VDOT

SKIFFES CREEK
CONNECTOR STUDY
ENVIRONMENTAL ASSESSMENT

JUNE 2018

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

ENVIRONMENTAL ASSESSMENT

Skiffes Creek Connector Study

James City County
Project Number: 0060-047-627, P101, R201, C501; UPC: 100200
Federal Project Number: STP-5A03(455)

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for Division Administrator

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List of Acronyms

AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
ASTM	American Society for Testing and Materials
AWDT	Average Weekday Daily Traffic
BMP	Best Management Practice
CAA	Clean Air Act
CCB	Center for Conservation Biology
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIM	Citizen Information Meeting
CNE	Common Noise Environment
CO	Carbon Monoxide
CoSS	Corridor of Statewide Significance
COV	Code of Virginia
CSXT	CSX Transportation
CTB	Commonwealth Transportation Board
dB(A)	Decibel
EA	Environmental Assessment
EDR	Environmental Data Resources, Inc.
EFH	Essential Fish Habitat
EJ	Environmental Justice
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GIS	Geographic Information Systems
HHS	Health and Human Services
HRBT	Hampton Roads Bridge-Tunnel
HRTPO	Hampton Roads Transportation Planning Organization
HUC	Hydrologic Unit Code
I-64	Interstate 64
ICE	Indirect and Cumulative Effects
IPaC	Information for Planning and Consultation
JD	Jurisdictional Determination
LEHD	Longitudinal Employer-Household Dynamics
L_{eq}	Equivalent Sound Level
lf	linear feet

LMI	Labor Market Information
LOD	Limit of Disturbance
LOS	Level of Service
LRTP	Long-Range Transportation Plan
mph	mile per hour
MPO	Metropolitan Planning Organization
MSATs	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NO_x	Nitrogen Oxides
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O/D	Origin and Destination
PC	Pollution Complaint
PCES	Project Cost Estimating System
PEM	Palustrine Emergent
PFO	Palustrine Forested
$PM_{2.5}$	Fine Particulate Matter
ppm	parts per million
PUB	Palustrine Unconsolidated Bottom
R2/R3	Perennial
R4	Intermittent
R6	Ephemeral
RECs	Recognized Environmental Conditions
SCC	Skiffes Creek Connector
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SYIP	Six-Year Improvement Program
TDM	Transportation Demand Management
TMDL	Total Maximum Daily Load
TIP	Transportation Improvement Program
TNM	Traffic Noise Model
TRB	Transportation Research Board
TSM	Transportation System Management
UPC	Universal Project Code
US 60	Pocahontas Trail (U.S. Route 60)
USACE	United States Army Corps of Engineers
USC	United States Code

USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VA 5	Capital Landing Road
VA 105	Fort Eustis Boulevard
VA 143	Merrimac Trail (State Route 143)
VA 249	New Kent Highway
VAC	Virginia Administrative Code
VAFWIS	Virginia Fish and Wildlife Information Service
V-CRIS	Virginia Cultural Resources Information System
VDEQ	Virginia Department of Environmental Quality
VDEM	Virginia Department of Emergency Management
VDGIF	Virginia Department of Game and Inland Fisheries
VDHR	Virginia Department of Historic Resources
VDOT	Virginia Department of Transportation
VEC	Virginia Employment Commission
VEZ	Virginia Enterprise Zone
VMT	Vehicle Miles Traveled
VOC	volatile organic compounds
VSMP	Virginia Stormwater Management Program
WATA	Williamsburg Area Transit Authority
WERMS	Wildlife Environmental Review Map Service
WetCAT	Wetland Condition Assessment Tool
WNS	White Nose Syndrome
WOUS	Waters of the U.S.

CHAPTER 1.0 PURPOSE AND NEED

1.1 INTRODUCTION

The Virginia Department of Transportation (VDOT), in coordination with the Federal Highway Administration (FHWA) as the lead federal agency, has initiated an Environmental Assessment (EA) for the Skiffes Creek Connector (SCC) Study in James City County, Virginia. This study evaluates potential transportation improvements between Pocahontas Trail (U.S. Route 60 (US 60)) and Merrimac Trail (State Route 143 (VA 143)).

This EA has been prepared in accordance with the National Environmental Policy Act of 1969, as amended, (NEPA) and in accordance with FHWA regulations[1]. The environmental review process as part of this EA was carried out following the *National Environmental Policy Act and Clean Water Act (Section 404) Merged Process for Highway Projects in Virginia* (merged process)[2], between VDOT, the FHWA, the U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency (USEPA), and the U.S. Fish and Wildlife Service (USFWS).

1.2 DESCRIPTION OF THE SKIFFES CREEK STUDY AREA

The initial study area extended approximately six miles between VA 199 and VA 238. The study area for this EA was developed and refined based upon agency and public input, review of land use, constraints (design and environmental), and existing connections between US 60 and VA 143. US 60 and VA 143 are the two primary routes running east/west through the SCC study area. However, as noted above, there is a distance of more than six miles between the existing connections linking US 60 and VA 143 at VA 199 and VA 238. The ideal location for potential transportation improvements would therefore be centrally located between the two existing connections (see **Figure 1-1**). The refined SCC study area is bordered to the north by the southern edge of the Interstate 64 (I-64) right-of-way and to the south by the southern edge of the US 60 right-of-way. The eastern border is Skiffes Creek Reservoir and the western border is just west of the intersection of the inactive rail spur that lines up with BASF Drive, as shown on **Figure 1-2**.

The SCC study area is comprised mainly of undeveloped, residential, institutional/public land, and industrial land. The southwest portion of the study area contains two residential areas bisected north to south by the inactive rail spur that lines up with BASF Drive, west of Green Mount Parkway. A second rail line, the CSX Transportation (CSXT) railroad, runs west to east, separating the northern third of the study area from the southern portion. This area contains three institutional properties – the Virginia Peninsula Regional Jail, Merrimac Juvenile Detention Center, and a VDOT maintenance center, as well as an industrial use, the asphalt processing plant.

[1] NEPA and FHWA's regulations for Environmental Impact and Related Procedures can be found at 42 USC §4332(c), as amended, and 23 CFR §771, respectively.

[2] The process is intended to facilitate an environmental review process and development of documentation that comply with the requirements of NEPA and provide sufficient information to support FHWA approval or Federal regulatory decision-making, including permits issued by other Federal agencies.

Figure 1-1
Skiffes Creek Connector
Initial Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 0.25 0.5 1 Mile

N W E S

Source: Esri OpenStreetMap

Study Area

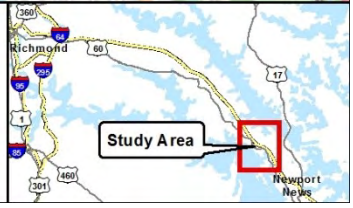


Figure 1-2
Skiffes Creek Connector Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

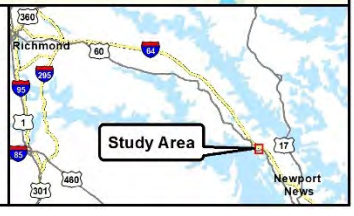
0 0.05 0.1 0.2 Miles

N W E S

Source: ESRI, NHD

Interstate Exit

Study Area



1.3 SKIFFES CREEK CONNECTOR BACKGROUND

The SCC project has been considered in local and regional plans for several years. In December 2012, VDOT initiated the SCC location study and EA and in May 2013, the SCC Study was introduced to USACE, USEPA, and other federal agencies as a four-lane divided roadway to improve freight movement and improve connectivity between US 60 and VA 143. In August 2013, the Route 60 Relocated study was introduced to the same federal agencies. The Route 60 Relocated study proposed the construction of a four-lane divided highway to realign US 60 in James City County and the City of Newport News. The Route 60 Relocated project was proposed to begin in Newport News along US 60 at the Fort Eustis Boulevard (VA 105) interchange, extend through Oakland Industrial Park and Green Mount Industrial Park to the existing intersection of US 60 and Green Mount Parkway, where it would connect to the previously proposed SCC project. The intent of the project was to improve freight movement through this corridor and reduce movement through local neighborhoods.

Following the introduction of these proposed projects to the NEPA process, federal agencies questioned the independent utility of the SCC and the US 60 Relocated projects, referencing their timing and proximity. Upon further review, FHWA concluded that both projects did not meet Council on Environmental Quality (CEQ) guidelines for independent utility due to their close geographic proximity, timing, the similarity of their addressed needs, and the interrelationship of the consideration of alternatives; therefore, as long as VDOT was working on both proposed projects, then both would need to be included in the same EA. During this coordination effort, FHWA reiterated that NEPA cannot be completed (*e.g*. issue a Finding of No Significant Impact [FONSI]) for either proposed project until they are funded for construction in the Metropolitan Planning Organization's (MPO) Long-Range Transportation Plan (LRTP) and a subsequent phase (i.e., right-of-way) is funded in the MPO's Transportation Improvement Program (TIP). Neither project was fully funded. Therefore, both studies were placed on hold while the region identified and prioritized funding.

Subsequently, James City County and Newport News have abandoned plans to relocate US 60. The project and associated Universal Project Code (UPC) have been closed.

With a focus on improving local connectivity between US 60 and VA 143, James City County submitted an application to initiate the SMART SCALE process to determine if the SCC would qualify for funding[3]. The project was subsequently awarded SMART SCALE funding. Once funded, the SCC project was included in the HRTPO's Fiscal Year (FY) 2018-2021 TIP, and 2040 LRTP: Funding Plan and Fiscally-Constrained List of Projects, and VDOT's FY 2018-2023 Six-Year Improvement Program (SYIP), satisfying the fiscal constraint requirements for a NEPA decision.

[3] Virginia's SMART SCALE (Virginia Administrative Code (VAC) §33.2-214.1) is the method of screening, scoring, and prioritizing planned transportation projects. Using this information, the Commonwealth Transportation Board (CTB) selects projects for funding. http://smartscale.org/

1.4 NEEDS FOR THE PROJECT

The purpose of the SCC is to create efficient local connectivity between US 60 and VA 143, in the area between VA 199 and VA 238, in a manner that improves safety, emergency evacuation, and the movement of goods along the two primary roadways. The SCC would address the following needs:

- ***Improved local connectivity*** – there is inadequate and or inefficient connectivity points between these two primary routes;
- ***Provide efficient connectivity for local truck movement*** – there are known truck destinations along the corridors; and
- ***Emergency evacuation capability*** – connectivity between identified evacuation routes should be enhanced to support connectivity and efficiency.

Each of these key needs is described in detail below.

1.4.1 Improved Local Connectivity

1.4.1.1 Existing Conditions

Major Roadway Connections

US 60 is a two- to four-lane roadway between VA 199 and VA 238. Traveling east from VA 199 towards the Exit 243 Busch Gardens interchange with I-64, US 60 is a four-lane roadway merging down to a two-lane roadway. Between the Exit 243 Busch Gardens interchange and VA 238, US 60 continues as a two-lane roadway. VA 143 is a four-lane roadway between VA 199 and VA 238. In addition to I-64, US 60 and VA 143 are the two, main east-west routes along the Hampton Roads Peninsula and serve local and regional traffic. **Table 1-1** provides a summary of Average Weekday Daily Traffic (AWDT) for select roadway links within and adjacent to the SCC study area.

AWDT along US 60 ranges from 9,700 to 16,100 vehicles per day with the highest daily traffic volumes observed along US 60 between VA 238 and VA 105. The AWDT along VA 143 ranges from 15,000 to 19,800 with the highest traffic volumes observed along VA 143 between the I-64 eastbound off-ramp and VA 238. As noted, the AWDTs along US 60 and VA 143 are comparable; however, the daily traffic volumes per lane along US 60 within the traffic study area are 25 to 115 percent greater than along VA 143 due to the greater number of lanes along VA 143 (four lanes) versus US 60 (two lanes).

US 60 and VA 143 are separated by the CSXT railroad along the peninsula creating a barrier between the two roadways. **Figure 1-3** shows the lack of local connectivity between US 60 and VA 143 in the area between VA 199 and VA 238. As shown on **Figure 1-3**, there are many residential areas located along US 60 and VA 143, and many destinations for visitors and employees, including six industrial districts, Busch Gardens Williamsburg Theme Park, as well as the Yorktown Naval Weapons Station. Currently, there are no connection points between US 60 and VA 143 in or near the SCC study area. Residents, employees, large freight trucks, and visitors to the area are required to take non-direct routes to travel between US 60 and VA 143.

Table 1-1: 2017 Existing Daily Traffic Summary

Route	Roadway Segment Begin	Roadway Segment End	2017 AWDT	Truck %
US 60	VA 199	McLaws Circle	12,600	7%
	McLaws Circle	James City / York County Line	12,400	7%
	James City / York County Line	Green Mount Pkwy	9,700	6%
	Green Mount Pkwy	VA 238	11,400	9%
	VA 238	VA 105	16,100	9%
VA 143	VA 199	James City / York County Line	15,000	2%
	James City / York County Line	I-64 EB off-ramp	16,100	3%
	I-64 EB off-ramp	VA 238	19,800	2%
	VA 238	VA 105	17,000	2%
VA 238	US 60	I-64	30,000	3%
	US 60	I-64	5,300	8%
VA 199	I-64	VA 143	9,100	3%
VA 105	US 60	I-64	40,300	4%
	I-64	VA 143	25,000	4%
I-64	VA 199	US 60	82,000	6%
	US 60	VA 143	89,000	6%
	VA 143	VA 238	78,000	4%
	VA 238	VA 105	83,000	4%
	VA 199	McLaws Circle	12,600	7%

Source: Traffic and Transportation Technical Report (VDOT, 2018f)
Notes: Highlighted rows indicate sections of US 60 and VA 143 within the SCC study area

Traveling approximately four miles west from the SCC study area, vehicles can travel between US 60 and VA 143 using the VA 199 interchange ramps. Vehicles traveling between US 60 and VA 143 via VA 199 pass residential neighborhoods and James River Elementary School along US 60 between the VA 199 interchange and the SCC study area.

Traveling east from the SCC study area, the nearest major roadway connection between US 60 and VA 143 is located approximately two miles away at VA 238. Vehicles traveling between US 60 and VA 143 using VA 238 also pass along residential neighborhoods and Lee Hall Elementary School, which is located at the intersection of US 60 and VA 238. The geometry of the intersection of US 60 and VA 238 requires drivers to make a near U-turn while finding gaps in oncoming traffic traveling west along US 60. This intersection is located within 200 feet of the at-grade CSXT railroad crossing VA 238. Additionally, Elmhurst Street, a local two-lane road, is located 0.15 mile west of the US 60/VA 238 intersection. This connection requires vehicles avoiding the US 60/VA 238 signalized intersection to stop at a stop-controlled intersection before accessing VA 238. This intersection is also located within 200 feet of the at-grade CSXT railroad crossing VA 238.

There are additional connection points between US 60 and VA 143; however, they are located even farther away from the SCC study area[4]. As shown in **Figure 1-3**, access to I-64 is provided at Exit 243; however, the interchange only provides access between I-64 and US 60 and between I-64 and VA 143. Vehicles are not able to travel between US 60 and VA 143 at this interchange.

[4] Moving east from the SCC study area, the next nearest connection is approximately three miles away at VA 105. Moving west from the SCC study area, the next nearest connection is approximately 7 miles away at VA 5 (Capital Landing Road).

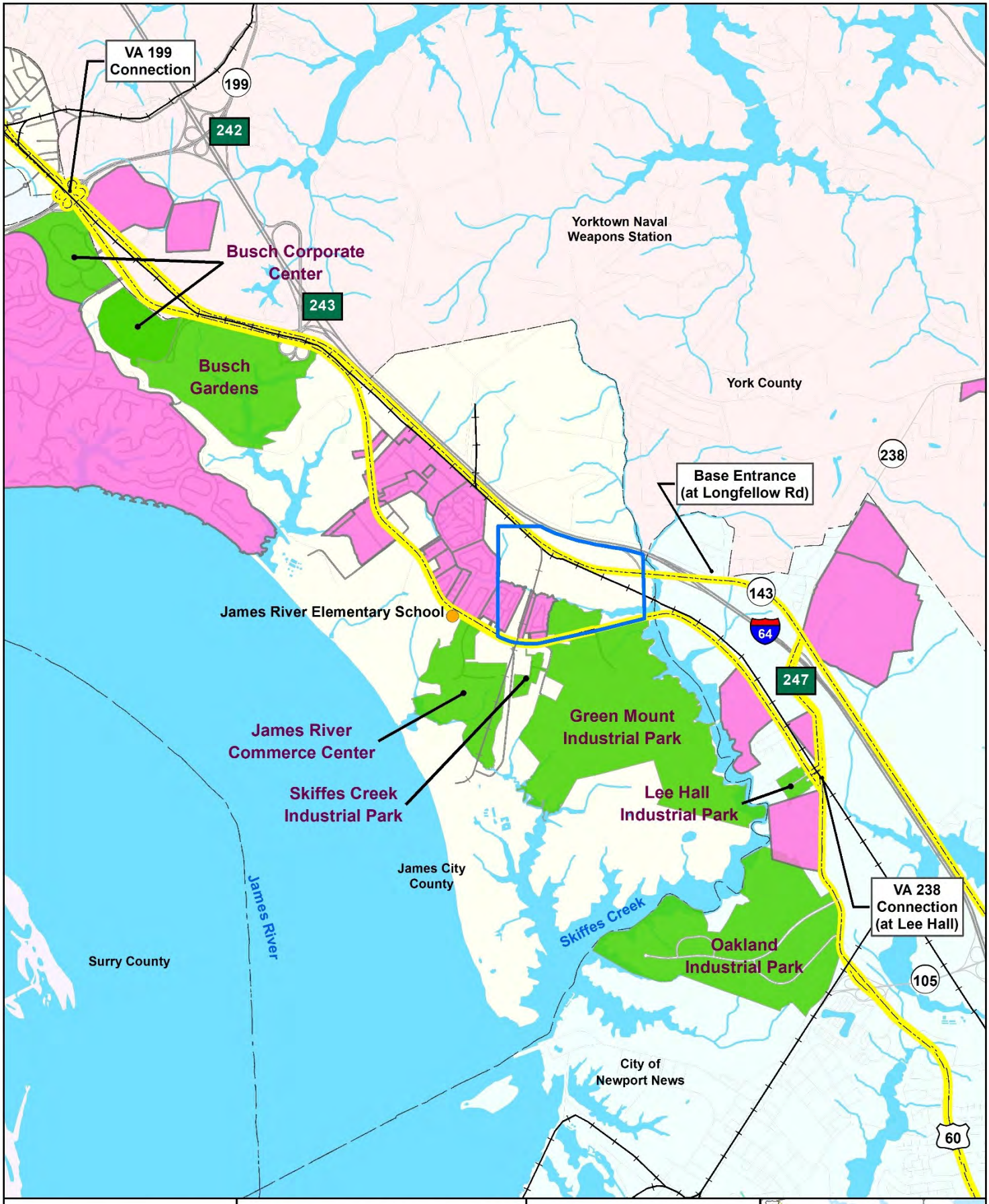


Figure 1-3
Origin and Destination Points in the Project Area

Commute Patterns

Work force travel patterns demonstrate that James City County's population exhibits a high commuting exchange with Williamsburg, Newport News, and York County with the majority of these commuters likely using US 60 and VA 143 for a portion of their commute. Of the 27,630 James City County commuters, 31 percent, or 8,573, live and work within James City County and 69 percent, or 19,057, commute to localities outside of James City County (see **Table 1-2**). Of the 19,057 commuters traveling out of James City County, 4,016 (21 percent) are commuting to Williamsburg, 3,392 (18 percent) are commuting to Newport News, and 2,148 (11 percent) are commuting to York County. Of the commuters traveling west, 1,595 (9 percent) are commuting to Richmond, Henrico County, and Fairfax County. Residents commuting east include 3,439 (18 percent) traveling to localities including Hampton, Norfolk, Virginia Beach, and Chesapeake (LMI, 2018a, 2018b, 2018c, 2018d). These commuter destinations are linked to James City County by I-64, US 60, and VA 143.

Table 1-2: Commuting Patterns to and from James City County

Locality	Commuting To	
	Count	Percentage
Williamsburg City	4,016	21%
Newport News City	3,392	18%
York County	2,148	11%
Hampton City	1,325	7%
Norfolk City	840	5%
Virginia Beach City	806	4%
Fairfax County	633	3%
Henrico County	570	3%
Chesapeake City	468	3%
Richmond City	392	2%
All Other Locations*	4,467	23%
Total Out-Commuters	19,057	100%

Locality	Commuting From	
	Count	Percentage
Newport News City	4,548	23%
York County	2,174	11%
Hampton City	1,192	6%
Gloucester County	1,050	5%
Williamsburg City	759	4%
New Kent County	734	4%
Virginia Beach City	721	4%
Chesterfield County	472	2%
Henrico County	457	2%
Suffolk City	368	2%
All Other Locations*	7,341	37%
Total In- Commuters	19,816	100%

**Other locations details not available in data source.*

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, 2014.

Of the 28,389 James City County commuters, 30 percent, or 8,573, live and work within James City County, and 70 percent, or 19,816, commute from localities outside of James City County. Of the 19,816 commuters traveling to James City County, 4,548 (23 percent) are commuting from Newport News, 2,174 (11 percent) are commuting from York County, and 759 (4 percent) are commuting from Williamsburg. The other commuters traveling west total 1,663 (8 percent) and are coming from New Kent County, Chesterfield County, and Henrico County. The other commuters traveling east total 3,331 (17 percent) and are coming from Hampton, Gloucester County, Virginia Beach, and Suffolk (LMI, 2018). These commuter origins are linked to James City County by I-64, US 60, and VA 143.

Based on James City County's commuting patterns, additional reliable and safe connectivity between US 60 and VA 143 is crucial for the work force of James City County and surrounding localities. Therefore, there is a need to improve local connectivity in order to facilitate work force commuter patterns for people that live and work in James City County, the movement of goods along US 60 and VA 143, and other travel patterns that are common for James City County, Newport News, York County, and Williamsburg.

Safety Analysis

A safety analysis was conducted to identify crash trends along the primary roadways within and in the vicinity of the SCC study area. The results of the analysis revealed several concerns, particularly along US 60 and VA 238 (see **Figure 1-4** and **Table 1-3**). Five pedestrian-related crashes were reported, all of which occurred along US 60. Two fatalities were reported, which also occurred along US 60, including one of the pedestrian-related crashes (VDOT, 2018f). Additionally, there is a large number of crashes along VA 238, specifically concentrated at the intersections of US 60 / VA 238 and VA 143 / VA 238 which serve as the connection between US 60 and VA 143. At the US 60 / VA 238 intersection, there were ten reported crashes, including four angle crashes and five crashes involving injuries. At the VA 143 / VA 238 intersection, there were 23 reported crashes, including 12 angle crashes and 13 crashes involving injuries. Additionally, because US 60 and VA 238 are two-lane roads, crashes can lead to severe, unexpected congestion since there are limited abilities for vehicles to bypass incidents.

Table 1-3: Crash Data Summary (2014 – 2016)

Crash Type		VA 143	US 60	VA 238	Total Crashes	% of Total Crashes
Collision Type	Rear End	66	76	0	**149**	35%
	Angle	51	56	7	**121**	28%
	Sideswipe	13	18	1	**33**	8%
	Fixed Object	27	36	8	**79**	18%
	Pedestrian	0	5	0	**5**	1%
	Other	18	22	2	**44**	10%
Crash Severity	Fatal Injury	0	2	0	**2**	0%
	Ambulatory, Visible and Non-Visible Injury	89	106	7	**210**	49%
	Property Damage Only	86	105	11	**219**	51%
Vehicle Involved	Passenger Car/Other	165	202	16	**405**	95%
	Truck	8	8	2	**18**	4%
	Bus	2	2	0	**4**	1%
	Bus and Truck	0	1	0	**1**	0%
Total Crashes by Road		**175**	**213**	**18**	**428**	100%
AADT		15,400	12,000	6,600		
Length		8.61	8.98	1.12		
Crash Rate per 100 Million VMT		120.5	180.5	222.4		
Average Crash Rate for Primary Roads (2015)		127.8	127.8	127.8		
Average Crash Rate for Hampton Roads Primary Roads (2015)		98.5	98.5	98.5		

Source: Traffic and Transportation Technical Report (VDOT, 2018f)

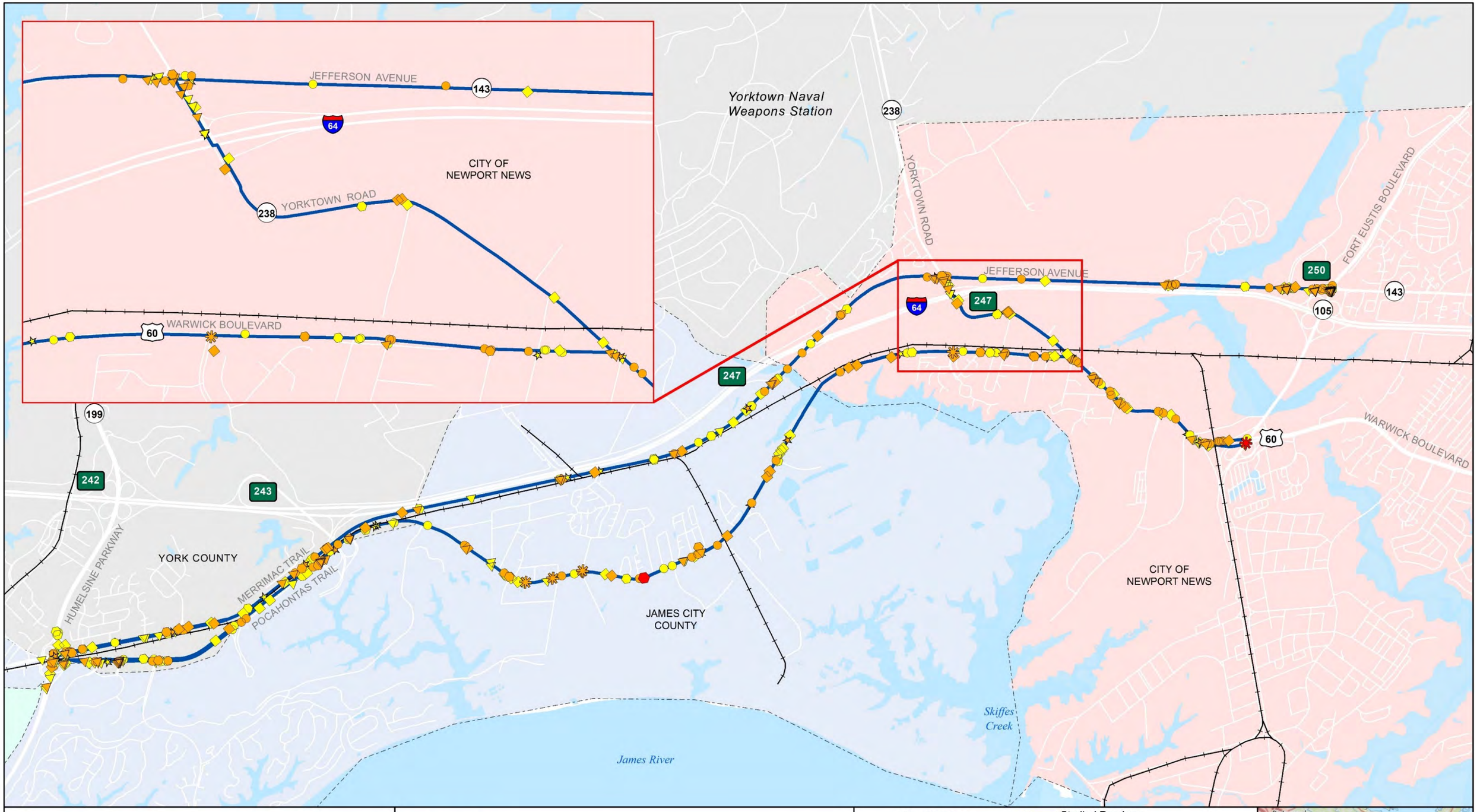


Figure 1-4
2014 – 2016 Crash Data Along US 60, VA 143, VA 199, and VA 238

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project No. 0060-047-627, P101, R201, C501; UPC 100200

0 0.5 1 2 Miles

Source: ESRI, James City County GIS, NHD

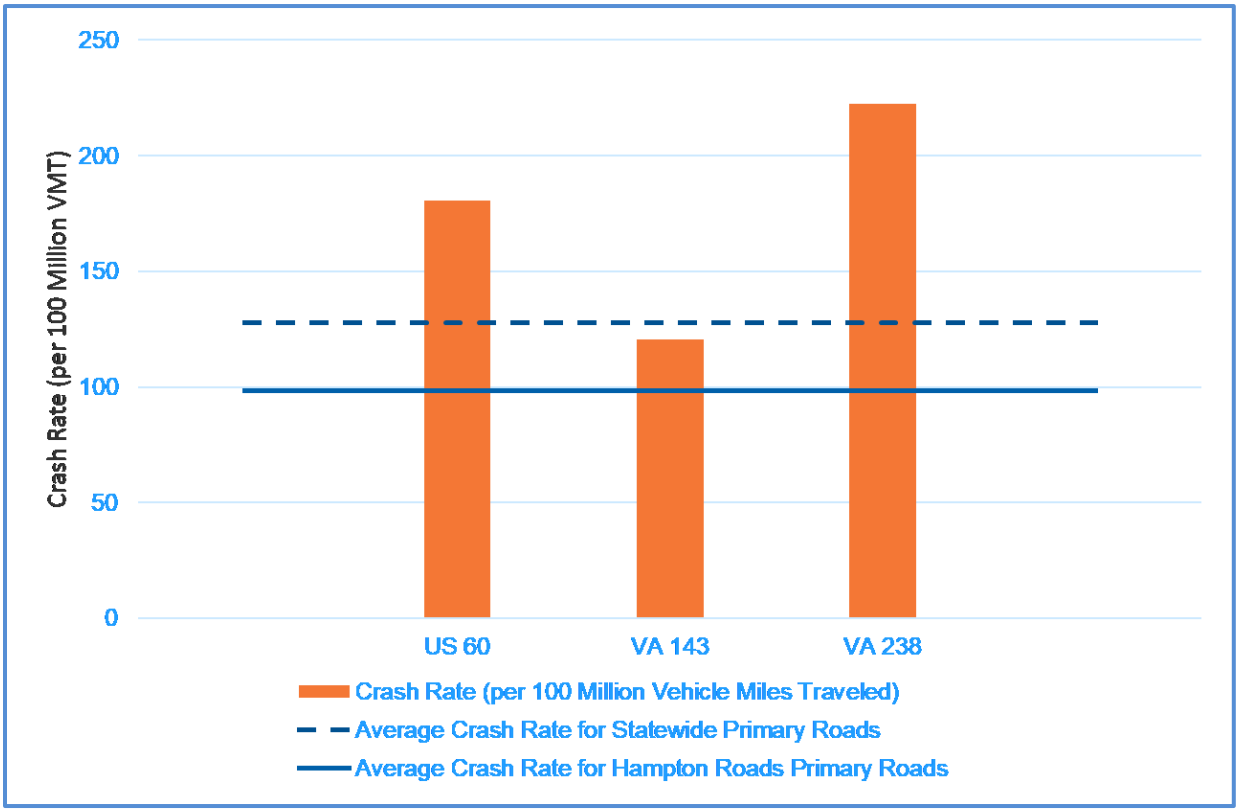
Crash Type
- Rear End
- Angle
- Sideswipe
- Fixed Object
- Pedestrian
- Other

Studied Roadway
County Boundary

Crash Severity
- FATAL
- INJURY
- PROPERTY DAMAGE ONLY

To consider the influence of traffic volumes on crash frequency and compare the relative safety of the study area roadways to statewide averages, crash rates per 100 million vehicle miles traveled (VMT) were calculated for US 60, VA 143, and VA 238. As shown in **Table 1-3**, the crash rates on US 60 and VA 238, 180.5 and 222.4, are higher than the Statewide Average Crash Rate for Primary Roads, 127.8, and the Average Crash Rate for Hampton Roads Primary Roads, 98.5. Although the crash rate of 120.5 for VA 143 does not exceed the Statewide Average Crash Rate for Primary Roads, it exceeds the Average Crash Rate for Hampton Roads Primary Roads (see **Figure 1-5**). Based on a review of crash data, the areas with the highest crashes directly correlate with the areas experiencing the greatest traffic volumes. The rate of crashes along US 60, VA 143, and along VA 238 support the need for adequate and/or more efficient local connectivity. Therefore, due to the high rate of crashes along US 60 and the existing VA 238 connection to VA 143 and limited connections between US 60 and VA 143, there is a need to improve local connectivity between these two primary routes.

Figure 1-5: Crash Rates Compared to Statewide and Hampton Roads Primary Roads



1.4.1.2 Future Conditions

Major Roadway Connections

Similar to the 2017 existing conditions analysis for ***Major Roadway Connections***, a summary comparison of the existing, and forecasted 2023 Interim Year and 2043 Design Year AWDT are provided in **Table 1-4** for select roadway links within and adjacent to the SCC study area.

Table 1-4: 2017 Existing and No Build AWDT Summary

Route	Begin	End	AWDT			Annual Percent Change (2017 to 2023)	Annual Percent Change (2023 to 2043)
			Existing (2017)	Interim Year (2023)	Design Year (2043)		
US 60	VA 199	McLaws Circle	12,600	10,400	13,200	-2.8%	1.3%
	McLaws Circle	James City / York County Line	12,400	9,300	11,800	-4.1%	1.3%
	James City / York County Line	Green Mount Pkwy	9,700	6,200	7,900	-5.9%	1.4%
	Green Mount Pkwy	VA 238	11,400	8,400	10,600	-4.4%	1.3%
	VA 238	VA 105	16,100	12,800	16,500	-3.3%	1.4%
VA 143	VA 199	James City / York County Line	15,000	10,900	13,800	-4.5%	1.3%
	James City / York County Line	I-64 Interchange	16,100	6,800	8,700	-9.6%	1.4%
	I-64 Interchange	VA 238	19,800	9,800	12,500	-8.4%	1.4%
	VA 238	VA 105	17,000	7,800	10,000	-9.0%	1.4%
VA 238	US 60	I-64	30,000	30,300	40,100	0.2%	1.6%
	US 60	I-64	5,300	7,700	8,600	7.7%	0.6%
VA 199	I-64	VA 143	9,100	10,200	11,500	2.1%	0.6%
VA 105	US 60	I-64	40,300	33,600	41,100	-2.8%	1.1%
	I-64	VA 143	25,000	19,300	23,600	-3.8%	1.1%
I-64	VA 199	US 60	82,000	96,200	122,200	2.9%	1.4%
	US 60	VA 143	89,000	106,100	134,900	3.2%	1.4%
	VA 143	VA 238	78,000	95,900	122,000	3.8%	1.4%
	VA 238	VA 105	83,000	100,600	129,500	3.5%	1.4%
	VA 199	McLaws Circle	12,600	10,400	13,200	-2.8%	1.3%

Source: Traffic and Transportation Technical Report (VDOT, 2018f)
Notes: Highlighted rows indicate sections of US 60 and VA 143 within the SCC study area

The I-64 Peninsula Widening project which includes widening from four to six lanes is expected to have a substantial impact on other parallel routes within the region. These anticipated impacts are reflected in the future year forecasted volumes. Traffic in the study area that would typically use US 60 and VA 143 as regional through routes would likely divert to I-64 due to its higher capacity and speed limits. This is reflected in the negative growth rates on many roadways within the study area between 2017 and 2023, following the widening of I-64 from two to three lanes in each direction. Then from 2023 to 2043, traffic patterns begin to normalize with continued annual growth in traffic volumes along roadways within the study area.

As shown in **Table 1-4**, traffic volumes along US 60 between 2023 and 2043 are anticipated to increase annually from 1.3 percent to 1.4 percent and ranges from 7,900 to 16,500 vehicles per day in 2043 and the AWDT along VA 143 is anticipated to increase annually between 2023 and 2043 from 1.3 percent to 1.4 percent and ranges from 8,700 to 13,800 vehicles per day in 2043 (see the ***Traffic and Transportation***

Technical Report [VDOT, 2018f] for additional details). Therefore, although the I-64 Peninsula Widening project would initially reduce traffic volumes along US 60 and VA 143, traffic volumes along the primary routes within and adjacent to the SCC study area are anticipated to continue to grow as a result of both local and regional growth. The existing connectivity deficiencies identified in **Section 1.4.1** would not be alleviated, thereby continuing the need to improve local connectivity within the SCC study area for people who live, work, and visit the area.

Commute Patterns

Table 1-5 and **Table 1-6** show James City County's forecasted population and employment growth compared to other localities within the Hampton Roads Peninsula. The population within James City County is anticipated to continue to grow at a steady rate, with a 50 percent increase projected between 2015 and 2040. James City County's growth is anticipated to be much greater than that of York County (30 percent), the City of Newport News (1 percent), and the state of Virginia (22 percent) (Weldon Cooper Center for Public Service, 2017).

Table 1-5: Population Projections of Localities and Virginia

Locality	2015	2020	2030	2040	% Change Between 2015 and 2040
James City County	73,147	79,404	95,549	110,044	50%
York County	67,837	73,161	81,370	88,288	30%
City of Newport News	182,385	185,620	186,514	184,820	1%
Virginia	8,382,993	8,744,273	9,546,958	10,201,530	22%

Source: Weldon Cooper Center for Public Service, 2017.

Table 1-6: Employment Totals of Localities and Hampton Roads Peninsula

Location	2010	2040	% Change Between 2010 and 2040
James City County	37,183	58,300	57%
York County	33,354	47,290	42%
City of Newport News	115,265	129,700	13%
Hampton Roads Peninsula	994,089	1,277,700	29%

Source: Hamptons Roads 2040 Socioeconomic Forecast (HRTPO, 2012).

Between 2010 and 2040, the anticipated employment growth in James City County exceeds surrounding localities and the Hampton Roads Peninsula. James City County and York County employment growth both exceed 40 percent, with 57 percent and 42 percent, respectively. Although employment in the City of Newport News is only predicted to grow by 13 percent and the Hampton Roads Peninsula is expected to grow by 29 percent, cumulatively, the employment in these localities and subsequently, the region as a whole is growing (see **Table 1-6**).

James City County's comprehensive plans have consistently identified the SCC study area as a growth area with particular potential for industrial development and mixed-use areas to complement the General Industry uses surrounding this area. Furthermore, a majority of the land south of I-64 identified as developable land is included in the Virginia Enterprise Zone (VEZ). The VEZ program is a partnership between state and local government that encourages job creation and private investment in the VEZs. This continued growth within James City County, as well as the adjacent localities, would likely place greater demand on the primary roads in the area, US 60 and VA 143.

Based on the anticipated population, employment, and economic growth within James City County, it is likely that the commuting patterns outlined in **Table 1-2** would continue; however, there would be larger numbers of commuters utilizing US 60 and VA 143 within and in the vicinity of the SCC study area. Therefore, to improve commuting to and from James City County, there is a need to improve local connectivity.

Safety Analysis

According to the American Association of State Highway and Transportation Officials (AASHTO) *A Policy on the Geometric Design of Highways and Streets*, "the frequency of traffic crashes on particular highway facilities is very strongly influenced by the traffic volumes present. Crash frequencies generally increase with increasing traffic volumes, but this effect is generally nonlinear" (AASHTO, 2011). Consequently, under future conditions, if no additional connections between US 60 and VA 143 are made within the SCC study area, anticipated connectivity issues would likely increase the potential for crashes along US 60, VA 143, and VA 238. Crashes on US 60 and VA 238 would increasingly lead to severe, unexpected congestion due to the limited abilities for vehicles to bypass incidents. Therefore, there is a need to improve local connectivity.

1.4.2 Provide Efficient Connectivity for Local Truck Movement

1.4.2.1 Existing Conditions

The same local access and safety concerns that affect local drivers discussed in **Section 1.4.1** also impact truck movement within and adjacent to the SCC study area. However, due to their larger size, trucks take longer to accelerate, have difficulty negotiating tight curves, require increased distances to stop to avoid a potential incident, and take longer to travel through an intersection if turning movements are involved, thus making the problems identified in **Section 1.4.1** more severe.

Table 1-7 compares the Average Annual Daily Traffic (AADT) along US 60 and VA 143 between VA 105 and VA 199 as compared to the larger area, I-295 to I-664 for US 60 and Camp Peary to I-664 for VA 143. While the percentage of trucks is the same for the two segments along VA 143, the percentage of trucks traveling along US 60 is much higher for the area between VA 105 and VA 199 (7 percent) as compared to the larger area between I-295 and I-664 (4 percent). Additionally, 173 percent more trucks travel along US 60 between VA 105 and VA 199 compared to VA 143 within the same roadway segment.

Table 1-7: Daily Traffic Volumes and Truck Percent

Roadway Segment	AADT	Average Truck %[1]	Number of Trucks[1]
US 60			
VA 105 to VA 199	12,000	7%	840
I-295 to I-664	15,200	4%	608
VA 143			
VA 105 to VA 199	15,400	2%	308
I-64 (Camp Peary) to I-664	29,300	2%	586

Source: Traffic and Transportation Technical Report (VDOT, 2018f)
[1]Includes trucks and buses

According to AASHTO *A Policy on the Geometric Design of Highways and Streets,* "trucks have a greater individual effect on highway traffic operation than do passenger vehicles. The effect on traffic operation of one truck is often equivalent to several passenger cars. The number of equivalent passenger cars equaling the effect of one truck is dependent on the roadway gradient and, for two-lane highways, on the available passing sight distance. Thus, the larger the proportion of trucks in a traffic stream, the greater the equivalent traffic demand and the greater the highway capacity needed" (AASHTO, 2011). Additionally, according to the National Highway Traffic Safety Administration's (NHTSA) report *Large-Truck Crash Causation Study: An Initial Overview,"* passengers in vehicles other than large trucks are more likely to be seriously injured than are the passengers within the large truck, when these two different vehicle types collide" (NHTSA, 2006). Therefore, the high percent of trucks within and in the vicinity of the SCC study area increases the potential for more severe crashes and adversely impacts local connectivity by affecting traffic operations.

Within and in the vicinity of the SCC study area, there are several employment centers and truck origin and destination (O/D) points located within six designated industrial/commercial facilities: Green Mount Industrial Park, the James River Commerce Center, Skiffes Creek Industrial Park, the Busch Corporate Center, Lee Hall Industrial Park, and Oakland Industrial Park, all of which have direct access to US 60 (JCC, 2015a) (see **Figure 1-3**). Of these employment centers and truck O/D points, only the Green Mount Industrial Park is located within/adjacent to the SCC study area. Additionally, west of the SCC study area, Busch Gardens Williamsburg Theme Park, a large commercially-zoned area and an important contributor to this area's economy, is located along US 60. All of these industrial/commercial facilities are located within a VEZ. Additionally, the Green Mount Industrial Park, James River Commerce Center, Skiffes Creek Industrial Park, Lee Hall Industrial Park, Oakland Industrial Park, and the former BASF property are located within a federally-designated Opportunity Zone, a newly developed designation to encourage investment in low-income census tracts (JCC, 2018a).

Since the SCC study area lacks efficient connectivity for local truck movement between US 60 and VA 143, in the area between VA 199 and VA 238, trucks are required to use US 60 as their main access route to these industrial/commercial facilities, which as discussed in **Section 1.4.1** above, is bordered by several residential developments and elementary schools. As outlined in **Table 1-7**, US 60 carries seven percent trucks within the study area while the truck percentage on VA 143 is only two percent (VDOT, 2016a). The high percentage of trucks along US 60 between VA 105 and VA 199 is largely attributed to the truck O/D points and proximity to the Port of Virginia.

A key truck O/D point within the SCC study area is the Green Mount Industrial Park, located immediately south of the study area, along Green Mount Parkway. A portion of the industrial park is occupied by the second largest Walmart direct import center (out of six total in the US) on the East Coast. This Walmart facility serves eight regional Walmart distributions centers which provide retail for 870 stores, from Virginia, north to Maine, and west to Ohio (Stone, 2017). Although numerous port-related distribution centers contribute to truck traffic in the area, this Walmart facility accounts for 43 percent of port-related distribution center traffic entering and exiting Hampton Roads (HRTPO, 2018). According to the Virginia Employment Commission (VEC) Labor Market Information (LMI), Walmart is the third largest employer in James City County and York County, and the ninth largest employer in the City of Newport News (LMI, 2018a, 2018b, 2018c). The number of inbound and outbound Walmart truck trips in 2017 totaled 193,295, with 60 percent (115,886) of the truck trips traveling to and from the east to the Port of Virginia (Norfolk International Terminal), likely utilizing US 60 (Stone, 2017).

The Port of Virginia offers the deepest, deep water harbor on the East Coast and is currently the third largest container port on the East Coast, and continues to experience growth (The Port of Virginia, 2017a). Between 2014 and 2016, the port experienced an estimated 10 percent increase in tonnage[5] (The Port of Virginia, 2017a). In 2017, the Port of Virginia became the leading rail port, having moved 569,000 containers or 37 percent of its total cargo by rail. Additionally, 61 percent of the cargo from the Port leaves on trucks (The Port of Virginia, 2017b). According to the Port of Virginia, truck and rail tonnage rates are increasing at the same rate, approximately six to seven percent per year, and changes to the percentages of freight transferred to truck and rail are not anticipated. According to the FHWA's *Freight Analysis Framework Data Tabulation Tool*, in 2015, approximately 77 percent of truck tonnage coming out of the Port of Virginia facilities within Hampton Roads traveled less than 100 miles from the ports, resulting in measurable truck traffic on local roads and the interstate (FHWA, 2016).

As port activity, surrounding and through the SCC study area truck O/D points, is growing and regional truck trips are increasing, safety and local efficient connectivity for trucks throughout the SCC study area is increasingly crucial for James City County, the Port of Virginia, and the national and international distribution of goods. Therefore, there is a need to connect the truck destinations along US 60 with VA 143, which is better suited to handle truck traffic due to the roadway and corridor design elements. This would allow for more efficient connectivity for truck movements and reduced freight travel distance between destinations and improved safety conditions.

1.4.2.2 Future Conditions

As noted in **Section 1.4.1**, James City County's comprehensive plans have consistently identified the SCC study area as a growth area with particular potential for industrial development and mixed-use areas to complement the General Industry uses surrounding this area. Based on the anticipated economic growth within James City County, the number of trucks within the area would continue to increase. As previously stated in **Section 1.4.2.1**, there is a lack of efficient connectivity for local truck movements between US 60 and VA 143, in the area between VA 199 and VA 238. Lack of efficient connectivity for local truck movements would continue in the future and would become increasingly more challenging based on future forecasted traffic volume increases, projected increases in population, and projected economic development.

[5] Tonnage refers to the volume of freight/cargo transported.

Therefore, projected increases in truck volumes along the primary routes within and adjacent to the SCC study area, higher severity associated with truck-related crashes that would be expected to increase in the future, projected economic growth, and existing connectivity deficiencies for local truck movements would increase the need to improve efficient connectivity for local truck movements.

1.4.3 Emergency Evacuation Capability

1.4.3.1 Existing Conditions

Since the SCC study area is located within a coastal region, emergency evacuation plans are critical to ensuring public safety, particularly as it relates to potential hurricanes. The 2017 Atlantic hurricane season produced 17 named storms, four hurricanes, and six major hurricanes (Category 3, 4 or 5), including the first two major hurricanes to hit the continental U.S. in 12 years. These numbers exceed the 1981 to 2010 averages of about 12 named storms, six hurricanes, and three major hurricanes per season and defined the 2017 hurricane season as the seventh most active season in the historical record dating to 1851, and the most active season since 2005 (NWS CPC NOAA, 2017).

The Virginia Department of Emergency Management (VDEM) has established "shelter in place" and evacuation plans for the region's localities for designated emergencies, including hurricanes, tropical storm events, or other emergency situations. The VDEM hurricane evacuation guide identifies I-64, US 60, and VA 143 as the main evacuation routes for the Peninsula localities within the Hampton Roads region, which include James City County, Williamsburg, Newport News, York County, Hampton, and Poquoson (VDEM, 2017b). I-64 is also a designated evacuation route for Norfolk and Virginia Beach. Nearly 1.1 million of the 1.7 million residents of the Hampton Roads region could be expected to use I-64, US 60, and VA 143 as evacuation routes (HRPDC, 2017). In addition to the residents that would be evacuating from the identified localities, the employment-based population, vacationing population, and freight operations, may also be evacuating during an emergency event.

