



**US Army Corps
of Engineers®**
St. Paul District

Appendix J: RECONS

Riverbank Stabilization Project Feasibility Report and Integrated Environmental Assessment

Section 203 Tribal Partnership Program

February 2023

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Appendix J: RECONS

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Appendix J – RECONS Analysis

1. General

The U.S. Army Corps of Engineers (USACE) Institute for Water Resources, Louis Berger, and Michigan State University 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 through the use of 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.

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.

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. The costs were calculated using FY 2023 price levels.

4. Results

a. Alternative 1 RECONS Results

The expenditures associated with All Work Activities, with Ability to Customize Impact Area and Work Activity at Renville (MN) are estimated to be \$1,817,000. Of this total expenditure, \$1,063,209 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 \$1,817,000 support a total of 12.7 full-time equivalent jobs, \$789,671 in labor income, \$939,978 in the gross regional product, and \$1,469,022 in economic output in the local impact area. More broadly, these expenditures support 31.4 full-time equivalent jobs, \$2,265,796 in labor income, \$2,904,744 in the gross regional product, and \$4,885,940 in economic output in the nation. Table 1 summarizes these results.

Table 1. Lower Sioux Indian Community Section 203 Feasibility Report
Regional Economic Development (RED) Summary for Alternative 1

Area	Output	Jobs*	Labor Income	Value Added
Local				
Direct Impact	\$1,063,209	10.4	\$678,274	\$720,731
Secondary Impact	\$405,813	2.3	\$111,397	\$219,247
Total Impact	\$1,469,022	12.7	\$789,671	\$939,978
State				
Direct Impact	\$1,441,156	13.4	\$1,039,043	\$1,003,072
Secondary Impact	\$1,568,234	8.3	\$548,959	\$889,945
Total Impact	\$3,009,390	21.7	\$1,588,001	\$1,893,017
US				
Direct Impact	\$1,749,207	16.8	\$1,259,640	\$1,184,556
Secondary Impact	\$3,136,733	14.7	\$1,006,156	\$1,720,188
Total Impact	\$4,885,940	31.4	\$2,265,796	\$2,904,744

* Jobs are presented in full-time equivalence (FTE). FY 2023 Price levels.

b. Alternative 2 RECONS Results

The expenditures associated with All Work Activities, with Ability to Customize Impact Area and Work Activity at Renville (MN) are estimated to be \$1,429,000. Of this total expenditure, \$836,173 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 \$1,429,000 support a total of 10.0 full-time equivalent jobs, \$621,046 in labor income, \$739,256 in the gross regional product, and \$1,155,329 in economic output in the local impact area. More broadly, these expenditures support 24.7 full-time equivalent jobs, \$1,781,961 in labor income, \$2,284,468 in the gross regional product, and \$3,842,602 in economic output in the nation. Table 2 summarizes these results.

Table 2. Lower Sioux Indian Community Section 203 Feasibility Report
Regional Economic Development (RED) Summary for Alternative 2

Area	Output	Jobs*	Labor Income	Value Added
Local				
Direct Impact	\$836,173	8.2	\$533,436	\$566,827
Secondary Impact	\$319,156	1.8	\$87,609	\$172,429
Total Impact	\$1,155,329	10.0	\$621,046	\$739,256
State				
Direct Impact	\$1,133,413	10.5	\$817,167	\$788,877
Secondary Impact	\$1,233,355	6.6	\$431,735	\$699,907
Total Impact	\$2,366,768	17.1	\$1,248,901	\$1,488,784
US				
Direct Impact	\$1,375,684	13.2	\$990,658	\$931,607
Secondary Impact	\$2,466,919	11.6	\$791,303	\$1,352,861
Total Impact	\$3,842,602	24.7	\$1,781,961	\$2,284,468

* Jobs are presented in full-time equivalence (FTE). FY 2023 Price levels.

c. Alternative 3 RECONS Results

The expenditures associated with All Work Activities, with Ability to Customize Impact Area and Work Activity at Renville (MN) are estimated to be \$1,855,000. Of this total expenditure, \$1,085,445 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 \$1,855,000 support a total of 12.9 full-time equivalent jobs, \$806,186 in labor income, \$959,636 in the gross regional product, and \$1,499,745 in economic output in the local impact area. More broadly, these expenditures support 32.1 full-time equivalent jobs, \$2,313,182 in labor income, \$2,965,493 in the gross regional product, and \$4,988,123 in economic output in the nation. Table 3 summarizes these results.

Table 3. Lower Sioux Indian Community Section 203 Feasibility Report
Regional Economic Development (RED) Summary for Alternative 3

Area	Output	Jobs*	Labor Income	Value Added
Local				
Direct Impact	\$1,085,445	10.6	\$692,459	\$735,804
Secondary Impact	\$414,300	2.3	\$113,726	\$223,832
Total Impact	\$1,499,745	12.9	\$806,186	\$959,636
State				
Direct Impact	\$1,471,296	13.7	\$1,060,773	\$1,024,050
Secondary Impact	\$1,601,031	8.5	\$560,439	\$908,557
Total Impact	\$3,072,327	22.2	\$1,621,212	\$1,932,607
US				
Direct Impact	\$1,785,789	17.1	\$1,285,984	\$1,209,329
Secondary Impact	\$3,202,333	15.0	\$1,027,198	\$1,756,164
Total Impact	\$4,988,123	32.1	\$2,313,182	\$2,965,493

* Jobs are presented in full-time equivalence (FTE). FY 2023 Price levels.

d. Alternative 4 RECONS Results

The expenditures associated with All Work Activities, with Ability to Customize Impact Area and Work Activity at Renville (MN) are estimated to be \$1,978,000. Of this total expenditure, \$1,157,418 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 \$1,978,000 support a total of 13.8 full-time equivalent jobs, \$859,642 in labor income, \$1,023,267 in the gross regional product, and \$1,599,189 in economic output in the local impact area. More broadly, these expenditures support 34.2 full-time equivalent jobs, \$2,466,563 in labor income, \$3,162,126 in the gross regional product, and \$5,318,871 in economic output in the nation. Table 4 summarizes these results.

Table 4. Lower Sioux Indian Community Section 203 Feasibility Report
Regional Economic Development (RED) Summary for Alternative 4

Area	Output	Jobs*	Labor Income	Value Added
Local				
Direct Impact	\$1,157,418	11.3	\$738,375	\$784,593
Secondary Impact	\$441,771	2.5	\$121,267	\$238,674
Total Impact	\$1,599,189	13.8	\$859,642	\$1,023,267
State				

Direct Impact	\$1,568,853	14.6	\$1,131,110	\$1,091,952
Secondary Impact	\$1,707,191	9.1	\$597,601	\$968,801
Total Impact	\$3,276,045	23.6	\$1,728,710	\$2,060,753

US

Direct Impact	\$1,904,200	18.2	\$1,371,254	\$1,289,516
Secondary Impact	\$3,414,671	16.0	\$1,095,309	\$1,872,610
Total Impact	\$5,318,871	34.2	\$2,466,563	\$3,162,126

* Jobs are presented in full-time equivalence (FTE). FY 2023 Price levels.