

## **Background**

The Central Nebraska Public Power and Irrigation District (Central or Facility) is a political subdivision of the State of Nebraska, formed in 1933. Central's original purpose was to provide irrigation water to a region where rainfall was inadequate for consistent agricultural production. The hydroelectric power plants at Jeffrey, Johnson Canyon No. 1 (J1), and Johnson Canyon No. 2 (J2) were included to make Central economically feasible. Not only did Central help develop one of the most successful and productive agricultural regions in the United States, Central's lakes and the canal that links them together proved a significant benefit to wildlife and created opportunities for water-based recreation where none previously existed. Today, Central provides multiple benefits: hydroelectric generation, surface irrigation, ground water recharge, fish and wildlife habitat, and recreation.

Central is a leader in the area of integrated water resource management. Central's Long-Range Strategic Plan and Mission statement reads:

*"The mission of the Central Nebraska Public Power and Irrigation District is to serve the agricultural-based community in south-central Nebraska by protecting and utilizing in a sustainable and ecologically balanced manner all of the natural resources available to us to provide reliable and reasonably priced surface water irrigation and ground water recharge while producing electric power and preserving and enhancing our quality of life and the natural environment in which we live."*

A major addition to Central occurred in 1984 when the Kingsley Hydroelectric power plant was constructed at the outlet of Lake McConaughy to make use of the existing water releases and water elevation drop of up to 143 feet that occurs between Lake McConaughy and Lake Ogallala.

Central began the process of relicensing its project with the Federal Energy Regulatory Commission (FERC) in 1984, which concluded with the issuance of a 40-year license in July of 1998. During the relicensing process, the United States Department of Interior (DOI) and the States of Nebraska, Colorado and Wyoming entered into a Cooperative Agreement to develop a long-term recovery program for threatened and endangered species habitat along the central reach of the Platte River. In May 1998, the parties to the license negotiations – including Central, the Nebraska Public Power District (NPPD), the DOI, the State of Colorado, the State of Wyoming, the Platte River Whooping Crane Critical Habitat Maintenance Trust, the National Audubon Society, the Nebraska Wildlife Federation, American Rivers and the Sierra Club – entered into a settlement agreement on wildlife and habitat issues and proposed operating conditions for Central's hydroelectric project. Terms of the settlement were used by FERC staff to complete the Final Environmental Impact Statement and licensing order.

A unique condition within the Settlement Agreement is the Environmental Account, a block of water set aside in Lake McConaughy dedicated for fish and wildlife purposes. This Environmental Account is funded by 10 percent of the storable inflows into Lake McConaughy with a cap of 200,000 acre-feet of water. The U.S. Fish and Wildlife Service (Service) employs a manager who controls the release of this water for the protection of endangered and threatened species on the Platte River downstream.

During the years of 2000 to 2003, Central repowered the Jeffrey, J1, and J2 hydroelectric power plants to improve the efficiency of the units and to maintain the high reliability expected of the power plants. These units now utilize greaseless bushings throughout the wicket gates and turbine pit to ensure that contaminants are not added to the water.

Central entered into the J-2 Hydrocycling Agreement, which went into effect in August 2007, to address various Service concerns regarding the impact that cycling may be having on listed species and their

habitat. This was the latest settlement agreement Central executed to address concerns about endangered and threatened species.

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The following paragraphs address the eight specific areas of criteria of the Low Impact Hydro Institute:

#### #1. FLOWS:

As noted in the Low Impact Hydropower Certification Questionnaire, the Facility is in compliance with all Resource Agency Recommendations regarding flow conditions for fish and wildlife protection, mitigation, and enhancement. As previously mentioned, Central annually provides 10 percent of the storable inflows into Lake McConaughy to an Environmental Account. This account can be utilized as desired by the Service to augment instream flows, seasonal pulse flows, or to be held in storage to accumulate and be used at a later time. Central meets semi-annually with the Service, representatives from the Nebraska Game and Parks Commission (NGPC), the Nebraska Department of Natural Resources (DNR), the State of Wyoming, the State of Colorado, and the DOI-Bureau of Reclamation to discuss the use of the Environmental Account. At times when the Service is requesting releases from the Environmental Account, Central is in daily or almost daily contact with the Service to schedule those releases.

