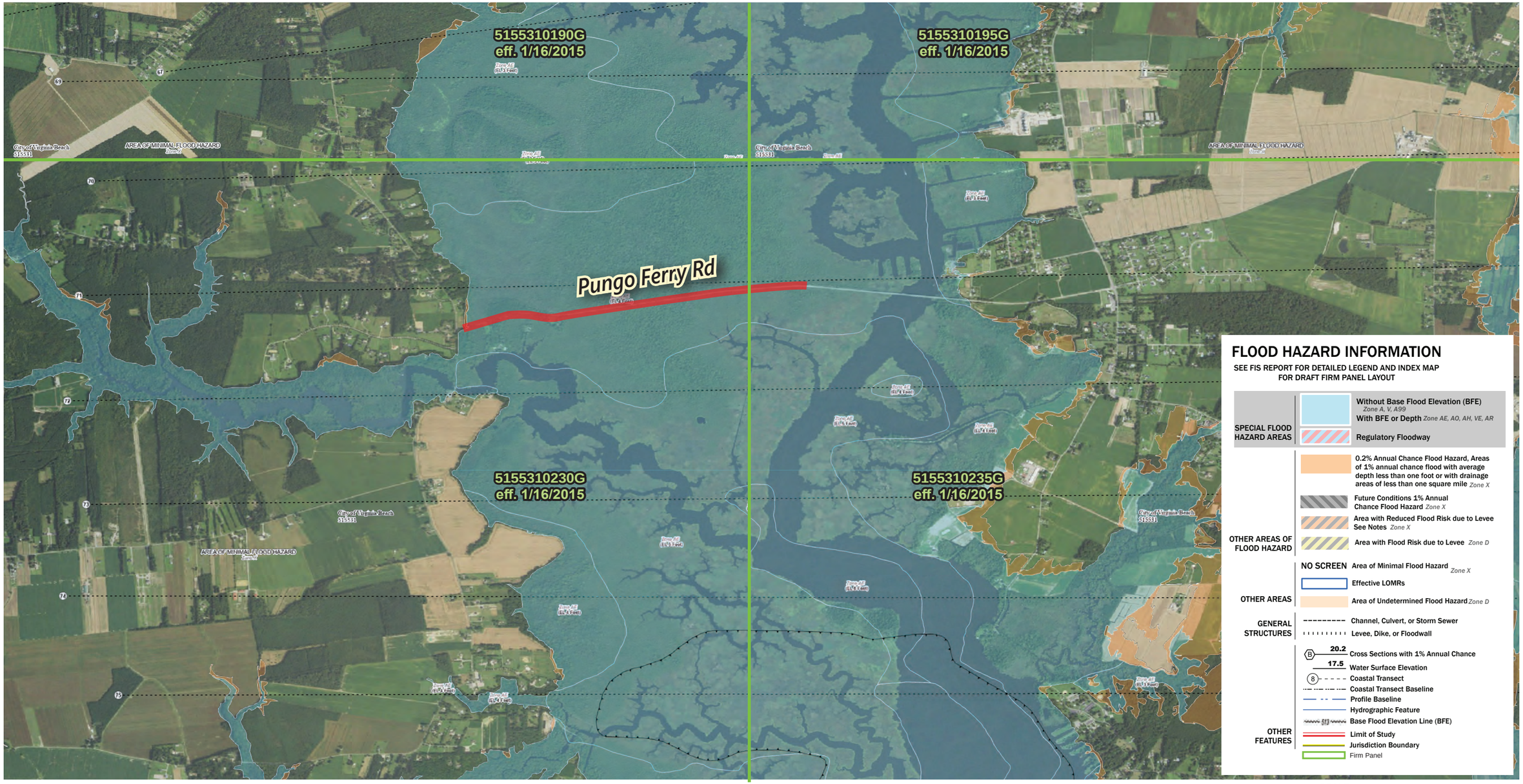


Source: FEMA FIRM Panels 5155310195G, 5155310190G, 5155310235G, and 5155310230G effective date 01/16/2015

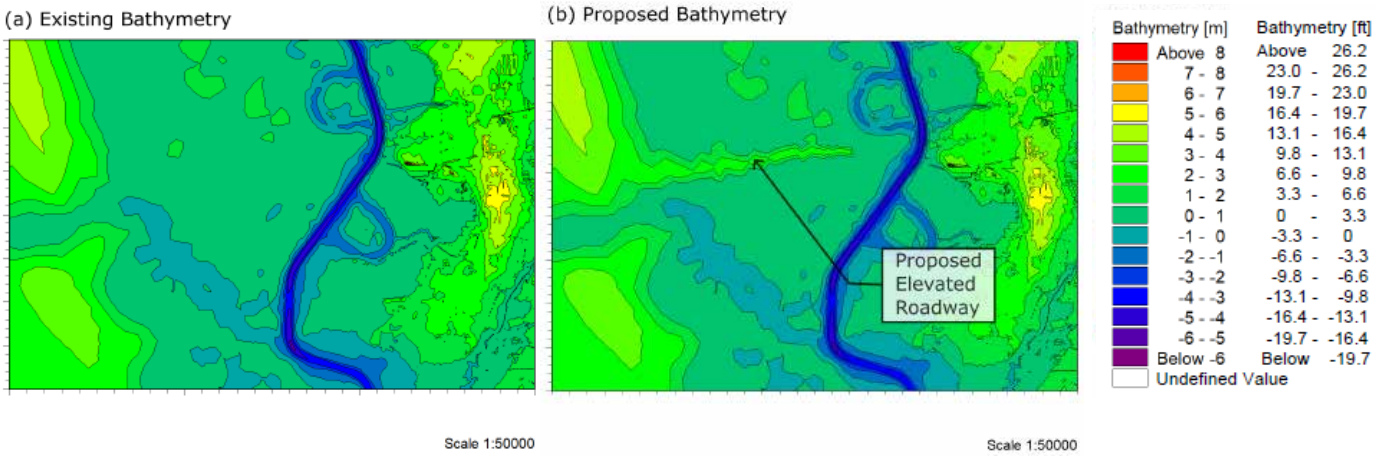
Modeling Analysis

The Danish Hydraulic Institute MIKE (MIKE) software suite was utilized to assess the effects of each alternative on the local hydrodynamics, specifically the impacts of wind-driven tides and rainfall on water elevations and erosion for a 100-year, 24-hour rainfall, considering 1.5 feet of anticipated water level increase per the Design Storm Frequency and Sea Level Rise guidelines from the City of Virginia Beach PWDSM (2022). Coupled models (MIKE+ and MIKE 21), Manning's 'n' roughness coefficients, and digital elevation model (DEM) data were provided by the City.

For all modeled scenarios, the initial and boundary conditions assume a constant wind speed of 9 meters per second (20 miles per hour) blowing northward, with variable wind friction to simulate the wind-driven tide. The southern boundary is set with a water elevation of 1.18 meters (3.87 feet), and the modeled bathymetry for the existing (Panel A) and proposed (Panel B) conditions is shown in Figure 12. Only the DEM has been altered between the two modeled scenarios, raising the roadway centerline profile to approximately 6.5 feet NAVD88. Temporal analyses used 5 reference points surrounding the site, including locations in close proximity to residential homes.

All build alternatives are simulated under one scenario labeled "proposed condition," as the lateral movement of the northern shift alternatives is negligible with respect to the dominant hydrodynamic scale modeled. Thus, the alternatives, if simulated separately, will show no change in characteristic results.

Figure 12. Bathymetry of the MIKE Model Under (a) Existing and (b) Proposed Conditions

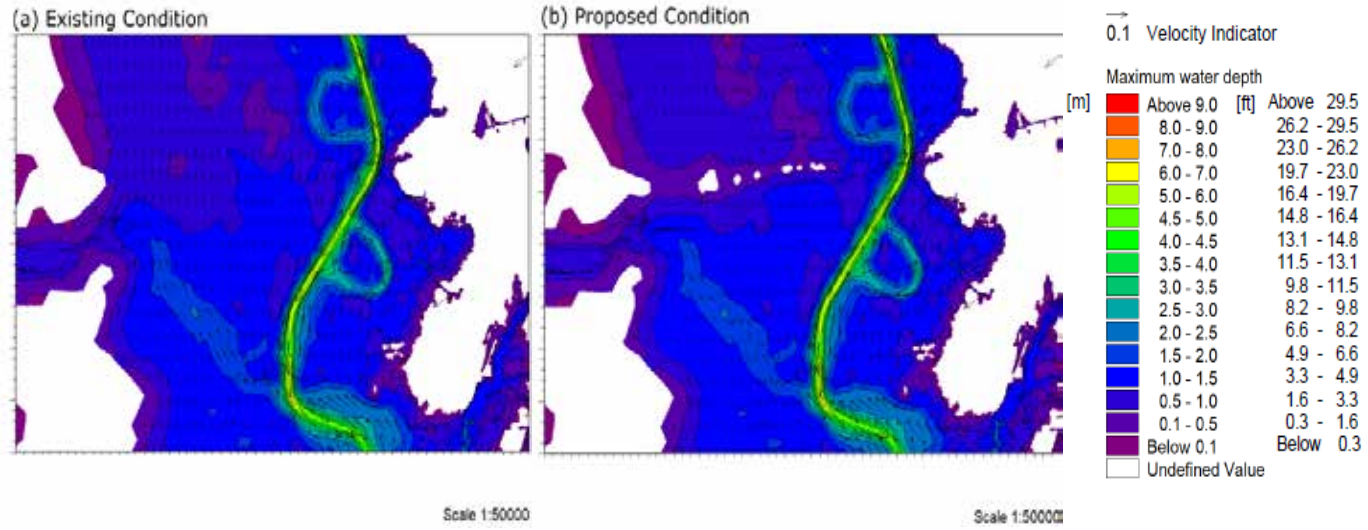


Results

Simulation results for the existing condition at the project area indicate that the water elevation reaches approximately 1.39 meters (4.6 feet NAVD88) around Hour 17 on both the south and north sides of Pungo Ferry Road.

In the proposed condition, Pungo Ferry Road acts as an obstruction to northward wind-induced flow, redirecting it towards First Landing River (Figure 13b). On the south side of Pungo Ferry Road, the water elevation rises faster in the initial stages; however, it reaches a similar peak at approximately the same time (Hour 17) as the existing condition.

Figure 13. Maximum Water Depth of Velocity Field in the Vicinity of Pungo Ferry Road Under a) Existing and (b) Proposed Conditions



Environmental Consequences

No Build Alternative

Under the No Build Alternative, no project-related construction would occur, and therefore no changes to the floodplain or flow patterns would result.

Northern Shift Alternative

In the Northern Shift Alternative, Pungo Ferry Road acts as an obstruction to northward wind-induced flow, redirecting it towards First Landing River (Figure 13b). On the south side of Pungo Ferry Road, the water elevation rises faster in the initial stages; however, it reaches a similar peak at approximately the same time (Hour 17) as the existing condition.

The shifts associated with this alternative result in negligible change to the maximum water surface elevation and time to peak water level at the 5 spatially distributed output locations analyzed (see Figure 14). With negligible change to the water surface elevations in this alternative, the change to the floodplain is primarily around the footprint of the fill. This alternative would result in a minimal reduction of the existing floodplain.

With a proposed centerline elevation of approximately 6.5 feet NAVD88, the water surface during the 100-year, 24-hour rainfall event, including 1.5 feet of sea level rise, is projected to be at or below the edge of the travel lane (white line). This complies with the PWDSM, Section 3.7A. Flow patterns on the eastern overbank would be disrupted by the obstruction from the fill, and localized stabilization may be recommended during final design to protect the roadway embankment.

Figure 14: MIKE Model Output Results Locations

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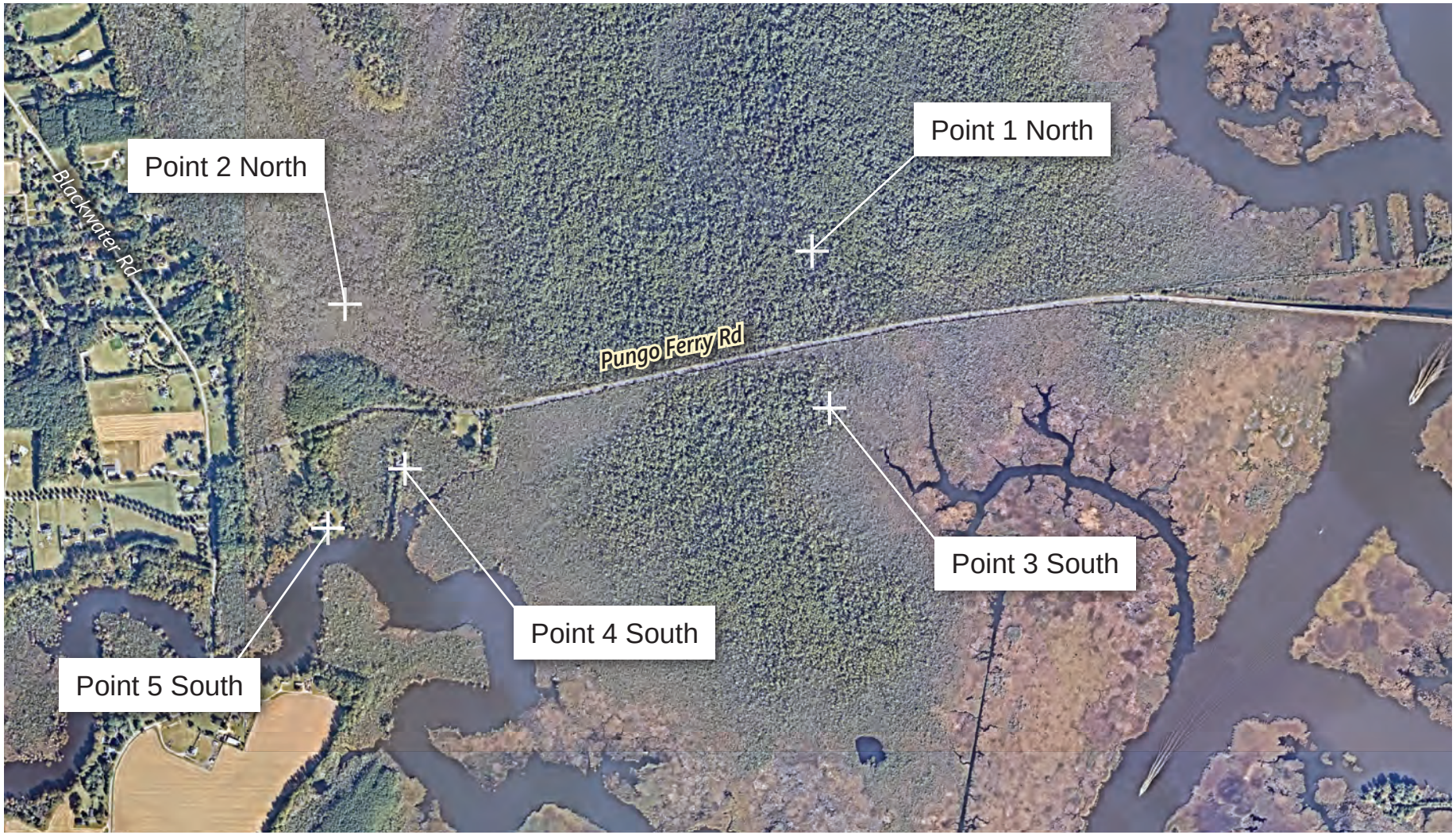

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Source: Nearmap Imagery dated 10-23-2025

Retaining Wall Alternative (Preferred Alternative)

Under this alternative, the change to the existing floodplain and flow patterns would be similar to those under the Northern Shift Alternative, with an overall reduction in floodplain footprint on the south side. The retaining wall reduces the development footprint by minimizing the fill slope, therefore resulting in a lesser reduction to the overall floodplain boundaries than the Northern Shift Alternative.

