

## 1.0 Socioeconomics and Environmental Justice

### 1.1 Introduction

This Technical Memorandum describes existing socioeconomic characteristics and environmental justice (EJ) communities in the Proposed Action's Region of Influence (ROI) and potential impacts on these resources from the Proposed Action (i.e., Preferred Alternative) and No Action Alternative. Measures to reduce potential adverse effects on socioeconomic resources and EJ communities from the Proposed Action are identified.

Socioeconomics refer to the attributes of the human environment, particularly the demographic and economic characteristics of an area and its population. Demography specifically refers to the composition of a population in an area and looks at factors such as age and race. Economic characteristics include variables related to the economy, such as employment, income, poverty, and housing. EJ is the consideration of low-income and minority populations when implementing a federal action with the potential to affect the environment.

For this analysis, Treasury describes and analyzes socioeconomic conditions regarding population, housing, labor force and employment, and community services' conditions in the ROI. Treasury describes and analyzes EJ conditions regarding race, ethnicity, income, and poverty conditions in the ROI.

Treasury received comments related to socioeconomics and EJ from stakeholders during the public scoping period. These comments identified concern over impacts to residential communities near the Project Site, such as through increased local traffic and changes in property values. Other public comments demonstrated support for the Proposed Action as it would bring jobs and diversity to the community.

Please refer to Treasury's [Public Scoping Report](#) for further details on the comments received during the scoping period. Concerns expressed during public scoping regarding socioeconomics and EJ are considered and addressed in this analysis.

**Note:** Treasury revised the following EJ analysis in this Technical Memorandum following publication of the Draft Environmental Impact Statement (DEIS) for this Proposed Action. Treasury originally prepared the socioeconomic and EJ analyses using the US Census Bureau's 2018 American Community Survey (ACS) dataset, which was the best available data at that time. That data remains sufficient for the socioeconomic ROI (a larger, high-level area encompassing 17 counties and Washington, DC), in which there would be no potential for the Proposed Action to result in significant adverse impacts.

That dataset, however, did not contain data at the block group level, which restricted Treasury's ability to consider potential EJ impacts to individual communities, at the block group level, near the Project Site within the EJ ROI. Since that time, the US Census Bureau has published new and more refined data for the EJ ROI, allowing Treasury to conduct a more refined analysis.

The updated analysis, using these more current and specific data, is provided below. **Section 1.2** includes the revised Affected Environment data, and **Section 1.3** includes minor refinements in the potential effects based on this new data. In summary, these new, more refined data did not substantively change the conclusions of the previous analysis shown in the DEIS but did provide the opportunity to provide confirmation of that analysis, based on the more specific data.

## 1.2 Affected Environment

### 1.2.1 Region of Influence

#### *Socioeconomic ROI*

The socioeconomic ROI is the [Washington-Arlington-Alexandria Metropolitan Area](#) (Metro Area). This approximately 6,247-square mile ROI includes Calvert, Charles, Frederick, Montgomery, and Prince George's Counties in Maryland; Washington, DC; Arlington, Clarke, Culpeper, Fairfax, Fauquier, Loudoun, Prince William, Rappahannock, Spotsylvania, Stafford, and Warren Counties in Virginia; and Jefferson County, West Virginia (see **Figure 1**) (OMB, 2015; US Census Bureau, 2018).

#### *Environmental Justice ROI*

The EJ ROI is different from the socioeconomics ROI due to the proximity of EJ communities to the Project Site. The EJ ROI is where impacts would be most directly felt (e.g., from changes in traffic, noise levels, and air quality) and is the area in which communities may receive a disproportionate share of those impacts. Treasury identified 17 block groups, located within eight census tracts, that may potentially experience disproportionate impacts from the Proposed Action (see **Table 1** and **Figure 2**). The Project Site is located entirely within census tract 8074.08, block group 1.

**Table 1. Block Groups in the EJ ROI**

Census Tract	Block Groups	Census Tract	Block Groups
8004.11	1	8067.13	1, 2
8067.06	1	8067.14	1, 2
8067.08	1, 2, 3	8074.04	1, 2, 3
8067.12	1, 2	8074.08	1, 2, 3

### 1.2.2 Applicable Guidance

**Table 2** identifies federal and state guidance and regulations relevant to this analysis. Treasury would comply with these guidelines and requirements under the Proposed Action.

**Table 2: Socioeconomics and EJ Applicable Guidance and Regulations**

Guidance/Regulation	Description/Applicability to Proposed Action
<a href="#">Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994)</a>	Directs federal agencies to consider the potential adverse environmental effects of their programs, policies, and activities. Requires impacts that may disproportionately affect minority and/or low-income populations to be addressed.
<a href="#">EO 13045, Protection of Children from Environmental Health Risks and Safety Risks (1997)</a>	Requires federal agencies to prioritize and address environmental risks that may disproportionately affect the health and safety of children.
<a href="#">Council on Environmental Quality (CEQ) Environmental Justice Guidance under the National Environmental Policy Act (1997)</a>	Provides guidance on the consideration of EJ within the National Environmental Policy Act (NEPA) process, and how to identify EJ populations. Establishes criteria for identifying minority and low-income populations within the general population or affected area.

