



SKIFFES CREEK

CONNECTOR STUDY

SOCIOECONOMIC & LAND USE

TECHNICAL REPORT

JUNE 2018

SKIFFES CREEK CONNECTOR STUDY

Socioeconomic and Land Use Technical Report

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

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List of Acronyms

ACS	American Community Survey
CEQ	Council on Environmental Quality
CIM	Citizen Information Meetings
CSXT	CSX Transportation
EA	Environmental Assessment
EJ	Environmental Justice
EO	Executive Order
FHWA	Federal Highway Administration
FY	Fiscal Year
GIS	Geographic Information System
HHS	U.S. Department of Health and Human Services
HRTPO	Hampton Roads Transportation Planning Organization
I-64	Interstate 64
kV	kilovolt
LMI	Labor Market Information
LOD	Limit of Disturbance
LRTP	Long Range Transportation Plan
NEPA	National Environmental Policy Act
O/D	Origin and Destination
SCC	Skiffes Creek Connector
SYIP	Six Year Improvement Program
US 60	US Route 60
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USEPA	Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VA 143	State Route 143
VA 199	State Route 199
VA 238	State Route 238
VDOT	Virginia Department of Transportation
WATA	Williamsburg Area Transit Authority

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 (US Route 60 (US 60)) and Merrimac Trail (State Route 143 (VA 143)). 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.

To support the analysis in the EA, this Socioeconomic and Land Use Technical Report has been prepared to document the following:

- **Section 1** provides an overview of the study, the Purpose and Need of the project, and the alternatives being evaluated in this study;
- **Section 2** describes the socioeconomic characteristics of the study area including communities and community facilities, population and housing characteristics, economic resources, and land use and right-of-way impacts;
- **Section 3** discusses environmental justice (EJ), identifies the minority and/or low-income populations within the study area, and evaluates the potential for impacts to these groups; and
- **Section 4** provides the references used within this Technical Report.

The EA has been prepared in accordance with the National Environmental Policy Act of 1969, as amended, (NEPA) and in accordance with FHWA regulations¹. The environmental review process as part of the 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). In accordance with the merged process agreement, the environmental analysis methodologies were developed and concurred upon based on coordination and input from these agencies. The memorandum documenting these environmental analysis methodologies is included in **Appendix A**. Analyses were then carried out following the concurred upon methodologies and included in this Technical Report and summarized in the corresponding EA.

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.

1.1 STUDY AREA

The 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 1-1** and **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.

1.2 PURPOSE AND NEED

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.

1.3 DESCRIPTION OF ALTERNATIVES

1.3.1 No Build Alternative

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 Fiscal Year (FY) 2018-2023 Six-Year Improvement Program (SYIP) and the Hampton Roads Transportation Planning Organization (HRTPO)'s 2040 Long-Range Transportation Plan (LRTP). As these other projects are independent of the proposed action, they are not evaluated in the EA.



Figure 1-1
Skiffes Creek Connector
Initial Study Area



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



Study Area

Source: Esri OpenStreetMap





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

Source: ESRI, NHD

Interstate Exit

Study Area



1.3.2 Build Alternative 1

Build Alternative 1 would provide an approximate one-mile two-lane roadway between US 60 and VA 143. Build Alternative 1 would tie into US 60 at the existing US 60/Green Mount Parkway signalized intersection, bridge³ over Skiffes Creek, the CSXT railroad, and VA 143, then turn east to connect at a new intersection with VA 143. Potential environmental impacts of Build Alternative 1 were estimated based on the planning-level limits of disturbance (LOD), estimated to be 140 feet wide. This width includes sufficient area to accommodate the required right-of-way as well as any necessary utility or construction easements. It is anticipated that this planning-level LOD would be refined as the project advances through more detailed design and permitting following a FHWA NEPA decision. Additionally, resources within a larger 225-foot Inventory Corridor were identified to provide the ability for future shifts or refinements to be made within this corridor during the detailed design and permitting phases.

1.3.3 Build Alternative 2

Build Alternative 2 would provide an approximate one-mile two-lane roadway between US 60 and VA 143. Build Alternative 2 would begin at a new intersection with US 60, approximately 1,000 feet west of the existing US 60/Green Mount Parkway intersection. Build Alternative 2 would then bridge³ over Skiffes Creek, the CSXT railroad, and VA 143, then turn east to connect at a new intersection with VA 143. Potential environmental impacts of Build Alternative 2 were estimated based on the planning-level LOD, estimated to be 140 feet wide. This width includes sufficient area to accommodate the required right-of-way as well as any necessary utility or construction easements. It is anticipated that this planning-level LOD would be refined as the project advances through more detailed design and permitting following a FHWA NEPA decision. Additionally, resources within a larger 225-foot Inventory Corridor were identified to provide the ability for future shifts or refinements to be made within this corridor during the detailed design and permitting phases.

2. SOCIOECONOMIC RESOURCES

The FHWA Technical Advisory T6640.8A *Guidance for Preparing and Processing Environmental and Section 4(f) Documents* indicates that NEPA documents should consider social impacts, to the extent they are distinguishable, for changes to neighborhoods or community cohesion; travel patterns and accessibility (e.g., vehicular, commuter, bicycle, or pedestrian); impacts to school districts, recreation areas, places of worship, businesses, police and fire protection stations, etc. (FHWA, 1987). Following is a description of the social characteristics of the study area and an assessment of how the project could affect those characteristics.

2.1 COMMUNITIES AND COMMUNITY FACILITIES

2.1.1 Methodology

Communities and community facilities were identified through a review of data provided through coordination with James City County, state and federal agencies, planned citizen information meetings (CIM), desktop searches, and secondary mapping sources (e.g., Geographic Information Systems [GIS])

³ The type and length of bridge-like structure over Skiffes Creek would be determined during final design/permitting.

data provided by VDOT and James City County, Google Maps, Google Earth, and review of local and regional planning documents).

2.1.2 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 and one church are within the study area, as listed in **Table 2-1** and shown on **Figure 2-1**. 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 or VA 143.

Table 2-1: Community Facilities within the Study Area

Facility	Facility Type
Virginia Peninsula Regional Jail	Government Service
Merrimac Juvenile Detention Center	Government Service
Morning Star Church	Religious Facility

The Williamsburg Area Transit Authority (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 origin and destination (O/D) locations, as discussed below in **Section 2.3**. However, since the SCC study area lacks efficient connectivity between US 60 and VA 143, all truck traffic must use US 60 as their main access 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 (see *Traffic and Transportation Technical Report* [VDOT, 2018b]).