To support connectivity and efficiency between emergency evacuation routes, US 60 and VA 143 have been enhanced with multiple connection points east and west of the SCC study area. Moving west from the VA 105 connection, the next connection point is VA 238, approximately 1.5 miles away. Between the VA 238 connection and the next connection at VA 199, there are approximately six miles. The western connection utilizing VA 199 is approximately four miles from the SCC study area, and the connection at VA 238 is approximately two miles east of the SCC study area. Moving from the VA 238 intersection, the closest connection point past the VA 199 connection is over three miles away, at VA 5 (Capital Landing Road) creating a distance of approximately nine miles with one connection. As residents are evacuating through and west of the SCC study area, the ability of the evacuation routes to address route detours and closures is decreased as the connection points are further in distance. With the potential for nearly 1.1 million residents to use the I-64, US 60, and VA 143 evacuation routes during a major evacuation event, the lack of efficient connectivity west of, and within the SCC study area, may result in severely congested, slower evacuation events; particularly if there is a major traffic incident on I-64, US 60, or VA 143.

In preparation for an evacuation, the Governor has the ability to order a lane reversal of the eastbound lanes on I-64 to facilitate the evacuation of Hampton Roads (VDEM, 2017b). According to a HRTPO *Lane Reversals and Hurricane Evacuation* presentation, the I-64 Peninsula reversal from the Hampton Roads Bridge Tunnel to I-295 would reduce clearance time from 36 hours to 23 hours for York County and the Cities of Poquoson, Virginia Beach, Chesapeake, Norfolk, Newport News, and Hampton (HRTPO, 2014).

The I-64 reversal plan would begin in Norfolk, east of the Hampton Roads Bridge-Tunnel (HRBT) at mile marker 273. Traffic would travel west from Norfolk to Richmond in both the eastbound and westbound I-64 travel lanes.

During the lane reversal, only two exits/ramps are available on the peninsula from the reversed I-64 eastbound lanes: Exit 205 in Bottoms Bridge (near Richmond), which connects to New Kent Highway (VA 249) and Exit 234 in Williamsburg west of the SCC study area, which connects with VA 199 for gas, food, lodging, and hospital access (VDEM, 2017a)[6]. Once a vehicle exits the reversed lanes there is no way for motorists to reenter the reversed lanes; however, all entrances and exits would be open to traffic traveling in the westbound lanes. During the lane reversal period, the lack of connectivity between US 60 and VA 143 would be more pronounced, as a delay or shut-down on one route could require measurable backtracking in severely congested conditions.

The lane reversal policy allows for additional ramp closures on the standard westbound lanes. If one route becomes impassible, the interstate ramps allow for traffic to be diverted to another ramp. However, within and adjacent to the SCC study area, there are no connection points that provide a direct connection between US 60 and VA 143 without interfering with traffic trying to get to or from the interstate. In the absence of such a connection, the primary routes do not offer the same connectivity or efficiency for an evacuation that is provided by the interstate. Additionally, in the case of a shutdown on I-64, US 60, or VA 143, the remaining roadways would not provide adequate emergency evacuation capabilities to the cities of Newport News, Hampton, and Poquoson and York County. Therefore, there is a need to provide an additional connection point between US 60 and VA 143 to improve emergency evacuation capabilities between identified evacuation routes.

1.4.3.2 Future Conditions

The Hampton Roads region's existing population of approximately 1.7 million individuals is expected to increase to over two million individuals by 2040 (HRPDC, 2017). This increase in population would result in higher volumes of evacuees utilizing designated evacuation routes during hurricanes and other emergency events. Coinciding with the projected population growth is the potential for similar Atlantic hurricane seasons with the intensity and frequency of those produced in 2017. Consequently, under future conditions, if no improvements are made within the SCC study area, the existing evacuation routes would continue to lack enhanced connectivity to support efficiency of the network during evacuation events. Increasingly, the lack of enhanced connectivity, coupled with projected population growth and similar storm events, would lead to even more pronounced delays or shut-downs and could require measurable backtracking and slowed or stopped traffic for extended periods of time during an evacuation event. Therefore, there is a need to enhance emergency evacuation capabilities between US 60 and VA 143 to support connectivity and efficiency.

[6] The hurricane plan allows for VDOT to make changes to what ramps are open or closed during an evacuation.

1.5 PURPOSE AND NEED SUMMARY

The purpose of the SCC is to create efficient local connectivity between US 60 and VA 143, in the area between VA 199 and VA 238, in a manner that improves safety, emergency evacuation, and the movement of goods along the two primary roadways. The SCC would address the following needs:

- ***Improved local connectivity*** – there is inadequate and or inefficient connectivity points between these two primary routes;
- ***Provide efficient connectivity for local truck movement*** – there are known truck destinations along the corridors; and
- ***Emergency evacuation capability*** – connectivity between identified evacuation routes should be enhanced to support connectivity and efficiency.

CHAPTER 2.0 ALTERNATIVES

This chapter presents the proposed improvements identified during the planning stage of the SCC Study, the factors considered in their evaluation, and the alternatives retained and not retained for detailed study. An alternatives analysis was originally conducted in 2012, when the SCC Study was initiated, and was put on hold in 2013. As the study was reinitiated in 2017, the alternative analysis activities included an updated review of the alternatives developed in 2012, as well as consideration of new options. More detailed information for each of the sections below may be found in the ***Alternatives Analysis Technical Report*** (VDOT, 2018a).

As will be described in detail in **Section 2.3**, the alternatives retained for detailed study included:

- No Build Alternative;
- Build Alternative 1; and
- Build Alternative 2.

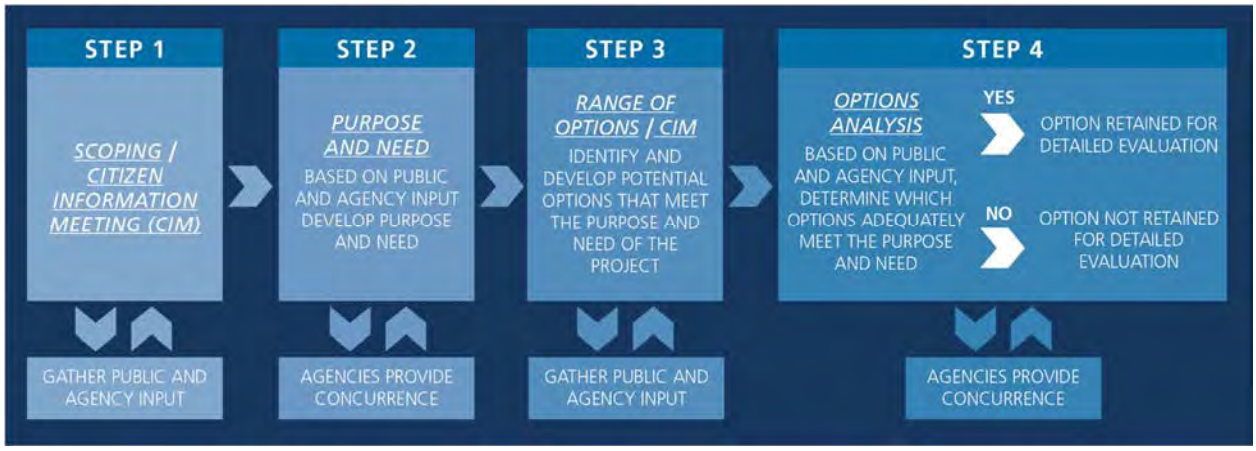
2.1 ALTERNATIVE OPTIONS DEVELOPMENT AND EVALUATION PROCESS

In order to improve local connectivity, provide efficient connectivity for local truck movement, and enhance emergency evacuation capability, VDOT, in coordination with FHWA, considered a range of options to determine which would effectively meet the established purpose and need of the project. While the development and evaluation of these options does not represent a formal, detailed engineering analysis of all potential engineering solutions, the preliminary analysis contained herein was developed for the options identified and to evaluate their anticipated impacts. Should one of these options be advanced to the detailed design phase, further traffic and engineering analysis would be required.

Through the merged process, VDOT has worked extensively with the Concurring, Cooperating, and Participating Agencies for the SCC Study (resource agencies), as well as the public, to develop the purpose and need of the project and evaluate potential options to meet the needs. As discussed further in **Section 4.2.1: Merged Process Agreement Coordination**, VDOT held several meetings with the resource agencies, as well as the public, to evaluate how well each option met the purpose and need of the project. The presentation material from the March 14, 2018 meeting with the resource agencies documenting this discussion is included in **Appendix A** of the ***Alternatives Analysis Technical Report*** (VDOT, 2018a). As required by the merged process, concurrence was received by the Concurring Agencies upon the alternatives to be retained for detailed study. **Figure 2-1** shows the VDOT alternative options development and evaluation process.

The alignments proposed in the different options were developed using current design guidelines including AASHTO's *A Policy on Geometric Design of Highways and Streets, 2011* (Green Book) and the VDOT Road Design Manual (AASHTO, 2011 and VDOT, 2017c). Detailed tables showing the design criteria that were used for this study are included in **Appendix B** of the ***Alternatives Analysis Technical Report*** (VDOT, 2018a). Overall, the design criteria are based on the functional classification of the new roadway as an Urban Minor Arterial Street (GS-6).

Figure 2-1: Alternative Options Development and Evaluation Process



2.1.1 2012 Alternatives

Six alternatives were initially identified during the 2012 SCC Study, the No Build Alternative, Option 1 (formerly identified as Alternative A), Option 3 (formerly identified as Alternative B), Option 4 (formerly identified as Alternative C), a Transportation System Management (TSM) Alternative, and a Mass Transit Alternative. During resource agency coordination, a seventh option was developed to provide a perpendicular crossing of Skiffes Creek, identified as Option 2 (formerly Alternative A1). Options 1, 2, 3, and 4 utilized a design speed of 50 miles per hour (mph), were classified as Urban Minor Arterial Streets (GS-6), and were designed as four-lane divided freeway facilities, with wide medians and bicycle/pedestrian facilities, with 225-foot wide planning level Limits of Disturbance (LODs)[7]. These alternative options are discussed in detail in **Section 2.2: Alternative Options Not Retained for Evaluation** and **Section 2.3: Alternative Options Retained for Evaluation**.

2.1.2 Refinement of 2012 Alternatives

In the original study, VDOT considered two projects that would eventually connect – the widening and relocation of US Route 60 and the SCC. The US Route 60 Relocated project was conceived as a four-lane road with a wide median, as well as bicycle/pedestrian facilities. Similarly, the SCC was conceived to be a four-lane road with bicycle/pedestrian facilities. Both projects were put on hold in 2013 due to resource agency concerns about independent utility. In 2017, VDOT reinitiated the SCC Study and abandoned the US Route 60 project, removing it from the VDOT Six-Year Plan. As a stand-alone project, the SCC did not require as large of a cross-section and was reduced to a simple two-lane undivided freeway facility options with no wide medians or bicycle/pedestrian facilities, reducing the planning level LODs from 225 feet to 140 feet.

Once the alignment was reduced to two lanes, it was further determined that the 50 mph design was no longer necessary. Given the short length of the roadway and the elevation required to cross over the railroad tracks, trucks would not be able to accelerate in time to reach the 50 mph design speed; therefore, a design speed of 35 mph would be sufficient (AASHTO, 2011). As part of the merged process, these revisions were

[7] The LOD is the boundary that includes all of the construction, materials storage, grading, landscaping and any other construction activities needed for this project, excluding stormwater management. The width of the LOD is centered on the proposed centerline of the corridor.

discussed with FHWA, the resource agencies, and the public. The revisions received positive response from the resource agencies and the public due to the reduction in resource impacts and project costs.

2.1.3 2017 Options

During meetings with the resource agencies and the public, as described in **Section 4.1: Agency Coordination** and **Section 4.3: Public Involvement**, additional alternative options, Options 5, 6, 7, 8, and 9, were identified (see **Figure 2-2**). These additional options either included a new alignment or improvements to existing roadways. Additionally, the TSM Alternative was revised to be a TSM/Transportation Demand Management (TDM) Alternative, and a stand-alone Bicycle/Pedestrian Alternative also was included. These alternatives are discussed in detail in **Section 2.2: Alternative Options Not Retained for Evaluation.**

2.1.4 Evaluation of Options

Options 1 through 9, the TSM/TDM Alternative (referenced as Option 10), the Mass Transit Alternative (referenced as Option 11), and the Bicycle/Pedestrian Alternative (referenced as Option 12) were evaluated based upon how they met the purpose and need and whether there were engineering issues with any of the options. The results of the evaluation were presented at the February 15, 2018 Citizen Information Meeting (CIM), and discussed at the January 10, 2018, February 14, 2018, and March 14, 2018 agency meetings. VDOT recommended at these meetings that Options 1 and 2 be retained for detailed evaluation, and Options 3 through 12 not be retained. Following the March 2018 agency meeting, the Concurring Agencies, informed by public comment, concurred with VDOT's recommendations. Descriptions of options not retained for detailed evaluation and reasons for their elimination are included in **Section 2.2**. Descriptions of Options 1 and 2 (now referred to as Build Alternatives 1 and 2) and why they were retained for detailed evaluation are included in **Section 2.3**.

2.2 ALTERNATIVE OPTIONS NOT RETAINED FOR EVALUATION

As discussed above, ten options (Options 3 through 12) were developed but not retained for detailed evaluation. Refer to **Figure 2-2** for illustration of Options 3 through 9 or **Section 2.2: Alternative Options Not Retained For Evaluation** of the ***Alternatives Analysis Technical Report*** for individual illustrations of each option. Below is a discussion of each option and the reason(s) each was eliminated from further evaluation.

2.2.1 Option 3

Option 3 would tie into US 60 at the existing US 60/Green Mount Parkway intersection, continue in a northwest direction to the proposed bridge over Skiffes Creek, cross the CSXT railroad at-grade, then connect directly with VA 143 approximately 2,300 feet from the I-64 Exit 247 eastbound off- ramp. Option 3 would be located approximately halfway between the existing connections from US 60 to VA 143 at VA 199 and VA 238, providing an efficient connection for local traffic, trucks, and emergency evacuation within the study area. Utilizing the existing Green Mount Parkway intersection would provide a safe and efficient connection for all traffic and would allow trucks direct access to the SCC from their O/D locations. Relying on an at-grade crossing of an active rail line; however, would not provide a safe or reliable option.

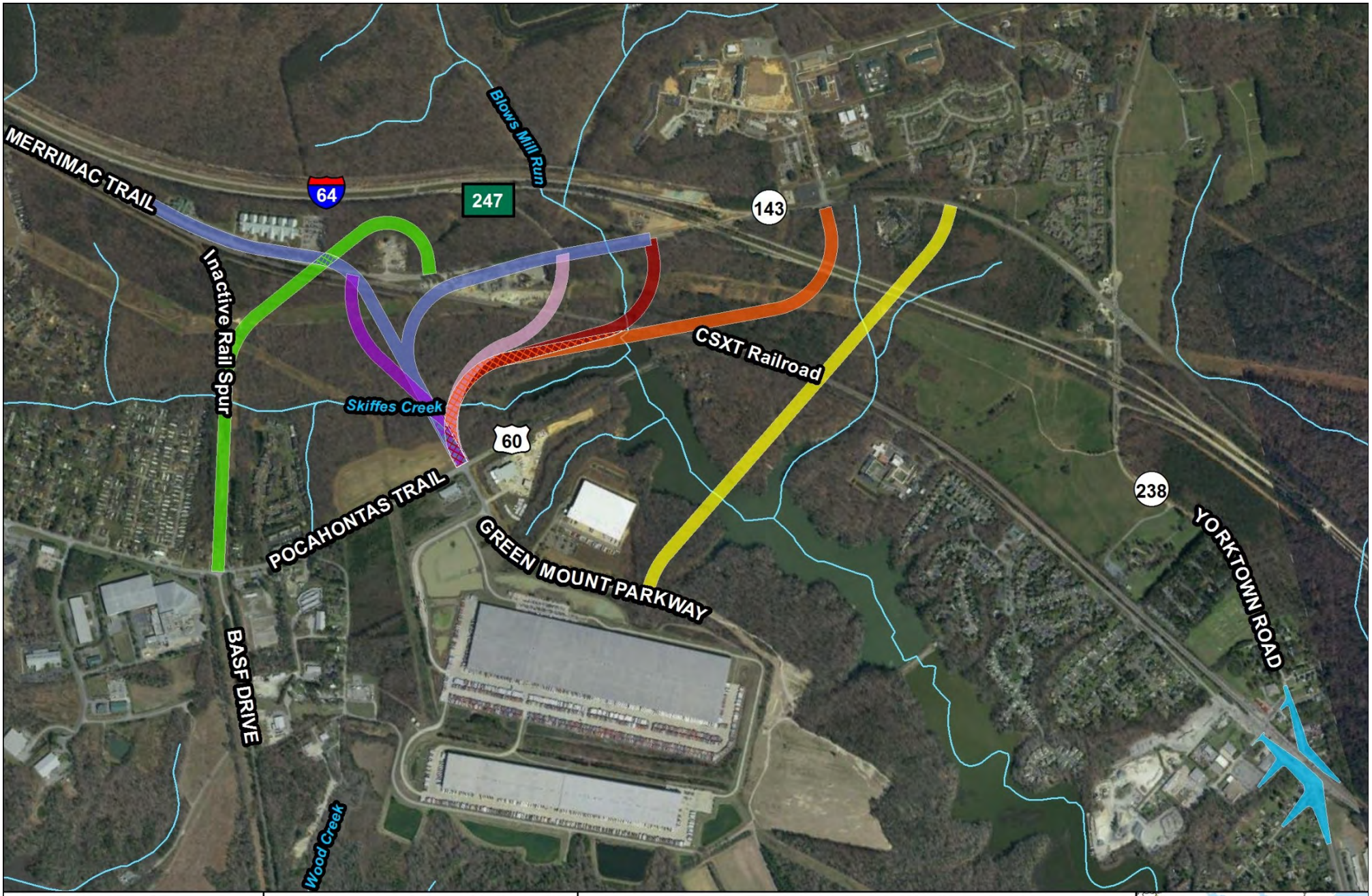


Figure 2-2
Options 3 through 9

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 375 750 1,500 Feet

N W E S

Source: VGIN VBMP Imagery, NHD

Due to the short distance between VA 143 and the grade crossing, approximately 500 feet, traffic using the SCC would likely backup onto VA 143 when the grade crossing is closed during train movements, reducing the efficiency of the traveling public on this road. Additionally, there are known safety concerns with at-grade crossings, with the state code (*Code of Virginia § 56-363*) discouraging at-grade crossings. Furthermore, previous coordination with CSXT when the project was initiated in 2012 suggested that adding an at-grade crossing could require removing three existing at-grade crossings, which cannot be accomplished through the scope of a single project. Successful federal approvals for such changes are unknown/unlikely. Furthermore, the distance between the new intersection at VA 143 would not meet VDOT's identified minimum desired spacing of 750 feet between an intersection and an interchange ramp (VDOT, 2017c). This would require a design exception which may or may not be approved. With the safety concerns of the at-grade railroad crossing and the potential for interruptions in local connectivity and truck access due to the train stoppages, this option would not adequately meet the purpose and need.

2.2.2 Option 4

Option 4 would tie into the existing US 60/Green Mount Parkway intersection; turn northeast to bridge over Skiffes Creek and the CSXT railroad; then connect directly with VA 143 at the I-64 Exit 247 eastbound off-ramp. Option 4 would have steep vertical grades to provide appropriate clearance over the CSXT railroad and then descend to the VA 143 intersection. Option 4 would be located approximately halfway between the existing connections from US 60 to VA 143 at VA 199 and VA 238. The location, however, would not provide the same efficiency as the other options as the required grade would be steep (approximately 8% to 9.5%) due to the close proximity of the existing railroad and existing VA 143, and would likely be avoided by trucks and some personal vehicles. The design criteria for this classification of roadway has a maximum vertical grade of 7%; Option 4's required grade would not meet the current VDOT design standards and guidelines. Per the AASHTO Green Book, a truck needs approximately 1,500 feet to accelerate from zero to 30 mph on a 3% vertical grade. If a truck attempted to travel on the proposed grades (8% to 9.5%), it would slow any traffic down behind it, further reducing the efficiency of the connection, and would be undesirable for trucks and local traffic.

If Option 4 was constructed, the facility could serve as a connection in an evacuation. The previous iteration of Option 4 would have required design exceptions to account for slope and sight distances, as well as a substandard sag curve (sag curves are the curves that connect descending vertical grades and when it is substandard, it reduces the sight distance for traveling vehicles). The design exception process would allow for design exceptions; however, the design must still meet a safety standard which is not likely to be provided or mitigated with this option due to the sight distance and steep grade. Additionally, due to the steep grade, trucks would not be able to get up to speed or maintain a speed. The delay that this reduction in speed causes would be compounded during periods of heavy truck traffic, causing delays on the SCC, as well as the approach lanes to the SCC. While this option would improve local connectivity, the improvement would be limited to periods where there are fewer large trucks on the road. Given the higher percentage of trucks accessing the study area (see **Section 1.3: Skiffes Creek Connector Background**) and the hours of operations of the O/D locations of the trucks, there are only small windows of time when trucks are not accessing the roadways. Therefore, since this option would not consistently improve local connectivity or provide efficient connectivity for local truck movement, it would not adequately meet the purpose and need.

2.2.3 Option 5

Option 5 would begin at the southern end of Green Mount Parkway, proceed in a northeasterly direction, bridge over the Skiffes Creek Reservoir, US 60, the CSXT railroad, and I-64, and then connect to VA 143, approximately 1,400 feet from Yorktown Naval Weapons Station Gate 3 at Longfellow Road. Utilizing the existing Green Mount Parkway intersection would provide a safe and efficient connection to US 60. However, by utilizing a portion of the existing Green Mount Parkway to make the connection, it would force local and regional travelers to use what is, in practice, an industrial access road. Green Mount Parkway does not have a posted speed limit; therefore, due to the location within a county and not within city limits, the statutory speed limit is 55 mph for vehicular traffic and 45 mph for trucks (Code of Virginia§ 46.2-870). Due to the length and nature of the industrial road, it is unlikely that traffic would be able to obtain 55 mph or 45 mph. This traffic would mix with trucks entering/exiting O/D locations along the road. When accessing Green Mount Parkway, trucks would start from a stopped condition and would need approximately 1,500 feet to obtain 30 mph (AASHTO, 2011). The introduction of local trucks would reduce the efficiency of local traffic that interacts with the trucks entering and exiting the existing facilities. This interaction would not support the efficient movement of traffic and, in some instances, could create safety concerns. In addition to the potential inefficiencies, the connection made at VA 143 is east of the study area. Since this option would direct local traffic to travel in an easterly direction, it is likely that traffic and local trucks heading west would not utilize this option.

Additionally, the intersection on VA 143 considered for this option is located on the inside of an existing horizontal curve which produces sight distance issues at the intersection for local and truck traffic entering VA 143. In order to mitigate this sight distance, additional right-of-way would be required at the intersection for clearing of any obstructions, such as trees or shrubs, to optimize the sight lines of the driver. Alignments that would impact the U.S. Navy property were not considered. While Option 5 is feasible, it would not improve local connectivity or provide efficient connectivity for local trucks; therefore, it would not adequately meet the purpose and need of the project.

2.2.4 Option 6

Option 6 is the “improve existing” option. Option 6 would focus on the US 60 / VA 238 intersection, as no improvements are warranted at the VA 199 or I-64 ramps which connect VA 143 to US 60, to the west of the study area. The existing US 60 / VA 238 intersection is a signalized skewed T-intersection with an at-grade crossing with the existing CSXT railroad located to the north. To improve this intersection, Option 6 would create a grade separated intersection, elevating US 60 and VA 238 and bridging VA 238 over the CSXT railroad. Due to the close proximity of the existing CSXT railroad, and in order to make a grade separated crossing, both VA 238 and US 60 would be required to be raised approximately 30 feet, impacting several businesses and properties located at the existing intersection. Additional details on the layout can be found in the ***Alternatives Analysis Technical Report*** (VDOT, 2018a). Even with the increased elevation, the intersection would remain skewed due to the close proximity of the railroad and the historical properties, which would lessen the efficiency of turning vehicles, especially trucks, and would not improve the existing geometrics of the intersection.

Existing VA 238 is approximately 20 feet wide with minimal shoulders and may require improvements if additional trucks and local traffic are directed to utilize this route. This option would improve existing connectivity but not in the “efficient” manner specified in the Purpose Statement. Located approximately two miles east of the study area, Option 6 would not provide an efficient connection for vehicles traveling

west or seeking to travel within the study area. Since this option would direct local traffic to travel to the east, it is likely that traffic and local trucks heading west would not utilize this option. Therefore, Option 6 would not provide efficient connectivity for local trucks within the study area and connectivity between evacuation routes would not be improved.

Additionally, the preliminary layout, as shown in the ***Alternatives Analysis Technical Report*** in greater detail, illustrates a number of impacts to properties listed on or eligible for listing on the National Register of Historic Places (NRHP). These impacts would require the preparation of an alternatives analysis under Section 106 of the National Historic Preservation Act (NHPA) to consider options that cause fewer impacts to historical properties (such as Options 1 and 2). In addition to the historical properties, these improvements would impact a public school property and several residences. With the Section 106 impacts, it was determined that other options were more feasible and Option 6 was not considered for advancement.

2.2.5 Option 7

Option 7 responds to comments asking how Option 1 would function if it was split in a "Y" to provide east- and west-bound based connections to VA 143, eliminating the intersection along VA 143. Option 7 would be located approximately halfway between the existing connections from US 60 to VA 143 at VA 199 and VA 238, providing an efficient connection for local traffic, trucks, and emergency evacuation. Utilizing the existing Green Mount Parkway intersection would provide a safe and efficient connection for all traffic and would allow trucks direct access to the SCC from their O/D locations. This option, however, would not provide the same efficiency as the other options; the road is a proposed two-lane facility, therefore, the merging/diverging of traffic at the "Y" would either create congestion and safety concerns or require a traffic signal. In either case, the connection would occur at the base of the incline to get over the railroad tracks. Forcing trucks to slow down or come to a halt at this location would reduce the efficiency of the connection for large trucks, as well as small vehicles that would be traveling behind them as they attempted to get up to speed, and would likely be avoided by trucks and some personal vehicles. These conditions would also create the same concerns if the road was open to two-way traffic during an evacuation, reducing efficiency of evacuation efforts. Therefore, since this option would not provide efficient connectivity for local truck movement or enhance evacuation capabilities, it would not adequately meet the purpose and need.

2.2.6 Option 8

Option 8 would be located approximately halfway between the existing connections from US 60 to VA 143 at VA 199 and VA 238, and was developed to respond to comments questioning if shifting the Option 4 alignment elsewhere in the corridor could avoid associated grade issues discussed above. East of the proposed location/study area, the railroad sits adjacent to US 60. This would not provide enough space to achieve the elevation required to clear the railroad. Likewise, in the western end of the corridor, the railroad sits adjacent to VA 143, creating similar challenges. Options 8A and 8B show the most reasonable ways to stretch out Option 4 to reduce grades. However, even at these locations, the grades would be steep enough to result in issues similar to those discussed under Option 4.

Option 8A – would connect US 60 to VA 143 from the Green Mount Parkway terminus and proceed northeast, bridge over Skiffes Creek, the CSXT railroad, and the Skiffes Creek Reservoir, and would tie to VA 143 in the area of the I-64 on ramp, requiring relocation of the on ramp, as well as a design exception for not meeting VDOT's identified minimum desired spacing of 750 feet between an intersection and an

interchange ramp (VDOT, 2017a). As noted above, this design exception is less likely to be approved since there are other options that provide acceptable access and would not require any design exceptions. Additionally, the relocation of the on ramp comes with increased impacts and costs.

Option 8B - is similar to Option 8A in connection; however, it would require an additional structure over I-64 and would tie into an existing intersection with Longfellow Road on VA 143 that is close in proximity to the I-64 westbound on ramp. Similar to Option 8A, this option would require a design exception for not meeting the desired spacing of 750 feet between an intersection and an interchange ramp (VDOT, 2017a). As noted above, this design exception is less likely to be approved since there are other options that provide acceptable access and would not require any design exceptions. This option would also have very steep grades in order to have the minimum clearance over I-64 and then tie into existing VA 143. This would have a similar impact on the local traffic as discussed in **Section 2.2.2: Option 4**.

Options 8A and 8B would be located approximately halfway between the existing connections from US 60 to VA 143 at VA 199 and VA 238. The location, however, would not provide the same efficiency as the other alternatives as the required grade would be steep and would likely be avoided by trucks and personal vehicles. If a truck attempted to travel on these grades, it would slow any traffic down behind it, further reducing the efficiency of the connection. The facility could serve as a connection in an evacuation. Options 8A and 8B are like Option 4, an option that, if constructed, would be unusable by the large truck volumes that are experienced in the study corridor, and would therefore, not adequately meet the purpose and need.

2.2.7 Option 9

Option 9 attempts to address a public comment received at the February 15, 2018 CIM suggesting, “Why not try to take over old railroad track although more impact?” Based on this input, the layout developed is similar to Option 2 but shifted further west with a wider curve to connect to VA 143. Option 9 would begin at the northern terminus of BASF Drive and continue along the inactive rail spur and proceed in a northeasterly direction. Option 9 would bridge over the CSXT railroad and VA 143 and would tie into VA 143 at a new intersection. The option would have utility conflicts due to the close proximity of the existing Dominion transmission and distribution lines and proposed (and permitted) transmission lines. This proposed route would require the truck traffic to make additional turns on US 60 which would reduce the efficiency of the truck traffic. In a stopped condition at an intersection, signalized or unsignalized, trucks would need approximately 1,500 feet to obtain a speed of 30 mph (AASHTO, 2011). Additionally, as noted in **Section 1.4.1: Improved Local Connectivity**, five pedestrian-related crashes were reported, all of which occurred along US 60; therefore, there are safety concerns with adding additional intersections within close proximity to existing intersections and residential areas. The facility could serve as a connection in an evacuation. Coordination with James City County has determined that the “old” rail line is not currently in use but is not abandoned. The County’s land use plans for industrial growth in the area assumes this line would become active in the future. While Option 9 could enhance local connectivity, this option is similar to Options 1 and 2 except with a greater distance between the employment centers and truck O/D locations and the SCC. Additionally, Option 9 would require additional turning movements, decreasing the speed of local traffic and trucks. Therefore, as this is not an abandoned rail line, and since the option does not provide as efficient connectivity for local truck movement as Options 1 and 2 provide, Option 9 would not adequately meet the purpose and need.

2.2.8 Option 10

Option 10 would consist of TSM/TDM. The possible TSM/TDM opportunities for the Skiffes Creek corridor could include the optimization of traffic signal timing and other signalized arterials in the study area, and/or pursuing strategies to better coordinate traffic signals, such as adaptive signal control. As a stand-alone option, these strategies would not meet the purpose and need. However, the NEPA process does not preclude these strategies from being implemented as part of a preferred alternative or as a separate project in the future.

2.2.9 Option 11

Option 11 would consist of mass transit improvements. Mass transit improvements could include additional bus services, such as new buses, stops or lines to supplement the existing Williamsburg Area Transit Authority (WATA) grey bus line, which has several bus stops within the study area along US 60. As a stand-alone option, these strategies would not meet the purpose and need. However, the NEPA process does not preclude these strategies from being implemented as part of a preferred alternative or as a separate project in the future.

2.2.10 Option 12

Option 12 would consist of bicycle/pedestrian improvements. Bicycle/pedestrian improvements could include sidewalk enhancements, new multi-use paths and trail systems, designated bicycle lanes, and shared roadways with signing as bicycle routes. As discussed in **Section 2.1.2: Refinement of 2012 Alternatives**, the SCC was originally planned as part of a larger regional transportation improvement that proposed a wider typical section and included four lanes, sidewalk, and multi-use paths. Since the larger regional project has not moved forward, James City County has begun to focus on smaller local improvements, the typical section was reduced from a four-lane divided freeway to a two-lane section, the sidewalk and multi-use paths were removed from the typical section. As a stand-alone option, these strategies would not meet the purpose and need. However, the NEPA process does not preclude these strategies from being implemented as a separate project in the future.

2.2.11 Options to Develop Alignments Between the Existing I-64 and VA 199 Ramps and the Study Area

In addition to the options presented above, a general review was conducted to identify additional options between the I-64 and VA 199 ramps and the SCC study area. Moving west of the SCC study area, options to connect US 60 and VA 143 would not provide efficient connections. The location would not efficiently service eastbound travelers. Those travelers who opted to use an option west of the study area would be required to continue to past the residential areas and school along US 60, rather than being diverted before they reach these areas. Due to the close proximity of the existing CSXT rail line to VA 143 (less than 100 feet for the entire length between the existing I-64 and VA 199 Ramps and the study area), there would be similar engineering and safety concerns as those noted in **Section 2.2.1: Option 3** and **Section 2.2.2: Option 4**. Not only would this fail to improve local connectivity and increase safety concerns on the corridor, it would not provide an efficient connection to employment centers and truck O/D locations. Preliminary analysis indicated that a number of the communities that could be impacted by such an alignment may be environmental justice communities. Since options in this area would not provide efficient

connection for truck movement and would not improve local connectivity, the options would not adequately meet the purpose and need, as stated previously.

2.2.12 Options to Develop Alignments Between VA 238 and the Study Area

Similar to **Section 2.2.11**, a general review was conducted to identify additional options between VA 238 and the SCC study area. Moving east of the SCC study area, options to connect US 60 and VA 143 would not provide an efficient connection. The location would not efficiently service westbound travelers. Due to its close proximity to the existing CSXT rail line, there would be similar engineering and safety concerns as those noted in **Section 2.2.1: Option 3** and **Section 2.2.2: Option 4**. Not only would this fail to improve local connectivity, it would not provide an efficient connection to employment centers and truck O/D locations. Options east of the Skiffes Creek Reservoir and Newport News Reservoir would result in Section 106 impacts similar to those described for Option 6. These options would not efficiently connect the local trucks to the O/D locations and would not be efficient for local traffic; therefore, the options would not adequately meet the purpose and need.

2.3 ALTERNATIVES RETAINED FOR EVALUATION

Following is a discussion of the alternatives retained for evaluation, which includes two Build Alternatives, and a No Build Alternative, in order to provide a baseline for comparison. This approach is consistent with FHWA's Technical Advisory *T 6640.8A Guidance For Preparing and Processing Environmental and Section 4(f) Documents* (FHWA, 1987). Additional information on the alternatives can be found in the ***Alternatives Analysis Technical Report*** (VDOT, 2018a).

2.3.1 No Build Alternative

In accordance with the regulations implementing NEPA (40 CFR § 1502.14(d)), the No Build Alternative has been included for evaluation as a benchmark for the comparison of future conditions and impacts. The No Build Alternative would retain the existing US 60 and VA 143 roadways and associated intersections/interchanges in their present configuration, and allow for routine maintenance and safety upgrades. This alternative assumes no major improvements to either corridor with the exception of previously committed projects, including projects currently programmed and funded in VDOT's FY 2018-2023 SYIP and the HRTPO's 2040 LRTP. As these other projects are independent of the proposed action, they are not evaluated in this EA.

Traffic Operations

This option would not improve traffic flow or mobility for local traffic and trucks to travel between US 60 and VA 143. Local traffic and trucks traveling west on US 60 would have to travel approximately four miles before access to VA 143 would be available; while local traffic and trucks travelling east on US 60 would have to travel approximately two miles before access to VA 143 would be available. Neither of these routes would provide direct access for the local traffic or the trucks from the O/D locations.

Ability of the No Build Alternative to Address the Purpose and Need

The No Build Alternative would not address the purpose and need elements of the study as identified in **Section 1.4** because routine maintenance and other programmed projects would not provide improved local connectivity, efficient connectivity for local truck movements, or enhanced evacuation routes.

2.3.2 Build Alternative 1

Build Alternative 1 would provide an approximate one-mile two-lane roadway between US 60 and VA 143. This alternative would tie into US 60 at the existing US 60/Green Mount Parkway signalized intersection, bridge[8] over Skiffes Creek, the CSXT railroad, and VA 143, then turn east to connect at a new intersection with VA 143 (see **Figure 2-3**). Utilizing the existing Green Mount Parkway intersection would provide a safe and efficient connection for all traffic and would allow trucks direct access to the SCC from their O/D locations. This alternative would provide consistent vertical grades (approximately 3% to 4%) for the local traffic and trucks. As described in **Section 2.1.2**, Build Alternative 1 has been revised since it was originally developed to provide a reduced planning level LOD from 225 feet to 140 feet, a perpendicular stream crossing, and to accommodate a reduction in design speed from 50 mph to 35 mph; all of which have reduced cost and impacts. By reducing the design speed to 35 mph for Build Alternative 1, the alignment could be shifted to cross Skiffes Creek perpendicularly, thereby further reducing impacts to wetlands and streams. In addition to a reduction in wetland and stream impacts for Build Alternative 1, the intersection at VA 143 would be able to be located further away from the I-64 Exit 247 westbound off-ramp (which would improve traffic flow through the area). This width of 140 feet includes sufficient area to accommodate the required right-of-way as well as any necessary utility or construction easements[9]. The design of this alternative meets the current VDOT Urban Minor Arterial Street (GS-6) guidelines and standards.

Traffic Operations

This option would improve traffic flow by providing an efficient connection for local traffic and trucks to travel between US 60 and VA 143. US 60 is designated as a Corridor of Statewide Significance (CoSS) and is part of VDOT's Arterial Preservation Network (VDOT, 2017f). According to VDOT's policy, "the Commonwealth Transportation Board has expressed concern that the proliferation of new signals on the Arterial Preservation Network, whether due to land use development or installed via VDOT construction project, collectively degrade the travel time and travel experience within and between urban centers, adversely impacting the Commonwealth's economy" (VDOT, 2017f). By tying into the existing Green Mount Parkway signalized intersection along US 60, Build Alternative 1 would not add an additional intersection and would be in accordance with VDOT's policy. In addition, this alternative allows for direct access from the employment centers and truck O/D locations for improved efficiency and improved mobility by eliminating turning movements of the trucks unlike other options that would increase the turning movements.

[8] The type and length of bridge-like structure over Skiffes Creek would be determined during final design/permitting.
[9] Stormwater management facilities have not been included within the LOD to determine the associated environmental impacts or the specific parcels that would be impacted. Additional signing and maintenance of traffic activities are anticipated to occur beyond the study area LOD. Additionally, intersection improvements required for the tie-ins at US 60 and VA 143 are not included in the LOD.

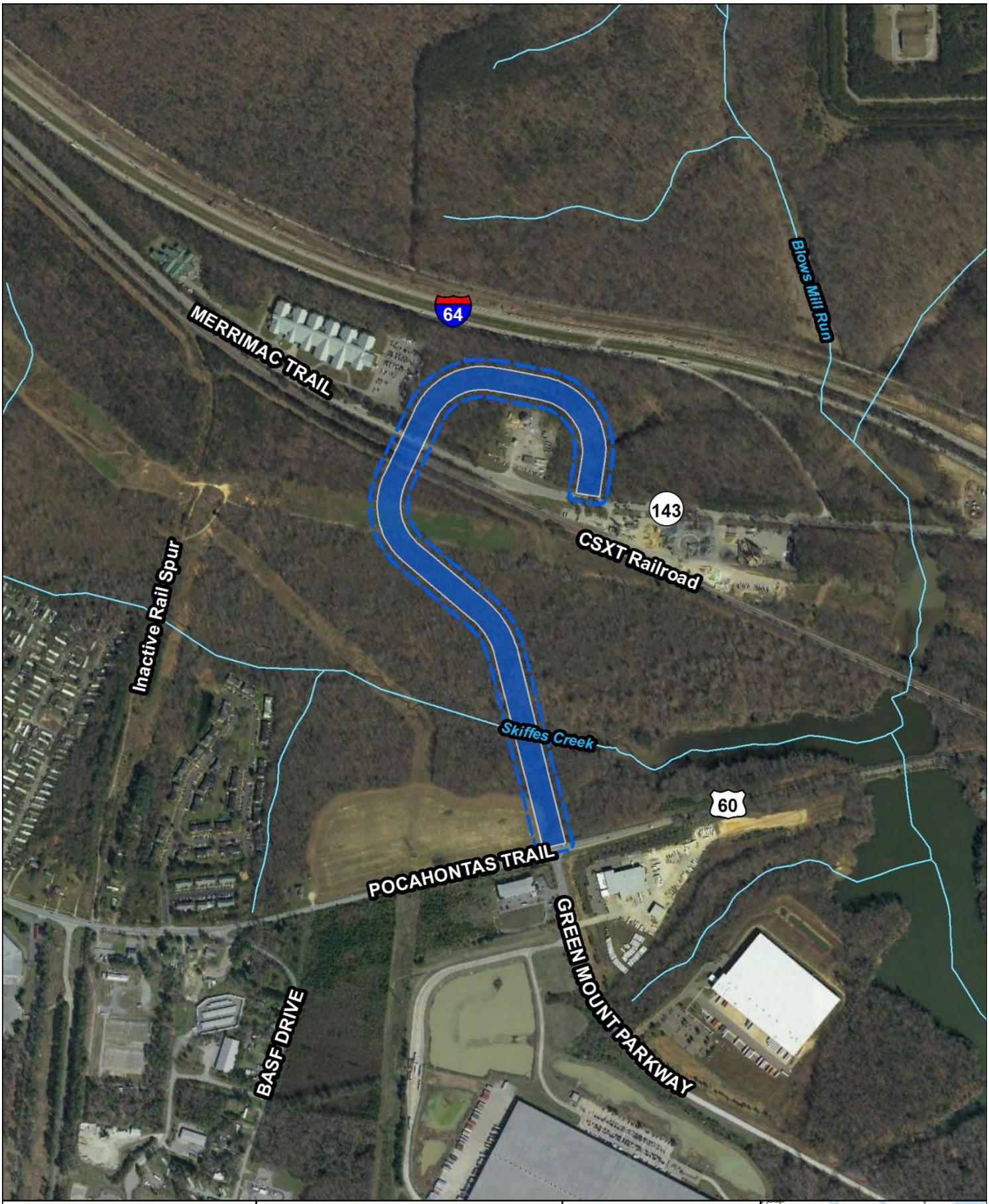


Figure 2-3
Build Alternative 1

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 200 400 800 Feet

N
W E
S

Source: VGIN VBMP Imagery, NHD

Build Alternative 1 (140-foot LOD)

Build Alternative 1 (225-foot Inventory Corridor)

Ability of Build Alternative 1 to Address the Purpose and Need

Build Alternative 1 would be located approximately halfway between the existing connections from US 60 to VA 143 at VA 199 and VA 238, and was retained for detailed study because it would provide an efficient connection for local traffic, trucks, and emergency evacuation. This alternative utilizes the existing signalized Green Mount Parkway intersection at US 60, which minimizes turning movement conflicts which can be associated with additional access points. Utilizing an existing intersection provides a safe and efficient connection for all traffic, in addition to providing an efficient connection to the employment centers and primary truck O/D locations in the study area. By having a direct connection between the SCC and Green Mount Parkway, Build Alternative 1 minimizes the number of conflict points and turns required by trucks traveling between Green Mount Parkway and VA 143, thereby resulting in improved safety and by reducing the turning movements of the trucks, there would be fewer delays related to trucks stopping and starting. By being located midway between the existing connections from US 60 and VA 143 (VA 199 and VA 238), Build Alternative 1 would result in greater connectivity to both local traffic and truck traffic. Additionally, by providing a consistent vertical grade (approximately 3% to 4%), Build Alternative 1 would provide an efficient connection for local trucks. Finally, this direct route between US 60 and VA 143 would provide an enhanced emergency evacuation route along the primary routes (US 60 and VA 143). Should an crashes or other backup occur on one of the primary routes, traffic could connect to the other route without interfering with traffic trying to get to or from I-64 and its connecting ramps.

Under Build Alternative 1, the SCC is forecasted to carry 7,300 daily trips in 2043 which would provide a more efficient travel route between US 60 and VA 143 for employment centers and primary truck O/D locations in the SCC study area. Daily traffic volumes along US 60 from Green Mount Parkway east to VA 238, VA 238 east to VA 105, VA 238 between US 60 and I-64, and VA 105 between US 60 at I-64 are forecasted to decrease as a result of the connectivity provided by the SCC. Based on the 2043 forecasts, the SCC would create a utilized efficient connection for travelers similar to existing connections between VA 143 and US 60. These reductions, as well as the discussion in the above paragraph, show that Build Alternative 1 would address the purpose and need elements of the study as identified in **Section 1.4** by providing improved local connectivity, efficient connectivity for local truck movements, and enhanced evacuation routes (see the ***Traffic and Transportation Technical Report*** [VDOT, 2018f] for additional details).

2.3.3 Build Alternative 2

Build Alternative 2 would provide an approximate one-mile two-lane roadway between US 60 and VA 143. This alternative would begin at a new intersection with US 60, approximately 1,000 feet west of the existing US 60/Green Mount Parkway intersection. Similar to Build Alternative 1, Build Alternative 2 would then bridge[10] over Skiffes Creek, the CSXT railroad, and VA 143, then turn east to connect at a new intersection with VA 143 (see **Figure 2-4**). This alternative would provide consistent vertical grades (approximately 3% to 4%) for the local traffic and trucks.

[10] The type and length of bridge-like structure over Skiffes Creek would be determined during final design/permitting.

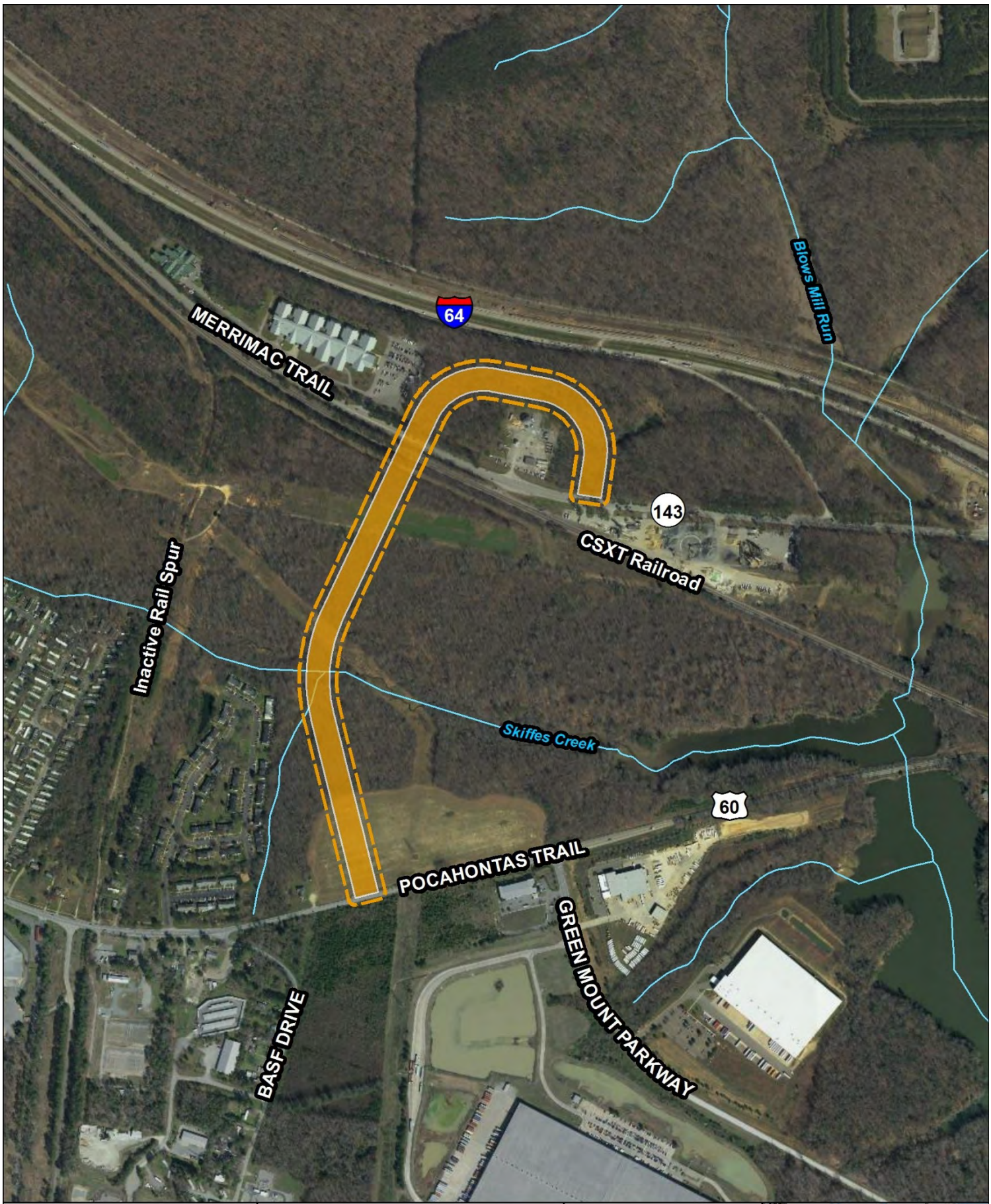


Figure 2-4
Build Alternative 2

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 200 400 800 Feet

N W E S

Source: VGIN VBMP Imagery, NHD

Build Alternative 2 (140-foot LOD)

Build Alternative 2 (225-foot Inventory Corridor)

As described in **Section 2.1.2**, Build Alternative 2 has been revised since it was originally developed to provide a reduced planning level LOD from 225 feet to 140 feet and to accommodate a reduction in the design speed from 50 mph to 35 mph. This width includes sufficient area to accommodate the required right-of-way as well as any necessary utility or construction easements. The design of this alternative meets the current VDOT Urban Minor Arterial Street (GS-6) guidelines and standards.

