

# APPENDIX 16

## ENVIRONMENTAL JUSTICE

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## **A16-1 INTRODUCTION**

EO 12898, Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations, and the Department of Defense’s Strategy on Environmental Justice of 1995 direct Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of Federal projects on minority and low-income populations. The U.S. Environmental Protection Agency (EPA) defines EJ as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

The EJ analysis identifies disproportionately high and adverse human health or environmental impacts to minority and low-income populations as a result of construction activities to repair parts of Mississippi River and Tributaries levees, which in part are currently experiencing seepage, design deficiencies or stability issues. The EJ assessment identifies demographic variables for the identification of EJ communities; particularly low-income and minority census data. The existing conditions section describes the low-income and minority percentages for counties/parishes as whole. The environmental consequences section zooms in and identifies EJ communities, based upon low-income and minority percentages, in areas surrounding the project repairs. If the alternative impact is appreciably more severe or greater in magnitude on minority or low-income populations than the adverse effect suffered by the non-minority or non-low-income populations after taking offsetting benefits into account, then there may be a disproportionate finding. Avoidance or mitigation are then required. Thirty-one counties or parishes comprise the study area where all of the improvements to levees will be made. The counties and parishes in the study area are shown in Tables A16-1 through A16-6.

## **A16-2 METHODOLOGY**

Consistent with EO 12898, this section identifies low-income and minority populations within the counties and parishes and for the 143 project areas based on the most recent socioeconomic statistics currently available from the U.S. Census Bureau’s American Community Survey (ACS) five-year estimates from 2014 to 2018. This analysis considered public comments provided during the project’s scoping process. Tables A16-X and A16-X present data on key demographic indicators in the 31 parishes and counties comprising the study area.

EJ is institutionally significant because of Executive Order 12898 of 1994 (EO 12898) and the Department of Defense’s Strategy on Environmental Justice of 1995. As per the U.S. Census, minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, Pacific Islander, some other race, or a combination of two or more races. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations as of 2018 are those whose income are below \$25,100 for a family of four and are identified using the Census Bureau’s statistical poverty threshold. The Census Bureau defines a “poverty area” as a census tract or block group with 20 percent or more of its residents below the poverty threshold and an “extreme poverty area” as one with 40 percent or more below the poverty level.

The methodology to accomplish an EJ analysis, consistent with EO 12898, includes identifying low-income and minority populations within the study area using the most recently available U.S. Census Bureau data. The American Community Survey estimates provide the latest socioeconomic community characteristics, including minority and poverty level data, released by the U.S. Census Bureau and are based on data collected between January 2014 and December 2018. Sources for the methodology used in preparing the EJ assessment include Council on Environmental Quality’s (CEQ) “Environmental Justice Guidance under the National Environmental Policy Act)” released in December 1997, DOD’s 1995 release of “Strategy on Environmental Justice” provides guidance on EJ methodology and as does EPA’s “Promising Practices for EJ Methodologies in NEPA Reviews”, prepared in March 2016.

### A16-3 EXISTING CONDITIONS

#### A16-3.1 Minority and Ethnicity

The 143 work items are in 31 parishes or counties across seven States. Fifteen of the 31 parishes or counties in the study area are within the Memphis District (MVM) boundary, as shown in Table A16-1. The largest MVM County is Shelby. Of the 15 counties in MVM, five have a majority of residents identifying as Black/African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Some Other Race, or Two or More Races. Crittenden County, AR, Shelby County, TN, Lee and Phillips Counties, AR and Tunica County, MS all have a majority minority population. Most of the minority population identifies as Black/African American. The 2018 ACS total population of the counties in MVM is approximately 1.3 million. Hispanic population represents the largest ethnicity and is between 0.8 percent and 6.2 percent of total population.

Table A16-1: County/Parish Minority and Ethnicity Population: Memphis District (MVM)

District Counties/Parishes	Total Population	White	Black or African Am.	Am. Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or more Races	Percent Minority	Percent Hispanic
<b>MVM:</b>										
Cape Girardeau County, MO	78,324	68,709	5,894	153	1,244	25	199	2,100	12.3%	2.3%
Alexander County, IL	6,532	4,078	2,169	48	6	21	19	191	37.6%	1.1%
Pulaski County, IL	5,611	3,674	1,685	7	16	-	22	207	34.5%	2.2%
Scott County, MO	38,729	33,004	4,456	151	160	-	239	710	14.8%	2.3%
Mississippi County, MO	13,748	10,065	3,322	131	7	6	6	211	26.8%	2.1%
New Madrid County, MO	17,811	14,505	2,802	68	5	-	28	403	18.6%	1.8%
Fulton County, KY	6,210	4,483	1,550	22	7	-	32	116	27.8%	1.9%
Lake County, TN	7,526	5,112	2,190	16	10	-	83	115	32.1%	2.2%
Dyer County, TN	37,576	30,899	4,893	199	282	53	250	1,000	17.8%	3.3%

District Counties/Parishes	Total Population	White	Black or African Am.	Am. Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or more Races	Percent Minority	Percent Hispanic
Mississippi County, AR	42,831	25,863	15,070	28	236	25	861	748	39.6%	4.0%
Crittenden County, AR	49,013	21,763	23,789	155	352	76	90	2,788	55.6%	2.5%
Shelby County, TN	937,005	368,340	501,627	1,607	23,924	251	25,207	16,049	60.7%	6.2%
Lee County, AR	9,398	3,978	5,313	27	13	-	8	59	57.7%	1.8%
Tunica County, MS	10,10	1,966	7,984	-	121	-	24	75	80.7%	0.8%
Phillips County, AR	19,034	6,893	11,921	6	11	-	29	174	63.8%	1.8%

Source: U.S. Census Bureau American Community Survey, 2014-2018.

Note: Highlighted red text represents county/parish having a majority of residents identifying as a minority.

Four of the 31 parishes or counties in the study area are in the Vicksburg District (MVK). Of the three counties and one parish in MVK District, three have a majority of residents identifying as Black/African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Some Other Race, or Two or More Races. Delsha County, AR, Bolivar and Warren Counties, MS and Concordia Parish, LA all have a majority minority population. Most of the minority population identifies as Black/African American. The 2018 ACS total population of the counties in MVK is approximately 111,500. Hispanic population represents the largest ethnicity of the parish and counties and is between 1.4 percent and 5.9 percent of total population.

Table A16-2: County/Parish Minority and Ethnicity Population: Vicksburg District (MVK)

District Counties/Parishes	Total Population	White	Black or African Am.	Am. Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or more Races	Percent Minority	Percent Hispanic
<b>MVK:</b>										
Desha County, AR	11,887	5,855	5,596	30	39	-	206	161	50.7%	5.9%
Bolivar County, MS	32,592	10,803	20,941	41	213	-	363	231	66.9%	2.2%
Warren County, MS	47,075	22,859	23,138	105	241	9	160	563	51.4%	2.2%
Concordia Parish, LA	20,021	11,579	8,230	15	36	26	110	25	42.2%	1.4%

Source: U.S. Census Bureau American Community Survey, 2014-2018.

Note: Highlighted red text represents county/parish having a majority of residents identifying as a minority.

Twelve of the 31 parishes or counties in the study area are in the New Orleans District (MVN) and shown in Table A16-3. Of the 12 parishes in MVN, five have a majority of residents identifying as Black/African American, American Indian and Alaska Native, Asian, Native

Hawaiian and Other Pacific Islander, Some Other Race, or Two or More Races. East Baton Rouge, Iberville, St. James, St. John the Baptist, and Orleans Parishes all have a majority minority population. Most of the minority population identifies as Black/African American. The 2018 ACS total population of the counties in MVN is just over 1.6 million. Hispanic population represents the largest ethnicity of the parishes and is between 1.6 percent and 14.4 percent of total population.