Figure 2-1
Community Facilities
and Neighborhoods
within the Study Area

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



Source: ESRI, NHD

- Residential Neighborhood
- Community Facility
- Build Alternative 1
- Build Alternative 2
- Study Area



2.1.3 Environmental Consequences

2.1.3.1 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 with community facilities and residential areas. This condition has proven to be unsafe, given the concentration of pedestrian accidents 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.

2.1.3.2 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 points and VA 143, reducing the potential for vehicle/pedestrian incidents.

2.1.3.3 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.

2.2 POPULATION AND HOUSING

2.2.1 Methodology

Data from the Census 2011-2015 American Community Survey (ACS) 5-Year Estimates were used for this analysis. ACS data is a sampling of the population, as opposed to the decennial Census, a per person/per household capture effort. The use of sampling makes small area census data less precise. However, the ACS data sources are more recent, are the most comprehensive published data sources, and are relied on by VDOT and FHWA for comprehensive analyses. For the purposes of this report, 2011-2015 ACS 5-Year Estimates Census data were used wherever possible, as opposed to 2010 decennial counts, as this data more closely represents the existing population within the study area given the change in demographics since 2010. All Census block groups fully or partially within the study area were included in the analysis (see **Figure 2-2**). This data was then compared to the county and statewide data.

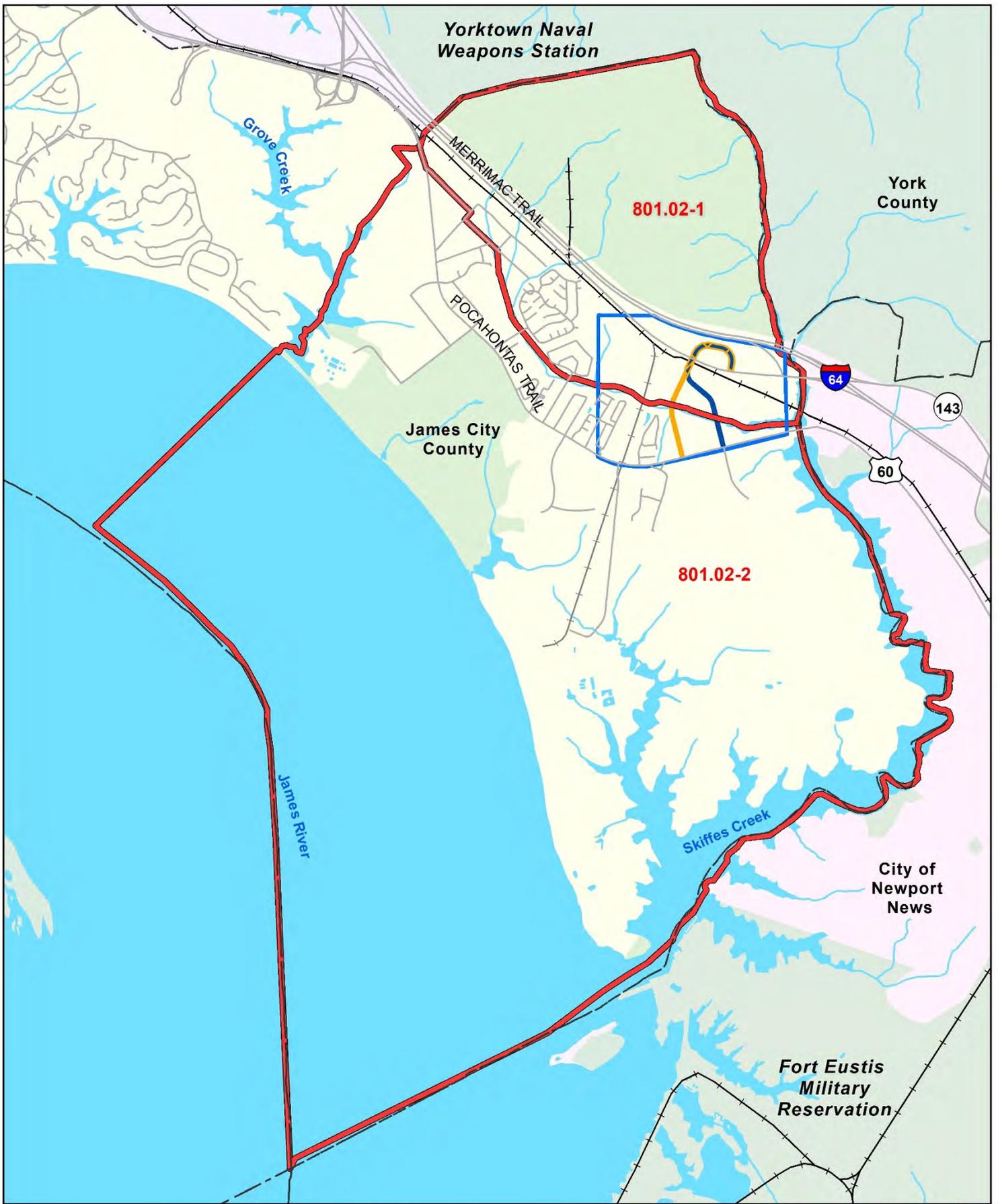


Figure 2-2
Census Block
Groups within the
Study Area

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



Source: ESRI, NHD, Census

- Build Alternative 1
- Build Alternative 2
- Census Block Group
- Study Area



2.2.2 Existing Conditions

The study area is located in a developed and expanding region. As described below in **Section 2.3**, James City County’s population exhibits a high commuting exchange with the Cities of Williamsburg and Newport News and York County; therefore, Newport News and York County are included in the population discussion. As the population grows in James City County and the surrounding areas, the likelihood is that commuter traffic would increase as well. **Table 2-2** illustrates population trends for James City County, York County, the City of Newport News, and Virginia from 1980 to 2015. Census block group population data is not available for 1980 and 1990; therefore, block groups were not included in the analysis of population. James City County has seen a much larger percent change (221 percent) in total population between 1980 and 2015 than York County (91 percent), the City of Newport News (26 percent), and the state of Virginia (57 percent) (Census, 2018b and 2018c). As show in **Table 2-3**, population projections anticipate that James City County would continue this growth, although at a slower pace (50 percent between 2015 and 2040).