Both shifted alternatives would be consistent with federal policies and procedures for the location and hydraulic design of highway encroachments on floodplains contained in 23 CFR 650 Subpart A. Based on the MIKE modeling analysis, it is anticipated that the potential floodplain encroachments would not be a "significant encroachment" (as defined in 23 CFR 650.105(q)) because:

- It would pose no significant potential for interruption or termination of a transportation facility which is needed for emergency vehicles or provides a community's only evacuation route;
- It would not pose significant flooding risks; and
- It would not have significant adverse impact on natural and beneficial floodplain values.

Surface Water and Hydrology

Surface waters in Virginia are regulated both federally and by the state. USACE jurisdiction of authority includes Sections 10 and 14 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act of 1972 (CWA). The geographic jurisdiction of the Rivers and Harbors Act includes all navigable waters of the United States which are defined as, "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible to use, as transport for interstate or foreign commerce" (33 CFR Part 329). This jurisdiction extends seaward to include all ocean waters within a zone of 3 nautical miles from the coastline ("territorial seas"). Limited authorities extend across the outer continental shelf for artificial islands, installations, and other devices (43 USC §1333 [e]).

The CWA uses the term "navigable waters," which is defined as "waters of the United States, including the territorial seas" (Section 502[7]). Thus, Section 404 jurisdiction is defined as encompassing Section 10 waters plus their tributaries and adjacent wetlands and isolated waters where the use, degradation, or destruction of such waters could affect interstate or foreign commerce.

Section 404 of the CWA (33 CFR Parts 320-332) regulates discharges of dredged or fill material into waters of the United States (WOTUS), including jurisdictional wetlands. The CWA requires compliance with the Section 404(b)(1) Guidelines, 40 CFR Part 230, developed jointly by the Environmental Protection Agency (EPA) and USACE. CWA compliance requires a sequential evaluation process, which includes verification that all WOTUS impacts have been avoided and minimized to the maximum extent practicable and unavoidable impacts have been mitigated in the form of compensatory mitigation to replace the loss of wetland, stream, and/or other aquatic resource functions.

Under Section 401 of the CWA, any applicant for a federal permit or license for an activity that may result in a discharge to navigable waters must provide the federal agency issuing a permit with a certificate, either from the state where the discharge would occur or from an interstate water pollution control agency, that the discharge would comply with Sections 301, 302, 303, 306,

307, and 316 (b) of the CWA. Applicants for discharges to navigable waters in Virginia must also obtain a Water Quality Certification from the Virginia Department of Environmental Quality (VDEQ) as part of the permit approval process.

Available topographic surveys of the project area, GIS elevation data, and hydrologic and hydraulic studies completed in the region were used to identify and characterize waterways within the project area with regard to hydrology and surface water flow. Further, national and regional data, studies, and projection tools were referenced to provide context on sea level rise and storm surge risk due to the region's susceptibility to the effects of climate change and land subsidence.

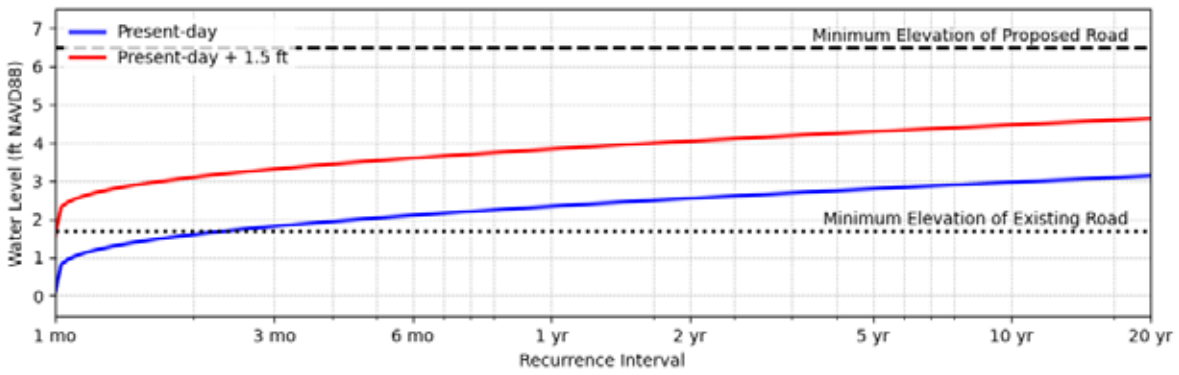
Existing Conditions

The project area is bordered by forested and scrub-shrub wetlands to the north and south, as identified by VHB ecologists during a field delineation in February 2023. The local topography varies, with road elevations ranging from approximately 1.7 to 10 feet NAVD88. At the western end of the project area, the intersection of Pungo Ferry Road and Blackwater Road is at a higher elevation, which gradually decreases along Pungo Ferry Road. This elevation profile and the site's proximity to water bodies (i.e., Currituck Sound and the Atlantic Ocean) make the area prone to flooding.

Stormwater runoff from the road typically follows the natural contours of the land. Water flows from higher ground down towards lower areas, where it is then channeled to the northern and southern marshes, on either side of the road. This runoff eventually discharges into the North Landing River. The project area drains to North Landing River–Blackwater Creek (AS16) via City of Virginia Beach Drainage Basin 15 (Lower Southern Rivers) and falls within the Southern Rivers Watershed buffer area.

Analysis of water surface elevation data from the U.S. Geological Survey (USGS) gage on the North Landing River (Station No. 02043269) indicates that Pungo Ferry Road is inundated in the low-lying sections roughly every 2.5 to 3 months (see Figure 15). Based on predictive modeling, with a projected 1.5 feet of water level rise, the existing road is likely to experience at least monthly flooding in the future.

Figure 15. Flooding Occurrence at Pungo Ferry Road



A hydrodynamic modeling analysis using the MIKE model, described in the "Floodplains" section, was conducted to evaluate the hydrological effects of the existing and proposed conditions at the site. The simulation results support the conclusions described below.

Simulation for the existing conditions at the project area indicates that the water elevation reaches approximately 4.6 feet NAVD88 on both the south and north sides of Pungo Ferry Road,

implying approximately 2.9 feet of water flow across the lowest sections of Pungo Ferry Road during a 100-year, 24-hour rainfall, considering 1.5 feet of anticipated water level increase. The velocity field shows that the relatively low elevation of Pungo Ferry Road allows the wind to push water northward over the road (Figure 13a).

Groundwater at the boring locations sampled within the road corridor were measured to be approximately 48 to 84 inches below the existing grades, corresponding to an elevation of -1.3 to -0.6 feet NAVD88. However, groundwater conditions vary due to environmental, climatological, and artificial influences (e.g., frequency and magnitude of rainfall, swales, drainage ponds, underdrains, and impervious surfaces) and are driven by tidal cycles. Seasonal groundwater fluctuations of approximately ±2 feet are common in the project area; however, greater fluctuations have been documented. The project area is underlain by permeable granular soils. It should be noted that the areas immediately adjacent to the existing roadway consist of scrub-shrub and forested wetlands with higher groundwater elevations.

Environmental Consequences

No Build Alternative

Under the No Build Alternative, no project-related construction would occur and no project-related changes to surface water or hydrology would result. However, predictive modeling projects 1.5 feet of water level rise along with more frequent rain-driven events and higher storm surges in the future. Consequently, the low-lying sections of Pungo Ferry Road (i.e., areas below 2 feet NAVD88) are expected to experience more frequent flooding, with the potential to occur monthly under this alternative.

Northern Shift Alternative

Under the Northern Shift Alternative, the centerline of Pungo Ferry Road would be raised to an elevation of 6.5 feet NAVD88 and would not experience any overtopping as a result of the 100-year present-day event nor the 100-year present-day event considering 1.5 feet of anticipated water level rise (Figures 13b and 15).

The flow is expected to discharge toward the North Landing River, rather than overtopping the road as occurs under existing conditions. Although the elevation of the proposed roadway alters the flow path, the effects on water levels north and south of the road are negligible when compared with existing conditions.

The marshes surrounding the project area are sustained in part by groundwater, with seasonal water table fluctuations providing prolonged soil saturation. The site's permeable soil allows groundwater to move between marshes and provide baseflow to the North Landing River. Under this alternative, the nearby marshes are not expected to experience disruptions or adverse effects.

Retaining Wall Alternative (Preferred Alternative)

The lateral shifts associated with the Northern Shift Alternative are assumed to have a negligible effect on results at the hydrodynamic spatial scale; the vertical elevation change determines the hydrologic and surface water effects. Therefore, the Retaining Wall Alternative is expected to yield the same environmental consequences as the Northern Shift Alternative.

Water Quality

Water quality is enforced at the state level, based on standards set by both the state and the EPA. States can choose to adopt national water quality standards or to revise these and adopt state-specific standards. The proposed action must demonstrate compliance with the Virginia Stormwater Management Act, Erosion and Sediment Control Law, Water Quality Standards, and Erosion and Sediment Control Regulations.

Water quality requirements will be addressed based on the Runoff Reduction method per City of Virginia Beach Code of Ordinance Section 1-12 – Water Quality Compliance and through the utilization of Best Management Practices (BMP) and the Virginia Runoff Reduction Method (VRRM) V4.1 (VDEQ 2024).

Existing Conditions

The existing road is crowned aside from a few superelevated curves. The runoff from the road flows down a short slope into the adjacent wetlands. The west end of the project area abuts several residential properties which do not have defined roadside ditches. Currently, runoff sheet flows off the pavement and onto the adjacent residential properties. All runoff from the road eventually discharges into North Landing River via low gradient channels and wooded wetlands. The project area lies within a floodplain that abuts the North Landing River.

Environmental Consequences

No Build Alternative

Under the No Build Alternative, no project-related construction would occur, and therefore, no changes to the stormwater management and water quality are anticipated. No stormwater management treatment exists in current conditions as regulations have changed substantially since construction of the original roadway. This alternative would result in adverse effects to water quality as the opportunity to improve stormwater treatment throughout the corridor would not occur.

Northern Shift Alternative

The impervious footprint of the Northern Shift Alternative is similar to that of the Retaining Wall Alternative. Stormwater management strategies would continue to be defined as design progresses and would be conducted similarly to the Retaining Wall Alternative as described below.

Retaining Wall Alternative (Preferred Alternative)

According to the VRRM, the Retaining Wall Alternative would yield 5.5 pounds per year of phosphorus removal required to achieve water quality compliance. Stormwater sheet flow would be directed to conserved open space to meet the majority of the water quality compliance requirements. This would treat approximately 5 pounds per year of phosphorus while having the least impact to the environmentally sensitive areas adjacent to the project area. According to the Virginia Stormwater Management Specification P-FIL-07, Sheet Flow to Conserved Open Space can provide 50 percent Total Phosphorus (TP) mass load removal for Hydrologic Soil Groups C and D.

For sheet flow, run-off from the proposed roadway would intersect with a proposed gravel diaphragm before continuing down a constructed fill slope. The average distance between the limits of the slopes and the edge of ROW adjacent to VDCR property on the south side of the road is approximately 24 feet. This buffer, which is primarily characterized as wetlands, would meet the intent of the conserved open space area.

To supplement water quality compliance accommodated by the conserved open space, an additional solution may be proposed. A wet swale (or grass channel BMP) is proposed at the western end of the project area. The swale would create a water quality treatment train of the sheet flow into open space. A level spreader would be constructed on the downstream end to ensure water velocities are slowed before draining onto the adjacent VDCR property. This treatment plan would result in double treatment of stormwater runoff and would result in an overall benefit to water quality. See Figure 16 for a proposed stormwater treatment diagram.

Figure 16: Proposed Stormwater Treatment (Grass Swale)

Pungo Ferry Road Improvements | Virginia Beach, Virginia

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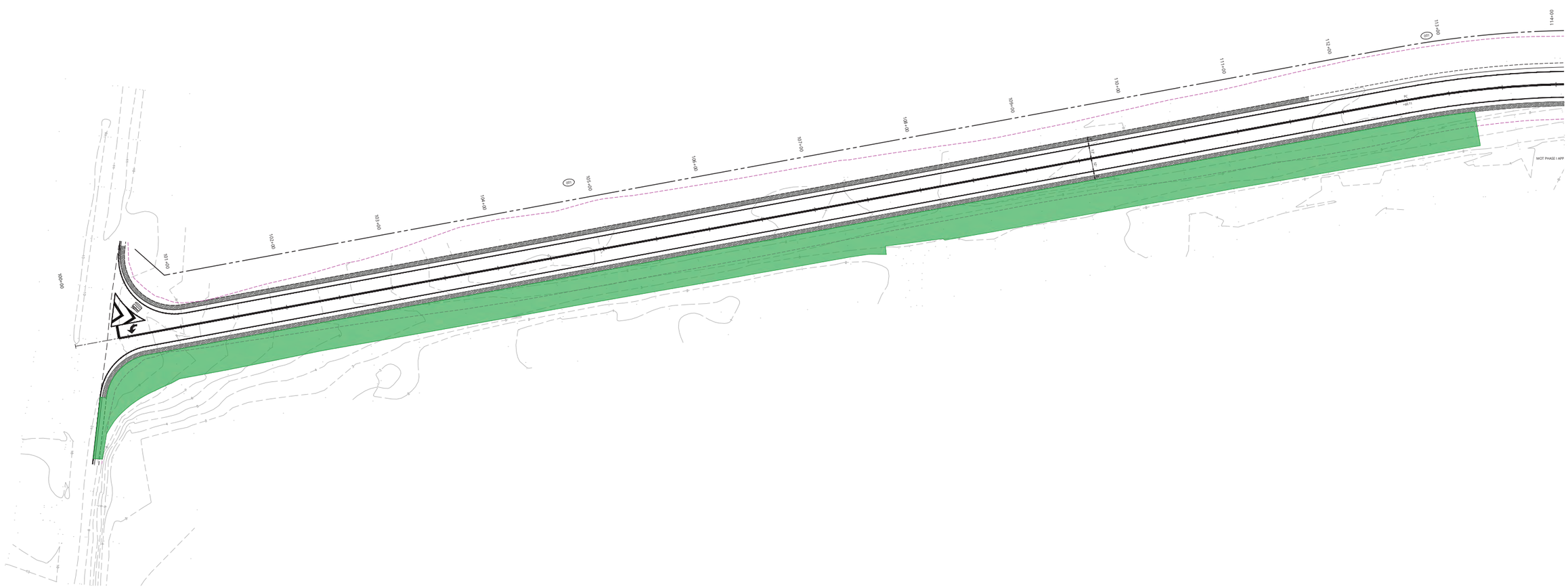

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Legend

- Gravel Diaphragm Location
- Wet Swale Location

N

0 55 100 feet

Natural Resources

Waters of the U.S.

