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.

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 includes parts of the Cities of Beltsville and Greenbelt. This ROI is different from socioeconomics 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, air quality, and procurement of goods and services) and is the area in which communities may receive a disproportionate share of those impacts. Eight census tracts are included in this ROI: 8004.11, 8067.06, 8067.08, 8067.12, 8067.13, 8067.14, 8074.04, and 8074.08. The Project Site is located entirely within census tract 8074.08 (see **Figure 2**).

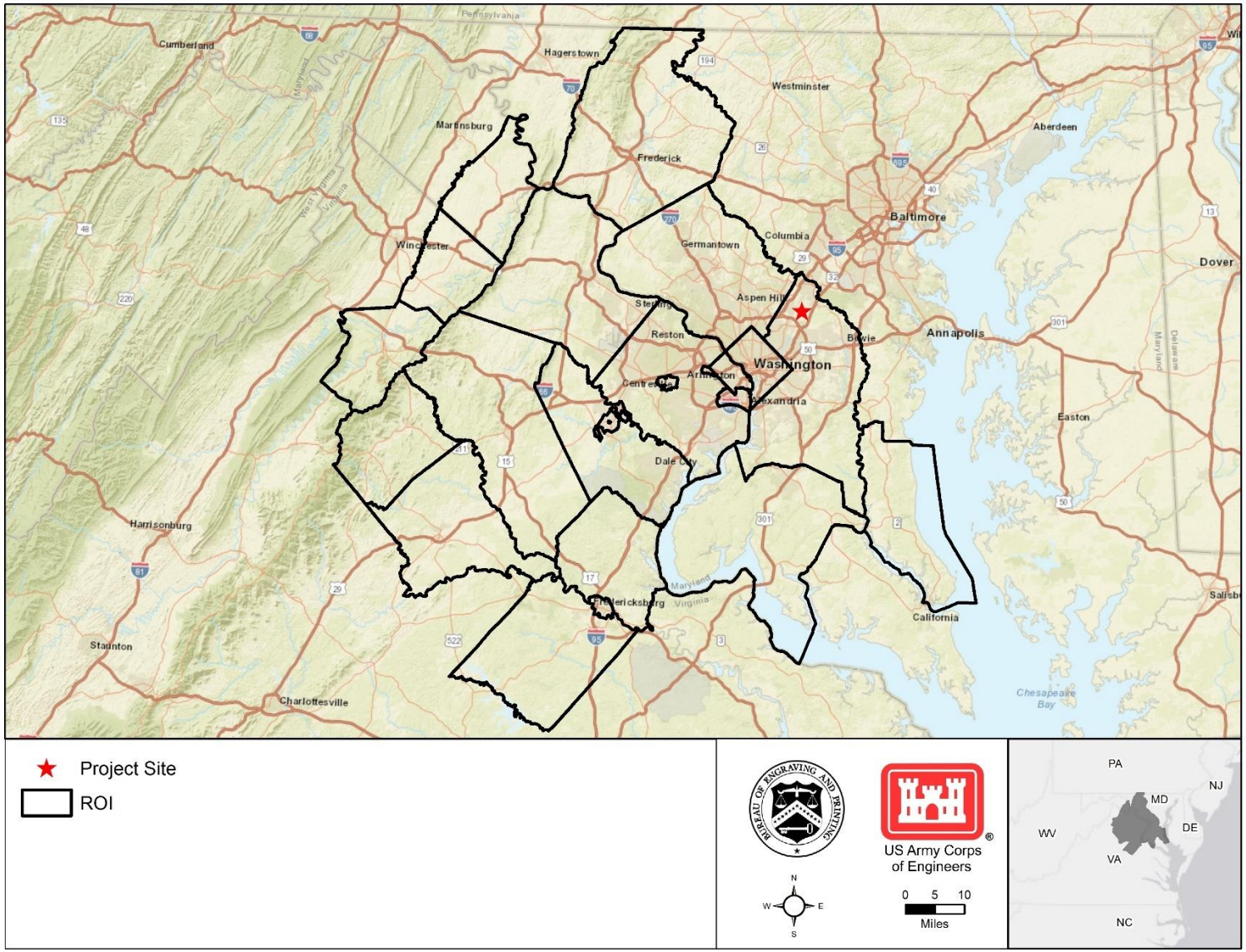

Figure 1: Socioeconomic ROI

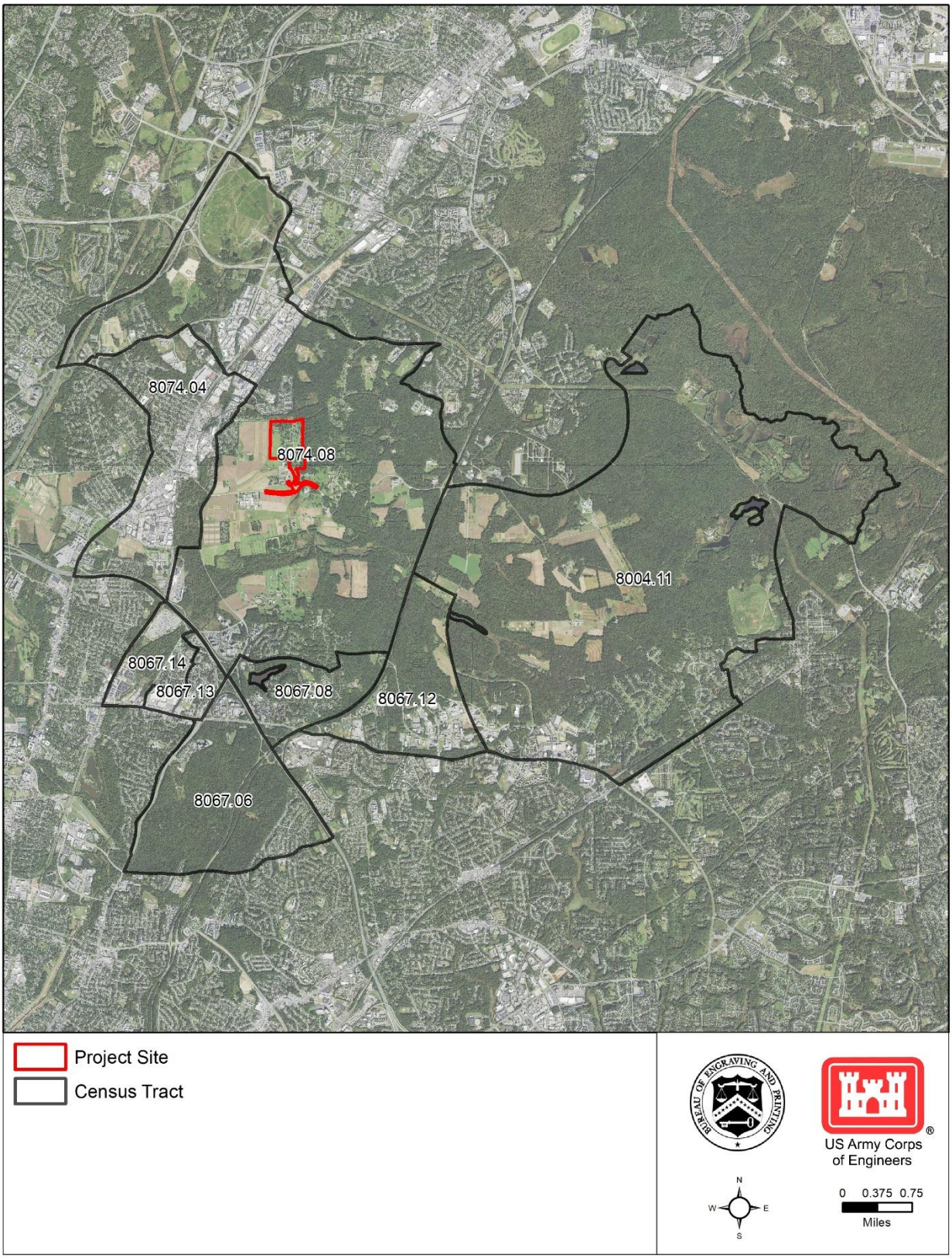

Figure 2: Environmental Justice ROI

1.2.1 Applicable Guidance

Table 1 identifies federal and state guidance and regulations relevant to this analysis. Treasury would comply with these guidelines and requirements under the Proposed Action.

