- Purpose
- Benefits
- Participants

J-2 Regulating Reservoirs

- Design & Operations
- Construction Schedule
- Funding

Purpose of the J-2 Regulating Reservoirs

The J-2 Regulating Reservoirs Project is part of a larger plan to enhance flows in the Platte River for the benefit of threatened and endangered species and to provide integrated water management benefits for Nebraska. The reservoirs will be located south of the Platte River between Lexington and Overton, Nebraska. Water from The Central Nebraska Public Power and Irrigation District's (Central) hydro-irrigation system will be retimed in the reservoirs and then returned to the Platte River for the benefit of threatened and endangered species. The reservoirs also help Central to more efficiently use its limited water supply, allowing for more power generation with the same amount of water.

Construction of the reservoirs is a joint effort by Central, the Platte River Recovery and Implementation Program (Platte River Program), the State of Nebraska, and several Platte River basin Natural Resources Districts.

The J-2 Regulating Reservoirs have been studied extensively and many alternatives — including variations of the current configuration — were also examined. It was concluded that the reservoirs are the best alternative to address many issues associated with the Program's objectives, the state's need for offsets to depletions, and Central's project operations.

The site was geographically and hydraulically preferable to other alternatives and obtaining a large and reliable volume of water from the project was found to be considerably more cost-efficient than a combination of smaller water projects.

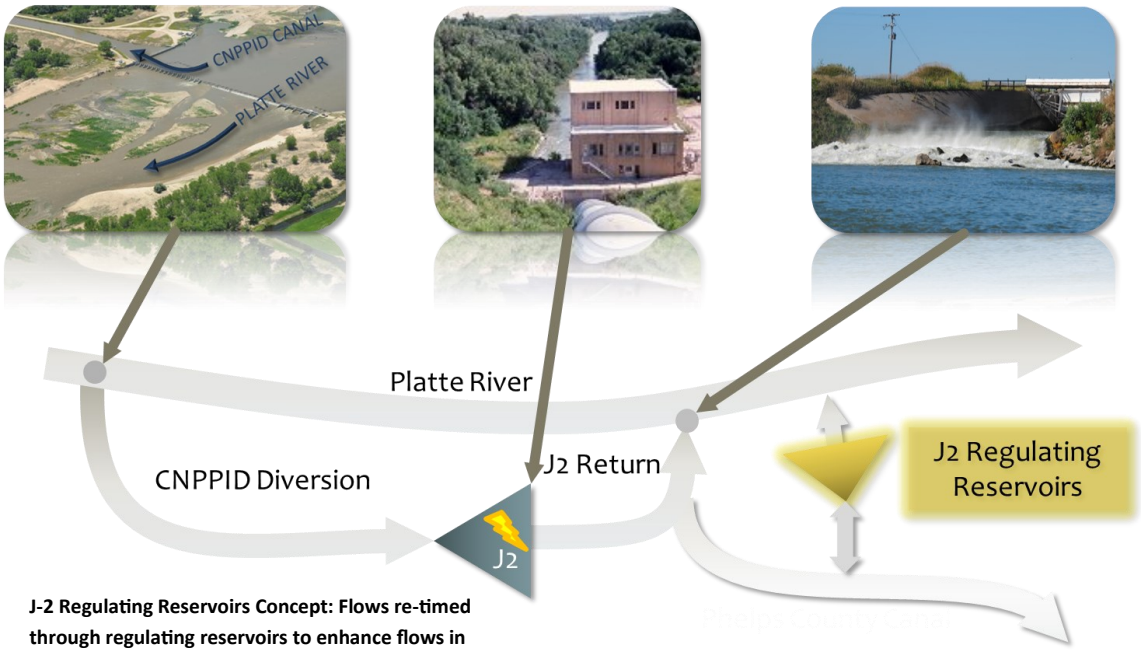
Benefits to the Platte River Recovery Implementation Program

The Platte River Program is a cooperative effort by Nebraska, Wyoming, Colorado and the U.S. Department of the Interior, Platte Basin water-user stakeholders, and conservation groups to provide benefits for threatened and endangered species (specifically whooping cranes, interior least terns, piping plovers, and pallid sturgeon) along the Platte River in Nebraska. Water users in all three states also benefit from the Program because it serves as the "reasonable and prudent alternative" for water projects that might otherwise face difficulties in obtaining permits because of the Endangered Species Act.

One of the Platte River Program's main objectives is to improve river flows for threatened and endangered species, by reducing "shortages to target flows," and developing the capability to create small "pulse flows."