Traffic Operations

This option improves traffic flow by providing an efficient connection for local traffic and trucks to travel between US 60 and VA 143. Although US 60 is designated as a CoSS and is part of VDOT's Arterial Preservation Network, about which the CTB has expressed concern about the proliferation of new signals, this alternative introduces a new intersection (VDOT, 2017f). The new intersection would require users of the SCC to perform additional turn movements. For trucks starting at Green Mount Parkway, they would make a left turn from a stop condition, get up to speed to travel along US 60 and then slow down to make a right turn onto the SCC, which would decrease the speed of local traffic and trucks since in a stopped condition at an intersection, signalized or unsignalized, trucks would need approximately 1,500 feet to obtain a speed of 30 mph (AASHTO, 2011).

Ability of Build Alternative 2 to Address the Purpose and Need

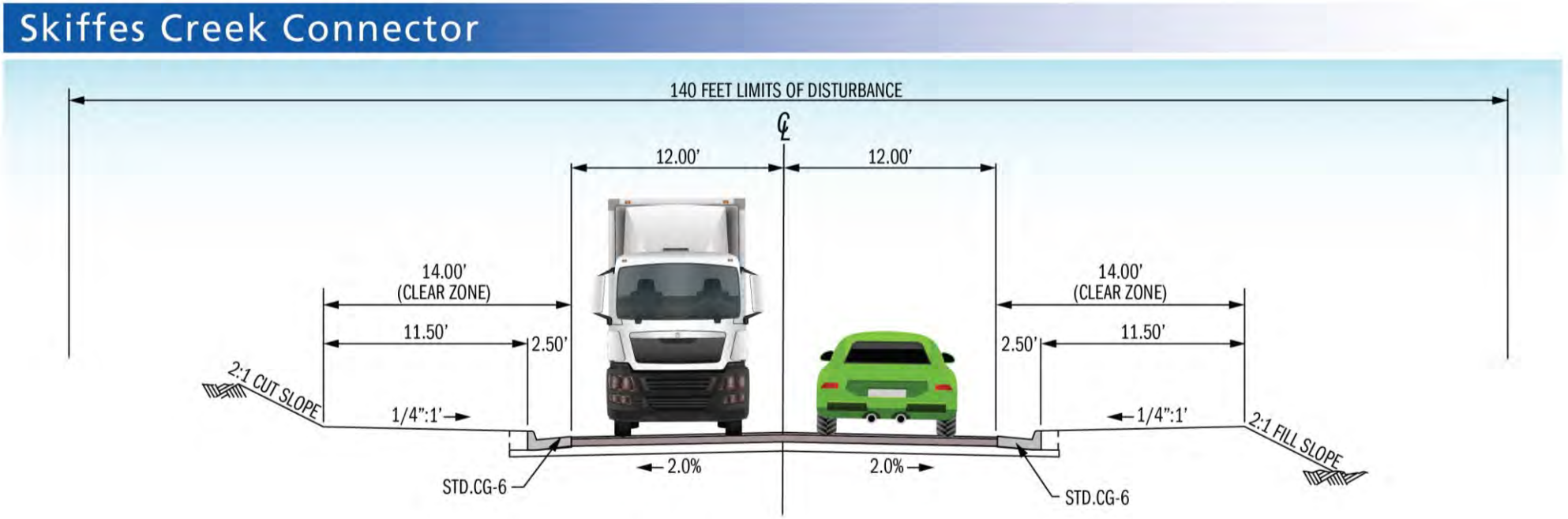
Build Alternative 2 would be located approximately halfway between the existing connections from US 60 to VA 143 at VA 199 and VA 238, and was retained for detailed study because it would provide an efficient connection for local traffic, trucks, and emergency evacuation. This alternative would provide new intersections at US 60 and VA 143. Although this alternative would create an additional new access point along US 60, the connection would still provide a link between the two routes in close proximity to the employment centers and primary truck O/D locations in the study area. By being located midway between VA 199 and VA 238, Build Alternative 2 would result in greater connectivity to both local traffic and truck traffic. Additionally, by providing a consistent vertical grade (approximately 3% to 4%), Build Alternative 2 would provide an efficient connection for local trucks. Finally, this direct route between US 60 and VA 143 would provide an enhanced emergency evacuation route along the primary routes (US 60 and VA 143). Should an crashes or other backup occur on one of the primary routes, traffic could connect to the other route without interfering with traffic trying to get to or from I-64 and its connecting ramps.

The traffic forecasts for Build Alternative 2 would be the same as those described above for Build Alternative 1. Based on the 2043 forecasts, the SCC would create a utilized efficient connection for travelers similar to existing connections between VA 143 and US 60. These reductions, as well as the discussion in the above paragraph, show that Build Alternative 2 would address the purpose and need elements of the study as identified in **Section 1.4** by providing improved local connectivity, efficient connectivity for local truck movements, and enhanced evacuation routes (see the ***Traffic and Transportation Technical Report*** [VDOT, 2018f] for additional details).

2.3.4 Typical Section of Build Alternatives

The proposed typical section for the Build Alternatives is shown in **Figure 2-5**. The typical section was developed for planning purposes only and would be refined during detailed design and permitting. The typical section is based on the Urban Minor Arterial (GS-6) design criteria (VDOT, 2016c).

Figure 2-5: Typical Section



The proposed typical section utilizes two lanes of 12 feet (one in each direction) with curb and gutter on both sides. In addition, there is a buffer space provided behind the curb and gutter for the acceptable clear zone for the design speed of 35 mph. For this type of roadway classification, a 2:1 sideslope was utilized. The bridge over the railroad would be constructed outside of the railroad right-of-way. As noted above, for the purposes of the study, a planning level LOD (140 feet) was utilized to estimate impacts. In order to illustrate a worst-case scenario, impacts to Waters of the U.S. (WOUS) were estimated assuming the proposed roadway would cross Skiffes Creek on a fill causeway with culverts and would not be bridged. Through design and permitting, it is assumed bridging would be applied to avoid and minimize these impacts. This width includes sufficient area to accommodate the required right-of-way as well as any necessary utility or construction easements.

2.3.5 Cost Estimates

A preliminary construction cost estimate and anticipated right-of-way and utility costs for the entire project were developed using the VDOT Project Cost Estimating System (PCES), Version 7.10. Construction costs were calculated using VDOT's PCES spreadsheet. Additional information, including the spreadsheets, can be found in **Appendix C** of the ***Alternatives Analysis Technical Report*** (VDOT, 2018a).

In addition to construction costs, costs were estimated for the anticipated right-of-way and utilities needed along the proposed corridors for the SCC for each of the proposed alternatives using the VDOT PCES spreadsheet. The current VDOT PCES bridge spreadsheet (Version 1.2) is independent of the roadway construction cost and was utilized for the bridge construction cost.

The preliminary construction cost estimate and anticipated right-of-way costs assumed that the parcels would fall in the Rural density category. Assumptions also included that property access would not be affected and therefore right-of-way negotiations would be limited to partial acquisitions rather than complete acquisitions. The right-of-way cost estimate assumes partial takes of the 7 parcels within the LOD of each build alternative. The utility cost is based on current aerial photography and Geographic Information Service (GIS) information. Assumptions were made to include cost for certain utilities such as power poles and lines, communications, water line, sewer line, and gas line. A summary of the estimated construction and right-of-way/utility costs is provided in **Table 2-1**.

Table 2-1: Total Estimated Costs

Alternative	Cost Estimate	Total
Build Alternative 1	Construction and Preliminary Engineering	$30,767,079
	Right-of-way and Utilities	$10,949,164
	Total Cost Estimates	$41,716,243
Build Alternative 2	Construction and Preliminary Engineering	$38,595,562
	Right-of-way and Utilities	$10,864,170
	Total Cost Estimates	$49,459,732

CHAPTER 3.0 EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION AND OVERVIEW OF ENVIRONMENTAL ISSUES

Social, economic, physical and natural resources have the potential to be affected during transportation projects. Therefore, existing environmental conditions and potential impacts are important to identify and understand. The following sections inventory and analyze the potential environmental effects associated with the No Build Alternative and the Build Alternatives considered in the SCC Study in James City County, Virginia. Potential environmental impacts of the Build Alternatives were estimated based on each Build Alternative's planning level LOD as shown in **Figure 2-3 and 2-4**. The planning level LOD has been estimated for alternative comparison purposes and decision-making during the NEPA process, and would be refined as design advances. **Table 3-1** summarizes the environmental conditions within the study area and where applicable, summarizes the estimated environmental impacts to those resources for the No Build Alternative and Build Alternatives 1 and 2 within the planning level LOD. In order to illustrate a worst-case scenario, impacts to WOUS were estimated assuming the proposed roadway would cross Skiffes Creek on a fill causeway with culverts and would not be bridged. Through design and permitting, it is assumed bridging would be applied to avoid and minimize these impacts. Impact estimates do not account for impacts associated with stormwater management facilities, signing and maintenance of traffic activities, or potential intersection improvements required for tie-ins at US 60 and VA 143.

3.2 COMMUNITIES AND COMMUNITY FACILITIES

3.2.1 Existing Conditions

Communities are typically neighborhood residential areas, business centers, or places that have shared characteristics. Community facilities are buildings or places that provide a variety of services to the public. Public community facilities generally provide services for general public benefit, and include public schools, healthcare facilities, emergency services facilities, government service facilities, airports, museums, sports centers, public non-profits, and regional or local parks and trails. Privately-held community facilities also serve as important institutions within the community, and include religious facilities, cemeteries, private non-profits, and private schools.

The study area is located within the Grove Community of James City County, which generally encompasses the area between Grove Creek and Skiffes Creek. The study area contains the following four neighborhoods: Windy Hill, Whispering Pines, Skiffes Creek Terrace, and Carter's Village. A small portion of the land within the Poplar Hall neighborhood is located within the study area; however, none of the residences are within the study area. Two government service facilities, Virginia Peninsula Regional Jail and Merrimac Juvenile Detention Center, and one church, Morning Star Church, are located within the study area, as shown on **Figure 3-1**. No emergency services facilities are located within the study area. The nearest emergency services are fire stations located two miles west of the study area on US 60 and three miles east of the study area on VA 143, requiring residents and employees to rely on emergency vehicles that must travel through the study area with no opportunity to connect between US 60 and VA 143.

Table 3-1: Summary of Existing Conditions and Environmental Consequences

Environmental Resource	Resource Summary	Potential Environmental Consequences		
		No Build Alternative	**Build Alternative 1**	**Build Alternative 2**
Communities and Community Facilities	The study area contains four neighborhoods (Windy Hill, Whispering Pines, Skiffes Creek Terrace, and Carter's Village) and three community facilities (Virginia Peninsula Regional Jail, Merrimac Juvenile Detention Center, and Morning Star Church). No emergency service facilities are located within the study area, requiring residents and employees to rely on emergency vehicles that must travel through the study area with no opportunity to connect between US 60 and VA 143 (see **Section 3.2**).	No community facilities would be impacted; however, communities would remain fragmented and access to community facilities and emergency vehicle access would continue to be limited.	Connectivity between neighborhoods, community facilities, and by emergency vehicles would be improved through increased access options and decreasing the community fragmentation of the area.	Connectivity between neighborhoods, community facilities, and by emergency vehicles would be improved through increased access options and decreasing the community fragmentation of the area. The new intersection could increase idling traffic near the Carter's Village neighborhood and Morning Star Church.
Population and Housing	The study area is located in a developed and expanding region. The 2015 population of James City County was 73,147. The population expanded by 221 percent between 1980 and 2015 and is projected to increase by an additional 50 percent from 2015 to 2040. James City County has 31,392 housing units with 89 percent of them occupied (see the ***Socioeconomic and Land Use Technical Report*** for more information [VDOT, 2018e]).	No impacts to population and housing are anticipated and there would be no residential full acquisitions or relocations.		
Economic Resources	Employment within James City County is largely dependent on the Retail Trade industry, the Arts, Entertainment, Recreation industry, Accommodation and Food Services industry, the Healthcare and Social Assistance industry, and Local Government. Within James City County, 37,183 persons were employed in 2010. This is predicted to grow by another 57% by 2040. The median household income within James City County is $75,712 and within the study area is $38,192 (see **Section 3.3**).	While there would not be any direct, impact to employment, travel to work, or income, the No Build Alternative would not improve connectivity for commuters or employers.	No commercial full acquisitions or relocations or direct effect on long-term employment. Construction would result in temporary jobs. Commuters and trucks would benefit from increased connectivity with direct access from Green Mount Parkway to VA 143.	No commercial full acquisitions or relocations or direct effect on long-term employment. Construction would result in temporary jobs. Commuters and trucks would benefit from increased connectivity; however, trucks using Green Mount Parkway would be required to perform two additional turn movements.
Land Use	The study area is comprised of undeveloped, residential, industrial, transportation, institutional/public land, farmland, water, and business land uses. While a portion of land within the study area is used for farming, this land is not designated as farmland. The study area contains 133.4 acres of land classified as having prime farmland soils or soils of statewide importance (see **Section 3.4**).	The No Build Alternative would not cause any land use impacts and would not affect the use of farmed land or soils mapped as prime farmland soil and/or soils of statewide importance.	Approximately 14.6 acres from six parcels would be acquired. The alignment would impact 9.7 acres of soils mapped as prime farmland soil and/or soils of statewide importance.	Approximately 14.9 acres from five parcels would be acquired. The alignment would impact 7.1 acres of soils mapped as prime farmland soil and/or soils of statewide importance.
Environmental Justice	Minority populations are identified in both study area Census block groups. Although the median household income of both Census block groups are much lower than the average for James City County and Virginia, neither have a median household income below the poverty threshold (see **Section 3.5**).	The lack of improvements would be felt by all residents, including minority and low-income populations, and thus would not result in a disproportionate and adverse impact to Environmental Justice (EJ) populations.	The benefits of improved local connectivity and access between communities, community facilities, and for emergency vehicles, described above, would be felt by all residents, including minority and low-income populations. There would be no short-term effects to access from the EJ communities. Therefore, Build Alternative 1 would not result in a disproportionate and adverse impact to EJ populations.	The benefits of improved local connectivity and access between communities, community facilities, and for emergency vehicles, described above, would be felt by all residents, including minority and low-income populations. There would be no short-term effects to access from the EJ communities. Therefore, Build Alternative 2 would not result in a disproportionate and adverse impact to EJ populations.
Cultural Resources	Two potentially eligible archaeological resources and one potentially-eligible historic resource (the existing CSXT/Peninsula Subdivision of the Chesapeake and Ohio Railroad) are located within the project Area of Potential Effect (APE). VDOT will coordinate the findings of the 2018 supplemental archaeological survey, once completed, with the State Historic Preservation Officer (SHPO) (see **Section 3.6**).	No Section 106 effects to archaeological or architectural historic properties.	Two potentially eligible archaeological resources are located within the LOD of Build Alternative 1 and would likely be affected by the project. Although one potentially-eligible historic resource is located within the LOD, since the project would bridge over the railroad, no direct impacts are assumed.	One potentially eligible archaeological resource is located within the LOD of Build Alternative 2 and would likely be affected by the project. Although one potentially-eligible historic resource is located within the LOD, since the project would bridge over the railroad, no direct impacts are assumed.
Section 4(f)	Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 U.S.C. § 303(c)) makes provisions for the preservation of public parks and recreational areas, wildlife and waterfowl refuges, and historic sites on or eligible for listing in the NRHP. No public parks and recreational areas, wildlife and waterfowl refuges were identified within planning level LOD for either of the Build Alternatives. Two potentially eligible archaeological resources and one potentially-eligible historic resource (the existing CSXT/Peninsula Subdivision of the Chesapeake and Ohio Railroad) are located within the project APE, as discussed in Cultural Resources (see **Section 3.6**).	No Section 4(f) resources would be impacted.	The historic resources identified in **Section 3.6** are being evaluated to determine if any of the impacts to the resources would be considered a "use" under Section 4(f). The evaluation will be guided by the definition of "use" in 23 CFR 774.17. A determination of de minimis impact can be made only if the project would not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f). VDOT will coordinate the findings of the 2018 supplemental archaeological survey, once completed, with the SHPO (see **Section 3.6**). Pending the SHPO's effect determination, VDOT and FHWA will determine if Section 4(f) is applicable.	

Environmental Resource	Resource Summary	Potential Environmental Consequences		
		No Build Alternative	**Build Alternative 1**	**Build Alternative 2**
Air Quality	James City County is designated as an Attainment area for all of the National Ambient Air Quality Standards (NAAQS) (see **Section 3.7**).	The assessment indicates that the project would meet all applicable air quality requirements of NEPA and federal and state transportation conformity regulations. As such, the project will not cause or contribute to a new violation, increase the frequency or severity of any violation, or delay timely attainment of the NAAQS established by the USEPA.		
Noise	Three Common Noise Environments (CNEs) are located within 500 feet of the Build Alternatives. The CNEs contain interior and exterior land uses associated with the Virginia Peninsula Regional Jail, the interior of the Morning Star Church, a cemetery, 48 residences, and one playground (see **Section 3.8**).	While noise impacts are present within the project study areas of both Build Alternative 1 and Build Alternative 2, no noise impacts are attributed to either of the proposed Build Alternatives; therefore, no noise abatement is recommended.		
WOUS	Approximately 9,519 linear feet of regulated stream channels and 32.04 acres of wetlands are present within the study area. According to the Wetland Condition Assessment Tool (WetCAT), wetland habitat stress level and water quality stress levels range from somewhat stressed to severely stressed (see **Section 3.9**).	Current impacts to WOUS would be anticipated to continue. Wetlands would continue to be somewhat stressed to severely stressed in terms of wetland habitats and water quality.	Build Alternative 1 would result in impacts to an estimated 0.85 acres of wetlands and an estimated 673 linear feet of streams.	Build Alternative 2 would result in impacts to an estimated 0.95 acres of wetlands and an estimated 365 linear feet of streams.
Water Quality	Streams within the study area are classified as Category 5A impaired waters where a Total Maximum Daily Load (TMDL) is required. The study area crosses Skiffes Creek approximately 0.5 miles upstream from the City of Newport News' raw drinking water intake located on Skiffes Creek Reservoir. The study area is greater than two miles away from public drinking water wells (see **Section 3.10**).	Existing surface water impairments would be expected to continue.	The Build Alternatives would not impact public surface water quality or drinking water wells, and would result in limited temporary and permanent impacts to water quality, which would be minimized with the implementation of stormwater best management practices (BMPs).	
Floodplains	The portion of the study area mapped by the Federal Emergency Management Agency (FEMA) contains approximately 11 acres of 100-year floodplain (see ***Natural Resources Technical Report*** for more information [VDOT, 2018d]).	The current level of impacts to floodplains would be anticipated to continue.	The Build Alternatives would not directly impact floodplains. A hydrologic and hydraulic analysis would be conducted to minimize potential effects to floodplains.	
Wildlife and Habitat	Mid-late twentieth century land development has encroached into and fragmented the various wildlife habitats found within the study area. The majority of remaining habitat is located in the study area's only wildlife corridor along Skiffes Creek. This corridor is intersected by utility easements, which fragment the corridor, but do not prevent continued use of the corridor (see **Section 3.11**).	The current level of impacts to disruption to wildlife and habitat would be anticipated to continue.	Build Alternative 1 would impact an estimated 14.6 acres of land cover, of which approximately 6.4 acres is forested habitat. Wildlife corridors along Skiffes Creek would be maintained through the installation of culverts and bridges.	Build Alternative 2 would impact an estimated 14.9 acres of land cover, of which approximately 6.4 acres of forested habitat. Wildlife corridors would be maintained along Skiffes Creek through the installation of culverts and bridges.
Threatened, Endangered, and Special Status Species	Database searches identified two federally listed species within the vicinity of the project study area: Atlantic sturgeon and northern long-eared bat. Databases identified three state listed species in the vicinity of the project study area: little brown bat, Mabee's salamander, and tri-colored bat. No Anadromous Fish Use Streams, Critical Habitat, bald eagles, or Threatened and Endangered Waters are present in the study area (see **Section 3.12**). The field investigation determined no suitable habitat for Mabee's salamander or Atlantic sturgeon. Suitable habitat is present for the three bats, but the closest known hibernaculum/roost tree is over 40 miles away.	The current level of impacts and disruption to threatened, endangered, or special status species would be anticipated to continue.	No impacts to threatened, endangered, or special status species are anticipated. Further coordination with agencies and final effect determinations would be conducted as a part of the Clean Water Act Section 401/404 permitting process.	
Hazardous Materials	A search of federal and state agency databases identified five sites of elevated environmental concern, four of these sites are within the study area and one is in close proximity to the LOD (see **Section 3.13**).	The current level of soil and groundwater impacts would be anticipated to continue.	Two sites are near the LODs of the Build Alternatives. Prior to or during right-of-way acquisition, a Phase I Environmental Site Assessment, is recommended to be performed.	
Indirect and Cumulative Effects	Past and present actions have been both beneficial and adverse to socioeconomic resources and land use within the Indirect and Cumulative Effects (ICE) Study Areas. Past development has produced a steady decline in natural and historic resources conditions, and cultural resources have been continuously created and destroyed by succeeding developments over time (see **Section 3.14**).	While some indirect effects and cumulative impacts would occur under the No Build Alternative, the impacts would have a minor adverse cumulative effect due to the continued lack of connectivity and continued fragmentation of communities and destinations within the ICE Study Area.	While some indirect effects and cumulative impacts would occur under Build Alternative 1 or 2, no significant adverse impacts were identified.	

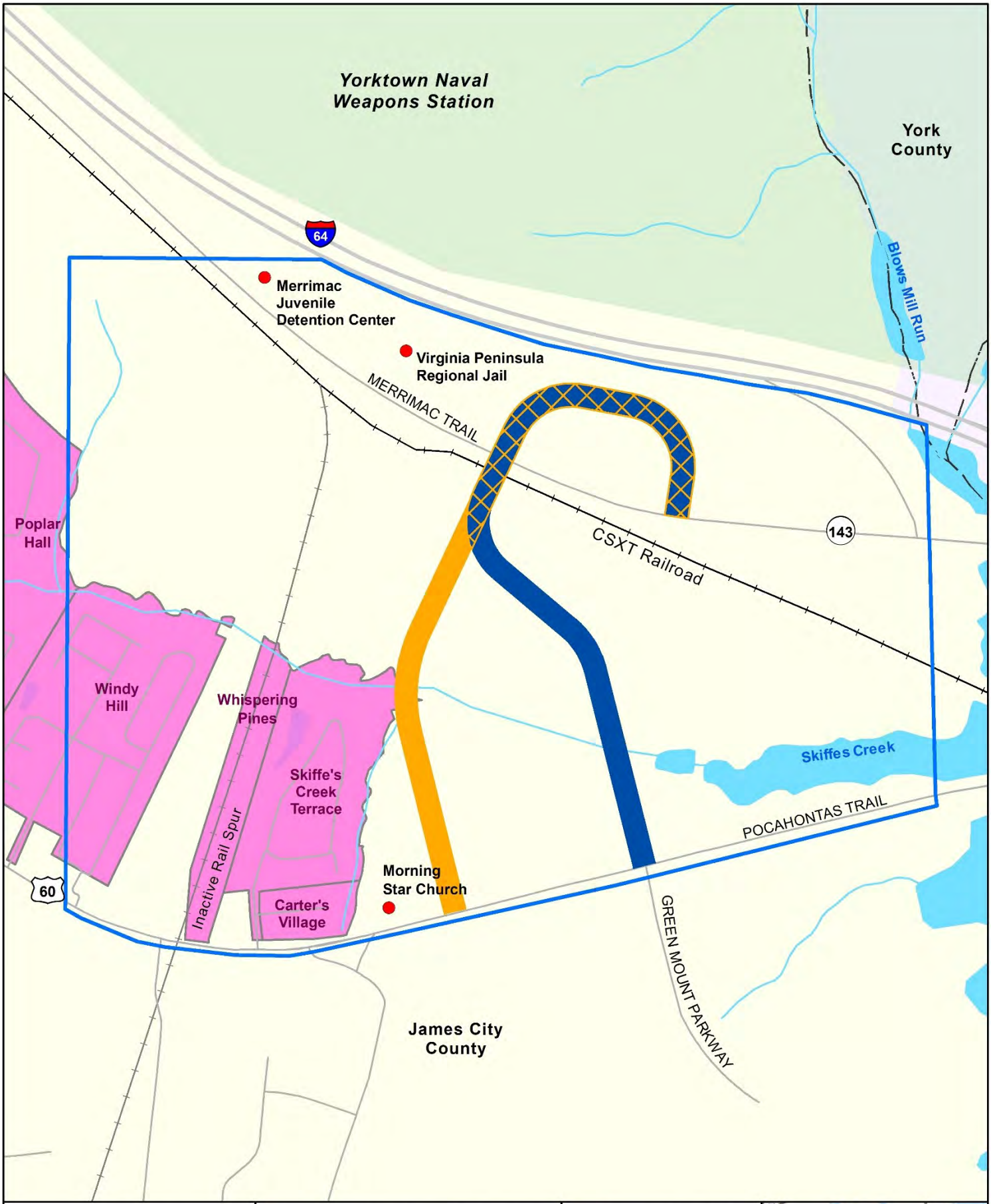


Figure 3-1
Community Facilities and Neighborhoods within the Study Area

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The WATA grey bus line has several bus stops within the study area along US 60. This bus line provides regular bus service between the Williamsburg Transportation Center and York Street in the Lee Hall section of Newport News. Although there are no rail stations within the study area, a CSXT rail line bisects the study area, creating a barrier that fragments the community.

Within the vicinity of the SCC study area, there are several truck O/D locations, as discussed below in **Section 3.3**. However, since the SCC study area lacks connectivity between US 60 and VA 143, all truck traffic must use US 60 as their main access route to and from the O/D locations. US 60 is bordered by several residential developments and an elementary school. This results in increased safety concerns as illustrated by the fact that all pedestrian crashes reported in the vicinity of the SCC study area have occurred on US 60, as discussed in **Section 1.4.1**.

For additional information, refer to the ***Socioeconomic and Land Use Technical Report*** (VDOT, 2018e).

3.2.2 Environmental Consequences

3.2.2.1 No Build Alternative

The existing community fragmentation would not improve with the No Build Alternative and access to communities and community facilities would continue to be limited. The No Build Alternative would not improve public safety with respect to continued limited access to emergency evacuation routes and for emergency vehicles. Through traffic would be required to continue to use local roadways past community facilities and residential areas. This condition has proven to be unsafe, given the concentration of pedestrian crashes in this portion of the study area. With anticipated increases in population growth and the subsequent increase in vehicular traffic, these unsafe conditions would persist.

3.2.2.2 Build Alternative 1

No community facilities within the study area would be impacted by Build Alternative 1. The new connection between US 60 and VA 143 would increase access options for emergency vehicles, improve access options to/from the existing study area communities, and improve access to other community facilities located along US 60 and VA 143 both east and west of the study area by decreasing the community fragmentation of the area. Through traffic would have a direct connection between the employment centers and truck O/D locations and VA 143, reducing the potential for vehicle/pedestrian incidents.

3.2.2.3 Build Alternative 2

Similar to Build Alternative 1, no community facilities within the study area would be impacted by Build Alternative 2 and the new connection would benefit communities, improve access to/from the existing study area communities and community facilities, and increase access options for emergency vehicles. While through traffic would have a direct connection between the employment centers and truck O/D locations and VA 143, residents of the Carter's Village neighborhood and people using the Morning Star Church could experience an increase in idling traffic associated with the new intersection at US 60.

3.3 ECONOMIC RESOURCES

3.3.1 Existing Conditions

3.3.1.1 Employment

As identified within the VEC LMI *Community Profile*, employment within James City County is largely dependent on the Retail Trade industry, the Arts, Entertainment, and Recreation industry, Accommodation and Food Services industry, the Healthcare and Social Assistance industry, and Local Government (LMI, 2018a, 2018b, 2018c). The following five organizations or corporations within James City County employ the largest number of people:

1. Busch Entertainment Corporation
2. Williamsburg-James City County School Board
3. Walmart
4. County of James City
5. Riverside Regional Medical Center

As noted in **Section 1.4.2**, the majority of the SCC study area is within a state-designated Enterprise Zone (James River Enterprise Zone) and includes the James River Commerce Center, the Green Mount Industrial Park, the Busch Corporate Center, and part of the US 60 corridor. Additionally, this area is within a federally-designated Opportunity Zone, a newly developed designation to encourage investment in low-income census tracts (JCC, 2018f). Within the Green Mount Industrial Park is the Walmart facility, the second largest Walmart direct import center (out of six total in the US) on the east coast, employing 878 associates (Stone, 2017). Within the study area or adjacent to the study area with access from Green Mount Parkway, primary employment centers consist of the formerly mentioned Walmart direct import center, the Virginia Peninsula Regional Jail, Merrimac Juvenile Detention Center, a VDOT maintenance center, Lee Hall (Branscome Inc.) asphalt processing plant, and the Haynes furniture distribution center. Due to the Walmart direct import center and the Haynes furniture distribution center's location along Green Mount Parkway, all trucks accessing/exiting these locations must make a turning movement at the US 60/Green Mount Parkway intersection. As described in **Section 2.3.1**, in a stopped condition at an intersection trucks would need approximately 1,500 feet to obtain a speed of 30 mph (AASHTO, 2011). These trucks must then travel along US 60 for several miles in either direction before they have the opportunity to connect to VA 143.

Table 3-2 shows reported employment for 2000, 2010, and forecasted employment for 2040. Between 2010 and 2040, the anticipated employment growth in James City County exceeds surrounding localities and the Hampton Roads Peninsula. Employment totals are predicted to grow by 57 percent in James City County, in comparison to a 42, 13, and 29 percent increase in York County, City of Newport News, and Hampton Roads Peninsula, respectively.

Table 3-2: Employment Totals of Locations and Hampton Roads Peninsula

Location	Employment Totals			
	2000	2010	Forecast 2040	2010-2040 Percent Change
James City County	25,943	37,183	58,300	57%
York County	24,746	33,354	47,290	42%
City of Newport News	115,678	115,265	129,700	13%
Hampton Roads Peninsula	963,231	994,089	1,277,700	29%

Source: Hamptons Roads 2040 Socioeconomic Forecast (HRTPO, 2012).

3.3.1.2 Travel to Work

As described in **Section 1.4.1**, work force travel patterns demonstrate that James City County's population exhibits a high commuting exchange with Williamsburg, Newport News, and York County, with the majority of these commuters likely using US 60 and VA 143 for a portion of their commute (see **Table 1-2**).

The methods by which residents within the study area travel to work are identified in **Table 3-3**. The study area has a higher percentage of persons who carpool, 15.4 percent, compared with James City County and Virginia, 7.7 percent and 9.4 percent, respectively. Although the study area has a low percentage of persons who use public transportation, 3.5 percent, the percentage is higher than that of James City County, 0.9 percent, and slightly lower than that of Virginia, 4.6 percent.

Table 3-3: Methods of Transportation to Work

Transportation Method	Study Area	James City County	Virginia
Total Public Transportation Use	57	278	183,183
Total Car / Truck / Van Alone	1,262	26,181	3,117,644
Total Car / Truck / Van Carpool of 2 or More Persons	252	2,442	379,361
Percent of Study Area Population that Commutes by Public Transportation Use	3.5%	0.9%	4.6%
Percent of Study Area Population that Commutes by Car / Truck / Van Alone	77.1%	83.0%	77.5%
Percent of Study Area Population that Commutes by Car / Truck / Van Carpool of 2 or More Persons	15.4%	7.7%	9.4%
Total Workers within the Study Area	1,636	31,537	4,020,679

Source: U.S. Census Bureau, Census 2011-2015 ACS 5-Year Estimate (Census, 2018a).

Due to the number of employment centers within and adjacent to the study area, a number of people commute through and to the study area, utilizing US 60 and VA 143. Employees of the Walmart direct import center and the Haynes furniture distribution center must use US 60 to travel to work. Employees of the Virginia Peninsula Regional Jail, Merrimac Juvenile Detention Center, a VDOT maintenance center, and the Lee Hall (Branscome Inc.) asphalt processing plant must use VA 143. The study area residents, located in the Windy Hill, Whispering Pines, Skiffes Creek Terrace, or Carter's Village neighborhoods, currently only have access to US 60 for the first several miles of their commutes before they have the opportunity to connect to VA 143, if they are traveling to the identified employment centers located on VA 143 or if they are accessing different employment centers accessed via VA 143.

3.3.1.3 Income

Income data from 2011-2015 ACS 5-Year Estimates, *Median Household Income in the Past 12 Months* (*in 2015 Inflation-Adjusted Dollars*) were used to generate median household income data for each of the Census block groups within the study area (see **Table 3-4** and **Figure 3-2)**. The median household income of the two block groups within the study area, 801.02-1 and 801.02-2, both fall below the median household income for James City County, as well as the median household income for the state of Virginia.

Table 3-4: Median Household Income

Locality	Median Household Income
801.02-1	$29,318
801.02-2	$42,804
Study Area	$38,192
James City County	$75,712
Virginia	$65,015

Source: U.S. Census Bureau, 2011-2015 ACS 5-Year Estimate (Census, 2018a).

For additional information, refer to the ***Socioeconomic and Land Use Technical Report*** (VDOT, 2018e).

3.3.2 Environmental Consequences

3.3.2.1 No Build Alternative

While there would not be any direct impacts to employment, travel to work, or income, the No Build Alternative would not improve connectivity for commuters or employers.

3.3.2.2 Build Alternative 1

Build Alternative 1 would not require any commercial full acquisitions or relocations and would not have a direct effect on long-term employment, but construction would result in temporary jobs. The improved connectivity would also benefit commuters traveling to work, allowing them to switch between US 60 and VA 143, as needed. The traffic from the primary employment centers located on Green Mount Parkway, specifically the Walmart direct import center and Haynes furniture distribution center, would experience direct access straight through the existing Green Mount Parkway/US 60 intersection to VA 143, benefiting from enhanced travel efficiency to and from employment centers and truck O/D locations, including the Port of Virginia. Build Alternative 1 would not have an effect on income levels in the study area or James City County. By tying into the existing Green Mount Parkway signalized intersection along US 60, Build Alternative 1 allows for direct access from the employment centers and truck O/D locations to VA 143, allowing trucks that do not need to stop at the signal to get up to speed quicker.

3.3.2.3 Build Alternative 2

Build Alternative 2 would have similar improvements for employers and commuters to Build Alternative 1; however, this alignment would be located approximately 1,000 feet west of the Green Mount Parkway intersection with US 60. The trucks accessing or leaving Green Mount Parkway would be required to perform two additional turn movements, at the existing Green Mount Parkway/US 60 intersection and at the new SCC/US 60 intersection, to access the SCC and VA 143.

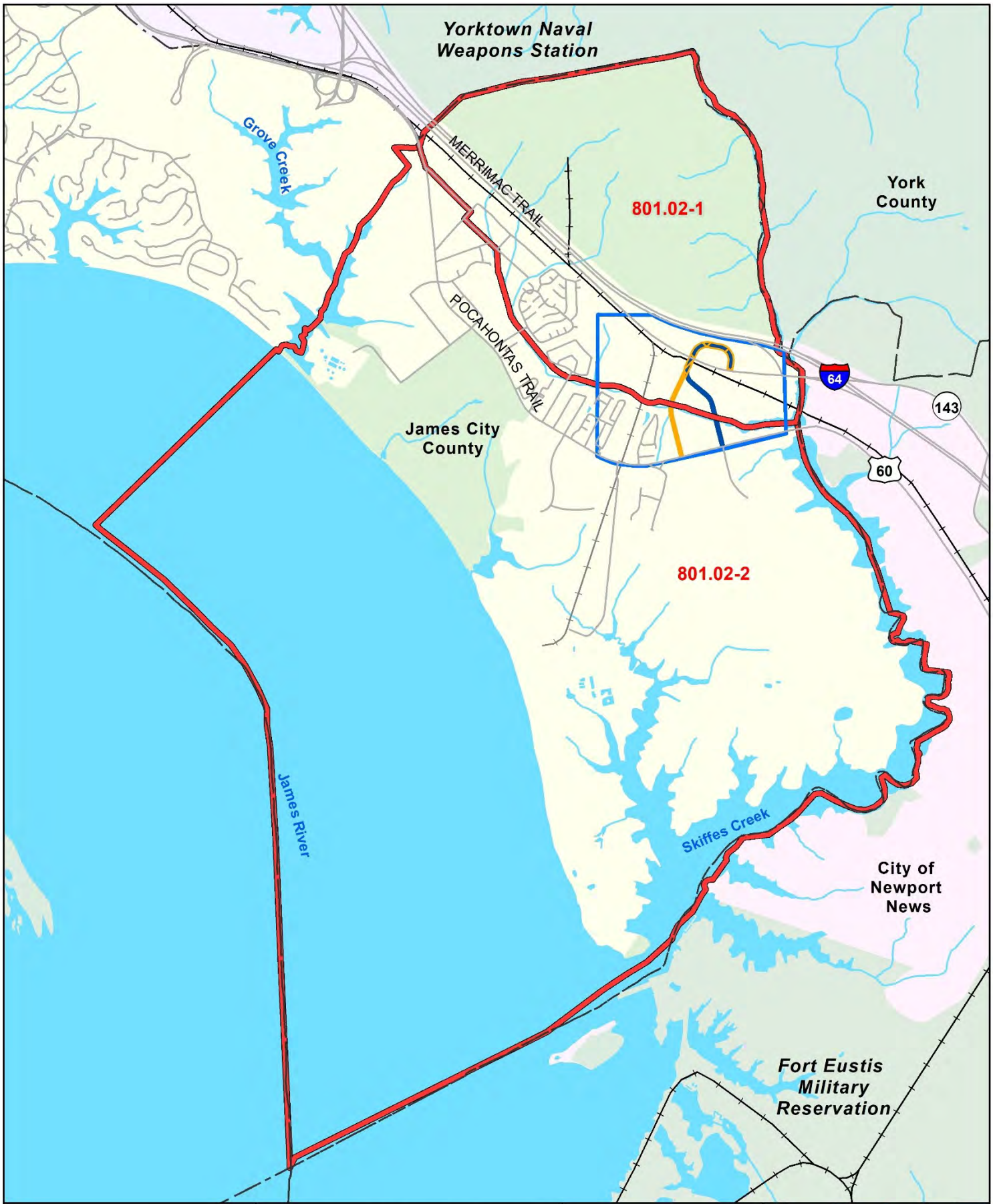

Figure 3-2
Census Block Groups within the Study Area

VDOT Virginia Department of Transportation
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0 0.25 0.5 1 Miles

N W E S

Source: ESRI, NHD, Census

Build Alternative 1
Build Alternative 2
Census Block Group
Study Area

For trucks starting at Green Mount Parkway, they would make a left turn from a stop condition, get up to speed to travel along US 60 and then slow down to make a right turn onto the SCC, which would decrease the speed of local traffic and trucks since, as noted above, in a stopped condition at an intersection trucks would need approximately 1,500 feet to obtain a speed of 30 mph (AASHTO, 2011).

3.4 LAND USE

3.4.1 Existing Conditions

The study area is comprised of undeveloped, residential, industrial, transportation, institutional/public land, farmland, water, and business land use. The southwest portion of the study area contains two residential areas bisected north to south by the inactive CSXT rail spur that lines up with BASF Drive, west of Green Mount Parkway, as shown on **Figure 3-3**. Undeveloped land and industrial land make up the areas east of the residential use. A second rail line, the CSXT railroad, runs west to east, separating the northern third of the study area from the southern portion. This area contains three institutional properties – the Virginia Peninsula Regional Jail, Merrimac Juvenile Detention Center, and a VDOT maintenance center, as well as an industrial use, the asphalt processing plant. Based upon James City County GIS data, there are no conservation easements within the study area.

As shown in **Figure 3-3**, the study area is generally comprised of large parcels, with the exception of those within Skiffes Creek Terrace and Carter's Village. For additional information, refer to the ***Socioeconomic and Land Use Technical Report*** (VDOT, 2018e).

The James City County 2035 Land Use Map depicts the existing residential area in the study area as mixed use, with the rest of the study area designated as mixed use or industrial. An alignment similar to Build Alternative 1 is included on the 2035 Land Use Map. James City County had previously granted a change in zoning for the Morning Star Church property from industrial to mixed use (JCC, 2015c). Additionally, Dominion Energy proposes to construct new electrical transmission line infrastructure within and proximate to the study area[11] (Dominion Energy, 2017). This project received a USACE permit on July 3, 2017 and was approved by the James City County Board of Supervisors on July 11, 2017 (USACE, 2017 and Dominion Energy, 2017).

The portion of the study area that is outside of the area designated as an urban Census area is subject to the Farmland Protection Policy Act of 1981 (FPPA). The FPPA is administered by United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) and is intended to minimize the impact of federal programs on unnecessary and irreversible conversion of farmland to nonagricultural uses. Under the FPPA, "farmland" is defined as:

- *Prime farmland* - land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses;
- *Unique farmland* - land other than prime farmland that is used for production of specific high-value food and fiber crops; and
- *Farmland other than prime or unique* - farmland that is of statewide or local importance for the production of food, feed, fiber, forage, or oilseed crops.

[11] A map showing the proposed route can be found at the website: https://dominionenergy.com/about-us/electric-projects/power-line-projects/skiffes-creek.

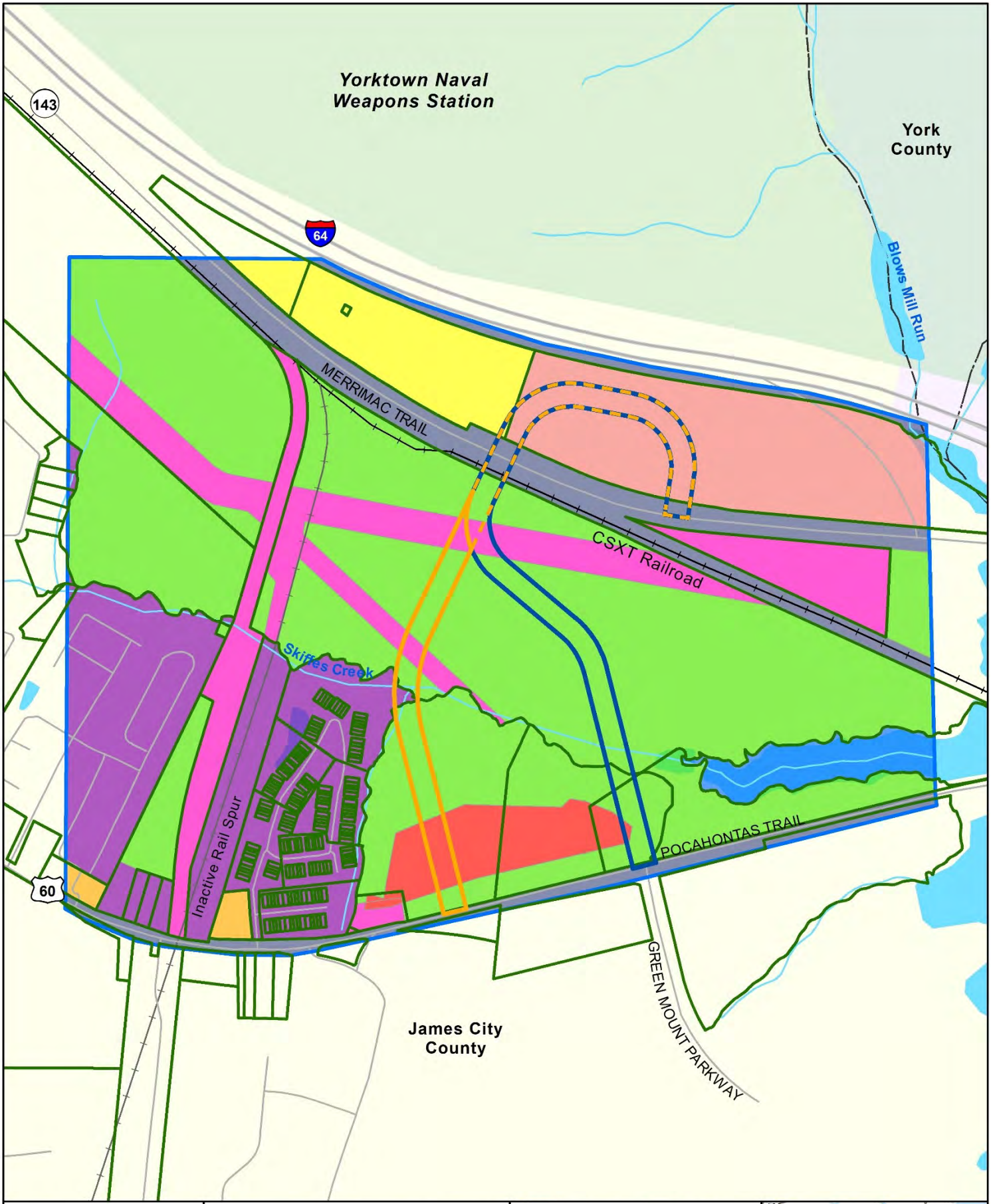

Figure 3-3
Existing Land Use and Parcels within the Study Area

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Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

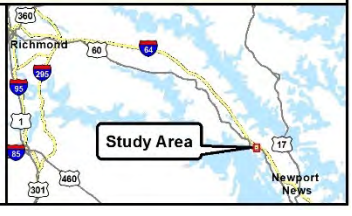
0 0.05 0.1 0.2 Miles

N W E S

Source: ESRI, NHD, James City County

Build Alternative 1
Build Alternative 2
Study Area
Parcel

Land Use Category
Business
Farmland
Industrial
Institutional
Public
Residential
Transportation
Undeveloped
Water



The study area contains 133.4 acres of land classified as having prime farmland soils or soils of statewide importance. The closest agricultural and forestal district, Carter's Grove Plantation, is approximately 500 feet away from the study area (JCC, 2017a). For additional information refer to the ***Natural Resources Technical Report*** (VDOT, 2018d).

3.4.2 Environmental Consequences

3.4.2.1 No Build Alternative

The No Build Alternative would not cause any land use impacts and would not affect the use of soils mapped as prime farmland soil and/or soils of statewide importance. The proposed land use and development consistent with the James City County Comprehensive Plan would continue regardless of the conditions of the surrounding roadway network.

3.4.2.2 Build Alternative 1

Build Alternative 1 would require the acquisition of approximately 14.6 acres from six parcels. The acquisition would consist of 7.7 acres of undeveloped land, 5 acres of public land, 1 acre of transportation land, 0.7 acres of industrial land, 0.11 acres of institutional land, and 0.11 acres of farmland. Compensation in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act* of 1970 (as amended, 1987) would be provided. Build Alternative 1 is in conformance with the James City County Comprehensive Plan and consistent with future land use plans.

Build Alternative 1 would impact 9.7 acres of soils mapped by NRCS as prime farmland soil and/or soils of statewide importance that are subject to the FPPA (of the 133.4 acres within the study area). This is approximately seven percent of the overall amount of prime farmland soil and soils of statewide importance within the areas subject to the FPPA within the study area.

A USDA NRCS Farmland Conversion Impact Rating Form has been completed and submitted to USDA NRCS to determine impact ratings to prime farmland soils and soils of statewide importance. The Farmland Conversion Impact Rating is based on an assessment of the suitability of the land in the corridor for the protection of farmland. The FPPA states that "increasingly higher levels of consideration for protection" be given to farmlands impacted by projects that have a Farmland Conversion Impact Rating exceeding a total score of 160; corridors receiving a total score less than 160 need not be given further consideration for protection. Build Alternative 1 scored below 160 because it is located in an urbanized area and there is a low percentage of farmland protected by FPPA within the study area; and thus no further action is recommended to mitigate farmland conversion.

3.4.2.3 Build Alternative 2

Build Alternative 2 would require the acquisition of approximately 14.9 acres from five parcels. The acquisition would consist of 6 acres of undeveloped land, 5 acres of public land, 1.4 acres of farmland, 1.1 acres of industrial land, 0.96 acres of transportation land, 0.3 acres of residential land, and 0.1 acres of institutional land. While the James City County Comprehensive Plan supports the addition of a connection between US 60 and VA 143, the location of Build Alternative 2 is different than what is shown in the plan. The shift in alignment would affect other land use and zoning plans that have been developed to accommodate a SCC alignment that begins in the vicinity of the US 60 and Green Mount Parkway intersection. This would then affect other land owners who have prepared conceptual developments based upon approved land use and zoning plans.

