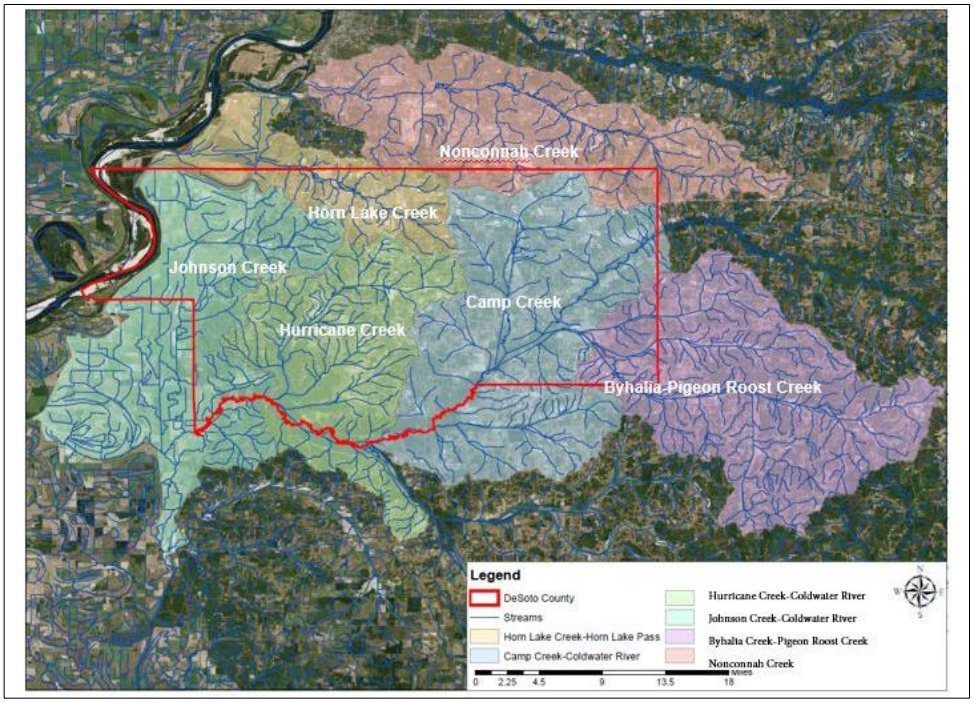
Mississippi Valley Division,
Regional Planning and Environment Division South

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



Appendix M – Environmental Justice

FEBRUARY 2023

CONTENTS

LIST OF TABLES

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. 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, including EPA's EJSCREEN reports for U.S. census block group 704121 which is where the 14 residential apartment structures proposed for the floodproofing measure are located.

Section 2
Environmental Justice

Environmental Justice (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 2020 are those living at or below poverty or whose income is at or below $26,200 for a family of four. The percent of population living below poverty for the State of Mississippi (19.6%) is the reference community and is the percentage used for this analysis when identifying areas of EJ concern based upon the low-income criteria.

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.

Commented [G(1]: "Areas of EJ Concern" is capitalized is some places and lowercase in others. Is this terminology from the EO that needs to be capital?

Commented [PARCUC(2R1]: No can be lower case.

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. EJ outreach is discussed at the end of this Appendix.

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. The NHGIS tool provides data (ultimately all of it from the U.S. Census Bureau) and maps that identify areas of EJ concern. Areas of EJ concern is the focus of the Executive Orders which state the importance of achieving Environmental Justice. A second source for this EJ analysis is EPA's EJSCREEN which lists demographic data and 12 environmental indicators and an area's percentile rank compared to the region and the USA. The environmental indicator report helps determine if any of the areas of EJ concern are overburdened with different types of environmental pollution further reinforcing its identification as an area of EJ concern.