The J-2 Regulating Reservoirs are one of the

J2 REGULATING RESERVOIR CONCEPT

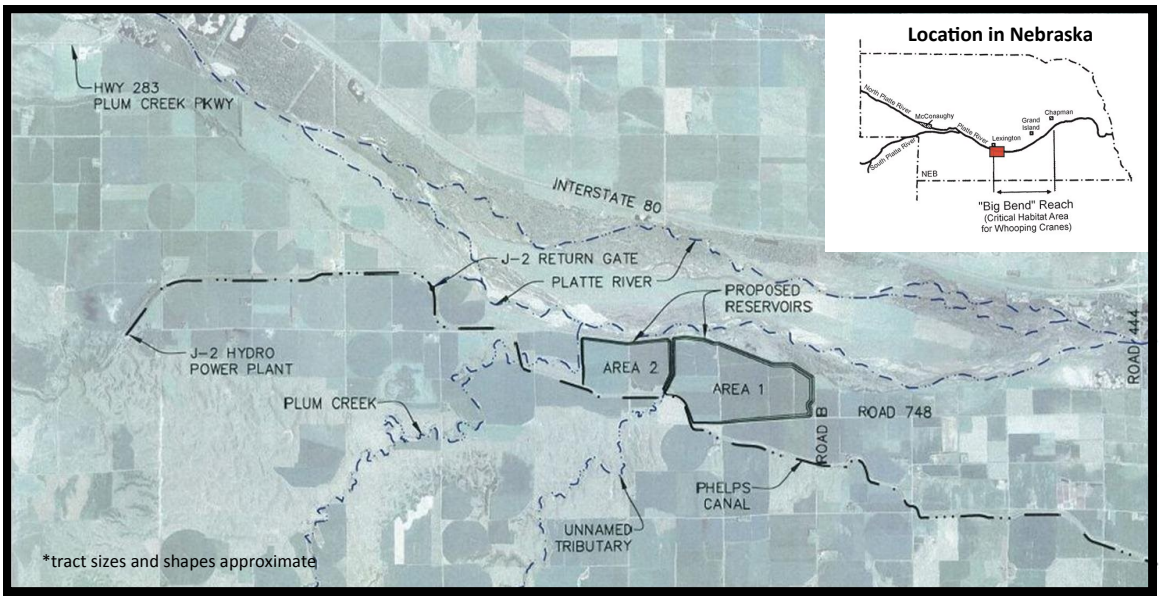


J-2 Regulating Reservoirs Concept: Flows re-timed through regulating reservoirs to enhance flows in Platte River at preferred times.

best alternatives to satisfy the Platte River Program's water objectives. It is estimated that the reservoirs will average more than 30,000 acre-feet per year of target flow improvements for the Program — more than half of the remaining requirement for reducing shortages to target flows — and they could also be used to create or enhance the pulse flows. The reservoirs accomplish these objectives through retiming of flows, without the need to acquire the water from other existing uses.

Benefits to Nebraska and NRDs

The State of Nebraska and several Natural Resources Districts (currently the Tri-Basin NRD, Central Platte NRD, and Twin Platte NRD) are also gaining benefits from the J-2 Regulating Reservoirs Project. Nebraska and the NRDs are required by law to "offset" for "new depletions" to the Platte River that are the result of new or expanded uses in Nebraska, including groundwater pumping,



since 1997. The reservoirs will give Nebraska and the NRDs approximately 10,000 acre-feet per year of "credit," at a lower cost than other alternatives by retiming flows rather than by retiring or restricting irrigation uses.

Benefits to Central

Central benefits from the J-2 Regulating Reservoir Project because it will now have a "downstream regulator" for its J-2 Hydropower Plant (J-2 Hydro). The reservoirs will allow Central to operate the J-2 Hydro at peak efficiency without causing rapid fluctuations in Central's Phelps irrigation canal and the river downstream.

The reservoirs will also reduce the impact of a flow attenuation plan on Johnson Lake. The plan, part of Central's federal operating license, requires Central to maintain space in Johnson Lake to temporarily capture high flows that may result from large rainfall events that could affect the birds' nests along the river.

The regulating reservoirs would achieve this function, allowing operation of Johnson Lake at higher, more stable levels during the spring and summer recreation season.