Table 2-2: Historic Populations

Locality	1980	1990	2000	2010	2015	% Change Between 1980 and 2015
James City County	22,763	34,859	48,102	67,009	73,147	221%
York County	35,463	42,422	56,297	65,464	67,837	91%
City of Newport News	144,903	170,045	180,150	180,719	182,385	26%
Virginia	5,346,797	6,187,358	7,078,515	8,001,024	8,382,993	57%

Source: US Census of Population and Housing (Census, 2018b and 2018c).

Table 2-3: Population Projections

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.

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). 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.

Table 2-4 presents housing data for the study area, James City County, and Virginia. The study area block groups have an average of 84 percent occupied housing units, which is slightly lower than James City County and Virginia’s percent occupied housing units at 89 percent (Census, 2018a). Within the study area block groups, the percentage of owner occupied housing (73 percent) is similar to the percentages within

James City County and Virginia (75 and 66 percent, respectively). The average median home value within the study area, \$99,355, is much lower than the average median value within James City County, at \$319,100, and Virginia, at \$245,000. As shown on **Figure 2-1**, although there is a large number of housing units within the study area Census block groups, housing is limited within the study area.

Table 2-4: Study Area and Localities Housing Data

Locality	Total Housing Units	Total Occupied Housing Units	Percent Occupied	Owner Occupied	Percent Owner Occupied	Median Home Value
801.02-1	435	356	82%	294	83%	\$39,400
801.02-2	1,017	863	85%	598	69%	\$125,000
Study Area	1,452	1,219	84%	892	73%	\$99,355
James City County	31,392	28,000	89%	20,984	75%	\$319,100
Virginia	3,423,291	3,062,783	89%	2,027,005	66%	\$245,000

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

2.2.3 Environmental Consequences

2.2.3.1 No Build Alternative

Because the alternatives are on new alignment, the No Build conditions are consistent with the existing conditions. The No Build Alternative is not expected to impact population or housing.

2.2.3.2 Build Alternative 1

Build Alternative 1 would not require the full acquisition or relocation of any homes and would not affect the housing supply. Build Alternative 1 is not expected to impact population or housing.

2.2.3.3 Build Alternative 2

Similar to Build Alternative 1, Build Alternative 2 would not require the full acquisition or relocation of any homes and would not affect the housing supply. Build Alternative 2 is not expected to impact population or housing.

2.3 ECONOMIC CHARACTERISTICS

2.3.1 Methodology

Employment trends were provided by the HRTPO. The Virginia Employment Commission – Virginia Labor Market Information (LMI), *Community Profiles*, last updated in January 2018, provided top employment industries, largest employer data, and travel to work trends for James City County. Data from the 2011-2015 ACS 5-Year Estimates, *Means of Transportation to Work*, was used to identify how workers commute to work.

2.3.2 Existing Conditions

2.3.2.1 Employment

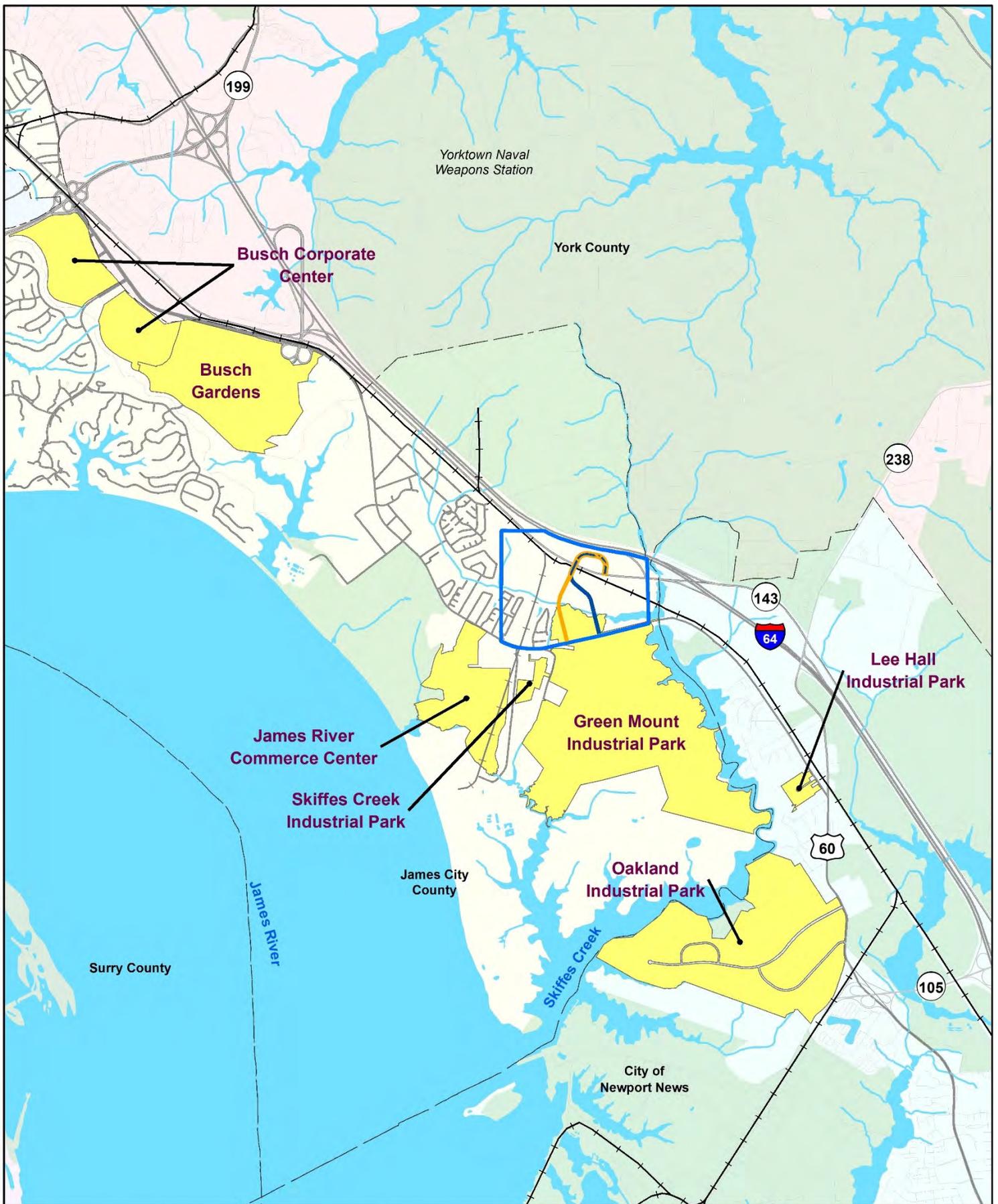
As identified within the LMI *Community Profile*, employment within James City County is largely dependent on the Retail Trade industry (16 percent of employment), the Arts, Entertainment, and Recreation industry (13 percent), Accommodation and Food Services industry (12 percent), the Healthcare and Social Assistance industry (12 percent), and Local Government (11 percent). 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