Table A16-3: County/Parish Minority and Ethnicity Population: New Orleans District (MVN)

District Counties/Parishes	Total Population	White	Black or African Am.	Am. Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or more Races	Percent Minority	Percent Hispanic
<b>MVN:</b>										
Pointe Coupee Parish, LA	22,158	13,504	7,874	65	57	-	417	241	39.1%	2.6%
East Baton Rouge Parish, LA	444,094	210,236	204,036	857	13,946	117	6,564	8,338	52.7%	4.0%
West Baton Rouge Parish, LA	25,860	15,008	10,320	33	41	-	188	270	42.0%	3.0%
Iberville Parish, LA	32,956	16,248	15,935	71	21	-	205	476	50.7%	2.5%
Ascension Parish, LA	121,176	88,396	26,398	57	1,281	40	1,506	3,498	27.1%	5.4%
St. James Parish, LA	21,357	10,345	10,622	22	24	26	123	195	51.6%	1.6%
St. John the Baptist Parish, LA	43,446	17,206	24,192	-	463	-	595	990	60.4%	5.9%
St. Charles Parish, LA	52,724	36,775	13,967	201	558	-	677	546	30.2%	6.0%
Jefferson Parish, LA	435,300	273,395	116,621	1,694	18,131	39	15,996	9,424	37.2%	14.4%
Orleans Parish, LA	389,648	132,423	232,789	632	11,294	98	5,297	7,115	66.0%	5.5%
St. Bernard Parish, LA	45,694	31,838	10,445	172	1,076	37	862	1,264	30.3%	10.0%
Plaquemines Parish, LA	23,373	15,871	4,786	308	850	8	610	940	32.1%	7.1%

Source: U.S. Census Bureau American Community Survey, 2014-2018.

Note: Highlighted red text represents county/parish having a majority of residents identifying as a minority.

### A16-3.2 Poverty

Over half of the counties/parishes in the study area (17 of 31) have 20 percent or more of individuals living below poverty, which in 2018 is \$25,100 for a family of four. Tables A16-4 through A16-6 provide information for population living below poverty level. Twelve of the 17

are located in the MVM. The range is 20.6 percent of the population in Shelby County, TN to 33.2 percent in Phillips County, AR that live below the poverty level.

Table A16-4: County/Parish Poverty: MVM (Memphis District)

District Counties/Parishes	Population for whom Poverty Status is Determined	Population Below Poverty Level	% of Population Below Poverty Level
<b>MVM:</b>			
Cape Girardeau County, MO	75,105	12,800	17.0%
Alexander County, IL	6,440	1,946	30.2%
Pulaski County, IL	5,559	1,048	18.9%
Scott County, MO	37,904	7,844	20.7%
Mississippi County, MO	11,978	2,996	25.0%
New Madrid County, MO	17,357	4,005	23.1%
Fulton County, KY	5,776	1,723	29.8%
Lake County, TN	4,714	1,268	26.9%
Dyer County, TN	36,737	6,806	18.5%
Mississippi County, AR	41,917	10,825	25.8%
Crittenden County, AR	48,299	10,709	22.2%
Shelby County, TN	919,244	189,641	20.6%
Lee County, AR	7,727	2,009	26.0%
Tunica County, MS	10,051	2,205	21.9%
Phillips County, AR	18,837	6,252	33.2%

Source: U.S. Census Bureau American Community Survey, 2014-2018.  
 Note: Highlighted red text represents at least 20 percent of population lives below poverty.

Table A16-5 provides information for population living below poverty level for the MVK. All of the counties and one parish in MVK, including Desha County, AR, Bolivar and Warren Counties, MS and Concordia Parish, LA have at least 20 percent of residents living below the poverty level, ranging from 20.6 percent to 34.6 percent.

Table A16-5: County/Parish Poverty: MVK (Vicksburg District)

District Counties/Parishes	Population for whom Poverty Status is Determined	Population Below Poverty Level	% of Population Below Poverty Level
<b>MVK:</b>			
Desha County, AR	11,702	3,401	29.1%

District Counties/Parishes	Population for whom Poverty Status is Determined	Population Below Poverty Level	% of Population Below Poverty Level
Bolivar County, MS	31,018	10,723	34.6%
Warren County, MS	46,536	9,594	20.6%
Concordia Parish, LA	18,002	4,944	27.5%

Source: U.S. Census Bureau American Community Survey, 2014-2018.  
Note: Highlighted red text represents at least 20 percent of population lives below poverty.

Table A16-6 provides information for population living below poverty level for the MVN. Only one of the 12 parishes in the MVN, Orleans Parish, has at least 20 percent of residents meeting the poverty threshold.

Table A16-6: County/Parish Poverty: MVN (New Orleans District)

District Counties/Parishes	Population for whom Poverty Status is Determined	Population Below Poverty Level	% of Population Below Poverty Level
<b>MVN:</b>			
Pointe Coupee Parish, LA	21,851	3,992	18.3%
East Baton Rouge Parish, LA	434,827	79,462	18.3%
West Baton Rouge Parish, LA	25,026	3,929	15.7%
Iberville Parish, LA	29,594	5,338	18.0%
Ascension Parish, LA	120,186	13,969	11.6%
St. James Parish, LA	21,149	3,531	16.7%
St. John the Baptist Parish, LA	42,743	8,122	19.0%
St. Charles Parish, LA	51,966	6,015	11.6%
Jefferson Parish, LA	431,372	66,696	15.5%
Orleans Parish, LA	376,276	92,497	24.6%
St. Bernard Parish, LA	45,270	8,912	19.7%
Plaquemines Parish, LA	23,055	4,507	19.5%

Source: U.S. Census Bureau American Community Survey, 2014-2018.  
Note: Highlighted red text represents at least 20 percent of population lives below poverty.

## A16-4 IMPACTS ASSESSMENT

EJ analyses identify and address, when appropriate, disproportionately high and adverse impacts of Federal agency actions on minority populations, low-income populations, and Tribal Nations. Public Involvement during scoping meetings is described in the existing conditions section. Of primary concern is identifying high, adverse impacts and if they fall disproportionately on minority and/or low-income members of the community compared to the larger community and, if so, whether those community members are “disproportionately high and adversely” affected by the Project. If disproportionately high and adverse impacts are evident, guidance from the NEPA Committee and Federal Interagency Working Group on Environmental Justice (EJ IWG 2016) and the EPA (EPA 1998) advises Federal agencies to initiate consideration of alternatives and mitigation actions in coordination with extensive community outreach. Consistent with EO 12898 and the Federal Interagency Working Group on Environmental Justice guidance (EJ IWG 2016), this section describes the approach taken to identify low-income and minority populations in the Project area and evaluate environmental consequences of the proposed Project with respect to these populations. The approach for evaluating impacts of the proposed Project on low-income and minority populations included the following steps:

1. **Refine the area of potential impacts.** The analysis identified relevant portions of the proposed project area where impacts of the Project would occur based on other resource analyses, Socioeconomics, Noise and Air Quality. In all, there are 143 Mississippi River levee (MRL) work items being assessed in this SEIS for impacts to biological and human environmental resources. For the EJ analysis, the segments of each MRL project are evaluated for EJ community impacts. In all, the 143 MRL work items have about 421 segments of levee repair or floodwall replacement projects, which are assessed for adverse impacts to EJ communities.

