UPPER MISSISSIPPI RIVER RESTORATION FEASIBILITY REPORT WITH INTEGRATED ENVIRONMENTAL ASSESSMENT

GREEN ISLAND HABITAT REHABILITATION AND ENHANCEMENT PROJECT

> POOL 13, UPPER MISSISSIPPI RIVER RIVER MILES 545.9 THROUGH 548.7 JACKSON COUNTY, IOWA

APPENDIX G ECONOMIC AND SOCIAL CONSIDERATIONS

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TABLE OF CONTENTS TOC will be completed when main report is finalized

1.1 General. The U.S. Army Corps of Engineers (USACE) Institute for Water Resources have developed a regional economic impact modeling tool, RECONS (Regional ECONomic System), that provides estimates of jobs and other economic measures such as labor income, value added, and sales that are supported by USACE programs, projects, and activities. This modeling tool automates calculations and generates estimates of jobs, labor income, value added, and sales using IMPLAN®'s multipliers and ratios, customized impact areas for USACE project locations, and customized spending profiles for USACE projects, business lines, and work activities. RECONS allows the USACE to evaluate the regional economic impact and contribution associated with USACE expenditures, activities, and infrastructure.

1.2 Description of Metrics. "Output" is the sum total of transactions that take place as a result of the construction project, including both value added and intermediate goods purchased in the economy. "Labor Income" includes all forms of employment income, including employee compensation (wages and benefits) and proprietor income. "Value Added" or "Gross Regional Product" represents the value-added output of the study regions. This metric captures all final goods and services produced in the study areas because of the existence of the project. It is different from output in the sense that one dollar of a final good or service may have multiple transactions associated with it. "Jobs" is the estimated worker-years of labor required to build the project.

1.3 Assumptions. Input-output analysis rests on the following assumptions. The production functions of industries have constant returns to scale, so if output is to increase, inputs will increase in the same proportion. Industries face no supply constraints; they have access to all the materials they can use. Industries have a fixed commodity input structure; they will not substitute any commodities or services used in the production of output in response to price changes. Industries produce their commodities in fixed proportions, so an industry will not increase production of a commodity without increasing production in every other commodity it produces. Furthermore, it is assumed that industries use the same technology to produce all their commodities.

1.4 Results

1.4.1. Cadillac Plan – Alternative 2. The expenditures associated with All Work Activities, with Ability to Customize Impact Area and Work Activity at Jackson (IA) are estimated to be \$33,824,000. Of this total expenditure, \$24,940,700 will be captured within the local impact area. The remainder of the expenditures will be captured within the state impact area and the nation. These direct expenditures generate additional economic activity, often called secondary or multiplier effects.

The direct and secondary impacts are measured in output, jobs, labor income, and gross regional product (value added) as summarized in the following tables. The regional economic effects are shown for the local, state, and national impact areas. In summary, the expenditures \$33,824,000 support a total of 270.9 full-time equivalent jobs, \$15,461,038 in labor income, \$19,603,202 in the gross regional product, and \$35,529,484 in economic output in the local impact area. More broadly, these expenditures support 568 full-time equivalent jobs, \$38,664,713 in labor income, \$53,536,269 in the gross regional product, and \$88,375,826 in economic output in the nation. The results of the RECONs analysis are summarized in Table G-1.

Area	Local Capture	Output	Jobs*	Labor Income	Value Added
Local					
Direct Impact		\$24,940,700	198.3	\$12,751,893	\$14,346,582
Secondary Impact		\$10,588,783	72.6	\$2,709,145	\$5,256,620
Total Impact	\$24,940,700	\$35,529,484	270.9	\$15,461,038	\$19,603,202
State					
Direct Impact		\$27,168,128	220.0	\$14,791,715	\$17,773,838
Secondary Impact		\$18,742,264	108.6	\$5,845,926	\$10,244,880
Total Impact	\$27,168,128	\$45,910,391	328.6	\$20,637,641	\$28,018,717
US					
Direct Impact		\$33,588,501	317.2	\$21,312,760	\$23,620,147
Secondary Impact		\$54,787,325	250.6	\$17,351,953	\$29,916,121
Total Impact	\$33,588,501	\$88,375,826	567.7	\$38,664,713	\$53,536,269

Table G-1. Green Island Habitat Rehabilitation and Enhance ProjectRegional Economic Development Summary (Alternative 2)

*Jobs are presented in full-time equivalence (FTE).

1.4.2. Critical Small Plan – Alternative 3. The expenditures associated with All Work Activities, with Ability to Customize Impact Area and Work Activity at Jackson (IA) are estimated to be \$28,154,000. Of this total expenditure, \$20,759,830 will be captured within the local impact area. The remainder of the expenditures will be captured within the state impact area and the nation. These direct expenditures generate additional economic activity, often called secondary or multiplier effects. The direct and secondary impacts are measured in output, jobs, labor income, and gross regional product (value added) as summarized in the following tables. The regional economic effects are shown for the local, state, and national impact areas. In summary, the expenditures \$28,154,000 support a total of 225.5 full-time equivalent jobs, \$12,869,266 in labor income, \$16,317,069 in the gross regional product, and \$29,573,589 in economic output in the local impact area. More broadly, these expenditures support 472.6 full-time equivalent jobs, \$32,183,253 in labor income, \$44,561,853 in the gross regional product, and \$73,561,170 in economic output in the nation. The results of the RECONs analysis are summarized in Table G-2.