Wetlands within the study area are regulated and protected under state and federal regulatory programs. Within the Commonwealth of Virginia, activities conducted in wetlands are regulated by the Virginia Wetlands Act of 1972 and Virginia Code Sections 62.1-44.2 *et* seq, while activities affecting state waters are regulated under the Virginia Water Protection (VWP) Permit Program (Virginia Code Sections 62.1-44.2 *et seq*.), administered by the Virginia Department of Environmental Quality (DEQ). At the federal level, the U.S. Army Corps of Engineers (USACE) administers Section 404 of the CWA, which regulates discharges of fill into wetlands and other Waters of the U.S. (WOTUS). In addition, Section 401 of the CWA (33 U.S.C. § 1341) requires applicants for federal permits that may result in a discharge to WOTUS to obtain state water quality certification, guaranteeing that the activity complies with applicable state water quality standards. In Virginia, this certification is typically issued through the Virginia Water Protection Permit Program (VWPPP), which evaluates potential impacts to surface waters, including wetlands.

Wetlands as defined by the USACE in 33 CFR 328.3 and by the EPA in 40 CFR 230.3 are those "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

EO 11990, *Protection of Wetlands*, discourages direct or indirect support of new construction impacting wetlands wherever there is a practicable alternative. The process for compliance would be accomplished through completion of the Final EA for this project.

Under the EPA and USACE definition, a wetland is defined by the presence of the following three parameters:

- Hydric soil: a soil formed under conditions of saturation or flooding long enough to develop anaerobic, or low oxygen, conditions in the upper part;
- A dominance of hydrophytic vegetation: plants adapted for life in habitats with saturated or inundated soils for prolonged periods of time;
- Wetland hydrology: the presence of water at or above the ground surface for a significant duration during the growing season.

This determination is tied to Section 404 of the CWA, which provides for the protection of water quality in WOTUS, including wetlands, and instructs the USACE to issue permits for activities that result in the discharge of dredged or fill material into these areas. Alternatively, the USFWS uses the Cowardin definition, which defines wetlands as:

> "... lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year" (Cowardin et al. 1979).

The USFWS definition is more comprehensive than the EPA and USACE definition, acknowledging that physical or chemical conditions such as wave action, current, or high salinity may prevent development of hydric soils or hydrophytic vegetation in some wetland types. Therefore, some

unvegetated or non-hydric soil sites, such as mudflats or high-energy shorelines, may not exhibit all three attributes but are still classified as wetlands.

Existing Conditions

On February 22, 2023, environmental scientists from VHB performed a formal field delineation of an approximate 46.2-acre study area within the proposed project location for wetlands and waterways regulated under Sections 401 and 404 of the CWA. Prior to the onsite investigation, offsite research was conducted using the following sources:

- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey,
- USFWS NWI, and
- USGS Quadrangle Maps for Creeds, VA.

Datasets and mapping were downloaded from each of these sources and overlaid onto project area mapping. Layers were processed using ESRI's ArcMap Pro and included as base maps for mobile data collection using ESRI's Collector for ArcGIS.

This field investigation was conducted according to the methodologies and guidance described in the USACE's *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)* (USACE 2010) to complete the wetland delineation. The boundaries of potentially jurisdictional WOTUS were marked using individual pink flags with the label "WETLAND DELINEATION" and geo-located using a Global Navigation Satellite System (GNSS) receiver. Datapoints were collected to describe the hydrology, soil, and vegetation characteristics present on the proposed project location. The results of this delineation effort were submitted to the USACE and VDEQ. On May 23, 2023, the USACE approved the wetland boundaries, and on February 18, 2026, DEQ approved the wetland boundaries, and confirmed that the 46.2-acre study area included 31.94 acres of wetlands. The different wetland community types are listed by acreage in Table 2 and briefly described below. The term "palustrine" as it is used here generally describes a wetland that is vegetated and lacks either tidal influence or salt water (Cowardin et al. 1979).

Table 2. Summary of Wetland Resources

Resource Type	Surface Area (Acres)
Palustrine Forested (PFO) Wetland	27.80
Palustrine Emergent (PEM) Wetland	2.79
Palustrine Scrub-Shrub (PSS) Wetland	1.35

Palustrine Forested (PFO) Wetlands

Nine PFO habitats are present, making up the majority of wetland resources within the study area. Dominant vegetation within these systems includes sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), pond pine (*Pinus serotina*), loblolly pine (*Pinus taeda*), swamp bay (*Persea palustris*), wax myrtle (*Morella cerifera*), and laurel greenbriar (*Smilax laurifolia*).

Palustrine Emergent (PEM) Wetland

Sixteen PEM habitats are present within the study area, occurring along the maintained right-of-way of Pungo Ferry Road and Blackwater Road. Dominant vegetation within these systems includes soft rush (*Juncus effusus*), sedge (*Carex* spp.), narrowleaf cattail (*Typha latifolia*), royal fern (*Osmunda spectabilis*), common reed (*Phragmites australis*), and joint-head grass (*Arthraxon hispidus*).

Palustrine Scrub-Shrub (PSS) Wetland

Eight PSS habitats are present within the study area, occurring along the maintained right-of-way of Pungo Ferry Road and between PFO systems. Dominant vegetation within these systems includes soft rush (*Juncus effusus*), wax myrtle (*Morella cerifera*), swamp rose (*Rosa palustris*), black willow (*Salix nigra*), and sedge (*Carex spp.*).

Environmental Consequences

No Build Alternative

Under the No Build Alternative, no wetland filling would occur. The Pungo Ferry Road alignment would remain the same, and no work would be done to widen the road shoulders. Therefore, no impacts to wetlands would result.

Northern Shift Alternative

Under the Northern Shift Alternative, the existing centerline of a 1.5-mile stretch of Pungo Ferry Road between Blackwater Road and the west side of Pungo Ferry Bridge would be shifted north of its current alignment, between 9 and 32 feet. Both travel lanes would be widened to 12 feet each, with 4 feet of paved shoulder and another 4 feet of graded shoulder on each side. A 9-foot northern shift of the existing centerline would result in 9.28 acres of permanent wetland impacts, 0.27 acre of temporary wetland impacts, and 2.89 acres of permanent conversion impacts. A 32-foot northern shift of the existing centerline would result in 10.28 acres of permanent wetland impacts, 1.05 acres of temporary wetland impacts, and 1.66 acres of permanent conversion impacts. See Figure 17 for a map of potential impacts. The area of permanent wetland conversion would have a loss of wetland function including loss of wildlife habitat and sediment or nutrient removal.

Retaining Wall Alternative (Preferred Alternative)

Under the Retaining Wall Alternative, the existing centerline of a 1.5-mile stretch of Pungo Ferry Road between Blackwater Road and the west side of Pungo Ferry Bridge would be shifted 15 feet to the north of its current alignment with a series of retaining walls installed along approximately 1 mile of the roadway on the northern edge. Both travel lanes would be widened to 12 feet each, with 8-foot shoulders (combined paved and graded) on both sides. The Retaining Wall Alternative would result in 6.27 acres of permanent wetland impacts, 0.36 acre of temporary wetland impacts, and 2.49 acres of permanent conversion impacts. See Figure 18 for a map of potential impacts. Under this alternative, there would be approximately 3.32 fewer acres of total impacts compared to a 9-foot northern shift, and 3.87 fewer acres of total impacts compared to a 32-foot northern shift.

The Retaining Wall Alternative is the least environmentally damaging, practicable alternative. Wetlands would be avoided to the maximum extent practicable through the use of retaining walls that would minimize the amount of grading on the northern edge of the road.

Figure 17. Northern Shift Alternative Wetland Impacts Map (Panels 1-2)

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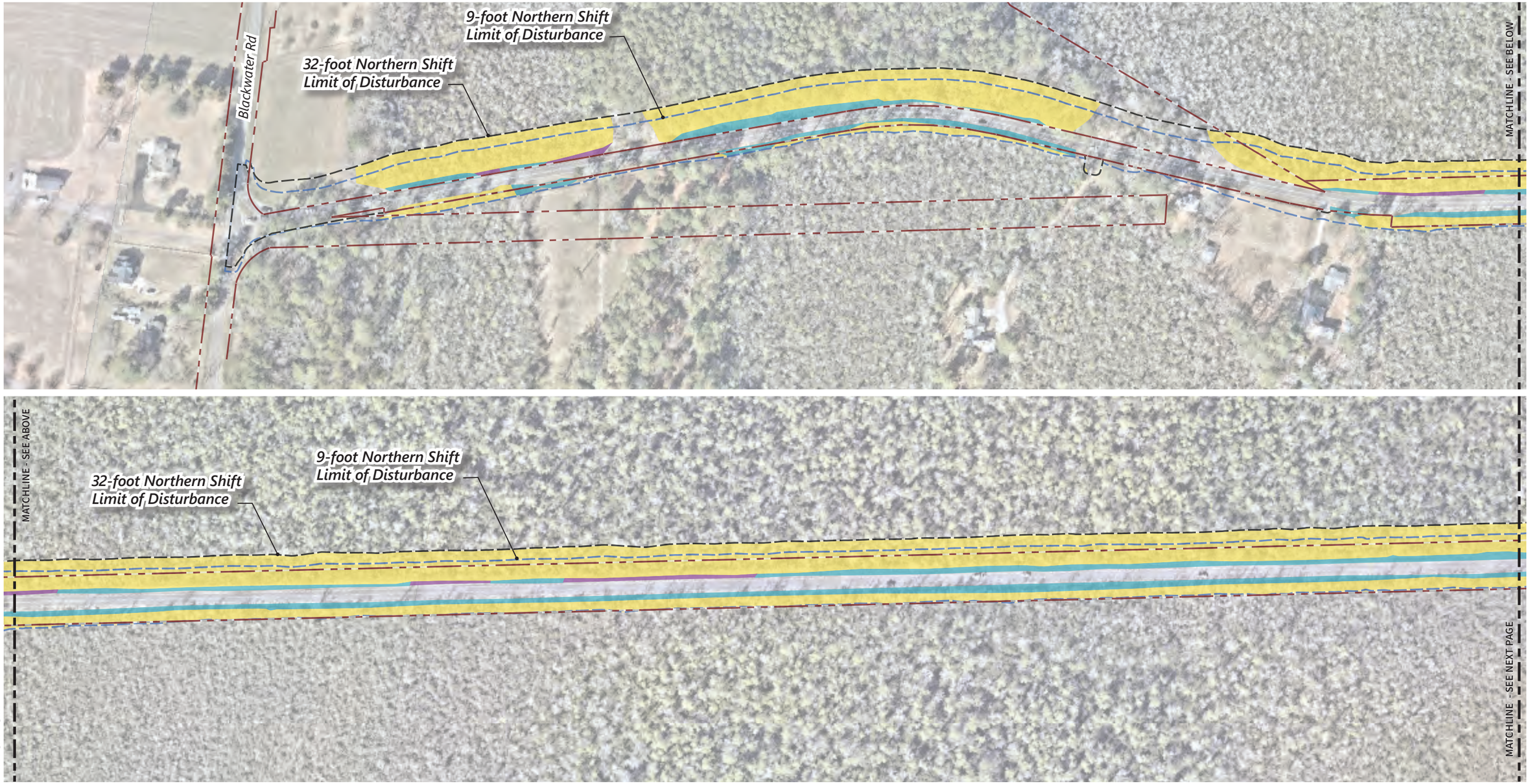

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Legend

- Existing Right of Way
- 9-foot Northern Shift Limit of Disturbance
- 32-foot Northern Shift Limit of Disturbance

Wetland Impacts

- Palustrine Emergent (PEM) Impacts (2.60 to 2.65 acres)
- Palustrine Forested (PFO) Impacts (9.20 to 12.88 acres)
- Palustrine Scrub/Shrub (PSS) Impacts (0.04 to 0.6 acres)

0 100 200 feet

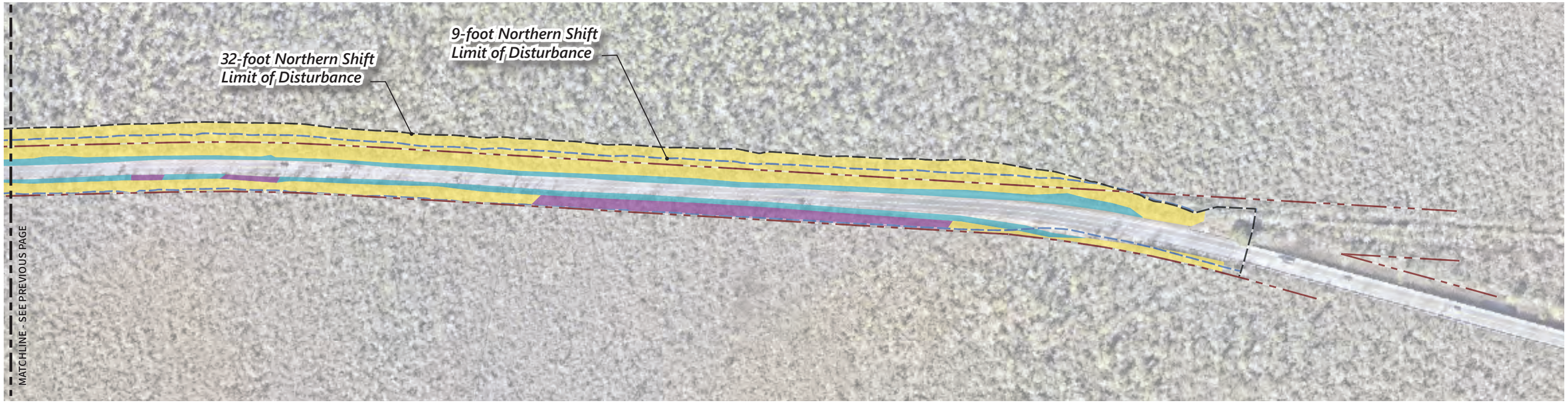
SCALE 1" = 200 feet

Source: Nearmap Imagery dated Feb 13, 2026

Figure 17. Northern Shift Alternative Wetland Impacts Map (Panel 3)

Pungo Ferry Road Improvements | Virginia Beach, Virginia

05/22/26



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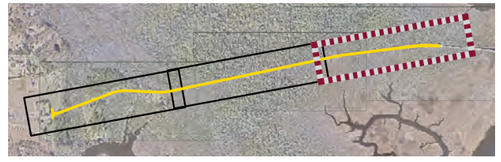
Legend

- Existing Right of Way
- 9-foot Northern Shift Limit of Disturbance
- 32-foot Northern Shift Limit of Disturbance

Wetland Impacts

- Palustrine Emergent (PEM) Impacts (2.60 to 2.65 acres)
- Palustrine Forested (PFO) Impacts (9.20 to 12.88 acres)
- Palustrine Scrub/Shrub (PSS) Impacts (0.04 to 0.6 acres)