In addition, the J-2 Hydrocycling Agreement addresses ramping and peaking rates in the Platte River below the J-2 Return to the Platte River during the spring and fall to reduce risk to cranes, terns, and plovers. Central also has a Flow Attenuation Plan (FERC License - Article 412, and referred to as the "Spike Flow Attenuation Plan" in the Settlement Agreement) to protect ground nesting birds whose nests may otherwise be inundated by sudden river stage changes during the summer months.

#### Supporting Documentation:

[FERC License \(including Articles 400, 403, 404, 405, 410, and 412\);](#)  
[FERC License Amendments](#)  
[Administrative Plan for Managing Water Commitments \(FERC License Article 408\);](#)  
[Pulse Flow Planning document \(Platte Pulse document\);](#)  
[2012 Environmental Account Operating Plan](#)  
[J-2 Hydrocycling Agreement;](#) and  
[Flow Attenuation Plan.](#)

#### #2. WATER QUALITY:

As noted in the Low Impact Hydropower Certification Questionnaire, the Facility is in compliance with all conditions issued pursuant to the Clean Water Act and Nebraska regulations. Lake Ogallala, a tailrace reservoir below Lake McConaughy, has been listed on the 303(d) list of impaired waters for low dissolved oxygen (D.O.). Central -- along with the NPPD, NGPC, University of Nebraska-Lincoln, and the Nebraska Department of Environmental Quality -- conducted studies to determine the Total Maximum Daily Load and determine the cause of the low D.O. The cause was determined to be pollution entering the lake from upstream waters and not caused by the Facility.

Central and the other entities developed a two-part plan to address the low D.O. concerns in Lake Ogallala. Central maintains a minimum D.O. level at the end of its tailrace by bypassing the turbine of the Kingsley Hydroelectric power plant and spraying the water into the air through a bypass valve. In addition, Central monitors D.O. and temperature at one-meter intervals at five separate stations around the lake on a weekly basis to assure adequate D.O. The studies discussed earlier identified areas in the lake where lack of circulation of lake water contributed to the low D.O. in those areas and subsequent stress on the trout fishery of the lake. In 2009, a channel was cut through a peninsula and through shallow areas of the lake to improve circulation.

Supporting Documentation:

TMDL for Lake Ogallala;  
Water Quality Modeling of Lake Ogallala Using CE-QUAL-W2 Model  
to Support Dissolved Oxygen TMDL Determination.  
Lake Ogallala Bathometric Project Mitigation Report 2012  
Lake Ogallala Water Quality Report 2012

#3. FISH PASSAGE AND PROTECTION:

As noted in the Low Impact Hydropower Certification Questionnaire, the Facility is in compliance with all Fish Passage Prescription for upstream and downstream passage of anadromous and catadromous fish. There has never been a concern about the passage of fish either upstream or down.

#4. WATERSHED PROTECTION:

As noted in the Low Impact Hydropower Certification Questionnaire, there are no “buffer zones” extending 200 feet from the high water mark. However, Central has a FERC-approved Land and Shoreline Management Plan that identifies safeguards in regard to development, use, and wildlife protection along the entire shore of the facilities. Included in that Plan are setbacks from the water’s edge where construction is not allowed, recreational areas where further development is limited, constraints on land use that may result in point source pollution, and species protection zones where habitat for species of concern (endangered species and bald eagles) are located. Central submitted an amendment to this plan on December 7, 2009 after completing consultation with the agencies. This amendment has not yet been approved by FERC. Some revisions strengthened and expanded environmental protection for endangered species by ensuring consultation with agencies prior to any variances given that may affect their habitat. Other revisions were done to make the plan easier to use.

