

## NATURAL RESOURCES TECHNICAL MEMORANDUM

### CATEGORICAL EXCLUSION

I-64 Improvements: Exit 205 to Exit 234  
State Project No.: 00064-800-25632396; UPC 109885  
Henrico County, New Kent County, James City County, York County

#### 1.0 Introduction

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA), is studying the environmental consequences of the proposed widening of Interstate 64 (I-64) from Exit 205 - Route 33/New Kent Highway to 1.15 miles west of Exit 234 – Route 199/646/Humelsine Parkway/Newman Road (MM 204.96 to MM 233.26) from four to six lanes.

The purpose of this memorandum is to summarize the Natural Resources analysis and due diligence review to identify the likely presence of wetlands and streams, floodplains, and threatened and endangered species in the study area. This information will also be used to support the completion of the Categorical Exclusion documentation to comply with the National Environmental Policy Act (NEPA) for this project.

#### 2.0 Study Area

**Figure 1** shows the study corridor for the proposed project. This area encompasses approximately 30 miles along I-64. The widening will take place in the median of I-64 within the existing right-of-way and will avoid to existing interchanges. The widening of I-64 from Exit 205 to 1.15 miles west of Exit 234 will tie into the following recently completed widening project along I-64:

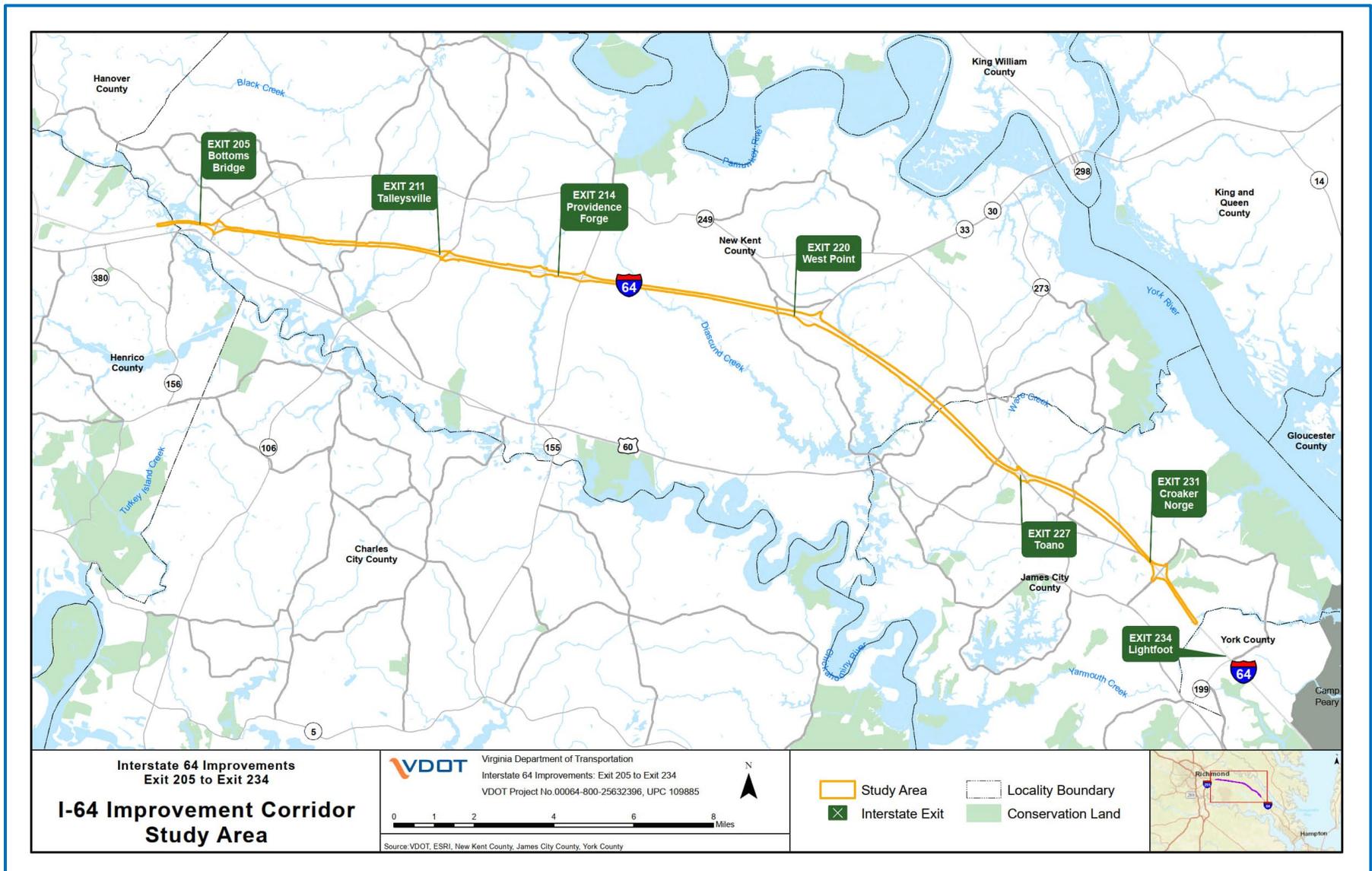
- Widening I-64 from four to six lanes from Exit 200 – I-295 to Exit 205 – Route 33 at the western terminus; and
- Widening I-64 from four to six lanes from approximately 1.15 miles west of Exit 234 – Route 199 to 1.05 miles west of Exit 242 – Route 199 at the eastern terminus.