Table 1: Socioeconomics and EJ Applicable Guidance and Regulations

Guidance/Regulation	Description/Applicability to Proposed Action
Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (1994)	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.
EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (1997)	Requires federal agencies to prioritize and address environmental risks that may disproportionately affect the health and safety of children.
Council on Environmental Quality (CEQ) Environmental Justice Guidance under the National Environmental Policy Act (1997)	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.

1.2.2 Existing Conditions

The US Census Bureau and American Community Survey (ACS) datasets provide information on socioeconomic conditions. Treasury examined data from the socioeconomic ROI from 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. A complete 2018 ACS dataset is not currently available for Prince George's County or Maryland, so Treasury used data from the 2013-2017 ACS 5-Year Estimates dataset for the county and state.

1.2.2.1 Socioeconomic Characteristics

Population

As shown in **Table 2**, 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 2: Population and Trends in the Socioeconomic ROI[1]

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

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

Housing

As shown on **Table 3**, 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 3: Housing Characteristics in the Socioeconomic ROI

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

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

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 4** 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 4: Labor Force and Employment Characteristics in the Socioeconomic ROI

Labor Force or Employment Characteristic	ROI[1]	Prince George's County[2]	Maryland[2]
Approximate Employment Rate (%)	72	72	68
Largest Industry Sector for Employment (over 20% of labor force)	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
Second Largest Industry Sector for Employment (15-20% of the labor force)	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, 2017g)

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.

1.2.2.2 Environmental Justice

Minority Populations

As shown in **Table 5**, 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 EJ ROI with respect to race (see **Figure 4**).

Table 5: Minority Populations in the EJ ROI

Race/Ethnicity	ROI	Prince George's County	Maryland
Total Population Count	**34,781**	**905,161**	**5,996,079**
Hispanic or Latino	18.8%	17.4%	9.6%
White Alone	**31.1%**	**18.8%**	**56.6%**
Non-Hispanic White	24.7%	13.3%	52.0%
Hispanic White	6.4%	5.5%	4.8%
Non-White	**68.9%**	**81.2%**	**43.3%**
Black or African-American Alone	45.4%	63.2%	29.7%
American Indian and Alaska Native Alone	0.2%	0.4%	0.3%
Asian Alone	9.9%	4.3%	6.2%
Native Hawaiian and Other Pacific Islander Alone	0.1%	0.0%	0.0%
Some other race alone	10.8%	10.6%	3.9%
Two or more races	2.5%	2.7%	3.2%
Total Minority Population	**26,184 (75.3%)**	**784,961 (86.7%)**	**2,886,804 (48.1%)**

Source(s): (US Census Bureau, 2017a; US Census Bureau, 2017b)