In addition, a large portion of the Facility’s shoreline is under a no-fee management lease to the NGPC.

Supporting Documentation:

Land and Shoreline Management Plan  
Amendment to Land and Shoreline Management Plan  
NGPC lease

#5: THREATENED AND ENDANGERED SPECIES PROTECTION:

As noted in the Low Impact Hydropower Certification Questionnaire, there are both threatened and endangered species, as well as species of concern, in the Facility area and downstream. The Facility is in compliance with all aspects of the Recovery Plan for the threatened Great Plains population of piping plovers (*Charadrius melodus*), the endangered Interior least tern (*Sterna antillarum*), the recently de-listed American bald eagle (*Haliaeetus leucocephalus*), and downstream only, the endangered Pallid Sturgeon (*Scaphirhynchus albus*).

As part of its FERC license (Article 421) and the Land and Shoreline Management Plan, Central is providing protection for piping plovers and least terns along the shores of its facilities, as well as perch and roost trees for bald eagles. According to the Service’s designation of Critical Habitat, this level of protection was sufficient for piping plovers to preclude the shoreline of Lake McConaughy from designation as critical habitat. The Final Rule for Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Northern Great Plains Breeding Population of the Piping Plover, stated the following:

“The shoreline along Lake McConaughy, Nebraska, was not included as critical habitat due to the existence of two draft conservation management plans developed by the Central

Nebraska Public Power and Irrigation District to satisfy a Federal Energy Regulatory Commission (FERC) relicensing requirement for Project No. 1417. The "Land and Shoreline Management Plan" and the "Management Plan for Least Terns and Piping Plovers Nesting on the Shore of Lake McConaughy" were developed in coordination and in agreement with the Service and the Nebraska Game and Parks Commission. Both plans are being implemented on an interim basis while awaiting FERC approval. We believe that implementation of these conservation management plans is consistent with piping plover recovery. Therefore, this area is not in need of special management and does not meet the definition of critical habitat. If conservation management plans are in place and meet the following three criteria, then we may exclude these areas from critical habitat. These conservation plans must (1) Provide a benefit to the species; (2) include implementation assurances; and (3) include features, such as an adaptive management plan, that will assure effectiveness. Therefore, despite the presence of nesting piping plovers at this site, it is eligible for exclusion from critical habitat on the basis of having conservation management plans that specifically address the conservation and recovery of the piping plover. We have been informed that FERC will be finalizing the plans in the near future."

The "Management Plan for Least Terns and Piping Plovers Nesting on the Shore of Lake McConaughy" was approved on March 9, 2010. The three-year reevaluation of the plan by the FWS was completed on December 14, 2011, without any recommendations or changes. Central is currently in discussions with the FWS and NGPC concerning additional protection of Least Tern and Piping Plover nests on the Lake McConaughy shoreline.

Central protects least terns in the same fashion. In addition to protection and management along Facility shorelines, as per FERC License Article 420, Central manages habitat for piping plovers and least terns at three locations on the river downstream and participates in tern and plover monitoring along with the NPPD, the Central Platte Natural Resources District, NGPC, and the Service downstream of the Facility.

Central has also purchased, has a long-term lease with option to buy, and owns easements on a total of approximately 5,000 acres of riverine property dedicated to the protection, development, and enhancement of habitat for whooping cranes, least terns, piping plovers, sandhill cranes, and migratory waterfowl in the North Platte and Platte River valleys. These properties are: (1) The Kelly Ranch, a 507-acre tract along the North Platte River under a 40-year easement with The Nature Conservancy; and (2) The Jeffrey Island Habitat Area, approximately 4,200 acres under a 17-year lease with an option to purchase contract along the Platte River.

Central is an active member in the Platte River Recovery Implementation Program (Program), a program to aid the recovery of whooping cranes, least terns, piping plovers, and pallid sturgeon. The Program is a cooperative effort between the States of Wyoming, Colorado, and Nebraska and the DOI.