Build Alternative 2 would impact 7.1 acres of soils mapped by NRCS as prime farmland soil and/or soils of statewide importance that are subject to the FPPA. This is approximately eight percent of the overall amount of prime farmland soil and soils of statewide importance within the areas subject to the FPPA within the study area.

A USDA NRCS Farmland Conversion Impact Rating Form was also completed for Build Alternative 2. This alternative also scored below 160 because it is also located in an urbanized area and there is a low percentage of farmland protected by FPPA within the SCC study area; and thus, no further action is recommended to mitigate farmland conversion.

3.5 ENVIRONMENTAL JUSTICE

3.5.1 Existing Conditions

Consistent with Title VI of the Civil Rights Act of 1964 and Executive Order 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, EJ communities in the study area were identified so the effects of the alternatives could be assessed to address disproportionately high and adverse effects of the project on the health or environment of EJ communities, and to provide meaningful opportunities for public participation in project development and decision-making. In accordance with the terms of CEQ guidance, *Environmental Justice Guidance under the National Environmental Policy Act* (CEQ, 1997b), an area is identified as containing a minority population where either (a) the minority population of the affected area exceeds 50 percent of total population; or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographical analysis. The minority population (including Hispanic/Latino populations) for each Census block group was found to be "meaningfully greater" than the surrounding Census block groups if the Census block was greater than James City County's percentage of minority population (24 percent). Additionally, in accordance with the terms of FHWA 6640.23 and USDOT Order 5610.2(a), low-income persons include any persons whose median household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines (FHWA, 2012). The HHS 2015 Poverty Guidelines of the 48 Contiguous States and the District of Columbia identifies the poverty threshold as $24,250 for a family of four (HHS, 2015). For additional information, refer to the ***Socioeconomic and Land Use Technical Report*** (VDOT, 2018e).

Table 3-5 provides a summary of minority and income characteristics by block group within the study area compared to the state of Virginia and James City County. Both of the Census block groups are above the 24 percent minority threshold and are thus considered EJ communities (as shown in **Figure 3-4**). In Virginia, minority populations comprise approximately 37 percent of the total population. Within the study area, minority populations account for 54 percent of the population. Although the median household income of both Census block groups are much lower than the average for James City County and Virginia, neither have a median household income below the HHS poverty threshold of $24,250 and are not considered to be low-income populations.

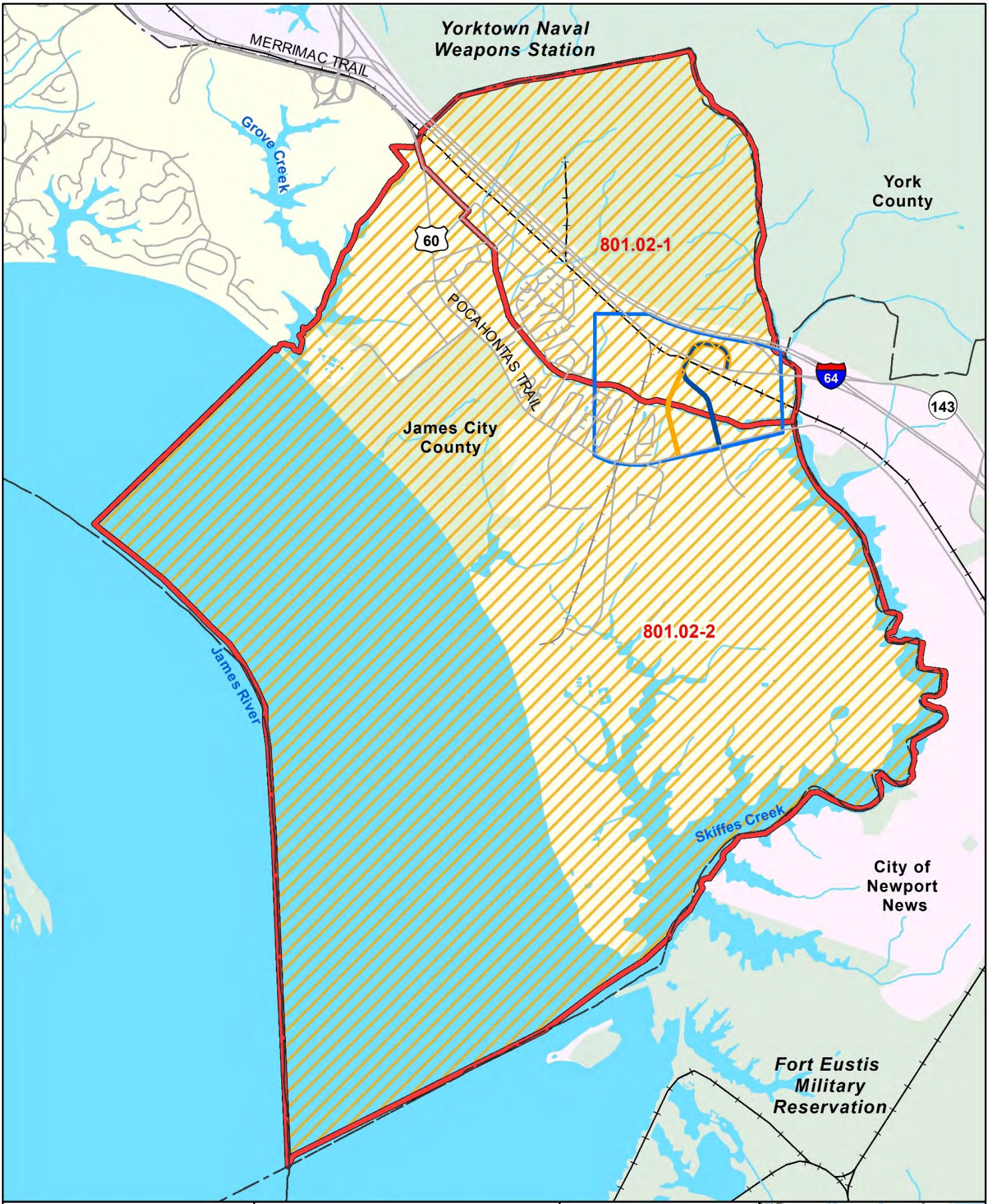


Figure 3-4
Environmental Justice Block Groups

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 0.25 0.5 1 Miles

N W E S

Source: ESRI, NHD, Census

Census Block Group with Minority Population
Census Block Group
Build Alternative 1
Build Alternative 2
Study Area

Table 3-5: Study Area Environmental Justice Characteristics by Locality

Locality	Total Population	Minority[1]		Median Household Income
		No.	%	
801.02-1	1,481	879	59%	$29,318
801.02-2	2,541	1,293	51%	$42,804
Total Study Area	4,022	2,172	54%	$38,192
James City County	70,673	16,641	24%	$75,712
Virginia	8,256,630	3,018,782	37%	$65,015

1) The U.S. Census Bureau defines Hispanic or Latino as a person of Mexican, Puerto Rican, Cuban, South or Central American, or other Spanish culture or origin, regardless of race. Because Hispanic or Latino may be any race, data may overlap for other race categories and percentages were not calculated.

Source: U.S. Census Bureau, 2011-2015 ACS 5-Year Estimates (Census, 2018a).

As described in **Section 4.3**, public meetings, including citizen information meetings organized by VDOT, have been and will be advertised in minority, and low-income media outlets, in addition to other widely disseminated sources of news in the study area. Additionally, notification of the meetings was shared with local representatives of the Grove Community to post in local businesses and churches. Public meetings have been and will be held at times convenient for the public to attend and located at the James River Elementary School, which is compliant with the Americans with Disabilities Act, and is close to publicly accessible bus routes.

3.5.2 Environmental Consequences

3.5.2.1 No Build Alternative

The impacts resulting from the lack of improvements described above in **Sections 3.2.2.1**, **3.3.2.1**, and **3.4.2.1** would be felt by all residents, including minority and low-income populations, and thus would not result in a disproportionate and adverse impact to EJ populations.

3.5.2.2 Build Alternative 1

The benefits of improved local connectivity and access between communities, community facilities, and for emergency vehicles, described above in **Sections 3.2.2.2**, **3.3.2.2**, and **3.4.2.2,** would be felt by all residents, including minority and low-income populations. During construction, short-term road closures and detours would be limited to construction connecting to the two existing roadways. Since construction would be limited in duration, there would be no short-term effects to access to access to or from the EJ communities. Therefore, Build Alternative 1 would not result in a disproportionate and adverse impact to EJ populations.

3.5.2.3 Build Alternative 2

The benefits of improved local connectivity and access between communities, community facilities, and for emergency vehicles, described above in **Sections 3.2.2.3**, **3.3.2.3**, and **3.4.2.3,** would be felt by all residents, including minority and low-income populations. During construction, short-term road closures and detours would be limited to construction connecting to the two existing roadways. Since construction would be limited in duration, there would be no short-term effects to access to or from the EJ communities. Therefore, Build Alternative 2 would not result in a disproportionate and adverse impact to EJ populations.

3.6 CULTURAL RESOURCES

3.6.1 Existing Conditions

The SCC Study's potential effects on historically significant archaeological and architectural resources were analyzed in accordance with Section 106 of the NHPA of 1966 (as amended) (54 U.S.C. § 306108) and its implementing regulations at 36 CFR § 800. Section 106 requires federal agencies to take into account the effects of their undertakings on "historic properties," defined as buildings, structures, sites, districts, and objects, generally at least 50 years of age, that are listed on or eligible for listing on the NRHP. The Section 106 process is undertaken by federal agencies in consultation with the SHPO, who in Virginia is the director of the Virginia Department of Historic Resources (VDHR); the Advisory Council on Historic Preservation (ACHP), as appropriate; federally-recognized Indian tribes; representatives of local government; and other parties with a demonstrated interest in an undertaking. The FHWA, the USACE, the Tennessee Valley Authority, the VA SHPO, and the ACHP have executed a programmatic agreement[12] ("2016 Federal PA") that delegates the responsibility for certain Section 106 actions and decisions to VDOT for transportation projects in Virginia.

VDOT initiated Section 106 consultation for the SCC Study with the SHPO in March 2013, but the project was later placed on hold. In October 2017 the project was re-started and VDOT reinitiated Section 106 consultation with the SHPO. Additionally, VDOT and FHWA made outreach in October 2017 to two federally-recognized Indian tribes (Pamunkey Indian Tribe and Delaware Nation) and four local governments (James City and York Counties, Cities of Williamsburg and Newport News) to determine whether they desired to participate in Section 106 consultation for the SCC Study. The Pamunkey Indian Tribe responded that it is not aware of any site of cultural or religious significance that would be affected by the project but asked to be notified in the event of an inadvertent discovery. York County declined the opportunity to participate, and none of the other potential consulting parties responded.

For the purposes of Section 106, VDOT defined the Area of Potential Effects (APE) for the SCC Study as depicted in **Figure 3-5**. The APE is the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties. The APE for effects to archaeological resources and direct effects to architectural resources consists of the 225-foot corridors associated with Build Alternative 1 and Build Alternative 2. The view from and to the build alternatives was evaluated to define the APE for indirect effects to architectural resources, where alterations to their feeling and setting may occur. The indirect APE extends outward 500 feet from the two 225-foot-wide build alternatives, with the exception that at the north ends of the build alternatives the northern boundary of the indirect APE is the I-64 corridor.

[12] Programmatic Agreement among the Federal Highway Administration, the U.S. Army Corps of Engineers, Norfolk District, the Tennessee Valley Authority, the Advisory Council on Historic Preservation, the Virginia State Historic Preservation Officer, and the Virginia Department of Transportation Regarding Transportation Undertakings Subject to Section 106 of the National Historic Preservation Act of 1966 (executed August 2, 2016).

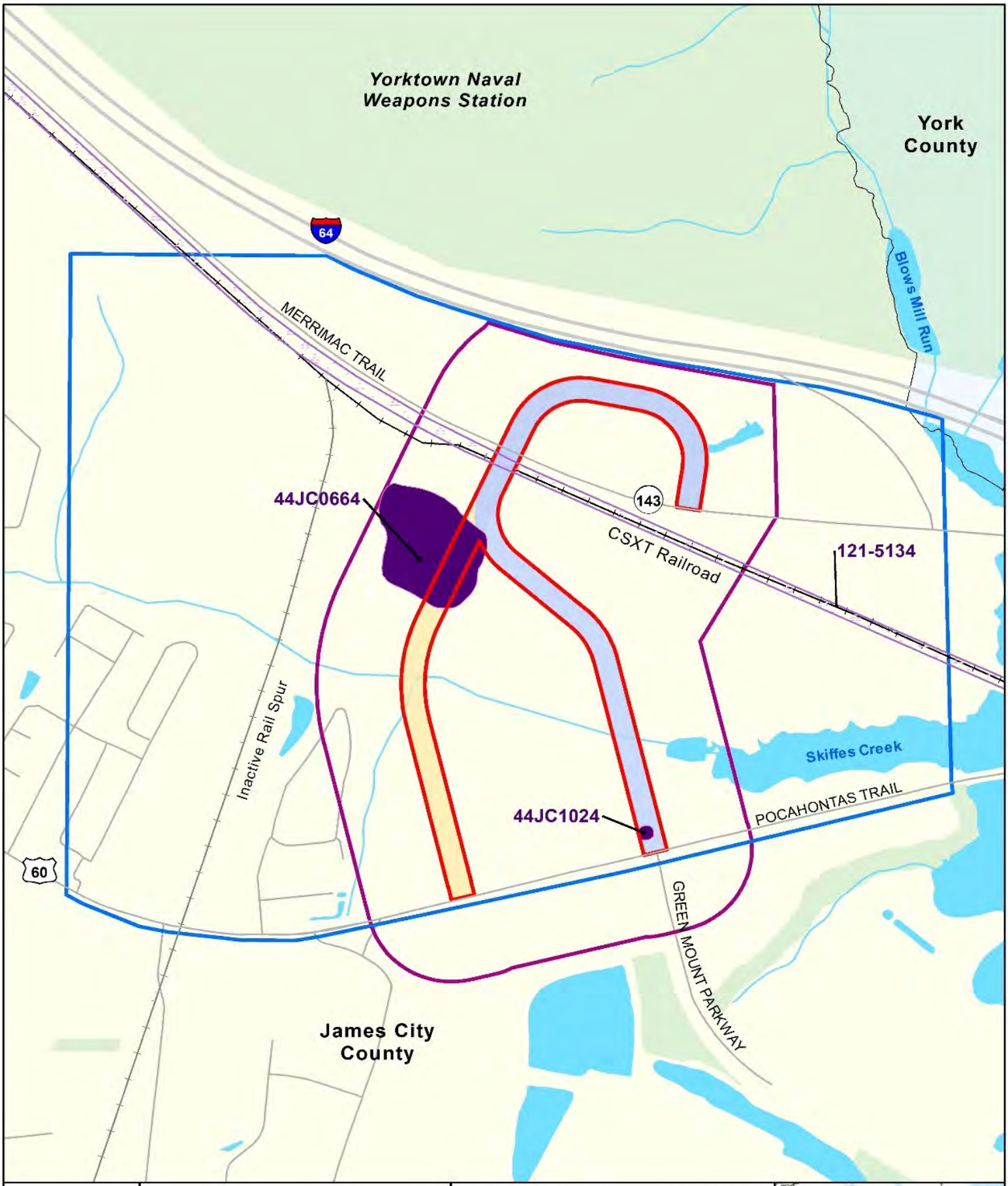


Figure 3-5 Cultural Resources within the Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 0.05 0.1 0.2 Miles

N W E S

Source: ESRI, NHD, CEDAR

- Architectural resources potentially eligible for the NRHP
- Archaeological sites potentially eligible for the NRHP
- Area of Potential Direct Effects
- Area of Potential Indirect Effects
- Build Alternative 1
- Build Alternative 2
- Study Area

For the purpose of determining whether archaeological historic properties might be affected by the SCC, VDOT conducted archaeological survey of the 225-foot corridors associated with the two build alternatives. In 2013, an initial survey was conducted of the 2012 alternatives known as Build Alternative 1 (formerly identified as Alternative A) and Build Alternative 2 (formerly Alternative A1) [Archaeological Survey for the Skiffes Creek Connector (from U.S. 60 to VA Route 143), James City County, Virginia (August 2013, Revised October 2017) (VDOT, 2017a)]. The revisions made to these alternatives that resulted in their present configurations as Build Alternatives 1 and 2 necessitated supplemental archaeological survey, which was conducted in spring 2018. The findings of the 2013 survey have been reviewed by the SHPO. Completion of a technical report on the 2018 supplement survey is anticipated in June 2018, at which time VDOT will coordinate it as well with the SHPO.

VDOT's archaeological surveys located five archaeological sites within the APE for direct effects. Two sites, 44JC0664 and 44JC1024, previously had been identified by other surveyors (refer to **Figure 3-5**). Site 44JC0664, manifested by a broad scatter of domestic and architectural artifacts and surface features, likely represents an eighteenth- and nineteenth-century farmstead. Site 44JC1024, manifested by a scatter of domestic artifacts, likely represents an eighteenth- and nineteenth-century residence. In 2001, after these sites were first identified by others, the SHPO determined each site to be potentially eligible for the NRHP. Based on VDOT's 2013 survey findings for the SCC Study, the SHPO confirmed its previous determination on February 6, 2018. Each site requires further investigation to conclusively establish its NRHP eligibility.

The 2018 survey identified three archaeological sites that VDOT does not believe meet the NRHP eligibility criteria. Site 44JC1343 and Site 44JC1344, located between the CSXT corridor and Skiffes Creek, are, respectively, a mid-twentieth-century trash dump and an early twentieth-century spring house site. Site 44JC1345 consists of traces on an early twentieth-century roadbed that runs just north of and parallel to VA 143. The site may represent a truck road or a perimeter security road that was located near the southern boundary of the U.S. Naval Mine Depot property. The road was likely abandoned when the installation boundary was relocated northward with the construction of VA 143 (earlier, Route 168) or I-64. VDOT will be seeking the concurrence of the SHPO with its NRHP eligibility determinations for sites 44JC1343, 44JC1344, and 44JC1345 once the final report on the 2018 survey is complete.

VDOT cultural resources staff reviewed the direct and indirect APE for the SCC project and found only two architectural resources that are 50 or more years of age. Each of these resources previously has been surveyed by others and coordinated with the SHPO. Morning Star Baptist Church (VDHR Inventory No. 047-5129) is located at 9320 Pocahontas Trail, just north of Route 60 and west of Build Alternative 2. The SHPO first determined the church is not eligible for the NRHP in 2001 and confirmed this determination in 2015. The present CSXT railroad corridor between Fulton Yards in Richmond, Virginia, and Newport News was initially constructed in 1881 as the Peninsula Subdivision of the Chesapeake and Ohio Railroad (VDHR Inventory No. 121-5134) (refer to **Figure 3-5**). In 2015, in relation to a different VDOT project in Newport News, the SHPO determined that the railroad corridor is potentially eligible for the NRHP under Criteria A for its significance in transportation history, specifically in relation to its importance in connecting the coal rich regions of West Virginia to the Hampton Roads harbor. VDOT has assumed the railroad's NRHP eligibility for the purposes of applying Section 106 to the SCC Study, and will recommend to the SHPO that the ca. 100-foot-wide CSXT right-of-way containing the railroad track foundation comprises the NRHP boundaries of the resource.

Table 3-6 lists the one architectural and two archaeological resources within the APE for the SCC Study that the SHPO has determined are potentially eligible for listing in the NRHP.

Table 3-6: Archaeological & Architectural Resources Listed in or Eligible for the NRHP

VDHR No.	Resource/Description	NRHP Eligibility Status
44JC0664	Archaeological –18th/19th century farmstead site	Determined Potentially Eligible in 2001 and 2018 by VA SHPO
44JC1024	Archaeological –18th/19th century domestic site	Determined Potentially Eligible in 2001 and 2018 by VA SHPO
121-5134	Architectural – CSXT/Peninsula Subdivision of the Chesapeake and Ohio Railroad	Determined Potentially Eligible in 2015 by SHPO

Source: V-CRIS and Archaeological Survey for the Skiffes Creek Connector. August 2013, Revised October 2017 (VDOT, 2017a) and VDOT Project Files.

3.6.2 Environmental Consequences

3.6.2.1 No Build Alternative

The No Build Alternative would not result in any project-related construction and would therefore not result in any Section 106 effects to archaeological or architectural historic properties.

3.6.2.2 Build Alternative 1

Two archaeological sites (44JC0664 and 44JC1024) potentially eligible for the NRHP are located within the planning level LOD for Build Alternative 1 and likely would be affected by the project. While each site requires further evaluation to establish conclusively its NRHP eligibility, based on available information VDOT has concluded that the sites likely are important chiefly for the information they contain, which could be retrieved through data recovery, and have minimal value for preservation in place. Thus, each site would meet the regulatory exception to the requirements of Section 4(f) approval, provided the SHPO does not object to this finding [23 CFR §774.113(b)].

The planning level LOD for Build Alternative 1 also contains a section of the CSXT/Peninsula Subdivision of the Chesapeake and Ohio Railroad (VDHR Inventory No. 121-5134). VDOT is assuming the railroad is eligible for the NRHP for the purposes of applying Section 106 to the SCC Study. VDOT has applied the Section 106 criteria of effect [36 CFR §800.16(i), 36 CFR §800.5(a)(1)] and concluded that Build Alternative 1 will not alter any of the characteristics of the CSXT/Peninsula Subdivision of the Chesapeake and Ohio Railroad that might quality it for inclusion in the NRHP. The project will not directly impact the resource because the proposed highway will be carried by a bridge over the railroad and, as planned, all substructure elements of the proposed bridge will be placed outside of CSXT right of way. Further, the original late nineteenth-century setting of the railroad in the project area has already been substantially modified by the addition since the mid-twentieth century of VA 143, a VDOT maintenance facility, an asphalt plant, and a regional jail facility, and new highway infrastructure is not incompatible with the original industrial nature of the railroad.

3.6.2.3 Build Alternative 2

One archaeological site (VDHR No. 44JC0664) potentially eligible for the NRHP is located within the planning level LOD for Build Alternative 2 and likely would be directly affected by the project. While the

site requires further evaluation to establish conclusively its eligibility, based on available information VDOT has concluded that the site likely is important chiefly for the information it contains, which could be retrieved through data recovery, and has minimal value for preservation in place. Thus, the site would meet the regulatory exception to the requirements of Section 4(f) approval, provided the SHPO does not object to this finding [23 CFR §774.113(b)].

The planning level LOD for Build Alternative 2 also contains a section of the CSXT/Peninsula Subdivision of the Chesapeake and Ohio Railroad (VDHR Inventory No. 121-5134). VDOT is assuming the railroad is eligible for the NRHP for the purposes of applying Section 106 to the SCC Study. VDOT has applied the Section 106 criteria of effect [36 CFR §800.16(i), 36 CFR §800.5(a)(1)] and concluded that Build Alternative 2 will not alter any of the characteristics of the CSXT/Peninsula Subdivision of the Chesapeake and Ohio Railroad that might quality it for inclusion in the NRHP. The project will not directly impact the resource because the proposed highway will be carried by a bridge over the railroad and, as planned, all substructure elements of the proposed bridge will be placed outside of CSXT right of way. Further, the original late nineteenth-century setting of the railroad in the project area has already been substantially modified by the addition since the mid-twentieth century of VA 143, a VDOT maintenance facility, an asphalt plant, and a regional jail facility, and new highway infrastructure is not incompatible with the original industrial nature of the railroad.

3.6.3 Completion of the Section 106 Process

Once the technical report on the 2018 supplemental archaeological survey of Build Alternatives 1 and 2 has been completed, VDOT will coordinate its findings with the SHPO and seek the SHPO's concurrence that sites 44JC0664 and 44JC1024 are the only archaeological resources within the APE for the SCC project potentially eligible for the NRHP. VDOT will also seek the concurrence of the SHPO that the SCC project will have no effect on the CSXT/Peninsula Subdivision of the Chesapeake and Ohio Railroad (VDHR Inventory No. 121-5134). The 2016 Federal PA allows VDOT, in accordance with Section 106 regulations [§800.4(b)(2)], to defer completion of efforts to identify archaeological historic properties on projects involving consideration of multiple corridors until after a preferred alternative is selected. Once this selection has been made, VDOT anticipates completing the Section 106 process through execution of a Programmatic Agreement for the SCC Study with the Virginia SHPO, pursuant to §800.14(b)(3) of the Section 106 regulations. The Programmatic Agreement would stipulate the process VDOT would follow to complete efforts to identify archaeological historic properties potentially affected by the selected alternative, assess the undertaking's effect on those sites, and implement measures that would resolve any adverse effects through avoidance, minimization, or mitigation. The Programmatic Agreement would also stipulate the measures necessary to ensure that the project has no effect on the CSXT/Peninsula Subdivision of the Chesapeake and Ohio Railroad.

3.7 AIR QUALITY

3.7.1 Existing Conditions

Pursuant to the Clean Air Act of 1970 (CAA), the EPA is required to set the National Ambient Air Quality Standards (NAAQS) 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.

EPA designates geographic regions that do not meet the NAAQS for one or more criteria pollutants as "non-attainment areas." Areas previously designated as non-attainment, but subsequently re-designated to attainment because they no longer violate the NAAQS, are reclassified as "maintenance areas" subject to maintenance plans to be developed and included in a State Implementation Plan (SIP). This project is located in James City County, an Attainment area for all of the NAAQS.

On February 16, 2018 the U.S. Court of Appeals for the D.C. Circuit issued a decision in *South Coast Air Quality Management District v. EPA*, No. 15-1115, which struck down portions of the 2008 Ozone NAAQS SIP Requirements Rule concerning the ozone NAAQS. These portions of the 2008 Ozone NAAQS SIP Requirements Rule addressed implementation requirements for the 2008 ozone NAAQS as well as the anti-backsliding requirements associated with the revocation of the 1997 ozone NAAQS. On April 23, 2018 the FHWA/Federal Transit Administration (FTA) issued guidance concerning the Court ruling that states in part, "*NEPA approvals for FHWA/FTA projects (40 CFR 93.101) may not proceed unless the existing Metropolitan Plan and TIP include the project*." This project is already included in the current HRTPO's FY 2018-2021 TIP for preliminary engineering.

The project is located in a volatile organic compounds (VOC) and nitrogen oxides (NO_x) Emissions Control Area. As such, all reasonable precautions should be taken to limit the emissions of VOC and NO_x. The following Virginia Department of Environmental Quality's (VDEQ) air pollution regulations must be adhered to during the construction of this project: 9 VAC 5-130, Open Burning restrictions; 9 VAC 5-45, Article 7, Cutback Asphalt restrictions; and 9 VAC 5-50, Article 1, Fugitive Dust precautions.

3.7.2 Environmental Consequences

3.7.2.1 Build Alternative 1

CO Analysis

The proposed project falls within the project types and conditions listed in the current FHWA – VDOT "Programmatic Agreement for Project –Level Air Quality Analyses for Carbon Monoxide" for streamlining the project level air quality analysis process for carbon monoxide. Modeling using "worst-case" parameters has been conducted for these project types and conditions. It has been determined that projects, such as this one, for which the conditions are not exceeded, would not significantly impact air quality and would not cause or contribute to a new violation, or delay timely attainment of the NAAQS for CO.

The worst-case alternative under the build condition occurs at the intersection of the proposed SCC and VA 143, which has the highest forecast traffic conditions based on the traffic forecasts noted in the Skiffes Creek Connector Environmental Traffic Data Report (April 27, 2018). An intersection project would fall under the types of projects listed in Table 2 of the agreement; i.e., a 6-lane urban intersection for all approaches and an approach speed of 15 mph. The modeled CO concentrations for this type of project, excluding the background concentrations, is 6.5 parts per million (ppm) for the one-hour and, using a persistence factor of 0.77, an eight-hour concentration of 5.0 ppm. When the background concentrations of 2.0 ppm and 1.1 ppm are included, the one-hour and eight-hour concentrations increase to 8.5 ppm and 6.1 ppm, respectively. These predicted values are well below the one-hour and eight-hour CO NAAQS of 35 ppm and 9 ppm, respectively. This configuration would give a much worst-case scenario than that of the proposed T-intersection improvements that include no more than 4 approach lanes in each direction and an approach speed greater than 15 mph.

While the No Build Alternative would result in increased traffic along local roadways, no assessment was performed due to the FHWA-VDOT 2009 Agreement for No Build Analyses, which states that if the project qualifies as an EA, an analysis of CO is not required. This agreement is based upon FHWA's and VDOT's review of numerous air studies on similar projects that concluded that CO is not anticipated to be adversely affected in the No Build condition, and therefore yields little or no value to the public and does not aid in decision-making.

Mobile Source Air Toxics (MSAT) Analysis

The project is best characterized as one with "low potential MSAT effects" since design year traffic is projected to be significantly less than 140,000 to 150,000 AADT thresholds that are provided in the FHWA MSAT guidance. Additionally, the USEPA's vehicle and fuel regulations are expected to result in substantially lower MSAT levels in the future than exist today due to cleaner engine standards coupled with fleet turnover, similar to the No Build Alternative, the MSAT emissions in the study area would be substantially lower under Build Alternative 1 or 2 than they are today, even accounting for VMT growth. As a result, a qualitative assessment is attached (refer to **Appendix C**).

The effect on MSATs was assessed qualitatively. Since the USEPA's vehicle and fuel regulations are expected to result in substantially lower MSAT levels in the future than exist today due to cleaner engine standards coupled with fleet turnover, the MSAT emissions in the study area would be substantially lower under the No Build Alternative than they are today; even accounting for VMT.

Construction Emissions

The temporary air quality impacts from construction activities are not expected to be significant. Construction activities would be performed in accordance with VDOT's current *Road and Bridge Specifications* (VDOT, 2016b). The specifications require compliance with all applicable local, state, and federal regulations.

3.7.2.2 Build Alternative 2

The air quality results for Build Alternative 2 would be the same as those for Build Alternative 1.

3.7.2.3 Conclusion

The proposed improvements were assessed for potential air quality impacts and compliance with applicable air quality regulations and requirements. All models, methods/protocols and assumptions applied in modeling and analyses were made consistent with those provided or specified in the VDOT Resource Document. The assessment indicates that the project would meet all applicable air quality requirements of NEPA and federal and state transportation conformity regulations. As such, the project will not cause or contribute to a new violation, increase the frequency or severity of any violation, or delay timely attainment of the NAAQS established by the USEPA.

3.8 NOISE

A screening noise analysis for the SCC project was completed in accordance with the State Noise Abatement Policy that was developed to implement the requirements of 23 CFR Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise (July 13, 2011), FHWA's Highway Traffic Noise Analysis and Abatement Policy and Guidance (December 2011), and the noise related requirements

of NEPA. The current VDOT State Noise Abatement Policy became effective on July 13, 2011 and was last updated on February 20, 2018.

As part of this screening noise analysis one detailed existing case noise model and two detailed build alternative noise models were developed using the FHWA Traffic Noise Model (TNM 2.5). AM and PM peak hour traffic volumes for the existing year (2017) and design year (2043) were produced for this study. The PM peak hour was selected as the worst-case hour as this hour had a higher volume of traffic along the proposed alignments with the same percentage of heavy and medium trucks as the AM peak hour.

3.8.1 Environmental Consequences

3.8.1.1 Build Alternative 1

Build Alternative 1 would provide an approximate one-mile two-lane roadway between US 60 and VA 143. This alternative would tie into US 60 at the existing US 60/Green Mount Parkway signalized intersection, bridge over Skiffes Creek, the CSXT railroad, and VA 143, then turn east to connect at a new intersection with VA 143.

Under this alternative, only one CNE (CNE C), containing two noise sensitive land uses, is within the 500-foot noise study area. Both noise sensitive sites are associated with the Virginia Peninsula Regional Jail, approximately 450 feet from both proposed Skiffes Creek Connector alignments. The interior of this public institutional structure was evaluated as a Noise Abatement Criteria (NAC) category D and an outdoor seating area associated with the structure was evaluated as a category C. The design year 2043 exterior noise levels are predicted to be 67 dB(A) which exceed the NAC for category C receptors and therefore this site is considered to be impacted. The jail interior is not predicted to exceed the category D NAC due to the noise reduction factor of 25 dB(A) for a masonry structure with single glazed windows as shown in table 6 of the FHWA Highway Traffic Noise Analysis and Abatement Guidance Manual (2011) and is not considered impacted.

According to the VDOT Highway Traffic Noise Impact Analysis Guidance Manual, not all impacted noise sensitive receptors within 500 feet of the project area may qualify for noise abatement as noise abatement is typically evaluated for noise impacts caused primarily by the proposed roadway improvements. While the outdoor seating area associated with the jail is considered to be impacted by highway traffic noise in the design year 2043, the dominant noise source at this site has been determined to be I-64. Additional noise modeling determined that the predicted design year noise level at this site does not change when traffic noise is excluded from the proposed SCC. Since the proposed project alternatives do not contribute to the overall noise environment at this location, noise abatement for Build Alternative 1 is not considered warranted.

3.8.1.2 Build Alternative 2

Build Alternative 2 would provide an approximate one-mile two-lane roadway between US 60 and VA 143. This alternative would begin at a new intersection with US 60, approximately 1,000 feet west of the existing US 60/Green Mount Parkway intersection. Similar to Build Alternative 1, Build Alternative 2 would then bridge over Skiffes Creek, the CSXT railroad, and VA 143, then turn east to connect at a new intersection with VA 143. Under this proposed alignment three CNEs were identified within the 500-foot noise study area. CNE A containing two modeling sites representing the interior of the Morning Star Church (A1) and a cemetery (A2), CNE B containing 48 residences and one playground represented by 26 modeling sites,

and CNE C containing interior and exterior land uses associated with the Virginia Peninsula Regional Jail as discussed under Build Alternative 1.

The Design Year 2043 worst-case noise levels in CNE A are predicted to range from 41 – 67 dB(A) with one noise impact identified at the cemetery. While the cemetery is considered to be impacted, the dominant noise source at this site has been determined to be US 60, approximately 50 feet away. Additional noise modeling determined that the predicted design year noise level at this site does not change when traffic noise is excluded from the proposed SCC. Since the proposed Build Alternative 2 does not contribute to the overall noise environment at this location, noise abatement for CNE A is considered not warranted.

The design year 2043 worst-case noise levels in CNE B are predicted to range from 49 – 57 dB(A). No noise impacts due to an exceedance of the NAC or significant increase in noise levels (> 10dB(A)) from the existing year to the design year have been predicted; therefore, noise abatement for CNE B is considered not warranted.

The proposed alignments and typical sections of the SCC Build Alternatives 1 and 2 are similar in the vicinity of CNE C. Additionally, the traffic volumes, truck compositions, and predicted speeds are the same for both alternatives, as such, the predicted design year noise levels are predicted to be the same for CNE C under both alternatives. Therefore, the conclusions made for CNE C in the evaluation of Build Alternative 1 are the same for Build Alternative 2 – no noise abatement is considered warranted.

3.8.1.3 Conclusion

In conclusion, while noise impacts are present within the project study areas of both Build Alternative 1 and Build Alternative 2, no noise impacts are attributed to either of the proposed project alignments; therefore, no noise abatement is recommended. For additional information, refer to the Preliminary Noise Analysis Technical Memorandum (VDOT, 2018j).

3.9 WATERS OF THE U.S.

3.9.1 Existing Conditions

The study area is located within the James River – Skiffes Creek subwatershed (Hydrologic Unit Code [HUC] 020802060802) (USGS, 2017). The streams and wetlands within the study area ultimately drain to the James River.

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

To provide a more refined estimate of potential wetland and stream impacts that may result from the project, field investigations were conducted in June 2013 and March 2018 within a 225-foot Inventory Corridor. The Inventory Corridor, which encompasses Build Alternatives 1 and 2, provides the ability for future alignment shifts or refinements (see **Figure 3-6**).

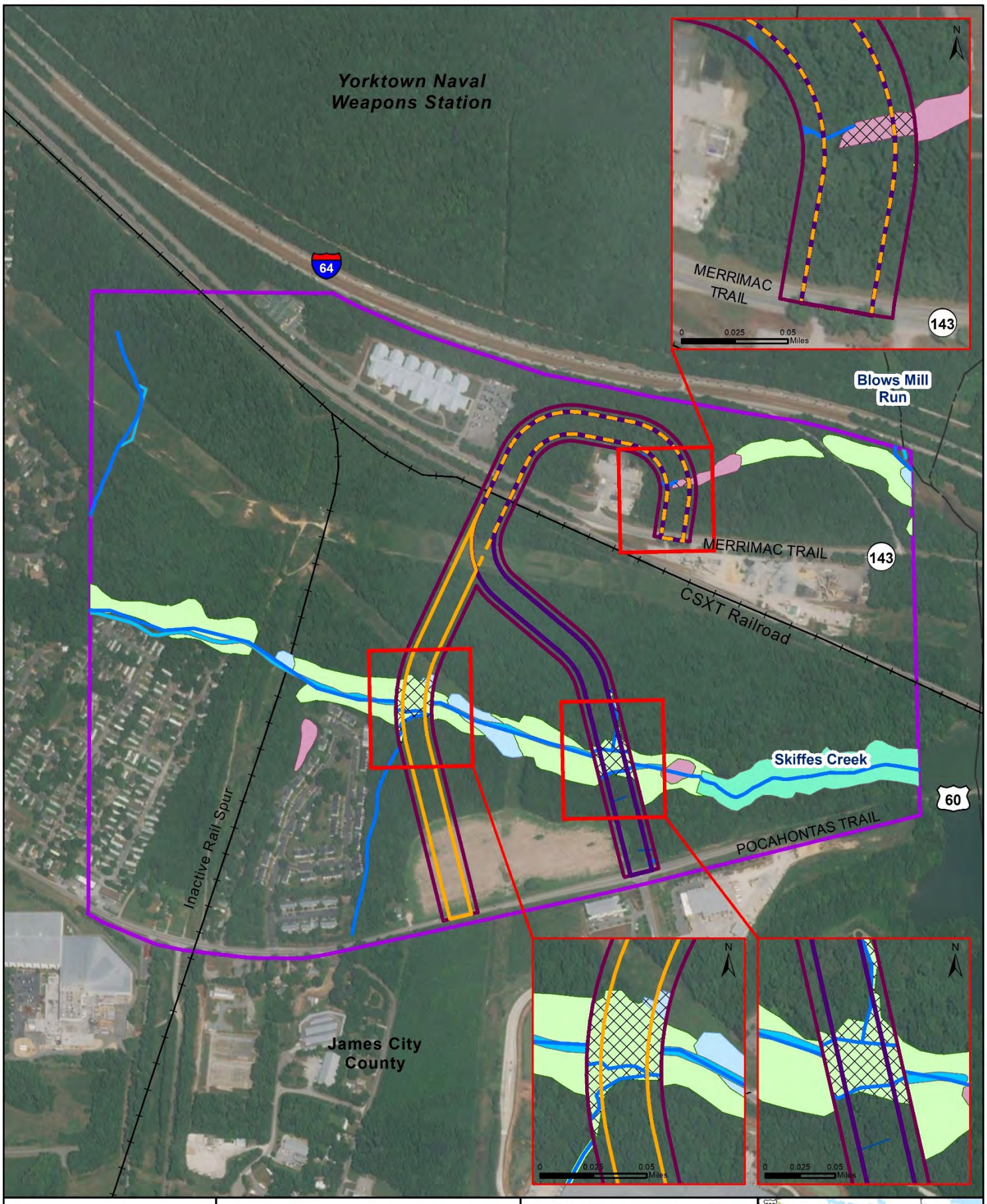


Figure 3-6
Streams and Wetlands within the Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 0.05 0.1 0.2 Miles

N W E S

Source: ESRI, NHD, NWI

- Build Alternative 1
- Build Alternative 2
- Field Investigated Wetlands
- Inventory Corridor
- Lacustrine
- Riverine
- PEM
- PFO
- PUB
- R2/R3/R4
- R6
- NHD Stream
- Study Area

Per the concurred methods with resources agencies, only the Inventory Corridor was studied in the field investigation; the rest of the study area was approximated with NWI and NHD. The field investigation was performed in accordance with the 2010 Regional *Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)*, the USACE 1987 *Wetland Delineation Manual*, and subsequent applicable regulatory guidance (USACE, 1987 and USACE, 2010).

Approximately 9,519 linear feet of regulated stream channels (combined NHD and 2013/2018 wetland investigation data) were identified within the study area, including 9,332 linear feet of perennial/intermittent channel (R2/R3/R4) and 187 linear feet of ephemeral channel (R6). No jurisdictional ditches were identified. Approximately 32.04 acres of wetlands (combined NWI and 2013/2018 wetland investigation data) were identified within the study area, including 18.86 acres of palustrine forested (PFO) wetlands, 1.69 acres of palustrine emergent (PEM) wetlands, 1.76 acres of palustrine unconsolidated bottom (PUB) wetlands, 7.03 acres of lacustrine wetlands, and 2.70 acres of riverine wetlands. Streams and wetlands (combined NHD, NWI, and field investigated) are depicted on **Figure 3-6**.

Within the Inventory Corridor, there are approximately 1,627 linear feet of R2/R3/R4 and 187 linear feet of R6 (2013/2018 wetland investigation data). In addition, there are approximately 2.98 acres of wetlands (2013/2018 wetland investigation data), including 2.74 acres of PFO wetlands, 0.09 acres of PEM wetlands, and 0.15 acres of PUB wetlands. Streams and wetlands (combined NHD, NWI, and field investigated) are depicted on **Figure 3-6**.

Additionally, VDEQ's WetCAT was run on January 5, 2018 to provide additional documentation on the condition of wetlands in the study area. According to WetCAT, wetland habitat stress levels and water quality stress levels range from somewhat stressed to severely stressed (VDEQ, 2018b). These results indicate that all wetland habitats and water quality within the study area experience a degree of stress that is not consistent with pristine environments. For additional information, refer to the ***Natural Resources Technical Report*** (VDOT, 2018d).

3.9.2 Environmental Consequences

3.9.2.1 No Build Alternative

Because the alternatives are on new alignment, the No Build conditions are consistent with the existing pre-development conditions. Existing infrastructure has impacted WOUS (*e.g.* construction of roads, Skiffes Creek Reservoir and dam, the CSXT railroad, surrounding development, etc.). The current impacts to WOUS would be anticipated to continue under the No Build Alternative. Wetlands within the study area would continue to be somewhat stressed to severely stressed in terms of wetland habitats and water quality.

3.9.2.2 Build Alternative 1

Since the initiation of the SCC Study in 2012, VDOT has refined the design to reduce impacts to WOUS. The original four-lane divided freeway facility options were reduced to a two-lane facility, reducing the LOD from 225 feet to 140 feet. In addition, the design speed was reduced from 50 mph to 35 mph. By reducing the design speed, the alignment for Build Alternative 1 could be shifted to cross Skiffes Creek at a perpendicular angle, which is generally the least impactful way to cross a wetland or stream and is preferred by the regulatory agencies with purview over these resources. The design refinements reduced impacts to streams and wetlands by 869 linear feet (lf) and 1.84 acres, respectively (see **Table 3-7)**. The current alignment of Build Alternative 1 would result in impacts to an estimated 0.85 acres of wetlands and

an estimated 673 linear feet of stream (impacts assume no bridging of Skiffes Creek). An additional design element that would further reduce impacts to wetlands and streams is a bridge crossing over Skiffes Creek. The extent of impact reduction would depend upon the final configuration of the bridge which would be developed during final design and CWA Section 404/401 permitting. The impact reductions from the bridge over Skiffes Creek were not included in this avoidance and minimization analysis.

Primary impacts to streams and wetlands resulting from roadway construction would likely include discharges of fill material for culverted stream crossings, bridge approaches and abutments, and roadway cut/fill slopes. Should Build Alternative 1 advance, impacts to wetlands and streams could 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. For more information on permitting, see **Section 9.0: Anticipated Permits** of the ***Natural Resources Technical Report*** (VDOT, 2018d).

Table 3-7: Build Alternative 1 and 2 Avoidance and Minimization Impact Reductions*

Alternative	Classification	2012 4-Lane LOD	2017 2-Lane 50 mph LOD	2-Lane 35 mph LOD (Current Alignment)
Build Alternative 1	PEM (acres)	-	-	-
	PFO (acres)	2.40	1.53	0.75
	PUB (acres)	0.29	0.21	0.10
	Total Wetland	**2.69**	**1.73**	**0.85**
	R6 (lf)	187	137	150
	R3/R4 (lf)	1,355	1,077	523
	Total Stream	**1,542**	**1,214**	**673**
Build Alternative 2	PEM (acres)	0.48	0.32	0.02
	PFO (acres)	0.82	0.51	0.83
	PUB (acres)	0.32	0.25	0.10
	Total Wetland	**1.62**	**1.07**	**0.95**
	R6 (lf)	-	-	-
	R3/R4 (lf)	318	188	365
	Total Stream	**318**	**188**	**365**

* In order to illustrate a worst-case scenario, impacts reported in Table 3-7 were estimated assuming the proposed roadway would cross Skiffes Creek on a fill causeway with culverts and would not be bridged. Through design and permitting, it is assumed bridging would be applied to avoid and minimize these impacts.

3.9.2.3 Build Alternative 2

The same design refinements used to avoid and minimize impacts to streams and wetlands for Build Alternative 1 were used for Build Alternative 2, ultimately reducing impacts to wetlands by 0.67 acres but increasing impacts to streams by 47 linear feet (see **Table 3-7**). The current alignment of Build Alternative 2 would result in impacts to an estimated 0.95 acres of wetlands and an estimated 365 linear feet of streams (impacts assume no bridging of Skiffes Creek). The primary impacts and mitigation described above for Build Alternative 1 would be the same for Build Alternative 2. For more information on permitting, see **Section 9.0: Anticipated Permits** of the ***Natural Resources Technical Report*** (VDOT, 2018d).

3.10 WATER QUALITY

3.10.1 Existing Conditions

According to VDEQ's 2014 305(b)/303(d) Water Quality Assessment Integrated Report, study area streams have insufficient data to determine if any designated uses are currently met, and are prioritized for future monitoring (VDEQ, 2014). VDEQ's Draft 2016 305(b)/303(d) Water Quality Assessment Integrated Report classifies these streams (totaling approximately 1.6 miles) as Category 5A impaired waters where a Total Maximum Daily Load (TMDL) is required. Aquatic life is impaired due to dissolved oxygen deficiencies (VDEQ, 2016).

The study area is greater than two miles away from public drinking water wells (VDEQ, 2018a; VDOT, 2018). The study area crosses Skiffes Creek approximately 0.5 miles upstream from the City of Newport News' raw drinking water intake located on Skiffes Creek Reservoir. For additional information, refer to the ***Natural Resources Technical Report*** (VDOT, 2018d).

3.10.2 Environmental Consequences

3.10.2.1 No Build Alternative

Because the alternatives are on new alignment, the No Build conditions are consistent with the existing conditions. Existing surface water impairments are expected to continue under the No Build Alternative.

3.10.2.2 Build Alternative 1

In accordance with Virginia's State Water Control Law (COV Title 62.1, Chapter 3.1) and implementing Virginia Stormwater Management Program (VSMP) regulations (9VAC25-870), Build Alternative 1 would maintain water quality and quantity post-development equal to or better than pre-development. Stormwater design would conform with VSMP regulations, which maintain, protect, or improve the physical, chemical, biological, and hydrologic characteristics, as well as water quality and quantity, of the receiving state waters.

Implementation of Build Alternative 1 would not impact public surface water quality. Although the City of Newport News' Skiffes Creek Reservoir surface water intake is approximately 0.5 miles downstream of Build Alternative 1, the reservoir is only used to store raw water. Drinking water is treated and stored at the Newport News City Reservoir. Due to the off-site treatment of Skiffes Creek Reservoir water, contamination of public drinking water is not a major concern.

Implementation of Build Alternative 1 is not expected to impact public drinking water wells. Build Alternative 1 is over two miles away from public drinking water wells; therefore, the wellhead protection radius set forth in the Virginia Wellhead Protection Plan (VDEQ, 2005) and the 100-foot wellhead setback zone specified in Virginia Waterworks Regulations (VR 355-18-000) for public groundwater supply wells would not be impacted.

Build Alternative 1 would introduce impervious surface to an otherwise undeveloped area. Consequently, stormwater runoff would also increase. The stormwater associated with Build Alternative 1 has the potential to carry roadway pollutants that would impact water quality. However, permanent stormwater BMPs would be designed as the project progresses and implemented to minimize the negative impacts of various

pollutants that can be carried by runoff into the groundwater and receiving waters in accordance with Virginia's State Water Control Law.