For the 421 MRL project segments, the impact area is determined as that population living within 0.5 miles of the proposed project. Normally, construction activities taking place for the types of MRL projects are experienced by communities directly adjacent to the site. Each project site’s impact area is assessed to determine if EJ communities may experience temporary or permanent direct or indirect impacts from construction of the levee or floodwall features. As discussed below, indirect impacts are primarily anticipated in portions of the MVN, MVK and MVM. The data is presented for each district and by parish or county which were consequently determined to be the area of focus for this analysis.

2. **Identify low-income and minority populations** (CEQ 1997; EJ IWG 2016). U.S. Census data were used to identify low-income and minority populations. Census block group data is used to identify EJ communities around the project sites. U.S. Census Bureau Data, American Community Survey 2014-2018 is used to identify low-income and minority populations residing outside of incorporated places varied according to Census designation.



#### A16-4.1 Construction Impacts: MRL Study Area

##### Alternative 1 - No Action

Under the No Action Alternative, construction of the proposed Projects would not occur; as such, no EJ impacts from the Project would occur. Low-income and minority populations would continue to be affected by and potentially adapt to changes in environmental conditions under the No Action Alternative in the short-term. Continued risk of flooding to EJ communities in the study area could result in these communities suffering economic losses, loss of agricultural lands, impacts to urban structures and property, loss of crops, or damage to property, and reduction in land values.

The no action alternative could directly and indirectly affect other socioeconomic resources through increased flooding potential within the area. Potential EJ impacts could occur to employment, income, population (migration), and government revenues and expenses. Impacts to transportation infrastructure and water supply could occur under the no action alternative; thereby impacting EJ communities, and all communities.

##### Alternative 2 - Traditional Alternative

##### Alternative 3 - Avoid And Minimize

Alternatives 2 and 3 are expected to have similar impacts to the human environment, including Environmental Justice. Both alternatives would have the same proportional impact from the 143 work items to EJ communities. Alternative 3 may avoid or minimize impacts to BLH, for instance, but the construction work will still take place at a new nearby location; the construction work will take place.

#### A16-4.2 Direct Impacts

Direct impacts to EJ communities from construction of the MRL projects are expected to be minimal. Direct impacts can occur when a Federal action, such as increasing the size of a levee for flood risk reduction, requires acquisition of land or other property to construct the improvement. For the MRL projects, the need to acquire a substantial amount of land for the levee improvements is not anticipated. When additional land is required to construct the improvement, re-engineering, including an analysis of the total height deficiency, can determine whether the levee lift can be a flood side shift, straddle or will need to be a land side shift. In addition, a stability analysis will need to be conducted along with an evaluation of the height of the lift in order to determine the best solution and to raise the levee with the minimum impact. Direct impacts will be avoided and or minimized by incorporating design changes. In situations where a design change cannot remove the need to acquire some land for a right-of-way (ROW), which will be determined at a much later phase of this project, further analysis may be required to assess if the acquisition creates a disproportionate impact to EJ communities.

#### A16-4.3 Indirect Impacts

Positive, indirect impacts include a decrease in risk of damage from levee failure to minority or low-income populations in the study area. Assuming that the levee failures would be avoided,

Alternatives 2 and 3 would reduce the adverse impacts to EJ communities- flood damages, loss of life, reduced economic activity, and potential out-migration. These positive impacts would be long term and would be likely to sustain the socioeconomic vitality of the project area positively impacting EJ communities.

Population groups residing or working near the construction site itself may experience minor, temporary, adverse indirect impacts due to added traffic congestion and construction noise and air quality. Truck traffic and noise along roads, highways and streets during project construction would cease following completion of construction activities. There may also be a degradation of the transportation infrastructure, primarily local roads and highways, as a result of the wear and tear from transporting construction materials. Best management practices will be utilized to avoid, reduce, and contain temporary impacts to human health and safety. The following is a description of the types of indirect impacts that may be caused by the construction of the MRL projects.

- **Transportation and Traffic Delays**

In general, the overall MRL implementation may cause adverse temporary impacts on the road network near the project site due to increased congestion, accelerated roadway wear-and-tear, and traffic delays resulting from re-routing major and local access roads in the project area. Temporary impacts on transportation due to increased congestion may occur and is dependent on road closures required to construct levee repairs. Road closures may not occur at every project site, and if closures are required, they will be for the short-term. On those segments of roads that must close and traffic re-routed, minor to moderate delays, particularly during peak hours, may occur especially in more congested areas.

Several impact avoidance features are included as integral components of the proposed action to minimize impacts to vehicular transportation. Specific routes would be designated for construction-related traffic to minimize residential disturbance and traffic congestion. USACE contracts would designate specific routes for construction-related traffic to avoid residential areas, to the maximum extent practicable, and staging areas for construction equipment and personnel would be located away from heavily populated areas. Streets that would serve construction-related traffic would be resurfaced, if needed and as appropriate, prior to initiation of construction activities, and maintenance of those streets would be provided during the project construction period. Appropriate detour signage would be placed in order to preserve access to local streets during construction activities. Off-street parking would be provided for construction workers, and shuttle vans would be used to transport construction workers to the work sites, if necessary. Streets that are damaged by any and all construction activities would be repaired.

Minority and low-income populations along the levee improvements in the MVN would experience minor to moderate, temporary, adverse impacts due to transportation delays during the approximately 6 – 60 month construction period, depending on the project. The projects will not start until FY22, with most starting in FY2030 - FY2050. Transportation impacts from construction of MVK and MVM projects could also be possible but is expected to be less of an impact to EJ communities than the MVN District.

- **Noise**

Noise along all segments of levee improvement existing right-of-ways would increase due to the temporary operation of equipment and vehicles used in the construction of the levee lifts and floodwall raises. While noise impacts may cause a temporary inconvenience to EJ residents and facilities in the immediate area, noise levels associated with construction activities would be temporary and monitored to ensure acceptable standards are maintained. No permanent noise impacts as a result of MRL construction is anticipated, and all noise emissions are expected to be short-term, lasting only as long as construction activities. No long-term indirect effects on noise are anticipated with implementation of proposed actions.

Short-term noise impacts will be avoided, minimized or mitigated by use of the following best management practices:

1. Placement of temporary noise barriers adjacent to construction activities.
2. Inclusion of the following noise and vibration monitoring language in the contract specifications for specific MRL work items: monitoring of noise levels to verify adherence to contract specifications; limiting pile driving activities associated with pile founded T-walls to daylight hours; and vibration monitoring equipment measure surface velocity waves caused by equipment and monitor vibration up to a threshold value established and approved in writing by the Corps. Such measurements would only be taken near residences and occupied buildings that could be adversely affected by excessive ground vibrations.
3. Construction equipment noise would be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications), and by shrouding or shielding impact tools.
4. All equipment, haul trucks, and worker vehicles would be turned off when not in use for more than 30 minutes.
5. Equipment warm up areas, water tanks, equipment storage areas, and project staging areas would be located as far from existing residences as is feasible.

- **Dust and Air Quality**

Impacts to EJ communities are expected to be minor and short term. Temporary increases in air pollution could occur from the use of construction equipment (combustible emissions). Combustible emission calculations were made for standard construction equipment, such as bulldozers, tug boats, excavators, dredgers, pumps, front end loaders, backhoes, cranes, and dump trucks. Analyses were made for the type of equipment, duration of the total number of days each piece of equipment would be used, and the number of hours per day each type of equipment would be used.

Based on traditional funding allocations of MRL projects, no more than 2 work items are likely to be constructed within the same year resulting in emissions significantly lower than any annual threshold limits. Based on this applicability determination, the emissions for work items within the MVM and MVK are classified as de minimus, and no further action is required. Most of these proposed work items in the MVN are located in areas that are in attainment status for National Ambient Air Quality Standards (NAAQS0; however, there are

there are several proposed projects that are located in the Baton Rouge Five-Parish non-attainment area for Ozone (O3) or in the St. Bernard Parish non-attainment area for Sulfur Dioxide (SO2). For air quality impacts for these areas in MVN, refer to the Air Quality section, 4.2.9.