The majority of the SCC study area is within a state-designated Enterprise Zone (James River Enterprise Zone) which is a tract of land bordered by VA 143 to the north and the James River to the south. Enterprise Zones are areas that allow for local and state capital investment incentives and that are intended for private sector commercial and industrial investment and development. The James River Enterprise Zone includes the James River Commerce Center, the Green Mount Industrial Park (a portion of which is within the study area), 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, 2018b). These locations, as well as the Busch Gardens amusement park complex and nearby industrial parks in Newport News, are shown on **Figure 2-3**.

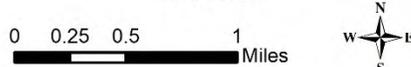
Within the Green Mount Industrial Park is the Walmart facility, the second largest Walmart direct import center (out of six total in the US) on the east coast, employing 878 associates (Stone, 2017). Although numerous port-related distribution centers contribute to truck traffic in the area, this Walmart facility accounts for 43 percent of port-related distribution center traffic entering and exiting Hampton Roads (HRTPO, 2018). 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) (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. 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.



**Figure 2-3
Industrial Parks and
Office Parks Proximate
to the Study Area**

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



Source: ESRI, NHD, James City County, Newport News, York County

- Industrial/Office/
Commercial Park
- Build Alternative 1
- Build Alternative 2
- Study Area



Table 2-5 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 2-5: 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)*.

2.3.2.2 Travel to Work

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 2-6**). 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.

Table 2-6: Commuting Patterns to and from James City County

Locality	Commuting To		Locality	Commuting From	
	Count	Percentage		Count	Percentage
Williamsburg City	4,016	21%	Newport News City	4,548	23%
Newport News City	3,392	18%	York County	2,174	11%
York County	2,148	11%	Hampton City	1,192	6%
Hampton City	1,325	7%	Gloucester County	1,050	5%
Norfolk City	840	5%	Williamsburg City	759	4%
Virginia Beach City	806	4%	New Kent County	734	4%
Fairfax County	633	3%	Virginia Beach City	721	4%
Henrico County	570	3%	Chesterfield County	472	2%
Chesapeake City	468	3%	Henrico County	457	2%
Richmond City	392	2%	Suffolk City	368	2%
All Other Locations*	4,467	23%	All Other Locations*	7,341	37%
Total Out-Commuters	19,057	100%	Total In-Commuters	19,816	100%

*Other locations details not available in data source.

Source: *U.S. Census Bureau, James City County Community Profile (LMI, 2018)*.

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, 2018). These commuter destinations are linked to James City County by I-64, US 60 and VA 143.

A total of 28,389 work in James City County, 70 percent, or 19,816, commute from outside of the 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. Other commuters traveling west, 1,663 (8 percent) are coming from New Kent County, Chesterfield County, and Henrico County. Other commuters traveling east, 3,331 (17 percent) 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.

The methods by which residents within the study area travel to work are identified in **Table 2-7**. 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.

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.

Table 2-7: 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).

2.3.2.3 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, listed in **Table 2-8**. The median household income of the two block groups within the study area, 801-02-1 and 801-02-2, both fall well below the median household income for James City County, as well as the median household income for the state of Virginia. \$75,712 and \$65,015, respectively.

Table 2-8: 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).

2.3.3 Environmental Consequences

2.3.3.1 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.

2.3.3.2 Build Alternative 1

Build Alternative 1 would not require any commercial displacements 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. The Build Alternative 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.

2.3.3.3 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. 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).

2.4 LAND USE

2.4.1 Methodology

Existing land use was mapped using aerial photos and field reconnaissance. Information on future land use was gathered from the James City County 2035 Comprehensive Plan and input from local and regional planning officials. The future land use was then compared to existing land use to analyze what changes the County was anticipating for the study area and the surrounding area and how the project could affect those changes.

2.4.2 Existing Conditions

Commuter and freight traffic from James City County to the major employment centers of the Cities of Williamsburg, Newport News, and Hampton is heavily concentrated on US 60 and VA 143. US 60 provides the only local route for the land uses located along the seven-mile stretch between VA 199 and VA 238. The land uses along this corridor are mixed, ranging from the Anheuser-Busch brewery, Busch Gardens amusement park complex, and the hotels, restaurants, and shops intended to service the visitors of Busch Gardens, to residential communities, industrial parks, and golf courses. VA 143 provides access to far fewer land uses due to its location in close proximity to the CSXT railroad, I-64, and through the undeveloped, forested lands associated with the Newport News City Reservoir.