The project scope does not include improvements to the interchanges within the study area, with the exception of improvements to the auxiliary lanes along I-64 at the Exit 205 interchange at the western project terminus. It is assumed that all other auxiliary lanes along I-64 will remain in their current configuration.

#### 3.0 Purpose and Need

The purpose of this project is to improve traffic operations and safety on I-64 from MM 204.96 to MM 233.26. The I-64 corridor in this area has recurring congestion, including congestion resulting from incidents along I-64, and high crash frequency and severity.

Figure 1: I-64 Improvement Corridor Study Area



## 4.0 Natural Resources Review

### 4.1 Regulated Wetland and Stream Review

#### 4.1.1 Methodology

In order to identify potential regulated wetlands and streams that could be present within the study area, an in-office review of available resource information was conducted in March 2022. Data reviewed includes U.S. Geological Survey (USGS) topographic mapping (USGS, 2019), National Wetland Inventory (NWI) mapping (USFWS, 2018), the National Hydrography Dataset (NHD) (USGS, 2022), U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soils mapping and data (USDA, 2019), and aerial imagery (USGS, 2017).

#### 4.1.2 Existing Conditions

##### 4.1.2.1 Watersheds

As depicted on **Figure 2 (Appendix A)**, the study area is located within several Hydrologic Unit Codes (HUCs) (see **Table 1**) (DCR, 2019).

**Table 1: Hydraulic Unit Codes**

HUC-8	HUC-8 Name	HUC-12	HUC-12 Name
02080206	Lower James	020802060502	Higgins Swamp - Chickahominy River
		020802060504	Toe Ink Swamp - Chickahominy River
		020802060505	Rumley Marsh - Chickahominy River
		020802060602	Diascund Creek Reservoir - Diascund Creek
		020802060603	Mill Creek - Diascund Creek
02080107	York	020801070101	Ware Creek
		020801070104	Skimino Creek - York River

Eleven named streams, including the Chickahominy River, Crumps Swamp, Allens Run, Toe Ink Swamp, Schiminoe Creek, Rumley Marsh, Diascund Creek, Beaverdam Creek, Wahrani Swamp, Barnes Swamp, and Edwards Swamp, and several unnamed tributaries flow through the study area, as depicted on **Figure 2 (Appendix A)**. The streams ultimately flow to the James River. Additionally, two named streams, Bird Swamp and France Swamp, and several unnamed tributaries flow through the study area and ultimately to the York River, as depicted on **Figure 2 (Appendix A)**.