Section 3
Affected Environment

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

Census Tract	Block Group	Total Population	White	Black	Native American	Asian	Hawaiian	Other Race	Two or more races	% Minority
70101	2	1624	282	1205	0	0	0	125	12	82.6%
70210	2	2728	996	1624	19	18	0	55	16	63.5%
70210	3	2545	638	1717	0	173	0	0	17	74.9%
70310	3	1988	726	1174	0	0	0	0	88	63.5%
70322	1	2647	954	1534	0	55	0	0	104	64.0%
70322	2	1616	800	780	0	36	0	0	0	50.5%
70323	1	1553	557	747	0	20	0	190	39	64.1%
70323	2	1706	251	1152	0	13	0	93	197	85.3%
70323	3	2434	730	1642	46	4	0	0	12	70.0%
70324	1	1064	456	506	2	0	11	2	87	57.1%
70324	2	1789	700	978	0	0	0	91	20	60.9%
70324	3	1198	405	638	0	4	0	122	29	66.2%
70412	1	1819	772	1015	0	5	0	10	17	57.6%
70522	2	916	342	563	0	0	0	0	11	62.7%
70523	1	2471	908	1526	0	17	0	0	20	63.3%
70610	2	1651	397	1254	0	0	0	0	0	76.0%
70721	2	2499	762	1427	0	176	0	22	112	69.5%
70721	3	804	384	362	22	0	0	0	36	52.2%
70723	2	1952	708	907	0	0	0	96	241	63.7%
70811	1	2687	1265	935	0	284	0	0	203	52.9%
70811	3	1748	740	1001	0	7	0	0	0	57.7%
70812	1	1723	856	764	0	0	0	103	0	50.3%
70812	2	1564	758	578	0	15	0	124	89	51.5%
70821	3	1729	818	816	0	0	0	60	35	52.7%
70822	2	1489	642	606	0	26	0	174	41	56.9%
71124	1	947	190	724	0	0	0	26	7	79.9%

Note: Using the minority criteria, any census block group having a population of 50% or more is identifying as an area of EJ concern.

Data is from U.S.Census Bureau 2020.

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

Census Tract	Block Group	Total Population*	Population Living Below Poverty	% Population Living Below Poverty
70101	2	1624	334	20.6%
70221	2	1509	396	26.2%
70221	3	625	143	22.9%
70310	2	514	243	47.3%
70323	2	1674	357	21.3%
70323	3	2430	655	27.0%
70324	1	1006	277	27.5%
70324	2	1789	718	40.1%
70412	1	1819	502	27.6%
70412	2	1228	537	43.7%
70421	2	865	331	38.3%
70422	2	1484	489	33.0%
70522	2	803	435	54.2%
70523	3	3924	1094	27.9%
70811	3	1721	488	28.4%
70822	3	1537	308	20.0%
71001	3	2242	479	21.4%
71200	1	810	169	20.9%

Note: Using the low-income criteria, any census block group having 19.6 percent or more of population living below poverty is an area of EJ concern. See the Existing Conditions Section 3.2.1.2.4 for a more detailed explanation of how areas of EJ concern are identified.

* For Whom Poverty Status is Known, U.S. Census Bureau 2020 Data

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

3.1 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 10/13/2022). Using EJSCREEN, the report shown in Table M-3 shows the demographics of the census block group where the 14 residential structures are located (704121). Sixty-five percent of the block group population is a person of color.

Table M-3

EJSCREEN ACS Summary Report

Location: Blockgroup: 280330704121
Ring (buffer): 0-mile radius
Description: Block Group

Summary of ACS Estimates	2016 - 2020
Population	1,819
Population Density (per sq. mile)	2,023
People of Color Population	1,181
% People of Color Population	65%
Households	807
Housing Units	970
Housing Units Built Before 1950	17
Per Capita Income	21,331
Land Area (sq. miles) (Source: SF1)	0.90
% Land Area	100%
Water Area (sq. miles) (Source: SF1)	0.00
% Water Area	0%

	2016 - 2020 **ACS Estimates**	**Percent**	**MOE (±)**
Population by Race			
Total	1,819	100%	440
Population Reporting One Race	1,802	99%	726
White	772	42%	308
Black	1,015	56%	358
American Indian	0	0%	14
Asian	5	0%	13
Pacific Islander	0	0%	14
Some Other Race	10	1%	19
Population Reporting Two or More Races	17	1%	31
Total Hispanic Population	161	9%	130

Total Non-Hispanic Population	1,658		
White Alone	638	35%	273
Black Alone	1,015	56%	358
American Indian Alone	0	0%	14
Non-Hispanic Asian Alone	5	0%	13
Pacific Islander Alone	0	0%	14
Other Race Alone	0	0%	14
Two or More Races Alone	0	0%	14
Population by Sex			
Male	802	44%	207
Female	1,017	56%	305
Population by Age			
Age 0-4	65	4%	54
Age 0-17	444	24%	165
Age 18+	1,375	76%	262
Age 65+	165	9%	84

Data Note: Detail may not sum to totals due to rounding.
N/A means not available. **Source:** U.S. Census Bureau Hispanic population can be of any race. Community American Survey (ACS) 2016 - 2020 .

