



Memphis Metropolitan Stormwater – North DeSoto County Feasibility Study, DeSoto County Mississippi



Appendix M – Environmental Justice

MAY 2022

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Section 1

Purpose

All Federal undertakings or projects require an assessment of Environmental Justice as per Executive Order #12898: Environmental Justice, 1994 and EO #14008, Tackling the Climate Crisis at Home and Abroad, 2021.

This appendix identifies the areas of EJ concern in the study area, County of DeSoto, MS, the location of the Proposed Action for the TSP. The study area for potential construction measures to reduce flood risk was identified during the plan formulation process based on the historical and forecasted future flood. This appendix includes EJ information not presented in the main report.

Section 2

Environmental Justice (EJ)

EJ is 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. Executive Order 12898 of 1994 directs Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of federal actions to minority and/or low-income populations. 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 2019 are those whose income are \$25,750 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.

Additionally, EO14008, Sections 219-222, stress the importance of achieving Environmental Justice. From EO 14008, "Agencies shall make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts. It is therefore the policy of my Administration to secure environmental justice and spur economic opportunity for disadvantaged communities that have been historically marginalized and overburdened by pollution and underinvestment in housing, transportation, water and wastewater infrastructure, and health care."

2.1 EJ METHODOLOGY

The first step in an EJ assessment is to identify Areas of EJ Concern. Maps are an excellent way to visually display the areas and for this EJ analysis, census block groups is the preferred geographic display. A Census Block Group is a geographical unit used by the United States Census Bureau which is, in size, between the Census Tract and the Census Block. It is the smallest geographical unit for which the bureau publishes sample data, i.e., data which is only collected from a fraction of all households. This data is available for the years between the decennial census (taken every 10 years). Typically, Block Groups have a population of 600 to 3,000 people.

The second step is to identify the impacts to areas of EJ concern from the federal action, in this case, the impacts of constructing a flood risk reduction system. The third step is to determine if the impacts to Areas of EJ Concern are high, adverse disproportionate impacts. If they are, a mitigation plan is required and developed through EJ outreach and engagement with residents of Areas of EJ Concern to develop measures that will avoid, minimize and reduce the impacts. Regardless, if adverse impacts are disproportionate or not, this EJ assessment provides mitigation measures of the adverse impacts.

A key element of the EJ assessment is EJ Outreach and engagement. Both of the Executive Orders mentioned at the beginning of this Appendix express the need to meet with residents who live in Areas of EJ Concern throughout the planning process. The goal of the outreach is to inform and engage with the hope of receiving comments about the project.

Two different tools are used to identify Areas of EJ Concern. The National Historic Geographic Information System (NHGIS) tool enables the user to download U.S. Census Bureau demographic data for several different geographic levels. This tool was used to help identify Areas of EJ Concern. A second tool is CEQ's Climate and Economic Justice Screening Tool which identifies disadvantage communities at the Census Tract level by using 25 metrics. If any one of the metrics is exceeded, the census tract is considered a "disadvantaged community". Both tools assist in providing data (ultimately all of it from the U.S. Census Bureau) to help identify disadvantaged communities (also referred to as Areas of EJ Concern). Areas of EJ Concern is the focus of the Executive Orders which state the importance of achieving Environmental Justice. A third source for this EJ analysis is EPA's EJSCREEN which lists 12 environmental indicators and an area's percentile rank compared to the region and the USA. This tool helps determine if any of the Areas of EJ Concern are overburdened with different types of environmental pollution.

Section 3

Affected Environment

Table M-1. Minority Population by Block Group (Areas of EJ Concern)

Location	Total	White	Black	Native American	Asian	Hawaiian	Some Other Race	Two or More Races	Percent Minority
Desoto County	184,945	119,740	55,988	275	3,175	-	2,462	3,303	35.3%
Census Tract*:									
708221	2,553	1,267	956	-	10	-	209	111	50.4%
703243	1,134	555	344	-	20	-	179	36	51.1%
703241	1,225	592	555	-	-	13	-	65	51.7%
703102	2,929	1,415	1,251	-	-	-	184	79	51.7%
704121	1,891	894	979	-	-	-	-	18	52.7%
707212	2,593	1,222	1,272	10	-	-	12	77	52.9%
703242	2,249	957	1,228	-	-	-	38	26	57.4%
703221	2,387	1,013	1,141	-	40	-	55	138	57.6%
708112	3,999	1,687	2,206	-	11	-	-	95	57.8%
702101	6,613	2,777	3,327	34	220	-	206	49	58.0%
706101	3,250	1,323	1,785	-	34	-	11	97	59.3%
705222	779	281	486	-	-	-	-	12	63.9%
703232	1,634	560	872	-	59	-	124	19	65.7%
703231	4,102	1,365	2,569	12	24	-	97	35	66.7%
701012	1,489	323	932	-	-	-	181	53	78.3%

*Number represents the Census Tract and Block Group, i.e., 708221 is Census Tract 70822, Block Group 1
Source: Steven Manson, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. IPUMS National Historical Geographic Information System: Version 16.0 [dataset]. Minneapolis, MN: IPUMS. 2021. <http://doi.org/10.18128/D050.V16.0>

*Table M-2: Persons Living
 Below Poverty: Areas of EJ Concern*

Location	Population Living Below Poverty
Desoto County	9.6%
Census Tract*:	
703102	20%
703252	20%
701012	20%
703231	21%
703101	21%
704121	23%
712001	24%
702213	25%
704222	25%
702212	26%
703242	29%
704212	30%
703241	33%
704122	46%
705222	50%

*Number represents the Census Tract and Block Group, i.e., 708221 is Census Tract 70822, Block Group 1
 Steven Manson, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. IPUMS National Historical Geographic Information System: Version 16.0 [dataset]. Minneapolis, MN: IPUMS. 2021. <http://doi.org/10.18128/D050.V16.0>

