Stage II Recertification Review for Kingsley Dam Low Impact Hydropower Institute's (LIHI) #37

1. BACKGROUND

The Central Nebraska Public Power and Irrigation District (CNPPID) is a subdivision of the State of Nebraska, formed in 1933. CNPPID provides irrigation water to a region with inadequate rainfall for consistent agricultural production. CNPPID operates the Kingsley Dam Project, Federal Energy Regulatory Commission (FERC) Project 1417 (Project). The FERC issued a 40-year license on July 29, 1998. The license expires on July 29, 2038.

The Kingsley Dam Project consists of dams, canals, and power plants located on the North Platte and Platte Rivers in Garden, Keith, Lincoln, Dawson, and Gosper Counties in south-central Nebraska.

The Project's current LIHI certification was set to terminate on May 22, 2018. On May 15, 2018, to allow sufficient time for the recertification process to be completed, LIHI extended the certification term of the Project to December 31, 2018 and again to April 30, 2019. The CNPPID's LIHI coordinator is Eric Hixson[1].

CNPPID submitted an application for recertification of the Project on June 29, 2018. On August 14, 2018, LIHI notified CNPPID that the Stage I recertification review for the Project was complete. Given the review was processed under the new, Second Edition LIHI Certification Handbook, the need for a Stage II review is necessary.

The Stage I review deemed it unnecessary to submit a new revised application, but found supplemental information was needed. On October 23, 2018, CNPPID supplied the requested supplemental information.

2. PLATTE RIVER BASIN

The North Platte River originates in the north-central region of Colorado known as the North Park Valley (See Figure 1). Its boundaries are the continental divide on the west and south and the 11,000-feet high mountain peaks on the east. The North Platte River has dams built for flood control and irrigation purposes in Wyoming and Nebraska. The river flows north about 200 miles to Casper, Wyoming, turns to the east-southeast, and flows about 350 miles to the city of North Platte, Nebraska. In Colorado and Wyoming, the North Platte is narrower and much swifter flowing than it is in Nebraska, where it slows down becoming a shallow braided stream.

The South Platte River drains the northeast corner of Colorado, parts of southeastern Wyoming near the city of Cheyenne and a small part of the southwest corner of Nebraska. The South Platte River has dams built for flood control, drinking water and irrigation purposes in Colorado. The river originates southwest

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of Denver, in the South Park grasslands and mountains east of the continental divide then skirts the west side of Pikes Peak and flows roughly east-northeast about 100 miles through Denver and on to Greeley, Colorado. From Greeley, the river turns east and flows about 200 miles to its confluence with the North Platte River near the city of North Platte, Nebraska forming the Platte River.

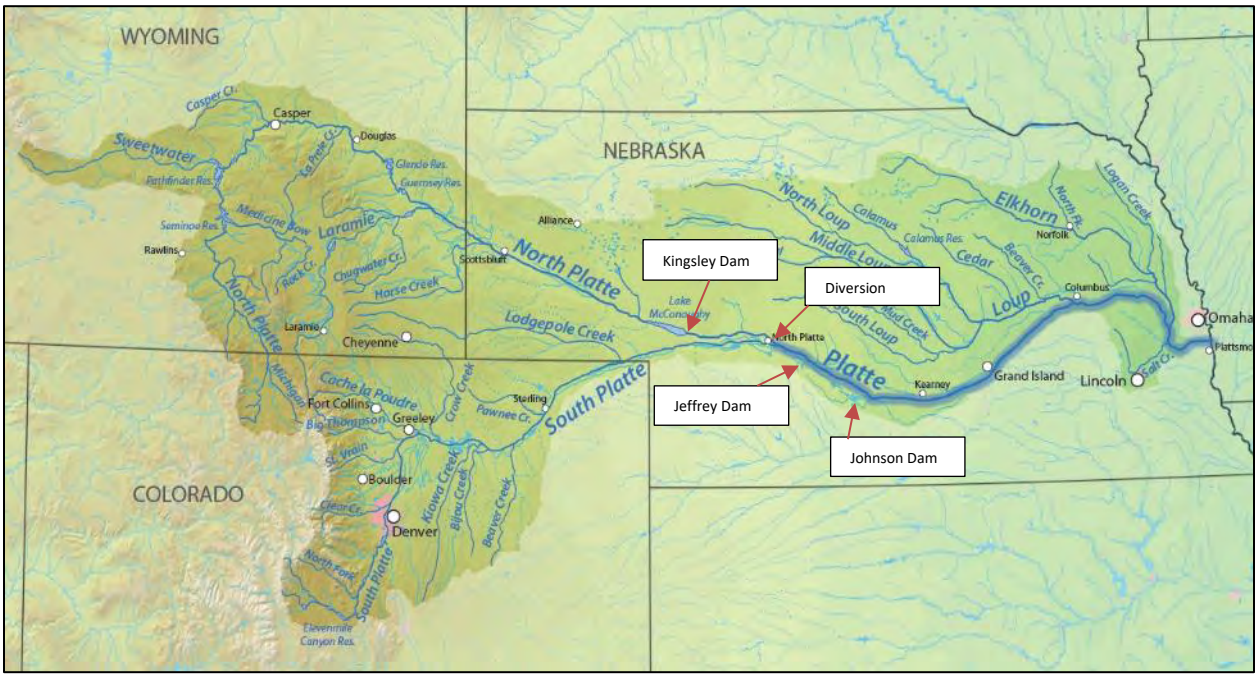

Figure 1- Platte River Overview

The Platte River is about 310 miles long mostly characterized as a muddy, broad, shallow, meandering stream with a swampy bottom and many islands. The Platte River is a tributary of the Missouri River, which itself is a tributary of the Mississippi River.