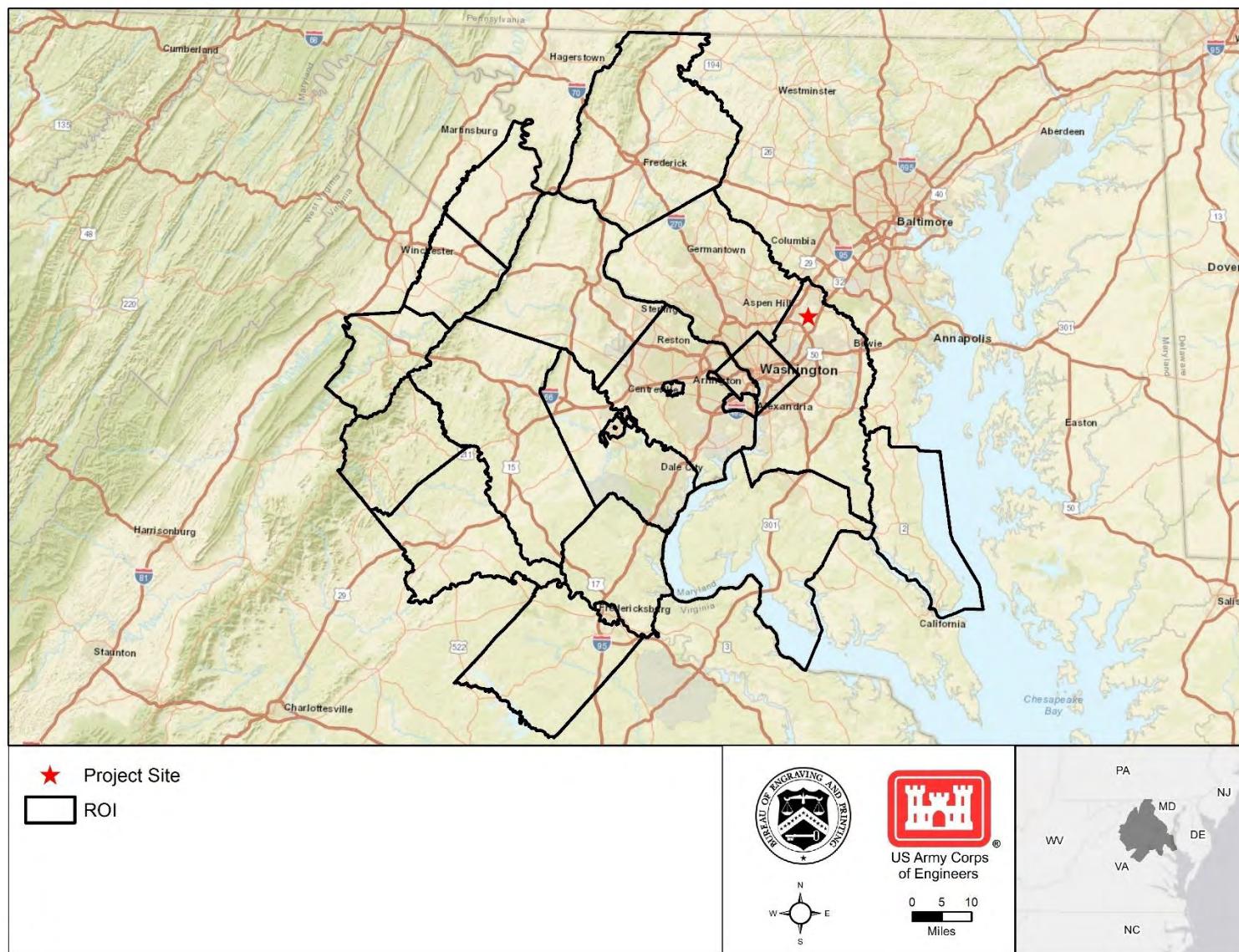


Figure 1: Socioeconomic ROI

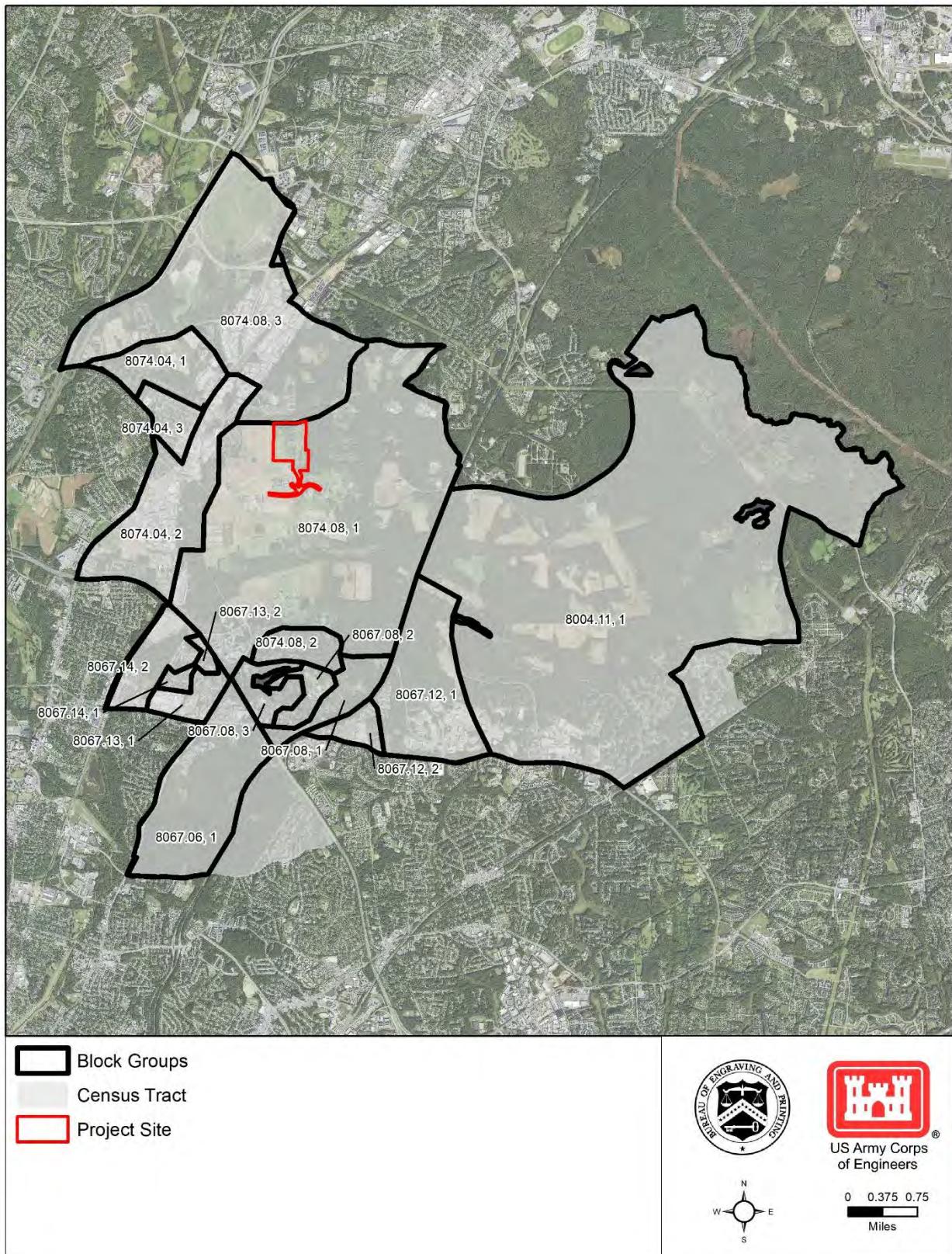


Figure 2: Environmental Justice ROI

### 1.2.3 Existing Conditions

The ACS datasets provide information on socioeconomic conditions. Treasury examined data from the socioeconomic ROI, Prince George's County, and the state of Maryland to provide a comparative analysis of regional conditions. Treasury used the 2018 ACS dataset for the [Metro Area](#) statistics, and data from the 2013-2017 ACS 5-Year Estimates dataset for Prince George's County and Maryland in the socioeconomic analysis. As described above, Treasury has revised the EJ analysis to incorporate more detailed data from the 2015-2019 ACS 5-Year Estimates dataset for all relevant geographies.

#### 1.2.3.1 Socioeconomic Characteristics

##### *Population*

As shown in **Table 3**, the overall 2018 population within the ROI is greater than in the state of Maryland, which reflects the highly urbanized character of the non-Maryland counties in the ROI. The population characteristics also indicate a growth trend between 2010 and 2018, with the ROI having a greater increase in population than Prince George's County and Maryland.

**Table 3: Population and Trends in the Socioeconomic ROI<sup>1</sup>**

Population and Trends	ROI	Prince George's County	Maryland
<b>2010 Population</b>	5,384,989 <sup>2</sup>	863,420	5,773,552
<b>2018 ACS Population</b>	6,251,240	909,308	6,042,718
<b>Percent Change in Population from 2010-2018 (%)</b>	16.1	5.3	4.7
<b>Population under 18 years (%)</b>	23.0	22.5 <sup>3</sup>	22.5 <sup>3</sup>

Source(s): 1. (US Census Bureau, 2018), 2. (US Census Bureau, 2019g), 3. (US Census Bureau, 2017a)

##### *Housing*

As shown on **Table 4**, the ROI has high housing values compared to the county and state. The high housing values in the ROI may reflect the highly urbanized character of the ROI. Conversely, the lower housing values in Prince George's County suggest that the county may be less affluent than surrounding communities in the ROI. The ROI has some of the highest property values in the United States, which may contribute to the disparity in housing values.

**Table 4: Housing Characteristics in the Socioeconomic ROI**

Housing Characteristic	ROI <sup>1</sup>	Prince George's County <sup>2</sup>	Maryland <sup>2</sup>
<b>Total housing units</b>	2,374,883	333,862	2,458,801
<b>Owner-occupied housing unit rate (%)</b>	63.5	62.0	66.8
<b>Median value of owner-occupied housing units (\$)</b>	433,200	287,800	305,500
<b>Renter-occupied housing unit rate (%)</b>	36.5	37.6 <sup>1</sup>	33.1 <sup>1</sup>
<b>Median gross rent (\$)</b>	1,670	1,434	1,357

Source(s): 1. (US Census Bureau, 2018), 2. (US Census Bureau, 2019g)

### *Labor Force and Employment*

Most of the population over 16 years of age is part of the labor force in the ROI, county, and state. The industry sectors in **Table 5** may be prevalent due to a high incidence of employers within those industries in the areas, such as universities, hospitals, and government facilities. The prevalence of these industries across the three levels indicates that there is a substantial professional workforce located in and around the ROI. Sectors that contain what are traditionally known as ‘trade’ jobs, such as manufacturing, do not have high incidences of employment across the geographies (i.e., less than 5 percent).

**Table 5: Labor Force and Employment Characteristics in the Socioeconomic ROI**

<b>Labor Force or Employment Characteristic</b>	<b>ROI<sup>1</sup></b>	<b>Prince George's County<sup>2</sup></b>	<b>Maryland<sup>2</sup></b>
<b>Approximate Employment Rate (%)</b>	72	72	68
<b>Largest Industry Sector for Employment (over 20% of labor force)</b>	professional, scientific, and management, and administrative and waste management services	educational services, and health care and social assistance	educational services, and health care and social assistance
<b>Second Largest Industry Sector for Employment (15-20% of the labor force)</b>	educational services, and health care and social assistance	professional, scientific, and management, and administrative and waste management services	professional, scientific, and management, and administrative and waste management services

Source(s): 1. (US Census Bureau, 2018), 2. (US Census Bureau, 2017b)

### *Community Services*

Community services includes facilities and services that are available to the entire public, such as schools, social services, recreational facilities, hospitals, and emergency response services (i.e., fire protection, law enforcement, and ambulances). While community services are abundant within the ROI and Prince George's County, only two schools and two fire stations are located within a 1-mile radius of the Project Site (see **Figure 3**). No community or public services are located at the Project Site.