N

0 100 200 feet

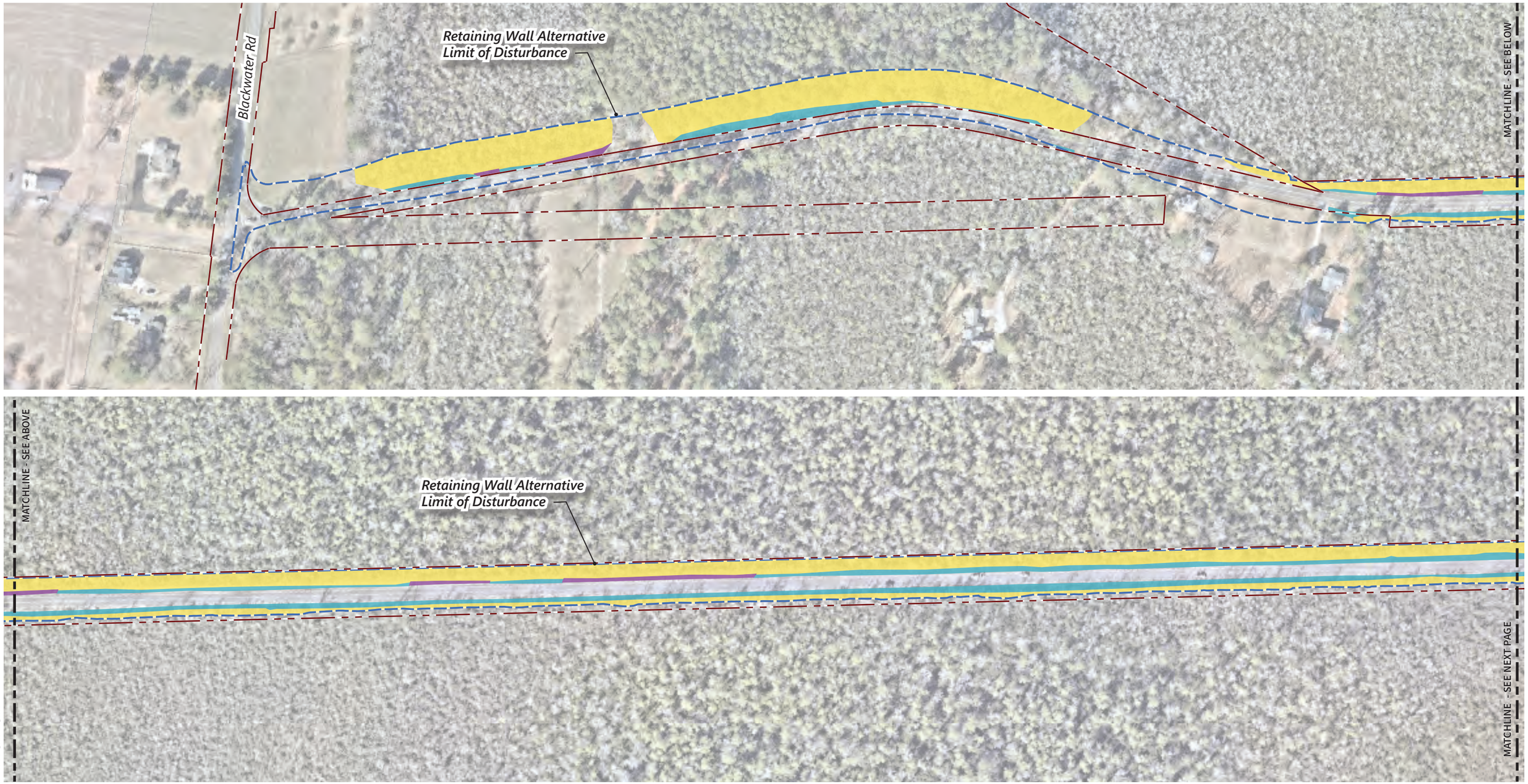
SCALE 1" = 200 feet

Source: Nearmap Imagery dated Feb 13, 2026

Figure 18. Retaining Wall Alternative Wetland Impacts Map (Panels 1-2)

Pungo Ferry Road Improvements | Virginia Beach, Virginia

05/22/26



3472.3_Pungo_EA_Figures

Legend

- Existing Right of Way
- Retaining Wall Alternative Limit of Disturbance

Wetland Impacts

- Palustrine Emergent (PEM) Impacts (2.44 acres)
- Palustrine Forested (PFO) Impacts (6.31 acres)
- Palustrine Scrub/Shrub (PSS) Impacts (0.04 acres)

N

0 100 200 feet

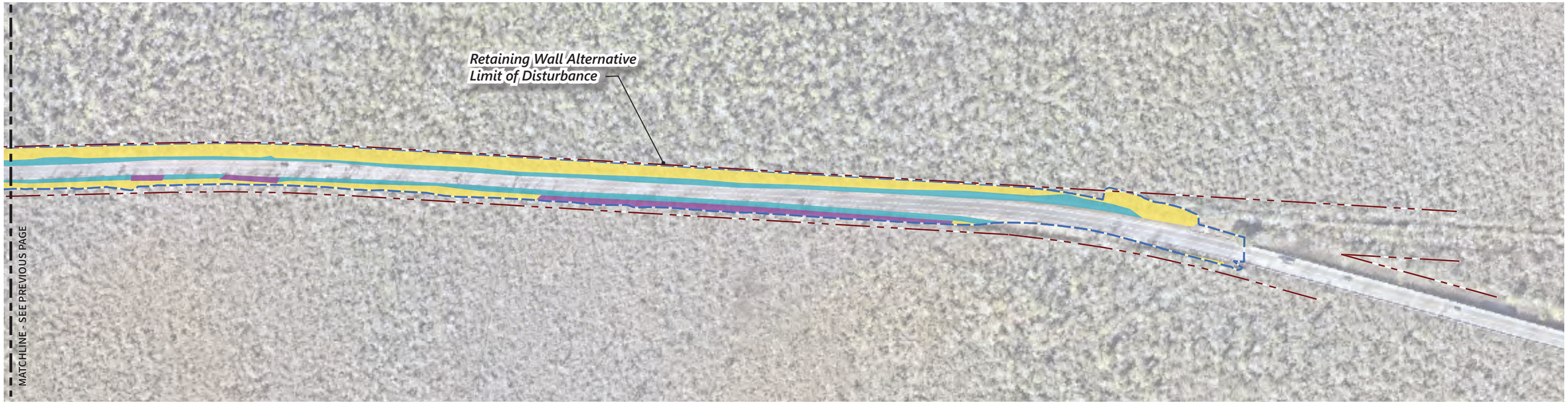
SCALE 1" = 200 feet

Source: Nearmap Imagery dated Feb 13, 2026

Figure 18. Retaining Wall Alternative Wetland Impacts Map (Panel 3)

Pungo Ferry Road Improvements | Virginia Beach, Virginia

05/22/26



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Legend

Existing Right of Way

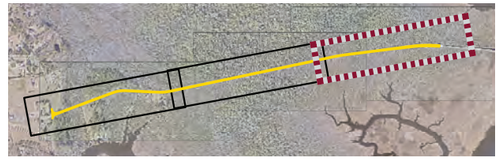
Retaining Wall Alternative Limit of Disturbance

Wetland Impacts

Palustrine Emergent (PEM) Impacts (2.44 acres)

Palustrine Forested (PFO) Impacts (6.31 acres)

Palustrine Scrub/Shrub (PSS) Impacts (0.04 acres)



N

0 100 200 feet

SCALE 1" = 200 feet

Source: Nearmap Imagery dated Feb 13, 2026

Geology and Soils

The geology and soils analysis is based on a review of available data resources, including extensive subsurface geotechnical surveys completed for the project, NRCS Web Soil Survey map, geologic mapping, local GIS datasets, and hydrologic and hydraulic studies prepared as part of the engineering and design analyses.

Existing Conditions

According to the NRCS Web Soil Survey, soils mapped within the project area include Dorovan mucky peat, Pocaty peat, Acredale silt loam, Nawney silt loam, Tetotum loam, Chapanoke silt loam, State loam, and Udorthents, loamy (NRCS 2026a). These soil series occur primarily in coastal plain landscapes and include a mixture of organic wetland soils, hydric mineral soils, non-hydric marine terrace soils, and disturbed anthropogenic soils associated with fill material.

Dorovan mucky peat and Pocaty peat are organic soils that typically occur in coastal plain swamps and depressional wetlands with slopes between 0 and 2 percent. These soils are composed primarily of decomposed organic material accumulated under prolonged saturation. Dorovan soils are classified in hydrologic soil group B/D, indicating moderate to slow infiltration rates. Both series are poorly drained, have a water table at or near the surface, and are associated with frequent flooding and prolonged saturation (NRCS 2026a). Both Dorovan mucky peat and Pocaty peat are listed as hydric soils in the NRCS Hydric Soils List for Virginia (2026b).

Acredale silt loam and Nawney silt loam are mineral hydric soils commonly found in low-lying coastal plain settings. Acredale soils typically occur on marine terraces with slopes of 0 to 2 percent and are derived from loamy marine and fluvial deposits. Nawney soils occur primarily on floodplains with slopes of 0 to 1 percent and are formed by loamy alluvium (e.g., sediment deposits created by flowing water in riverine environments). Both soils are characterized by poor to very poor drainage, shallow seasonal water tables, and periodic flooding or prolonged saturation (NRCS 2026a). Acredale soils belong to hydrologic soil group C/D, while Nawney soils are classified in hydrologic soil group B/D, representing the limited infiltration capacity when saturated. Both soil series are identified as hydric in Virginia (NRCS 2026b).

Tetotum loam, Chapanoke silt loam, and State loam are mineral soils associated with well-drained coastal plain uplands and terraces. These soil types are derived from fluviomarine (e.g., stratification of materials formed by the join action of riverine and marine physical processes) or marine terrace deposits and generally occur on flat terrains. Tetotum loam soils are moderately well drained and belong to hydrologic soil group C, with a seasonal water table typically between 18 and 30 inches below the soil surface. Chapanoke silt loam soils are somewhat poorly drained and classified as hydrologic soil group B/D, with a seasonal water table typically observed between 12 and 18 inches. State loam soils are classified as well drained and belong to the hydrologic soil group B, with deeper seasonal water tables observed between 48 and 72 inches from the soil surface (NRCS 2026a). Tetotum loam, Chapanoke silt loam, and State loam are not listed as hydric soils in the NRCS Hydric Soils List for Virginia.

Udorthents, loamy, represent disturbed or anthropogenic soils formed in areas where native soil horizons have been substantially altered through grading, filling, or other anthropogenic modifications involved in construction activities. These soils commonly occur in developed landscapes, including roadway corridors, and may exhibit slopes ranging from 0 to 25 percent. Udorthents generally have deep water tables (greater than 80 inches) and are not considered hydric soils in Virginia (NRCS 2026a and 2026b).

A geotechnical evaluation of the project area was completed by Terracon in May 2023 (Appendix C). During this survey, groundwater was measured at boring locations within the road corridor between approximately 48 and 84 inches below the existing grade of the roadway, corresponding to an elevation of -1.3 to -0.6 feet (NAVD88). Within the project area, groundwater conditions vary along topographic and geologic gradients and are influenced by ecological and seasonal climatic conditions such as evapotranspiration and the frequency and magnitude of rainfall patterns. Additionally, depth to groundwater may be influenced by anthropogenic modifications, including local groundwater extraction rates, drainage swales, stormwater retention ponds, underdrains, and areas of man-made fill. Seasonal fluctuations of ±2 feet are common in the project area; however, greater fluctuations have been documented (Terracon 2023).

Environmental Consequences

No Build Alternative

Effects on geology or soils are not expected under the No Build Alternative as no ground disturbance is proposed.

Northern Shift Alternative

Under the Northern Shift Alternative, disturbance to soils would occur throughout the project area. The upper limits of all the above described soil types found within the study area would be impacted under this alternative. With a 9-foot northern shift of the roadway centerline, 16.37 acres of soil would be disturbed, and 17.12 acres of soil would be disturbed by a 32-foot northern shift of the roadway centerline. The primary disturbance type would be from fill material and grading during roadway construction. Areas of fill and disturbed soils would be stabilized immediately upon final grading with erosion control blankets and seeding, while unimpacted wetlands would be protected by implementation of silt fencing. Vegetation would be re-established within 30 days post-disturbance.

Historical disturbances have occurred within the project area, where roadway development has covered or compacted native soil horizons. Much of the project area consists of existing roadway and maintained ROW.

Retaining Wall Alternative (Preferred Alternative)

Under the Retaining Wall Alternative, disturbance to soils would occur throughout the project area. The upper limits of all of the above soil types found within the study area would be impacted under this alternative. As a result of the use of a retaining wall along the northern edge of the road, only 12.32 acres of soil would be disturbed. The Retaining Wall Alternative would impact 4.05 fewer acres of soil than a 9-foot northern shift, and 4.8 fewer acres of soil relative to a 32-foot northern shift. Disturbance types would be the same as the Northern Shift Alternative, as would stabilization and vegetation measures. Historical disturbances under the Retaining Wall Alternative are the same as those described under the Northern Shift Alternative.

Protected Species

Pursuant to the Endangered Species Act of 1973 (ESA), an endangered species is defined as “any species which is in danger of extinction throughout all or a significant portion of its range,” and a threatened species is defined as “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range” (16 USC §1532).

The ESA protects threatened and endangered species at the federal level, while the Virginia Endangered Species Act and Virginia Endangered Plant and Insect Species Act protect state threatened and endangered species. The federal Bald and Golden Eagle Protection Act protects eagles from take (as defined under the ESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.") or disturbance (16 USC §668a et seq.), and USFWS recommends a 660-foot buffer zone between any development or construction and an active eagle nest during nesting season (USFWS 2007). In compliance with these regulations, searches were conducted to determine the presence or potential occurrence of the following: federally and state listed species, active eagle nests and roosts, and suitable habitat for threatened, and endangered species.

Resources used to identify threatened and endangered species and their preferred habitat within the project area included the USFWS Information for Planning and Consultation (IPaC) system, the Virginia Department of Wildlife Resources (VDWR) Virginia Fish and Wildlife Information Service (VaFWIS), the VDCR Natural Heritage Data Explorer (NHDE), and The Center for Conservation Biology (CCB) Virginia Bald Eagle Nest Locator. The IPaC, VaFWIS, and NHDE databases were used to identify threatened and endangered species that have been reported or have the potential to occur on or near the project area. This information was also used to identify suitable habitat for any threatened and endangered species, as well as designated critical habitat. The CCB Virginia Bald Eagle Nest Locator was used to identify the locations of nearby bald eagle (*Haliaeetus leucocephalus*) nests and roosts and to ensure there is, at minimum, a buffer of 660 feet between active eagle nests and the project area.

Existing Conditions

Table 3 below provides a list of federal and state protected species based on the results of the searches described above. It is divided into species that have suitable habitat within the project area and those with limited or no habitat within the project area.

The VaFWIS database indicated that the canebrake rattlesnake (*Crotalus horridus*) (state endangered) was documented within 2 miles of the project site. The eastern black rail (*Laterallus jamaicensis jamaicensis*) (federally threatened, state endangered) and Henslow's sparrow (*Centronyx henslowii)* (state threatened) were also identified by the VaFWIS search to potentially occur in or near the project site. The northern long-eared bat (*Myotis septentrionalis*) (federally and state endangered) and tricolored bat (*Perimyotis subflavus*) (federally proposed endangered and state endangered) were identified by the IPaC search as also having the potential to occur within the project site. The other 22 species in Table 3 have neither been observed nor had suitable habitat identified within or adjacent to the project site.