Build Alternative 1 would result in temporary impacts to water quality during roadway construction through increased sedimentation from land disturbing activities and occurrences of fuel spills or hydraulic spills from construction equipment. During construction, the contractor would be required to adhere to strict erosion and sediment control and stormwater measures and the associated required monitoring protocols, as specified in the State Water Control Law. Temporary stormwater BMPs would be designed as the project progresses and implemented to minimize the negative impacts of various pollutants that can be carried by runoff into the groundwater and receiving waters in accordance with Virginia's State Water Control Law.

3.10.2.3 Build Alternative 2

Similar to Build Alternative 1, Build Alternative 2 would adhere to the State Water Control Law and VSMP regulations, would not impact public surface water quality or drinking water wells, and would result in the same temporary and permanent impacts to water quality.

3.11 WILDLIFE AND HABITAT

3.11.1 Existing Conditions

The study area has experienced noticeable alterations over the past several hundred years, primarily due to human activity. Land development of the mid-late twentieth century, including housing, agriculture, retail, rail lines, reservoir construction, roadways, concrete plants, and correctional facilities, have encroached into and fragmented the various wildlife habitats found within the study area. Most of these manmade impediments to wildlife movement (*i.e.* VA 143, US 60, and the CSXT railroad) are located in an east-west orientation, and thus inhibit wildlife movement north and south within the study area (refer to **Figure 3-7**). The majority of remaining habitat is located in the study area's only wildlife corridor along Skiffes Creek. This corridor is intersected by utility easements, which fragment the corridor, but do not prevent continued use of the corridor (see **Figure 3-7**).

The wildlife in the study area primarily consists of species that are adapted to forest and developed lands. However, the forested riparian corridor along Skiffes Creek supports fauna more typically found in less disturbed floodplain forests, including neotropical migrant birds.

Streams within the Inventory Corridors also provide habitat for a variety of aquatic species. These streams are in relatively good health; however, there may be localized disrupting influences that are damaging to aquatic species and their habitat. Examples of disrupting influences include uncontrolled storm flows from adjacent roads which contribute to erosion and sedimentation of Inventory Corridor streams, thereby reducing habitat. Additionally, storm flows also have the potential to carry stormwater pollutants that reduce the quality of aquatic habitat. For additional information, refer to the ***Natural Resources Technical Report*** (VDOT, 2018d).

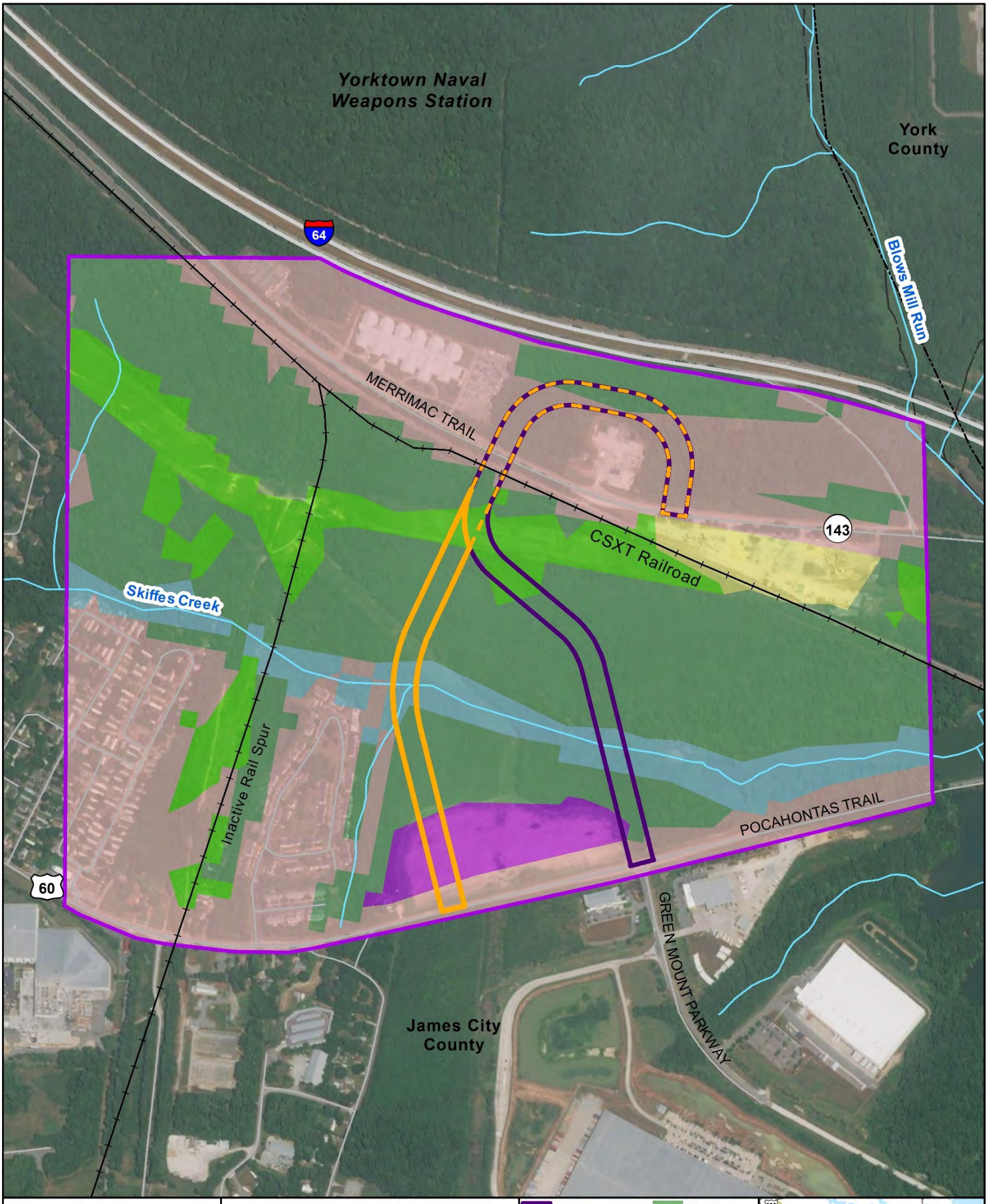


Figure 3-7
Land Cover within the Study Area

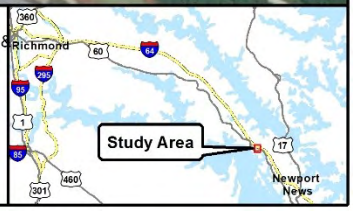
VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501;
UPC: 100200

0 0.05 0.1 0.2 Miles

N W E S

Source: ESRI, NHD, NLCD

- Build Alternative 1
- Build Alternative 2
- Study Area
- Open Water
- Developed
- Barren Land
- County Boundary
- Forest
- Shrub/Scrub & Herbaceous/ Grassland
- Cultivated Crops
- Wetlands
- Railroad



3.11.2 Environmental Consequences

3.11.2.1 No Build Alternative

Because the alternatives are on new alignment, the No Build conditions are consistent with the existing pre-development conditions. Existing infrastructure has impacted wildlife and habitat (*e.g.* construction of roads, Skiffes Creek Reservoir and dam, the CSXT railroad, surrounding development, etc.). The current level of impacts and disruption to wildlife and habitat would be anticipated to continue under the No Build Alternative.

3.11.2.2 Build Alternative 1

Construction of Build Alternative 1 would result in some effects to the general ecology of the roadway's surroundings (see **Table 3-8**). Build Alternative 1 would affect wildlife communities and habitat through conversion of existing land cover to paved road surfaces and maintained right-of-way. An estimated 3.6% (14.6 acres) of the existing land cover within the study area would be converted for transportation use. This conversion would result in loss of wildlife habitat and could affect existing wildlife migration patterns as a result of this new north-south road barrier, inhibiting wildlife movement east and west. The proposed bridges over the CSXT railroad and VA 143 would prevent full habitat fragmentation by providing wildlife passages. In addition, the bridge over Skiffes Creek that would be developed during final design and Section 404/401 permitting, would also provide a wildlife passage.

Table 3-8: Build Alternative 1 and 2 Land Cover Impacts

Land Cover Type	Total Acres within Study Area	Build Alternative 1 Impact (acres)	Build Alternative 2 Impact (acres)
Forest; Deciduous, Evergreen, and Mixed	169.5	6.4	6.4
Developed; Open Space	79.4	4.4	4.5
Developed; Low, Medium, and High Intensity	71.4	0.7	0.7
Shrub/Scrub and Herbaceous/Grassland	40.3	2.1	0.9
Wetlands	22.3	0.9	1.0
Cultivated Crops	12.5	0.1	1.4
Barren Land	9.5	0	0
Open Water	5.8	0	0
TOTAL	**410.7**	**14.6**	**14.9**

Source: NLCD, 2011.

As discussed in **Section 3.10**, Build Alternative 1 would also increase the amount of impervious surface within the study area, thereby increasing stormwater runoff. The stormwater runoff associated with Build Alternative 1 has the potential to carry roadway pollutants that impact aquatic biology and habitat. However, installation of stormwater BMPs would help mitigate the effect of roadway runoff pollutants on aquatic biology by treating stormwater. BMPs would also attenuate flows, reducing the potential for downstream erosion and impacts to hydrologic regime.

3.11.2.3 Build Alternative 2

Build Alternative 2 would impact an estimated 0.3 more acres of land than Build Alternative 1, but would still convert approximately 3.6% (14.9 acres) of the existing land cover within the study area to transportation use. Wildlife communities and habitat would be impacted in a similar manner as Build Alternative 1. Build Alternative 2 direct impacts to land cover are included in **Table 3-8**.

3.12 THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES

3.12.1 Existing Conditions

3.12.1.1 Database Findings

Federally listed species with the potential to occur in the study area include the Atlantic sturgeon (*Acipenser oxyrinchus)* and the northern long-eared bat (*Myotis septentrionalis*). State listed species with potential to occur in the study area include little brown bat (*Myotis lucifugus lucifugus*), tri-colored bat (*Perimyotis subflavus*), and Mabee's salamander (*Ambystoma mabeei*).

The Atlantic sturgeon is an anadromous fish that migrates from the ocean into coastal estuaries and rivers to spawn. In the Chesapeake Bay, Atlantic sturgeon historically spawned in all of its major tributaries. Presently, spawning populations have been reduced due to overfishing, pollution, dam construction, and habitat degradation (Bilkovic, et al., 2009). The James and York Rivers in Virginia are the two rivers comprising the Chesapeake Bay Distinct Population Segment where Atlantic sturgeon reproduction has been confirmed (Balazik, et al., 2012). The Atlantic Sturgeon was last recorded within a two-mile buffer of the study area by Virginia Department of Game and Inland Fisheries (VDGIF) in 1998; however, the existing Skiffes Creek Reservoir and associated dam effectively act as an impediment to fish passage, which would make the Atlantic sturgeon's presence within the study area highly unlikely (VDGIF, 2018a).

Declines in the northern long-eared bat, the little brown bat, and the tri-colored bat populations are largely due to the fungal disease white-nose syndrome (WNS), wind energy development, and habitat modification. The northern long-eared bat, the little brown bat, and the tri-colored bat have been confirmed within a two-mile buffer of the study area (VDGIF, 2018a). VDGIF's northern long-eared bat winter habitat and roost trees mapper indicates that there are no known hibernacula or roost trees within 40 miles of the study area (VDGIF, 2018b). VDGIF's tri-colored and little brown bat habitat mapper indicates the closest hibernaculum (overwintering shelter) is over 130 miles from the study area. There are no recorded tri-colored bat or little brown bat roost trees in Virginia (VDGIF, 2018b).

Mabee's salamander is a small and rare terrestrial forest salamander that breeds in fish-free temporary pools. This species is found in savannas in burrows at the edges of bogs or ponds. They also occur in low wet woods and swamps. Mabee's salamanders have been recorded in 14 cities/counties in Virginia, including James City County. Threats include habitat fragmentation, aquatic and terrestrial habitat loss, road mortality, and alteration of hydrology mostly due to urbanization (VDGIF, 2018a).

No streams were identified as Threatened and Endangered Waters or Anadromous Fish Use Streams within the study area. The USFWS Information for Planning and Consultation (IPaC) system indicates that no critical habitat occurs within the study area. Additionally, VDGIF's Virginia Fish and Wildlife Information Service (VaFWIS), VDGIF's Wildlife Environmental Review Map Service (WERMS), the Center for Conservation Biology (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 0.8 miles away (CCB, 2018). For additional information, refer to the ***Natural Resources Technical Report*** (VDOT, 2018d).

3.12.1.2 Field Findings

In March 2018, a field investigation was conducted within the Inventory Corridor to identify potential habitat for Atlantic sturgeon, little brown bat, northern long-eared bat, Mabee's salamander, and tri-colored bat. No suitable habitat was identified for Mabee's salamander or Atlantic sturgeon. No ephemeral ponds that could be used by Mabee's salamander were identified. Skiffes Creek Reservoir and the associated dam act as an impediment to fish passage and would prevent the Atlantic sturgeon from migrating upstream to the Inventory Corridor. In addition, the largest stream within the Inventory Corridor, Skiffes Creek, is approximately 10 feet wide, 6-18 inches deep, has multiple roots, logs, and debris crossing the channel and would not provide suitable habitat for the Atlantic sturgeon. The forested areas within the Inventory Corridor have suitable habitat for the listed bat species; however, the closest known hibernaculum/roost tree for any of the identified species is over 40 miles away.

3.12.2 Environmental Consequences

3.12.2.1 No Build Alternative

Because the alternatives are on new alignment, the No Build conditions are consistent with the existing pre-development conditions. Existing infrastructure has impacted threatened, endangered, or special status species (*e.g.* construction of roads, Skiffes Creek Reservoir and dam, the CSXT railroad, surrounding development, etc.). The current level of impacts and disruption to threatened, endangered, or special status species would be anticipated to continue under the No Build Alternative.

3.12.2.2 Build Alternative 1

Based on the lack of habitat and/or distance to known occurrences, Build Alternative 1 is not anticipated to impact threatened, endangered, or special status species. Should Build Alternative 1 be selected for construction, further coordination and final Section 7 effect determinations would be conducted with resource agencies during the Section 404/401 permitting process.

Conservation and protection measures for the northern long-eared bat would be in accordance with the final 4(d) rule and the Programmatic Biological Assessment for Transportation Projects in the Range of the Indiana Bat and Northern long-eared bat. Additional conservation measures may be implemented depending upon the outcome of agency coordination.

In accordance with a memorandum of understanding between VDOT and FHWA, the results of any presence/absence surveys that may result from future Section 7 coordination would not influence the FHWA NEPA/location decision process. Therefore, if surveys are required from the resource agencies, the coordination requiring the surveys would occur during the permitting/design stage of the study. Following, or as part of the coordination, the surveys would be completed as required by the natural resource agencies.

3.12.2.3 Build Alternative 2

Based on the lack of habitat or distance to known occurrences, Build Alternative 2 is not anticipated to impact threatened, endangered, or special status species. The same coordination described above for Build Alternative 1 would be required should Build Alternative 2 be selected for construction.

As described for Build Alternative 1, if surveys are required from the resource agencies, the coordination requiring the surveys would occur during the permitting/design stage of the study.

3.13 HAZARDOUS MATERIALS

3.13.1 Existing Conditions

Environmental Data Resources, Inc. (EDR) was utilized to perform a search of federal and state regulatory agency databases within a 1-mile radius from the study area to identify potential sites with recognized environmental conditions (RECs). A total of five sites of elevated environmental concern were identified; four of these sites are within the study area and one of these sites is located approximately 140 feet north of the study area. For a location figure and additional information, refer to the ***Hazardous Materials Technical Memorandum*** (VDOT, 2018b).

3.13.2 Environmental Consequences

3.13.2.1 No Build Alternative

Because the alternatives are on new alignment, the No Build conditions are consistent with the existing pre-development conditions. The current level of soil and groundwater impacts would be anticipated to continue.

3.13.2.2 Build Alternative 1

Based on the EDR Database Report, no "Open" Pollution Complaint (PC) cases or current corrective action efforts are associated with any of the sites identified within the study area. Four sites were identified within the study area with PC cases that have been closed by the VDEQ. One site (VDOT Skiffes Creek Headquarters) was identified to have historic petroleum releases associated with leaking underground storage tanks and is located within close proximity (50 feet) of the LOD of Build Alternative 1. Additionally, the Yorktown Naval Weapon Station is located outside of the study area but is identified as a National Priorities List (NPL) Superfund Site with extensive corrective action efforts and land use controls associated with subsurface soil and groundwater. The USEPA indicated that there are numerous areas of concern within the Yorktown Naval Weapons Station and that there is insufficient data to make conclusions as to whether the migration of contaminated groundwater is under control. Since the southernmost border of the Yorktown Naval Weapons Station is located approximately 340 feet north of the proposed LOD for Build Alternative 1 (bordering I-64 to the north), there is potential for impacted groundwater to have migrated from Yorktown Naval Weapons Station to the subsurface of the project site.

Should the project advance, prior to or during right-of-way acquisition, a Phase I Environmental Site Assessment (ESA), consistent with the American Society for Testing and Materials (ASTM) method E1527-13 is recommended. Findings from the ASTM Phase I ESA would be used to determine the applicability for an ASTM Phase II ESA (ASTM method E1903-11). Any necessary remediation would be conducted in compliance with federal and state environmental laws and would be coordinated with the

USEPA, VDEQ, and other regulatory agencies, as necessary. The potential impacts would not influence FHWA's NEPA decision.

Undocumented hazardous materials that are encountered during construction efforts would be managed, handled, and disposed of in accordance with federal, state, and local regulations.

3.13.2.3 Build Alternative 2

Build Alternative 2 would be located at the same distance to the VDOT Skiffes Creek Headquarters site and Yorktown Naval Weapon Station. As noted for Build Alternative 1, should the project advance, prior to or during right-of-way acquisition, a Phase I ESA, consistent with the ASTM method E1527-13 is recommended and the findings would be used to determine the applicability for an ASTM Phase II ESA. The potential impacts would not influence FHWA's NEPA decision. Remediation and undocumented hazardous materials would be handled the same as discussed above for Build Alternative 1.

3.14 INDIRECT AND CUMULATIVE EFFECTS

3.14.1 Indirect Effects

This section provides a summary of the potential indirect effects associated with the direct impacts anticipated to occur with the No Build Alternative and Build Alternatives 1 or 2. Refer to the ***Indirect and Cumulative Effects Technical Report*** for a discussion of the methodology for analysis of indirect effects (VDOT, 2018c).

3.14.1.1 No Build Alternative

Under the No Build Alternative, continued limited local connectivity coupled with population growth and increases in truck traffic through the study area would have a negative impact on businesses, community facilities, residents, and through-traffic throughout the ICE Study Areas. With the expected planned and/or approved development within the study area, an increase in traffic, including truck traffic, would likely occur along US 60 potentially contributing to safety concerns to adjacent communities and community facilities. Additional proximity impacts such as noise, air quality, and visual intrusions could affect communities as well as historic resources along the existing roadway network. Existing development within the watersheds would continue to contribute to surface water impairments.

No induced growth would be expected as a result of the No Build Alternative. The ICE Study Areas and surrounding localities are already developing or are planned and/or approved for development and anticipated growth would continue regardless of the conditions of the surrounding roadway network.

3.14.1.2 Build Alternative 1

Existing communities and community facilities, primarily on US 60, are likely to experience less through truck movement due to the increased travel efficiency to/from employment centers and truck O/D locations and would benefit from additional access to VA 143 as an access route to other neighborhoods and community facilities. The improved local connectivity could increase the desirability of living or working within the area, which would have a positive indirect impact on businesses and residents throughout the Socioeconomic Resources ICE Study Area. During construction, short-term road closures and detours would be limited to construction connecting to the two existing roadways. Since construction would be

limited in duration, there would be no short-term indirect effects to access between neighborhoods and community facilities.

Build Alternative 1 would create a road on a new alignment which opens land that was previously less accessible to development; however, James City County's comprehensive plans have consistently identified the SCC study area and much of the surrounding area as a growth area with particular potential for industrial development and mixed use areas. A similar alignment to Build Alternative 1 is included in transportation plans of James City County, and additional infill development and redevelopment is anticipated in York County and the City of Newport News. The majority of the total acres outside of designated growth areas are shown on James City County's 2035 Comprehensive Plan Land Use Map and the City of Newport News' 2030 *Framework for the Future* and *Transportation Map* as federal, state, or county land, mixed use, limited industry, or residential land uses (JCC, 2015a; City of Newport News, 2016b). The future land use and zoning plans are designed to accommodate this development. Therefore, no induced growth is anticipated under Build Alternative 1. Additionally, since Build Alternative 1 is not anticipated to encourage or accelerate any changes in land use that are not already expected in the localities within the study area, the construction of Build Alternative 1 is unlikely to create pressure on city councils and boards of supervisors to make changes to their land use plans to allow types of development in areas not currently approved for it or to allow greater development densities.

Potential indirect effects to waters, wetlands, and water quality could result from increased stormwater runoff due to an increase in impervious surface. Increased downstream pollution and sedimentation could also occur as a result of construction, use, and maintenance of the road. Implementation of strict erosion and sediment control and stormwater measures during construction would minimize permanent and temporary impacts to waters, wetlands and water quality, and thereby minimize indirect effects as well. Construction of stormwater management facilities would also minimize permanent indirect effects to water quality. Although Build Alternative 1 would not directly impact FEMA floodplains, flood flow elevations and hydrology could be altered through the placement of fill, culverts, and bridges. All construction activities would be designed to ensure that culverts and bridges are adequately sized and do not impede floodwater passage.

Indirect effects to wildlife and threatened, endangered, and special status species could occur due to increased noise, increased pollution, potential for introduction of invasive species, changes in vegetative composition due to changes in light and hydrologic regimes, and habitat fragmentation. However, bridges and culverts would be designed and installed to prevent habitat fragmentation and changes in hydrologic regime. During construction, the contractor would adhere to VDOT's Road and Bridge Specifications manual, Chapter 40 of Title 3.2 of the Code of Virginia, 2VAC-5-390-20, and other applicable regulations to prevent the introduction and establishment of invasive species.

Archaeological resources in the Historic Resources ICE Study Area may be indirectly impacted should additional areas in the vicinity of Build Alternative 1 be developed. Refer to **Section 3.6** for a discussion of potential indirect Section 106 impacts.

No induced growth would be expected as a result of Build Alternative 1. The ICE Study Areas and surrounding localities are already developing or are planned and/or approved for development and anticipated growth would continue regardless of the conditions of the surrounding roadway network.

3.14.1.3 Build Alternative 2

Socioeconomic indirect effects are similar for Build Alternatives 1 and 2. However, residents may experience an increase in idling traffic associated with the new intersection. During construction, short-term road closures and detours would be limited to construction connecting to the two existing roadways. Since construction would be limited in duration, there would be no short-term indirect effects to access between neighborhoods and community facilities.

Due to the close proximity of the Build Alternatives, indirect effects to natural and historic resources for Build Alternative 2 are the same as those identified for Build Alternative 1. Refer to **Section 3.6** for a discussion of potential indirect Section 106 impacts.

No induced growth would be expected as a result of Build Alternative 2. The ICE Study Areas and surrounding localities are already developing or are planned and/or approved for development and anticipated growth would continue regardless of the conditions of the surrounding roadway network.

3.14.2 Cumulative Effects

Over time, past and present actions have been both beneficial and adverse to socioeconomic, natural, and historic resources. Any development in the future would likely result in development of surrounding undeveloped land, redevelopment or infill development. Protections afforded by federal, state, and local regulations could limit future adverse impacts to natural and historic resources. Refer to the ***Indirect and Cumulative Effects Technical Report*** for a more detailed discussion of each step of the evaluation (VDOT, 2018c).

3.14.2.1 No Build Alternative

Past and present actions have been both beneficial and adverse to socioeconomic resources within the ICE Study Areas, and it is expected that reasonably foreseeable future actions under the No Build Alternative would be as well. Past and present growth and development has overall increased the standards of living for communities, provided for community cohesion and community and recreational facilities, and economic growth and expansion. Additionally, such growth and development has benefited local economies by improving access to ports, industrial parks, commercial centers, markets, and customers. Although the overall roadway network connectivity and community cohesion has increased, the CSXT railroad and I-64 have and continue to fragment communities and destinations within these areas. Without a new connection between US 60 and VA 143, population growth and economic development would continue; however, existing and future communities and businesses would continue to be poorly connected, causing negative economic and social consequences.

Past development has produced a steady decline in natural and historic resource conditions, including the creation of reservoirs, expansion of road and rail networks, and land use changes in the area. Intense land use has resulted in reduced water quality, impairment of waters for human and wildlife use; loss of wetlands, streams, and floodplains; loss of terrestrial wildlife population from over-exploitation; habitat loss, fragmentation, and degradation; and removal or impact to historic resources. Development projects conducted before the 1970s, in the absence of major environmental regulations, were generally more impactful than more recent projects and resulted in much of the current impairment to natural and historic resources. Under the No Build Alternative, existing surface water impacts would continue, as well as the continued loss of natural resources due to ongoing developments. Historic resources along US 60 would

continue to experience the proximity effects associated with truck traffic. Therefore, the No Build Alternative would likely have a minor adverse cumulative effect on communities, community facilities, EJ populations, and natural and historic resources.

3.14.2.2 Build Alternative 1

Past and present actions have led to fragmentation of communities and community facilities; hindering community cohesion. Access to businesses and destinations has also been hindered by fragmentation throughout the ICE Study Areas. Build Alternative 1 would have a moderate beneficial long-term cumulative impact by improving connectivity between neighborhoods, enhancing evacuation routes, and improving access to other community facilities located along US 60 and VA 143. Additionally, Build Alternative 1 would provide efficient connectivity for local truck movements, which would result in less trucks passing by neighborhoods and community facilities. Present and future local comprehensive planning allows for development and land use strategies that enhance accessible and efficient transportation systems to allow for convenient and efficient movement of people and goods. The proposed project would add some beneficial impacts to otherwise adverse cumulative impacts on community cohesion.

The impacts to waters, wetlands, and water quality; floodplains, wildlife habitat; and threatened, endangered, and special status species from Build Alternative 1 would contribute to the cumulative effects that have occurred in the past to natural resources within the study area; although the effects should be minimized through implementation of best management practices, compensatory mitigation, and environmental regulations. The impacts to floodplains, wildlife habitat; and threatened, endangered, and special status species from present and reasonably foreseeable projects are difficult to quantify, as there are no comprehensive regulatory mechanisms that track impacts to these resources. In order to infer present and reasonably foreseeable impacts to wetlands and streams, VDOT analyzed data provided by the USACE that reports Section 404 permits issued by the USACE over the last five years (data provided by the USACE to VDOT) within the sub-basin (HUC 02080206) where the project would be constructed. This data is the best available data for the project and is representative of the individual subwatersheds (HUC-12s) that make up the Natural Resources ICE Study Area. From May 7, 2013 through May 7, 2018, the USACE issued Section 404 permits authorizing impacts that resulted in the permanent loss of 69.16 acres of wetlands and 35,060 linear feet of streams within HUC 02080206 (Lower James) (USACE, 2018). Based on current and projected land use and growth in the HUC, it is reasonable to assume that the trend of impacts to wetlands and streams over the last five years would continue into the reasonably foreseeable future. Therefore, the impact of less than 1 acre of wetlands and 673 linear feet of streams from Build Alternative 1 impact would have a minor cumulative effect.

Prior to the NHPA and local protective measures, the impact to historic resources through the development of the area was much higher than the potential impacts today. Some historic properties (private and public) may continue to fall into disrepair or be impacted by development in the area. On federal undertakings, implementation of mitigation strategies would be coordinated with the SHPO and Section 106 consulting parties (as necessary), reducing cumulative impacts on historic resources that would otherwise occur (see **Section 3.6** for more information regarding Section 106 impacts).

3.14.2.3 Build Alternative 2

Similar to Build Alternative 1, Build Alternative 2 would have a moderate beneficial long-term cumulative impact on socioeconomic resources. Although the new intersection and associated turning movements would be proximate to residential communities possibly increasing traffic idling, an adverse cumulative impact on the communities adjacent to the connector is not likely.

Due to the close proximity of the Build Alternatives, cumulative impacts for Build Alternative 2 are the same as those identified for Build Alternative 1 for natural and historic resources (see **Section 3.6** for more information regarding Section 106 impacts). Additionally, the less than 1 acre of wetlands and 365 linear feet of streams that would be impacted by Build Alternative 2 would, similar to Build Alternative 1, have a minor cumulative effect. Refer to the ***Indirect and Cumulative Effects Technical Report*** for a more detailed discussion of each step of the evaluation (VDOT, 2018c).

CHAPTER 4.0 COORDINATION AND COMMENTS

4.1 AGENCY COORDINATION

Pursuant to 23 CFR § 771.111 and the Council on Environmental Quality (CEQ)'s *Memorandum for General Counsels, NEPA Liaisons, and Participants in Scoping*, VDOT, in cooperation with FHWA, has coordinated extensively with local, state, and federal entities as well as engaged in public involvement efforts throughout the development of the SCC Study. Scoping activities originally occurred in 2012, when the SCC Study was initiated before it was placed on hold. As the study was reinitiated in 2017, scoping activities included additional updated coordination efforts. In September 2017, VDOT mailed scoping letters and questionnaires to state, federal, and local agencies and organizations to obtain pertinent information and data, as well as to identify key issues regarding the potential environmental impacts for this study. The letters and questionnaires related to the recipient's purview were mailed to the following government agencies:

- Advisory Council on Historic Preservation
- City of Newport News
- City of Williamsburg
- Hampton Roads Planning District Commission
- Hampton Roads Transportation Accountability Commission
- Hampton Roads Transportation Planning Organization
- James City County
- National Oceanic and Atmospheric Administration, Habitat Conservation Division
- United States Army Corps of Engineers
- United States Department of Agriculture, Forest Service
- United States Department of Agriculture, Natural Resources Conservation Service
- United States Department of Homeland Security, Federal Emergency Management Agency
- United States Department of Homeland Security, United States Coast Guard
- United States Department of Housing and Urban Development
- United States Department of the Interior, Fish and Wildlife Service
- United States Department of the Interior, National Park Service, Northeast Region
- United States Department of the Interior, Office of Environmental Policy and Compliance
- United States Department of Transportation, Federal Railroad Administration
- United States Department of Transportation, Federal Transit Administration
- United States Environmental Protection Agency
- United States Joint Base Langley-Eustis
- Virginia Department of Agricultural and Consumer Services
- Virginia Department of Conservation and Recreation
- Virginia Department of Emergency Management
- Virginia Department of Environmental Quality
- Virginia Department of Forestry
- Virginia Department of Game and Inland Fisheries
- Virginia Department of Health
- Virginia Department of Historic Resources
- Virginia Department of Housing and Community Development
- Virginia Department of Mines, Minerals and Energy

- Virginia Department of Rail and Public Transportation
- Virginia Economic Development Partnership
- Virginia Marine Resources Commission
- Virginia Outdoors Foundation
- Virginia Peninsula Regional Jail
- Virginia State Police Department
- York County
- Yorktown Naval Weapons Station

4.2 AGENCY SCOPING RESPONSES

In response to the scoping letters, VDOT received responses from a number of agencies identifying transportation needs, environmental resources, and other relevant factors to be analyzed in this EA. **Table 4-1** provides a summary of the responses received. Copies of the correspondence is provided in **Appendix B**.

Table 4-1: Agency Scoping Responses

Agency	Scoping Responses
United States Army Corps of Engineers	Response described USACE process of authorizing FHWA coordination on their behalf as lead agency. Indicated USACE will serve as both a Cooperating and a Concurring Agency for this project study. Response provided specific suggestions that apply to the study area and directions and goals of the region. Response indicated that there are valid USACE permits as well as preliminary Jurisdictional Determinations (JDs) within the project area. Response also recommended the following: • The study area boundary for analyzing indirect and cumulative effects should include an area of sufficient size to include any indirect downstream effects. • VDOT should obtain information regarding impaired waters in the region and ascertain the basis for their designation as impaired, which may provide helpful information for establishing a geographic study area for the analysis of potential indirect and cumulative effects to streams. • VDOT should consider the dates of construction of highways (US 60, I-64, and VA 143) or any major development/change in land use within and adjacent to the study area in setting a past date. • VDOT should document avoidance and minimization of impacts to streams and wetlands. • Concern was also noted regarding whether the relocation of US 60 project was abandoned. It was suggested that the purpose and need for the SCC project be clearly defined and supported separate from earlier studies. • Potential induced growth or economic development and investment should be considered as the study is developed. • All stormwater facilities should be located outside of jurisdictional areas.

Agency	Scoping Responses
United States Environmental Protection Agency	Outlined the responsibilities that they will take in the NEPA process as a Cooperating Agency including: • Identification of significant issues • Provide technical assistance in the development of the analysis of alternatives and their environmental impact • Technical assistance on Environmental Justice, cumulative impacts, etc.
United States Department of Transportation - Federal Railroad Administration	Response expressed interest in acting as a Participating Agency in the study and willingness to assist with NEPA processes. Indicated that all options would have to cross a critical CSXT railroad corridor. Added that if future funding was applied through Federal Railroad Administration (FRA), documentation would need to comply with FRA's Procedures for Considering Environmental Impacts.
National Oceanic and Atmospheric Administration – National Marine Fisheries Service	Response indicated that no Essential Fish Habitat (EFH) or fish passage for anadromous species was located within study area, and therefore no further coordination is required.
Virginia Department of Agriculture and Consumer Services	Response provided specific suggestions that apply to the study area and directions and goals of the region. Response suggested that VDOT be mindful of any actions that could result in alteration of water flow within surrounding agricultural lands, and to the greatest extent possible, minimize any adverse drainage or erosion issues that may result.
Virginia Department of Conservation and Recreation - Planning and Recreation Resources	Response indicated that there was a review performed and no recreation resources exist within the study area and no impacts are anticipated.
Virginia Department of Conservation and Recreation - Natural Heritage	Response indicated that Natural Heritage resources are not located within two miles of the project boundary. Stated that no listed threatened and endangered plant and insect species will be affected by the current activity. Ensured that there are no State Natural Area Preserves in the project area.
Virginia Department of Game and Inland Fisheries	Response indicated that no response is available at this time for projects that are not currently involved in one of the regulatory review processes that the VDGIF is consulted for. Also indicated that the lack of response does not constitute "no comment" or imply support. Provided a link to search for threatened and endangered wildlife species within study area.
Virginia Department of Health – Office of Drinking Water	Response provided information on proximity of study to public drinking water sources and suggested potential impacts to public water distribution systems or sanitary sewage systems must be verified by the local utility. Stated that Best Management Practices should be employed, including Erosion & Sedimentation Controls and Spill Prevention Controls and Countermeasures on the project site and that materials should be managed while on site and during transport to prevent impacts to nearby surface water.

Agency	Scoping Responses
James City County	Response indicated general approval of the project and advised on the potential benefits of adding the SCC to the area. Response also discussed growth and development of the county citing businesses that have grown in the area. SCC project would fit community goals as expressed in the 2035 Comprehensive Plan. Advised on upcoming development within the County. Provided links for sites and land information for large developments in the area. Offered copy of proffers, master plan, and traffic study for Peninsula Pentecostal Church which is based on future SCC. Stated that the county has not changed zoning based on the land use assumptions of the SCC Study. Stated that the county has not made infrastructure improvements related to land use changes based on the SCC Study. Provided a list of major developments within the last 25 years in the area as well as planned and approved but not yet built major development. Wants to ensure that there are no impacts to the Skiffes Creek Reservoir. Advised on several disproportionately high or concentrated populations of minorities and low-income populations from the U.S. Census Bureau data and validated its accuracy. Responded that there are no planned greenways, trails, recreational facilities, or public parks in the study area other than a 2002 Greenway Master Plan that does not have funds allocated. Provided information about the school properties that provide recreational programs for students and the community.
York County	County response declined an invitation to participate in the study due to the fact that the scoped project area does not lie within York County. Offered assistance with any further questions that may come as a result of the SCC projects progress.

4.2.1 Merged Process Agreement Coordination

The environmental review process as part of this EA was carried out following the *National Environmental Policy Act and Clean Water Act (Section 404) Merged Process for Highway Projects in Virginia* (merged process)[13], pursuant to the agreement between VDOT, the FHWA, the USACE, the USEPA, and the USFWS.

In accordance with the merged process agreement, resource impact methodologies were prepared and distributed to the Concurring, Cooperating, and Participating Agencies in September 2017, revisions were made to address the agencies' comments, and the methodologies were concurred upon on November 8, 2017.

On November 8, 2017, VDOT presented potential purpose and need elements and a draft Purpose and Need Statement to the Concurring, Cooperating, and Participating Agencies. During and following the meeting, VDOT received input from several agencies requesting clarification on several of the points shown on the presentation or discussed during the meeting. Revisions were made to address the agencies' comments and the Purpose and Need Statement was redistributed and concurred upon on January 10, 2018.

[13] The merged process facilitates an environmental review that helps to ensure a permittable project if and when the project advances into design. Permits would not be obtained as part of this phase of the project.

On January 10, 2018, VDOT presented alternative options to receive agency input. On February 14, 2018, VDOT gave additional information on each alternative and recommended whether each alternative met the Purpose and Need of the study. VDOT recommended retaining the No Build Alternative and Build Alternative Options 1 and 2. Additional options suggested by the agencies were assessed. The agencies concurred on March 14, 2018 that Build Alternative Options 1 and 2 should be retained for evaluation in this EA, as well as the No Build Alternative.

Following the public review of this EA, VDOT will re-engage the Concurring, Cooperating, and Participating Agencies to seek concurrence on a recommended preferred alternative and conceptual mitigation for that preferred alternative. This coordination would be documented in VDOT's Request for FONSI from FHWA.

4.3 PUBLIC INVOLVEMENT

4.3.1 Citizen Information Meetings

On November 9, 2017 from 5:00 p.m. to 7:00 p.m., VDOT held a CIM at James River Elementary School, 8901 Pocahontas Trail, Williamsburg, VA to introduce the study to the public, share available information, and gather public input for consideration during study development. Specifically, VDOT sought input from the public to inform concurrence on the purpose and need, as described above. Advertisements for the CIM were published in local newspapers. Additionally, notice for the CIM was given on VDOT's website and all CIM materials were posted to the website prior to the meeting date. The CIM took place at a local elementary school accessible by transit to the local community, and was held in an open house format with display boards depicting general information on the study, including the study background and goals, the study area and alternatives considered, environmental analysis procedure, and the study schedule. VDOT representatives were available to discuss the study and answer questions. Comment sheets and informational brochures were provided at the meeting and were made available on the study website. Twenty-one people signed in for the meeting, including members of the press and elected officials. Eight comment sheets, two letters, and three emailed comments were received during the CIM or during the 10-day comment period following the meeting, and one oral statement was recorded at the meeting. Commenters generally supported the stated goals of the SCC study and noted their concern regarding traffic, safety, and conflict between local traffic and regional truck traffic.

A second CIM was held on February 15, 2018 from 6:00 p.m. to 8:00 p.m. at James River Elementary School to seek input on the options to be considered and retained in this EA. The CIM was held in an open house format and citizens could stop in at any time to discuss the study and their concerns with VDOT representatives. Attendees received informational brochures describing the study and preprinted comment sheets designed to elicit their input on the proposed project and the options to be retained for further study. The project study material was made available on the study website and a link was provided to complete the survey via Survey Monkey. Fifty-one people signed in for the meeting, including members of the press and elected officials. Eleven comment sheets, one email, and three survey responses were received during the CIM or during the 10-day comment period following the meeting, and three oral statements were recorded at the meeting. All of the commenters agreed with the decision to retain Option 1. Half of the commenters disagreed with the decision to retain Option 2 citing that the option would interfere with the development of the proposed church and that it would be too close to existing housing. The majority of the commenters agreed with the decision not to retain Options 3 through 6.

4.3.2 Location/Design Public Hearing

After publication of this EA, VDOT will hold a Location Public Hearing for this study in July 2018. The purpose of the hearing will be to present the findings of this EA, provide a discussion forum between the public and the project team, and obtain input and comments from the community. In addition, there will be a minimum 30-day public comment period following notice of availability of this EA. Any comments received during the public hearing and public comment period will become part of the public hearing record.

4.3.3 Additional Coordination Efforts

4.3.3.1 Additional Local Coordination

VDOT staff reached out to Walmart and Newport News Waterworks to gather additional information about the study area. Walmart provided detail regarding the number of trucks that travel to and from the distribution center and which roadways are typically used by the trucks, including the primary roadways on the peninsula, VA 143 and US 60. Newport News Waterworks provided information on the use of Skiffes Creek Reservoir and how transportation projects typically effect the reservoirs.

4.3.3.2 Mailing List

A mailing list was developed to identify owners of parcels within a 100-foot buffer beyond the existing right-of-way along the project corridor. Thirty-two property access letters were mailed pursuant to §33.1-94 of the Code of Virginia. VDOT mailed letters to property owners within the study area to inform them that an agent of VDOT may need to access their property to survey the area's topographic features and property boundaries; identify wetlands; undertake stream studies; conduct environmental drilling (to collect soil and groundwater samples for analysis); or perform other transportation design-related evaluations and environmental assessments, which could include taking photographs and collecting environmental samples. In the letter, VDOT requested the property owners to notify other tenants, if also living or working on the property, about potential activities. The letter included contact information for the VDOT Project Manager in the event that the property owner had concerns regarding entry or wanted to request advanced notification prior to field work being conducted on the property. Requests for advanced notice or other information was noted by the project team and honored during field visits.

4.3.3.3 Website

Information for the study, including this EA and all technical documentation, is available to the public through the following VDOT website:

http://www.virginiadot.org/projects/hamptonroads/-skiffes_creek.asp

The website is continually updated as new information becomes available.

CHAPTER 5.0 REFERENCES

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Appendix A: List of Technical Reports

Appendix A LIST OF TECHNICAL REPORTS

Alternatives Analysis Technical Report, June 2018

Hazardous Materials Technical Memorandum, June 2018

Indirect and Cumulative Effects Technical Report, June 2018

Natural Resources Technical Report, June 2018

Socioeconomics and Land Use Technical Report, June 2018

Traffic and Transportation Technical Report, June 2018

Preliinary Noise Analysis Technical Memorandum, June 2018

Archaeological Survey for the Skiffes Creek Connector (from U.S. 60 to VA Route 143, James City County, Virginia, August 2013, Revised October 2017

Supplemental Archaeological Survey Associated with the Skiffes Creek Connector Study, James City County, Virginia June 2018

Appendix B: Agency Correspondence

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Mr. Reid Nelson, Director
Advisory Council on Historic Preservation (ACHP)
Office of Federal Agency Programs
401 F Street NW, Suite 308
Washington, DC 20001-2637

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

Dear Mr. Nelson:

The Virginia Department of Transportation (VDOT), in coordination with the Federal Highway Administration (FHWA), has initiated an Environmental Assessment (EA) to evaluate potential improvements between U.S Route 60 (Pocahontas Trail) and State Route 143 (Merrimac Trail) in James City County, Virginia. The EA is being prepared in accordance with the National Environmental Policy Act of 1969 (NEPA). In order to ensure an efficient environmental review process, FHWA and VDOT have established an approach for coordinating agency (Federal lead, Joint Lead, Cooperating, Concurring, and Participating) and public participation during the development of the EA.

Your agency has been identified as one that may have an interest in the environmental review process. VDOT is therefore extending your agency an invitation to become a Participating Agency to support the development of the EA. Please find attached a draft Coordination Plan. The Coordination Plan defines and documents your opportunities for agency involvement as a Participating Agency, should you choose to accept this status. We would invite any comments that your agency might have on the draft Coordination Plan at our planned October 11, 2017 meeting referenced later in this letter.

In general, Participating Agencies are any Federal, State, tribal, regional, or local agency that has an interest in the project and the environmental review process. Participating Agencies are responsible for identifying, as early as practicable, any issues of concern regarding the project's potential environmental, social, or economic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project.

The enclosed map illustrates the initial bounds of the EA study area. At this early stage of the study, our efforts are focused on identifying transportation needs, human and environmental resources, and ensuring that a full range of relevant factors related to the study area addressed. To that end, we are requesting that you please review the enclosed map and provide comments on any issues or concerns regarding social, economic, or natural resources under your jurisdiction or interest within the study area indicated. In

addition, if you could please respond to the attached list of questions, we would greatly appreciate it. Our intent is to address your concerns and incorporate any recommendations or pertinent information into the planning process at the earliest possible time.

An agency meeting will be held at the following time and location:

October 11th, 2017, 10:30 a.m.
James Monroe Building - Conference Room D
101 N. 14th Street, Richmond, VA 23219

To ensure timely communication throughout the study process please identify a signal point of contact for us to coordinate with regarding this meeting and future communication. For those unable to attend in person, the agency meeting will be broadcast via telephone and webconferencing technologies. Please respond to let us know whether you, or a representative, anticipate attending or calling into the meeting.

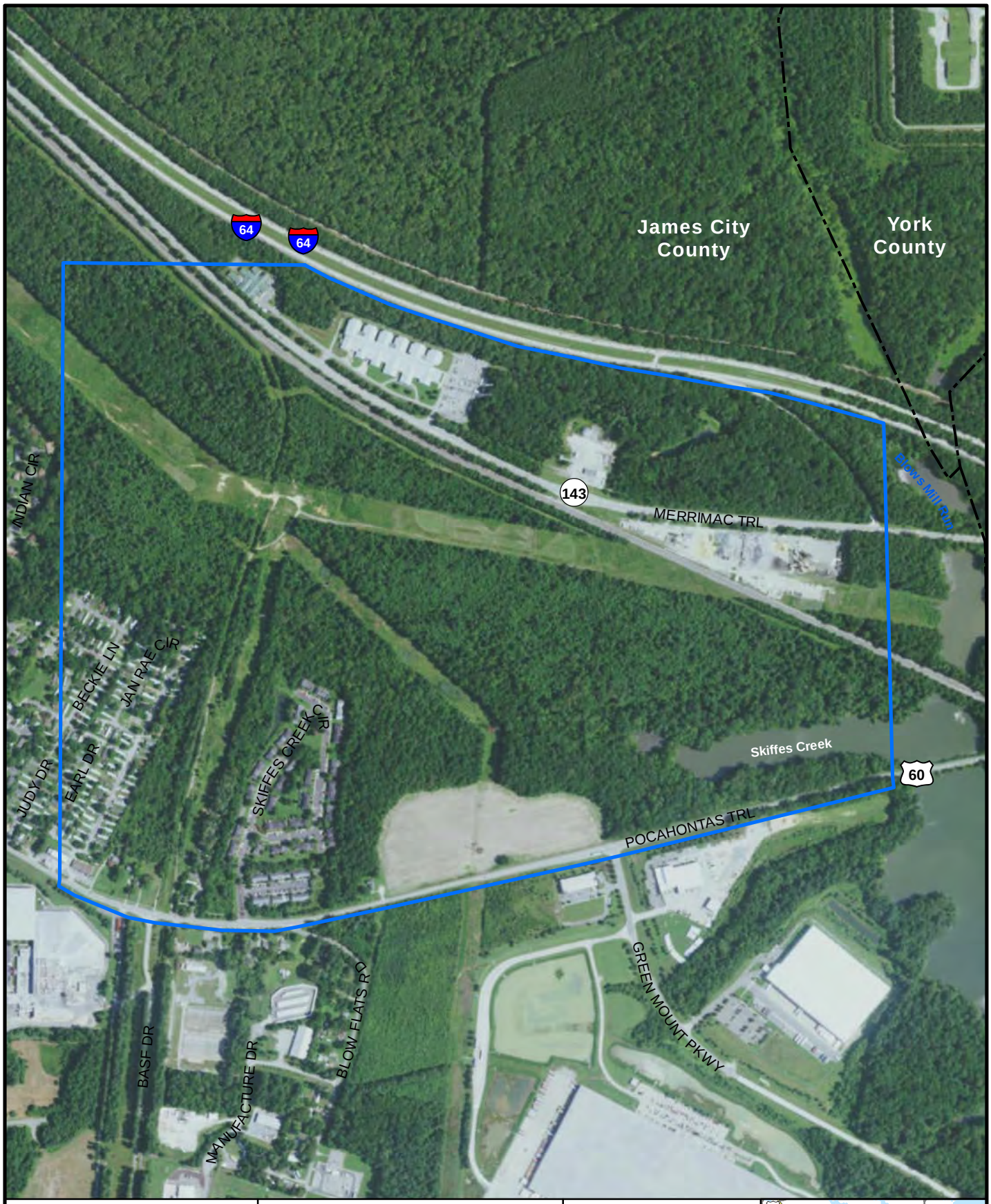
We greatly appreciate your cooperation and participation in this process. Should you require additional information or have further questions about the project, please contact me at (804) 371-4082 or by email at Scott.Smizik@vdot.virginia.gov or Mack Frost at (804) 775-3352 or by email at mack.frost@dot.gov.