#### **1.2.3.2 Environmental Justice**

##### *Minority Populations*

As shown in **Table 6**, both the EJ ROI and Prince George's County have higher percentages of minority races and persons of a Hispanic or Latino ethnicity compared to Maryland. According to [CEQ EJ guidance](#), a minority population is an area where the percentage of minorities exceeds 50 percent or is meaningfully greater than in the general population of the larger surrounding area (CEQ, 1997). The minority population within the EJ ROI exceeds this threshold; therefore, an EJ community of concern is present within the overall EJ ROI with respect to race.

More specifically, 14 of the 17 block groups in the ROI have a minority population that exceeds the 50 percent threshold (i.e., all but census tract 8067.08, block group 1; census tract 8067.08, block group 3; and census tract 8074.08, block group 2). Census tract 8074.08, block group 1, which contains the Project Site, is 72.8 percent minority, and is one of the 14 block groups with a minority population above 50 percent.

**Figure 4** depicts the spatial distribution of minority populations within the EJ ROI.

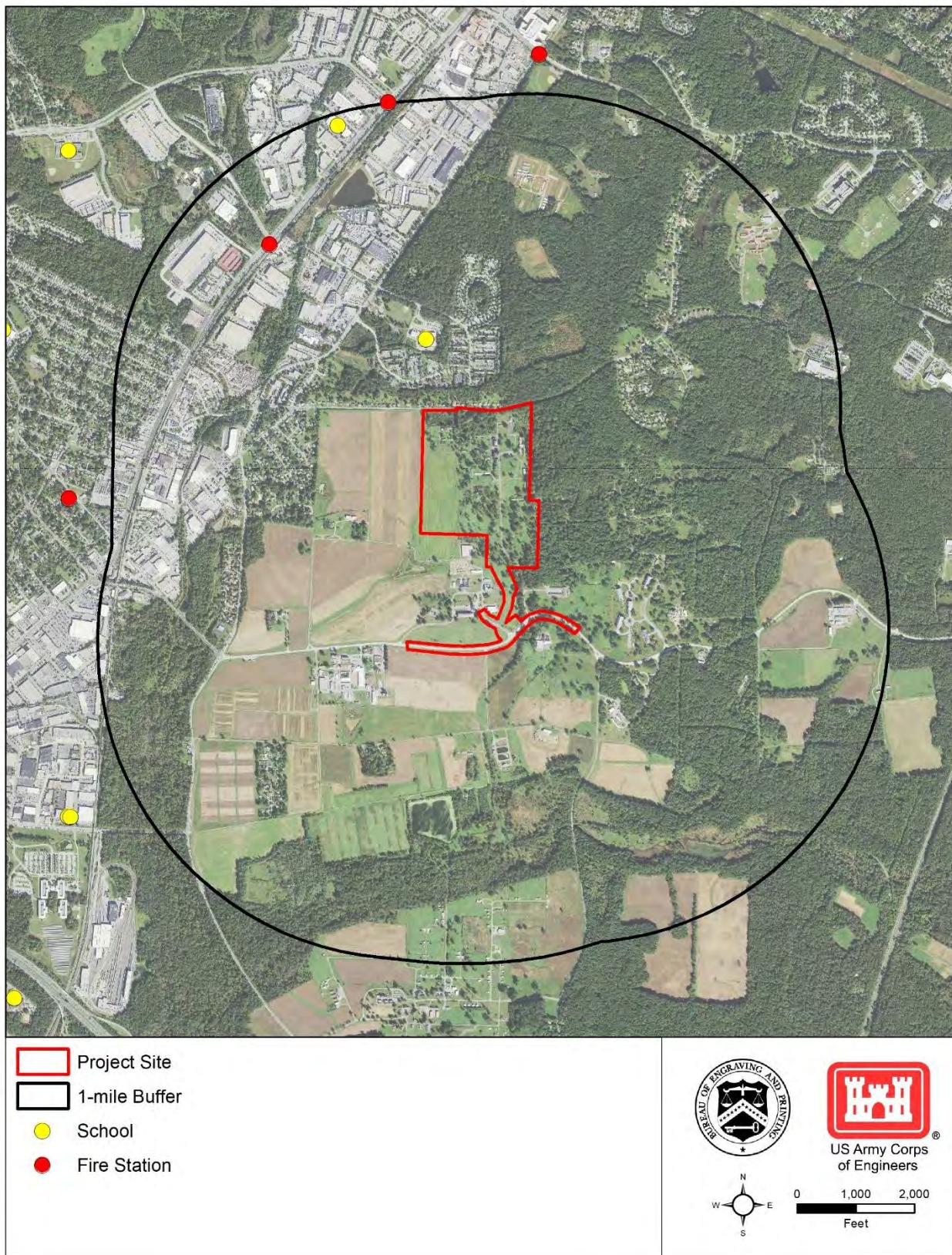


Figure 3: Community Services within 1 mile of the Project Site

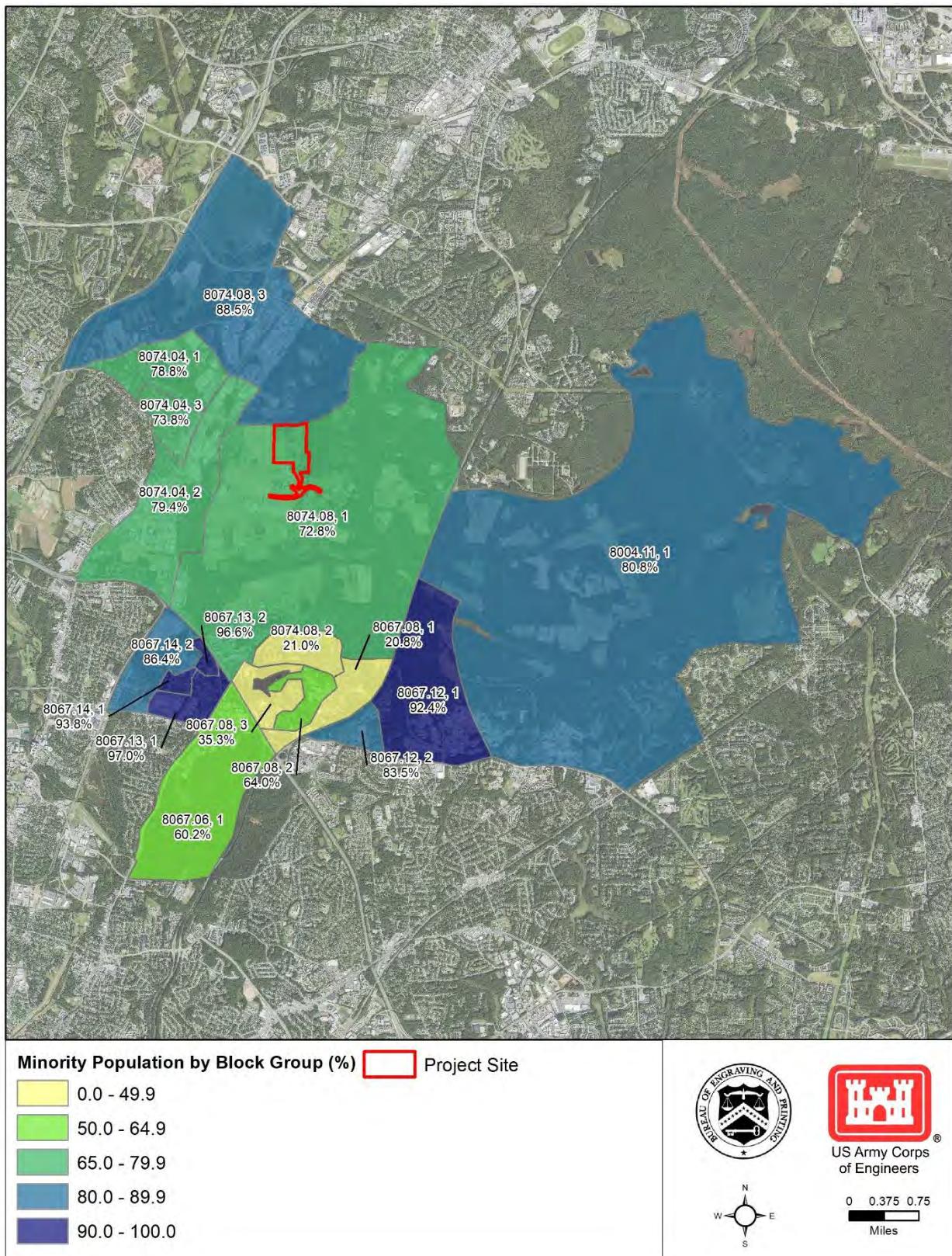


Figure 4: Minority Populations in the Environmental Justice ROI

**Table 6: Minority Populations in the EJ ROI**

Race/Ethnicity	ROI	Prince George's County	Maryland
<b>Total Population Count</b>	<b>30,704</b>	<b>908,670</b>	<b>6,018,848</b>
Hispanic or Latino	21.7%	18.4%	10.1%
<b>White Alone</b>	<b>32.5%</b>	<b>16.6%</b>	<b>55.5%</b>
Non-Hispanic White	24.6%	12.7%	50.9%
Hispanic White	7.9%	3.9%	4.7%
<b>Non-White</b>	<b>67.5%</b>	<b>83.3%</b>	<b>44.4%</b>
Black or African-American Alone	43.5%	62.7%	29.9%
American Indian and Alaska Native Alone	0.1%	0.4%	0.3%
Asian Alone	8.7%	4.1%	6.3%
Native Hawaiian and Other Pacific Islander Alone	0.0%	0.0%	0.0%
Some other race alone	13.0%	13.2%	4.5%
Two or more races	2.3%	2.9%	3.4%
<b>Total Minority Population</b>	<b>23,161 (75.4%)</b>	<b>792,360 (87.2%)</b>	<b>2,955,254 (49.1%)</b>