Area	Local Capture	Output	Jobs ¹	Labor Income	Value Added		
Local							
Direct Impact		\$20,759,830	165.0	\$10,614,262	\$11,941,629		
Secondary Impact		\$8,813,760	60.4	\$2,255,004	\$4,375,440		
Total Impact	\$20,759,830	\$29,573,589	225.5	\$12,869,266	\$16,317,069		
State							
Direct Impact		\$22,613,868	183.1	\$12,312,144	\$14,794,366		
Secondary Impact		\$15,600,452	90.4	\$4,865,959	\$8,527,505		
Total Impact	\$22,613,868	\$38,214,320	273.5	\$17,178,103	\$23,321,871		
US							
Direct Impact		\$27,957,979	264.0	\$17,740,050	\$19,660,644		
Secondary Impact		\$45,603,191	208.6	\$14,443,202	\$24,901,209		
Total Impact	\$27,957,979	\$73,561,170	472.6	\$32,183,253	\$44,561,853		

Table G-2. Green Island Habitat Rehabilitation and Enhance Project Regional Economic Development Summary (Alternative 3)

Jobs are presented in full-time equivalence

1.4.3. No Pump No Browns Lake Outlet – Alternative 5. The expenditures associated with All Work Activities, with Ability to Customize Impact Area and Work Activity at Jackson (IA) are estimated to be \$9,264,000. Of this total expenditure, \$6,830,968 will be captured within the local impact area. The remainder of the expenditures will be captured within the state impact area and the nation. These direct expenditures generate additional economic activity, often called secondary or multiplier effects. The direct and secondary impacts are measured in output, jobs, labor income, and gross regional product (value added) as summarized in the following tables. The regional economic effects are shown for the local, state, and national impact areas. In summary, the expenditures \$9,264,000 support a total of 74 full-time equivalent jobs, \$4,234,598 in labor income, \$5,369,089 in the gross regional product, and \$9,731,112 in economic output in the local impact area. More broadly, these expenditures support 155.5 full-time equivalent jobs, \$10,589,815 in labor income, \$14,662,961 in the gross regional product, and \$24,205,110 in economic output in the nation. The results of the RECONs analysis are summarized in Table G-3.

Area	Local Capture	Output	Jobs*	Labor Income	Value Added
Local					
Direct Impact		\$6,830,968	54.3	\$3,492,595	\$3,929,362
Secondary Impact		\$2,900,145	19.9	\$742,003	\$1,439,727
Total Impact	\$6,830,968	\$9,731,112	74.2	\$4,234,598	\$5,369,089
State					
Direct Impact		\$7,441,034	60.3	\$4,051,279	\$4,868,047
Secondary Impact		\$5,133,288	29.7	\$1,601,131	\$2,805,953
Total Impact	\$7,441,034	\$12,574,322	90.0	\$5,652,410	\$7,674,001
US					
Direct Impact		\$9,199,500	86.9	\$5,837,317	\$6,469,284
Secondary Impact		\$15,005,611	68.6	\$4,752,498	\$8,193,677
Total Impact	\$9,199,500	\$24,205,110	155.5	\$10,589,815	\$14,662,961

Table G-3. Green Island Habitat Rehabilitation and Enhance Project Regional Economic Development Summary (Alternative 5)

*Jobs are presented in full-time equivalence

1.4.4. Iowa Department of Natural Resources – Alternative 6. The expenditures associated with All Work Activities, with Ability to Customize Impact Area and Work Activity at Jackson (IA) are estimated to be \$32,124,000. Of this total expenditure, \$23,687,177 will be captured within the local impact area. The remainder of the expenditures will be captured within the state impact area and the nation. These direct expenditures generate additional economic activity, often called secondary or multiplier effects. The direct and secondary impacts are measured in output, jobs, labor income, and gross regional product (value added) as summarized in the following tables. The regional economic effects are shown for the local, state, and national impact areas. In summary, the expenditures \$32,124,000 support a total of 257.3 full-time equivalent jobs, \$14,683,963 in labor income, \$18,617,941 in the gross regional product, and \$33,743,766 in economic output in the local impact area. More broadly, these expenditures support 539 full-time equivalent jobs, \$36,721,418 in labor income, \$50,845,527 in the gross regional product, and \$83,934,042 in economic output in the nation. The results of the RECONs analysis are summarized in Table G-4.