### **MVN District projects**

Construction of the projects in the MVN are expected to have minor to moderate, adverse impacts on low-income and minority populations that live and work, within 0.5-mile of the construction footprints. Direct impacts to EJ communities who are adjacent to the construction work would likely be minimal. During the design phase, further analysis may be required and every effort will be made to minimize direct impacts. Levee design changes that could be taken to minimize impacts include shifting levee alignment to the flood side, or straddle of the existing levee.

Roadways may need to be relocated if the levee is a straddle or is shifted to the land side. However, the roadway can be part of the Vegetation Free Zone (15 feet), but will need to be outside the levee section. Traffic will need to be temporarily detoured/relocated while levee berm is constructed. During the design phase, all steps will be taken in order to minimize impacts and the need for acquiring new right of way which would minimize direct impacts to EJ communities.

Steps that could be taken include analyzing the total height deficiency and the length of the reach and whether the levee lift can be a flood side shift, straddle or will need to be a land side shift. In addition, a stability analysis will need to be conducted along with an evaluation of the height of the lift in order to determine the best solution and to raise the levee with the minimum impact. In situations where a design change cannot remove the need to acquire some land for a ROW, which will be determined at a much later phase of this project, further analysis may be required to assess if the acquisition creates a disproportionate impact to EJ communities. In many cases, road impacts will be minimal and may include temporary detours or delays, which would likely take place outside of rush hours.

- **EJ communities potentially impacted by MVN MRL Projects**

EJ communities are spread throughout the entire MVN MRL project area. The focus of this analysis is on those minority or low-income communities within a 0.5 mile buffer of the construction activities. According to CEQ's "Environmental Justice Guidance under the National Environmental Policy Act)" released in December 1997, DOD's 1995 release of "Strategy on Environmental Justice" and EPA's "Promising Practices for EJ Methodologies in NEPA Reviews", prepared in March 2016, if the alternative impact is appreciably more severe or greater in magnitude on minority or low-income populations than the adverse effect suffered by the non-minority or non-low-income populations after taking offsetting benefits into account, then there may be a disproportionate finding.

Impacts from the construction activities will be short-term (within a 6- to 60-month period). Fifty-five MVN levee project sites are located within 0.5 miles of low-income or minority communities (EJ communities). Table A16-7 lists the EJ communities (low-income and minority

communities) within 0.5 miles of 55 project sites (excluding borrow sites) in the MVN. Project sites that do not have an EJ community within 0.5 miles are not listed in this table. Sites shown in the table have met or exceeded the minority or low-income threshold met and therefore qualify as an EJ community.

The parish is the reference community of which to compare the low-income and minority percentages of the impacted area. The demographics of many of the EJ communities around the project sites are similar to the parish they are within. Twenty-three of the 55 EJ communities are in EJ parishes, which shows that the population affected by the project construction is similar to that of the parish. On the other hand, 32 EJ communities are in parishes that are not low-income or minority as a whole.

As described in the EJ adverse impact section above, most of the impacts are considered indirect and occur during construction, which will be temporary and last from six months, the St. James Moonshine levee repair, to about five years for the Jackson to Thalia floodwall replacement project in Orleans Parish. Traffic re-routing causing delays, dust, noise and air quality will be the common indirect impacts for all of the MRL projects. Depending on the duration of construction activities, impacts will vary. Once construction is completed, conditions will return to normal.

Because design changes will avoid direct impacts, mainly the acquisition of residential lands along the road adjacent to the levee, there are only minimal direct impacts anticipated from the construction of the MRL projects. The indirect impacts are minor to moderate affecting both EJ and non EJ communities throughout the entire MRL project area and do not qualify as disproportionately high and adverse under EO 12898. Best Management Practices will be undertaken during construction to reduce or minimize the potential impacts.

Therefore, there are no direct, high adverse disproportionate impacts to EJ communities within 0.5 miles of the construction activities associated with MVN levee repairs.

Table A16-7. MVN District MRL Sites having EJ Communities within 0.5 Miles

Levee Work ID	Item Name and Levee Work ID	Project Duration (mths)	NARRATIVE	Parish	Impact Area* 0.5 ml buffer				Parish Minority %	Parish Low-Income %
					Population	Minority	Hispanic	Percent of Population Below Poverty		
<b>172.6-R</b>	Aben, LA, Levee, Item 172.6R	19	Land Side - Offset distance for C/L = 105.0 feet	Ascension	379	63.7%	5.2%	18.1%	27.1%	11.6%
<b>180-R</b>	ABLD-1 180 R, LA, Levee, Item 180-R	17	Either Side - Offset distance for C/L = 115.0 feet	W. Baton Rouge	7	55.6%	18.2%	35.5%	42.0%	15.7%
<b>223-R</b>	Addis, LA, Levee, Item 223-R	9	Land Side - Offset distance for C/L = 135.0 feet	W. Baton Rouge	1,364	51.4%	9.0%	16.0%	42.0%	15.7%
<b>88-R</b>	Algiers Lock – Levee, LA, Levee, Item 88-R	9	Land Side - Offset distance for C/L = 85.0 feet	Orleans	1,928	93.5%	4.1%	19.0%	66.0%	24.6%

Levee Work ID	Item Name and Levee Work ID	Project Duration (mths)	NARRATIVE	Parish	Impact Area* 0.5 ml buffer				Parish Minority %	Parish Low-Income %
					Population	Minority	Hispanic	Percent of Population Below Poverty		
94.6-R	Algiers Point 93.75-95.5 R, LA, Levee or Floodwall, Item 94.6-R	8	Flood Wall / Land Side - Offset distance for C/L = 85.0 feet	Orleans	7,535	54.3%	4.1%	15.2%	66.0%	24.6%
61.5-R	Alliance to Ironton, LA, Levee, Item 61.5-R	12	Land Side - Offset distance for C/L = 75.0 feet	Plaquemines	151	65.8%	0.0%	49.4%	32.1%	19.5%
113.5-R	Ama, LA, Levee, Item 113.5-R	8	Land Side - Offset distance for C/L = 105.0 feet	St. Charles	1,034	72.8%	7.0%	26.7%	30.2%	11.6%
91.2-L	Arabi Levee and Floodwall, LA, Floodwall, Item 91.2-L	39	I-WALL Replacement along Arabi Floodwall	St. Bernard	1,745	45.8%	5.8%	26.7%	30.3%	19.7%
159.7-R	Barton Lane 159.7 R, LA, Levee, Item 159.7-R	9	Land Side - Offset distance for C/L = 125.0 feet	St. James	129	96.4%	1.8%	36.8%	51.6%	16.7%
194.5-R	Bayou Goula to Alhambra, LA, Levee, Item 194.5-R	12	Land Side - Offset distance for C/L = 105.0 feet	Iberville	1,105	74.0%	5.2%	18.0%	50.7%	18.0%
163.5-R	Brilliant Point 163.5 R, LA, Levee, Item 163.5-R	23	Land Side - Offset distance for C/L = 150.0 feet	St. James	22	97.8%	2.0%	38.7%	51.6%	16.7%
67-L	Carnaevon to Phoenix, LA, Levee, Item 67-L	51	Land Side - Offset distance for C/L = 75.0 feet	St. Bernard	255	45.4%	1.3%	24.7%	30.3%	19.7%
189-L	Carville, LA, Levee, Item 189-L	9	Land Side - Offset distance for C/L = 130.0 feet	Iberville	177	77.7%	2.8%	36.6%	50.7%	18.0%
88.5-L	Chalmette Battle Field (1), LA, Levee or Floodwall, Item 88.5-L	27	Floodwall/ Land side - Offset distance for C/L = 75.0 feet	St. Bernard	3,498	14.9%	15.1%	21.3%	30.3%	19.7%
115.5-R	Cyanamid, LA, Levee, Item 115.5-R	8	Land Side - Offset distance for C/L = 100.0 feet	Jefferson	74	52.5%	2.2%	12.7%	37.2%	15.5%
52.5-R	Deer Range to W. Point a la Hache, LA, Levee, Item 52.5-R	22	Land Side - Offset distance for C/L = 80.0 feet	Plaquemines	67	65.8%	0.0%	49.4%	32.1%	19.5%
100.4-R	Dugas to Celotex, LA, Levee, Berm and/or	23	Berm / Land side - Offset distance for C/L = 325.0 feet	Jefferson	2,262	50.4%	3.7%	27.4%	37.2%	15.5%