Table 3. Federal and State Listed Wildlife Species Potentially Occurring Within the Alternative Study Area

Listed Species	Scientific Name	Federal Status	State Status	Confirmed Within 2 Miles of Project Site
Species with Potential Habitat Within the Alternative Study Areas				
Northern long-eared bat	*Myotis septentrionalis*	FE	SE	
Tri-colored bat	*Perimyotis subflavus*	FP	SE	

Table 3. Federal and State Listed Wildlife Species Potentially Occurring Within the Alternative Study Area

Listed Species	Scientific Name	Federal Status	State Status	Confirmed Within 2 Miles of Project Site
Canebrake rattlesnake	*Crotalus horridus*		SE	Confirmed
Species with Limited or No Suitable Habitat within the Alternative Study Areas				
Eastern black rail	*Laterallus jamaicensis jamaicensis*	FT	SE	
Henslow's sparrow	*Centronyx henslowii*		ST	
Monarch butterfly	*Danaus plexippus*	FP		
Shortnose sturgeon	*Acipenser brevirostrum*	FE	SE	
Kemp's ridley sea turtle	*Lepidochelys kempii*	FE	SE	
Atlantic sturgeon	*Acipenser oxyrinchus*	FE	SE	
Leatherback sea turtle	*Dermochelys coriacea*	FE	SE	
Hawksbill sea turtle	*Eretmochelys imbricata*	FE	SE	
Roseate tern	*Sterna dougallii dougallii*	FE	SE	
Loggerhead sea turtle	*Caretta caretta*	FT	ST	
Rufa red knot	*Calidris canutus rufa*	FT	ST	
Green sea turtle	*Chelonia mydas*	FT	ST	
Piping plover	*Charadrius melodus*	FT	ST	
West Indian manatee	*Trichechus manatus*	FT	SE	
Eastern chicken turtle	*Deirochelys reticularia reticularia*		SE	
Wilson's plover	*Charadrius wilsonia*		SE	
Little brown bat	*Myotis lucifugus*		SE	

Table 3. Federal and State Listed Wildlife Species Potentially Occurring Within the Alternative Study Area

Listed Species	Scientific Name	Federal Status	State Status	Confirmed Within 2 Miles of Project Site
Rafinesque's eastern big-eared bat	*Corynorhinus rafinesquii macrotis*		SE	
Peregrine falcon	*Falco peregrinus*		ST	
Loggerhead shrike	*Lanius ludovicianus*		ST	
Gull-billed tern	*Gelochelidon nilotica*		ST	
Eastern glass lizard	*Ophisaurus ventralis*		ST	
Arctic peregrine falcon	*Falco peregrinus tundrius*		ST	
Migrant loggerhead shrike	*Lanius ludovicianus migrans*		ST	

Canebrake Rattlesnake

The VaFWIS indicates that canebrake rattlesnakes occupy a wide range of habitats, including swamps, cane fields, low pine flatwoods, moist woodlands, floodplains, open areas, creek bottoms, fallow agricultural fields, thickly wooded areas, and areas full of fallen logs (VDWR 2011). The current distribution of the canebrake rattlesnake in Virginia is York County and the cities of Chesapeake, Hampton, Newport News, Suffolk, and Virginia Beach (VDWR 2011). In a coastal plain population in the City of Chesapeake, Virginia, and Currituck County, North Carolina, canebrake rattlesnakes exhibited seasonal and sex-based variation in habitat selection (Peterson et al. 2019). It was determined that the snakes tend to occupy a wide range of habitat types, however, females prefer open habitats such as forest edges or scrub-shrub as locations to give birth, likely due to greater thermo-microclimates. During their active season (April to November), canebrake rattlesnakes typically do not travel more than 1,200 meters from their hibernacula (a shelter used by an animal for hibernation). Male snakes tend to have a greater daily travel distance than females, with males on average traveling 38.6 meters compared to the females' 22-meter daily average (Peterson et al. 2019). Across their range, canebrake rattlesnakes maintain large home ranges. From the populations studied, snakes on average inhabit home ranges of 55.94 hectares (Peterson et al. 2019). The snakes' foraging habitat includes live trees, fallen logs, and other cover types near small mammal runways (narrow trails cleared by small mammals through herbaceous vegetation, often used for movement and protection from predators). Canebrake rattlesnakes are ambush predators, and in southeastern Virginia, they primarily consume small mammals, including eastern gray squirrels (*Sciurus carolinensis*) and cotton rats (*Sigmodon hispidus*) (Goetz et al. 2016).

In its current condition, the project area provides suitable habitat for canebrake rattlesnakes. The area contains moist woodlands, swamps, and piles of fallen trees, all potential canebrake rattlesnake habitat. The North Landing River Natural Area Preserve directly to the north of the

project area provides acres of contiguous forested wetlands and is able to support the vast home ranges of numerous individuals. Given the presence of suitable habitat and previous nearby observations of canebrake rattlesnakes, this species is likely to be found within the project area.

Tricolored Bat

The tricolored bat was identified by several searches as having the potential to occur on or near the project area, although there are no confirmed observations on record. The species is proposed to be federally listed as endangered and is listed as endangered by the Commonwealth of Virginia. According to VaFWIS, these bats can be found in caves, trees, vegetation, cliffs, barns, and sometimes in buildings and in wooded and cleared areas (VDWR 2026).

Tricolored bats hibernate in caves throughout their range, and some roost in caves year-round (VDWR 2026). As a result, tricolored bats have been impacted by White-nose Syndrome (WNS), a fungus first identified in 2006 that has caused widespread mortality of cave-hibernating bat species (Blehert et al. 2009). In 2012, a marked decline in tricolored bat abundance was reported in West Virginia after WNS infected the population (Franci et al. 2012). A comparison of data from 2003 to 2004, pre-WNS, to data from 2016 to 2018, post-WNS, determined there was a substantial reduction in both the distribution and abundance of tricolored bats in the National Capital Region (Deeley et al. 2021). WNS infection of cave-hibernating bats poses the main threat to this species.

There is suitable roosting and foraging habitat for the tricolored bat within the project area, as there are abundant trees and other types of vegetation cover. According to the VDWR (2020), during the winter, tricolored bats hibernate in caves exclusively in the western region of Virginia. These bats then disperse after hibernation, sometimes migrating long distances, and can be found across the entire Commonwealth of Virginia in the summer (VDWR 2026). Thus, tricolored bats may be present within the project area during the warmer months while they are nesting and foraging.

Northern Long-eared Bat

The northern long-eared bat was identified by several searches as having the potential to occur on or near the project area, although there are no confirmed observations on record. These bats are listed as endangered at both the state and federal level. On November 29, 2022, the USFWS published a final rule to reclassify the northern long-eared bats as endangered under the ESA. According to VaFWIS, northern long-eared bats inhabit forested areas, foraging in hillsides and ridge forests and frequenting the space in the forest just above shrub level (VDWR 2026). During the spring and summer, males typically roost in caves, while females can be found under tree bark. There is evidence that northern long-eared bats often roost under the bark of pine snags (Rojas et al. 2017). Across their range, northern long-eared bats have been observed roosting in a number of different tree species, including black locust (*Robinia pseudo-acacia*), shortleaf pine (*Pinus echinata*), white pine (*Pinus strobus*), and some hardwoods (Menzel et al. 2002, Perry and Thill 2007, Rojas et al. 2017). Like the tricolored bat, both males and females hibernate in caves in western Virginia during the winter, dispersing across the state during the summer (VDWR 2026).

As a cave-hibernating species, the northern long-eared bat is also impacted by WNS (Blehert et al. 2009), which has led to significant declines in their numbers. In western Virginia, the capture rate for northern long-eared bats immediately after WNS onset was markedly lower than it was in the two decades before WNS, suggesting population declines as a result of the fungus (Reynolds et al. 2016). Further, the proportion of juveniles declined by nearly 77 percent after WNS onset, evidence that WNS not only caused population declines but also impacted the future viability of

northern long-eared bats in the area. According to USFWS (2026), WNS is by far the most pressing threat to this species. However, loss or degradation of winter hibernacula and summer roosting habitat has exacerbated these declines, as they further impact population viability. Since there are pines and hardwoods in the project area, there is suitable northern long-eared bat roosting habitat within the project area.

Protected Eagle Species

According to the Center for Conservation Biology Virginia Eagle Nest Locator, there is one bald eagle roost approximately 1.7 miles to the north and two roosts approximately 1.9 miles to the south of the project area.

Environmental Consequences

No Build Alternative

Under the No Build Alternative, no project-related construction would occur, and therefore no impacts to threatened, or endangered species would occur.

Northern Shift Alternative

Under the Northern Shift Alternative, the existing centerline of a 1.5-mile stretch of Pungo Ferry Road between Blackwater Road and the west side of Pungo Ferry Bridge would be shifted north of its current alignment, between 9 and 32 feet. Both travel lanes would be widened to 12 feet each, with 4 feet of paved shoulder and another 4 feet of graded shoulder on each side. This alternative would remove all forested and scrub-shrub habitats suitable for the canebrake rattlesnake, northern long-eared bat, and tri-colored bat within a variable width zone up to 52 feet north of the current road centerline, including 9.28 to 10.28 acres of wetlands. It would require the clearing of trees and vegetation, and the filling of wetland features north of the existing roadway.

Anticipated effects could result from activities associated with construction of the roadway realignment. As construction takes place, collisions with work vehicles or crushing could occur. Other project actions could also cause injury or mortality to wildlife on site. The canebrake rattlesnake, if present on site, is anticipated to be most affected by these impacts since the species is less mobile.

Through consultation with USFWS utilizing their “Northern Long-eared Bat and Tricolored Bat Range-wide” Determination Key, the northern long-eared bat and tricolored bat have been identified as species that the project is “Not Likely to Adversely Affect.” Time-of-year restrictions (TOYR) for tree clearing will be implemented by the project team to minimize impacts of construction activities on the bat species.

Additional anticipated effects include disturbance due to noise, vibration, and human presence during construction, both within and adjacent to the realignment area. This disturbance could cause threatened and endangered wildlife on or near the project area to disperse or potentially abandon breeding attempts, foraging opportunities, or shelter from predators.

The Northern Shift Alternative would also result in adverse effects to the species identified here, as suitable habitat would be lost when vegetated areas within the project area are cleared to realign the roadway. Suitable habitat for canebrake rattlesnakes, tri-colored bats, and northern long-eared bats would no longer be available. Once construction is complete, the project area would no longer support these species.

Eagle roosts and nests in the vicinity of the Northern Shift Alternative area are well outside the required 660-foot buffer. Therefore, no disturbance to protected eagles or their nests would occur as a result of this alternative.

Retaining Wall Alternative (Preferred Alternative)

Under the Retaining Wall Alternative, the existing centerline of a 1.5-mile stretch of Pungo Ferry Road between Blackwater Road and the west side of Pungo Ferry Bridge would be shifted 15 feet to the north of its current alignment with a series of retaining walls installed along approximately 1 mile of the roadway on the northern edge. Both travel lanes would be widened to 12 feet each, with 8-foot shoulders (combined paved and graded) on both sides. Under the Retaining Wall Alternative, anticipated effects to protected species and their habitats would be similar to the effects that would be incurred by the Northern Shift Alternative, although approximately 4 fewer acres of habitat would be impacted.

Eagle roosts and nests in the vicinity of the Retaining Wall Alternative area are well outside the required 660-foot buffer. Therefore, no disturbance to protected eagles or their nests would occur as a result of this alternative.

Migratory Birds

The Migratory Bird Treaty Act of 1918 (MBTA) protects migratory birds, their parts, nests, and eggs from take, kill, capture, transport, sale, and several other actions detrimental to these species, except when authorized by the USFWS (16 USC §703 et seq.). The MBTA provides protection for a variety of bird species native to the U.S. that are not listed at the state or federal level and are therefore not protected by the ESA or analogous state statutes.

Virginia is on the Atlantic flyway, a major migratory route spanning more than 3,000 miles from Baffin Island in Canada to northern South America (Ducks Unlimited 2021). A diverse array of bird species travel this route every fall and spring. Common migratory species that pass through Virginia on the Atlantic flyway include American kestrel (*Falco sparverius paulus*), brown-headed nuthatch (*Sitta pusilla*), chimney swift (*Chaetura pelagica*), coastal black-throated green warbler (*Setophaga virens waynei*), grasshopper sparrow (*Ammodramus savannarum perpallidus*), king rail (*Rallus elegans*), least tern (*Sternula antillarum antillarum*), lesser yellowlegs (*Tringa flavipes*), painted bunting (*Passerina ciris*), prairie warbler (*Setophaga discolor*), prothonotary warbler (*Protonotaria citrea*), purple sandpiper (*Calidris maritima*), red-headed woodpecker (*Melanerpes erythrocephalus*), rusty blackbird (*Euphagus carolinus*), and short-billed dowitcher (*Limnodromus griseus*). Migratory songbirds (also called passerine) are found in hardwood and pine forested habitats; migratory waterfowl on lakes and impoundments; migratory shorebirds on beaches and flooded agricultural fields; and migratory raptors (a carnivorous bird that actively hunts other vertebrates) across a wide variety of habitats including forests, fields, urban areas, and shorelines.

In compliance with the MBTA, searches were conducted to determine the presence or potential occurrence of the following within or near the project area: migratory bird species (including passerines, raptors, shorebirds, and others), waterbird nesting colonies, shorebird roosts, osprey nests, heron pairs, and suitable habitat for any migratory birds.

Resources used to identify migratory shorebirds, waterfowl, raptors, and passerines and their preferred habitat included the VDWR VaFWIS and The Cornell Lab of Ornithology eBird database (eBird). Several resources from the Center for Conservation Biology (CCB) Mapping Portal were also used to screen for known nests and roosts on or near the project area, including CCB

Shorebird Roost Registry, CCB Colonial Waterbirds mapping tool, CCB Chesapeake Bay Herons mapping tool, and CCB Osprey Watch Nest mapper.

This section discusses birds protected by the MBTA only. Federally and state-listed bird species covered by the federal ESA or the Virginia Endangered Species Act, as well as protected eagle species covered by the Bald and Golden Eagle Protection Act, are discussed in the previous section. These species will not be discussed further here.

Existing Conditions

The CCB Mapping Portal identified no waterbird colonies, shorebird roosts, or heron pairs in or near the project area. However, 2 osprey nests were identified approximately 0.5 miles from the project area. The identified nests were documented by Osprey Watch, a global reporting program through which volunteers monitor and document breeding osprey (CCB 2026).

According to VaFWIS, the project area search radius (i.e., 2-mile radius around the approximate project center) intersects with one Breeding Birds Survey (BBS) route – the Pungo, VA Route. The BBS occurs annually within set routes across North America. Volunteers skilled in avian identification walk an assigned track within a BBS route during the breeding season, identifying and documenting all birds observed along the way (USGS 2026). This provides a valuable estimate of the variety and abundance of birds in a specific area and information on the types of birds likely to occur on site.

The Pungo, VA Route overlaps the majority of the project area. Within this route, 116 species were observed by BBS participants, including a number of species that are anticipated to occur in the forested and shrub wetland habitat within the project area, such as belted kingfisher (*Megaceryle alcyon*), black-and-white warbler (*Mniotilta varia*), red-winged blackbird (*Agelaius phoeniceus*), green heron (*Butorides virescens*), northern flicker (*Colaptes auratus*), fish crow (*Corvus ossifragus*), wood duck (*Aix sponsa*), and ovenbird (*Seiurus aurocapilla*).

Publicly available data from eBird, a database that compiles bird species and abundance data reported by citizen scientists from around the globe, revealed several records within the project area. The nearest eBird “hotspot,” a location with several submitted eBird user observation lists, is the “Stakeout Black-chinned Hummingbird, Blackwater Road (2019)” site. A total of 43 bird species was observed within this hotspot, with the most recent observations recorded in April 2025 (The Cornell Lab of Ornithology 2021).

In total, the combined data from the CCB Mapping Portal, eBird, and BBS identified 122 distinct bird species that have been observed on or near the project area. A complete list of all species identified through these databases is provided in Table 4. The CCB Mapping Portal did not identify any MBTA-protected species within the project area. As a result, the source databases indicated for each species in Table 4 consist of either the Pungo, VA Breeding Bird Survey route (PBBS), or eBird. Of the 122 species listed in Table 4, only 5 species are not covered by MBTA protections. These are the European starling (*Sturnus vulgaris*), the house sparrow (*Passer domesticus*), the northern bobwhite (C*olinus virginianus*), the rock pigeon (*Columba livia*), and the wild turkey (*Meleagris gallopavo*). All others are protected by the MBTA and have some likelihood of being found in forested wetland habitat.