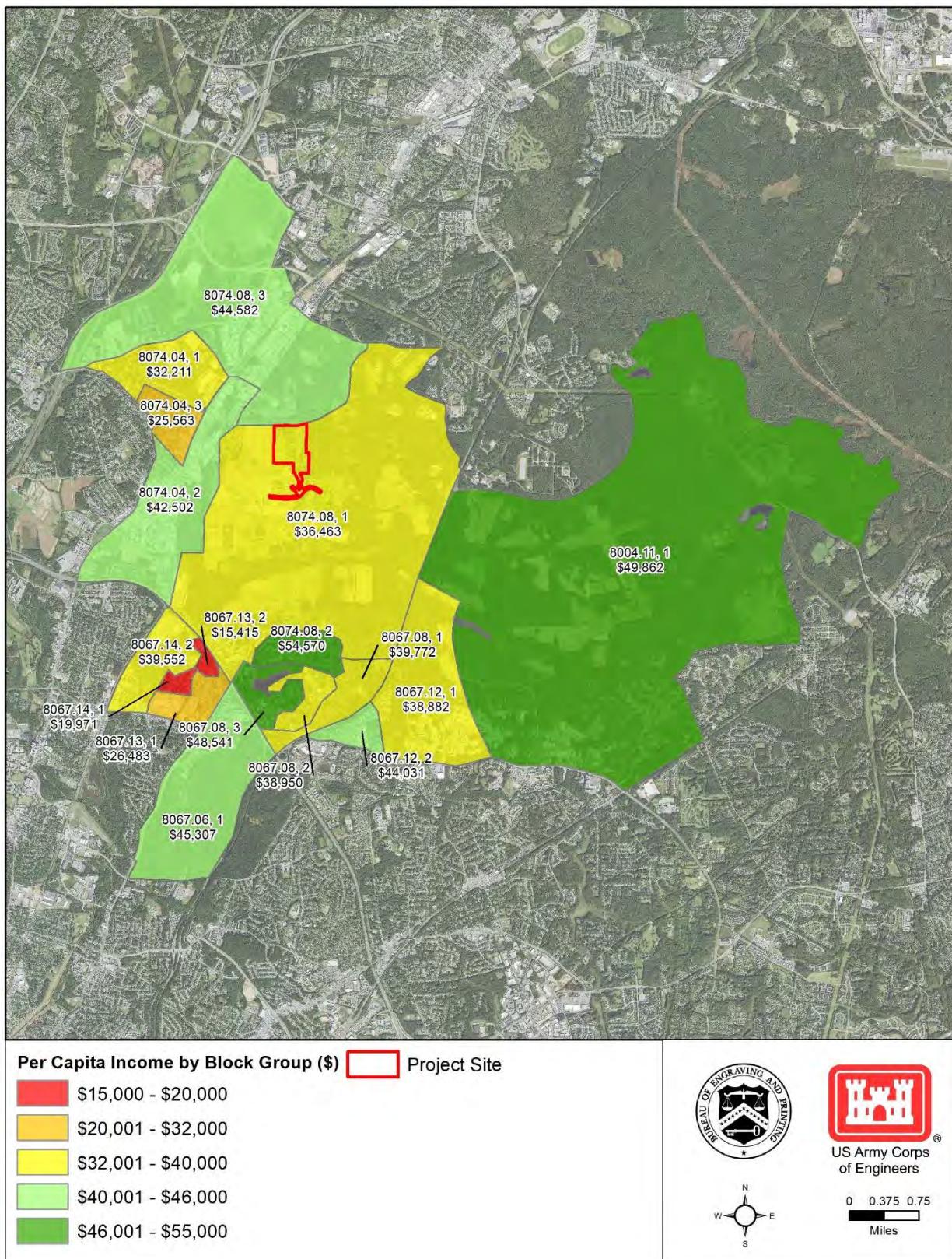
Source(s): (US Census Bureau, 2019a; 2019b)

#### *Low-Income Populations*

Following the [CEQ EJ guidance](#), Treasury compared income and poverty levels regionally to determine the presence of EJ communities of concern with respect to income and poverty (CEQ, 1997). As described below, the EJ ROI as a whole is not considered to be an EJ community of concern with respect to low income. However, six block groups within the EJ ROI that have per capita incomes below that of the overall EJ ROI may be considered EJ communities of concern with respect to low income.

As shown in **Table 7**, there is some disparity in median household income between the highest and lowest level (i.e., Prince George's County and the EJ ROI), with a difference of approximately \$6,400 per year. This difference in household income decreases to approximately \$4,500 per year when considering the weighted household income within the EJ ROI. A slightly smaller disparity exists regarding per capita income, with a difference of approximately \$4,900 per year between the highest and lowest level (i.e., Maryland and Prince George's County).

As shown in **Figure 5**, the per capita incomes of 6 of the 17 block groups within the EJ ROI are less than the per capita income of the EJ ROI as a whole. These six block groups also have minority populations exceeding 50 percent. The lowest per capita income is within census tract 8067.13, block group 2, with a substantial disparity of approximately \$22,400 between this block group and the ROI. The block group which contains the Project Site, census tract 8074.08, block group 1, also has a per capita income below that of the ROI, but with a difference of only approximately \$1,300.

**Figure 5: Low-Income Populations in the Environmental Justice ROI**

**Table 7: Income and Poverty Characteristics in the EJ ROI**

<b>Income and Poverty Characteristics</b>	<b>ROI</b>	<b>Prince George's County</b>	<b>Maryland</b>
<b>Median household income</b>	\$78,522	\$84,920	\$84,805
<b>Weighted<sup>1</sup> household income</b>	\$80,442	N/A	N/A
<b>Per capita income</b>	\$37,799	\$37,191	\$42,122
<b>Weighted<sup>1</sup> per capita income</b>	\$37,227	N/A	N/A

Source(s): (US Census Bureau, 2019c; 2019d)

1. The US Census Bureau uses weighted data to correct imbalances between the survey sample persons and the actual, overall population. Generally, the weighting procedure involves weighting the data from each sample person by the inverse of the probability of the person being in the sample.

Poverty data for the year 2019 are not reported at the block group level. Therefore, poverty levels within the EJ ROI have been determined using census tract data.<sup>1</sup> The poverty rate across these eight census tracts is 7.9 percent, compared to 8.5 percent for Prince George's County and 9.2 percent for the state of Maryland (US Census Bureau, 2019f).

Although some disparity exists for median household income when comparing the EJ ROI with the broader county and state geographies, the per capita income of the entire EJ ROI is comparable to, and slightly higher than, that of Prince George's County. Moreover, the EJ ROI has the lowest poverty rate of the three geographies considered. Therefore, the EJ ROI as a whole is not considered to be an EJ community of concern with respect to low income. However, the six block groups within the ROI that have per capita incomes below that of the overall EJ ROI (see **Figure 5**) may be considered EJ communities of concern with respect to low income; as noted above, these block groups are also an EJ community of concern with respect to race.

#### **1.2.3.3 Protection of Children**

Regionally, the total population under 18 years of age is 22.3 percent for both Prince George's County and Maryland (US Census Bureau, 2019e). As shown in **Table 8**, the total population under 18 years of age across all census tracts in the EJ ROI is similar to the county and state at just over 25 percent of the overall population.

The census tracts with the largest and second largest percent of the population under 18 years of age (i.e., 8067.13 and 8067.14) are located south of the Capital Beltway (Interstate 495) and distanced from the Project Site (i.e., 2.2 miles and 1.9 miles from the Project Site, respectively). While there is a population of children located in the same tract as the Project Site (i.e., 8074.08), no children are present at the Project Site itself.