Levee Work ID	Item Name and Levee Work ID	Project Duration (mths)	NARRATIVE	Parish	Impact Area* 0.5 ml buffer				Parish Minority %	Parish Low-Income %
					Population	Minority	Hispanic	Percent of Population Below Poverty		
	Wells, Item 100.4-R									
<b>100.4-R</b>	Dugas to Celotex, LA, Levee, Berm and/or Wells, Item 100.4-R	-	Land Side - Offset distance for C/L = 105.0 feet	Jefferson	2,568	54.3%	3.2%	26.9%	37.2%	15.5%
<b>242.5-R</b>	Fancy Point, LA, Levee, Item 242.5-R	26	Land Side - Offset distance for C/L = 165.0 feet	W. Baton Rouge	281	32.5%	0.4%	32.9%	42.0%	15.7%
<b>92-L</b>	Holy Cross, LA, Levee, Item 92-L	9	Land Side - Offset distance for C/L = 90.0 feet	Orleans	4,705	69.4%	2.7%	32.8%	66.0%	24.6%
<b>92.6-L</b>	IHNC Lock Forebay 92.6L - Levee, LA, Levee, Item 92.6-L	15	Land Side - Offset distance for C/L = 90.0 feet	Orleans	4,950	69.4%	1.8%	30.3%	66.0%	24.6%
<b>58-R</b>	Ironton to Deer Range, LA, Levee, Item 58-R	13	Land Side - Offset distance for C/L = 80.0 feet	Plaquemines	193	65.8%	0.0%	49.4%	32.1%	19.5%
<b>96.5-L</b>	Jackson to Thalia, LA Floodwall, Item 96.5-L	62	I-WALL Replacement at Market Street Wharf	Orleans	6,332	41.5%	6.4%	24.9%	66.0%	24.6%
<b>133-L</b>	Laplace, LA, Levee, Item 133-L	11	Land Side - Offset distance for C/L = 115.0 feet	St. John	728	25.4%	14.9%	30.5%	60.4%	19.0%
<b>107-R</b>	Lower Avondale, LA, Levee or Floodwall, Item 107-R	14	Floodwall Stability	Jefferson	552	53.0%	9.8%	33.6%	37.2%	15.5%
<b>107-R</b>	Lower Avondale, LA, Levee or Floodwall, Item 107-R	14	Land Side - Offset distance for C/L = 80.0 feet	Jefferson	818	53.0%	9.8%	33.6%	37.2%	15.5%
<b>135.7-R</b>	Lower Edgard (3) 135.2-136.2 R, LA, Levee, Item 135.7-R	13	Land Side - Offset distance for C/L = 125.0 feet	St. John	497	90.4%	0.0%	19.0%	60.4%	19.0%
<b>131.7-R</b>	Lower Edgard 131.7 R, LA, Levee, Item 131.7-R	8	Land Side - Offset distance for C/L = 110.0 feet	St. John	5	87.7%	5.0%	25.7%	60.4%	19.0%
<b>199-L</b>	Lower Plaquemines Point, LA,	27	Land Side - Offset distance for C/L = 140.0 feet	Plaquemines	689	63.2%	1.5%	17.8%	32.1%	19.5%

Levee Work ID	Item Name and Levee Work ID	Project Duration (mths)	NARRATIVE	Parish	Impact Area* 0.5 ml buffer				Parish Minority %	Parish Low-Income %
					Population	Minority	Hispanic	Percent of Population Below Poverty		
	Levee, Item 199-L									
<b>216-R</b>	Morrisonville, LA, Levee, Item 216-R	25	Land Side - Offset distance for C/L = 110.0 feet	Iberville	27	51.6%	2.6%	11.3%	50.7%	18.0%
<b>148-L</b>	Paulina/Lutcher/Gramercy, LA, Levee, Item 148-L	30	Land Side - Offset distance for C/L = 105.0 feet	St. James	2,974	54.5%	1.3%	15.1%	51.6%	16.7%
<b>51-L</b>	Phoenix to Bohemia, LA, Levee, Item 51-L	31	Land Side - Offset distance for C/L = 80.0 feet	Plaquemines	840	100.0%	0.0%	37.7%	32.1%	19.5%
<b>206.7-R</b>	Plaquemine/Reveille, LA, Levee, Item 206.7-R	24	Land Side - Offset distance for C/L = 100.0 feet	Plaquemines	3,195	55.8%	3.4%	13.7%	32.1%	19.5%
<b>165-R</b>	Point Houmas (Lauderdale), LA, Levee, Item 165-R	13	Land Side - Offset distance for C/L = 110.0 feet	Ascension	2	97.8%	2.0%	38.7%	27.1%	11.6%
<b>37-R</b>	Port Sulphur, LA, Levee, Item 37-R	10	Land Side - Offset distance for C/L = 80.0 feet	Plaquemines	1,296	74.1%	0.8%	39.7%	32.1%	19.5%
<b>136-L</b>	Reserve, LA, Levee, Item 136-L	20	Land Side - Offset distance for C/L = 95.0 feet	St. John	3,556	60.1%	7.4%	34.0%	60.4%	19.0%
<b>163-L</b>	Romeville, LA, Levee, Item 163-L	7	Land Side - Offset distance for C/L = 110.0 feet	St. James	2	59.1%	0.0%	5.7%	51.6%	16.7%
<b>156.8-L</b>	Romeville/College Point 156.8 L, LA, Levee, Item 156.8-L	38	Land Side - Offset distance for C/L = 80.0 feet	St. James	179	66.9%	0.1%	28.0%	51.6%	16.7%
<b>246-R</b>	Smithfield Levee Enlargement, LA, Levee, Item 246-R	11	Land Side - Offset distance for C/L = 135.0 feet	Pointe Coupee	7	32.5%	0.4%	32.9%	39.1%	18.3%
<b>293.5-R</b>	Smithland to Lacour 289-298 R, LA, Levee and Berm, Item 293.5-R	37	Straddle - Offset distance for C/L = 0.0 feet	Pointe Coupee	261	34.8%	5.7%	23.2%	39.1%	18.3%
<b>293.5-R</b>	Smithland to Lacour 289-298 R, LA, Levee and Berm,	-	Berm / Land side - Offset distance for C/L = 325.0 feet	Pointe Coupee	48	34.8%	5.7%	23.2%	39.1%	18.3%