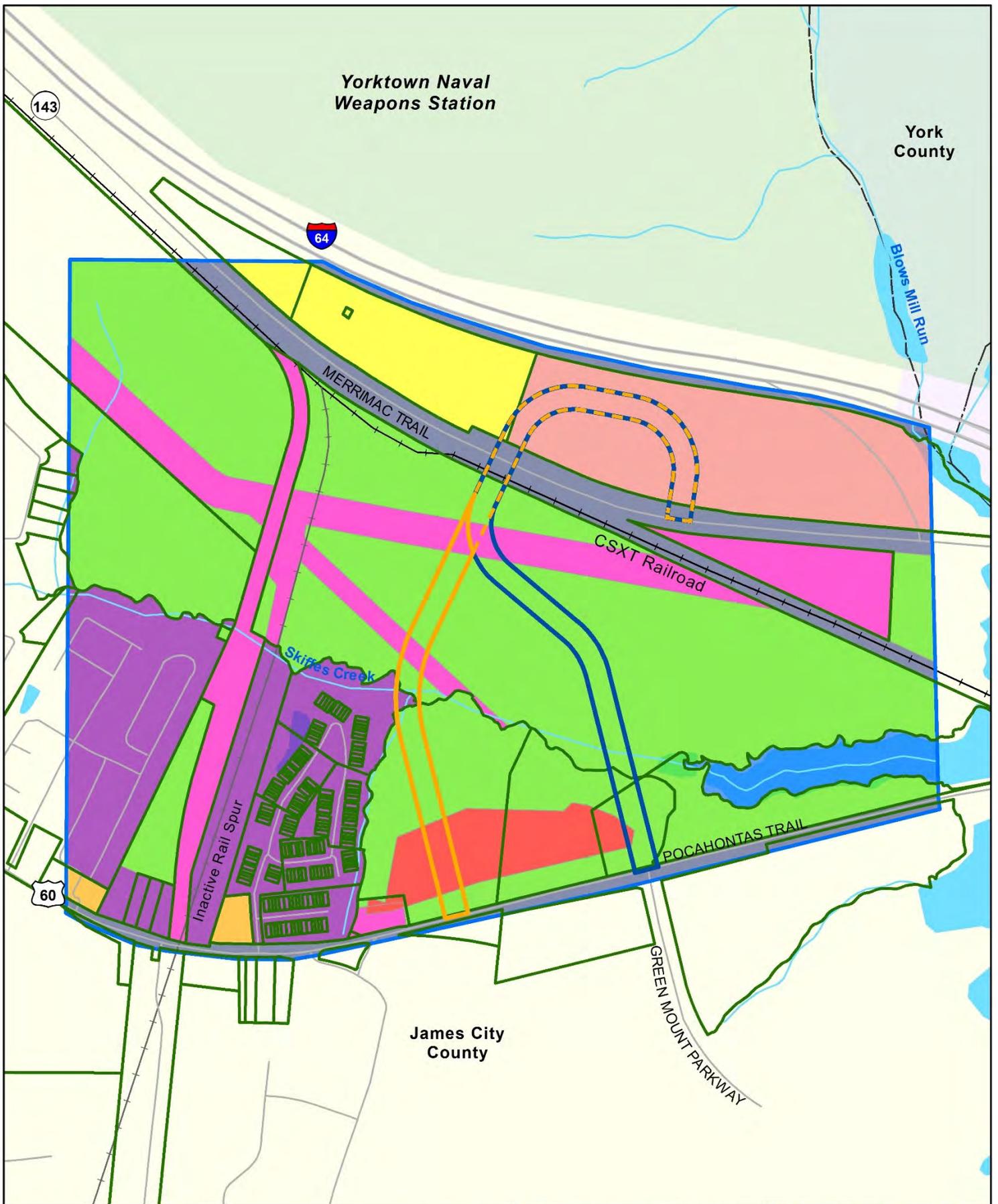
The majority of the 411 acres within the study area is undeveloped or covered by water, 189 acres or 46 percent. The next greatest use is residential, covering 16 percent (64 acres) of the study area, followed by industrial (46 acres or 11 percent), transportation (40 acres or 10 percent), public use (38 acres or 9 percent), institutional uses (18 acres or 4 percent), and farmland (13 acres or 3 percent). The remaining two acres (1 percent) of land are small businesses located along US 60 (refer to **Figure 2-4** and **Table 2-9**).

Table 2-9: Existing Land Use within the Study Area

Land Use	Acres within Study Area	Percent of Study Area Covered
Residential	64	16%
Institutional	18	4%
Public	38	9%
Industrial	46	11%
Business	2	1%
Transportation	40	10%
Water	8	2%
Farmland	13	3%
Undeveloped	181	47%
Study Area Total	411	100%

Note: Acres and percentages are rounded.

Source: Data was interpreted from the James City County GIS.



Yorktown Naval Weapons Station

York County

143

64

MERRIMAC TRAIL

CSXT Railroad

Skiffes Creek

Inactive Rail Spur

POCAHONTAS TRAIL

60

GREEN MOUNT PARKWAY

James City County

Figure 2-4
Existing Land Use
and Parcels within
the Study Area

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



Source: ESRI, NHD, James City County

- | | |
|--------------------------|----------------|
| Build Alternative 1 | Industrial |
| Build Alternative 2 | Institutional |
| Study Area | Public |
| Parcel | Residential |
| Land Use Category | Transportation |
| Business | Undeveloped |
| Farmland | Water |



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. The area to the west contains the Windy Hill mobile home park, and the area to the east contains the Whispering Pines mobile home park and multi-family residential units within Skiffes Creek Terrace and Carter's Village. 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 2-4**, the study area is generally comprised of large parcels, with the exception of those within Skiffes Creek Terrace and Carter's Village.

The portion of land within the SCC study area currently being utilized for farming is shown in orange on **Figure 2-4**; however, James City County's existing land use information does not identify any land uses designated as farmland (JCC, 2015b, 2018). For information regarding the Farmland Protection Policy Act, refer to the *Natural Resources Technical Report* (VDOT, 2018d).

2.4.3 Future Land Use

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, 2015b).

Additionally, Dominion Energy proposes to construct new electrical transmission line infrastructure within and proximate to the study area⁴ (Dominion Energy, 2017). The Dominion Energy 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 proposed project involves the construction of a new electrical switch station near Skiffes Creek and two new overhead transmission lines, including a 500 kilovolt (kV) line between the Surry Nuclear Power Station and the new switching station, and a 230kV line between the new switching station and Whealton Substation. The switching station would be located in the northeast corner of the study area in the vicinity of the CSXT rail line and the CSXT rail spur. The 500kV line would cross the James River then extend along BASF Drive and the inactive rail spur to connect with the new switching station, and the 250kV line would extend from the switching station across the study area to Green Mount Parkway then further southeast along the peninsula.

2.4.4 Environmental Consequences

2.4.4.1 No Build Alternative

The No Build Alternative would not cause any land use impacts and would not affect any parcels within the study area. 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.

⁴ A map showing the proposed route can be found at the website: <https://dominionenergy.com/about-us/electric-projects/power-line-projects/skiffes-creek>.