Central was a member of the Lower Platte Pallid Sturgeon/Sturgeon Chub Task Force. This Task Force provided funding through the NGPC to the University of Nebraska-Lincoln for research on pallid sturgeon habitat availability and use of the Lower Platte River. *Endangered and Threatened Species of the Platte River*, published by the National Research Council of the National Academies (2005) stated (page 238): "For those reasons, the committee concluded that current habitat conditions in the lower Platte do not adversely affect the likelihood of survival or recovery of the pallid sturgeon."

The Facility has an "incidental take" permit for disturbing roosting whooping cranes as part of its J-2 Hydrocycling Agreement with the Service.

Central's Biological Opinion on the operation of the Facility is accompanied by a FERC license and it is consistent with the recovery plans for the indicated species.

Supporting Documentation:

FERC License;  
J-2 Hydrocycling Agreement (see also Section #1);  
Ed Peter's Final Report on Sturgeon;  
2012 Annual Tern and Plover Report;  
Program documents;  
Land and Shoreline Management Plan (see also Section #4);  
Land and Shoreline Management Plan Amendment  
Jeffrey Island Enhancement and Management Plan;  
Annual Jeffrey Island Enhancement Report; and  
Annual Kelly Tract Report.

#6: CULTURAL RESOURCE PROTECTION:

As noted in the Low Impact Hydropower Certification Questionnaire, Central is in compliance with FERC Article 425 that requires implementation of a "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and The Nebraska State Historic Preservation Officer for Managing Historic Properties That May Be Affected by a License Issuing to the Central Nebraska Public Power and Irrigation District for the Kingsley Dam Hydroelectric Power Project, Project No. 1417." An archaeological and historic inventory of the Project area was done in 1991 by Larson-Tibesar Associates on behalf of Central. Eighteen archaeological sites, one building, and an engineering system were recorded as a result of this inventory. More recent investigations have concluded there are five archaeological sites eligible for the National Register of Historic Places along with the Jeffrey Lodge and Central's facilities engineering system. Central's Cultural Resources Management Plan includes the guidelines for the protection of historic cultural resources within the Facilities by working closely with the Nebraska State Historical Preservation Society.

Supporting Documentation:

Cultural Resources Management Plan

#7: RECREATION:

Central is in compliance with FERC Article 421, "Land and Shoreline Management Plan". As a general policy, Central considers all of its shorelines adjacent to the lakes and canal system open to public access, unless an operational safety concern, natural hazard, or environmental protection issue requires access restrictions. Central has leased much of the land within the FERC Project Boundary and adjacent to the lakes to the NGPC, for use as State Recreation Areas or Wildlife Management Areas. As a result, the majority of existing Public Park, camping, and water access facilities on the lakes are managed by the NGPC. The NGPC requires a permit that applies to all NGPC-managed facilities in the State of Nebraska. Central does not receive any income from the NGPC permits.

Central's project has almost 6,000 acres of land adjacent to Facility waters that are designated State Recreation Areas. Another 6,800 acres have been set-aside as Wildlife Management Areas. The main attraction is the total 35,688 surface acres of water that comprise Central's many lakes and reservoirs.

There are more than 20 campgrounds and 11 areas for recreational vehicles with space for more than 450 RV pads, nine trailer parks and innumerable sites suitable for primitive camping throughout the facilities. Recreation areas are equipped with picnic tables, grills, water wells and boat ramps. These facilities are available to the public in an area that, for the most part, would otherwise be significantly limited as to water-based recreation were it not for the existence of Central's facilities.

[Supporting Documentation:](#)

[Land and Shoreline Management Plan \(see also Section #4-6\)](#)

#8: FACILITIES RECOMMENDED FOR REMOVAL:

Central does not have any facilities that have been recommended for removal by a natural resource agency.

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**NOTE: ALL SUPPORTING DOCUMENTATION IS ATTACHED ON A "CD."**