Levee Work ID	Item Name and Levee Work ID	Project Duration (mths)	NARRATIVE	Parish	Impact Area* 0.5 ml buffer				Parish Minority %	Parish Low-Income %
					Population	Minority	Hispanic	Percent of Population Below Poverty		
	Item 293.5-R									
<b>178-R</b>	Smoke Bend, LA, Levee, Item 178-R	28	Land Side - Offset distance for C/L = 125.0 feet	Ascension	2,045	86.0%	2.9%	47.2%	27.1%	11.6%
<b>158-R</b>	St. Amelia 158R, LA, Levee, Item 158-R	7	Land Side - Offset distance for C/L = 110.0 feet	St. John	38	80.6%	0.0%	15.6%	60.4%	19.0%
<b>156-R</b>	St. James Moonshine, LA, Levee, Item 156-R	6	Land Side - Offset distance for C/L = 130.0 feet	St. James	246	80.6%	0.0%	15.6%	51.6%	16.7%
<b>173.9-R</b>	Stella Landing, LA, Levee, Item 173.9-R	7	Land Side - Offset distance for C/L = 100.0 feet	Ascension	13	63.7%	5.2%	18.1%	27.1%	11.6%
<b>240.3-R</b>	Thomas Point, LA, Levee, Item 240.3-R	14	Land Side - Offset distance for C/L = 155.0 feet	W. Baton Rouge	154	32.5%	0.4%	32.9%	42.0%	15.7%
<b>142-R</b>	Upper Edgard 142 R, LA, Levee, Item 142-R	8	Land Side - Offset distance for C/L = 110.0 feet	St. John	224	95.5%	0.0%	17.3%	60.4%	19.0%
<b>90.6-R</b>	US Coast Guard Reservation, LA, Levee, Item 90.6-R	27	Land Side - Offset distance for C/L = 85.0 feet	Orleans	12,453	74.1%	6.0%	18.8%	66.0%	24.6%
<b>149-R</b>	Vacherie, LA, Levee, Item 149-R	7	Land Side - Offset distance for C/L = 110.0 feet	St. James	625	80.8%	2.2%	15.6%	51.6%	16.7%
<b>47.5-R</b>	W. Pt a la Hache to St. Jude, LA, Levee, Item 47.5-R	7	Land Side - Offset distance for C/L = 80.0 feet	Plaquemines	24	65.8%	0.0%	49.4%	32.1%	19.5%
<b>109.6-R</b>	Waggaman and Bridge City Levee and Floodwall, LA, Floodwall, Item 109.6-R	24	I-WALL Replacement upriver floodwall within Waggaman to Bridge City	Jefferson	1,020	44.5%	16.7%	25.1%	37.2%	15.5%
<b>109.6-R</b>	Waggaman and Bridge City Levee and Floodwall, LA, Floodwall, Item 109.6-R	-	I-WALL Replacement upriver floodwall within Waggaman to Bridge City	Jefferson	398	56.9%	5.8%	26.9%	37.2%	15.5%

Levee Work ID	Item Name and Levee Work ID	Project Duration (mths)	NARRATIVE	Parish	Impact Area* 0.5 ml buffer				Parish Minority %	Parish Low-Income %
					Population	Minority	Hispanic	Percent of Population Below Poverty		
147.3-R	Wallace, LA, Levee, Item 147.3-R	13	Land Side - Offset distance for C/L = 85.0 feet	St. John	222	74.0%	0.3%	17.0%	60.4%	19.0%
102.1-R	Westwego Levee and Floodwall, LA, Floodwall, Item 102.1-R	43	I-WALL Replacement Marerro Floodwall within Westwego Levee and Floodwall	Jefferson	433	44.5%	19.9%	46.9%	37.2%	15.5%
102.1-R	Westwego Levee and Floodwall, LA, Floodwall, Item 102.1-R	-	I-WALL Replacement Marerro Floodwall within Westwego Levee and Floodwall	Jefferson	22	43.5%	20.4%	44.4%	37.2%	15.5%

Source: U.S. Census Bureau, ACS 2013-2018.

\*Impact area is the geographic area around the project site where impacts are expected to be felt.

Note: All other MRL projects in the MVN are not within 0.5 miles of an EJ community.

- **Borrow Sites MVN District**

Seventy-four borrow sites are within the MVN. Table A16-8 shows 24 of these borrow sites that are adjacent to or within 0.5 miles of EJ communities. Another 50 borrow sites are not within 0.5 miles of EJ communities and are therefore not shown in this table. There are no direct impacts to EJ communities from the use of borrow pits for excavation of material to be used in the MRL MVN projects.

Typical EJ indirect impacts to those within 0.5 miles of borrow excavation include noise and dust. Additionally, truck hauling may have adverse short-term impacts on vehicle traffic using the same route as the trucks delivering the borrow material needed for levee work. The indirect impacts to EJ communities are not high adverse impacts; therefore, there are no direct, high adverse disproportionate impacts to EJ communities within 0.5 miles of the MVN borrow pits.

Table A16-8. Borrow Sites MVN: Minority and Low-Income Population within 0.5 Miles

ITEM_NAME	Impact Area* 0.5 ml buffer			
	Population	Minority %	Hispanic %	Poverty %
Aben, LA, Levee, Item 172.6R	15	90.40%	0.00%	19.00%
ABLD-1 180 R, LA, Levee, Item 180-R	16	32.50%	0.40%	32.90%
Addis, LA, Levee, Item 223-R	10	32.50%	0.40%	32.90%
Arbroth Levee Enlargement, LA, Levee, Item 253-R	6	34.80%	5.70%	23.20%

ITEM_NAME	Impact Area* 0.5 ml buffer			
	Population	Minority %	Hispanic %	Poverty %
Bayou Goula to Alhambra, LA, Levee, Item 194.5-R	16	32.50%	0.40%	32.90%
Brilliant Point 163.5 R, LA, Levee, Item 163.5-R	15	90.40%	0.00%	19.00%
Chalmette Battle Field (1), LA, Levee or Floodwall, Item 88.5-L	1,484	73.40%	0.70%	24.60%
Chalmette Battle Field (2), LA, Levee, Item 86.1-L	1,753	74.20%	0.60%	26.20%
Chalmette Slip, LA, Levee or Floodwall, Item 90-L	1,712	74.30%	0.60%	25.80%
Claiborne Island, LA, Berm, Item 189-R	16	32.50%	0.40%	32.90%
Holy Cross, LA, Levee, Item 92-L	304	96.40%	8.80%	21.40%
IHNC Lock Forebay 92.6L - Levee, LA, Levee, Item 92.6-L	525	96.40%	8.80%	21.40%
Morrisonville, LA, Levee, Item 216-R	10	32.50%	0.40%	32.90%
Phoenix to Bohemia, LA, Levee, Item 51-L	1	45.40%	1.30%	24.70%
Plaquemine/Reveille, LA, Levee, Item 206.7-R	16	32.50%	0.40%	32.90%
Point Houmas (Lauderdale), LA, Levee, Item 165-R	15	90.40%	0.00%	19.00%
Port Allen Lock – Levee, LA, Levee, Item 228-R	16	32.50%	0.40%	32.90%
Port Allen, LA, Levee, Item 231-R	10	32.50%	0.40%	32.90%
Pt Coupee Levee Enlargement, LA, Levee, Item 268-R	21	34.80%	5.70%	23.20%
Smithfield Levee Enlargement, LA, Levee, Item 246-R	6	34.80%	5.70%	23.20%
Smithland to Lacour 289-298 R, LA, Levee and Berm, Item 293.5-R	21	34.80%	5.70%	23.20%
Smoke Bend, LA, Levee, Item 178-R	10	32.50%	0.40%	32.90%
St. James Moonshine, LA, Levee, Item 156-R	15	90.40%	0.00%	19.00%
Thomas Point, LA, Levee, Item 240.3-R	16	32.50%	0.40%	32.90%

Source: U.S. Census Bureau, ACS 2013-2018.