2.4.4.2 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, as shown in **Table 2-10**. Compensation in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act* of 1970 (as amended, 1987) would be provided. The conversion to transportation use would be relatively small when compared to the existing total acreage per land use class in the study area.

As shown in **Figure 2-4**, Build Alternative 1 would be located along the eastern edge of the land that is being used for farming. The impact to prime farmland soil and soils of statewide importance is discussed in the *Natural Resources Technical Report* (VDOT, 2018a). Build Alternative 1 is in conformance with the James City Comprehensive Plan and consistent with future land use plans.

Table 2-10: Potential Impacts to Land Use of Build Alternatives 1 and 2

Land Use	Existing Acres within Study Area	Acres within the LOD of Build Alternative 1	Percentage of Existing Acreage within LOD	Acres within the LOD of Build Alternative 2	Percentage of Existing Acreage within LOD
Residential	64	0	0%	0.3	0%
Institutional	18	0.1	1%	0.1	1%
Public	38	5.0	13%	5.0	13%
Industrial	46	0.7	2%	1.1	2%
Business	2	0	0%	0	0%
Transportation	40	1.0	2%	1.0	2%
Water	8	0	0%	0	0%
Farmland	13	0.1	1%	1.4	11%
Undeveloped	181	7.7	4%	6.1	3%
Study Area Total	411	14.6	4%	14.9	4%

Note: Acres and percentages are rounded.

Source: Data was interpreted from the James City County GIS.

2.4.4.3 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, as shown in **Table 2-10**. The conversion to transportation use would be relatively small when compared to the existing total acreage per land use class in the study area.

As shown in **Figure 2-4**, Build Alternative 2 would bisect the land that is being used for farming. The impact to prime farmland soil and soils of statewide importance is discussed in the *Natural Resources Technical Report* (VDOT, 2018a).

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.

3. ENVIRONMENTAL JUSTICE

3.1 METHODOLOGY

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving federal financial assistance. Title VI states that, “no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied benefits of, or be subjected to discrimination under any program or activity receiving federal assistance.”

The FHWA Title VI Program is broader than the Title VI statute and encompasses other nondiscrimination statutes and authorities, including:

- Section 162 (a) of the *Federal-Aid Highway Act of 1973* (23 USC §324) providing protection against gender-based discrimination;
- The Age Discrimination Act of 1975 prohibiting discrimination on the basis of age;
- Section 504 of the *Rehabilitation Act of 1973/Americans with Disabilities Act of 1990* providing disabled individuals equal opportunities to participate in and have access to federal programs, benefits, and services;
- Executive Order 13166 – *Improving Access to Services for Persons with Limited English Proficiency* (2000) requiring federal agencies to identify any need for services to those with limited understanding of the English language; and
- Executive Order 12898 – *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (1994) to ensure federal programs do not result in disproportionately high and adverse environmental or health impacts to these populations.

Executive Order (EO) 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* seeks to minimize disproportionate impacts of federal programs on minority populations and low-income populations. The following steps were included in this study process to address potential EJ consequences:

- Make active efforts to identify minority and low-income populations and include them in the transportation planning process;
- Provide for their participation and community representation in the process;
- Consider all reasonably foreseeable direct, indirect, and cumulative effects on minority and low-income populations;
- Compare the impacts to minority and low-income populations to those of non-minority and non-low-income populations to determine 1) whether minority and low-income populations share equally in the benefits of the transportation project and 2) whether disproportionately high and adverse effects to minority or low-income populations would occur with the transportation project; and

- To the extent practicable, avoid, minimize, and mitigate adverse effects to minority and low-income populations.

Consistent with Title VI, FHWA and VDOT are committed to ensuring that no person is excluded from, denied the benefits of, or discriminated against in their programs and activities on the basis of race, color, or national origin. To that end and in support of this study, an EJ analysis has been prepared in accordance with the definitions, methodologies, and guidance provided in Executive Order 12898; the Council on Environmental Quality (CEQ) *Environmental Justice Guidance Under the National Environmental Policy Act (NEPA)* (1997); U.S. Department of Transportation (USDOT) Order 5610.2(a) *Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (2012 revision); FHWA Order 6640.23A *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (2012); FHWA memorandum *Guidance on Environmental Justice and NEPA* (2011); the FHWA *Environmental Justice Reference Guide* (2015); and FHWA Technical Advisory T6640.8A: *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*. The strategies developed under EO 12898 and the USDOT/FHWA policies on EJ take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal transportation projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law, while ensuring EJ communities are proactively provided meaningful opportunities for public participation in project development and decision-making.

3.2 IDENTIFICATION OF ENVIRONMENTAL JUSTICE POPULATIONS

3.2.1 Minority Populations

According to FHWA Order 6640.23A, *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, and for the purposes of this Technical Report, minority populations are comprised of members of the following population groups:

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

Furthermore, FHWA 6640.23A provides the following definition of a minority population:

- Minority Population: any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy, or activity.

In accordance with the terms of CEQ guidance, *Environmental Justice Guidance under the National Environmental Policy Act* (1997), 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 CEQ guidance does not define the specific percentage that should be used for determining if the minority or low-income population is “meaningfully greater” than the average in the surrounding locality. For the purposes of this Technical Report and the associated EA, 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). This methodology for establishing a “meaningfully greater” threshold is consistent with that of other similar VDOT studies, developed in coordination with FHWA and the USEPA.

To perform the EJ analysis, Census data were collected on the racial and ethnic composition for each of the Census block groups partially within the study area. Data from 2011-2015 ACS 5-Year Estimate, *Hispanic or Latino Origin by Race*, were used for the purposes of identifying minority populations within the study area.

Table 3-1 provides a summary of racial and minority characteristics by block group within the study area compared to the state of Virginia and James City County. This information is displayed on **Figure 3-1**. Both of the Census block groups are above the 24 percent threshold and are thus considered EJ communities. 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.

3.2.2 Low-Income Population

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). Furthermore, FHWA Order 6640.23 defines low-income populations as follows:

- **Low-Income Population:** any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy, or activity.

The poverty threshold is determined by the U.S. Census Bureau and is updated annually. The poverty threshold varies according to the size of the family living at each residence and the ages of the family members. **Table 3-2** illustrates the average household size for each Census block group within the study area, as well as James City County and Virginia. The average household size of the Census block groups within the study area range between 2.88 and 3.23 family members. To be conservative, a family of four was used as the poverty threshold for identifying Census block groups with a low median household income within the study area.