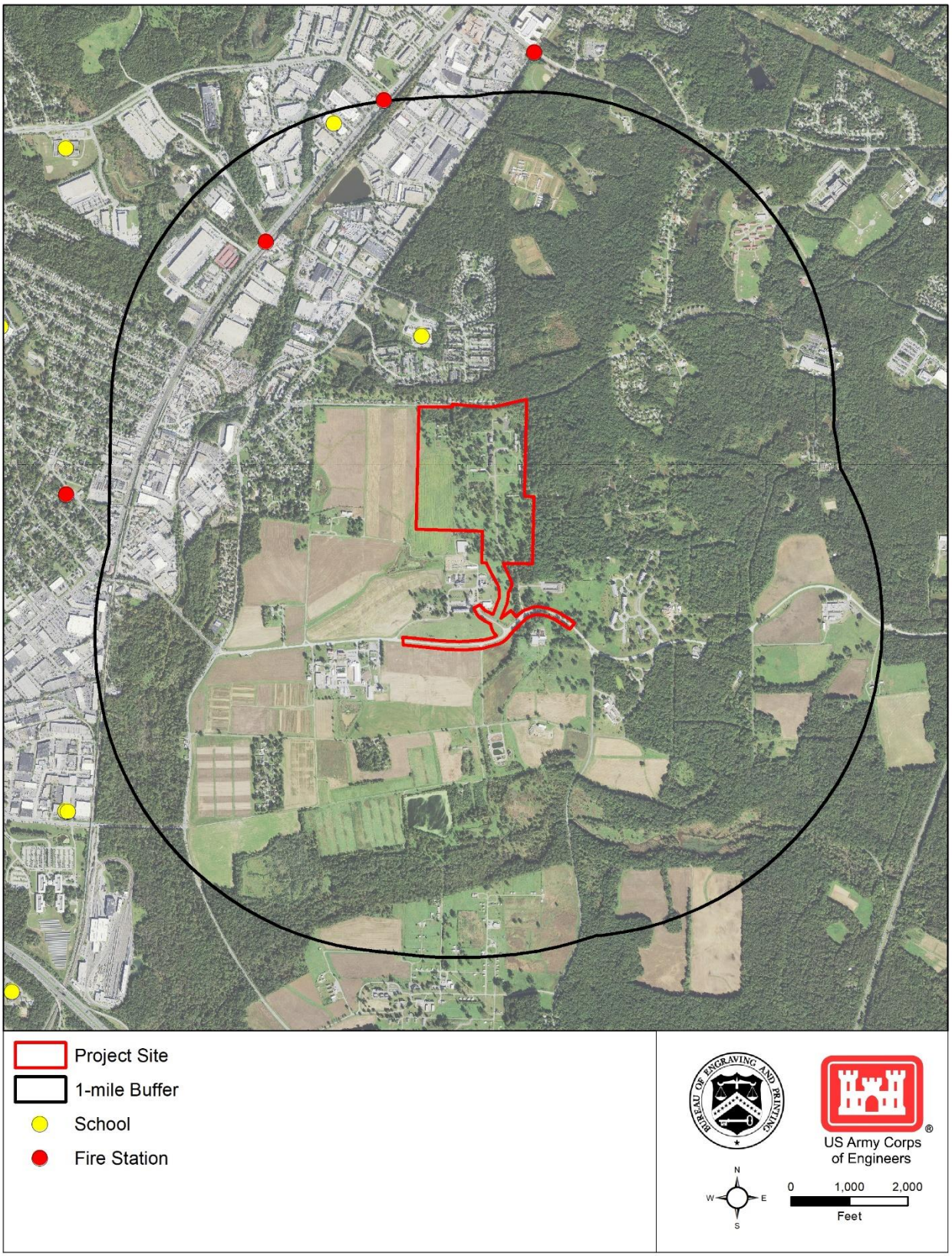

Figure 3: Community Services within 1 mile of the Project Site

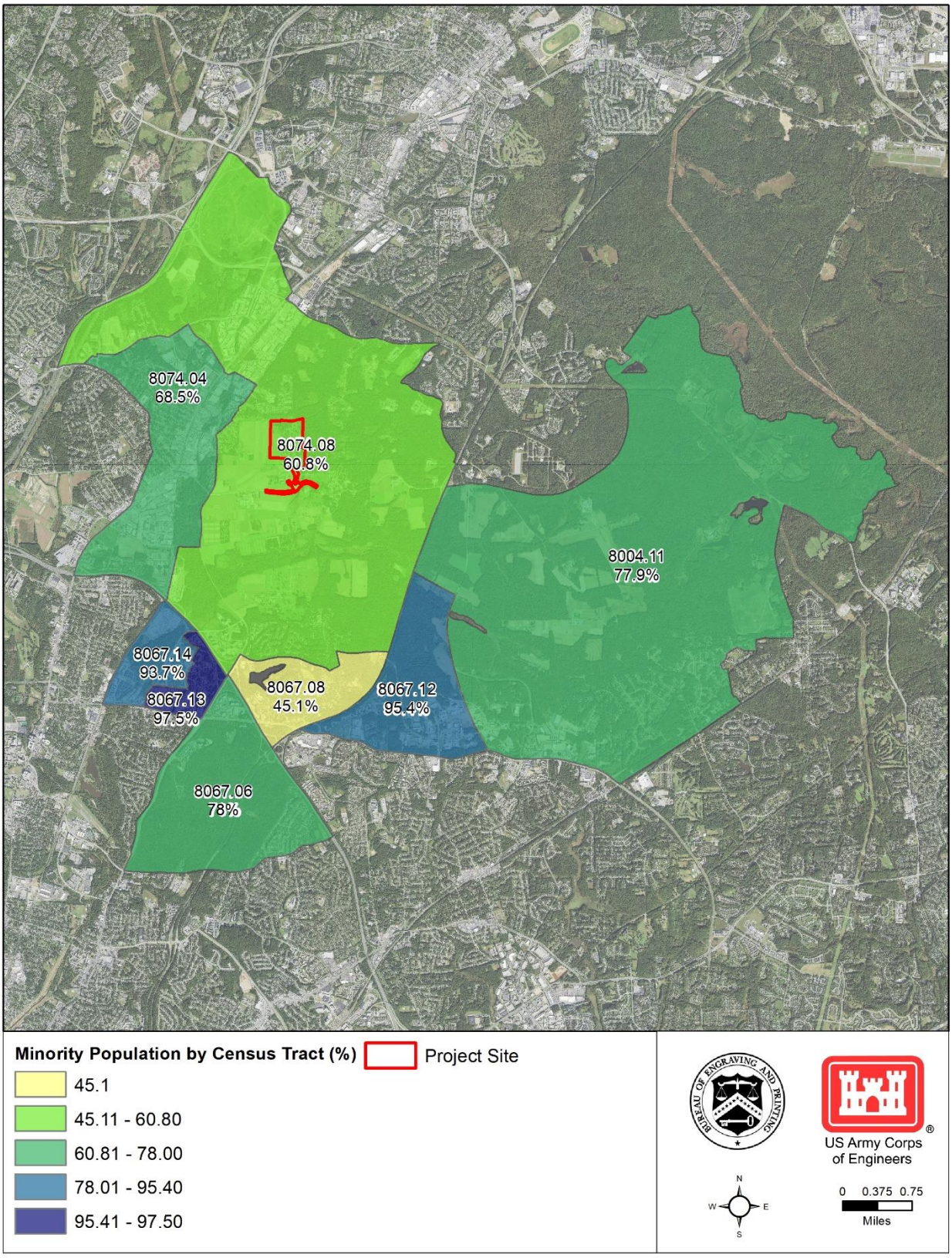

Figure 4: Minority Populations in the Environmental Justice ROI

Low-Income Populations

According to the CEQ EJ guidance, income levels are compared regionally to determine the presence of EJ communities of concern with respect to income and poverty (CEQ, 1997). As shown in **Table 6**, the median household income across all three levels is comparable; the difference between the highest and lowest level (i.e., Maryland and the EJ ROI) is only approximately $440 per year. A larger income disparity exists regarding per capita income, with a difference of approximately $5,000 per year per person between the highest and lowest level (i.e., Maryland and Prince George's County).

Across all three levels, the percentage of the population below the poverty level is between 9 and 10 percent. **Figure 5** shows the poverty rate of each census tract in the EJ ROI.

As the poverty rates and income levels are comparable across the three levels, no EJ communities of concern with respect to low income are present in the EJ ROI.

Table 6: Income and Poverty Characteristics in the EJ ROI

Income and Poverty Characteristics	ROI	Prince George's County	Maryland
Median household income	$78,476	$78,607	$78,916
Weighted[1] household income	$79,068	N/A	N/A
Per capita income	$35,603	$34,391	$39,070
Weighted[1] per capita income	$35,768	N/A	N/A
Percent below poverty level	9.4%	9.3%	9.7%

Source(s): (US Census Bureau, 2017c; US Census Bureau, 2017e; US Census Bureau, 2017g)

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.

1.2.2.3 Protection of Children

As shown in **Table 7**, the total population under 18 years of age is just over 25 percent of the overall population across all census tracts in the EJ ROI. 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 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.

Table 7: Population under 18 Years in the EJ ROI

Census Tract	% Under 18 Years	Census Tract	% Under 18 Years
8004.11	22.1	**8067.13**	39.7
8067.06	18.6	**8067.14**	32.2
8067.08	19.7	**8074.08**	23.1
Average Population under 18 Years in ROI (%)		**25.2**	

Source(s): (US Census Bureau, 2017d)