Note: All other borrow pits in the MVN are not within 0.5 miles of an EJ community.

### **MVK District projects:**

Construction of the Projects in the MVK District are expected to have minor to moderate, adverse impacts on low-income and minority populations that live and work, within 0.5-mile of the construction footprints.

- **EJ communities potentially impacted by MVK Levee Projects:**

EJ communities within 0.5 miles of the MVK District project sites are consolidated in Bolivar County, MS. The focus of this analysis is four project sites and the minority or low-income communities within a 0.5 mile buffer of the construction activities. All of the other MVK project sites (58) are not located within 0.5 miles of an EJ community. According to CEQ’s “Environmental Justice Guidance under the National Environmental Policy Act)” released in December 1997, DOD’s 1995 release of “Strategy on Environmental Justice” and EPA’s “Promising Practices for EJ Methodologies in NEPA Reviews”, prepared in March 2016, if the alternative impact is appreciably more severe or greater in magnitude on minority or low-income populations than the adverse effect suffered by the non-minority or non-low-income populations after taking offsetting benefits into account, then there may be a disproportionate finding.

Impacts from the construction activities will be short-term (within a 7- to 14-month period). Table A16-X lists the low-income and minority communities within 0.5 miles of the four project sites (excluding borrow sites) in the MVK. Project sites that do not have an EJ community within 0.5 miles are not listed in this table. EJ communities are defined as either at least 50 percent of population identifying as a minority or 20 percent or more of population living below poverty within a 0.5 miles buffer of the proposed levee project.

The county is the reference community of which to compare the low-income and minority percentages of the impacted area. The demographics of the EJ communities around the project sites are similar to the Bolivar County; that is, the county is also minority and low-income.

As described in the EJ adverse impact section above, most of the construction impacts will be temporary and last from 7 months for the Deeson-Gunnison Seepage Remediation, to about 14 months for the Bolivar and Cessions seepage remediation projects all in Bolivar County, MS. Traffic re-routing causing delays, dust, noise and air quality will be the common indirect impacts for all of the MRL projects. Depending on the duration of construction activities, impacts will vary. Conditions will return to normal once construction is completed.

Because design changes will avoid direct impacts, mainly the acquisition of residential lands along the road adjacent to the levee, there are no direct impacts anticipated from the construction of the MRL projects. The indirect impacts would not qualify as disproportionately high and adverse under EO 12898. Best Management Practices will be undertaken during construction to reduce or minimize the potential impacts.

Therefore, there are no direct, high adverse disproportionate impacts to EJ communities within 0.5 miles of the construction activities associated with MVK levee repairs.

Table A16-9. EJ communities in MVK District within 0.5 miles of Project Item

Item Name and Levee Work ID	Project Duration (months)	County	----- Impact Area* 0.5 ml buffer -----				County Minority %	County Low-Income %
			Popu-lation	Minority %	Hispanic %	Percent of Population Below Poverty		

<b>Bolivar, MS, Seepage Remediation, Item 577-L</b>	14	Bolivar	77	77.2%	1.3%	32.1%	66.9%	34.6%
<b>Deeson-Gunnison, MS, Seepage Remediation, Item 611-L</b>	7	Bolivar	1	80.0%	0.0%	39.6%	66.9%	34.6%
<b>Cessions, MS, Seepage Remediation, Item 615-L</b>	14	Bolivar	42	80.0%	0.0%	39.6%	66.9%	34.6%
<b>Rosedale, MS, Seepage Remediation, Item 587-L</b>	11	Bolivar	537	88.3%	0.0%	43.4%	66.9%	34.6%

Source: U.S. Census Bureau, ACS 2013-2018.

Note: All other levee projects in the MVK District are not within 0.5 miles of an EJ community.

- **Borrow Sites MVK District**

Table A16-10 list borrow sites having EJ communities within 0.5 miles that are within the MVK District. A total of 19 borrow sites are available for the MVK sites and four of them are near EJ communities (within 0.5 miles). The other 15 borrow sites are not within 0.5 miles of EJ communities. There are no direct impacts to EJ communities from the use of borrow pits for excavation of material to be used in the MRL MVK projects.

Typical EJ indirect impacts to those within 0.5 miles of borrow excavation include noise and dust. Additionally, truck hauling may have adverse short-term impacts on vehicle traffic using the same route as the trucks delivering the borrow material. The direct and indirect impacts to EJ communities are not high adverse impacts; therefore, there are no direct, high adverse disproportionate impacts to EJ communities within 0.5 miles of the MVK borrow pits.

Table A16-10. Borrow Sites MVK District: Minority and Low-Income Population within 0.5 Miles

ITEM_NAME	Impact Area* 0.5 ml buffer			
	POPULATION	Hispanic %	Minority %	Poverty %
<b>Bolivar, MS, Seepage Remediation, Item 577-L</b>	68	1.1%	76.9%	33.7%
<b>Bolivar, MS, Seepage Remediation, Item 577-L</b>	77	1.3%	77.2%	32.1%
<b>Rosedale, MS, Seepage Remediation, Item 587-L</b>	32	0.0%	84.9%	36.8%
<b>Cessions, MS, Seepage Remediation, Item 615-L</b>	25	0.0%	80.0%	39.6%

Source: U.S. Census Bureau, ACS 2013-2018.

Note: All other borrow pits in the MVK District are not within 0.5 miles of an EJ community.

## **MVM District projects:**

Construction of the projects in the MVM are expected to have minor to moderate, adverse impacts on low-income and minority populations that live and work, within 0.5-mile of the construction footprints.

- **EJ communities potentially impacted by MVM Levee Projects:**

EJ communities within 0.5 miles of the MVM project sites are consolidated in Alexander and Pulaski Counties, IL, Mississippi and Scott Counties, MO, Fulton, KY and Crittenden, AR. The focus of this analysis is on those minority or low-income communities within a 0.5 mile buffer of the construction activities. According to CEQ's "Environmental Justice Guidance under the National Environmental Policy Act)" released in December 1997, DOD's 1995 release of "Strategy on Environmental Justice" and EPA's "Promising Practices for EJ Methodologies in NEPA Reviews", prepared in March 2016, if the alternative impact is appreciably more severe or greater in magnitude on minority or low-income populations than the adverse effect suffered by the non-minority or non-low-income populations after taking offsetting benefits into account, then there may be a disproportionate finding.

Impacts from the construction activities will be short-term (within a 7- to 21-month period). Table A16-X lists the 23 low-income and minority communities within 0.5 miles of the project sites (excluding borrow site) in the MVM District. The 120 Project sites that do not have an EJ community within 0.5 miles are not listed in this table. EJ communities are defined as either at least 50 percent of population identifying as a minority or 20 percent or more of population living below poverty within a 0.5 miles buffer of the proposed levee project.

The county is the reference community of which to compare the low-income and minority percentages of the impacted area. The demographics of the EJ communities around the project sites are similar to the county they are within; that is, the county is also minority or low-income.

As described in the EJ adverse impact section above, most of the construction impacts will be temporary and last from 7 months for several projects to the Cairo, IL floodwall replacement project. Traffic delays due to temporary closures, or more permanent re-routing may take place throughout the construction activities, depending on the extent of the levee or floodwall work. Dust, noise and air quality will be the common indirect impacts for all of the MRL projects. Depending on the duration of construction activities, impacts will vary. Once construction is completed, conditions will return to normal.

Because design changes will avoid direct impacts, mainly the acquisition of residential lands along the road adjacent to the levee, there are no direct impacts anticipated from the construction of the MRL projects. The indirect impacts would not qualify as disproportionately high and adverse under EO 12898. Best management practices will be undertaken during construction to reduce or minimize the potential impacts.