October 13, 2022 1/3

EPA United States Environmental Protection Agency

EJSCREEN ACS Summary Report

Location: Blockgroup: 280330704121
Ring (buffer): 0-mile radius
Description: Block Group

	2016 - 2020 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	1,151	100%	238
Less than 9th Grade	99	9%	79
9th - 12th Grade, No Diploma	56	5%	46
High School Graduate	298	26%	105
Some College, No Degree	314	27%	122
Associate Degree	112	10%	65
Bachelor's Degree or more	272	24%	125

Population Age 5+ Years by Ability to Speak English			
Total	1,754	100%	417
Speak only English	1,534	87%	352
Non-English at Home[1+2+3+4]	220	13%	146
[1]Speak English "very well"	149	8%	124
[2]Speak English "well"	54	3%	72
[3]Speak English "not well"	0	0%	14
[4]Speak English "not at all"	17	1%	34
[3+4]Speak English "less than well"	17	1%	34
[2+3+4]Speak English "less than very well"	71	4%	79
Linguistically Isolated Households*			
Total	35	100%	42
Speak Spanish	18	51%	25
Speak Other Indo-European Languages	17	49%	31
Speak Asian-Pacific Island Languages	0	0%	14
Speak Other Languages	0	0%	14
Households by Household Income			
Household Income Base	807	100%	147
< $15,000	132	16%	81
$15,000 - $25,000	173	21%	90
$25,000 - $50,000	215	27%	102
$50,000 - $75,000	120	15%	74
$75,000 +	167	21%	95
Occupied Housing Units by Tenure			
Total	807	100%	147
Owner Occupied	235	29%	72
Renter Occupied	572	71%	125
Employed Population Age 16+ Years			
Total	1,431	100%	328
In Labor Force	981	69%	266
Civilian Unemployed in Labor Force	63	4%	52
Not In Labor Force	450	31%	167

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) *Households in which no one 14 and over speaks English "very well" or speaks English only.

October 13, 2022 2/3

EJSCREEN ACS SUMMARY REPORT

Location: Blockgroup: 280330704121
Ring (buffer): 0-mile radius
Description: Block Group

	2016 - 2020 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	3,813	100%	630
English	3,551	93%	585
Spanish	243	6%	198
French, Haitian, or Cajun	0	0%	14
German or other West Germanic	0	0%	14
Russian, Polish, or Other Slavic	17	0%	31
Other Indo-European	0	0%	14
Korean	0	0%	14
Chinese (including Mandarin, Cantonese)	0	0%	14
Vietnamese	0	0%	14
Tagalog (including Filipino)	2	0%	4
Other Asian and Pacific Island	0	0%	14
Arabic	0	0%	14
Other and Unspecified	0	0%	14

Total Non-English	262	7%	860

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2016 - 2020.
*Population by Language Spoken at Home is available at the census tract summary level and up.

October 13, 2022 3/3

Additionally, Table M-4 shows the block group was evaluated to determine whether populations 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

The EJSCREEN Report for block group 704121 (Table M-4) shows the area to be ranked fairly high on the pollution scale when compared to the EPA Region 4 and to the USA. Nearly all of these indices are at or above the 80th percentile, which means the block group 70412 population (an area of EJ concern based upon the area meeting the poverty and minority criteria) are also overly burdened by these indexes when compared to EPA Region 4 and the USA. The high burden this area is experiencing from environmental pollutants further reinforces the determination of an area of EJ concern.

If an EJ community's exposure to an environmental indicator is above the 80th percentile in the state or USA and the federal action (i.e., building a levee) exacerbates any of those environmental risks, mitigation may be required. The EJ Index for Traffic Proximity is at the 86th percentile for Block Group 704121, an area of EJ concern. The levee/floodwall project, once constructed, will not exacerbate traffic congestion in the area. In fact, the proposed alternative parking arrangement (that is part of the RP) that will be available to residents of apartment buildings along Sutton Place prior to a forecasted flooding rain event will help alleviate the potential traffic burden to residents during a flood. The other EJ indexes above the 80th percentile shown in Table M-4 are not expected to be exacerbated by the with-project condition.