Sincerely,

Scott Smizik
VDOT Project Manager – Environmental Division

Enclosures: Coordination Plan
Study Area Location Map
Scoping Questionnaire

cc: (with enclosures)
Mr. Mack Frost, FHWA Planning and Environment Specialist



Preliminary Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 0.05 0.1 0.2 Miles

Source:VDOT, ESRI

Preliminary Study Area

The Preliminary Study Area, developed during previous studies, is for the purpose of scoping and may change as the study progresses.

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Ms. Gay Vietzke, Regional Director
United States Department of the Interior
National Park Service, Northeast Region
U.S. Custom House
200 Chestnut Street, Fifth Floor
Philadelphia, PA 19106

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

Dear Ms. Vietzke:

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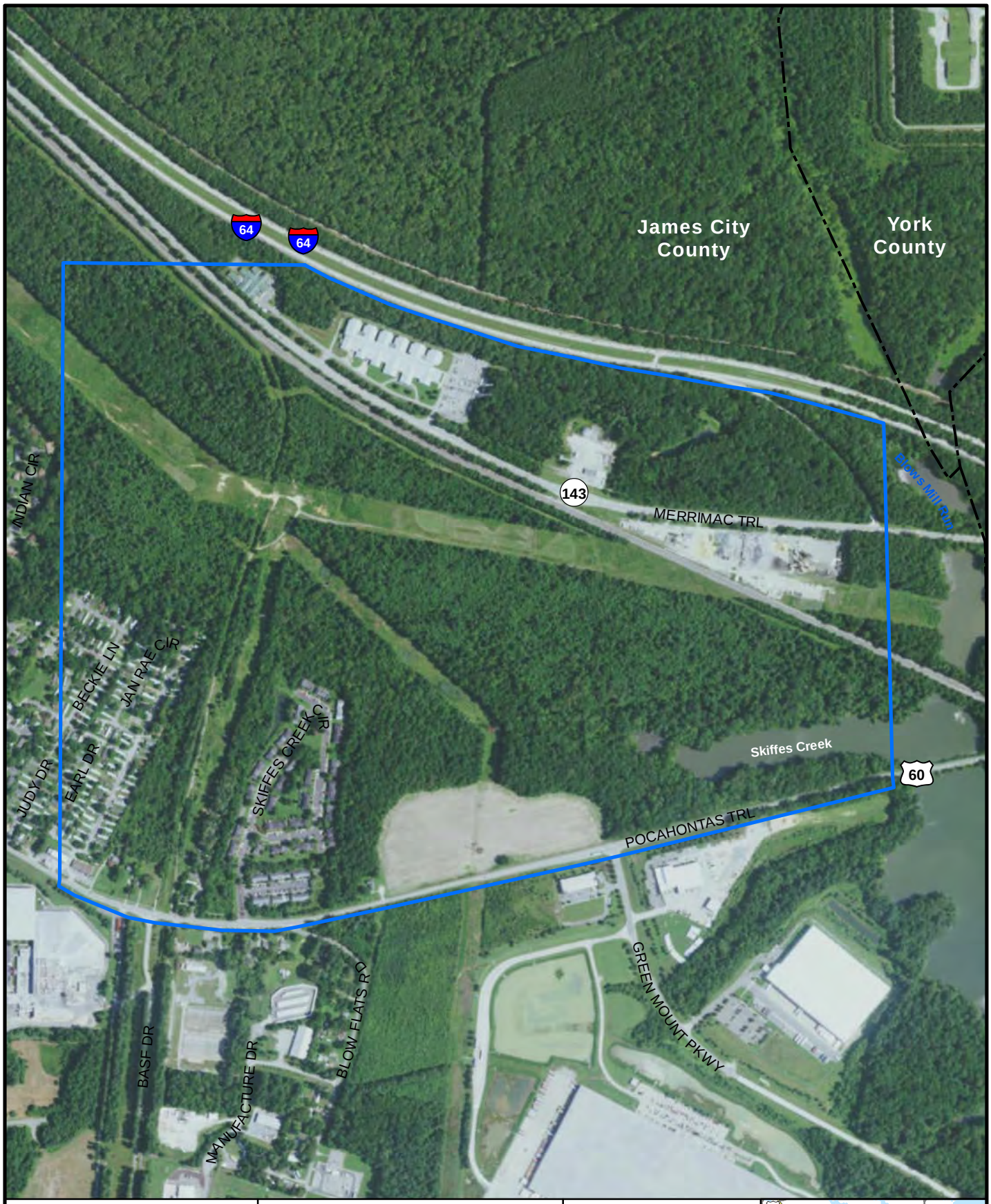
Sincerely,

Scott Smizik
VDOT Project Manager – Environmental Division

Enclosures: Coordination Plan
Study Area Location Map
Scoping Questionnaire

cc: (with enclosures)
Mr. Mack Frost, FHWA Planning and Environment Specialist



Preliminary Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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Source:VDOT, ESRI

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Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Ms. Amanda Ciampolillo, Environmental & Historic Preservation Contact, Region III
United States Department of Homeland Security
Federal Emergency Management Agency
1 Independent Mall, 6th Floor
615 Chestnut Street
Philadelphia, PA 19106-4404

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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Sincerely,

Scott Smizik
VDOT Project Manager – Environmental Division

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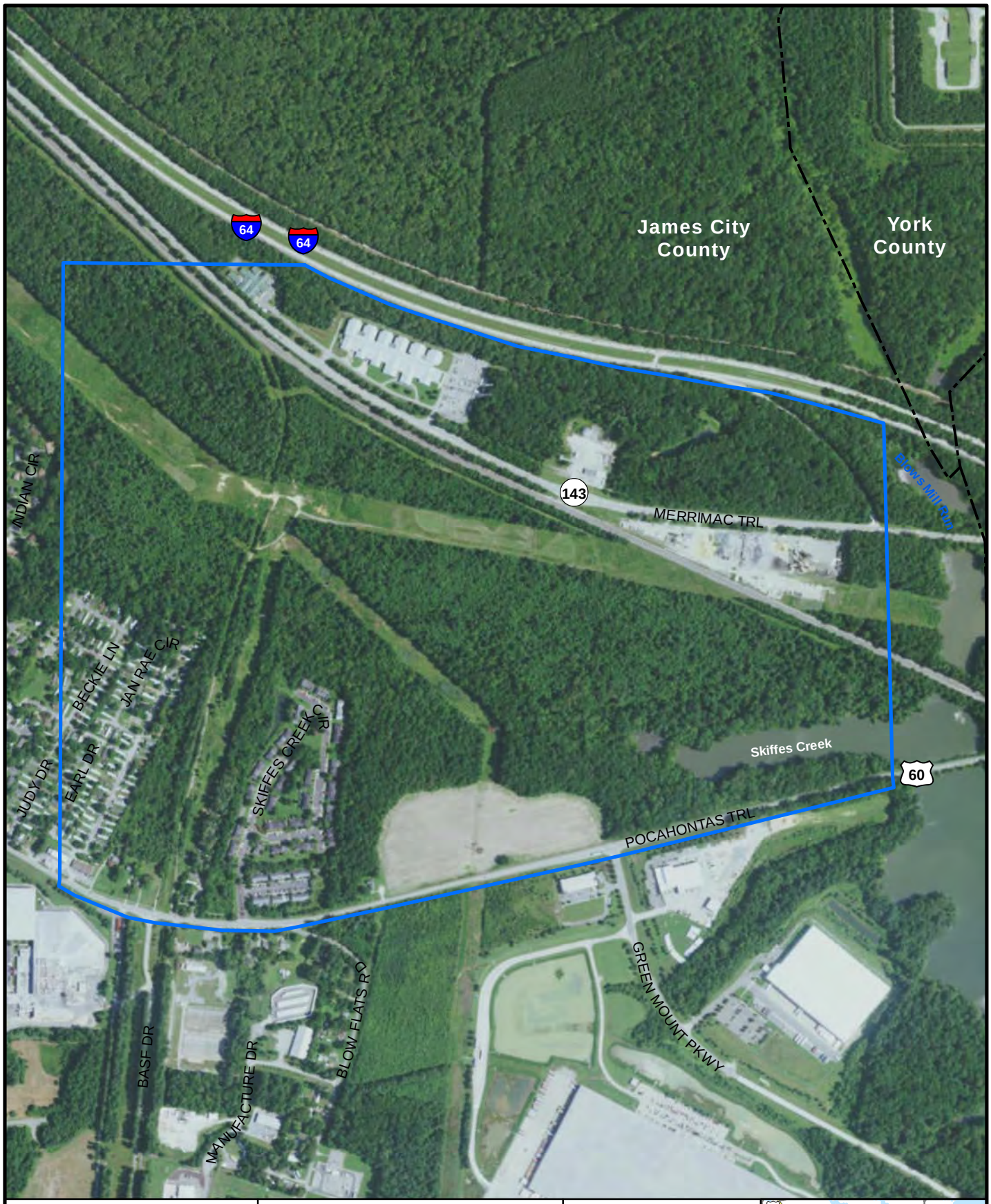

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VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Mr. Ryan Long, Community Planner
United States Department of Transportation, Federal Transit Administration
Region 3
1760 Market Street, Suite 500
Philadelphia, PA 19103-4124

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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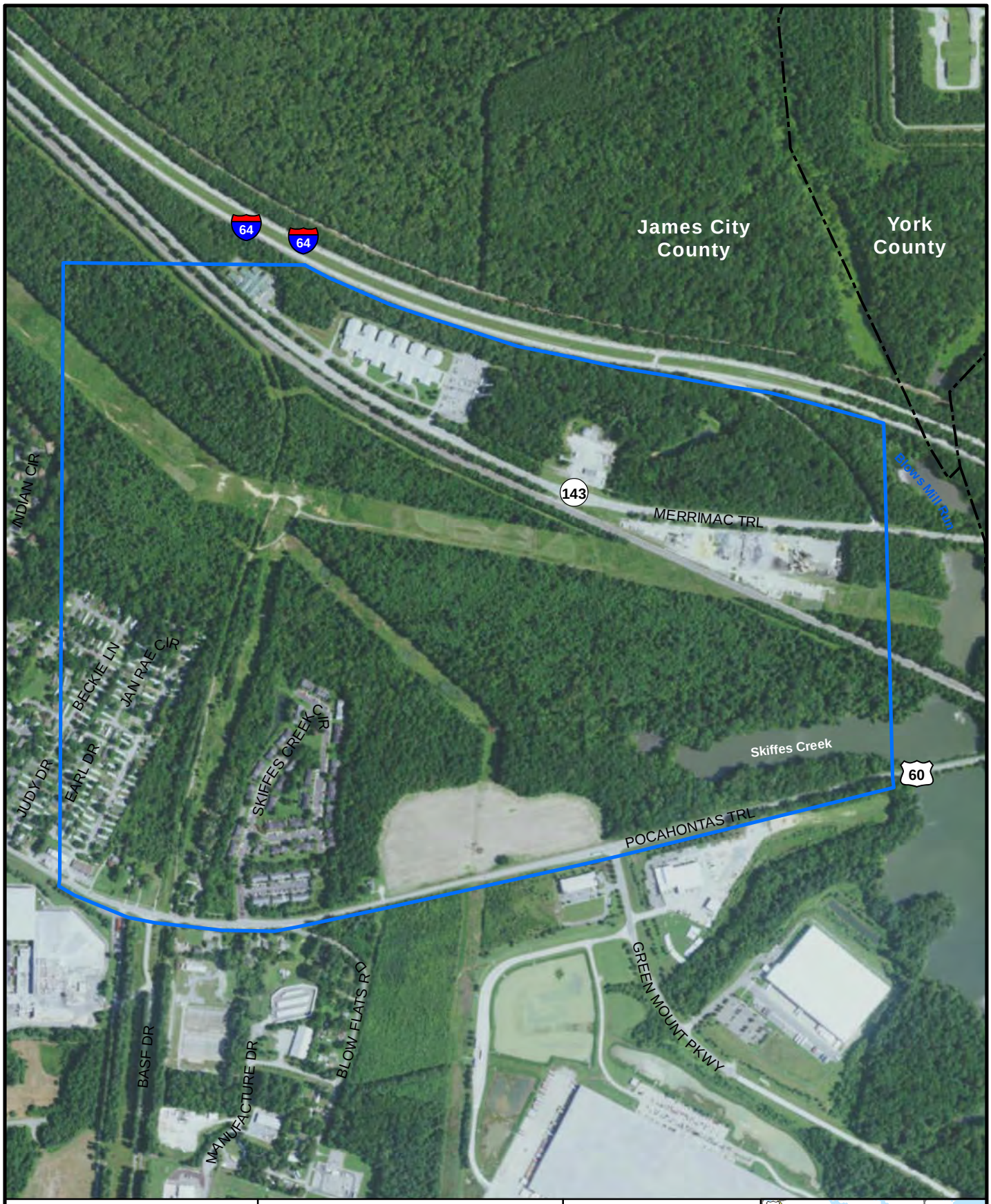

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VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Mr. David Valenstein, Division Chief
Office of Program Delivery, USDOT Federal Railroad Administration
Environmental and Corridor Planning
1200 New Jersey Ave, SE, MS-20, W38-314
Washington, DC 20590

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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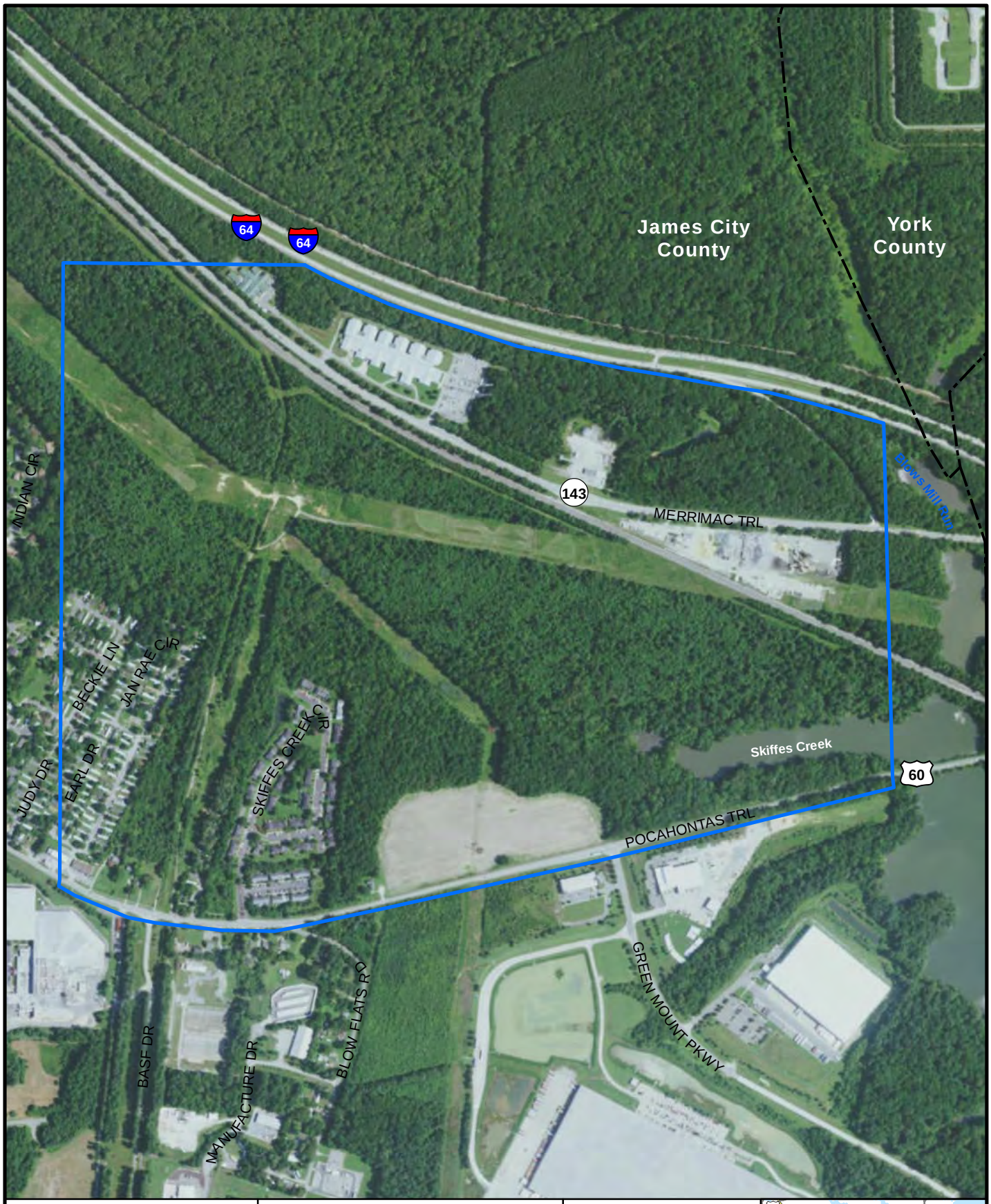

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VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Mr. Joe Carbone, Assistant Director, National Environmental Policy Act
United States Department of Agriculture
Forest Service, Ecosystem Management Coordination
Yates Building 2 CEN 201 14th Street, NW
Washington, DC 20250

Subject: **Skiffes Creek Connector Study**
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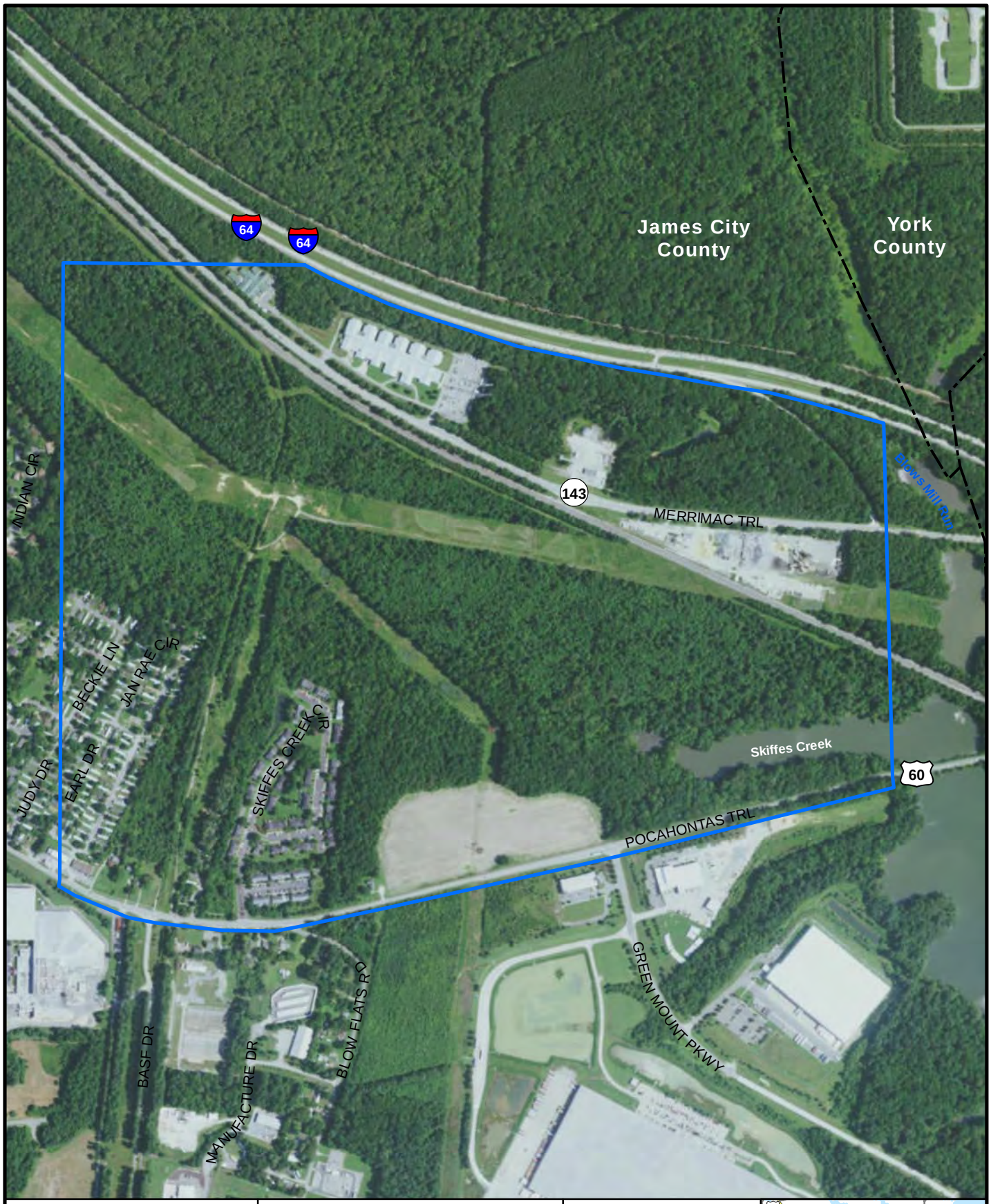

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COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Mr. Gregory A. Hammer, Area IV-Resource Soil Scientist
United States Department of Agriculture
Natural Resources Conservation Service
203 Wimbledon Lane
Smithfield, VA 23430

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

Dear Mr. Hammer:

The Virginia Department of Transportation (VDOT), in coordination with the Federal Highway Administration (FHWA), has initiated an Environmental Assessment (EA) to evaluate potential improvements between U.S Route 60 (Pocahontas Trail) and State Route 143 (Merrimac Trail) in James City County, Virginia. The EA is being prepared in accordance with the National Environmental Policy Act of 1969 (NEPA). In order to ensure an efficient environmental review process, FHWA and VDOT have established an approach for coordinating agency (Federal lead, Joint Lead, Cooperating, Concurring, and Participating) and public participation during the development of the EA.

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October 11th, 2017, 10:30 a.m.
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101 N. 14th Street, Richmond, VA 23219

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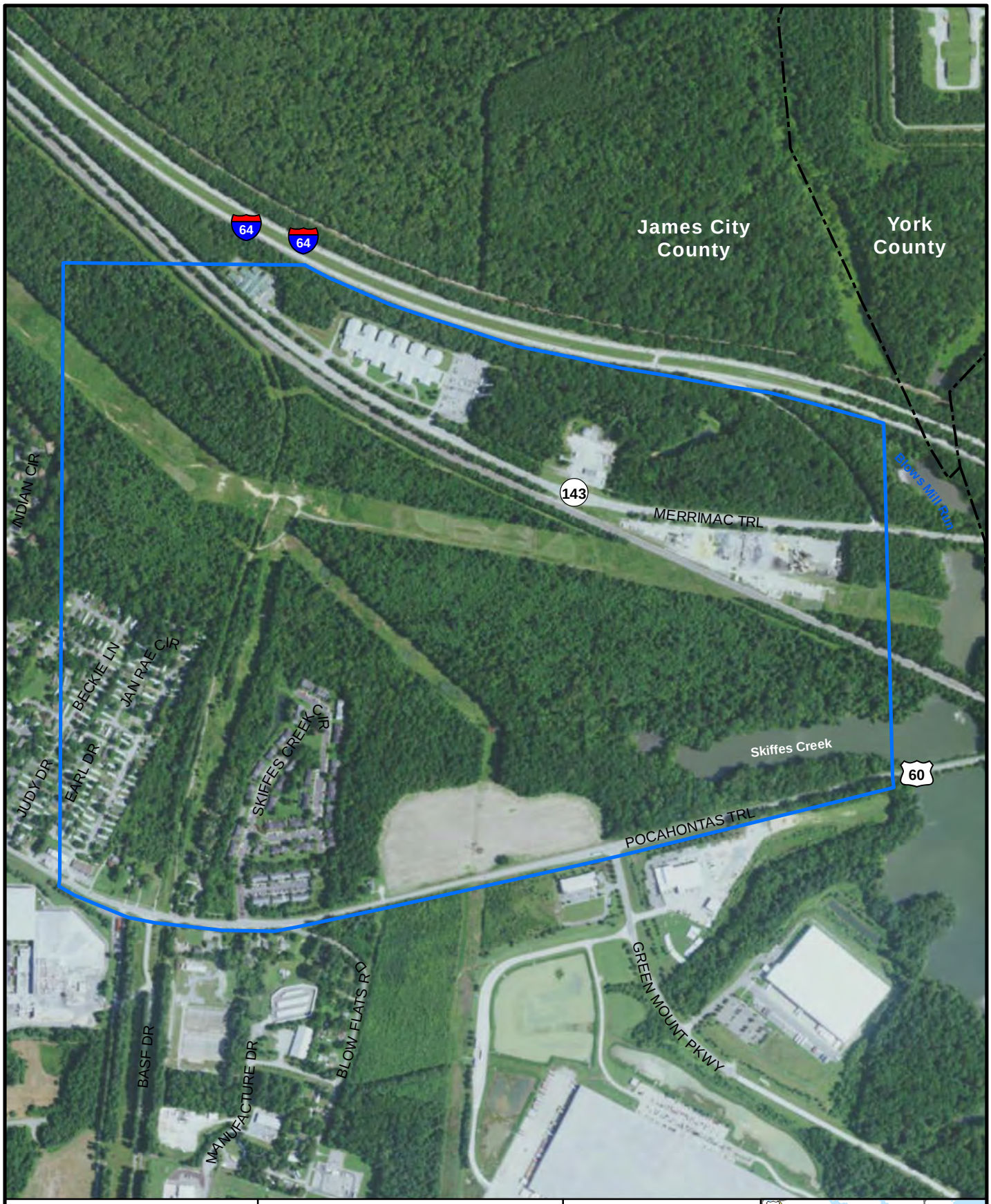
Sincerely,

Scott Smizik
VDOT Project Manager – Environmental Division

Enclosures: Coordination Plan
Study Area Location Map
Scoping Questionnaire

cc: (with enclosures)
Mr. Matthew Jones, District Conservationist
Mr. Mack Frost, FHWA Planning and Environment Specialist



Preliminary Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 0.05 0.1 0.2 Miles

Source:VDOT, ESRI

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Subject: **Skiffes Creek Connector Study**
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COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Mr. Bryan Hill, County Administrator
James City County
101 Mounts Bay Road
Building D
Williamsburg, VA 23185

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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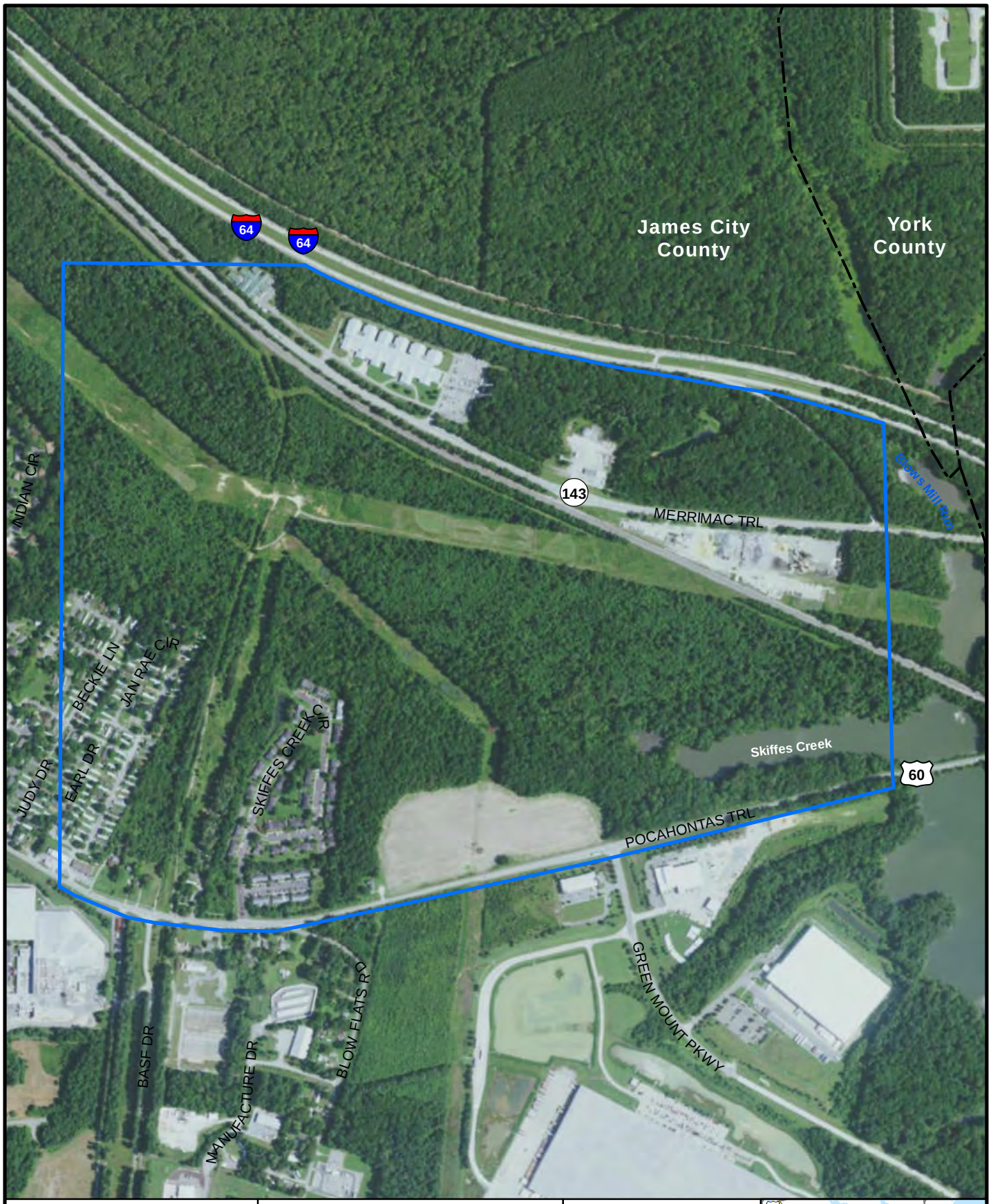
Sincerely,

Scott Smizik
VDOT Project Manager – Environmental Division

Enclosures: Coordination Plan
Study Area Location Map
Scoping Questionnaire

cc: (with enclosures)
Mr. Paul Holt, Director Community Development/Planning Director
Mr. Mack Frost, FHWA Planning and Environment Specialist



Preliminary Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 0.05 0.1 0.2 Miles

Source:VDOT, ESRI

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Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

1. What specific transportation needs do you feel should be addressed in this study?

2. What would you say are the causes of existing development in the scoping study area and the sources of pressure for future development?

3. To what extent would transportation improvements in the scoping study area be consistent with community goals, such as proposed land use?

4. Is there any planned or funded development anticipated within or adjacent to the scoping study area (if so, please include location, a description and site plan if possible – digital files are acceptable)?

5. Have you accepted proffers from developers based on your land use assumptions related to this study?

6. Have you changed zoning based on your land use assumptions related to this study?

7. Have you made any infrastructure improvements related to proposed land use changes resulting from your assumptions related to this study (i.e. water, sewer, etc.)?

8. If possible, please list major developments within the scoping study area that have been approved within the last 25 years (past actions)?

9. Are there particular economic resources or community facilities that should be considered in this study?

10. Are you aware of any disproportionately high or concentrated populations of minorities or low income populations that may not be captured in available US Census data within the scoping study area? To your knowledge, is the 2010 US Census an accurate reflection of the demographic composition of the scoping study area?

11. What existing and planned recreational properties and facilities are in the scoping study area, including greenways or trails? Please provide as much information as you can about each property's size, ownership, functions or activities, existing and planned facilities, hours of operation, types and amounts of public use, relationship to similarly used lands in the study area, any restrictive clauses or covenants regarding ownership or usage, any unusual characteristics, and whether any Land and Water Conservation Funds were used to either acquire or develop the property.

12. What roles do recreational facilities on public school properties play in the overall county parks and recreation program? Are any of these facilities accessible or utilized by the public outside of school hours?

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Mr. John Aubach II, Director
Virginia Department of Health
Office of Drinking Water
109 Governor Street,
Sixth Floor
Richmond, VA 23219

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

Dear Mr. Aubach II:

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VDOT Project Manager – Environmental Division

Enclosures: Coordination Plan
Study Area Location Map
Scoping Questionnaire

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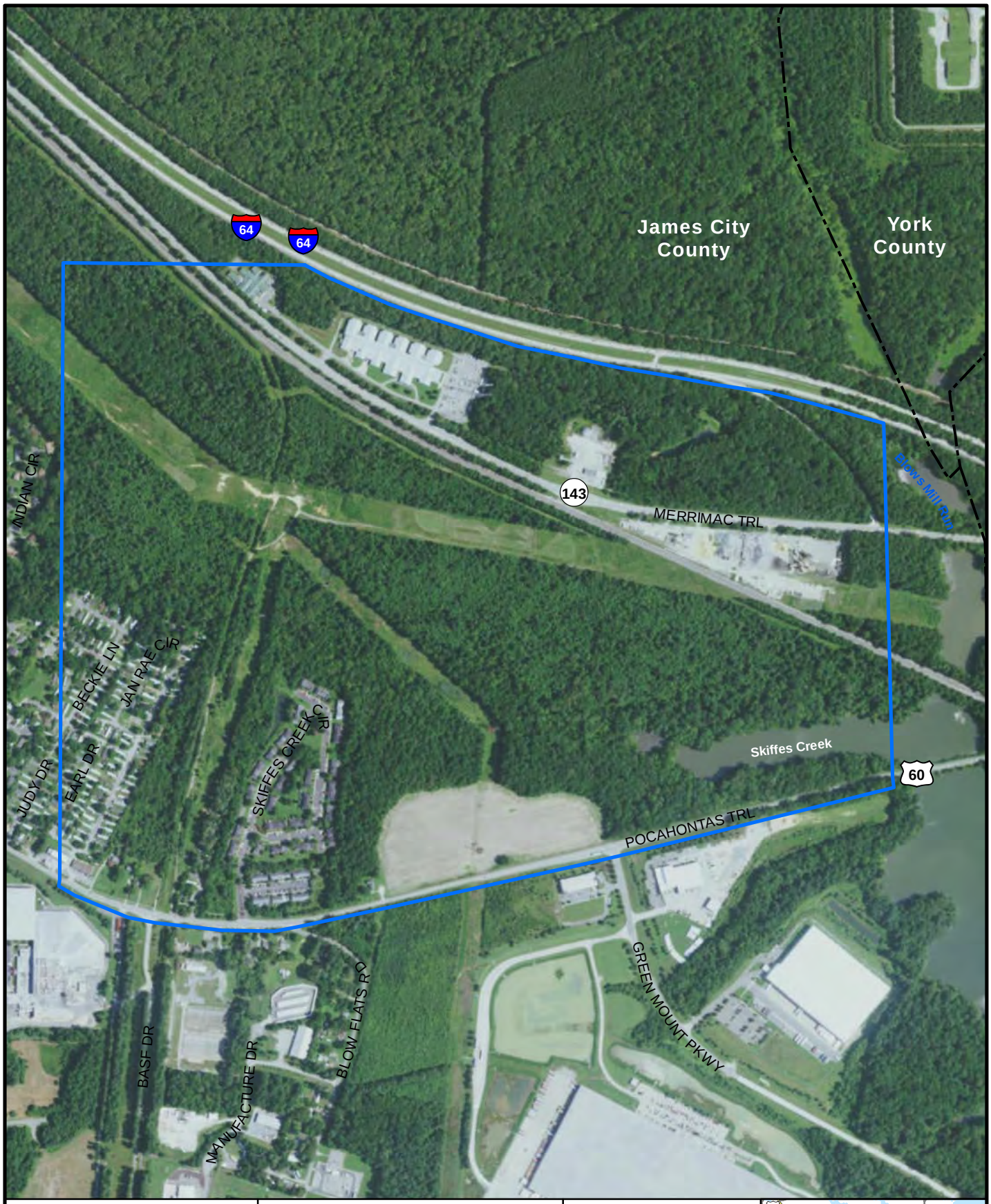

Preliminary Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Ms. Julie Langan, Director & State Historic Preservation Officer
Virginia Department of Historic Resources
Office of Review and Compliance
2801 Kensington Avenue
Richmond, VA 23221

Attn: Mr. Marc Holma, Architectural Historian

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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Enclosures: Coordination Plan
Study Area Location Map
Scoping Questionnaire

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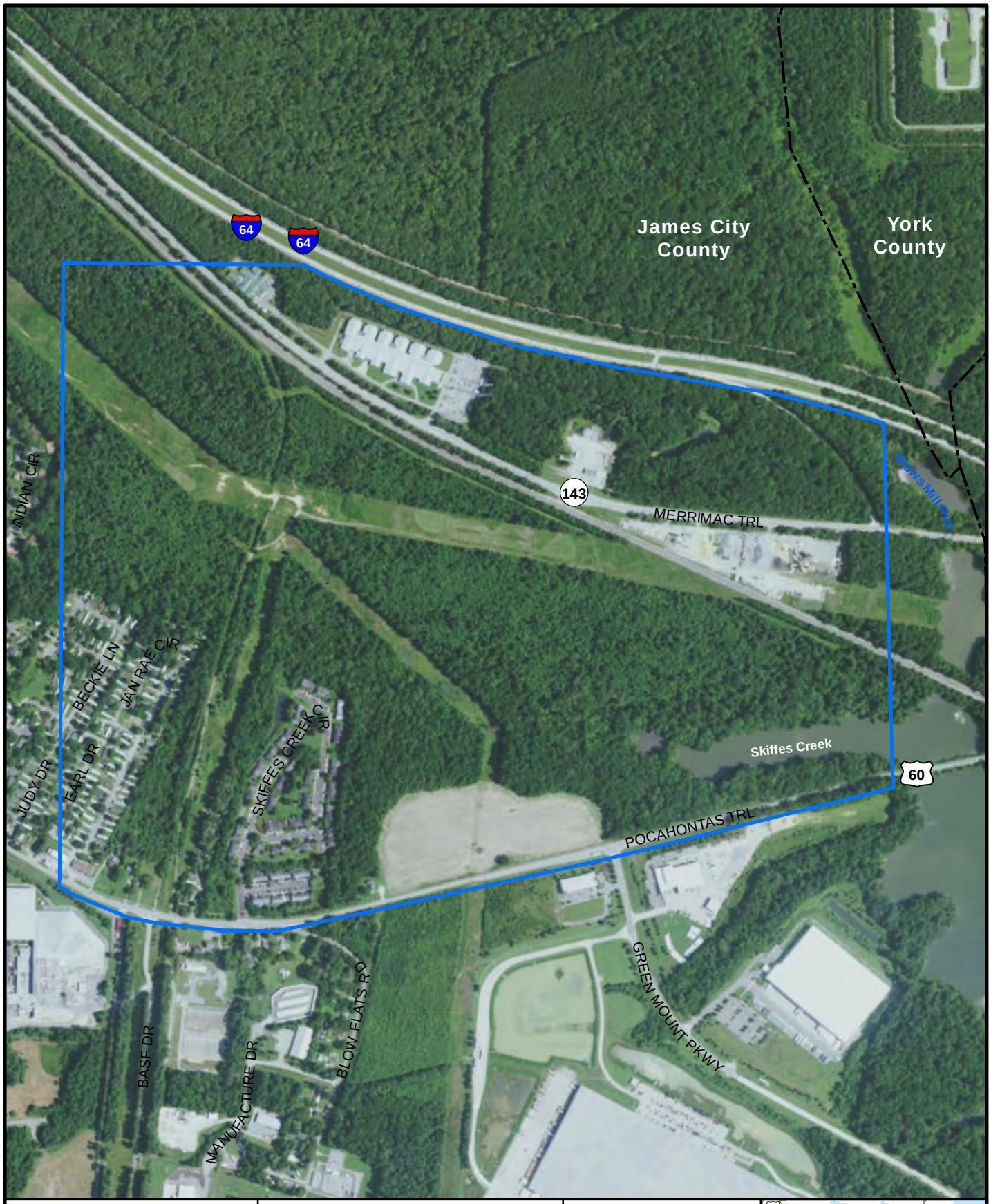
Mr. Mack Frost, FHWA Planning and Environment Specialist



Preliminary Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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James City County
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COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Ms. Brett Glymph, Executive Director
Virginia Outdoors Foundation
39 Garrett Street, Suite 200
Warrenton, VA 20186

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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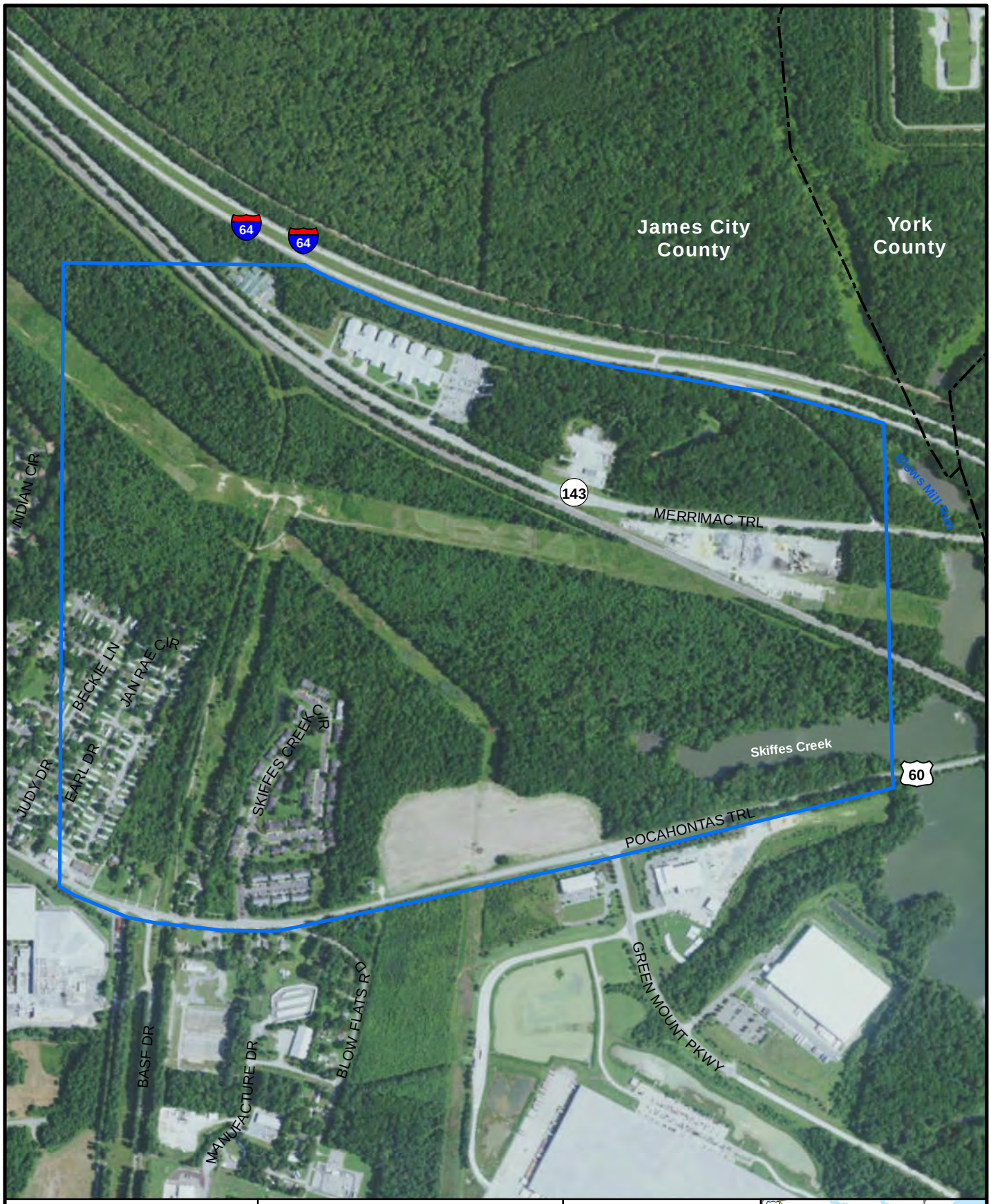

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VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Mr. Ray Fernald, Manager
Virginia Department of Game and Inland Fisheries
Environmental Services Section
P.O Box 11104
4010 West Broad Street
Richmond, VA 23230

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

Dear Mr. Fernald:

The Virginia Department of Transportation (VDOT), in coordination with the Federal Highway Administration (FHWA), has initiated an Environmental Assessment (EA) to evaluate potential improvements between U.S Route 60 (Pocahontas Trail) and State Route 143 (Merrimac Trail) in James City County, Virginia. The EA is being prepared in accordance with the National Environmental Policy Act of 1969 (NEPA). In order to ensure an efficient environmental review process, FHWA and VDOT have established an approach for coordinating agency (Federal lead, Joint Lead, Cooperating, Concurring, and Participating) and public participation during the development of the EA.