Therefore, there are no direct, high adverse disproportionate impacts to EJ communities within 0.5 miles of the construction activities associated with MVK levee repairs.

Table A16-11. EJ communities in MVM District within 0.5 miles of Project Item

Item Name	Duration (months)	Type of Work	County	Impact Area* 0.5 ml buffer				County Minority %	County Poverty %
				Population	Hispanic %	Minority %	Poverty %		
Cairo, IL Floodwall, Item 956-R	21	Floodwall Replacement	Alexander/IL	1,526	1.5%	73.0%	39.7%	37.6%	30.2%
Fish Market Gate/High 51 Closure, IL, Item 955-R	7	Levee Enlarge	Alexander/IL	93	3.7%	60.2%	13.7%	37.6%	30.2%
Mound City to Cairo, IL 7/50+00 to 8/4+00, Item 958-R	7	Levee Enlarge	Alexander/IL	23	3.8%	53.5%	27.5%	37.6%	30.2%
Mound City to Cairo, IL Levee 4/30+00 to 5/7+00, Item 961-R	7	Levee Enlarge	Alexander/IL	12	3.8%	53.5%	27.5%	37.6%	30.2%
West Memphis, AR Seepage Remediation, Item 723-R	14	Relief Wells	Crittenden/AR	15	0.0%	53.3%	8.4%	55.6%	22.2%
St. Thomas, AR Berm Re-evaluation, Item 754-R	14	Relief Wells	Crittenden/AR	9	4.0%	44.9%	23.2%	55.6%	22.2%
Hickman Levee Grade Raise, KY, Item 921-L	7	Levee Enlarge	Fulton/KY	157	1.9%	12.6%	22.7%	27.8%	29.8%
Hickman Floodwall Embankment Tie-in, KY, Item 922-L	7	Levee Enlarge	Fulton/KY	331	2.9%	37.2%	26.0%	27.8%	29.8%
Commerce to Birds Point, MO (17/49+00 to 32/0+00), Item 22-R AC	7	Levee Enlarge	Mississippi/MO	9	0.0%	4.0%	20.1%	26.8%	25.0%
Birds Point – New Madrid Setback, MO (0/0+00 to 12/32+00), Item 947-R	7	Levee Enlarge	Mississippi/MO	31	0.0%	17.2%	26.0%	26.8%	25.0%
Birds Point – New Madrid Setback, MO (0/0+00 to 12/32+00), Item 947-R	7	Levee Enlarge	Mississippi/MO	138	0.0%	17.2%	26.0%	26.8%	25.0%
Birds Point – New Madrid Setback, MO (0/0+00 to 12/32+00), Item 947-R	7	Levee Enlarge	New Madrid/MO	200	0.0%	17.2%	26.0%	26.8%	25.0%
Birds Point – New Madrid Setback, MO (0/0+00 to 12/32+00), Item 947-R	7	Levee Enlarge	Mississippi/MO	5	0.0%	17.2%	26.0%	26.8%	25.0%
Birds Point – New Madrid Setback, MO (0/0+00 to 12/32+00), Item 947-R	7	Levee Enlarge	Mississippi/MO	2	0.0%	17.2%	26.0%	26.8%	25.0%
Birds Point – New Madrid Setback, MO (12/32+00 to 36/0+00), Item 915-R	7	Levee Enlarge	New Madrid/MO	4	0.8%	27.7%	28.5%	18.6%	23.1%
Farrenburg Levee, MO Slope Flattening (1/50+00 to 2/21+00), Item 889-R	7	Slope Flattening	New Madrid/MO	1,028	0.5%	45.3%	51.2%	18.6%	23.1%

Item Name	Duration (months)	Type of Work	County	Impact Area* 0.5 ml buffer				County Minority %	County Poverty %
				Population	Hispanic %	Minority %	Poverty %		
Mound City to Cairo, IL Levee 2/26+00 to 4/0+00, Item 962.5-R	7	Levee_Enlarge	Pulaski/IL	609	5.8%	54.4%	31.1%	34.5%	18.9%
Mound City to Cairo, IL Levee 2/26+00 to 4/0+00, Item 962.5-R	7	Levee_Enlarge	Pulaski/IL	226	5.8%	54.4%	31.1%	34.5%	18.9%
Mound City to Cairo, IL Levee 0/0+00 to 2/26+00, Item 965-R	7	Levee_Enlarge	Pulaski/IL	172	5.8%	54.4%	31.1%	34.5%	18.9%
Mound City to Cairo, IL Levee 0/0+00 to 2/26+00, Item 965-R	7	Levee_Enlarge	Pulaski/IL	21	5.8%	54.4%	31.1%	34.5%	18.9%
Mound City to Cairo, IL Levee 0/0+00 to 2/26+00, Item 965-R	7	Levee_Enlarge	Pulaski/IL	2	5.8%	54.4%	31.1%	34.5%	18.9%
North Mound City, IL Sump, Item 962.3-R	7	Relief Wells	Pulaski/IL	319	5.8%	54.4%	31.1%	34.5%	18.9%
Commerce to Birds Point, MO (15/0+00 to 17/49+00), Item 29-R AC	14	Levee_Enlarge	Scott/MO	9	0.0%	4.0%	20.1%	14.8%	20.7%

Source: U.S. Census Bureau, ACS 2013-2018.

Note: All other MRL projects in the MVM District are not within 0.5 miles of an EJ community.

- **Borrow Sites MVM District**

Table A16-12 list borrow sites having EJ communities within 0.5 miles that are within the MVK District. A total of 52 borrow sites are available for the MVM sites and seven of them are near EJ communities (within 0.5 miles). The other 45 borrow sites are within 0.5 miles of non EJ communities. There are no direct impacts to EJ communities from the use of borrow pits for excavation of material to be used in the MRL MVM projects.

Indirect impacts to EJ communities within 0.5 miles of borrow excavation include noise and dust. Additionally, truck hauling may have adverse short-term impacts on vehicle traffic using the same route as the trucks delivering the borrow material. The indirect impacts to EJ communities are not high adverse impacts; therefore, there are no direct, high adverse disproportionate impacts to EJ communities within 0.5 miles of the MVM borrow pits.

Table A16-12. Borrow Sites MVM District: Minority and Low-Income Population within 0.5 Miles

Item Name	Impact Area* 0.5 ml buffer			
	Population	Hispanic %	Minority %	Poverty %
Birds Point – New Madrid Setback, MO (0/0+00 to 12/32+00), Item 947-R	5	0.0%	17.2%	26.0%
Birds Point – New Madrid Setback, MO (0/0+00 to 12/32+00), Item 947-R	9	0.0%	17.2%	26.0%



Item Name	Impact Area* 0.5 ml buffer			
	Population	Hispanic %	Minority %	Poverty %
<b>Birds Point – New Madrid Setback, MO (0/0+00 to 12/32+00), Item 947-R</b>	113	0.0%	17.2%	26.0%
<b>Commerce to Birds Point, MO (17/49+00 to 32/0+00), Item 22-R AC</b>	9	0.0%	4.0%	20.1%
<b>Great River Road Slope Flattening, TN (12/45+00 to 15/0+00), Item 848-L</b>	2	0.0%	16.6%	22.4%
<b>Hickman Levee Grade Raise, KY, Item 921-L</b>	114	1.2%	7.3%	24.3%
<b>Fish Market Gate/High 51 Closure, IL, Item 955-R</b>	125	3.0%	65.3%	18.7%

Source: U.S. Census Bureau, ACS 2013-2018.

Note: All other borrow pits in the MVM District are not within 0.5 miles of an EJ community.