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.

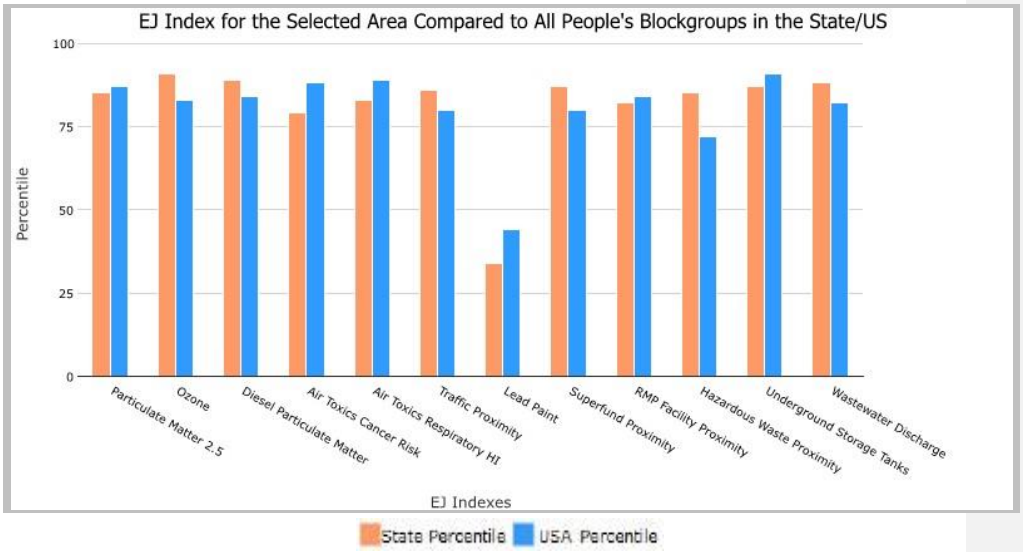
Table M-4

EJSCREEN REPORT (VERSION 2.1)

Blockgroup: 280330704121, MISSISSIPPI, EPA Region 4

Approximate Population: 1,819 Input Area (sq. miles): 0.90 Block Group

Selected Variables	State Percentile	USA Percentile
Environmental Justice Indexes		
EJ Index for Particulate Matter 2.5	85	87
EJ Index for Ozone	91	83
EJ Index for Diesel Particulate Matter*	89	84
EJ Index for Air Toxics Cancer Risk*	79	88
EJ Index for Air Toxics Respiratory HI*	83	89
EJ Index for Traffic Proximity	86	80
EJ Index for Lead Paint	34	44
EJ Index for Superfund Proximity	87	80
EJ Index for RMP Facility Proximity	82	84
EJ Index for Hazardous Waste Proximity	85	72
EJ Index for Underground Storage Tanks	87	91
EJ Index for Wastewater Discharge	88	82