##### 4.1.2.2 Wetlands

As depicted on NWI mapping, there are approximately 44.40 acres of wetlands present within the study area, including 37.39 acres of palustrine forested (PFO) wetlands, 2.26 acres of palustrine shrub (PSS) wetlands, 3.05 acres of palustrine emergent (PEM) wetlands, and 1.70 acres of palustrine unconsolidated bottom (PUB) wetlands (USFWS, 2018). NWI wetlands are depicted on **Figure 2 (Appendix A)**. Most of these NWI wetlands are associated with riparian systems along the Chickahominy River, Schiminoe Creek, Rumley Marsh, Crumps Swamp, Diascund Creek, Beaverdam Creek, Toe Ink Swamp, Wahrani Swamp, Barnes Swamp, Edwards Swamp, Bird

Swamp, France Swamp, and various unnamed tributaries to the James and York rivers (see **Figure 2** – Appendix A).

#### 4.1.2.3 Streams

As depicted on NHD mapping, there are approximately 28,245 linear feet of stream channels identified within the study area. NHD streams are depicted on **Figure 2** (Appendix A).

### 4.1.3 Environmental Consequences

Based on the March 2022 limits of disturbance (LOD) and NWI and NHD mapping, the project would impact approximately 11.61 acres of wetlands (including 0.02 acres of PEM, 9.93 acres of PFO, 1.25 acres of PSS, and 0.41 acres of PUB) and 5,761 linear feet of stream (see **Figure 2** – Appendix A).

Impacts to wetlands and streams would be further avoided and minimized to the maximum extent practicable as part of the Section 404/401 permitting process. Compensatory mitigation for permanent impacts to streams and wetlands would be developed, as required, during the Section 404/401 permitting process in coordination with the appropriate state and federal agencies.

## 4.2 Floodplain Review

### 4.2.1 Methodology

Locations of designated floodplains and floodways were determined using Flood Boundary and Floodway Maps published by the Federal Emergency Management Agency (FEMA) (US Department of Homeland Security, 2021).

### 4.2.2 Existing Conditions

The study area contains approximately 32 acres of 100-year floodplain, 0 acres of 500-year floodplain, and 0 acres of floodway (see **Figure 3** – Appendix A). These 100-year floodplains are associated with the Chickahominy River, Wahrani Swamp, Diascund Creek, Rumley Marsh, Schiminoe Creek, Toe Ink Swamp, Crumps Swamp, Beaverdam Creek, Barnes Swamp, and several unnamed tributaries to the James River. The remaining 1,896.90 acres within the study area are designated as Zone X (areas outside of the 500-year floodplain) (US Department of Homeland Security, 2021).

### 4.2.3 Environmental Consequences

Based on the March 2022 LOD and FEMA floodplain mapping, the project would impact approximately 6.52 acres of 100-year floodplains. During final design, a hydrologic and hydraulic analysis would be conducted to ensure adequate design of the hydraulic openings of culverts allowing proper conveyance of floodwaters to minimize potential impacts to the floodplain and floodplain hazards. The design would ensure that no substantial increase in downstream flooding would occur and/or would document the need for any Letters of Map Revision (LOMR) or Conditional Letters of Map Revision (CLOMR) and that all encroachments would conform with all applicable state and local floodplain protection standards.

## 4.3 Threatened and Endangered Species Review

### 4.3.1 Methodology

On March 15, 2022, the Virginia Department of Wildlife Resources (VDWR) Virginia Fish and Wildlife Information Service (VaFWIS) database (2-mile search radius), the VDWR Wildlife Environmental Review Map Service (WERMS) database, the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) database, the Virginia

Department of Conservation and Recreation – Division of Natural Heritage (VDCR-DNH) online searchable database, the Center for Conservation Biology (CCB) Mapping Portal, and the USFWS Virginia Field Office’s Bald Eagle Map Tool were queried to identify threatened, endangered, and special status species that may potentially be affected by the project. Additional background data was collected through aerial imagery, NRCS soils data, USGS topographic mapping, NWI mapping, NHD, and the Virginia Land Cover Dataset 2021.