Table 4. Migratory Birds Observed on or Near the Pungo Ferry Road Project Area

No.	Common Name	Scientific Name	MBTA Protection	Source Database	
1	Acadian Flycatcher	*Empidonax virescens*	Yes	PBBS	
2	American Crow	*Corvus brachyrhynchos*	Yes	PBBS	eBird
3	American Goldfinch	*Spinus tristis*	Yes	PBBS	eBird
4	American Kestrel	*Falco sparverius*	Yes	PBBS	
5	American Robin	*Turdus migratorius*	Yes	PBBS	eBird
6	Anhinga	*Anhinga anhinga*	Yes	PBBS	
7	Bald Eagle	*Haliaeetus leucocephalus*	Yes	PBBS	
8	Baltimore Oriole	*Icterus galbula*	Yes	PBBS	
9	Barn Swallow	*Hirundo rustica*	Yes	PBBS	
10	Barred Owl	*Strix varia*	Yes	PBBS	
11	Belted Kingfisher	*Megaceryle alcyon*	Yes	PBBS	
12	Black Vulture	*Coragyps atratus*	Yes	PBBS	eBird
13	Black-and-white Warbler	*Mniotilta varia*	Yes	PBBS	eBird
14	Blackpoll Warbler	*Setophaga striata*	Yes	PBBS	
15	Blue Grosbeak	*Passerina caerulea*	Yes	PBBS	
16	Blue Jay	*Cyanocitta cristata*	Yes	PBBS	eBird
17	Blue-gray Gnatcatcher	*Polioptila caerulea*	Yes	PBBS	
18	Boat-tailed Grackle	*Quiscalus major*	Yes	PBBS	
19	Bobolink	*Dolichonyx oryzivorus*	Yes	PBBS	
20	Brown Thrasher	*Toxostoma rufum*	Yes	PBBS	

Table 4. Migratory Birds Observed on or Near the Pungo Ferry Road Project Area

No.	Common Name	Scientific Name	MBTA Protection	Source Database	
21	Brown-headed Cowbird	*Molothrus ater*	Yes	PBBS	eBird
22	Brown-headed Nuthatch	*Sitta pusilla*	Yes	PBBS	eBird
23	Canada Goose	*Branta canadensis*	Yes	PBBS	
24	Carolina Chickadee	*Poecile carolinensis*	Yes	PBBS	eBird
25	Carolina Wren	*Thryothorus ludovicianus*	Yes	PBBS	eBird
26	Cattle Egret	*Bubulcus ibis*	Yes	PBBS	
27	Cedar Waxwing	*Bombycilla cedrorum*	Yes	PBBS	
28	Chimney Swift	*Chaetura pelagica*	Yes	PBBS	
29	Chipping Sparrow	*Spizella passerina*	Yes	PBBS	eBird
30	Chuck-will's-widow	*Antrostomus carolinensis*	Yes	PBBS	
31	Common Grackle	*Quiscalus quiscula*	Yes	PBBS	eBird
32	Common Yellowthroat	*Geothlypis trichas*	Yes	PBBS	
33	Coopers Hawk	*Accipiter cooperii*	Yes	PBBS	
34	Double-crested Cormorant	*Phalacrocorax auritus*	Yes	PBBS	
35	Downy Woodpecker	*Picoides pubescens*	Yes	PBBS	eBird
36	Eastern Bluebird	*Sialia sialis*	Yes	PBBS	eBird
37	Eastern Kingbird	*Tyrannus tyrannus*	Yes	PBBS	
38	Eastern Meadowlark	*Sturnella magna*	Yes	PBBS	
39	Eastern Phoebe	*Sayornis phoebe*	Yes	PBBS	eBird
40	Eastern Towhee	*Pipilo erythrophthalmus*	Yes	PBBS	

Table 4. Migratory Birds Observed on or Near the Pungo Ferry Road Project Area

No.	Common Name	Scientific Name	MBTA Protection	Source Database	
41	Eastern Wood-pewee	*Contopus virens*	Yes	PBBS	
42	European Starling	*Sturnus vulgaris*	No	PBBS	eBird
43	Field Sparrow	*Spizella pusilla*	Yes	PBBS	
44	Fish Crow	*Corvus ossifragus*	Yes	PBBS	
45	Forster's Tern	*Sterna forsteri*	Yes	PBBS	
46	Golden-crowned Kinglet	*Regulus satrapa*	Yes		eBird
47	Grasshopper Sparrow	*Ammodramus savannarum*	Yes	PBBS	
48	Gray Catbird	*Dumetella carolinensis*	Yes	PBBS	eBird
49	Great Blue Heron	*Ardea herodias*	Yes	PBBS	eBird
50	Great Crested Flycatcher	*Myiarchus crinitus*	Yes	PBBS	
51	Great Egret	*Ardea alba*	Yes	PBBS	
52	Great Horned Owl	*Bubo virginianus*	Yes	PBBS	
53	Green Heron	*Butorides virescens*	Yes	PBBS	
54	Hairy Woodpecker	*Picoides villosus*	Yes	PBBS	
55	Herring Gull	*Larus argentatus*	Yes	PBBS	
56	Hooded Warbler	*Wilsonia citrina*	Yes	PBBS	
57	Horned Lark	*Eremophila alpestris*	Yes	PBBS	
58	House Finch	*Carpodacus mexicanus*	Yes	PBBS	eBird
59	House Sparrow	*Passer domesticus*	No	PBBS	eBird
60	House Wren	*Troglodytes aedon*	Yes	PBBS	

Table 4. Migratory Birds Observed on or Near the Pungo Ferry Road Project Area

No.	Common Name	Scientific Name	MBTA Protection	Source Database	
61	Indigo Bunting	*Passerina cyanea*	Yes	PBBS	
62	Kentuck Warbler	*Geothlypis formosa*	Yes	PBBS	
63	Killdeer	*Charadrius vociferus*	Yes	PBBS	
64	King Rail	*Rallus elegans*	Yes	PBBS	
65	Laughing Gull	*Leucophaeus atricilla*	Yes	PBBS	
66	Least Bittern	*Ixobrychus exilis*	Yes	PBBS	
67	Louisiana Waterthrush	*Parkesia motacilla*	Yes	PBBS	
68	Mallard	*Anas platyrhynchos*	Yes	PBBS	
69	Marsh Wren	*Cistothorus palustris*	Yes	PBBS	
70	Mourning Dove	*Zenaida macroura*	Yes	PBBS	eBird
71	Northern Bobwhite	*Colinus virginianus*	No	PBBS	
72	Northern Cardinal	*Cardinalis cardinalis*	Yes	PBBS	eBird
73	Northern Flicker	*Colaptes auratus*	Yes		eBird
74	Northern Harrier	*Circus hudsonius*	Yes	PBBS	
75	Northern Mockingbird	*Mimus polyglottos*	Yes	PBBS	eBird
76	Northern Parula	*Parula americana*	Yes	PBBS	
77	Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Yes	PBBS	
78	Orchard Oriole	*Icterus spurius*	Yes	PBBS	
79	Osprey	*Pandion haliaetus*	Yes	PBBS	
80	Ovenbird	*Seiurus aurocapillus*	Yes	PBBS	eBird

Table 4. Migratory Birds Observed on or Near the Pungo Ferry Road Project Area

No.	Common Name	Scientific Name	MBTA Protection	Source Database	
81	Pileated Woodpecker	*Dryocopus pileatus*	Yes	PBBS	eBird
82	Pine Warbler	*Dendroica pinus*	Yes	PBBS	eBird
83	Prairie Warbler	*Dendroica discolor*	Yes	PBBS	
84	Prothonotary Warbler	*Protonotaria citrea*	Yes	PBBS	
85	Purple Martin	*Progne subis*	Yes	PBBS	
86	Red-bellied Woodpecker	*Melanerpes carolinus*	Yes	PBBS	eBird
87	Red-eyed Vireo	*Vireo olivaceus*	Yes	PBBS	
88	Red-headed Woodpecker	*Melanerpes erythrocephalus*	Yes	PBBS	
89	Red-shouldered Hawk	*Buteo lineatus*	Yes	PBBS	eBird
90	Red-tailed Hawk	*Buteo jamaicensis*	Yes	PBBS	eBird
91	Red-winged Blackbird	*Agelaius phoeniceus*	Yes	PBBS	eBird
92	Rock Pigeon	*Columba livia*	No	PBBS	
93	Ruby-crowned Kinglet	*Regulus calendula*	Yes		eBird
94	Ruby-throated Hummingbird	*Archilochus colubris*	Yes	PBBS	
95	Scarlet Tanager	*Piranga olivacea*	Yes	PBBS	
96	Sharp-shinned Hawk	*Accipiter striatus*	Yes	PBBS	
97	Snowy Egret	*Egretta thula*	Yes	PBBS	
98	Song Sparrow	*Melospiza melodia*	Yes	PBBS	eBird
99	Spotted Sandpiper	*Actitis macularius*	Yes	PBBS	
100	Summer Tanager	*Piranga rubra*	Yes	PBBS	

Table 4. Migratory Birds Observed on or Near the Pungo Ferry Road Project Area

No.	Common Name	Scientific Name	MBTA Protection	Source Database	
101	Tree Swallow	*Tachycineta bicolor*	Yes	PBBS	eBird
102	Tufted Titmouse	*Baeolophus bicolor*	Yes	PBBS	eBird
103	Turkey Vulture	*Cathartes aura*	Yes	PBBS	eBird
104	Warbling Vireo	*Vireo gilvus*	Yes	PBBS	
105	White Ibis	*Eudocimus albus*	Yes	PBBS	
106	White-breasted Nuthatch	*Sitta carolinensis*	Yes	PBBS	eBird
107	White-eyed Vireo	*Vireo griseus*	Yes	PBBS	
108	Wild Turkey	*Meleagris gallopavo*	No	PBBS	
109	Willet	*Tringa semipalmata*	Yes	PBBS	
110	Wood Duck	*Aix sponsa*	Yes	PBBS	
111	Wood Thrush	*Hylocichla mustelina*	Yes	PBBS	
112	Worm-eating Warbler	*Helmitheros vermivorus*	Yes	PBBS	
113	Yellow Warbler	*Setophaga petechia*	Yes	PBBS	
114	Yellow-bellied Sapsucker	*Sphyrapicus varius*	Yes		eBird
115	Yellow-billed Cuckoo	*Coccyzus americanus*	Yes	PBBS	
116	Yellow-breasted Chat	*Icteria virens*	Yes	PBBS	
117	Yellow-rumped Warbler	*Dendroica coronata*	Yes		eBird
118	Yellow-throated Vireo	*Vireo flavifrons*	Yes	PBBS	
119	Yellow-throated Warbler	*Dendroica dominica*	Yes	PBBS	
120	Black-chinned Hummingbird	*Archilochus alexandri*	Yes		eBird

Table 4. Migratory Birds Observed on or Near the Pungo Ferry Road Project Area

No.	Common Name	Scientific Name	MBTA Protection	Source Database	
121	Dark-eyed Junco	*Junco hyemalis*	Yes		eBird
122	American Pipit	*Anthus rubescens*	Yes		eBird

PBBS = Pungo, VA Breeding Bird Survey Route

eBird = Cornell Lab of Ornithology eBird Database

Sources: VDWR VaFWIS database (2026), The Cornell Laboratory of Ornithology eBird database (2026), USGS North American Breeding Bird Survey (2026)

Environmental Consequences

No Build Alternative

Under the No Build Alternative, there would be no land clearing or construction. Therefore, no adverse effects to migratory bird species or their habitats would occur.

Northern Shift Alternative

Under the Northern Shift Alternative, the existing centerline of a 1.5-mile stretch of Pungo Ferry Road between Blackwater Road and the west side of Pungo Ferry Bridge would be shifted north of its current alignment, between 9 and 32 feet. Both travel lanes would be widened to 12 feet each, with 4 feet of paved shoulder and another 4 feet of graded shoulder on each side. This alternative would remove all existing migratory bird habitat within 52 feet north of the current road centerline, including 9.28 to 10.28 acres of wetlands. It would require the clearing of trees and vegetation, and the filling of wetland features north of the existing roadway. This would lead to adverse effects for several of the migratory bird species identified here.

Anticipated impacts on migratory birds include incidental take due to collisions with construction equipment, crushing, and other injuries or death directly related to ongoing project activities. Birds are better protected from construction-related incidental take than mammals, reptiles, and amphibians, as they can fly to disperse and avoid equipment and obstacles. However, some injury and death are anticipated.

Adverse impacts on migratory birds are also anticipated as a result of the destruction of nests, eggs, and chicks during construction activities. Since this project requires the clearing of trees and vegetation, any nests, eggs, or chicks present in the areas cleared might be inadvertently taken, resulting in chick or egg mortality or injury, or abandonment of suitable breeding sites.

Additional effects include disturbance of birds due to noise, vibration, and human presence during construction. This would cause birds to disperse, abandoning territories, breeding attempts, foraging opportunities, or shelter. Birds migrating over the area might not stop on-site for rest and fuel, which could delay or impede their migration. Further, disturbance may induce stress, leading to behavioral and physical impacts that can cause injury or death.

Impacts are also anticipated as a result of habitat destruction. The clearing of forested wetlands on-site would leave many migratory birds with less habitat available for breeding, foraging, stopping over on migration, over-wintering, or territory establishment. After development of the

new road alignment is completed, the existing habitat would be gone. This would cause migratory birds dependent on the habitat within the project area to disperse to new habitat or perish.

Retaining Wall Alternative (Preferred Alternative)

Under the Retaining Wall Alternative, the existing centerline of a 1.5-mile stretch of Pungo Ferry Road between Blackwater Road and the west side of Pungo Ferry Bridge would be shifted 15 feet to the north of its current alignment with a series of retaining walls installed along approximately 1 mile of the roadway on the northern edge. Both travel lanes would be widened to 12 feet each, with 8-foot shoulders (combined paved and graded) on both sides. Under the Retaining Wall Alternative, impacts to migratory bird species and their habitats would be very similar to the effects that would be incurred by the North Shift Alternative, although approximately 4 fewer acres of habitat would be impacted.

Socioeconomics

Safety

One of the main design goals of the proposed project is to improve the roadway's safety. In addition to raising Pungo Ferry Road to a minimum elevation of 6.5 feet to improve the roadway's resiliency, shoulder widths and clear zones would also be widened to provide safer pull-off and recovery areas for motorists and bring them up to date with City and VDOT safety standards.

Existing Conditions

The existing roadway has two 11-foot travel lanes, one traveling in each direction, with graded shoulders ranging between 4 and 6 feet on both sides. The current shoulder is composed of soft material and does not support vehicles either for recovery or emergency pull-off. This existing road design does not meet the required VDOT clear zone standards which are requirements put in place to provide an unobstructed area outside of the travel lanes for errant vehicles to recover. The existing clear zone is approximately 10 feet, compared to the 30-foot VDOT minimum standard that should be provided.

This section of Pungo Ferry Road experiences frequent flooding, both from rain events and wind-driven tidal events, often occurring on dry days. The road has flooded 27 times in the past 5 years according to recorded City Public Works Operations data – the most recent recorded flooding event occurred in August 2024. Note that not all flooding events are recorded, and frequent nuisance flooding events are not included in this recorded statistic. Since the City began keeping records, Pungo Ferry Road has flooded more than 1,000 times including 133 times that were categorized as "Deep Water" flooding.