EJSCREEN

The EPA has developed an EJ mapping and screening tool called EJSCREEN, which is based on nationally consistent data and an approach that combines environmental and demographic indicators in the form of EJ indexes (<https://www.epa.gov/ejscreen> accessed 5/13/2021). Using EJSCREEN, the study area was evaluated to determine whether minority and /or low-income populations in the study area are overburdened by 12 environmental indicators:

1. Particulate Matter 2.5
2. Ozone
3. Diesel Particulate Matter
4. Air Toxics Cancer Risk

5. Air Toxics Respiratory Hazard Index
6. Traffic Proximity
7. Lead Paint
8. Risk Management Plan (RMP) Facility Proximity
9. Hazardous Waste Proximity
10. Superfund Proximity
11. Underground Storage Tanks (UST) and Leaking UST (LUST)
12. Wastewater Discharge

If an EJ community's exposure to an environmental indicator is above the 80th percentile in the state or USA and the Federal action (building a levee) exacerbates any of those environmental risks, a potential disproportionate impact may occur. Specifically, a disproportionate impact occurs when a proposed project impacts a much higher percentage of minority and low-income populations and disadvantaged communities more than other communities located within the study area or when the benefits and impacts are not evenly distributed between EJ and non EJ communities.

The EJSCREEN Report for DeSoto County (Table M-3) shows the area to be ranked fairly low on the pollution scale when compared to the EPA Region 4 and to the USA. All of these indices are below the 80th percentile, which means the areas of EJ concern are not overly burdened by these indexes more than all of the people in the comparison areas (EPA Region 4 and the USA). An EJ Index combines demographic factors with a single environmental factor. For example, the EJ Index for traffic is a combination of the following populations residing in the Census block group:

- The traffic indicator
- The low-income population
- The minority population

Note that an EJ index does not combine various environmental factors into a cumulative score -- each environmental indicator has its own EJ Index. The EJ Index is higher in block groups with large numbers of mainly low-income and/or minority residents with a higher environmental indicator value.

**Table M-3
 EJ Screen Report (Version 1.0)
 10 miles Ring Centered around Desoto County at 34.874665,-89.989014
 MISSISSIPPI, EPA Region 4
 Approximate Population: 155,664
 Input Area (sq. miles): 314.03**

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
Environmental Justice Indexes			
EJ Index for Particulate Matter 2.5	20	26	28
EJ Index for Ozone	18	28	31
EJ Index for 2017 Diesel Particulate Matter*	19	35	38
EJ Index for 2017 Air Toxics Cancer Risk*	23	31	29
EJ Index for 2017 Air Toxics Respiratory HI*	23	30	28
EJ Index for Traffic Proximity	62	61	61
EJ Index for Lead Paint	54	66	65
EJ Index for Superfund Proximity	21	31	40
EJ Index for RMP Facility Proximity	34	48	52
EJ Index for Hazardous Waste Proximity	5	13	25
EJ Index for Underground Storage Tanks	56	60	64
EJ Index for Wastewater Discharge	78	77	73

EJ Index for the Selected Area Compared to All People's Block groups in the State/Region

Relatedly, the Environmental Protection Agency (EPA) EJSCREEN is widely used by Federal and state agencies for a broad array of screening, outreach, and analytical purposes. EJSCREEN and CEJST complement each other – the former provides a tool to screen for potential disproportionate environmental burdens and harms at the community level, while the latter defines and maps disadvantaged communities for the purpose of informing how Federal agencies guide the benefits of certain programs, including through the Justice40 Initiative. These two tools are discussed in more detail in the EJ section of the main report particularly, Section 3.1.7.5.

Section 4

Best Management Practices and EJ Outreach

Mitigation of Construction-Related Impacts to areas of EJ concern:

Best Management Practices include several impact avoidance features which 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 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 MVM District would experience minor to moderate, temporary, adverse impacts due to transportation delays during the construction period, depending on the work involved.

Noise along all segments of levee construction would increase due to the temporary operation of equipment and vehicles used in the construction of the levee. 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 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.

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

Placement of temporary noise barriers adjacent to construction activities.

If machinery causing vibrations is used, the following noise and vibration monitoring language will be included in the contract specifications for specific 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 USACE. Such measurements would only be taken near residences and occupied buildings that could be adversely affected by excessive ground vibrations.

Construction equipment noise would be minimized during construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications), and by shrouding or shielding impact tools.

All equipment, haul trucks, and worker vehicles would be turned off when not in use for more than 30 minutes.

Equipment warm-up areas, water tanks, equipment storage areas, and staging areas would be located as far from existing residences as is feasible.

According to EPA's EJSCREEN environmental indicators for Desoto County (table M-3), the Air Toxics Respiratory Hazard Index is low and any temporary effect of dust related to construction activities or use of construction equipment is not expected to alter this index.

Additional EJ Outreach and Meetings

EJ Outreach will be conducted after the draft report is released to the public to gain insight from residents in areas of EJ concern about the proposed levee alignment and potential positive and adverse impacts. The outreach and meeting will coincide with the general public meeting that is planned after the draft report release. Notices will be sent to church leaders, government officials and others who have contacts with residents in areas of EJ concern about the upcoming meeting and our hope that they and the residents can attend the meeting and engage in dialogue about the project. Information about the meeting will be provided via outreach and will include a one-page summary about the project and the meeting information (place, time and how to submit comments).

Polygon shape files shown on the maps in the EJ sections of the main report and attribute data used in the EJ analysis are from Steven Manson, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. IPUMS National Historical Geographic Information System: Version 16.0 [dataset]. Minneapolis, MN: IPUMS. 2021. <http://doi.org/10.18128/D050.V16.0>