Because of the variability in relevance of the various species “hits” returned from query results, a screening process was used to select which species were carried forward for further analysis. This initial screening process was informed using a combination of site-specific knowledge, species life history requirements, resource agency coordination, and best professional judgement. Additionally, per VaFWIS coordination recommendation, species identified as “potential” in the VaFWIS database that were not listed in other databases were not carried forward for further analysis.

**4.3.2 Existing Conditions**

Five species were carried forward for further analysis, as depicted in **Table 2** (For more information on database results, please see **Appendix B**).

**Table 2: Threatened and Endangered Species Carried Forward for Analysis**

Common Name	Scientific Name	Status	Database		
			IPaC	VDCR-DNH	VaFWIS (2 Mile Buffer)
Northern long-eared bat	<i>Myotis septentrionalis</i>	FT, ST	X		
Small whorled pogonia	<i>Isotria medeoloides</i>	FT, SE	X	X	
Narrow-leaved spatterdock	<i>Nuphar sagittifolia</i>	ST		X	
New Jersey rush	<i>Juncus caesariensis</i>	ST		X	
Rafinesque’s eastern big-eared bat	<i>Corynorhinus rafinesquii macrotis</i>	SE			C

Source: USFWS IPaC, VDGIF-VaFWIS, VDCR-DNH, and WERMS

FE = federally endangered, FT= federally threatened, SE = state endangered, ST = state threatened, C = confirmed

No streams were identified as Threatened and Endangered Waters or Anadromous Fish Use Streams within the study area. The USFWS IPaC system indicates that no critical habitat occurs within the study area. Additionally, VAFWIS, WERMS, the CCB Mapping Portal, and the USFWS Virginia Field Office’s Bald Eagle Map Tool indicate no bald eagle nests are present within the study area; the closest nest is over 0.43 miles away (CCB, 2022).

Following is a description of each of the identified threatened, endangered, and special status species carried forward for further analysis.

**4.3.2.1 Northern Long-Eared Bat**

The northern long-eared bat (NLEB) was listed by the USFWS as threatened in April 2015. Home range for the northern long-eared bat is widely but patchily distributed in the eastern and north-central United States and adjacent southern Canada, and southward to southern Texas, Louisiana, Alabama, Georgia, and Florida, and westward in the United States generally to the eastern margin of the Great Plains region (NatureServe, 2022B). In the winter, they hibernate in

caves, mines, and tunnels with relatively constant and cool temperatures, high humidity, and no air currents. In the summer, they roost in old-growth forests with uneven forest structure, single and multiple tree-fall gaps, standing snags, and woody debris. Major threats to the species existence include wind energy development, white-nose syndrome (WNS), and habitat modification. This species was reported by USFWS' IPaC as potentially occurring within the boundary of the proposed project (USFWS, 2022). VDWR's northern long-eared bat winter habitat and roost trees mapper indicates that the nearest known hibernacula (overwintering shelters) and maternity roost are approximately 56 miles and 116 miles away from the project area, respectively (VDWR, 2022B).