As the percentage of children in the population of the EJ ROI is similar to that of the county and state, and there is not a sufficient population of children at the Project Site to warrant special consideration under EO 13045, no EJ communities of concern with respect to children are present in the EJ ROI.

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<sup>1</sup> While the EJ ROI consists of 17 block groups, the eight census tracts encompassing the EJ ROI include a total of 20 block groups.

**Table 8: Population under 18 Years in the EJ ROI<sup>1</sup>**

Census Tract	% Under 18 Years	Census Tract	% Under 18 Years
8004.11	19.9	8067.13	39.1
8067.06	19.0	8067.14	30.6
8067.08	18.5	8074.04	25.3
8067.12	22.4	8074.08	24.4
<b>Average Population under 18 Years in ROI (%)</b>			<b>25.1</b>

Source(s): (US Census Bureau, 2019e)

1. Age data for 2019 are not reported at the block group level. Therefore, age characteristics for the EJ ROI have been determined using age data that is available for the census tracts which contain the 17 block groups comprising the EJ ROI.

### 1.3 Environmental Effects

This section analyzes the potential effects on socioeconomic resources and EJ communities within their respective ROIs that could occur under the Proposed Action (i.e., Preferred Alternative) and No Action Alternative. Measures to reduce potential adverse effects on socioeconomic resources and EJ communities from the Proposed Action are also identified.

#### 1.3.1 Approach to the Analysis

For this analysis, Treasury assumed that a significant adverse impact would occur if:

- The current demographic or economic conditions in the ROI would be changed in a way that would be notable and harmful for surrounding communities and residents.
- EJ communities of concern in the ROI would be displaced or disproportionately adversely affected, such as through increased pollution or human health effects.

To determine potential impacts to socioeconomic resources and EJ communities, Treasury conducted a comparison of existing conditions with potential changes to those demographic or economic conditions with implementation of the Proposed Action.

Treasury conducted economic modeling using the [US Bureau of Economic Analysis Regional Input-Output Modeling System \(RIMS II\)](#) to determine potential impacts to socioeconomic conditions in the ROI. Treasury separated expenditures into construction and professional services.

RIMS II multipliers measure the total change in output, employment, and earnings that would result from an incremental change to a particular industry. Potential effects are categorized as direct (i.e., effects on industries used to implement the Proposed Action), indirect (i.e., effects on supporting industries that supply goods and services), and induced (i.e., effects from industry workers spending their personal incomes on consumer goods and services).

The total estimated effects, which include all direct, indirect, and induced effects, resulting from the RIMS II analysis are presented here; the full summary report of the RIMS II analysis is included in **Appendix A**.

RIMS II employment effects are expressed in job-years, defined as one job for one person for one year. The number of job-years does not necessarily reflect the amount of new jobs *created*; it instead presents

the job-years that would be *supported* by annual expenditures. RIMS II earnings results are expressed in 2020 US dollars for the construction phase and 2012 US dollars for the operation phase.<sup>2</sup>

Treasury's analysis of impacts to EJ communities was dependent on the impact determinations of other relevant resource areas, including air quality (see [Air Quality Technical Memorandum](#)), noise (see [Noise Technical Memorandum](#)), and traffic and transportation (see [Traffic and Transportation Technical Memorandum](#)). Treasury used these impact determinations to evaluate whether EJ communities would be disproportionately affected. Treasury based the determination of disproportionate impacts to EJ communities on whether health or environmental effects would exceed accepted norms or similar hazards faced by the general population.

Overall, ***no significant adverse impacts*** to socioeconomic resources are anticipated from either the Preferred Alternative or the No Action Alternative. ***Significant adverse impacts*** to EJ communities could result from significant adverse Proposed Action-induced traffic and transportation impacts in the ROI.

### 1.3.2 No Action Alternative

Under the No Action Alternative, Treasury would not construct or operate the Proposed Action. The Project Site would remain in its current condition and the existing socioeconomic trends and EJ communities would continue. As such, ***no impacts*** would occur.

### 1.3.3 Preferred Alternative

#### 1.3.3.1 Socioeconomics

##### *Construction*

Construction of the Proposed Action would result in ***beneficial impacts*** on the overall socioeconomic character of the ROI, notably in the immediately surrounding communities.

Construction activities would support or create construction-related jobs, some of which may be local, and most of which would be within the ROI. Treasury estimates that the Proposed Action would cost \$858 million (M) to implement, with construction activities accounting for over \$772M (BEP, 2017).<sup>3</sup>

As shown in **Table 9**, construction of the proposed Currency Production Facility (CPF) would support a total of 8,701 job-years, with projected total earnings of approximately \$483M. Based on the total anticipated job creation and earnings values, the average wage for these jobs would be approximately \$55,281 per job-year, approximately 55 percent higher than the average weighted per capita income in the surrounding census tracts.

**Table 9: RIMS II Estimates of Socioeconomic Construction Effects**

Industry	Total Employment (job-years)	Total Earnings (2020 \$) <sup>1</sup>
Construction	7,794	\$423,756,000
Professional Services	907	\$59,355,000
<b>Total</b>	<b>8,701</b>	<b>\$483,111,000</b>

1. Earnings rounded to nearest \$1,000.

<sup>2</sup> Anticipated operational costs are derived from a 30-year study completed in 2012 (Booz Allen Hamilton, 2012).

<sup>3</sup> The RIMS II analysis only includes project costs associated with constructing and operating the proposed CPF within Treasury's proposed parcel. Treasury has not yet calculated costs associated with the proposed new entrance road and Powder Mill Road modifications. These additional costs, although minor relative to the entire project costs, would likely further increase the projected job-years and earnings, making such potential impacts more beneficial.

The amount of jobs supported by construction would represent a small percent of the population currently employed in the same industry. Further, employment would be temporary and last only throughout the four-to five-year construction phase of the Proposed Action. Therefore, the higher wages and the creation of construction jobs would ***not significantly alter*** socioeconomic conditions or labor force characteristics of the ROI.

Since the Project Site is not occupied, no residents or community services would be displaced as a result of land acquisition or construction. Treasury's proposed parcel would be acquired through a land transfer between Treasury and the US Department of Agriculture (USDA), both federal agencies. No monetary effect or change in tax revenues would occur in the surrounding communities from the transfer of the property.

#### *Operation*

**Beneficial impacts** on communities near the proposed CPF may result from operation of the proposed CPF due to an increase in local revenues and spending. Operations may provide additional revenues to the surrounding communities; in Fiscal Year (FY) 2020 Treasury will pay approximately \$151M to employees at the Washington, DC Facility (DC Facility). By FY 2025, the total payroll for DC Facility employees is anticipated to increase by over \$50M to over \$200M. Locating the proposed CPF at BARC would shift at least part of the flow of this money to goods and services in Prince George's County, as employees would likely patronize local businesses located near the proposed CPF before, during, and after their shifts.

An estimated \$607M would be spent annually on operation and maintenance of the proposed CPF. This is a reduction of approximately \$34.8M compared to current spending for the DC Facility, as the deficient DC Facility has more expenditures on repairs that would not be required for the proposed CPF (see **Appendix A**).

This annual \$607M expenditure would support an annual total of 7,259 job-years for operation and maintenance activities (i.e., 7,259 people would be employed for one year as a result of this spending, every year) (see **Table 10**). This estimate includes the approximately 1,200 Treasury personnel who would transfer to the proposed CPF from the DC Facility and other direct, indirect, and induced employment from operation of the proposed CPF. Therefore, the total employment shown in **Table 10** does not reflect *new* job-years that would be created, but a regional retention of jobs. Moreover, Treasury employment would decrease from current levels due to the reduction in operation and maintenance costs.

**Table 10: Annual Estimates of Socioeconomic Operations and Maintenance Impacts**

Industry	Total Employment (job-years)	Total Earnings (2012 \$) <sup>1</sup>
Professional Services	7,210	\$411,562,000
Utilities	49	\$2,986,000
<b>Total</b>	<b>7,259</b>	<b>\$414,548,000</b>

1. Earnings rounded to nearest \$1,000.

The annual \$607M expenditure would also result in total annual earnings of approximately \$414.5M (see **Table 10**). This is the collective amount of money that Treasury and non-Treasury employees would earn for performing operation and maintenance activities. As with employment, the total earnings do not necessarily reflect *new* earnings within the ROI, but a regional retention of earnings. Overall, regional earnings would decrease slightly from current levels due to the reduction in Treasury expenditures on operations and maintenance activities. This would be a ***less-than-significant adverse impact*** on total employment and total earnings in the ROI.