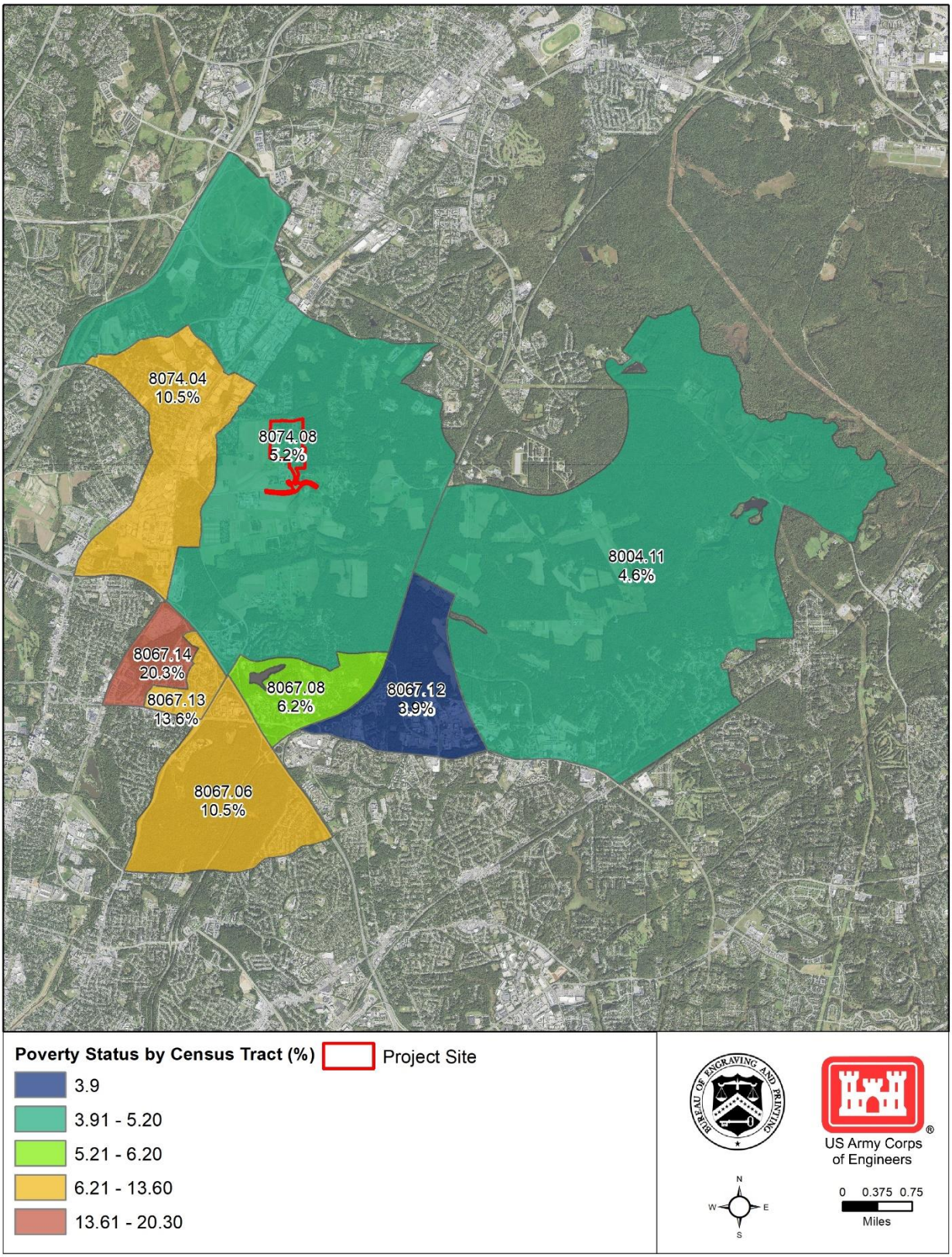

Figure 5: Low-Income Populations in the Environmental Justice ROI

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.[1]

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] Anticipated operational costs are derived from a 30-year study completed in 2012 (Booz Allen Hamilton, 2012).

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).[2]

As shown in **Table 8**, 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 8: RIMS II Estimates of Socioeconomic Construction Effects

Industry	Total Employment (job-years)	Total Earnings (2020 $)[1]
Construction	7,794	$423,756,000
Professional Services	907	$59,355,000
Total	8,701	$483,111,000

1. Earnings rounded to nearest $1,000.

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

[2] 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.

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 9**). 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 9** 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 9: Annual Estimates of Socioeconomic Operations and Maintenance Impacts

Industry	Total Employment (job-years)	Total Earnings (2012 $)[1]
Professional Services	7,210	$411,562,000
Utilities	49	$2,986,000
Total	7,259	$414,548,000

1. Earnings rounded to nearest $1,000.

The annual $607M expenditure would also result in total annual earnings of approximately $414.5M (see **Table 9**). 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. EJ minority communities of concern, however, could be disproportionately affected by these potential construction impacts, 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 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. Other EJ communities in the ROI are too far removed from the Project Site to experience disproportionate noise impacts.

