

Economic Benefits Analysis of South Platte River Water Supply Protection

Prepared for

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Background

The State of Nebraska commissioned a reconnaissance-level analysis of the economic benefits of developing additional storage and conveyance off the South Platte River to meet current and sustain future water supply needs in Nebraska. The project considered is the Perkins County Canal Project, also known as the South Divide Canal Project (the Project). The economic benefits analysis establishes the value of water provided by the Project to different beneficiaries. Project benefits are expressed as an annual value and as a total present value over the economic life of the Project. As a next step, a feasibility-level assessment of costs could then be compared to calculate the benefit-cost ratio and estimate the economic feasibility of the Project.

At this time the overall operations and yield of the Project have not been fully evaluated, including how it would fit into and affect the operation of the larger Platte Basin ground and surface water system. For the purposes of this reconnaissance-level economic assessment, it was estimated that the Project could collect wintertime and other excess flows and store the water in one or more reservoirs, providing an average annual supply of 100,000 acre-feet (AF) for agricultural preservation, represented by the instream and environmental benefits that will be maintained through the South Platte and Central Platte Rivers, and 100,000 AF of annual municipal supply firming in the lower Platte River that would continue to support existing municipal supply needs. The recreational benefits of water storage along the South Platte River were estimated based on the creation of surface acres in the new reservoirs. Hydropower operations would also be expected to improve by 20,000 AF annually through interconnection of this canal and reservoir system to existing hydropower facilities. The Project would provide additional opportunities to improve the timing of Platte River flows for habitat and ecosystem objectives. These additional habitat and ecosystem benefits were not quantified at this initial phase.

Conservative economic methods and assumptions were applied to establish the economic benefits of the Project in this reconnaissance-level assessment. For example, some potential benefits, such as flood control and endangered species-specific improvements, are not quantified but could add additional value. Therefore, this analysis represents a “floor” for potential economic benefits of the Project. Ongoing economic analyses and refinements to the Project configuration, operations, and costs may consider some of these additional factors.

Evaluation Summary

The economic benefits of the Project considered for this reconnaissance-level assessment include:

- **Environmental Flows.** The Project would protect flows for the Associated Habitats Reach on the Platte River. This would help augment Platte River Recovery Implementation Program (PRRIP) objectives and assist future Endangered Species Act compliance past the termination date of PRRIP. The project could also help support State instream flow objectives.
- **Agriculture.** The Project would support a more reliable water supply for growers along the Platte River, allowing irrigated agriculture to remain in production. This provides an economic benefit to corn farming and ancillary industries, particularly in rural communities across the state.

- **Municipal and Industrial (M&I).** Many municipalities along the Platte River continue to grow. The Project would provide support for existing water supplies that allow the cities to forgo more expensive alternative projects if these supplies were to be lost.
- **Recreation.** Recreation demand for flatwater and river-based water activities is an important part of the tourism economy in Nebraska. Lake McConaughy recently capped annual visitations at 2 million. The Project would develop additional reservoir storage that would support additional flatwater recreation and additional flows on the Platte River may improve river-based activities.
- **Hydropower.** The Project would provide water supply for hydropower through reoperation of the existing systems. This could include releases at Lake McConaughy as well as downstream hydropower plants operated by Nebraska Public Power District and Central Nebraska Public Power and Irrigation District. Clean hydropower generation provides a benefit to the state.
- **Other Benefits.** Other Project benefits not yet included in this preliminary assessment include, species-specific habitat improvements, potential water quality benefits, and flood control. These, and other, potential economic benefits of the Project can be refined under future planning studies.

Table 1 summarizes the results of the economic benefits analysis for the Project. The annual benefits are estimated to equal \$54.3 million with a range of \$45.1 to \$70.8 million. Over a 50-year planning horizon, the net present value (NPV) of benefits is estimated to equal \$1.38 billion, with a range of \$1.15 to \$1.81 billion. Additional regional economic effects would be created as the Project would protect or create an estimated 900 to 1,400 jobs in Nebraska. It would also create additional Nebraska jobs during Project construction. This would stimulate additional business activity in related industries with associated effects for Nebraska. These regional economic effects can be quantified and further refined under future planning studies for the Project.

Table 1. Project Economic Benefits Summary (\$ in millions)

	Annual Benefit	Annual Benefit Range	50-Year NPV	50-Year NPV Range
Agriculture / Environment	\$22.1	\$19.5 - \$32	\$586.08	\$517.1 - \$848.3
M&I	\$25.0	\$19.9 - \$30.1	\$662.54	\$527.4 - \$797.7
Recreation	\$7.1	\$5.7 - \$8.5	\$133.23	\$106.6 - \$159.9
Hydroelectric	\$0.04	\$0.01 - \$0.18	\$0.93	\$0.3 - \$4.7
Total	\$54.3	\$45.1 - \$70.8	\$1,382.79	\$1,151.3 - \$1,810.6