Operation of the Proposed Action would be expected to have ***no or negligible impacts*** on property and housing values in the overall ROI. Property values may decrease slightly adjacent to the Project Site as a result of the location of the proposed CPF near this residential community (i.e., the residential community located to the north of the Project Site along Odell Road) and replacement of adjacent open green space with an industrial facility. Conversely, housing values near the Project Site may increase due to the proximity of the proposed CPF, as it would employ approximately 1,200 Treasury personnel that would relocate employment from the DC Facility. Treasury personnel may choose to purchase homes in Prince George's County, potentially increasing housing values in a county that has overall lower housing values than the ROI and state.

Operation of the Proposed Action could generate pollution (e.g., air, noise, light) and lead to other adverse environmental effects in the ROI (see related Technical Memoranda: [Air Quality](#), [Noise](#), [Visual Resources](#), [Traffic and Transportation](#)). Except for impacts to visual resources and traffic, these impacts would not be significant and would be reduced further through sensitive design. Proposed lighting under the Preferred Alternative would be distinctly visible in the visual resources ROI at night, particularly to residences along Odell Road. The Proposed Action also has the potential to significantly increase traffic impacts in the ROI. The potential for reduction in property values as a result of these potential impacts, however, would not be significant, and would be further lowered through impact-reduction measures identified for the above-stated resource areas.

Operation of the proposed CPF would have ***no impact*** on labor force characteristics in the ROI. The current DC Facility employs 1,200 personnel, all of whom likely reside in the ROI. Approximately 65 percent of these existing employees live in Maryland, and, of those, 43 percent reside in Prince George's County (BEP, 2019).

Treasury anticipates that existing personnel would transition to the proposed CPF; no new permanent manufacturing jobs at the proposed CPF would be created in the ROI as a result of the Proposed Action. The estimated 7,259 job-years that would be supported by operation of the proposed CPF already reflect regional employment; therefore, most employees likely already live in the ROI, and are also already encompassed in its labor force characteristics.

Operation of the proposed CPF would have ***less-than-significant adverse impacts*** on community services in the ROI. The demand for community services may increase near the Project Site if some Treasury personnel move to the local area and use services such as schools, emergency services, and recreation facilities. Additionally, the proposed CPF would be connected to local emergency services. The proposed CPF would have numerous safeguards in place to minimize the possibility of needing such services, as described in the [Human Health and Safety Technical Memorandum](#) (BEP, 2017). Any additional use would not be expected to unduly strain local community resources.

### 1.3.3.2 Environmental Justice

#### *Construction*

As discussed in the [Air Quality](#), [Noise](#), and [Traffic and Transportation](#) Technical Memoranda, construction of the Proposed Action would result in increased air emissions, noise levels, and traffic congestion in the EJ ROI; Treasury would minimize these impacts to the extent possible as identified in these other Technical Memoranda. The potential for EJ minority communities of concern to be disproportionately affected by these potential construction impacts is detailed further below.

#### *Air Quality*

During the construction phase, the use of construction equipment and handling and transport of demolished materials would result in criteria pollutant and fugitive dust emissions (see the [Air Quality Technical Memorandum](#)). The receptors most likely to be exposed to these impacts, particularly fugitive dust

emissions, include the residences along the north side of Odell Road; this residential street is located within an EJ community of concern and has the potential to be disproportionately affected.

No other residences are located immediately adjacent to the Project Site, but a total of 485 federal and non-federal sensitive receptors are located within 1,500 feet of the Project Site; however, any air quality effects would be reduced by distance. Emission-reduction measures would be implemented during construction to minimize fugitive dust emissions traveling off-site and their potential to affect nearby receptors. These emissions would be maintained below *de minimis* thresholds and are not expected to be perceptible to nearby receptors. Therefore, ***no disproportionate adverse air quality impacts*** on EJ communities are anticipated.

#### *Noise*

During construction, heavy construction equipment would generate noise that could be heard up to 800 feet from the Project Site (see the [\*\*\*Noise Technical Memorandum\*\*\*](#)). The receptors most directly exposed to noise impacts would be the residences along the north side of Odell Road and in the Vansville community. Other EJ communities in the ROI are too far removed from the Project Site to experience disproportionate noise impacts.

The receptors along Odell Road and in the Vansville community would be partially shielded from construction noise by retained forested areas (i.e., conservation easements) in the northern portion of the Project Site that would serve as a vegetative buffer to block some of the generated noise. Estimated maximum sound levels that would be experienced by noise-sensitive receptors would be below regulated thresholds stated in the Prince George's County Noise Ordinance. Additional noise impacts would be minimized through preparation of a noise-suppression plan (see the [\*\*\*Noise Technical Memorandum\*\*\*](#)). Therefore, ***no disproportionate adverse noise impacts*** on EJ communities are anticipated.

#### *Traffic and Transportation*

During construction, vehicles traveling to and from the Project Site would contribute to traffic volume and congestion on local roadways but would not substantially alter the existing number of trucks or parking availability in the ROI. Construction of the Powder Mill Road modifications would require the temporary closure of all or part of Powder Mill Road within the Project Site but would include the emplacement of appropriate detours to maintain traffic flow. Additionally, a segment of the shoulder lane on Powder Mill Road would be temporarily closed to bicycle and pedestrian traffic during construction of these modifications, and public transit could experience a minor increase in ridership from construction workers' commutes (see the [\*\*\*Traffic and Transportation Technical Memorandum\*\*\*](#)).

While EJ communities of concern in the ROI may notice additional congestion on local roads, traffic increases from construction vehicles or worker commutes would be temporary and would not cause permanent degradation of road conditions or levels of service. The temporary closure of parts of Powder Mill Road within the Project Site would impact local traffic, but alternate routes would be made available. The loss of shoulder space for bicyclists and pedestrians would not have disproportionate impacts, as there are no residential communities located along that segment of Powder Mill Road. Construction workers' use of public transit would be temporary and minor. Therefore, ***no disproportionate adverse traffic and transportation impacts*** on EJ communities are anticipated.

#### *Operation*

Operation of the proposed CPF and resultant adverse environmental impacts, especially those to air and traffic, may disproportionately affect nearby EJ communities of concern in the ROI. Disproportionate traffic impacts could result in ***significant adverse EJ impacts***.

### Air Quality

Criteria pollutant emissions and toxic and hazardous air pollutant (HAP) emissions would result from operation of the proposed CPF (see the [Air Quality Technical Memorandum](#)). While these emissions would be partially offset regionally from the phasing out of the DC Facility, the focus of these emissions would occur in an EJ community of concern; air emissions from operation of the CPF could disproportionately affect nearby EJ communities.

Estimated emissions, however, would not exceed regulatory thresholds and would be minimized through improved emission controls and operational efficiency associated with the proposed CPF. Treasury would obtain and maintain appropriate air permits and comply with applicable emission and work practice standards to reduce emissions during operation to the extent feasible. Impacts to EJ communities, therefore, would be minimized to ***less-than-significant*** levels.

### Noise

Operational activities at the proposed CPF would generate noise from permanent support and production equipment (see the [Noise Technical Memorandum](#)). Residences along Odell Road would be most exposed to this noise; other EJ communities in the ROI would not be affected. Operational equipment would be enclosed to limit the potential to generate exterior noise and would operate at or below established noise thresholds. Tractor trailer truck deliveries to the proposed CPF and employee vehicles would occur during the daytime shift and would be routed along Powder Mill Road through BARC to avoid passing within 50 feet of sensitive receptors along Odell Road. Armored vehicle (i.e., box truck) shipments from the CPF, however, may create audible, but not intrusive, driving noise for nearby receptors at night, although truck loading would occur within an enclosed portion of the CPF and not be audible. These EJ receptors are not likely to experience disproportionate impacts. During operation, additional noise reduction measures would be implemented to minimize the impacts of operation-related traffic, including prohibiting the use of air braking in the noise ROI (see the [Noise Technical Memorandum](#)). With such measures in place, operational noise would ***not disproportionately affect*** surrounding EJ communities.

### Traffic and Transportation

Operation of the proposed CPF would result in increased traffic from employee commutes and delivery truck trips to and from the proposed CPF. This increase in traffic would have significant adverse impacts to the level of service and queue lengths at various intersections within the ROI (see the [Traffic and Transportation Technical Memorandum](#)). EJ communities of concern located to the west and southwest of the Project Site could be disproportionately affected by changes in traffic volumes, and the residences along Odell Road may be disproportionately affected by degraded level of service conditions at the intersection of Odell Road and Edmonston Road. Unless mitigated through intersection upgrades, these impacts could disproportionately impact EJ communities, resulting in ***significant adverse impacts***. Treasury would consult with local planning authorities throughout the design process to meet regulatory requirements.