Table 3-1: Study Area Racial and Ethnic Characteristics by Locality

Locality	Total Population	White – Not Hispanic or Latino ¹		White – Hispanic or Latino ¹		Black or African American ²		American Indian and Alaska Native ²		Asian ²		Native Hawaiian and Other Pacific Islander ²		Some Other Race ²		Two or More Races ²		Total Block Group Minority Population ³	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
801.02-1	1,481	602	41%	175	12%	484	33%	19	1%	8	1%	6	0%	68	5%	119	8%	879	59%
801.02-2	2,541	1,248	49%	111	4%	982	39%	39	2%	13	1%	0	0%	14	1%	134	5%	1,293	51%
Study Area	4,022	1,850	46%	286	7%	1,466	36%	58	1%	21	1%	6	0%	82	2%	253	6%	2,172	54%
James City County	70,673	54,032	76%	2,708	4%	9,571	14%	283	0%	2,095	3%	18	0%	518	1%	1,448	2%	16,641	24%
Virginia	8,256,630	5,237,848	63%	457,299	6%	1,589,345	19%	22,570	0%	492,973	6%	5,304	0%	183,124	2%	268,167	3%	3,018,782	37%

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.

2) Regardless of Hispanic/Latino designation

3) Total minority (including Hispanic/Latino) is the sum of all non-White races plus Hispanic or Latino – White.

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



**Figure 3-1
Environmental Justice
Block Groups**

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



Source: ESRI, NHD, Census

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



Table 3-2: 2015 Average Household Size

Locality	Average Household Size
801.02-1	3.23
801.02-2	2.88
James City County	2.49
Virginia	2.62

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

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 (see **Table 3-3**). While the 2018 HHS poverty threshold data is available, the 2015 dataset is the appropriate data set for a comparison because it aligns with the Census's 2011-2015 ACS 5-Year Estimates.

Table 3-3: 2015 Poverty Guidelines for the Contiguous States and the District of Columbia

Persons in Family/Household	Poverty Guideline
1	\$11,770
2	\$15,930
3	\$20,090
4	\$24,250
5	\$28,410
6	\$32,570
7	\$36,730
8	\$40,890

Source: 2015 Poverty Guidelines for the 48 Contiguous States and the District of Columbia (HHS, 2015).

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, listed in **Table 2-8**. Although the median income for both Census block groups are much lower than the average for James City County and Virginia, neither have a median household income below the \$24,250 threshold and are not considered to be low-income populations.

3.3 OUTREACH TO EJ COMMUNITIES

Scoping letters were sent to local governments, planning organizations, and elected officials in the study area to request information regarding minority and low-income areas and concerns in their communities. In addition to fulfilling NEPA public outreach requirements, 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, including facilities.

3.4 ENVIRONMENTAL CONSEQUENCES

3.4.1 No Build Alternative

The impacts resulting from the lack of improvements described above in **Sections 2.1.3.1, 2.2.3.1, 2.3.3.1, and 2.4.4.1** 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.

3.4.2 Build Alternative 1

The benefits of improved local connectivity and access between communities, community facilities, and for emergency vehicles, described above in **Sections 2.1.3.2, 2.2.3.2, 2.3.3.2, and 2.4.4.2**, 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 or from the EJ communities. Therefore, Build Alternative 1 would not result in a disproportionate and adverse impact to EJ populations.

3.4.3 Build Alternative 2

The benefits of improved local connectivity and access between communities, community facilities, and for emergency vehicles, described above in **Sections 2.1.3.3, 2.2.3.3, 2.3.3.3, and 2.4.4.3**, 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.

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Appendix A – Socioeconomic and Land Use Methodology Memorandum

SKIFFES CREEK CONNECTOR STUDY

Socioeconomics and Land Use Methodology
Memorandum
Revised 10/20/17

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List of Acronyms

ACS	American Community Survey
CIM	Citizen Information Meeting
CWA	Clean Water Act
CEQ	Council on Environmental Quality
EA	Environmental Assessment
EJ	Environmental Justice
FHWA	Federal Highway Administration
GIS	Geographic Information System
HRTPO	Hampton Roads Transportation Planning Organization
LMI	Labor Market Information
NMFS	National Marine Fisheries Service
NEPA	National Environmental Policy Act
SCC	Skiffes Creek Connector
HHS	U.S. Department of Health and Human Services
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USDOT	U.S. Department of Transportation
VDOT	Virginia Department of Transportation

1. INTRODUCTION

The Virginia Department of Transportation (VDOT), in coordination with the Federal Highway Administration (FHWA), has initiated an Environmental Assessment (EA) for the Skiffes Creek Connector Study (SCC) located in James City County. The study corridor is positioned south of Interstate 64 (I-64) between Exits 243 and 247, between existing U.S. Route 60 (Pocahontas Trail) to State Route 143 (Merrimac Trail). The EA is being prepared in accordance with the National Environmental Policy Act of 1969 (NEPA).

The purpose of this memorandum is to document the methodologies and strategies that will be used to identify and assess the potential impacts to socioeconomic resources, minority and low-income populations, and land use within the study area. The results of the analyses will be summarized in the *Socioeconomic and Land Use Technical Report* which will support discussions presented in the EA.

2. REGULATORY CONTEXT

2.1 SOCIOECONOMIC RESOURCES

The FHWA Technical Advisory T6640.8A *Guidance for Preparing and Processing Environmental and Section 4(f) Documents* indicates that NEPA documents should consider social impacts, to the extent they are distinguishable, for changes to neighborhoods or community cohesion; travel patterns and accessibility (e.g., vehicular, commuter, bicycle, or pedestrian); impacts to school districts, recreation areas, places of worship, businesses, police and fire protection stations, etc.

2.2 ENVIRONMENTAL JUSTICE

The EJ analysis will consider the definitions, methodologies, and guidance provided in CEQ's *Environmental Justice Guidance Under the National Environmental Policy Act* (1997); U.S. Department of Transportation (U.S. DOT) Order 5610.2(a) *Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (2012 revision), FHWA EJ Order 6640.23A *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (2012), FHWA memorandum *Guidance on Environmental Justice and NEPA* (2011), and the FHWA *Environmental Justice Reference Guide* (2015).