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An agency meeting will be held at the following time and location:

October 11th, 2017, 10:30 a.m.
James Monroe Building - Conference Room D
101 N. 14th Street, Richmond, VA 23219

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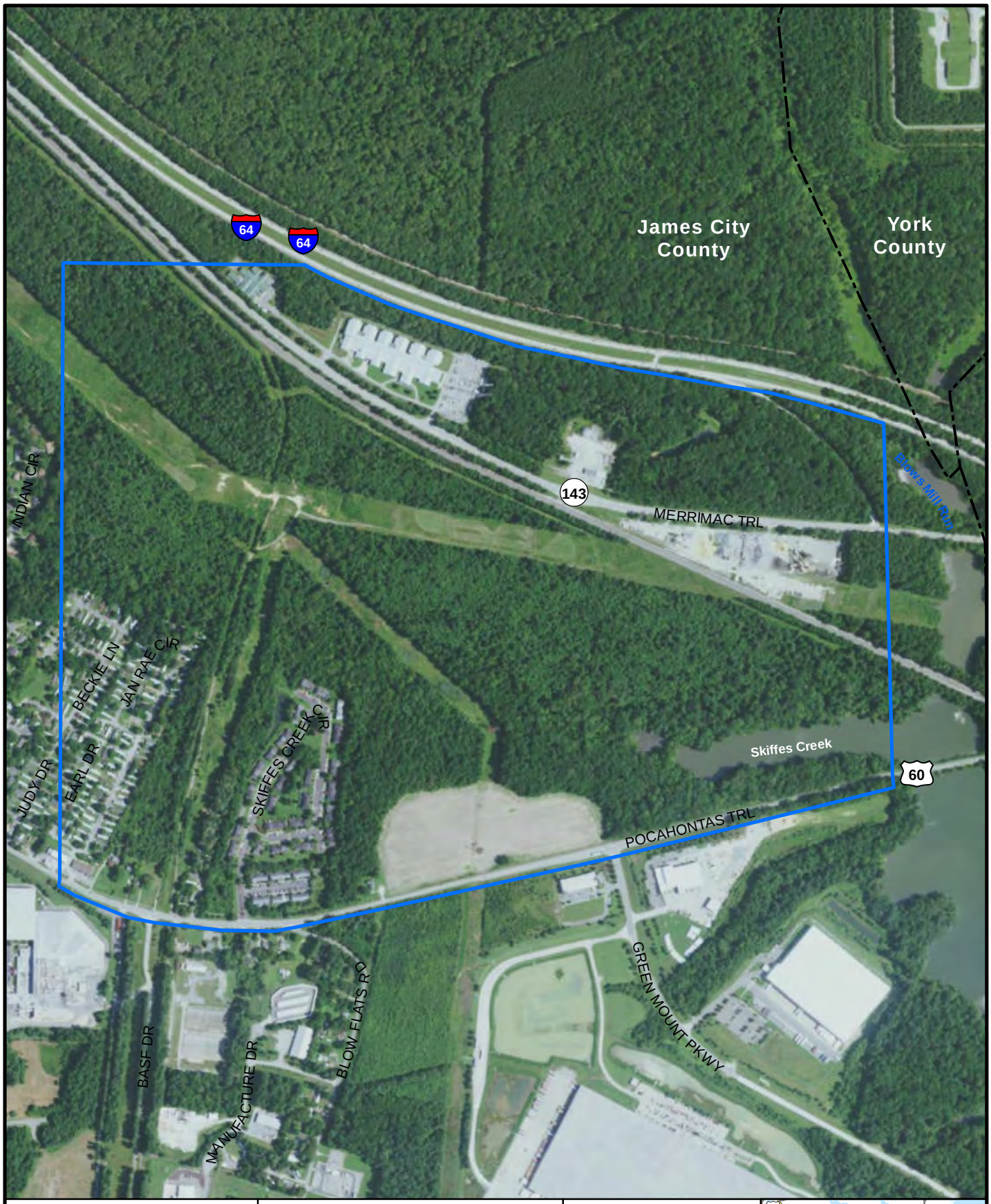
Sincerely,

Scott Smizik
VDOT Project Manager – Environmental Division

Enclosures: Coordination Plan
Study Area Location Map
Scoping Questionnaire

cc: (with enclosures)
Mr. Ernie Aschenbach, Biologist
Mr. Mack Frost, FHWA Planning and Environment Specialist



Preliminary Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 0.05 0.1 0.2 Miles

Source:VDOT, ESRI

Preliminary Study Area

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Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Ms. Roberta Rhur, Environmental Planner II
Virginia Department of Conservation and Recreation
217 Governor Street, Suite 302
Richmond, VA 23219-2094

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

Dear Ms. Rhur:

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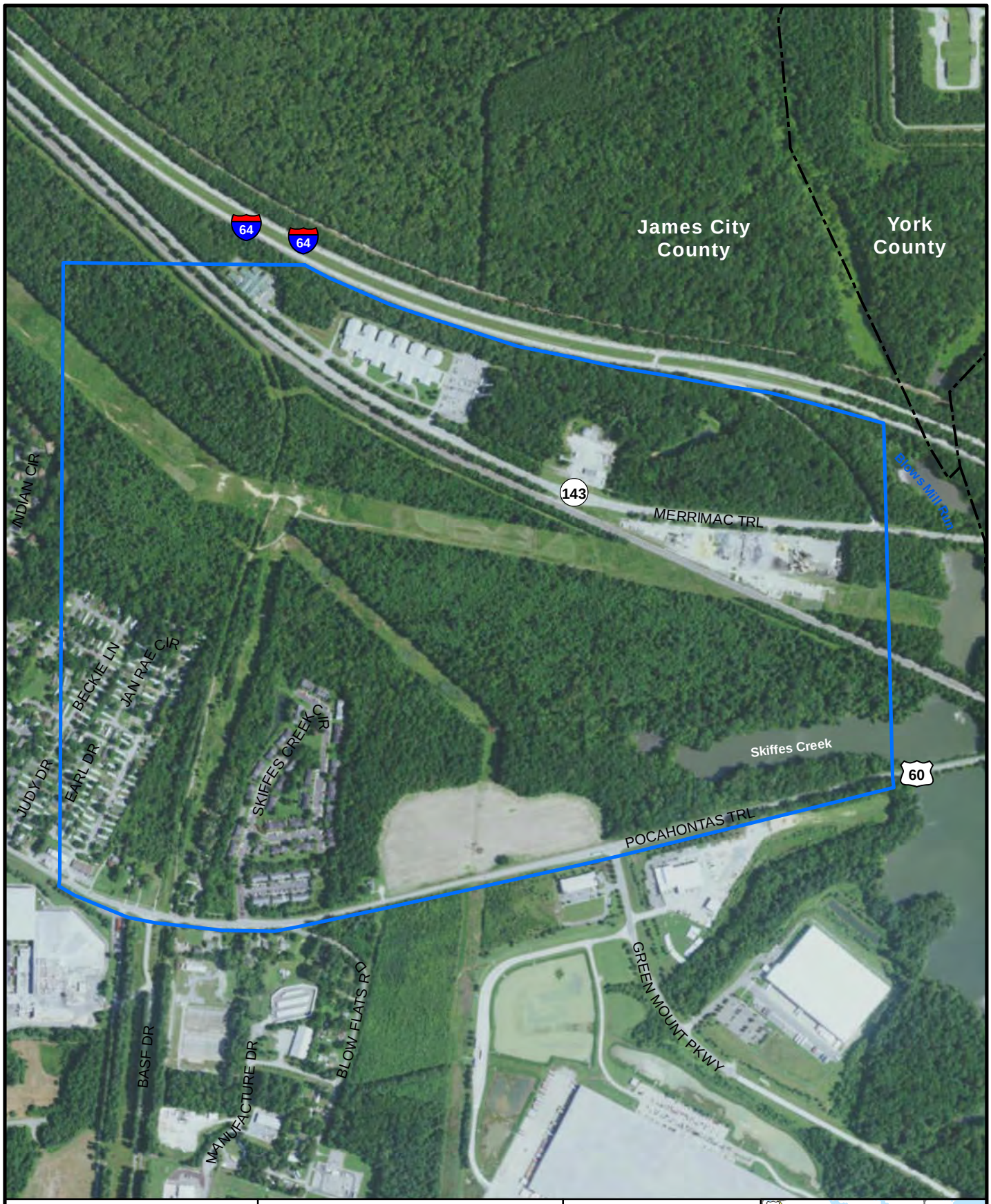
Sincerely,

Scott Smizik
VDOT Project Manager – Environmental Division

Enclosures: Coordination Plan
Study Area Location Map
Scoping Questionnaire

cc: (with enclosures)
Ms. S. René Hypes, Environmental Project Review Coordinator
Mr. Mack Frost, FHWA Planning and Environment Specialist



Preliminary Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 0.05 0.1 0.2 Miles

Source:VDOT, ESRI

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Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Mr. Tony Watkinson, Chief
Virginia Marine Resources Commission
Habitat Management
2600 Washington Avenue,
Third Floor
Newport News, VA 23607

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

Dear Mr. Watkinson:

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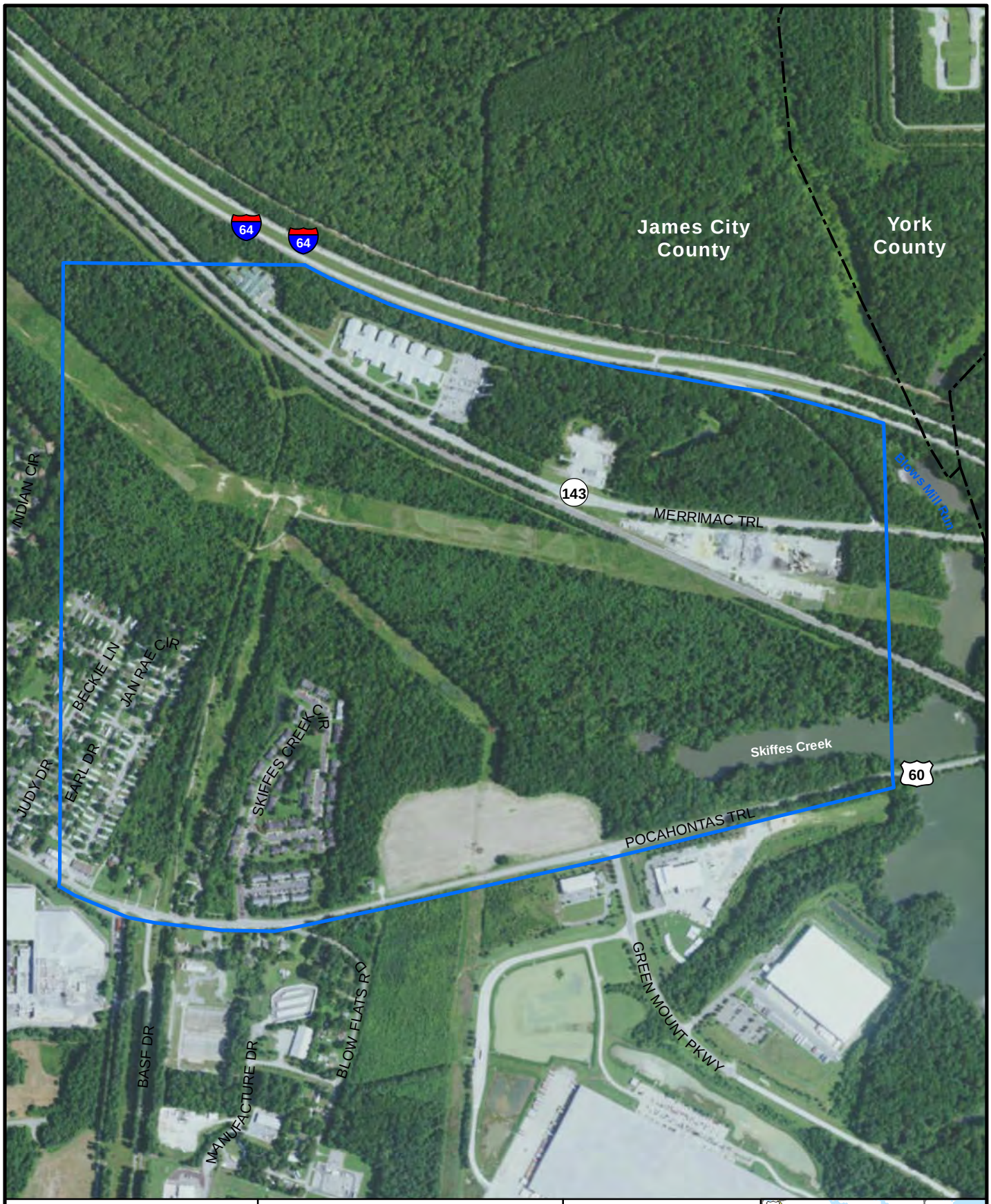
Sincerely,

Scott Smizik
VDOT Project Manager – Environmental Division

Enclosures: Coordination Plan
Study Area Location Map
Scoping Questionnaire

cc: (with enclosures)
Mr. Randy Owen
Mr. Mack Frost, FHWA Planning and Environment Specialist



Preliminary Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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Source:VDOT, ESRI

Preliminary Study Area

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Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Ms. Sandra Adams, Commissioner
Virginia Department of Agriculture and Consumer Services
102 Governor Street, Suite 200
Richmond, VA 23219

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

Dear Ms. Adams:

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Enclosures: Coordination Plan
Study Area Location Map
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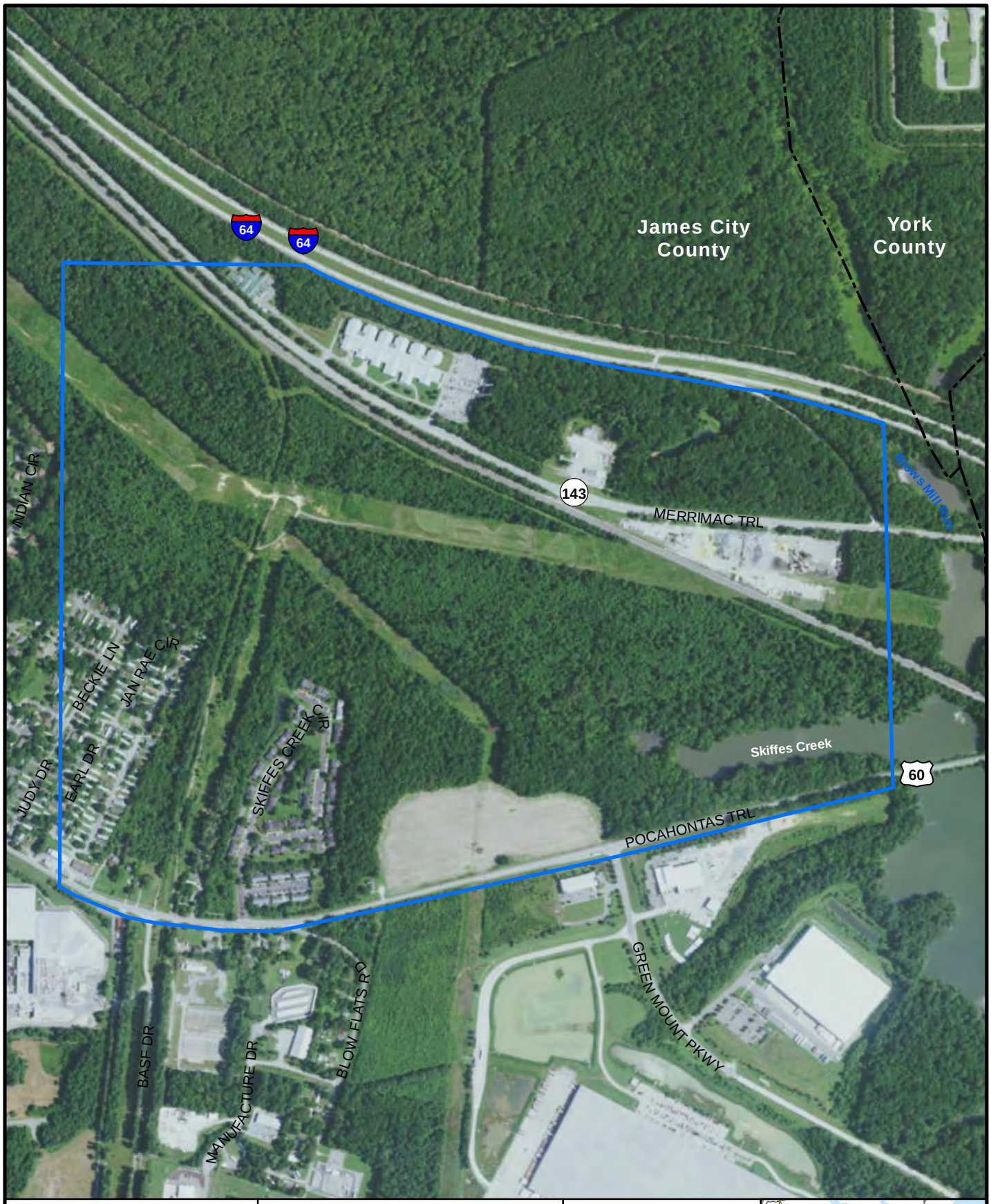
Mr. Mack Frost, FHWA Planning and Environment Specialist



Preliminary Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Ms. Carrie S. Schmidt, Field Office Director
United States Department of Housing and Urban Development
Richmond Field Office
600 East Broad Street, Third Floor
Richmond, VA 23219

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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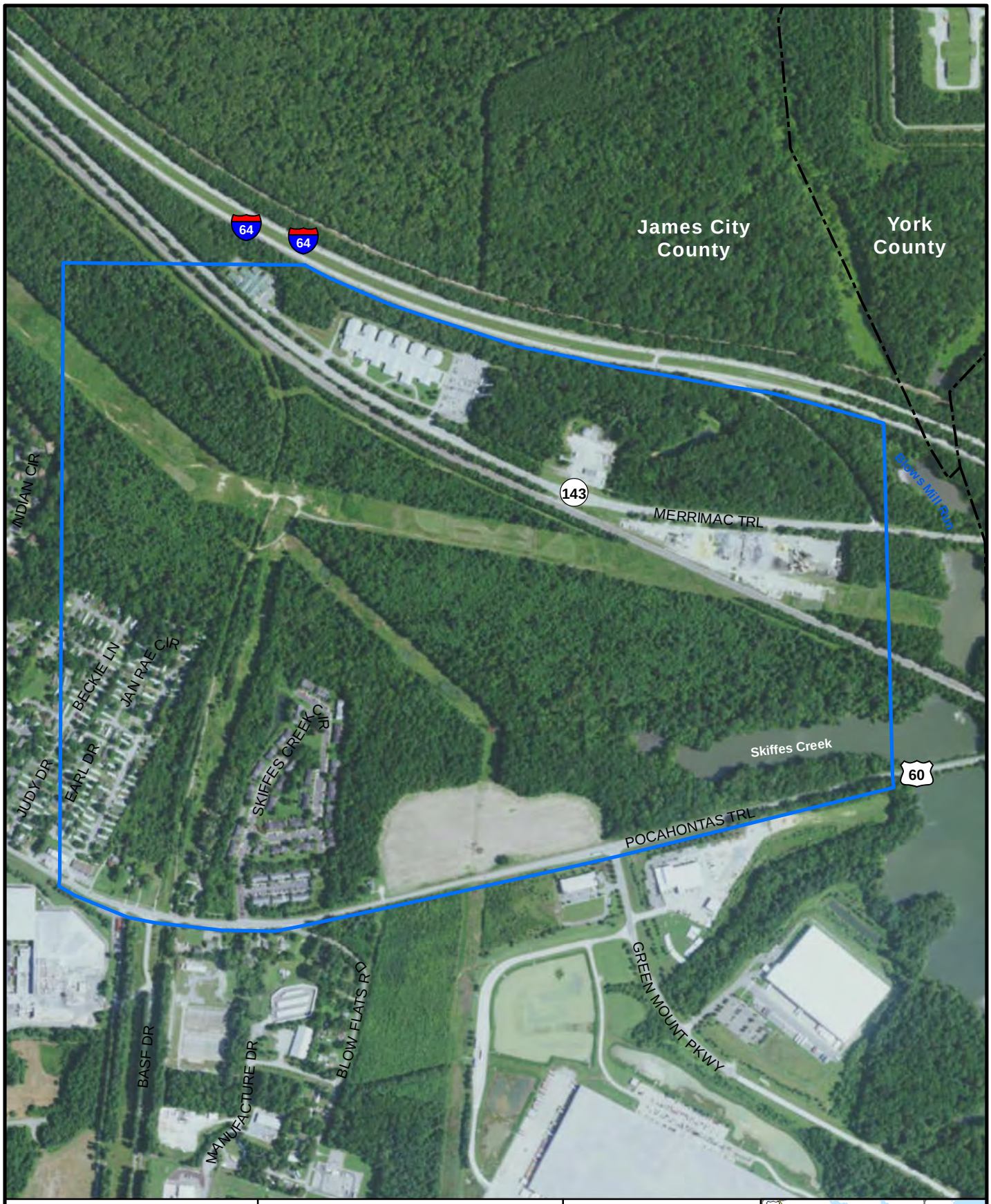

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VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 0.05 0.1 0.2 Miles

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James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

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3. Within the study area(s) you have recommended (please see question two above), does your agency possess any data regarding permitted or approved wetland or stream impacts and / or delineated wetlands that you believe should be taken into account when considering potential indirect and cumulative effects?

4. Please provide input on potential positive and negative indirect effects that could occur through the implementation of transportation improvements within the study area, such as: induced growth, economic development and investment, or improved stormwater management. Any pertinent reports or documents that may support your conclusions would be greatly appreciated.

5. Planning judgment[9] is a structured process that will be used as part of this study to analyze and forecast potential indirect effects and cumulative impacts. Does your agency possess any reports, data sources, or expert input that you recommend be used to inform the use of planning judgment in this study? Additionally, any other tools or resources that your agency might be able to provide to aid in the identification of indirect effects and cumulative impacts would be appreciated and considered.

6. Please provide any other comments or feedback that you feel may be beneficial to the development of this study.

[9] *Planning judgment is described in the National Cooperative Highway Research Program, Transportation Research Board's Project 25-25, Task 22: Forecasting Indirect Land Use Effects on Transportation Projects, obtained here: http://onlinepubs.trb.org/onlinepubs/archive/NotesDocs/25-25(22)_FR.pdf*

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

September 26, 2017

Mr. Lindy Nelson, Regional Environmental Officer
U.S. Department of the Interior
Office of Environmental Policy & Compliance, Philadelphia Region
Custom House, Room 244, 200 Chestnut Street
Philadelphia, PA 19106

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

Dear Mr. Nelson:

The Virginia Department of Transportation (VDOT), in coordination with the Federal Highway Administration (FHWA), has initiated an Environmental Assessment (EA) to evaluate potential improvements between U.S Route 60 (Pocahontas Trail) and State Route 143 (Merrimac Trail) in James City County, Virginia. The EA is being prepared in accordance with the National Environmental Policy Act of 1969 (NEPA). In order to ensure an efficient environmental review process, FHWA and VDOT have established an approach for coordinating agency (Federal lead, Joint Lead, Cooperating, Concurring, and Participating) and public participation during the development of the EA.

Your agency has been identified as one that may have an interest in the environmental review process. VDOT is therefore extending your agency an invitation to become a Participating Agency to support the development of the EA. Please find attached a draft Coordination Plan. The Coordination Plan defines and documents your opportunities for agency involvement as a Participating Agency, should you choose to accept this status. We would invite any comments that your agency might have on the draft Coordination Plan at our planned October 11, 2017 meeting referenced later in this letter.

In general, Participating Agencies are any Federal, State, tribal, regional, or local agency that has an interest in the project and the environmental review process. Participating Agencies are responsible for identifying, as early as practicable, any issues of concern regarding the project's potential environmental, social, or economic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project.

The enclosed map illustrates the initial bounds of the EA study area. At this early stage of the study, our efforts are focused on identifying transportation needs, human and environmental resources, and ensuring that a full range of relevant factors related to the study area addressed. To that end, we are requesting that you please review the enclosed map and provide comments on any issues or concerns regarding social, economic, or natural resources under your jurisdiction or interest within the study area indicated. In

addition, if you could please respond to the attached list of questions, we would greatly appreciate it. Our intent is to address your concerns and incorporate any recommendations or pertinent information into the planning process at the earliest possible time.

An agency meeting will be held at the following time and location:

October 11th, 2017, 10:30 a.m.
James Monroe Building - Conference Room D
101 N. 14th Street, Richmond, VA 23219

To ensure timely communication throughout the study process please identify a signal point of contact for us to coordinate with regarding this meeting and future communication. For those unable to attend in person, the agency meeting will be broadcast via telephone and webconferencing technologies. Please respond to let us know whether you, or a representative, anticipate attending or calling into the meeting.

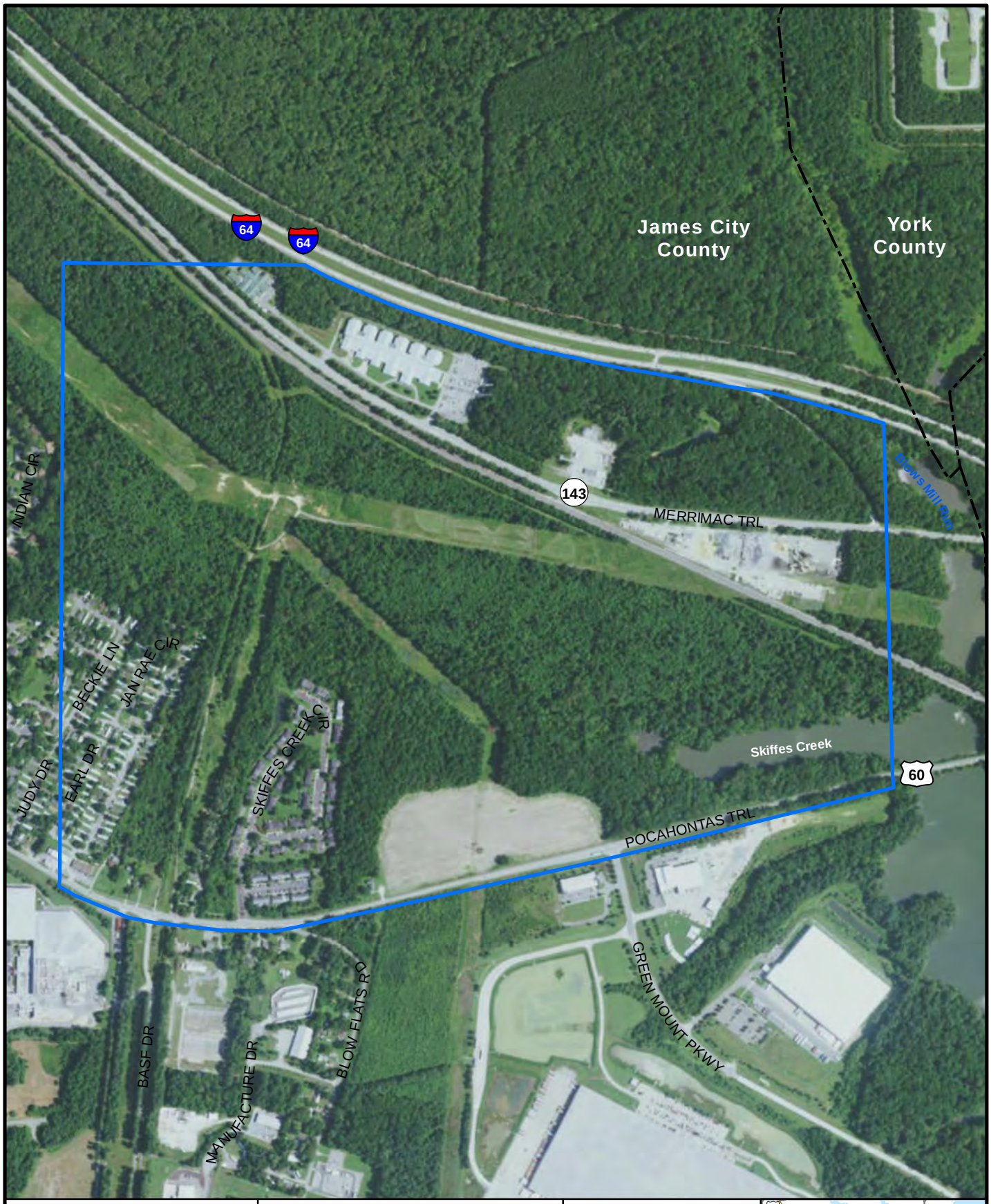
We greatly appreciate your cooperation and participation in this process. Should you require additional information or have further questions about the project, please contact me at (804) 371-4082 or by email at Scott.Smizik@vdot.virginia.gov or Mack Frost at (804) 775-3352 or by email at mack.frost@dot.gov.

Sincerely,

Scott Smizik
VDOT Project Manager – Environmental Division

Enclosures: Coordination Plan
Study Area Location Map
Scoping Questionnaire

cc: (with enclosures)
Mr. Mack Frost, FHWA Planning and Environment Specialist



Preliminary Study Area

VDOT Virginia Department of Transportation
Skiffes Creek Connector Study
VDOT Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

0 0.05 0.1 0.2 Miles

Source:VDOT, ESRI

Preliminary Study Area

The Preliminary Study Area, developed during previous studies, is for the purpose of scoping and may change as the study progresses.

Subject: **Skiffes Creek Connector Study**
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

1. Does your agency possess any historic aerial imagery or mapping (i.e. historical National Wetlands Inventories) that might be useful for informing the analyses, specifically for indirect effects and cumulative impacts, conducted in this environmental study?

2. What parameters, if any, would you recommend be used for establishing a study area boundary in which to analyze the indirect effects and cumulative impacts to potentially affected resources?

3. Within the study area(s) you have recommended (please see question two above), does your agency possess any data regarding permitted or approved wetland or stream impacts and / or delineated wetlands that you believe should be taken into account when considering potential indirect and cumulative effects?

4. Please provide input on potential positive and negative indirect effects that could occur through the implementation of transportation improvements within the study area, such as: induced growth, economic development and investment, or improved stormwater management. Any pertinent reports or documents that may support your conclusions would be greatly appreciated.

5. Planning judgment[8] is a structured process that will be used as part of this study to analyze and forecast potential indirect effects and cumulative impacts. Does your agency possess any reports, data sources, or expert input that you recommend be used to inform the use of planning judgment in this study? Additionally, any other tools or resources that your agency might be able to provide to aid in the identification of indirect effects and cumulative impacts would be appreciated and considered.

6. Please provide any other comments or feedback that you feel may be beneficial to the development of this study.

[8] *Planning judgment is described in the National Cooperative Highway Research Program, Transportation Research Board's Project 25-25, Task 22: Forecasting Indirect Land Use Effects on Transportation Projects, obtained here: http://onlinepubs.trb.org/onlinepubs/archive/NotesDocs/25-25(22)_FR.pdf*

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

October 25, 2017

Ms. Julie V. Langan, Director
ATTN: Mr. Marc Holma
Office of Review and Compliance
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, Virginia 23221

Project Name: Skiffes Creek Connector Study
Project Number: 0060-047-627, P101, R201, C501
UPC: 100200
DHR File No.: 2013-0325
City/County: James City County
Proposed Action: Re-Initiation of Section 106 Process

Dear Ms. Langan:

The Virginia Department of Transportation (VDOT), in coordination with the Federal Highway Administration (FHWA), has recently begun new efforts to prepare an Environmental Assessment (EA) to evaluate potential improvements, known as the Skiffes Creek Connector, between U. S. Route 60 (Pocahontas Trail) and State Route 143 (Merrimac Trail in James City County. The EA is being prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and, because of proposed federal funding and the likelihood that construction will require a permit from the U.S. Army Corps of Engineers, the project is subject to Section 106 of the National Historic Preservation Act (54 USC 306108) and its implementing regulations at 36 CFR Part 800.

VDOT initiated Section 106 consultation for the Skiffes Creek Connector with your department by letter dated March 26, 2013, but then put the project on hold in the fall of that year. The purpose of this letter is to re-initiate Section 106 consultation. Unless your department objects, VDOT will continue to use the DHR file number Marc Holma assigned to the project in his response of April 24, 2013, to VDOT's March 2013 letter. That number is DHR File No. 2013-0325.

The Skiffes Creek Connector is intended to facilitate access between Interstate 64 and industrial parcels in the east end of James City County in the vicinity of U.S. Route 60. The preliminary Study Area defined for the NEPA document is shown in Attachments 1 and 2.

VDOT has identified following federally recognized Indian tribes and local governments as potential consulting parties to the Section 106 process for the Skiffes Creek Connector. If the DHR has suggestions for additional parties which should be included in this process, we would appreciate your providing names and contact information.

- 36 CFR 800.2(c)(2)
  - Pamunkey Indian Tribe
  - Delaware Nation

- 36 CFR 800.2(c)(3)
  - James City County

- 36 CFR 800.2(c)(5)
  - York County
  - City of Newport News
  - City of Williamsburg

Thank you for your assistance. If you have any questions about the Skiffes Creek Connector, please don't hesitate to contact me by email at me.hodges@vdot.virginia.gov or by phone at 804-786-5368.

Sincerely,

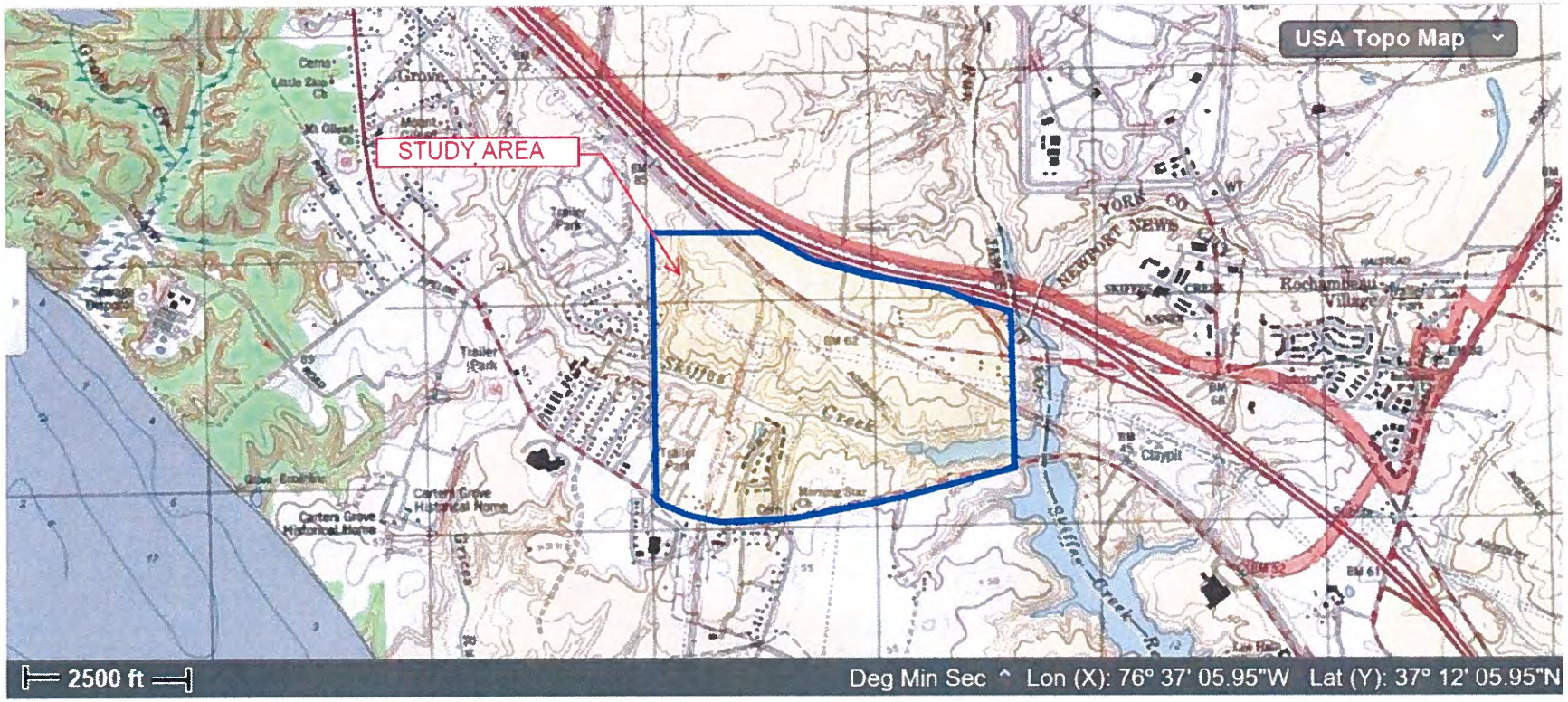
Mary Ellen N. Hodges

Mary Ellen N. Hodges
Cultural Resources Planner

Attachments
c. Mack Frost, FHWA
Scott Smizik, VDOT

Attachment 1 – Project Location Map, Skiffes Creek Connector, James City County, Virginia

Attachment 2 – Extent of Preliminary Study Area, Skiffes Creek Connector, James City County, Virginia



COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

January 8, 2018

Ms. Julie V. Langan, Director
ATTN: Mr. Marc Holma
Office of Review and Compliance
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, Virginia 23221

Project Name: Skiffes Creek Connector Study
Project Number: 0060-047-627, P101, R201, C501
UPC: 100200
DHR File No.: 2013-0325
City/County: James City County

Dear Ms. Langan:

In an earlier letter, dated October 25, 2017, the Virginia Department of Transportation (VDOT) notified you that VDOT and the Federal Highway Administration (FHWA) had recently begun new efforts to prepare an Environmental Assessment (EA) pursuant to the National Environmental Protection Act (NEPA) to evaluate potential improvements, known as the Skiffes Creek Connector, between U. S. Route 60 (Pocahontas Trail) and State Route 143 (Merrimac Trail in James City County. This project, intended to facilitate access between Interstate 64 and industrial parcels in the east end of James City County in the vicinity of U.S. Route 60, has been on hold since early 2013. The purpose of this letter is to update you on VDOT's efforts to identify consulting parties to the Section 106 process for the Skiffes Creek Connector, and to provide for your review the results of an archaeological survey VDOT conducted for the project in 2013.

VDOT has identified the following federally-recognized Indian tribes and local governments as potential consulting parties to the Section 106 process for the Skiffes Creek Connector. On October 26, 2017, the FHWA wrote to the Pamunkey Indian Tribe and Delaware Nation, providing each Indian tribe the opportunity to participate in consultation. The Pamunkey Indian Tribe responded on October 26, 2017, that it is not aware of any site of cultural or religious significance that would be affected by the project, and asked to be notified "in the event of inadvertent discovery." FHWA has received no response to date from the Delaware Nation.

On October 25, 2017, VDOT wrote to James City County [pursuant to 36 CFR 800.2(c)(3)] and York County and the cities of Newport News and Williamsburg [pursuant to 36 CFR 800.2(c)(5)] to provide these local governments the opportunity to participate in Section 106 consultation. York County declined the opportunity by letter dated November 6, 2017. VDOT has received no responses from the other local governments.

VDOT's October 2017 letter included a depiction of the preliminary NEPA Study Area VDOT will be using in preparing the EA for the Skiffes Creek Connector. The build alternatives that will be examined under the present NEPA document have not yet been identified; however, before work on the project was halted in 2013, VDOT conducted a Phase I level archaeological survey of two potential alternatives known as Alternative A and Alternative A1. The results of that survey, conducted by VDOT's consultant, McCormick Taylor, are presented in the enclosed report, *Archaeological Survey for the Skiffes Creek Connector (from U.S. 60 to VA Route 143), James City County, Virginia* (August 2013, Revised October 2017) (one paper copy and one copy on CD are enclosed).

The 2013 survey identified five archaeological sites within the Area of Potential Effects for direct effects for alternatives A and A1. Three of the sites (44JC1021, 44JC1045, and 44JC1050) have previously been determined by the Department of Historic Resources (DHR) to be not eligible for listing on the National Register of Historic Places (NRHP). DHR determined in 2001 that the other two sites (44JC664 and 44JC1024) are potentially eligible for the listing on the NRHP. Both McCormick Taylor and VDOT agree with this finding and recommend that these sites warrant further evaluation to establish conclusively their eligibility.

VDOT invites you to concur with the findings of the 2013 archaeological survey by completing the signature block below and returning the original signature to my attention within thirty (30) days of receipt of this letter. If you have any questions about the Skiffes Creek Connector, please don't hesitate to contact me by email at me.hodges@vdot.virginia.gov or by phone at 804-786-5368.

Thank you for your assistance.

Sincerely,

Mary Ellen N. Hodges

Mary Ellen N. Hodges
Cultural Resources Planner

Attachments
c. Mack Frost, FHWA
Scott Smizik, VDOT

Skiffes Creek Connector Study, James City County
VDOT Project No. 0060-047-627, P101, R201, C501 (UPC 100200)
DHR File No. 2013-0325

The Virginia Department of Historic Resources concurs with the Virginia Department of Transportation that:

- Archaeological sites 44JC1021, 44JC1045, and 44JC1050 are not eligible for listing on the National Register of Historic Places
- Archaeological sites 44JC664 and 44JC1024 are potentially eligible for listing on the National Register of Historic Places and warrant further evaluation to establish conclusively their eligibility.

_____ _____

Julie V. Langan, Director Date
Virginia Department of Historic Resources
State Historic Preservation Officer

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

OCT 16 2017

Mack Frost
Planning and Environment Specialist
FHWA Virginia
400 North 8th Street, Suite 750
Richmond, Virginia 23219-4825

RE: Cooperating and Concurring Agency request for the Development of an Environmental Assessment under the National Environmental Policy Act of 1969 for the Skiffes Creek Connector, James City County, VA

Dear Mr. Frost:

The U.S. Environmental Protection Agency (EPA) has received the invitation to EPA to become a cooperating and concurring agency in the development of an Environmental Assessment (EA) for the above referenced project. The EA is being prepared pursuant to the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) NEPA regulations (40 CFR parts 1500-1508).

The CEQ has determined that a cooperating agency has the responsibility to assist the lead agency by involvement in the NEPA process at the earliest possible time. This participation includes engaging in the scoping process; in developing information and preparing environmental analyses including portions of the environmental assessment where the cooperating agency has special technical expertise; and in making available staff support at the lead agency's request to enhance the lead agency's interdisciplinary capabilities. Our role as a cooperating agency in support of the subject EA will consist of providing comments on general NEPA compliance and Clean Water Act (CWA), Section 404 issues as well as providing technical support in the development of the EA. The EPA would like the opportunity to contribute in the EA process in the following manner:

- Identification of significant issues;
- Provide technical assistance in the development of the analysis of alternatives and their environmental impact; and
- Technical assistance on Environmental Justice, cumulative impacts, etc.

The benefits of cooperating agency engagement in the preparation of NEPA analyses include disclosing relevant information early in the analytical process and establishing a mechanism for addressing intergovernmental issues. Other benefits include fostering intra- and intergovernmental trust and a common understanding and appreciation for various governmental roles in the NEPA process, as well as enhancing agencies' ability to adopt environmental documents. We also agree to be a

concurring agency as specified in the draft NEPA/404 Memorandum of Understanding and the Coordination Plan for this project.

Due to resource constraints, we may limit our attendance of project meetings and hope that video or telephone conference opportunities may be made available. Given reasonable time frames, we would be pleased to review preliminary project documentation including preliminary draft versions of the EA. CEQ guidance recognizes that, while the lead agency has overall responsibility for the content of the EA, status as a cooperating agency should not be construed as expressing agreement with the lead agency regarding the conclusions to be drawn from the EA or selection of the preferred alternative. In addition, EPA has a number of independent responsibilities related to the proposed project, including our responsibilities pursuant to Section 309 of the Clean Air Act (CAA), Sections 402(d) and 404(b), (c), and (q) of the CWA.

EPA appreciates the opportunity to engage as a cooperating and concurring agency in the development of the documentation to satisfy the requirements of NEPA and the Clean Water Act for the Skiffes Creek Connector Study EA while, consistent with CEQ guidance, we retain our independent obligations and right under Section 309 (a) of the CAA to review and comment on an environmental document. If there are any questions or concerns, please feel free to contact Barbara Okorn, staff person for the project, at 215-814-3330.

Sincerely,

Barbara Rudnick,
NEPA Team Leader
Office of Environmental Programs

U.S. Department
of Transportation
**Federal Railroad
Administration**

1200 New Jersey Ave, SE
Washington, DC 20590

October 2, 2017

Mack Frost
Planning and Environmental Specialist
Federal Highway Administration
400 North 8th Street, Room 750
Richmond, VA 23219

Re: Skiffes Creek Connector Study

Mr. Frost:

I am writing in response to a letter received from the Virginia Department of Transportation (VDOT) on September 26, 2017 inviting the Federal Railroad Administration (FRA) to act as a cooperating agency for the Skiffes Creek Connector Study in James City County, Virginia.

FRA has reviewed the proposed scope of the project and requests to act as a participating agency in the study. FRA would support the NEPA review process, starting during the scoping process, and especially with regard to defining the purpose and need, determining the range of alternatives to be considered, methodologies, and the level of detail for the analysis of alternatives. FRA will also assist in the identification of any issues regarding potential environmental or socioeconomic impacts.

While the scope of the study is focused primarily on the development of a highway connector between U.S. 60 and Virginia Route 143 east of Williamsburg, VA, all potential options would require crossing a critical CSX Transportation railroad corridor. The proposed connector will cross the CSX railroad near milepost 30.0 on the Peninsula Subdivision, which carries approximately 14 freight trains per day to the Port of Newport News as well as up to six daily (three round-trip) Amtrak trains to Newport News at speeds up to 79 mph. This is a high priority railroad corridor providing the sole freight access to CSX customers, multiple U.S. military facilities and the port in Newport News. FRA's interest in the project is to preserve a safe and efficient operating environment for high priority freight and passenger service between Richmond and Newport News.

In addition, FRA recognizes that VDOT has not yet secured funding for the Project. Should VDOT consider applying for future funding through FRA, the NEPA review document prepared for this project would also need to comply with FRA's Procedures for Considering Environmental Impacts.

Mr. John Winkle, Environmental Protection Specialist in the FRA Office of Railroad Policy and Development, will be the primary point of contact for the study. Mr. Winkle will work with you and Mr. Scott Smizik at VDOT and can be reached at (202) 493-6067 or John.Winkle@DOT.Gov.

We look forward to working with FHWA and VDOT on this study.

Sincerely,

Michael Johnsen
NEPA Team Lead, Environment
and Systems Planning

James City County
VIRGINIA
Jamestown 1607

Community Development
101-A Mounts Bay Road
P.O. Box 8784
Williamsburg, VA 23187-8784
P: 757-253-6671
F. 757-253-6822
community.development@jamescitycountyva.gov

jamescitycountyva.gov

Building Safety & Permits 757-253-6620
Neighborhood Development 757-253-6640
Planning 757-253-6685
Zoning 757-253-6671

October 9, 2017

Mr. Scott Smizik, AICP
Location Studies Project Manager
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, Virginia 23219

RE: Skiffes Creek Connector Study
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC 100200

Dear Mr. Smizik:

Thank you for your correspondence, dated September 26, 2017, regarding the above referenced project. Regarding your request for responses to the scoping questionnaire, the following is provided:

1. **What specific transportation needs does the county feel should be addressed in this study?** The I-64 East-West Corridor has a reliability need between Exit 247 (VA Rt. 143) & Exit 250 (Ft Eustis Blvd) in Newport News (C5-Need S). The Skiffes Creek Connector (SCC) seeks to relieve congestion on Rt. 60 & provide additional access between Rts. 60 & 143, thereby improving their use as parallel routes and relief valves for I-64. Regarding the I-64 reliability need, Need A of the Regional Network Needs Assessment for Hampton Roads further states, "The parallel roads in the corridor share the reliability issues, and improved connectivity across the peninsula is also needed to improve mobility and reduce the congestion." The SCC specifically meets this need by providing a direct connection between Rts. 60 & 143. This will give all travelers, but especially truck traffic, more direct interstate access and more alternatives, increasing mobility and reducing congestion. In terms of UDA needs, the SCC will serve as a major gateway to the GreenMount Industrial Park and GreenMount UDA (Activity Center 26), filling the high external/internal need of roadway capacity/infrastructure, the high external need of roadway operations and high external need of safety features. Providing truck traffic with more direct access to the interstate will help alleviate traffic congestion along Rt. 60, as well as limit the need for additional truck trips to Exit 242, which already serves three local activity centers. The SCC is designed to redirect heavier industrial traffic away from the residential areas of Grove & Ewell Hall, improving truck movements, promoting connectivity and opening up currently landlocked properties for development. Based on the 2034 LRTP modeling, the SCC will be expected to carry 15,000 vehicles per day. Safety will be improved for local traffic turning on/off residential driveways and side streets as well as those using alternative modes of transportation. The reduction in traffic will result in reduced travel times for both commuter and truck trips, and improved roadway operations.

2. **What would the county say are the causes of existing development in the scoping study area and the sources of pressure for future development?** Throughout its history, growth in Grove has been spurred by the establishment and expansion of nearby military installations--Fort Eustis, Naval Weapons Station Yorktown, Cheatham Annex and Camp Peary. In addition to its connection to the military installations, the study area has close proximity to the interstate, Newport News, and the broader Hampton Roads area, making it attractive to industries ranging from Anheuser Busch to distribution centers. James City County's comprehensive plans have consistently designated the study area as a growth area with particular potential for industry. Consistent with the vision outlined in the comprehensive plans, James City County has established the James River Enterprise Zone to incentivize economic development in this area and approved the GreenMount Industrial Park, James River Commerce Center, and the Peninsula Pentecost development in the GreenMount North Mixed Use area. Pressure for future development is expected to remain for some time as the study area continues to have access to existing utilities, Fort Eustis, the interstate and nearby growing population centers.

3. **To what extent would transportation improvements in the scoping study area be consistent with community goals, such as proposed land use?** Transportation improvements in the scoping study area are consistent with the community goals as expressed in the 2035 Comprehensive Plan, which was approved in 2015, and in the 2035 Strategic Plan. In particular, the Transportation section has direct mention of this improvement in the corridor vision for Route 60 and the Land Use Map shows the Skiffes Creek Connector as a planned improvement with industrial and mixed use areas (noted as activity centers consistent with the Urban Development Area concept) being supported by this improvement.

4. **Is there any planned or funded development anticipated within or adjacent to the scoping study area (if so, please include location, a description and site plan if possible – digital files are acceptable)?** Development is planned and anticipated in the area, but with differing levels of approval and therefore at different points in the pipeline. Within the study area, the Peninsula Pentecostal mixed use development (9230, 9240 and 9250 Pocahontas Trail) has zoning and master plan approval but no specific site plan approval. See response to #5 below for additional information. A master plan can be provided upon request. Adjacent to the study area, there are approximately 219 developable acres of land zoned M-2, General Industry, left in the GreenMount Industrial Park (1651 Green Mount Parkway), 311 developable acres of land zoned M-2 available at the former BASF site (8961 Pocahontas Trail), and 70 acres of M-1, Limited Industry, and M-2, General Industry, available at the James River Commerce Center (8915 and 8925 Columbia Drive and 1716 Endeavor Drive). While all of this land is zoned, none of it has existing site plan approval, with the exception of 11.37 acres associated with the James River Commerce Center Shell/Virtual Building. A copy of the site plan for the James River Commerce Center Shell/Virtual Building can be provided upon request, and please see http://www.jamescitycountyva.gov/2953/Sites-Buildings for sites/land information for GreenMount, BASF and James River Commerce Center. Finally, approximately 103 acres of land at 8970 Pocahontas Trail is available for M2, General Industrial, development. It does not have an approved site plan associated with it.

5. **Has the county accepted proffers from developers based on our land use assumptions related to this study?** The properties at 9230, 9240, and 9250 were rezoned in 2015 under case no. Z-0005-2014, Peninsula Pentecostals, for a place of public assembly and commercial uses (potentially 30,000 square feet retail, restaurant, and convenience store). The proffers for Z-0005-2014 include commitment to a binding master plan which shows the future alignment of Skiffes Creek Connector as "U.S. 60 Realigned Proposed 120' Right-of-Way (Approximate)." The location of the right-of-way on the master plan was based on study materials from VDOT at that time. This case received legislative approval from the Board of Supervisors, but the property owner has not submitted or received approval of any development plans (site plans, etc.) since that time. A copy of the proffers, master plan, and traffic study can be provided upon request.

6. **Has the county changed zoning based on the land use assumptions related to this study?** No. As mentioned previously, the zoning of the land has been for industrial uses for some time.

7. **Has the county made any infrastructure improvements related to proposed land use changes resulting from assumptions related to this study (i.e., water, sewer, etc.)?** No.