## 1.4 Impact-Reduction Measures

As part of the Proposed Action, Treasury would implement the following impact-reduction measures to minimize potential adverse socioeconomic and EJ impacts:

- Implement the impact-reduction measures described in the [Air Quality](#), [Noise](#), [Visual Resources](#), and [Traffic and Transportation Technical Memoranda](#) to minimize adverse impacts to property values by preventing environmental impacts to the extent feasible and by maintaining natural buffers around the Project Site to limit interactions between nearby residences and the proposed CPF.

## 1.5 Mitigation Measures

Treasury should implement mitigation measures recommended in the [Visual Resources](#) and [Traffic and Transportation Technical Memoranda](#) to reduce potential adverse impacts, including potential significant adverse impacts to traffic and transportation, that could affect EJ communities of concern. Additionally, Treasury should implement the following project-specific mitigation measure to reduce the potential for adverse EJ impacts:

- Issue quarterly (i.e., every three months) informative newsletters containing updates regarding the Proposed Action to residents of Vansville within the Proposed Action's EJ ROI. Treasury may tailor the distribution lists based on which EJ communities may be impacted by different components of the Proposed Action. Publish the newsletter online, issue via email distribution, and regular mail to interested residents of the listed EJ communities, as necessary to ensure availability. The newsletter should contain Government point-of-contact information for interested residents to contact Treasury with questions or concerns regarding the Proposed Action.

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**Appendix A: RIMS II Multiplier Analysis**

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# 1 MEMORANDUM

**Subject** Economic Conditions Analysis for the Construction and Operation of a Currency Production Facility at the Beltsville Agricultural Research Center using the US Bureau of Economic Analysis (BEA) Regional Input-Output Modeling System (RIMS II)

**Date** February 21, 2020

**Prepared by** AECOM

2

## 3 1.0 Regional Input-Output Modeling System (RIMS II) Analysis

### 4 1.1 Background

5 The United States (US) Department of the Treasury (Treasury), Bureau of Engraving and Printing (BEP),  
6 proposes to construct and operate a new Currency Production Facility (CPF) in the National Capital Region (NCR)  
7 to replace its existing, operationally deficient production facility located in downtown Washington, DC (DC Facility)  
8 (i.e., the Proposed Action). AECOM Technical Services, Inc. (AECOM) conducted economic modeling using the  
9 [US Bureau of Economic Analysis Regional Input-Output Modeling System \(RIMS II\)](#) to determine impacts to  
10 socioeconomic conditions from Preferred (i.e., Proposed Action) and No Action Alternatives, which are defined  
11 as the following:

- 12 • **No Action Alternative:** Treasury would not construct and operate a new CPF in the NCR and  
13 would continue to operate under current conditions to the extent possible. Treasury would continue  
14 operations in its existing, deficient, owned and leased facilities. Treasury's operations and  
15 maintenance expenses would remain at current levels, about \$642 million annually on average.
- 16 • **Preferred Alternative:** Treasury would construct and operate the proposed CPF in the NCR and  
17 phase out currency manufacturing at the DC Facility. The estimated project cost is \$858.1 million.  
18 The construction of the CPF would temporarily increase employment and earnings in the NCR for  
19 the duration of the construction period. The annual operations and maintenance expenses of the  
20 proposed CPF are estimated to be \$607.5 million, a decrease compared to the No Action  
21 Alternative, as a newer CPF would require fewer repairs on average than the over 100-year-old DC  
22 Facility.

### 23 1.2 Methodology

#### 24 1.2.1 RIMS II Multipliers

25 AECOM used the Bureau of Economic Analysis (BEA) Regional Input-Output Modeling System (RIMS II)  
26 multipliers (updated in 2017) to estimate jobs and earnings effects resulting from construction of the proposed  
27 CPF. The multipliers were developed to reflect the structure of economies of the NCR (i.e., the study area). The  
28 study area for the analysis is the NCR<sup>1</sup> because construction workers and supplies may be sourced from a variety  
29 of locations within the metropolitan labor market. RIMS II multipliers measure the total change (direct, indirect,

<sup>1</sup> Calvert, Charles, Frederick, Montgomery, and Prince George's Counties in Maryland; Arlington, Alexandria City, Clarke, Culpeper, Fairfax, Fauquier, Loudoun, Prince William, Rappahannock, Spotsylvania, Stafford and Warren Counties in Virginia; and Washington, DC.

30 and induced effects) in output, employment, and earnings that results from an incremental change to a particular  
 31 industry; construction is the industry in this analysis. The RIMS II multipliers represent the most up to date version  
 32 available at the time this analysis.

33 **1.2.2 Construction Impacts**

34 Treasury provided the estimated construction cost for the proposed CPF<sup>2</sup>. Treasury provided a total estimated  
 35 cost with no detail on the components; therefore, AECOM assumed that 10 percent of the construction estimate  
 36 is for professional services. AECOM also assumed there would be no spending on right-of-way or printing and  
 37 engraving equipment. **Table 1** shows the breakdown of capital cost in 2020 dollars, with costs grouped into  
 38 construction and professional services categories that served as the basis for estimating spending impacts.

39 AECOM assumed that the funding source for the Proposed Action would be a new source of capital to the  
 40 economy of the study area and all funds would be expended in the study area for construction of the proposed  
 41 CPF. Therefore, AECOM estimated impacts for the study area to capture the full impact of the proposed CPF's  
 42 construction. Capital investment for the Proposed Action would create additional jobs and subsequent wages  
 43 during the construction period, estimated for years 2021 to 2025.

44 **Table 1: Construction Costs for the Preferred Alternative (2020\$)**

Expense	Costs
Construction	\$772,290,000
Professional Services	\$85,810,000
<b>Total</b>	<b>\$858,100,000</b>

45 Source(s): BEP, 2020

46 AECOM estimated total employment and total earnings impacts, which are the sum of the following three impact  
 47 categories:

- 48 • **Direct effect** – Includes the effects on industries that are directly purchased to build a project  
 49 • **Indirect effect** – Includes the effects on supporting industries that supply goods and services to the direct  
 50 effect industries, such as workers in industries that supply equipment parts, steel, concrete, wood, and  
 51 other raw materials needed for building a new project.  
 52 • **Induced effect** – Includes the effect of direct and indirect workers' spending their income on consumer  
 53 goods and services such as food, shelter, clothing, recreation, and personal services.

54 AECOM applied the multipliers for the construction and professional services industries to respective  
 55 expenditures, as shown in **Table 2**.

56

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<sup>2</sup> These estimated costs do not include the construction costs for the proposed new entrance road to the CPF or for proposed modifications to Powder Mill Road.

57      **Table 2: Employment and Earnings Multipliers for Construction and Professional Services**

<b>Direct</b>	<b>Employment (jobs)</b>	<b>Earnings (dollars)</b>
<b>Construction</b>		
Direct	6.4960	0.3715
<b>Total</b>	<b>10.7210</b>	<b>0.5487</b>
<b>Professional Services</b>		
Direct	5.7948	0.4542
<b>Total</b>	<b>11.2391</b>	<b>0.6917</b>

58      Source(s): BEA, US Department of Commerce

59      The interpretation of the RIMS II earning and employment multipliers in **Table 2** is described below with the  
60      construction industry as an example.

- 61      • The **final demand (total) employment multiplier** represents the total change in number of jobs that  
62      occurs in all industries for each \$1 million of output (in 2017\$) delivered to final demand by the  
63      construction industry. This multiplier is used to estimate the total employment impact to the economy.
- 64      • The **direct effect employment multiplier** represents the total change in number of jobs in all industries  
65      for each additional job in the construction industry. The multiplier is a ratio of the final demand and direct  
66      effect jobs multipliers for the construction industry.
- 67      • The **final demand (total) earnings multiplier** represents the total dollar change in earnings of  
68      households employed by all industries for each additional dollar of output delivered to final demand by  
69      the construction industry. This multiplier is used to estimate the total employment impact to the economy.
- 70      • The **direct effect earnings multiplier** represents the total dollar change in earnings of households  
71      employed by all industries for each additional dollar of earnings paid directly to households employed by  
72      the construction industry. The multiplier is a ratio of the final demand and direct effect earnings multipliers  
73      for the construction industry.

74      For example, for employment impacts, based on the multipliers in **Table 2**, every \$1 million spent on construction  
75      goods and services in the study area yields 6.4960 direct jobs in the construction industry and 10.7210 total jobs  
76      in the study area's economy. Employment effects are expressed in job-years; one job-year is defined as one job  
77      for one person for one year. For example, three job-years are equal to three people doing a job for one year, or  
78      one person doing a job for three years.