During flooding closure events, residents and business owners are required to utilize an approximate 40-mile round trip detour route. This detour negatively impacts emergency service response times.

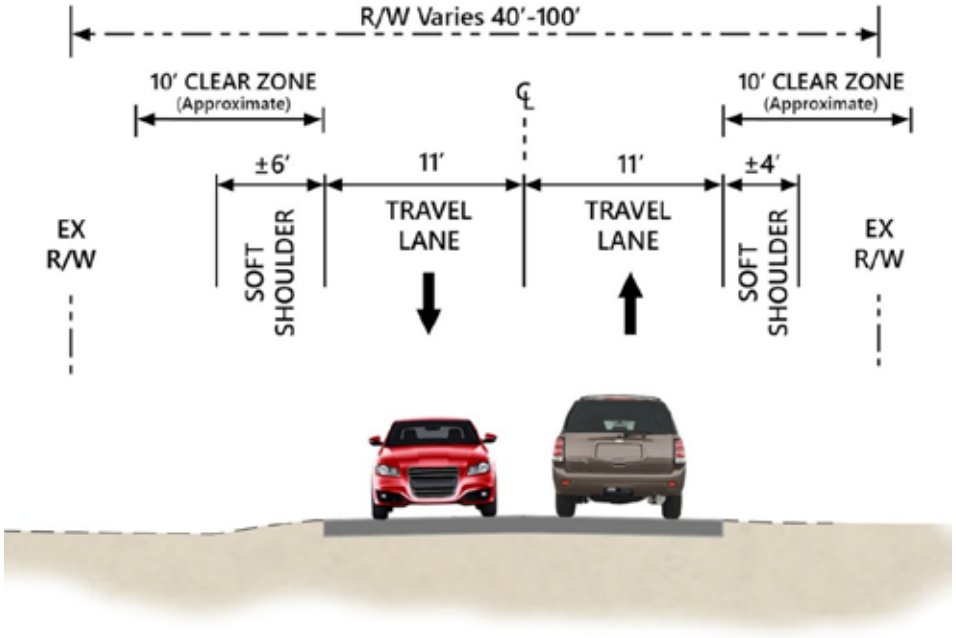
Environmental Consequences

No Build Alternative

Under the No Build Alternative, there would be no project-related construction, and therefore, no changes to the road's elevation or shoulders would occur. The existing roadway does not meet

the VDOT clear zone standards for a recoverable shoulder, which would continue to result in dangerous conditions if a driver needed to make an emergency pull-off or if they were to swerve off the road and needed room to regain control of the vehicle (see Figure 19). Emergency responders could also be delayed when attending an emergency if flooding rendered the road impassable or they had to take the detour route on their trip. Lack of a reliable roadway would continue to pose safety hazards for the local community and motorists if the roadway is not raised to improve resiliency.

Figure 19. Existing Typical Section



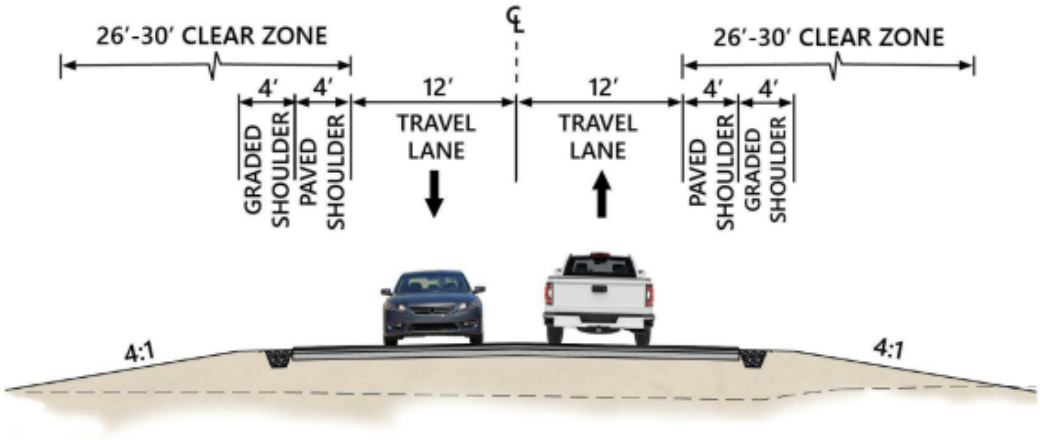
Northern Shift Alternative

Under the Northern Shift Alternative, both travel lanes would be widened to 12 feet, with an additional 4 feet of paved shoulder and 4 feet of graded shoulder on each side of the roadway (see Figure 20).

During construction, there would be temporary adverse impacts to safety if one-way traffic must alternate using automated signals. Work zones statistically have higher crash rates than roads not undergoing construction, and speeding vehicles are a key contributor to this concern (FHWA 2019). Speeding drivers are less likely to respond to traffic control devices, lane closures or shifts, rough surfaces, and other conditions that are common in work zones (FHWA 2019). To mitigate this risk, clear and obvious signage would be posted well in advance of approaching the construction zone to notify drivers of upcoming precautions, and work would be completed in short segments to reduce the overall length of the potential lane closure. The long-term impacts under this alternative would improve the safety of the road by creating a larger clear zone and recovery area for drivers to make emergency pull-offs or regain control of their vehicles if needed. Raising the roadway to approximately 6.5 feet would also allow for the continued operation of the roadway during heavy precipitation or strong winds. This is particularly important due to the roadway classification as a secondary evacuation route. In the event of a hurricane or another disaster that requires evacuation, all available east/west links to these rural locations are critical so

smaller communities do not get isolated. Improved resiliency would also enable both the local community and emergency responders to take the most efficient route when traveling. This could help improve response times to residents in need, which is especially critical for this more rural and dispersed community that is relatively far from essential services.

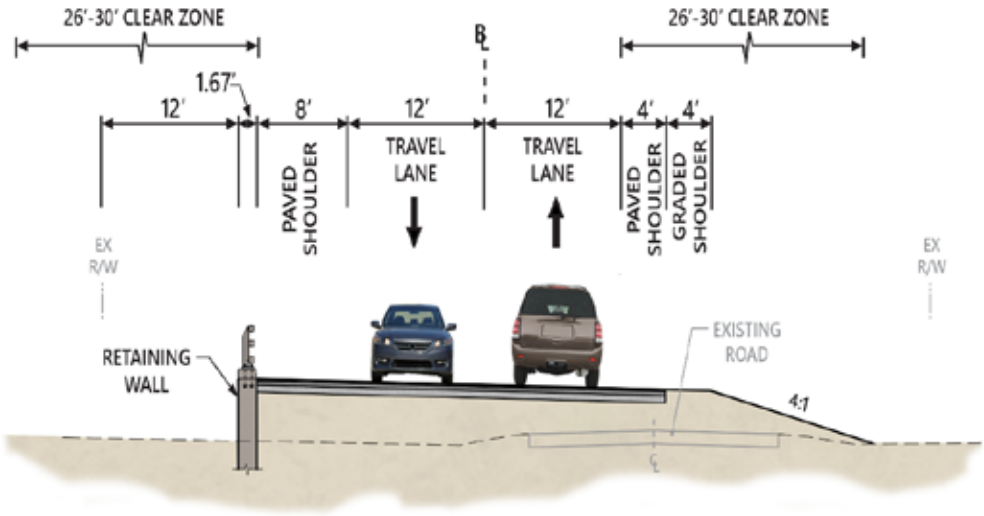
Figure 20. Proposed Northern Shift Alternative Typical Section



Retaining Wall Alternative (Preferred Alternative)

Short-term and long-term impacts under the Retaining Wall Alternative would be similar to those described above under the Northern Shift Alternative. The overall safety, resiliency, and reliability of the road would be improved, and guard rails would provide enhanced safety near areas of the road with retaining walls which would be located along the northern side of the road alignment. This series of guardrails along the retaining walls would protect vehicles from the danger of steeper side slopes in these areas (FHWA 2013) and contribute to the overall stability of the road well into the future. See Figure 21 for additional detail.

Figure 21. Proposed Retaining Wall Alternative Typical Section



Travel Patterns

Maintenance of traffic is a key consideration of the constructability and impacts of the proposed alternatives. Pungo Ferry Road is one of few west-to-east roadways connecting the southern portion of Viriginia Beach. The roadway is utilized by the community for daily commutes, school buses, and Emergency Medical Services (EMS). Improving Pungo Ferry Road would provide a reliable and efficient route to essential services, including routes to and from the nearest hospitals, schools, and police departments.

Existing Conditions

Communities and bus routes rely on the connectivity of Pungo Ferry Road to reach the nearest elementary school, Creeds Elementary School, as well as the city's western communities. When Pungo Ferry Road is open, on average it takes 13 minutes to drop children off at school. If Pungo Ferry Road is closed, the route must detour to Indian River Road using the North Landing Bridge, adding about 15 miles and 21 minutes to the drop-off time. See Figure 22 for a map of the detour route.

There are also two fire rescue stations, Station 13 and Station 6, that rely on Pungo Ferry Road to efficiently carry out their duties. Station 13, on the west side of Pungo Ferry Road, relies on the road to reach communities in Pungo and Creeds. If Pungo Ferry Road is open, firefighters can reach the opposite side of Pungo Ferry Bridge in 8 minutes. If Pungo Ferry Road is closed, the firefighters must detour and use North Landing Bridge to cross the North Landing River. This adds 18 miles to their trip and 30 minutes to their response time. When Pungo Ferry Road is impassable, the adjacent communities are isolated with reduced access to core city services. There are also critical facilities and destinations that allow economic industries to prosper and which rely on Pungo Ferry Road for access. Virginia Beach is the largest city in Virginia and is home to about 23,000 acres of farmland. Agriculture is the City's third largest industry, generating more than $170 million in economic impact (City of Virginia Beach 2023). It is critical for farmers and merchants to have access to and from farmland, enabling this industry to operate and thrive.

Residents in the Creeds and Pungo areas of Virginia Beach have an average 31.4-minute travel time to work, which is 174 percent longer than the average commuter in Virginia Beach, according to US Census data (City of Virigina Beach 2023). Furthermore, there is no existing transit service in this portion of Virginia Beach, nor does Hampton Roads Transit indicate plans for increased service to this area in the foreseeable future. Because of the area's rural nature, there are limited points of interest within walking distance; therefore, automobile transport is heavily relied upon as a connection to local amenities and necessary services.

The proposed project abuts four residences with private drives connecting directly to Pungo Ferry Road. Beyond these residences to the east, the road traverses through the North Landing River Nature Preserve before reaching the Pungo Ferry Bridge.

Figure 22. Detour Map with Community Resource Locations

Pungo Ferry Road Improvements | Virginia Beach, Virginia

03/19/26

LEGEND

- Project Area
- Detour Route (±20.5 Miles)
- School
- Fire/Emergency Medical
- Urgent Care/Hospital
- Post Office
- Agricultural Land Use Zone

0 2 4 miles

SCALE 1" = 4 miles

Source: ESRI Light Grey Basemap; City of Virginia Beach, Virginia and Currituck County, North Carolina GIS Data

34723_Pungo_EA_Figures

Environmental Consequences

No Build Alternative

Under the No Build Alternative, no project-related construction would occur. However, flooding events are expected to increase, which would result in more frequent road closures due to dangerous conditions. When the road is closed, residents would either continue to use this route, through flooded and dangerous driving conditions, or face increased travel time by utilizing a long detour. When Pungo Ferry Road is closed, the resulting detour increases travel time to 56.6 minutes. In addition to daily commuters and local residents being impacted by the road closures, school bus routes would also face longer travel times when utilizing the detour route, resulting in students being on the bus longer than expected and lengthening their school day. This increase in travel time negatively impacts travel time reliability and the ability for residents to reach their places of employment, education, or residence in a reasonable amount of time.

Northern Shift Alternative

Shifting the roadway alignment 32 feet to the north of the existing roadway would allow most of the corridor to be constructed with minimal impact to the existing traffic. Two-way traffic could be maintained on the existing alignment while construction of most of the roadway on the new alignment is completed. Tie-ins at each end of the corridor would need to be constructed under single lane closures where flaggers would alternate two-way traffic in a single open travel lane. Once traffic is moved onto the new roadway, the existing roadway would be demolished and the eastbound slope could be constructed. As design progresses, maintenance of traffic measures would be further refined.

Shifting the alignment only 9 feet to the north would require raising the road adjacent to the existing footprint 3 to 5 feet to meet the proposed elevation requirements. As it would be directly adjacent to the existing footprint, two lanes of continuous traffic could not be maintained during construction. Therefore, alternating one-way traffic 24 hours a day would need to be implemented for all phases of construction. As shown in Figure 23, temporary signals could be used to manage traffic flow, however the length of roadway to which this could be applied would need to be limited to short segments (approximately 1,200 to 1,800 feet) in order to manage one-way traffic most effectively.

Construction would result in short-term (2.5 to 3 years) adverse impacts through the disruption of typical travel patterns in this area. Private property owners in the project area would especially be inconvenienced while the western segment of the road is under construction because it would take longer for them to access their property and construction would be directly adjacent to their property entrances. However, private property owners would maintain full ingress and egress to their properties throughout the course of the project since all residences and associated driveway entrances are on the south side of the corridor, and construction would take place on the north side.

Over the long term, this alternative would result in beneficial impacts because of the improved, reliable connectivity provided. Commuters, residents, and school buses using Pungo Ferry Road daily would face less risk of being delayed by flooding events.