3. METHODOLOGY

Anticipated impacts will be assessed based upon a planning level Limits of Disturbance (LOD) that will include all impacts (both permanent and temporary) for each alternative. Should additional alternatives be identified outside of the preliminary study area, additional data collection and impact assessment would be conducted.

3.1 SOCIOECONOMIC RESOURCES

3.1.1 Communities and Community Facilities

Identification

Community and community facility characteristics will be identified within the study area. Community facilities will be identified through a review of data provided through coordination with James City County, state and federal agencies planned citizen information meetings (CIM), desktop searches, and secondary mapping sources (e.g., Geographic Information Systems [GIS] data provided by VDOT and James City County, Google Map, Google Earth, and review of local and regional planning documents), mapped, and presented using Desktop GIS software.

Community and recreational 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 services, 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.

Impact Assessment

Impacts to community facilities to be identified include potential partial or complete property acquisitions, noise impacts, dust, and any changes to access in the long term and short-term during construction.

3.1.2 Population and Housing

Identification

The U.S. Census Bureau's American Community Survey (ACS) 2011-2015 five-year data at the Census block group level will be used to estimate resident population and housing characteristics such as total number of units, number of occupied housing units, and the ratio of owned versus rented units. ACS data is based on sample survey that can have large margins of error at the Census block group level; however, where such ACS data is used, it represents the best available information at the time and/or is more reflective of existing conditions in the study area than the 2010 Decennial Census. All Census block groups fully or partially within the study area will be included in the analysis. This data will be compared to the county and statewide averages.

Impact Assessment

Potential impacts of the alternatives to resident population and housing within the study block groups will be based on number of residential relocations per the conceptual planning level design.

3.1.3 Economic Resources

Identification

Economic data will be collected from the ACS 2011-2015 five-year data at the Census block group level including income, employment, and journey to work data. Data from the Virginia Employment Commission – Virginia Labor Market Information (LMI) will also be reviewed to identify work trends for James City County and top employment industries and largest employer data for James City County and Virginia.

Impact Assessment

Impacts to income, employment and travel patterns will be based on number of acquisitions, and changes to access in the long term and short-term during construction.

3.1.4 Land Use and Right-of-Way

Identification

Existing and future land use will be mapped using GIS data obtained from James City County and Hampton Roads Transportation Planning Organization (HRTPO). Information on land use will also be gathered from the James City County 2035 Comprehensive Plan, regional planning documents from the HRTPO, aerial photos, input from local and regional planning officials, National Land Cover Dataset (2011), and field reconnaissance.

Acreage per land use category will be collected for the study area and compared to the statewide averages, presented in tabular format. Any changes to land use planned for the future, as identified in the James City County 2035 Comprehensive Plan will be described.

Impact Assessment

Impact to land use of each build alternative will be characterized by conversion to transportation use (acres) based on permanent right-of-way acquisitions only. Temporary, short-term right-of-way acquisition is not considered converted land. Number of total acquisitions, if any, will be assessed and total right-of-way acreage needs based on planning level, conceptual design, will be calculated. The effect of the project on future land use will also be evaluated.

3.2 ENVIRONMENTAL JUSTICE

3.2.1 Strategy to Identify Environmental Justice Populations

The definitions of minority and low-income populations outlined in FHWA Order 6640.23A, *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* will be used to identify Environmental Justice Populations.

In accordance with the terms of CEQ guidance, *Environmental Justice Guidance under the National Environmental Policy Act* (1997), 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 CEQ guidance does not define the specific percentage that should be used for determining if the minority or low-income population is “meaningfully greater” than the average in the surrounding locality. For the purposes of this project, the “meaningfully greater” threshold will be established for minority (including Hispanic/Latino) populations. Since the study area limits will be confined to James City County, the threshold will be the County average, providing the County average is less than 50 percent; if the County average is greater than 50 percent then 50 percent would be used as the threshold. This methodology for establishing a “meaningfully greater” threshold is consistent with that of other similar VDOT studies, developed in coordination with FHWA and the United States Environmental Protection Agency (USEPA). Race and ethnicity data will be gathered

from Census 2011-2015 ACS 5-Year Estimates, Hispanic or Latino Origin by Race, at the Census block group level.

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). While the 2017 HHS poverty threshold data will be available, the 2015 dataset will be the appropriate data set for a comparison with the Census's 2011-2015 ACS 5-Year Estimates. The poverty threshold is determined by the U.S. Census Bureau and is updated annually. The poverty threshold varies according to the size of the family living at each residence and the ages of the family members. Census 2011-2015 ACS 5-Year Estimates, *Average Household Size* and *Median Household Income* will be collected by Census block group. The average household size will be identified for the study area, which would determine the poverty threshold. Census block groups with median household income below that threshold would be identified as low-income block groups.

The analysis will result in tables and maps showing the locations of Census block groups in the study area and their minority/Hispanic/Latino and low-income population status, and labeled Census block groups.

3.2.2 EJ Outreach Strategy

The following strategy for reaching out to EJ populations has been designed to proactively provide meaningful opportunities for public participation in project development and decision-making for the Project. Outreach to EJ populations will begin by sending scoping letters to local governments, planning organizations, and elected officials in the study area with potential knowledge of minority and low-income areas and concerns in their communities. In addition to fulfilling NEPA public outreach requirements, public meetings, including public information meetings organized by VDOT will be advertised in minority, and low-income media outlets in addition to other widely disseminated sources of news in the study area. Public meetings will be held at times convenient for the public to attend and at places close to publicly accessible bus routes, as well as in Americans with Disabilities Act compliant facilities. Additionally, the study team will coordinate with local VDOT offices to identify any additional appropriate EJ populations that should be provided an opportunity to participate in project development and decision-making for this project.

3.2.3 Impact Methodology

The socioeconomic and land use analysis will identify the potential for adverse and beneficial effects of the proposed alternatives on human health and the environment in minority and low-income population locations in the study area. It will also analyze the effects the proposed project will have on socioeconomic resources within the study area. The SCC Study analysis will determine if potential impacts would occur in EJ areas with minority or low-income populations and whether these impacts would be disproportionately high and adverse (as defined by FHWA's EJ order 6640.23A). The analysis would include qualitative assessments, consistent with FHWA's *Guidance on Environmental Justice and NEPA* (FHWA, 2011), of potential effects to EJ populations.

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