79      In addition to the employment effects, the construction of the proposed CPF results in earnings impacts to the  
80      study area for both the construction and professional services industries. For earning impacts, based on the  
81      multipliers in **Table 2**, every \$1 delivered to final demand by the construction industry in the study area yields  
82      \$0.3715 of earnings for households employed in the construction industry and \$0.5487 of earnings for households  
83      employed in the entire economy.

84      The Proposed Action has the potential to impact construction employment in the region; as a result, construction  
85      hiring for the Proposed Action may affect construction schedules of other projects in the region.

### 86      **1.2.3 Operations and Maintenance Impacts**

87      In addition to the construction of the proposed CPF, there are annual operations and maintenance (O&M)  
88      expenditures that ensure that the proposed CPF remains in operating condition. AECOM estimated that the

89 annual expenditure of O&M for the proposed CPF, as provided by a BEP (2012), is \$607.5 million after  
 90 construction is complete until 2042. This is an increase in O&M compared to the No Action Alternative, as shown  
 91 in **Table 3**. AECOM categorized expenses into professional services or utilities expenditures. As shown in **Table**  
 92 **4**, AECOM then applied multipliers to the individual categories to estimate the total annual employment and  
 93 earnings impacts to the study area's economy for the Preferred Alternative.

94 **Table 3: Annual O&M Expenditures (2012\$)**

Expenses	Preferred Alternative	No Action Alternative
Personnel	\$115,600,000	\$252,800,000
Utilities	\$12,500,000	\$10,500,000
Materials & Supplies	\$248,400,000	\$248,400,000
Contracted Services	\$60,400,000	\$57,200,000
Other	\$70,600,000	\$73,500,000
<b>Total</b>	<b>\$607,500,000</b>	<b>\$645,300,000</b>
<i>Total Professional Services</i>	<i>\$595,000,000</i>	<i>\$632,800,000</i>
<i>Total Utilities</i>	<i>\$12,500,000</i>	<i>\$12,500,000</i>
<b>Total</b>	<b>\$607,500,000</b>	<b>\$645,300,000</b>

95 Source(s): BEP, 2012

96 **Table 4: Total Employment and Earnings Multipliers for Calculating O&M Impacts for the Preferred  
 97 Alternative**

Industry	Employment (jobs)	Earnings (dollars)
Professional Services	11.2391	0.6917
Utilities	3.6127	0.2389

98 Source(s): BEA, US Department of Commerce

99 The interpretation of the RIMS II employment multipliers in the analysis of O&M expenditures is the same as for  
 100 capital costs. For example, based on the multipliers in **Table 4**, every \$1 million spent on utilities in the study area  
 101 yields 3.6127 jobs in the entire economy. Likewise, every \$1 delivered to final demand for utilities in the study  
 102 area yields \$0.2389 of earnings for households employed in the entire economy.

### 103 1.3 Results

#### 104 1.3.1 Construction Impacts

105 Construction of the Preferred Alternative would support the local economy through the hiring of construction and  
 106 professional services personnel and purchasing of construction materials during the duration of the construction  
 107 period, which would impact the local labor and manufacturing markets. During construction, Treasury would  
 108 engage specialized labor from throughout the region, leading to an increase in employment for that market. In  
 109 addition, Treasury would purchase construction related goods, most of which would come from the region. The  
 110 local economy would benefit from direct, indirect, and induced employment and earnings impacts.

111    **1.3.1.1 No Action Alternative**

112    No construction expenditures would be associated with the No Action Alternative; therefore, there would be no  
 113    new economic impacts.

114    **1.3.1.2 Preferred Alternative**

115    The construction of the proposed CPF would result in earnings and employment impacts to the study area for  
 116    both the construction and professional services industries. Construction of the proposed CPF would result in  
 117    employment of approximately 5,200 direct jobs in the construction and professional services industries and an  
 118    addition of approximately 8,700 total jobs to the study area's economy. These jobs would result in direct earnings  
 119    of over \$325 million and total earnings to the local economy of over \$481 million, or an average of \$62,797 per  
 120    direct job and \$55,525 per total job.

121    **Table 5 and Table 6** show the estimated economic impacts in terms of jobs and earnings from the construction  
 122    of the Preferred Alternative. In the tables, the earnings and employment impacts are separated into construction  
 123    jobs and earnings, and professional services jobs and earnings.

124    **Table 5: Construction and Professional Services Employment Impacts for Preferred Alternative**

Industry and Spending			Multiplier		Impacts <sup>2</sup>	
Industry	Spending	Deflator <sup>1</sup>	Direct Employment Multiplier	Total Employment Multiplier	Direct Employment (job-years)	Total Employment (job-years)
Construction	\$772,290,000	0.9413	6.4960	10.7210	4,723	7,794
Professional Services	\$85,810,000	0.9401	5.7948	11.2391	467	907
			<b>Total</b>		<b>5,190</b>	<b>8,701</b>

125    1. The Final Demand Employment Multiplier was based on 2017 data, therefore, the capital spending was deflated to  
 126    2017 dollars for this calculation. Non-defense capital deflator values from the Office of Management and Budget (OMB)  
 127    *Gross Domestic Product and Deflators Used in the Historical Tables: 1940-2025* were used for the deflation between  
 128    2020 and 2017.

129    2. Employment is shown in job-years (one job is defined as one job for one person for one year) and is rounded to  
 130    nearest whole number.

131

132    **Table 6: Construction and Professional Services Earnings Impacts for Preferred Alternative  
 133    (2020\$)**

Industry and Spending		Multiplier		Impacts <sup>1</sup>	
Industry	Spending	Direct Earnings Multiplier	Total Earnings Multiplier	Direct Earnings	Total Earnings
Construction	\$772,290,000	0.3715	0.5487	\$286,942,000	\$423,756,000
Professional Services	\$85,810,000	0.4542	0.6917	\$38,977,000	\$59,355,000
			<b>Total</b>	<b>\$325,919,000</b>	<b>\$481,111,000</b>

134    1. Earnings are shown in 2020 dollars and rounded to nearest whole \$1,000.

135

136    **1.3.2 Operations and Maintenance Impacts**

137    AECOM estimated that the annual O&M expenditures would decrease with the Preferred Alternative compared  
 138    to the No Action Alternative, and would result in a net decrease in earnings and employment associated with  
 139    maintenance (i.e., repairs) of the over 100-year-old DC facility. The estimated decrease in O&M expenditures  
 140    between the Preferred and No Action Alternatives would be approximately \$34.8 million (2012\$). As a result, the  
 141    analysis shows a retention of jobs and earnings that are not new. The operation of the proposed CPF would result  
 142    in a loss of jobs and earnings in the study area, unless Treasury would direct the expenditure previously spent on  
 143    repairs to other facility operations.

144    **1.3.2.1 No Action Alternative**

145    O&M under the No Action Alternative would remain at current levels, which is \$642 million (2012\$) annually on  
 146    average.

147    **1.3.2.2 Preferred Alternative**

148    **Table 7 and Table 8** show the annual employment and earnings impacts that would result from O&M activities  
 149    under the Preferred Alternative. Annual employment impacts across all industries would total 7,258 jobs, and  
 150    earnings impacts would total over \$414.5 million.

151    **Table 7: Annual Employment Impacts of Operations and Maintenance Activities for Preferred  
 152    Alternative**

Industry	Annual Spending (2012\$)	Deflator <sup>1</sup>	Employment Multiplier	Total Employment (job-years) <sup>(2)</sup>
Professional Services	\$595,000,000	1.0781	11.2391	7,210
Utilities	\$12,500,000	1.0781	3.6127	49
<b>Total</b>				<b>7,258</b>

153    1. The Final Demand Employment Multiplier was based on 2017 data, therefore, the capital spending was deflated to 2017  
 154    dollars for this calculation. The OMB *Gross Domestic Product and Deflators Used in the Historical Tables: 1940-2025* were  
 155    used for the deflation between 2012 and 2017.

156    2. Employment is shown in job-years (one job is defined as one job for one person for one year) and is rounded to nearest  
 157    whole number

158    **Table 8: Annual Earnings Impacts of Operations and Maintenance Activities for Preferred  
 159    Alternative (2012\$)**

Industry	Annual Spending (2012\$)	Earnings Multiplier	Total Earnings <sup>1</sup>
Professional Services	\$595,000,000	0.6917	\$411,562,000
Utilities	\$12,500,000	0.2389	\$2,986,00
<b>Total</b>			<b>\$414,548,000</b>

160    1. Earnings are shown in 2020 dollars and rounded to nearest \$1,000.

161