The receptors along Odell Road 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, noise, and traffic, may disproportionately affect nearby EJ communities of concern in the ROI and 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. All truck shipments to the proposed CPF and employee vehicles would be routed along Powder Mill Road through BARC to avoid passing within 50 feet of sensitive receptors (e.g., along Odell Road). Truck shipments, however, may create audible, but not intrusive, noise for nearby receptors at night (i.e., from operation of delivery trucks within the Project Site during nighttime hours). These 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

No project-specific mitigation measures related to socioeconomics and EJ communities are recommended. Treasury should implement mitigation measures recommended in the ***Visual Resources***, and ***Traffic and Transportation*** ***Technical Memoranda*** to reduce potential adverse impacts, including potentially significant adverse impacts to traffic and transportation, that could affect EJ communities of concern.

1.6 References

BEP. (2017). *Facility Feasbility Study.*

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Appendix A: RIMS II Multiplier Analysis

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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

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

1.1 Background

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

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

1.2 Methodology

1.2.1 RIMS II Multipliers

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

[1] 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.

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

1.2.2 Construction Impacts

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

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

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

Expense	Costs
Construction	$772,290,000
Professional Services	$85,810,000
Total	**$858,100,000**

Source(s): BEP, 2020

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

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

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

[2] 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.

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

Direct	Employment (jobs)	Earnings (dollars)
Construction		
Direct	6.4960	0.3715
Total	**10.7210**	**0.5487**
Professional Services		
Direct	5.7948	0.4542
Total	**11.2391**	**0.6917**

Source(s): BEA, US Department of Commerce

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

- The **final demand (total) employment multiplier** represents the total change in number of jobs that occurs in all industries for each $1 million of output (in 2017$) delivered to final demand by the construction industry. This multiplier is used to estimate the total employment impact to the economy.
- The **direct effect employment multiplier** represents the total change in number of jobs in all industries for each additional job in the construction industry. The multiplier is a ratio of the final demand and direct effect jobs multipliers for the construction industry.
- The **final demand (total) earnings multiplier** represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the construction industry. This multiplier is used to estimate the total employment impact to the economy.
- The **direct effect earnings multiplier** represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the construction industry. The multiplier is a ratio of the final demand and direct effect earnings multipliers for the construction industry.

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

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

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

1.2.3 Operations and Maintenance Impacts

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

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

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
Total	**$607,500,000**	**$645,300,000**
Total Professional Services	*$595,000,000*	*$632,800,000*
Total Utilities	*$12,500,000*	*$12,500,000*
Total	**$607,500,000**	**$645,300,000**

Source(s): BEP, 2012

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

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

Source(s): BEA, US Department of Commerce

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

1.3 Results

1.3.1 Construction Impacts

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

1.3.1.1 No Action Alternative

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

1.3.1.2 Preferred Alternative

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

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

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

Industry and Spending			Multiplier		Impacts [2]	
Industry	**Spending**	**Deflator [1]**	**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
				Total	**5,190**	**8,701**

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

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

Industry and Spending		Multiplier		Impacts [1]	
Industry	**Spending**	**Direct Earnings Multiplier**	**Total Earnings Multiplier**	**Direct Earnings**	**Total Earning**
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
			Total	**$325,919,000**	**$481,111,000**

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

1.3.2 Operations and Maintenance Impacts

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

1.3.2.1 No Action Alternative

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

1.3.2.2 Preferred Alternative

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

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

Industry	Annual Spending (2012$)	Deflator [1]	Employment Multiplier	Total Employment (job-years) [(2)]
Professional Services	$595,000,000	1.0781	11.2391	7,210
Utilities	$12,500,000	1.0781	3.6127	49
			Total	**7,258**

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

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

Industry	Annual Spending (2012$)	Earnings Multiplier	Total Earnings [1]
Professional Services	$595,000,000	0.6917	$411,562,000
Utilities	$12,500,000	0.2389	$2,986,00
		Total	**$414,548,000**

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