8. **If possible, please list major developments within the scoping study area that have been approved within the last 25 years (past actions)?** Developments in the study area that were in place *prior* to 25 years ago include: the Branscome asphalt plant, the VDOT maintenance area, Skiffes Creek townhouses, and the Windy Hills Mobile Home Park. Development in the study area that has been approved and built *within* the last 25 years include: the Carter's Village townhouses (in front of Skiffes Creek townhouses), the Virginia Peninsula Regional Jail, and the Merrimac Juvenile Detention Center. Development in the study area that has been approved within the last 25 years, *but not yet built* include: Dominion Energy's Skiffes Creek Switching Station (8960, 8964, 8968 Pocahontas Trail) and the Peninsula Pentecostals Rezoning (9230, 9240, 9250 Pocahontas Trail).

9. **Are there particular economic resources or community facilities that should be considered in this study area?** Yes, the county wants to ensure there are no impacts to the Skiffe's Creek Reservoir. This Reservoir is owned and operated by the Newport News Waterworks (NNWW), which serves the lower end of James City County.

10. **Is the county aware of any disproportionately high or concentrated populations of minorities or low income populations that may not be captured in available US Census data within the scoping study area? To our knowledge, is the 2010 US Census an accurate reflections of the demographic composition of the scoping study area?** In summary, the Census appears to accurately reflect the demographic composition of the scoping study area. Specifically, the study area is comprised of Census tract 801.02 block groups 1 & 2. Census data shows the study area contains a large percentage of African Americans residing within it, relative to the rest of the County. The racial component of the block group's populations is 53.5% White, 38.7% African American. The study area includes the subdivisions of Carter's Village and Skiffe's Creek Terrace Townhomes, Whispering Pines manufactured home park and a majority of the Windy Hill manufactured home park. The per capita income in the block group, according to the 2015 ACS is $19,998. The median income is $42,804 in block group 2. Census Block Group 2, which contains all of the non-institutional residentially occupied property in the study area, has a population of 2,541 people.

11. **What existing and planned recreational properties and facilities are in the scoping study area, including greenways or trails? Please provide as much information as you can about each property's size, ownership, functions or activities, existing and planned facilities, hours of operation, types and amounts of public use, relationship to similarly used lands in the study area, any restrictive clauses or covenants regarding ownership or usage, any unusual characteristics, and whether any Land and Water Conservation Funds were used to either acquire or develop the property.** James City County does not have any greenways, trail, recreational facilities or public parks in the scoping area and none are any identified in the 2017 Parks and Recreation Master Plan. The 2002 Greenway Master Plan does identify a possible multi use trail connecting to Newport News but there are no funds allocated for the acquisition or construction of any recreational facilities in the impacted area.

12. **What roles do recreational facilities on public school properties play in the overall county parks and recreation program? Are any of these facilities accessible or utilized by the public outside of school hours?** School properties play a significant role in providing recreational programs and providing athletic facilities to the residents of James City County. Over 1,000 school age children use the schools on a regular basis for Before and After School Programs and summer camps. In addition, all outdoor athletic facilities and gymnasium are available for the public use and the youth sports organizations in the community. A MOU between the School Board and Board of Supervisors governs the utilization of school and park facilities.

RE: Skiffes Creek Connector Study
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC 100200

Thank you again for the opportunity to provide input into the process. If there is anything additional we can provide in support, please do not hesitate to contact me.

Sincerely,

Paul D. Holt, III, AICP, CNU-A, CFM
Director of Community Development and Planning

Nies, Nicholas

From: Smizik, Scott (VDOT) <Scott.Smizik@vdot.virginia.gov>
Sent: Thursday, December 14, 2017 5:58 PM
To: Nies, Nicholas
Cc: Salyers, Jennifer (VDOT); Jordan, Elizabeth (VDOT)
Subject: Fwd: NEPA Programs Coordination Meeting

Worth noting for the record.

Sent from my iPhone

Begin forwarded message:

> **From:** David O'Brien - NOAA Federal <david.l.o'brien@noaa.gov>
> **Date:** December 14, 2017 at 5:14:22 PM EST
> **To:** "Smizik, Scott (VDOT)" <Scott.Smizik@vdot.virginia.gov>
> **Subject: Re: NEPA Programs Coordination Meeting**
>
> Hi Scott,
>
> Not sure why I ever thought I needed to be involved with this project as its located on the reservoir portion of Skiffes Creek, i.e. no EFH and no fish passage for anadromous spp.
>
> So, unless the project changes significantly e.g. the limits of the project expands to the north/east across I-64 into tidal waters, I don't believe you need to continue to coordinate with me.
>
> Thanks,
> Dave
>
> David L. O'Brien
> Fisheries Biologist
> NOAA Fisheries Service
> Virginia Field Office
> 1375 Greate Rd.
> P.O. Box 1346
> Gloucester Point, VA 23062
> 804-684-7828 phone
> 804-684-7910 fax
> david.l.o'brien@noaa.gov
>
> On Thu, Dec 14, 2017 at 3:42 PM, Smizik, Scott (VDOT) <Scott.Smizik@vdot.virginia.gov> wrote:
>
> > Good afternoon –

In preparation for our January 10, 2018 meeting for the Skiffes Creek Connector Study, I have attached a PDF version of the updated presentation that was distributed after our November meeting. This new version has errata sheets inserted within the document to provide clarification on several points made during the meeting.

We look forward to meeting with you all in January to continue this study.

Scott Smizik

Desk: (804) 371-4082

Cell: (804) 306-0920

From: Smizik, Scott (VDOT)
Sent: Monday, November 20, 2017 1:32 PM
To: Jordan, Elizabeth (VDOT) <Elizabeth.Jordan@VDOT.Virginia.gov>; Cromwell, James R. (VDOT) <James.Cromwell@VDOT.Virginia.gov>; Wamsley, J. Cooper (VDOT) <Cooper.Wamsley@VDOT.Virginia.gov>; Deem, Angel N. (VDOT) <Angel.Deem@VDOT.Virginia.gov>; Parks, Caleb (VDOT) <Caleb.Parks@vdot.virginia.gov>; 'kimberly.a.baggett@usace.army.mil' <kimberly.a.baggett@usace.army.mil>; 'Troy Andersen' <troy_andersen@fws.gov>; Whitlock, Alison <alison_whitlock@fws.gov>; 'okorn.barbara@epa.gov' <okorn.barbara@epa.gov>; 'david.l.o'brien@noaa.gov' <david.l.o'brien@noaa.gov>; John.Simkins@dot.gov; Mack Frost - DOT (mack.frost@dot.gov) <mack.frost@dot.gov>; 'kevin.jones@dot.gov' <kevin.jones@dot.gov>; Allen-Grimes, Alice W NAO <Alice.W.Allen-Grimes@usace.army.mil>; Fuerst, Lee A CIV USARMY CENAO (US) <Lee.Fuerst@usace.army.mil>; Salyers, Jennifer (VDOT) <Jennifer.Salyers@VDOT.Virginia.gov>; Paul Holt (paul.holt@jamescitycountyva.gov) <paul.holt@jamescitycountyva.gov>; Debruhl, Jennifer (DRPT) <Jennifer.DeBruhl@drpt.virginia.gov>; Adams, Sandy (VDACS) <sandy.adams@vdacs.virginia.gov>; odwreview (VDH) <odwreview-VDH@cov.virginia.gov>; Douglas, Susan (VDH) <Susan.Douglas@vdh.virginia.gov>; Moses, Aaron (VDH) <Aaron.Moses@vdh.virginia.gov>; Mahoney, Mary (VDH) <Mary.Mahoney@vdh.virginia.gov>; Evans, Gregory (DOF) <Gregory.Evans@dof.virginia.gov>; 'rcrum@hrpdcva.gov' <rcrum@hrpdcva.gov>; Camelia Ravanbakht <cravanbakht@hrtpo.org>; Daniels Jr., George (VSP) <George.Daniels@vsp.virginia.gov>; Fernald, Ray (DGIF) <Ray.Fernald@dgif.virginia.gov>; Aschenbach, Ernie (DGIF) <Ernie.Aschenbach@dgif.virginia.gov>; ProjectReview (DGIF) <ProjectReview@dgif.virginia.gov>; 'pfreiling@williamsburgva.gov' <pfreiling@williamsburgva.gov>; 'mcollins@williamsburgva.gov' <mcollins@williamsburgva.gov>; 'Hammer, Greg - NRCS, Chesapeake, VA' <Greg.Hammer@va.usda.gov>; 'johnrk@vprj.net' <johnrk@vprj.net>; Kevin Page <kpage@hrtac.org>; 'crohlf@nnva.gov' <crohlf@nnva.gov>; Rhur, Robbie (DCR)

<Robbie.Rhur@dcr.virginia.gov>; Hypes, Rene (DCR) <Rene.Hypes@dcr.virginia.gov>; carrie schmidt <carrie.s.schmidt@hud.gov>; Shelton, Bill (DHCD) <Bill.Shelton@dhcd.virginia.gov>; Rayfield, Bettina (DEQ) <Bettina.Rayfield@deq.virginia.gov>; Davenport, Melanie (DEQ) <Melanie.Davenport@deq.virginia.gov>; Davis, Dave (DEQ) <Dave.Davis@deq.virginia.gov>; Narasimhan, Kotur (DEQ) <Kotur.Narasimhan@deq.virginia.gov>; Nicol, Craig (DEQ) <Craig.Nicol@deq.virginia.gov>; 'david.valenstein@dot.gov' <david.valenstein@dot.gov>; 'gay_vietzke@nps.gov' <gay_vietzke@nps.gov>; Mike Caldwell <mike_caldwell@nps.gov>; 'Dorothy Geyer' <dorothy_geyer@nps.gov>; Randy Owen <Randy.Owen@mrc.virginia.gov>; Sterling, Bruce (VDEM) <Bruce.Sterling@vdem.virginia.gov>; 'lindy_nelson@ios.doi.gov' <lindy_nelson@ios.doi.gov>; 'Amanda.Ciampolillo@fema.dhs.gov' <Amanda.Ciampolillo@fema.dhs.gov>; 'jcarbone@fs.fed.us' <jcarbone@fs.fed.us>; Moret, Stephen (SCHEV) <moret@yesvirginia.org>; 'sbartley@vofonline.org' <sbartley@vofonline.org>; 'Gatti, Jessie (FRA)' <Jessie.Gatti@dot.gov>; 'Johnson, Kerry' <Kerry.Johnson@hud.gov>; Dacey, Katy (DEQ) <Katy.Dacey@deq.virginia.gov>; 'Melissa.McGill@dot.gov' <Melissa.McGill@dot.gov>; 'john.winkle@dot.gov' <john.winkle@dot.gov>; Nies, Nicholas <nnies@wrallp.com>; 'Pitts, Hal R CIV' <Hal.R.Pitts@uscg.mil>; 'wpnsta.pao@navy.mil' <wpnsta.pao@navy.mil>; 'sean.tyler@us.af.mil' <sean.tyler@us.af.mil>; Zaman, Wali. PE (VDOT) <Wali.Zaman@VDOT.Virginia.gov>; Ruiz, Nick (DRPT) <Nick.Ruiz@drpt.virginia.gov>; Lasher, Terrance J. (DOF) <Terry.Lasher@dof.virginia.gov>; Gregory, Barbara (DCR) <Barbara.Gregory@dcr.virginia.gov>; Kesterson, Tarah (DMME) <Tarah.Kesterson@dmme.virginia.gov>; Weyland, Janet (DEQ) <Janet.Weyland@deq.virginia.gov>; Sterling, Caren (VSP) <Caren.Sterling@vsp.virginia.gov>
Cc: Howard, Janine (DEQ) <Janine.Howard@deq.virginia.gov>; Ramchandani, Jitender (DRPT) <Jitender.Ramchandani@drpt.virginia.gov>; Joyner, David F. (VDOT) <David.Joyner@vdot.virginia.gov>; 'Susan Miller' <smiller@rkk.com>; Parolari, Bert (DEQ) <Bert.Parolari@deq.virginia.gov>; 'Comer, Megan' <mcomer@wrallp.com>; Zaman, Wali. PE (VDOT) (Wali.Zaman@VDOT.Virginia.gov) <Wali.Zaman@VDOT.Virginia.gov>
Subject: RE: NEPA Programs Coordination Meeting
Importance: High

Good afternoon –

Following up on our November 8, 2017 meeting, I have attached a PDF version of the PowerPoint we used to review the Skiffes Creek Connector Methodology and Purpose and Need. To supplement this presentation, a "Follow-up" section has been added to the end. This section aims to address some of the traffic-related questions we received during the meeting with additional data. If there are additional inputs or questions that would inform the Purpose and Need Statement, please let me know. In the absence of further input, we will look to continue to coordinate with our concurring agencies and seek concurrence on the Purpose and Need Statement at our next meeting scheduled for January 10th. Look for additional materials in mid-December to assist in preparing for that meeting.

Since our last meeting, we held our first Citizen Information Meeting. The displays used at the meeting are available here: http://www.virginiadot.org/projects/hamptonroads/skiffes_creek.asp. We will look to have a summary of comments received available after the Thanksgiving holiday.

If you believe you no longer need to be included on this distribution or feel that someone else in your agency is better suited to receive these updates, please let me know. Thanks again to all for your continued support.

Scott Smizik

Location Studies Project Manager
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, Virginia 23219
Desk: (804) 371-4082

Cell: (804) 306-0920

Fax: (804) 786-7401

Scott.Smizik@VDOT.Virginia.gov

-----Original Appointment-----
From: Smizik, Scott (VDOT)
Sent: Thursday, September 14, 2017 2:41 PM
To: Smizik, Scott (VDOT); Jordan, Elizabeth (VDOT); Cromwell, James R. (VDOT); Wamsley, J. Cooper (VDOT); Deem, Angel N. (VDOT); Parks, Caleb (VDOT); 'kimberly.a.baggett@usace.army.mil'; 'Troy Andersen'; Whitlock, Alison; 'okorn.barbara@epa.gov'; 'david.l.o'brien@noaa.gov'; Simkins, John; Mack Frost - DOT (mack.frost@dot.gov); Jones, Kevin; Allen-Grimes, Alice; Fuerst, Lee A CIV USARMY CENAO (US); Salyers, Jennifer (VDOT); Paul Holt (paul.holt@jamescitycountyva.gov); Debruhl, Jennifer (DRPT); Adams, Sandy (VDACS); odwreview (VDH); Douglas, Susan (VDH); Moses, Aaron (VDH); Mahoney, Mary (VDH); Evans, Gregory (DOF); 'rcrum@hrpdcva.gov'; Camelia Ravanbakht; Daniels Jr., George (VSP); Fernald, Ray (DGIF); Aschenbach, Ernie (DGIF); ProjectReview (DGIF); 'pfreiling@williamsburgva.gov'; 'mcollins@williamsburgva.gov'; 'Hammer, Greg - NRCS, Chesapeake, VA'; 'johnrk@vprj.net'; Kevin Page; 'crohlf@nnva.gov'; Rhur, Robbie (DCR); Hypes, Rene (DCR); carrie schmidt; Shelton, Bill (DHCD); Rayfield, Bettina (DEQ); Davenport, Melanie (DEQ); Davis, Dave (DEQ); Narasimhan, Kotur (DEQ); Nicol, Craig (DEQ); 'david.valenstein@dot.gov'; 'gay_vietzke@nps.gov'; Mike Caldwell; 'Dorothy Geyer'; Owen, Randy (MRC); Sterling, Bruce (VDEM); 'lindy_nelson@ios.doi.gov'; 'Amanda.Ciampolillo@fema.dhs.gov'; 'jcarbone@fs.fed.us'; Moret, Stephen (SCHEV); 'sbartley@vofonline.org'; 'Gatti, Jessie (FRA)'; 'Johnson, Kerry'; Dacey, Katy (DEQ); 'Melissa.McGill@dot.gov'; 'john.winkle@dot.gov'; Nies, Nicholas; 'Pitts, Hal R CIV'; 'wpnsta.pao@navy.mil'; 'sean.tyler@us.af.mil'; Zaman, Wali. PE

(VDOT); Ruiz, Nick (DRPT); Lasher, Terrance J. (DOF); Gregory, Barbara (DCR); Kesterson, Tarah (DMME); Weyland, Janet (DEQ)
Cc: Howard, Janine (DEQ); Ramchandani, Jitender (DRPT); Joyner, David F. (VDOT); 'Susan Miller'; Parolari, Bert (DEQ); Comer, Megan
Subject: NEPA Programs Coordination Meeting
When: Wednesday, November 8, 2017 9:30 AM-12:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Monroe Bldg; Conf Rm B

Good afternoon –

In preparation for our next NEPA Programs Coordination Meeting, please find the attached agenda with dial-in/Go-to meeting information (please note we are in the same building but different conference room). A draft meeting summary from the October meeting also is attached. Prior to the November 8th meeting, additional informational materials may be distributed.

<< File: Agenda_NEPA Programs_11.8.17.pdf >> << File: Draft Meeting Summary_NEPA Programs_10.11.17.docx >>

We look forward to seeing you all in a few weeks.

Scott Smizik

Location Studies Project Manager
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
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Desk: (804) 371-4082

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Fax: (804) 786-7401

Scott.Smizik@VDOT.Virginia.gov

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

August 14, 2017

Special Projects Virginia Regulatory Section
NAO-2013-01119 (Skiffes Creek)

Ms. Jessie Yung, P.E.
Division Administrator
Federal Highway Administration
Post Office Box 10249
Richmond, Virginia 23240-0249

Mr. Scott Smizik
Project Manager
Virginia Department of Transportation
1401 East Broad Street
Richmond, Virginia 23219-2000

Dear Ms. Yung and Mr. Smizik:

This letter is in response your letter dated August 11, 2017 requesting Norfolk District Army Corps of Engineers (USACE) participation in the Skiffes Creek Connector Environmental Assessment study to evaluate potential transportation improvements between State Route 60 and State Route 143 in James City County.

It is likely the project will impact waters and/or wetlands regulated by USACE under Section 404 of the Clean Water Act (33 U.S.C. 1344), and a permit or permits will likely be required for the improvements. USACE will participate as a cooperating agency in the preparation of the Environmental Assessment (EA) and as a concurring agency as part of the draft merger process. It is our understanding that scoping comments will be requested after a scoping meeting is held. In accordance with the National Environmental Policy Act (NEPA), an Environmental Assessment (EA) is being prepared with the Federal Highway Administration (FHWA) as the lead federal agency and the Virginia Department of Transportation (VDOT) as the Joint Lead Agency.

Many projects funded by the Federal Highway Administration (FHWA) require permits from the Corps of Engineers. These projects are subject to compliance with Section 106 of the National Historic Preservation Act of 1966.

According to 36 CFR 800.2(a)(2):

"…If more than one Federal agency is involved in an undertaking, some or all [of] the agencies may designate a lead Federal agency, which shall identify the

appropriate official to serve as the agency official who shall act on their behalf, fulfilling their collective responsibilities under section 106. Those Federal agencies that do not designate a lead Federal agency remain individually responsible for their compliance with this part."

Pursuant to the above provision, FHWA is hereby designated as the lead federal agency to fulfill the collective Federal responsibilities under Section 106 for the following undertaking:

Skiffes Creek Connector (VDOT Project # 0060-047-627, C501, P101, R201)

The Corps authorizes FHWA to conduct Section 106 coordination on its behalf, including all required tribal coordination. Any Memorandum of Agreement prepared by FHWA under 36 CFR 800.6 should include the following clause in the introductory text:

"WHEREAS, pursuant to Section 10 and/or Section 404 of the Clean Water Act, a Department of the Army permit will likely be required from the Corps of Engineers for this project, and the Corps has designated FHWA as the lead federal agency to fulfill federal responsibilities under Section 106; and

In accordance with 50 CFR 401.07, FHWA is also designated as the lead Federal agency for consultation with the U. S. Fish and Wildlife Service and the National Marine Fisheries Service (NMFS) concerning potential effects to Federally-listed threatened and endangered species.

In addition, FHWA is designated as the lead Federal agency for consultation with NMFS for Essential Fish Habitat, as required under Section 305(b)(2) of the Magnuson Stevens Fishery Conservation and Management Act.

Should you have any questions, you may contact Lee Fuerst at 757-201-7832 or lee.fuerst@usace.army.mil.

Sincerely,

Kimberly A. Prisco-Baggett

Kimberly A. Prisco-Baggett, MBA
Chief, Special Projects Section

cc:
Mr. Mack Frost, Federal Highways Administration

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

Reply to Attention of

October 26, 2017

Special Projects Virginia Regulatory Section
NAO-2013-01119 (Skiffes Creek)

Ms. Jessie Yung, P.E.
Division Administrator
Federal Highway Administration
Post Office Box 10249
Richmond, Virginia 23240-0249

Mr. Scott Smizik
Project Manager
Virginia Department of Transportation
1401 East Broad Street
Richmond, Virginia 23219-2000

Dear Ms. Yung and Mr. Smizik:

This letter is in response to your letter dated September 26, 2017 soliciting scoping comments for a study you have undertaken to evaluate potential transportation improvements between State Route 60 and State Route 143 in James City County. In accordance with the National Environmental Policy Act (NEPA), an Environmental Assessment (EA) is being prepared with the Federal Highway Administration (FHWA) as the lead federal agency and the Virginia Department of Transportation (VDOT) as the Joint Lead Agency to FHWA.

It is likely the project will impact waters and/or wetlands regulated by the Norfolk District Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (33 U.S.C. 1344), and if so a permit or permits will be required for the improvements. As indicated in our letter dated August 14, 2017 USACE will serve as both a Cooperating and a Concurring Agency for this project study. We provided that indication in response to your letter dated August 11, 2017. Additionally, we provided comments as requested in your September 26, 2017 letter via email on October 18, 2017 regarding the draft Coordination Plan and draft methodologies. The letter additionally had a list of questions that were missing in the original attachment; this is in response to those listed questions.

Our regulations require that we consider a full range of public interest factors and conduct an alternatives analysis in order to identify the least environmentally damaging practicable alternative (LEDPA), which is the only alternative we can authorize. In addition to wetland and waters impacts, we must consider factors

such as land use (including displacements of homes and businesses), floodplain hazards and values, water supply and conservation, water quality, safety, cost, economics, threatened and endangered species, historic and cultural resources, and environmental justice.

Before you develop and evaluate alternatives, waters and wetlands should be identified and mapped, and you should document how impacts to aquatic resources are avoided and minimized by the alternatives you identify. We request regular coordination with the appropriate state and Federal agencies prior to making any decisions regarding the range and elimination of alternatives. While USACE recommends a jurisidictional determination, you should consider, at a minimum, all available information such as aerial photography, U.S.G.S. quad sheets (topographic maps), National Wetland Inventory (NWI) maps, and soil mapping of the study area, as well as review of aerial photography (including color infrared aerials) by a qualified reviewer. Should VDOT perform the assessment of jurisdictional areas through remote sensing, USACE recommends field verification of any areas which the qualified reviewer notes need further evaluation. The more accurate the delineation, the better for the purposes of alternative analysis and project development that incorporates avoidance and minimization of aquatic resources.

Measures to avoid and minimize impacts to streams and wetlands, such as bridging and alignment shifts, should be incorporated wherever practicable, and the EA should document avoidance and minimization measures considered. Relocation of streams should be avoided and all impacts to the compensatory mitigation site should be avoided.

Identifying potential compensation for stream and wetland impacts early in the process of project development is critical. Wetland impacts are typically compensated at 2:1 for forested, 1:5:1 for scrub/shrub, and 1:1 for emergent. Typically, we require stream compensation for unavoidable stream impacts to greater than 300 linear feet of stream at a crossing. However, we also consider the cumulative impacts to streams from a given project, and may require compensation for shorter lengths of stream if there are many impacts at close proximity, or if there are multiple impacts to the same stream and/or its direct tributaries. We encourage natural channel design to the extent practicable for streams that must be relocated. We utilize the Unified Stream Methodology for determining how much stream compensation is required for projects. The use of mitigation bank credits within the watershed are the preferred methods for providing compensation for stream and wetland impacts.

We have the following responses to your questions, which pertain only to aquatic resources:

1. We do not have available historic imagery or mapping. All of our imagery has been acquired from publically available sources. We request that you

coordinate with USACE and other federal agencies regarding the methodologies you propose to use for identifying resources for both direct and indirect impact analysis as well as the cumulative effects analysis. We do not have any tools to share that would be of use in indentifying indirect and cumulative effects other than our Regulatory database, from which we can provide some information about authorized impacts (as noted above). We recommend you refer to Virginia's record of identified impaired waters as one indicator of cumulative effects to surface waters. You may also wish to refer to the Virginia Department of Environmental Quality's WetCat program which will provide information regarding the condition of wetlands in the watershed, which can serve as an indicator of cumulative effects.

2. (In response to Question 2 and Question 5) We recommend that in establishing a study area boundary for analyzing indirect and cumulative effects, you include an area of sufficient size to include any indirect downstream effects. You should obtain information regarding impaired waters in the region and ascertain the basis for their designation as impaired, which may provide helpful information for establishing a geographic study area for your analysis of potential indirect and cumulative effects to streams. In determining a timeframe for evaluating cumulative effects, we recommend you consider the dates of construction of highways (Route 60, I-64, and Route 143) or any major development/change in land use within and adjacent to the study area in setting a past date.

3. There are valid permits as well as preliminary jurisdictional determinations of delineated wetlands and/or waters of the U.S. within the proposed project area. Attached is a map of permitted projects within the proposed study area to include their USACE number, as currently found in our database. It should be noted that the location shown may not be accurate, especially for older project numbers. Should VDOT require additional documentation, such as jurisdictional determinations, on any of these permitted projects within the study area, a Freedom of Information Act (FOIA) request would be required to be submitted. Instructions on how to submit a FOIA request can be viewed at: http://www.nao.usace.army.mil/Library/Freedom-of-Information-Act/ Alternatively, any permitted projects and their corresponding applications that were received and processed through the Virginia Marine Resources Commission, can be viewed on its publically available website.

   The proposed project area for the Skiffes Creek Connector Study was also evaluated in prior studies. We recommend reviewing any previous comments and/or delineations, along with any newly developed information regarding resources, as you develop your range of alternatives. In addition, we can provide VDOT with a record of impacts

from authorized projects in the watershed, although the data are incomplete and most accurate only back to about 2007. At such time as you are conducting your cumulative effects analysis, if you will contact us we will provide the most current information.

4. We have no specific comments at this time regarding potential induced growth or economic development and investment but we agree that such effects should be considered as you develop your study. All stormwater facilities should be located outside of jurisdictional areas.

5. To reiterate our concern over the previous studies affiliated with this current project, you confirmed during the October 11 meeting that the previous study of relocating Route 60 has been abandoned and will be removed from VDOT's website and corresponding LRTP. The purpose and need for this project should be clearly defined and supported separate from earlier studies. A public hearing is being held on November 9, 2017 in James City County. If you can please provide electronic copies of the material to be presented and a summary of comments that would be appreciated. We have no further comments at this time.

We appreciate your consideration including USACE in the early planning stages of this connector study and look forward to working with you.

Should you have any questions, please contact Lee Fuerst at 757-201-7832 or lee.fuerst@usace.army.mil.

Sincerely,

FUERST.LEE.A.1052791762

Digitally signed by FUERST.LEE.A.1052791762
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=FUERST.LEE.A.1052791762
Date: 2017.10.26 17:37:17 -04'00'

Lee Fuerst, Environmental Scientist
Special Projects Section
Norfolk District Corps of Engineers

cc:
National Marine Fisheries Service
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service

COMMONWEALTH of VIRGINIA

Sandra J. Adams
Commissioner

Department of Agriculture and Consumer Services
P.O. Box 1163, Richmond, Virginia 23218
Phone: 804/786-3501 • Fax: 804/371-2945• Hearing Impaired: 800/828-1120
www.vdacs.virginia.gov

Scott Smizik, AICP
Location Studies Project Manager
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, Virginia 23219

Subject: Skiffes Creek Connector Study
James City County
State Project Number: 0060-047-627, P101, R201, C501; UPC: 100200

Dear Mr. Smizik:

This is in response to your letter to this agency dated September 26, 2017, inviting comments concerning potential issues or concerns regarding social, economic, or natural resources under the jurisdiction or interest of the Virginia Department of Agriculture and Consumer Services (VDACS) within the study area for the Skiffes Creek Connector Study in James City County. We appreciate the opportunity to provide feedback on this project.

VDACS is responsible for the preservation of farmland and the protection of endangered and threatened plant and insect species. While VDACS does not possess any input, data, imagery, or mapping that would be responsive to the first, second, third, or fifth question on the Skiffes Creek Connector Study NEPA Evaluation Questionnaire, in response to the fourth and sixth question, we would recommend that the several issues be considered while developing this study. Concerning indirect effects that could occur through the implementation of transportation improvements within the study area, VDACS asks that you be mindful of any actions that could result in altering the water flow within surrounding agricultural lands and, to the greatest extent possible, minimize any adverse drainage or erosion issues that may result. Also, with regard to farmland preservation, § 3.2-204 of the Code of Virginia requires that in preparing reports on major state projects, each state agency demonstrate that it considered the impact of the projects on farm and forest lands as required in § 3.2-205 and that it adequately considered alternatives and mitigating measures. Therefore, VDACS encourages the Virginia Department of Transportation (VDOT) and others involved with this project to minimize the loss of farm and forest land to the highest degree possible. In addition, VDACS suggests that VDOT determine whether James City County has any established agricultural and forestal districts that may be impacted by this project. Should such districts exist, additional project review is required per § 15.2-4313 of the Code of Virginia.

Additionally, VDACS works closely with the Department of Conservation and Recreation (DCR) in determining the potential impact of proposed projects on state endangered and threatened plant and insect species. Through a Memorandum of Agreement between our agencies, DCR reviews these projects and submits comments on our behalf. Consequently, any inquiries relating to state protected plant and insect species should be directed to DCR for response. If after researching its database of natural resources, critical habitats, and species locations DCR finds that a project poses a potential adverse impact on an endangered or threatened plant or insect species, the appropriate information will be referred to VDACS for further review and possible mitigation. Please note that requests of this nature should be sent to Rene Hypes at the DCR Division of Natural Heritage Project Review Program. Ms. Hypes can be reached at (804) 371-2708 or rene.hypes@dcr.virginia.gov.

Sincerely,

Sandra J. Adams
Commissioner

cc: Kevin Schmidt, Director, Office of Policy, Planning and Research

Nies, Nicholas

From: Warren, Arlene (VDH) <Arlene.Warren@vdh.virginia.gov>
Sent: Tuesday, September 26, 2017 12:08 PM
To: Smizik, Scott (VDOT)
Subject: RE: Skiffes Creek Connector Study

Project Name: SKIFFES CREEK CONNECTOR STUDY
Project #: **0060-047-627, P101, R201, C501**
UPC #: **100200**
Location: **James City Co.**

VDH – Office of Drinking Water has reviewed the above project. Below are our comments as they relate to proximity to **public drinking water sources** (groundwater wells, springs and surface water intakes). Potential impacts to public water distribution systems or sanitary sewage collection systems **must be verified by the local utility.**

There are no public groundwater wells within a 1-mile radius of the project site.

The following surface water intakes are located within a 5-mile radius of the project site:

PWS ID Number	System Name	Facility Name
3700500	**NEWPORT NEWS, CITY OF**	**SKIFFES CREEK**
3700500	NEWPORT NEWS, CITY OF	LEE HALL

The project is within the watershed of the following public surface water sources (facilities where the project falls within 5 miles of the intake **and** is within the intake's watershed are formatted in **bold**):

PWS ID Number	System Name	Facility Name
3700500	**NEWPORT NEWS, CITY OF**	**SKIFFES CREEK**

Best Management Practices should be employed, including Erosion & Sedimentation Controls and Spill Prevention Controls & Countermeasures on the project site.

Materials should be managed while on site and during transport to prevent impacts to nearby surface water.

Best Regards,

Arlene Fields Warren
GIS Program Support Technician
Office of Drinking Water
Virginia Department of Health
109 Governor Street
Richmond, VA 23220
(804) 864-7781

The Virginia Department of Health – Office of Drinking Water appreciates the opportunity to provide comments. If you have any questions, please let me know.

From: Smizik, Scott (VDOT)
Sent: Tuesday, September 26, 2017 8:45 AM

To: odwreview (VDH) <odwreview-VDH@cov.virginia.gov>
Subject: Skiffes Creek Connector Study
Importance: High

Good morning –

With regards to the subject study, please find the following attachments:

1) Scoping/invitation letter
2) VDOT NEPA Programs Meeting Invitation
3) VDOT NEPA Programs Meeting agenda
4) Draft Coordination Plan
5) Draft Study Methodologies for
    a. Natural Resources
    b. Socioeconomic Resources
    c. Indirect and Cumulative Effects

These materials will be reviewed and discussed during the October 11th meeting. No hard copy will follow. If you have questions or require additional information, please let me know.

Scott Smizik, AICP
Location Studies Project Manager
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, Virginia 23219
Desk: (804) 371-4082
Cell: (804) 306-0920
Fax: (804) 786-7401
Scott.Smizik@VDOT.Virginia.gov

County Administrator
Neil A. Morgan

Deputy County Administrator/
Zoning Administrator
J. Mark Carter

Deputy County Administrator
Vivian A. Calkins-McGettigan

September 27, 2017

Scott Smizik
Project Manager – Environmental Division
Virginia Department of Transportation
1401 East Broad Street
Richmond, VA 23219

Dear Mr. Smizik:

Thank you for your September 26th letter inviting York County to become a Participating Agency in the Environmental Assessment (EA) process associated with the Skiffes Creek Connector (UPC: 100200) proposed in James City County. Given that no part of the EA study area lies within York County and in recognition of the other agencies that will be directly involved in the process, we will respectfully decline the invitation. However, as the EA proceeds if you or others need any information or specific comment from York County please do not hesitate to contact Tim Cross, Principal Planner, or me.

Sincerely,

Neil A. Morgan
County Administrator

Copy to: Tim Cross, Principal Planner

224 Ballard Street • P.O. Box 532 • Yorktown, Virginia 23690-0532 • (757) 890-3320
Fax: (757) 890-4000 •TDD (757) 890-3621 • Email: ctyadm@yorkcounty.gov
A Hampton Roads Community

Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

David C. Dowling
Deputy Director of Soil and Water Conservation and Dam Safety

Thomas L. Smith
Deputy Director of Operations

MEMORANDUM

DATE**:** September 28, 2017

TO: Scott Smizik, VDOT

FROM: Roberta Rhur, Environmental Impact Review Coordinator

SUBJECT: VDOT UPC 111815, Henry County Connector Study

Division of Planning and Recreation Resources

The Department of Conservation and Recreation (DCR), Division of Planning and Recreation Resources (PRR), develops the *Virginia Outdoors Plan* and coordinates a broad range of recreational and environmental programs throughout Virginia. These include the Virginia Scenic Rivers program; Trails, Greenways, and Blueways; Virginia State Park Master Planning and State Park Design and Construction.

Our review indicates that we do not have resources in the area of the project and do not anticipate impacts.

Division of Natural Heritage

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, natural heritage resources have not been documented within two miles of the project boundary. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Ernie Aschenbach at 804-367-2733 or Ernie.Aschenbach@dgif.virginia.gov.

The remaining DCR divisions have no comments regarding the scope of this project. Thank you for the opportunity to comment.

From: ProjectReview (DGIF) <ProjectReview@dgif.virginia.gov>
Sent: Tuesday, September 26, 2017 3:46 PM
To: Smizik, Scott (VDOT)
Cc: ProjectReview (DGIF)
Subject: RE: Skiffes Creek Connector Study

Good afternoon,

We appreciate that you submitted your project(s) for review by VDGIF to ensure the protection of sensitive wildlife resources during project development. Due to current staffing limitations within our Fish and Wildlife Information Services (FWIS) and Environmental Services sections, we are unable to review and provide comments on projects that are not currently involved in one of the regulatory review processes for which we are a consultative agency (see http://www.dgif.virginia.gov/environmental-programs/environmental-services-section.asp).
Please note that no response from VDGIF does not constitute "no comment" nor does it imply support of the project or associated activities. It simply means VDGIF has not been able to respond to your request.

To assist you in determining which, if any, wildlife resources under our jurisdiction, including threatened and endangered wildlife, may be present on or near your project site, we recommend that you access the Virginia Fish and Wildlife Information System (VAFWIS) at http://vafwis.org/fwis/.

If you should have further questions or need additional information about VDGIF's Environmental Programs, please visit: http://www.dgif.virginia.gov/environmental-programs/.

Please feel free to attach a copy of this correspondence and any reports from VAFWIS with your project paper work to document your correspondence with us regarding this project.

Thank you,
Anu Sriperambudur
Bureau Of Wildlife Resources
Virginia Department of Game & Inland Fisheries |
7870 Villa Park Dr, Ste 400, Henrico, VA 23228

DEPARTMENT OF GAME & INLAND FISHERIES
CONSERVE. CONNECT. PROTECT.

From: Smizik, Scott (VDOT)
Sent: Tuesday, September 26, 2017 9:05 AM
To: Fernald, Ray (DGIF)
Cc: Aschenbach, Ernie (DGIF); ProjectReview (DGIF)
Subject: Skiffes Creek Connector Study
Importance: High

Good morning –

With regards to the subject study, please find the following attachments:

1) Scoping/invitation letter
2) VDOT NEPA Programs Meeting Invitation
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    a. Natural Resources
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These materials will be reviewed and discussed during the October 11th meeting. No hard copy will follow. If you have questions or require additional information, please let me know.

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Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond, Virginia 23219
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Cell: (804) 306-0920
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Scott.Smizik@VDOT.Virginia.gov

Appendix C: Air Memo and Qualitative Analysis of Mobile Source Air Toxics

Air Report

Project Information

Project Name:	Skiffes Creek Connector		
Project Number:	0060-047-627, B619, B620, C501, P101, R201	**UPC:**	100200
Route Number:	60		
Project Limit - From:	Route 60	**To:**	Route 143
District	**City/County**	**Residency**	
Hampton Roads	James City	Williamsburg	
IPM Project Description:	#SMART18 - SKIFFES CREEK CONNECTOR		
Air Quality:	No		
Additional Project Description:	Skiffes Creek Connector		
Funding Source:	Federal		

PPTA/LAP

Locally Administered?	No	**PPTA?**	No

Traffic Data

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

TASK INFORMATION

Task/Subtask	PED	AED	Assigned To
Air Study - External Consultant/Locality	11/25/2013	09/11/2013	Ponticello, James P
Air Determination	05/14/2018	04/30/2018	Grinnell, Daniel T

I. Air Quality Status and Regional Conformity

Jurisdiction Description: This project is located within an Attainment area for all of the National Ambient Air Quality Standards (NAAQS). In accordance with 40 CFR Part 93, transportation conformity requirements are not applicable to the project since the project is not located in a nonattainment or maintenance area for any transportation-related criteria pollutant (i.e., ozone, particulate matter, nitrogen dioxide, and carbon monoxide). In addition, the project is located in a volatile organic compounds (VOC) and nitrogen oxides (NOx) Emissions Control Area. As such, all reasonable precautions should be taken to limit the emissions of VOC and NOx. The following VDEQ air pollution regulations must be adhered to during the construction of this project: 9 VAC 5-130, Open Burning restrictions; 9 VAC 5-45, Article 7, Cutback Asphalt restrictions; and 9 VAC 5-50, Article 1, Fugitive Dust precautions.

- The project is not considered regionally significant and/or is not of a type that would normally be included in the regional transportation model.

II. Carbon Monoxide

CO Microscale Analysis Required for NEPA?No

- The proposed project meets the criteria specified in the current FHWA-VDOT "Programmatic Agreement for Project Level Air Quality Analyses for Carbon Monoxide" and therefore a project-specific analysis for CO is not required.

The proposed project falls within the project types and conditions listed in the current Federal Highway Administration - Virginia Department of Transportation "Programmatic Agreement for Project –Level Air Quality Analyses for Carbon Monoxide" for streamlining the project level air quality analysis process for carbon monoxide. Modeling using "worst-case" parameters has been conducted for these project types and conditions. It has been determined that projects, such as this one, for which the conditions are not exceeded, would not significantly impact air quality and would not cause or contribute to a new violation, or delay timely attainment of the National Ambient Air Quality Standards for carbon monoxide.

Comments: The worst case alternative under the build condition occurs at the intersection of the proposed Skiffs Connector Road and VA 143. An intersection project would fall under the types of projects listed in Table 2 of the agreement,i.e.,a 6 lane urban intersection for all approaches and an approach speed of 15 mph. The modeled CO concentrations for this type of project excluding the background concentrations is 6.5 ppm for the one-hour and, using a persistence factor of 0.77, an eight-hour concentration of 5.0 ppm. When the background concentrations of 2.0 ppm and 1.1 ppm are included, the one-hour and eight-hour concentrations increase to 8.5 ppm and 6.1 ppm, respectively. These predicted values are well below the one-hour and eight-hour CO NAAQS of 35 ppm and 9 ppm, respectively. This configuration would give a much worst-case scenario than that of the proposed T-intersection improvements that include no more than 4 approach lanes in each direction and an approach speed greater than 15 mph.

III. Particulate Matter

PM Hotspot Analysis Required?No

The final rule that establishes the transportation conformity criteria and procedures for determining which transportation projects must be analyzed for local air quality impacts in Fine Particulate Matter (PM2.5) nonattainment and maintenance areas was published on March 10, 2006. This project is located in a PM2.5 attainment area and therefore no further discussion of PM2.5 is necessary.

IV. Mobile Source Air Toxics

This project requires: A qualitative MSAT analysis

This project requires a qualitative MSAT analysis. Please see the appendix for the appropriate language to be included in the environmental document.

Comments: The project is best characterized as one with “low potential MSAT effects” since design year traffic is projected to be significantly less than 140,000 to 150,000 annual average daily traffic (AADT) thresholds that are provided in the FHWA MSAT guidance. As a result, a qualitative assessment is attached.

Comments

General Comments:

Qualitative Analysis for Mobile Source Air Toxics

BACKGROUND

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA assessed this expansive list in its rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are part of EPA's Integrated Risk Information System (IRIS). In addition, EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-cancer hazard contributors from the 2011 National Air Toxics Assessment (NATA). These are *1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter*. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

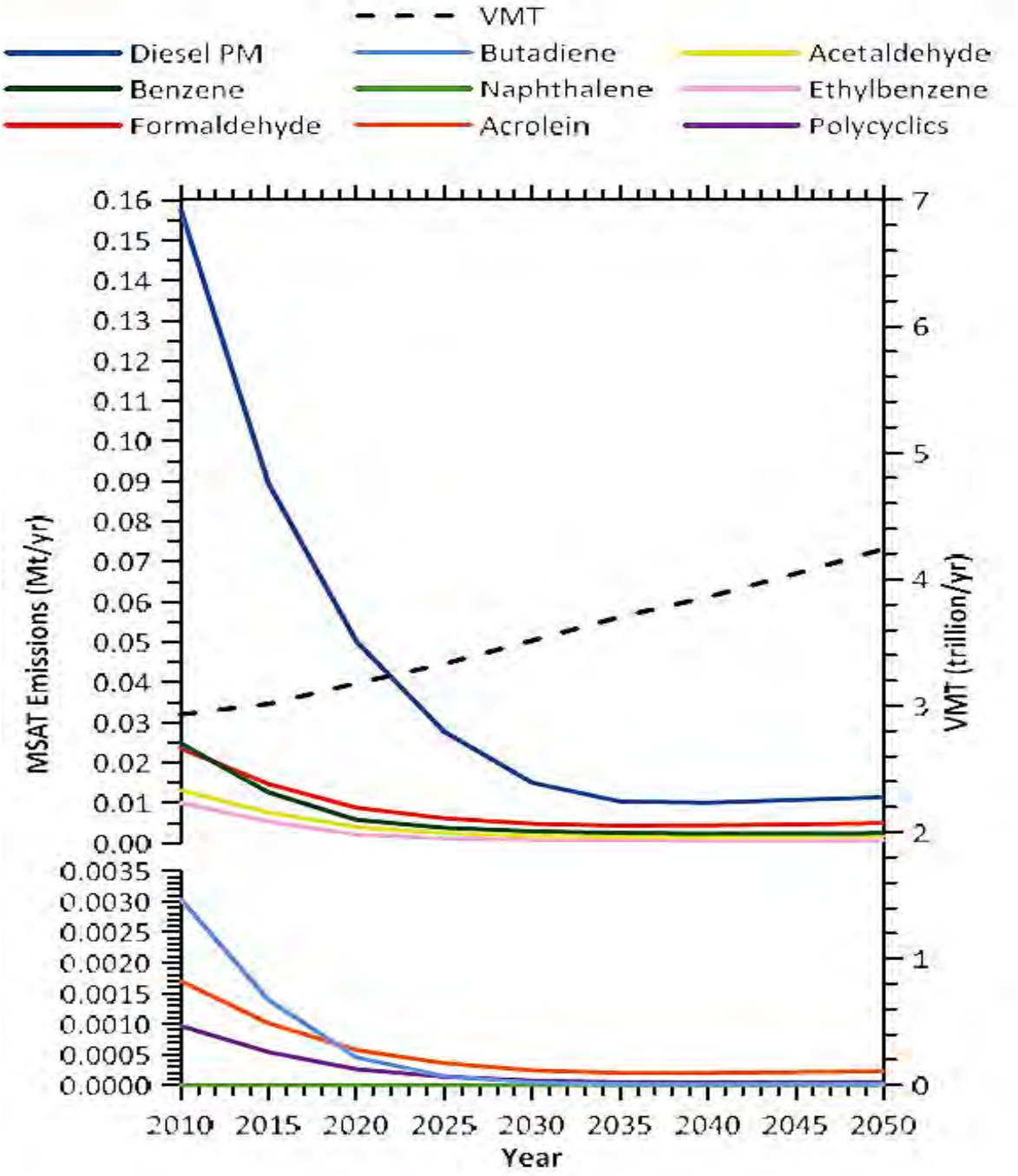
The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. Based on an FHWA analysis Using EPA's MOVES2014a model, as shown in Figure 1, FHWA estimates that even if VMT increases by 45 percent from 2010 to 2050 as forecast, a combined reduction of 91 percent in the total annual emissions for the priority MSAT is projected for the same time period.

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision-making within the context of the National Environmental Policy Act (NEPA). The FHWA, EPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this emerging field.

PROJECT-LEVEL MSAT DISCUSSION

Following FHWA's Interim Guidance Update on MSAT Analysis in NEPA dated October 18, 2016 (http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/aqintguidmem.cfm), this project has been determined to have low potential MSAT effects, thereby requiring a qualitative MSAT analysis. A qualitative MSAT analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*, found at:https://www.fhwa.dot.gov/environment/air_quality/air_toxics/research_and_analysis/mobile_source_air_toxics/msatemissions.cfm

Figure 1: NATIONAL MSAT EMISSION TRENDS 2010 - 2050
FOR VEHICLES OPERATING ON ROADWAYS
USING EPA's MOVES2014a MODEL



Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors
Source: EPA MOVES2014a model runs conducted by FHWA, September 2016.

For each alternative, the amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for each of the Build Alternative(s) may be slightly higher than that for the No-Build Alternative, because the additional capacity may increase the efficiency of the roadway and attract rerouted trips from elsewhere in the transportation network. This potential increase in VMT could lead to higher MSAT emissions for the preferred action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase would be offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOVES2014a model, emissions of all of the priority MSAT decrease as speed increases.

There may also be localized areas where VMT would increase, and other areas where VMT would decrease. Therefore, it is possible that localized increases and decreases in MSAT emissions may occur. However, even if these increases do occur, they too will be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent between 2010 and 2050 (Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, Federal Highway Administration, October 12, 2016). Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

Any additional travel lanes contemplated as part of the project alternatives may have the effect of moving some traffic closer to nearby homes, schools, and businesses; with the result that there may be localized areas where ambient concentrations of MSAT could be higher under the Build Alternative(s) than the No-Build Alternative. However, the magnitude and the duration of these potential increases compared to the No-Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, when capacity is increased, such as when a highway is widened, the localized level of MSAT emissions for the Build Alternative(s) could be higher relative to the No-Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

INCOMPLETE OR UNAVAILABLE INFORMATION FOR PROJECT-SPECIFIC MSAT HEALTH IMPACTS ANALYSIS

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The U.S. Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, https://www.epa.gov/iris/). Each

report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are; cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI Special Report 16, https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects) or in the future as vehicle emissions substantially decrease

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of C-3 occupational exposure data to the general population, a concern expressed by HEI (Special Report 16, https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, "[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk (https://www.epa.gov/iris)."

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a

June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable (https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/$file/07-1053-1120274.pdf).

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

CONCLUSION

As discussed above, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project at this time. While it is possible that localized increases in MSAT emissions may occur as a result of this project, emissions will likely be lower than present levels in the design year of this project as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent between 2010 and 2050. Although local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.