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

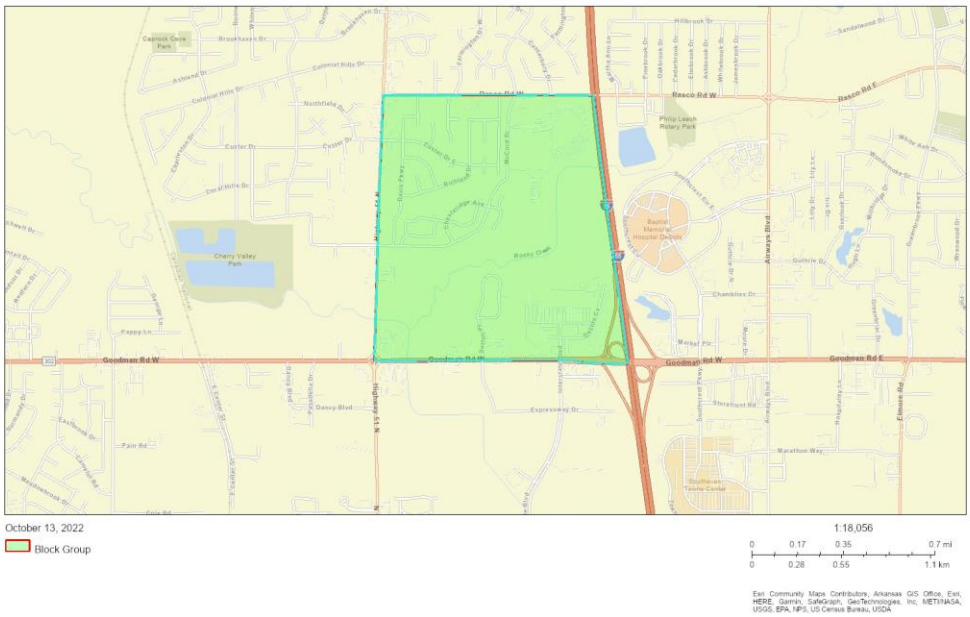
October 13, 2022 1/3

Section 4 EJSCREEN REPORT (VERSION 2.1)

Blockgroup: 280330704121, MISSISSIPPI, EPA Region 4

Approximate Population: 1,819 Input Area (sq. miles): 0.90

Block Group



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJSCREEN REPORT (VERSION 2.1)

Blockgroup: 280330704121, MISSISSIPPI, EPA Region 4

Approximate Population: 1,819 Input Area (sq. miles): 0.90 Block Group

Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Pollution and Sources					
Particulate Matter 2.5 (µg/m³)	9.45	9.12	74	8.67	75
Ozone (ppb)	43.1	37.6	99	42.5	58
Diesel Particulate Matter* (µg/m³)	0.348	0.15	97	0.294	70-80th
Air Toxics Cancer Risk* (lifetime risk per million)	40	32	99	28	95-100th
Air Toxics Respiratory HI*	0.5	0.42	97	0.36	95-100th
Traffic Proximity (daily traffic count/distance to road)	390	150	89	760	61
Lead Paint (% Pre-1960 Housing)	0.018	0.15	18	0.27	17
Superfund Proximity (site count/km distance)	0.073	0.069	76	0.13	56
RMP Facility Proximity (facility count/km distance)	0.83	0.6	80	0.77	70
Hazardous Waste Proximity (facility count/km distance)	0.51	0.33	80	2.2	45
Underground Storage Tanks (count/km²)	12	2.9	94	3.9	91
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.0024	0.03	87	12	57
Socioeconomic Indicators					
Demographic Index	57%	44%	69	35%	80
People of Color	65%	44%	69	40%	75
Low Income	50%	41%	61	30%	79
Unemployment Rate	6%	7%	58	5%	68
Limited English Speaking Households	4%	1%	93	5%	73
Less Than High School Education	13%	15%	48	12%	67
Under Age 5	4%	6%	36	6%	36
Over Age 64	9%	16%	18	16%	23

*Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/airtoxics-data-update.

For additional information, see: www.epa.gov/environmentaljustice

EJScreen is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJScreen outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

October 13, 2022 3/3

Section 5
Best Management Practices and EJ Outreach

5.1 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 are 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:

- The contractor, as a best management practice and as practicable, would restrict work to regular business hours (approximately 0700-1900) on weekdays to reduce potential effects from noise and increased truck traffic to the identified existing EJ community and general public.
- 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
- Limit pile driving activities associated with pile founded T-walls to daylight hours
- Use vibration monitoring equipment that measures 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.

Commented [G(3]: Turn this into a bulleted list, or don't, just match formatting from list above (short-term impacts).

Commented [DJLCUC(4R3]: Created a bulleted list.

Commented [SDMJCUC(5]: Are these supposed to be sub-bullet points?

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.

5.2 EJ OUTREACH AND MEETINGS

EJ Outreach was conducted after the draft report was 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 coincided with the general public meeting that took place after the draft report was released.

Public outreach was done across North De Soto County in the cities of Horn Lake, Southaven, Olivebranch, and Hernando in order to best reach residents in areas of EJ concern. Initial and follow up calls were made to 90 churches, four local public libraries, and two civic organizations. Of the 96 total entities contacted, 32 churches leaders, four local public libraries, and two civic organizations agreed to disseminate our-page summary, about the project and meeting information, to residents and their contacts.

Polygon shapefiles 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