#### 4.3.2.2 *Small Whorled Pogonia*

The small whorled pogonia was listed by USFWS as threatened in October 1982. This member of the orchid family is sparsely yet widely distributed. Its primary range extends from southern Maine and New Hampshire down the east coast to northern Georgia and southeastern Tennessee. The small whorled pogonia occurs on upland sites in mixed-deciduous or mixed-deciduous/coniferous forests that are generally in second or third growth successional stages. Other habitat requirements include sparse to moderate ground cover, a relatively open understory canopy, and proximity to features that create long-persisting breaks in the forest canopy. Preferred soils are highly acidic and nutrient poor (USFWS, 1992). This species was reported by USFWS' IPaC as potentially occurring within the boundary of the proposed project (USFWS, 2022). It was also reported by DCR-DNH as occurring within two of the seven sub-watersheds (HUC 12) the proposed project passes through (DCR-DNH, 2022). Additionally, in support of the 2013 EIS, VDOT conducted reconnaissance-level small whorled pogonia habitat evaluation in 2012, which identified potential habitat within the corridor.

#### 4.3.2.3 *Narrow-Leaved Spatterdock*

The narrow-leaved spatterdock is a hydromorphic herbaceous plant restricted to small guts, shallow tributary creeks, and large marsh pools along freshwater and oligohaline sections of tidal rivers. This species occurs on the Mid-Atlantic Coastal Plain of Virginia and southeastern North Carolina. In Virginia, this species is restricted to the Chickahominy River estuary where it forms large, floating mats (DCR, 2021; NatureServe, 2022C). This species was reported by DCR-DNH as occurring within two of the seven sub-watersheds (HUC 12) the proposed project passes through (DCR-DNH, 2022).

#### 4.3.2.4 *New Jersey Rush*

New Jersey rush is an herbaceous species that, outside the Pine Barrens of New Jersey, is restricted to isolated occurrences in seepages along the Coastal Plain of Maryland and Virginia south to James City County, Virginia. This species prefers very acidic and extremely wet spring or seep areas with a stable source of flowing water, but not standing water. It occurs in open to shaded stream banks, seepy pond margins, swales, pine barren savannas, edges of bogs, and Atlantic white cedar swamps. New Jersey rush is often associated with sphagnum species (NatureServe, 2022A). This species was reported by DCR-DNH as occurring within two of the seven sub-watersheds (HUC 12) the proposed project passes through (DCR-DNH, 2022).

#### 4.3.2.5 *Rafinesque's Eastern Big-Eared Bat*

The Rafinesque's eastern big-eared bat was designated State Endangered in 1987. This is a medium sized bat. Mating occurs during the fall and winter. Single naked young are born in the nursery colony in May or June. Roosts play a large role in social organization and survival, and

they were most often found roosting in the corners when in attics or the darkest location possible when found roosting elsewhere. This species is found in the Atlantic and Gulf lowlands and to a limited extent in the adjacent Piedmont. Its habitat is incidental in Virginia because this bat has adapted to temperate, arboreal zones found only in the extreme southeast of the state. It is most often found in houses, or sometimes in hollow trees, behind loose bark, in culverts, or in caves and mines. They prefer roosting sites near mature forests and adjacent to rivers and other permanent bodies of water. This species has been confirmed within a two-mile buffer of the study area (VDWR, 2022A).

#### **4.3.3 Environmental Consequences**

Since the proposed project involves tree removal, it has the potential to impact northern long-eared and Rafinesque's eastern big-eared bats. Conservation and protection measures for the northern long-eared bat would be in accordance with the final 4(d) rule and the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-eared Bat. Many of these conservation measures would also serve to protect Rafinesque's eastern big-eared bat. VDOT will coordinate with DWR to ensure appropriate conservation and protection measures are taken for the Rafinesque's eastern big-eared bat. Additional bat conservation measures may be implemented depending on the outcome of agency coordination. Future re-evaluations and certifications of this NEPA document would include updated coordination on Section 7.

VDOT is conducting habitat assessments for small whorled pogonia, narrow-leaved spatterdock, and New Jersey rush in the spring of 2022. If suitable small-whorled pogonia habitat is identified, VDOT will conduct a presence/absence survey in accordance with USFWS survey protocols. Depending on the outcome of habitat assessments, surveys, and agency coordination, additional conservation measures may be implemented to protect these species. Future re-evaluations and certifications of this NEPA document would include updated coordination on Section 7.

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