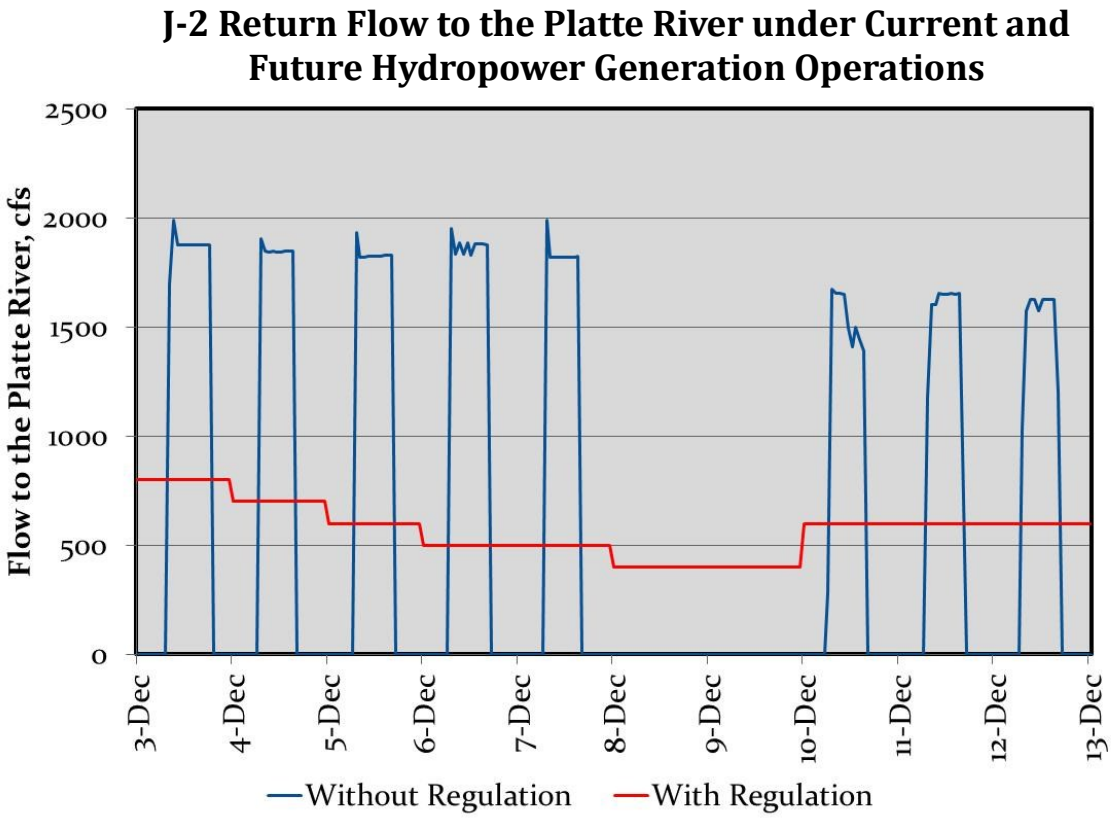
Reservoir Design/ Operations

The facility will consist of two adjacent reservoirs encompassing a total of about 1,200 acres of land. The reservoirs will be able to impound a maximum of 18,000 acre-feet. The reservoirs will be enclosed by berms with

soil cement protection to prevent erosion and the bottom will be lined with compacted clay. A system of drains will also be installed to minimize and regulate any seepage. Water will be delivered through inlets from the Phelps Canal and released through outlet gates directly to the Platte River.

A three-mile stretch of the Phelps Canal will be rehabilitated to accommodate higher flows into the reservoirs. Some roads in the area will be removed or rerouted, while others will be improved to facilitate local traffic.

Both reservoirs will fluctuate between dead pool (water below the level of the outlet structures) and full pool, depending upon the availability of excess water. During the irrigation season, the west reservoir will be reserved to help regulate irrigation flows in the Phelps Canal, resulting in more moderate fluctuations in the water level during these months. Water entering the reservoirs will be held for a period ranging from days to



months depending upon conditions along the river and the need for water. Unlike typical reservoirs, water will not be impounded for longer periods and the reservoirs levels will fluctuate, making them unsuitable for recreational purposes.

The existing J-2 Return to the river, immediately upstream of the facilities, will be seldom used after the reservoirs are operational.

Schedule

An agreement between Central, the Platte River Program, and the State of Nebraska was finalized in July 2013 following several years of feasibility studies and preliminary design work. It is likely that it will take an additional two to three years to complete final designs and obtain the necessary state and federal permits, including a permit to regulate excess flows, environmental permits from the federal government, and possible modifications to Central's Federal Energy Regulatory Commission operating license. In addition, negotiations with landowners to acquire the necessary property must be completed. Construction will most likely commence in 2017 and take two or more years to complete. The three-party agreement is in effect for 50 years with an option to renew the agreement for another 20 years.

Costs and Funding

The estimated cost of the project is $75 million. Central will contribute 5% of that cost, up to a maximum of $2.5 million. Of the remaining costs, 75% will be provided by the Platte River Program and 25% will be paid by the State of Nebraska through the Department of Natural Resources and the NRDs.

A lone whooping crane shares habitat with sandhill cranes along the Platte River in south-central Nebraska for a brief stopover during its spring migration north to Canada. (Photo courtesy of the Crane Trust.)

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