Area	Local Capture	Output	Jobs*	Labor Income	Value Added
Local					
Direct Impact		\$23,687,177	188.3	\$12,110,980	\$13,625,520
Secondary Impact		\$10,056,589	69.0	\$2,572,983	\$4,992,422
Total Impact	\$23,687,177	\$33,743,766	257.3	\$14,683,963	\$18,617,941
State					
Direct Impact		\$25,802,653	208.9	\$14,048,281	\$16,880,521
Secondary Impact		\$17,800,274	103.1	\$5,552,109	\$9,729,970
Total Impact	\$25,802,653	\$43,602,927	312.1	\$19,600,390	\$26,610,492
US					
Direct Impact		\$31,900,338	301.2	\$20,241,578	\$22,432,995
Secondary Impact		\$52,033,704	238.0	\$16,479,841	\$28,412,532
Total Impact	\$31,900,338	\$83,934,042	539.2	\$36,721,418	\$50,845,527

Table G-4. Green Island Habitat Rehabilitation and Enhance Project Regional Economic Development Summary (Alternative 6)

2 ENVIRONMENTAL JUSTICE

Environmental justice (EJ) is defined 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, with no group bearing a disproportionate burden of environmental harms and risks.

Several Executive Orders (EO) direct Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of Federal actions to "minority" and/or "low-income" populations¹:

- EO 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 16, 1994)
- EO 13985: Advancing Racial Equity and Support for Underserved Communities through the Federal Government (January 20, 2021)
- EO 13990: Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis (January 20, 2021)
- EO 14008: Tackling the Climate Crisis at Home and Abroad (January 27, 2021)

Environmental justice concerns may arise from impacts on the chemical, biological and physical environment, such as human health or ecological impacts on communities of color,² economically disadvantaged,³ and/or tribal and Indigenous American populations, or from

¹ Executive Order 12898 utilizes the terms "minority" and "low income." Recent Executive Orders use a broader term, "disadvantaged," which includes communities that are historically and currently marginalized, underserved, and overburdened by pollution.

² The phrase "communities of color" and/or "people of color" are used in place of the term "minority." All three terms/phrases include people who list their racial status as a race other than non-Hispanic, white-alone individuals.

³ The phrase "economically disadvantaged" is used in addition to "low-income." Note that EJ SCREEN tools specifically use "low-income" in their demographic indicators.

related social or economic impacts. The Council of Environmental Quality (CEQ) guidance on conducting EJ analyses in NEPA documents (CEQ, 1997) and Promising Practices for EJ Methodologies in NEPA Reviews (CEQ, 2016) indicate that 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 or other appropriate unit of geographic analysis. The CEQ guidance also recommends utilizing the Census Bureau's poverty measures in determining "low-income" populations. The Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. For EJ analysis, "low-income" is considered a percent of census tract's population in households where household income is at or below 200% of the Federal poverty level. The Corps conducted an evaluation of EJ impacts using a two-step process. As a first step, the affected area was evaluated using the EPA Environmental Justice Screening and Mapping Tool (EJSCREEN) (USEPA, 2022) and CEQ's Climate and Economic Justice Screen Tool (beta version) (CEQ, 2022) to determine whether it contains a concentration of communities of color and/or economically disadvantaged populations. Following that evaluation, the Corps determined whether the proposed action and its alternatives would result in negative effects on human health, environmental, climate-related and other impacts on communities.

2.1 EJ Screening Tool. Using EJSCREEN, a 2.5-mile radius was created around the study area to capture both IA and IL affected areas. This area includes Jackson County IA and Carroll and Jo Daviess Counties in IL. The tool identified 3% value for communities of color in the affected area which is lower than the 50 percent threshold. This value is not meaningfully greater than the general population of the state average (15%). Additional census tract mapping available in EJSCREEN determined that there was no "minority" population in the affected area. The "low-income" populations in the IA and IL affected area counties (30%) are above the 20% threshold and are similar to the general state populations (28%). Further refinement of the analysis through census tract mapping in EJSCREEN determined that there is a "low-income" population adjacent to the affected area. The Corps identified an economically disadvantaged population to the east of the Project area in Carroll County and to the south of the Project area in Jackson County, IA.

EJScreen Report (Version 2.11)

2.5 miles Ring around the Area IOWA, EPA Region 7 Approximate Population: 245 Input Area (sq. miles): 43.57

Socioeconomic Indicators	Value	State Avg.	%ile in State	USA	%ile in USA
Demographic Index	17%	22%	45	35%	25
Supplemental Demographic Index	12%	12%	57	15%	46
People of Color	3%	15%	25	40%	10
Low Income	30%	28%	58	30%	53
Unemployment Rate	6%	4%	76	5%	64
Limited English Speaking	1%	2%	73	5%	57
Less Than High School Education	8%	8%	65	12%	50
Under Age 5	4%	6%	33	6%	40
Over Age 64	14%	17%	35	16%	46

2.2 Climate and Economic Justice Screening Tool. The Climate and Economic Justice Screening Tool (CEJST) was used per EO 14008. This tool identifies communities with significant burdens in the following categories: climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. A community is considered disadvantaged if they are in a census tract that is at or above the 90th percentile in the one of the eight burden categories and are at or above the 65th percentile for low income. Each burden category has number of datasets that help identify specific burdens. All federally recognized tribes including Alaska Native Villages are also considered disadvantaged communities. A detailed description of methodology can be found on the CEJST website. The census tract that encompasses the Project area is not considered disadvantaged, however, the census tract directly north of the study area in Jo Daviess County is considered disadvantaged within the energy, health, and legacy pollution categories.