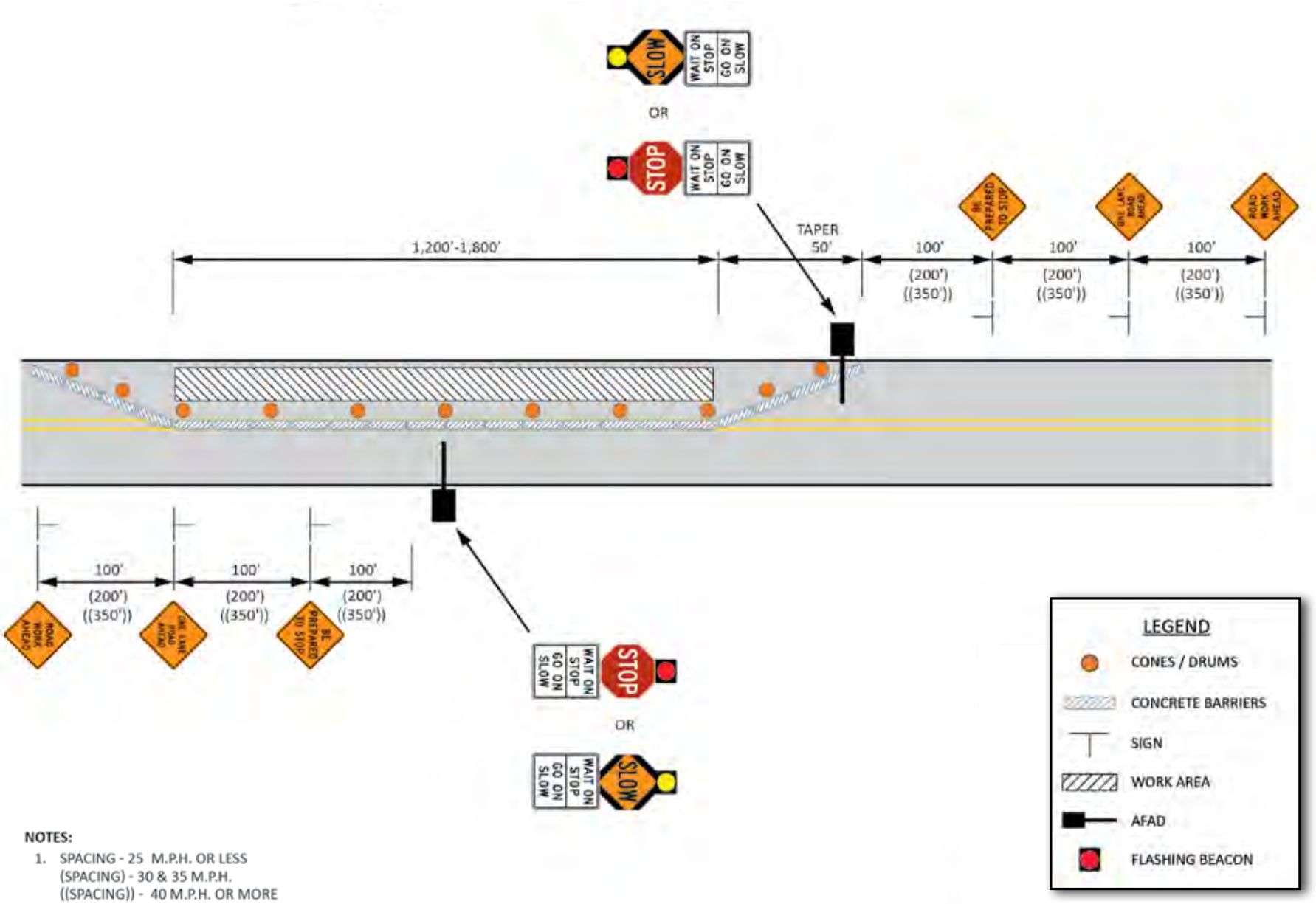
Retaining Wall Alternative (Preferred Alternative)

Overall, the Retaining Wall Alternative would have similar short-term and long-term travel pattern impacts as the Northern Shift Alternative, with reduced likelihood of alternating one-way traffic.

Figure 23. Alternating One-Way Traffic Pattern

Pungo Ferry Road Improvements | Virginia Beach, Virginia

03/19/26



NOTES:

1. SPACING - 25 M.P.H. OR LESS
   (SPACING) - 30 & 35 M.P.H.
   ((SPACING)) - 40 M.P.H. OR MORE

Community Considerations

Pungo Ferry Road is a vital roadway that provides access to the cities of Virginia Beach and Chesapeake for residents and businesses in rural southeast Virginia Beach and northeast North Carolina. Rural residents need access to the greater Hampton Roads region, and Pungo Ferry Road provides the most direct east to west access across the North Landing River. The proposed project cost, construction duration, and project constructability have been analyzed to determine the potential impact on the local community. Economic impacts considered included public expenditures, effects on local industry (including agriculture and tourism) or other impacts to businesses.

Existing Conditions

Pungo is a rural community of the City of Virginia Beach located 10 miles south of the heart of Viriginia Beach. The City of Virginia Beach has a population of approximately 450,000 residents. The Blackwater community surrounding the Pungo Ferry Road project area is also quite rural. The area is bordered by Back Bay National Wildlife Refuge to the east. Blackwater has approximately 1,200 residents who rely on Pungo Ferry Road to connect them to greater Virginia Beach and the City of Chesapeake (City of Virginia Beach 2023). These rural communities in southern Virginia Beach are more dispersed and infrastructure investments are therefore not as concentrated as typically found in more populated areas of the city. As such, the rural populations remain vulnerable to the reliability of the transportation network.

While the immediate project area is not a designated disadvantaged community, it does serve as a connector to disadvantaged communities who traverse this route and rely on a dependable facility. There are also historically Black communities in the Blackwater and Creeds area. The southeastern area of Virginia Beach, while within an urbanized city, is itself fairly remote and lacks connectivity to the transportation infrastructure in the more developed portions of the city. If roadway connections become impassable, the residents cannot reach community facilities and the community becomes even more vulnerable and isolated.

There is no existing transit service in this portion of Virginia Beach, nor does Hampton Roads Transit show plans for increased service to this area in the future. There are limited points of interest within walking distance in this area, so transportation via automobile is heavily relied upon.

According to the USDOT Equitable Transportation Community (ETC) Explorer tool, the proposed project area is located within Census Tract 51810046400, in which approximately 98 percent of households own their own cars. With no transit in the area and lack of pedestrian facilities within a 15-minute radius of the project site, this portion of Virginia Beach is entirely automotive-dependent. This area of Virginia Beach is within the 91st percentile for traffic safety, according to the ETC Explorer Tool (City of Viriginia Beach 2023). There is a lack of transportation equity in this area, and it results in an unfair burden on residents who cannot commute by vehicle or who face even a temporary lack of vehicle access due to necessary repairs or financial constraints.

Environmental Consequences

No Build Alternative

The No Build Alternative would have no immediate effect on the community because no construction activities would occur. Roadway flooding would gradually increase and worsen over time, occasionally limiting residents' access to local services, industries, and other points of

interest. Continued flooding and use of the detour route would present a hardship to the agricultural industry, which contributes to the economic strength of Virginia Beach. In 2022 alone, Virginia Beach farmers accounted for more than $190 million in economic impact (City of Virigina Beach 2023). Unreliable use of the existing road may adversely impact the transport of agricultural goods if trucks must travel the longer detour route to deliver products to or from nearby farms.

Northern Shift Alternative

Under the Northern Shift Alternative, community amenities may take longer to access due to construction work and potentially alternating one-way traffic. However, implementing traffic controls would not restrict existing access; it may add a few minutes to a driver's trip while waiting for their turn to proceed, but would not otherwise preclude them from accessing local businesses. Similarly, agriculture vehicles would also have to make temporary stops when crossing through the construction zone but would not be altogether restricted from serving their primary function of transporting agricultural products and goods. While there would be added wait time for vehicles driving through the construction zone over the course of the project, the local economy and industries in the community would not be substantially impacted. Over an extended period, the cost of the proposed project would be covered by City tax revenue, which would be paid by local taxpayers. Long term, completing this project to raise the road would ensure more reliable access to local services and the broader Virginia Beach community by reducing flooding occurrences and enhancing safety conditions along the road that would otherwise delay or endanger drivers.

Retaining Wall Alternative (Preferred Alternative)

Under the Retaining Wall Alternative, both short-term and long-term impacts to the community are anticipated to be similar to those described under the Northern Shift Alternative.

Mitigative Measures

To prevent and minimize potential adverse impacts associated with the preferred alternative, best management practices (BMPs) and mitigation measures would be implemented during the construction and post-construction phases of the project. General and resource specific BMPs and mitigation measures are listed below. The state and federal permits that would be required before this project proceeds with construction typically include a variety of conditions specifically related to the protection of water quality and natural resources from additional construction-related impacts (see "Chapter 4: Coordination and Comments"). Continued evaluation of avoidance and minimization efforts will occur as design continues to advance. Mitigation measures provided below are organized by resource or impact topic.

Water Quality

A wet swale is proposed at the western end of the project area which would create a water quality treatment train of the sheet flow into open space. This treatment plan would result in double treatment of stormwater runoff and would result in an overall benefit to water quality.

Waters of the U.S.

The USACE Regulatory Program allows permittees to fill wetlands and streams while continuing to achieve the standards of the Clean Water Act and the no net loss goal, primarily through

compensatory mitigation. Prior to issuing a Department of Army permit, the USACE needs to make a determination that potential impacts have been avoided “to the maximum extent practicable” and “to the extent appropriate and practicable.” The remaining impacts must be offset or compensated. This can be done through compensatory mitigation with a mitigation bank.

A mitigation bank is a site, or a suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, or preserved for the purpose of providing compensatory mitigation for impacts authorized by USACE permits. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. The operation and use of a mitigation bank are governed by a mitigation banking instrument.

The City has proposed to compensate for permanent impacts to approximately 6.27 total acres of nontidal wetlands at a 2:1 ratio with 12.54 credits purchased from established mitigation banks.

Protected Species

Northern long-eared bat and tricolored bat TOYR would be required for tree clearing within the project area. TOYR would occur during summer occupancy, pupping season, and torpor between April 1 to July 15 and December 15 to February 15.

Migratory Birds

The project would be required to follow TOYR for federally protected bat species from December 15 through February 15 and April 1 through July 15 which partially overlaps with VDWR's recommended TOYR for resident and migratory songbird nesting, therefore potential effects would be mitigated.

Safety

To mitigate construction work zone risks, clear and obvious signage would be posted well in advance of approaching the construction zone to notify drivers of upcoming precautions, and work would be completed in short segments to reduce the overall length of the potential lane closure.

Travel Patterns

To mitigate the impact on travel patterns, construction work would take place in short segments of 1,200-1,800 feet at a time. This would reduce the overall length of the two-lane road span that is unavailable to drivers, and consequently, the overall inconvenience of the one-way lane closure. Phasing construction work to shorter segments at a time would help reduce the duration of each phase, mitigating the amount of time a specific stretch of road would be affected. This would contribute to a longer project time overall because the phasing would lengthen earthwork efforts to allow for required roadway settlement during construction.

4

Coordination and Comments

Project coordination involved collaboration with the public, as well as with local, state, and federal officials. Coordination took place to ensure the public and all stakeholders remain well informed and engaged throughout the project, and to satisfy requirements under NEPA and other agency requirements. This chapter describes the public involvement and agency consultation undertaken leading up to and during the preparation of this draft EA. A combination of activities, including alternatives development and planning workshops, public scoping, and agency correspondence, helped to guide the project team in developing this draft EA. This chapter provides a detailed list of the various consultations initiated during the development of this draft EA.

The project team has made a diligent effort to involve the interested and affected public in this planning and NEPA process. This involvement, known as scoping, occurs at the beginning of the process to identify the range of issues, resources, and alternatives to address in the EA. Public scoping is conducted to address these elements. State and federal agencies were contacted to uncover any additional planning issues and to fulfill statutory requirements, as described below.

Public Scoping

The City conducted an in-person Citizen Information Meeting (CIM) on October 23, 2024 at Creeds Elementary School in Virginia Beach after advertising it on the Virginia Beach website, local news sources and in the newspaper, road signs, and among community members on-line and in-person.

A presentation video describing the project challenges and various proposed improvements was displayed for those in attendance. Several items were covered in the video, including the project overview, existing conditions information, design considerations, project constraints, proposed alternatives, preliminary cost estimates for each alternative, funding sources, description of the required environmental review and permitting process, the preliminary schedule, and next steps for the project.

A brochure describing the project and a six-question comment card were provided at the meeting to solicit feedback from the public. The comment period extended from October 23 to November 25, 2024.

Further description of the CIM can be found in Appendix D.

Agency and Tribal Coordination

Consultation took place with a number of federal, state, and local agencies, as well as interested federally recognized Indian tribes in Virigina. Coordination with agencies helped identify necessary compliance, relevant guiding regulations, as well as required permits. Coordination is ongoing. Below is a list of agencies consulted before and during the process of preparing this

draft EA. The USACE has participated in the development of the EA as a cooperating agency and has supported the project team throughout the planning process.

Federal

USACE

Permitting of the proposed improvements will be required under Section 404 of the CWA. The project does not require review under Section 10 of the Rivers and Harbors Act since the work would not occur in a navigable waterway. In addition, no review is required under Section 14 of the Rivers and Harbors Act (33 USC §408), because the activity, in whole or in part, would not alter, occupy, or use a USACE Civil Works project.

USFWS Section 7 Consultation

On September 12, 2025, the FHWA sent an initial letter to agencies introducing the proposed project and indicating that the project would be evaluated through the EA process.

On December 10, 2025, the FHWA used IPaC to obtain an official USFWS species list from the Virginia Ecological Services Field Office, which identified the listed and proposed species that may be affected by the project as the following: federally listed endangered northern long-eared bat (*Myotis septentrionalis*); proposed to be federally listed endangered tri-colored bat (*Perimyotis subflavus*); and candidate species monarch butterfly (*Danaus plexippus*). The FHWA used the "FHWA, FRA, FTA Programmatic Consultation for Transportation Projects affecting IBAT, NLEB, or TCB" Determination Key and reached the determination of "Likely to Adversely Affect (LAA)" for the northern long-eared bat and tri-colored bat on November 26, 2025.

On February 25, 2026, the FHWA provided feedback from USFWS to utilize the "Northern Long-eared Bat and Tricolored Bat Range-wide" Determination Key in order to result in a "Not Likely to Adversely Affect (NLAA)" determination. The project would adhere to TOYR of no tree clearing during summer occupancy, pupping season, or torpor occurring from April 1 to July 15 and December 15 to February 15 of any given year to minimize impacts to the northern long-eared bat and tri-colored bat.

National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS)

The project site does not contain species that would be covered under Section 7 of the ESA within the jurisdiction of NMFS; therefore, no coordination will be required. In addition, no essential fish habitat is designated within the project area, so coordination will not be required under the Magnuson-Stevens Fishery Conservation and Management Act.

FEMA

FEMA review is anticipated for confirmation of no net rise based on the project footprint within the floodplain.

NHPA

Section 106 of the NHPA requires a consultative process to identify historic properties; assess project impacts to historic properties; and avoid, minimize, or mitigate adverse effects prior to

approval to use federal funds. The FHWA coordinated the Determination of Effects with the State Historic Preservation Officer and federally recognized Indian tribes in Virginia who have requested consulting party status.

On January 14, 2026, the project was submitted to the VDHR through their Electronic Project Information Exchange (ePIX) for review.

On February 17, 2026, VDHR responded requesting a Phase 1 survey for both archaeological and architectural resources.

State

VDEQ

The project will require various approvals from VDEQ to demonstrate compliance with several acts and authorities, such as the Virginia Coastal Zone Management Program (EO 35, 2014), stormwater management regulations (9 VAC 25-880), and Section 401 of the CWA.

Virginia Marine Resources Commission (VMRC)

The project may require approval from VMRC for activities occurring over, under, or on state-owned land.

VDHR

Consultation has occurred under Section 106 of the NHPA, as described above and in the Tribal Nations section below.

VDCR

Coordination with VDCR's Real Property Office occurred during alternatives refinement to discuss potential ROW acquisition, as they are the largest property owner along Pungo Ferry Road with the North Landing River Natural Area Preserve located to the north of the corridor. See Appendix B for additional detail.

Tribal Nations

The FHWA initiated consultation with the following Tribes on September 12, 2025:

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

As of December 22, 2025, three Tribes responded to FHWA, with only one Tribe, the Nansemond Indian Nation, accepting the invitation to be a participating agency. In their response on October 10, 2025, they identified the project area as an “area of high significance.”

On September 22, 2025, the Rappahannock Tribe responded stating that the project area did not fall under their jurisdiction.

On November 6, 2025 the Delaware Nation responded stating that they will not “actively participate in consultation” as there are no known cultural resources or historic properties associated with their Nation within the project area.

Public Review

The EA was released for a formal 40-day public and agency review on June 8, 2026. It has been distributed to interested individuals, agencies, and organizations.

The draft EA is also available on the internet at the following link: https://pw.virginiabeach.gov/stormwater/flood-protection-program/southern-rivers-watershed/pungo-ferry-road.

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Tyson Rosser	Project Manager, Transportation Engineer
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5

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