3. PROJECT DESCRIPTION

The Kingsley Dam Project consists of dams, canals, and power plants located on the North Platte and Platte Rivers in Garden, Keith, Lincoln, Dawson, and Gosper Counties in south-central Nebraska. The Project's developments are the Kingsley Dam Hydro, Jeffrey Dam Hydro, Johnson # 1 Hydro and Johnson #2 Hydro (See Table 1).[2]

The Kingsley Dam, on the North Platte River, impounds Lake McConaughy. The Kingsley Hydro Plant abuts Kingsley Dam and discharges to Lake Ogallala. The Central Diversion Dam, located 50 miles downstream of Kingsley Dam at the confluence of the North Platte and South Platte rivers, diverts Platte River flow into the 75-mile-long CNPPID Supply Canal, which incorporates 27 dams and impoundments and three hydroelectric power plants (Jeffrey, Johnson No. 1, and Johnson No. 2).

[2] Detailed maps and information can be viewed on the Project webpage - https://www.cnppid.com/ . Daily river flow data - http://www.cnppid.com/wp-content/uploads/2016/06/lakeRiverData.html

The Kingsley Hydro Plant contains one 51,900-kW turbine and one 59,470-kW generator, with an installed capacity of 51,900 kW. The Jeffrey Hydro Plant contains two 10,440-kW turbines and two 10,800-kW generators. The Johnson No. 1 Hydro plant is configured identical to Jeffrey Hydro, containing two 10,030-kW turbines and two 10,800-kW generators. The Johnson No. 2 Hydro plant contains one 22,960-kW turbine and one 22,500-kW generator. The total installed capacity of the Project is 117,600 kW and the average annual generation from the Project is approximately 373.4 GWh, which corresponds to an annual plant factor of 36.2%.

Table 1 – Average Annual Generation (AAG) - (Last 10 Years)			
Development	Installed Capacity (MW)	AAG (MWh)	Plant Factor
Kingsley Dam	51.90	88,050	19.4
Central Diversion Dam	NA	NA	NA
Jeffrey Dam	21.6	106,990	58.5
Johnson Dam J1 J2	 21.6 22.50	 79,461 98,872	 45.2 50.2
TOTAL	117.6	373,373	36.2

A. Kingsley Dam

The Kingsley Dam was constructed in 1941 and is located in Keith County, NE at river mile (RM) 57.3 of the North Platte River (Latitude: 41° 13’ 25” Longitude: -101° 40’ 21”) (See Figure 2). The dam, with a 32,500 square-mile (SQMI) drainage area, creates Lake McConaughy, a reservoir with a maximal allowable storage capacity of 1,790,000 acre-feet (ACFT). The U.S. Bureau of Reclamation’s (USBR) North Platte Project upstream on the North Platte River[3] utilizes the water for irrigation and hydroelectric production. The North Platte Project extends 111 miles along the North Platte River Valley from Guernsey, Wyoming to Bridgeport, Nebraska. Return flows from the Project facilities into the North Platte River make up a significant portion of the inflows to Lake McConaughy.

[3] USBR North Platte Project – This Project is comprised of the Dry Spotted Tail Diversion Dam, Guernsey Dam, Horse Creek Diversion Dam, Lake Alice Dams, Minatare Dam, Pathfinder Dam, Tub Springs Diversion Dam and Whalen Dam - https://www.usbr.gov/projects/index.php?id=363

Figure 2 - Lake McConaughy & Lake Ogallala

The US Geological Survey (USGS) gage at North Platte River at Lewellen (06687500) with a drainage area of 28,600 SQMI is used to estimate Lake McConaughy inflows. For the period of record (July 1, 1931 to September 29, 1991) average annual inflow at the gage was 1,468 CFS, or only 0.05 CFS per SQMI. This runoff per CFS result is low because the majority of upstream inflows are diverted for irrigation.

The maximum water surface elevation is 3,260 feet mean sea level (FMSL) to 3,265 FMSL depending on the time of year. The maximum surface area is 35,700 acres and maximum length is about 22 miles long. The reservoir has 76 miles of shoreline and a maximum width of 4 miles.

The dam consists of:

- A 163-foot-high earthen dam and dike with a maximum water height behind the dam of 142 feet;
- An outlet tower with a maximum release capacity of 5,720 cubic feet per second (CFS);
- A gated morning glory spillway with a maximum release capacity of 54,000 CFS;
- A 475-foot-long emergency spillway with a maximum release capacity of 50,000 CFS;
- A 685-foot-long reinforced concrete penstock that directs water to the Kingsley Hydro built in 1984.

CNPPID operates the dam for power production and water supply to support downstream irrigation demands. Designated uses of Lake McConaughy by the Nebraska Department of Environmental Quality (NDEQ) are aquatic life, recreation, agriculture water supply, industrial water supply, and aesthetics. All releases from Lake McConaughy enter Lake Ogallala. Designated uses of Lake Ogallala are aquatic life, recreation, and agriculture.

The Kingsley Hydro plant (See Figure 3) consists of a single 51.9 MW turbine and 59.470 MW generator with a maximum turbine hydraulic capacity of 4,979 CFS and an operating head that varies from about 140 to 135 feet. The level of Lake Ogallala creates the plant's tailwater elevation, which varies from 3,123.5 FMSL – 3,126.3 FMSL.

Figure 3 - Kingsley Hydro

Releases from Lake Ogallala pass through either the Nebraska Public Power District's (NPPD) Keystone Diversion Dam (RM 54.2 - FERC No. 1835) into the North Platte River or through the NPPD Canal, which eventually flows into the South Platte River near Paxton, NE. The USGS gage at North Platte River near Keystone (06690500) records releases into the North Platte River, which period of record average flow is 585 CFS (See Figure 4).

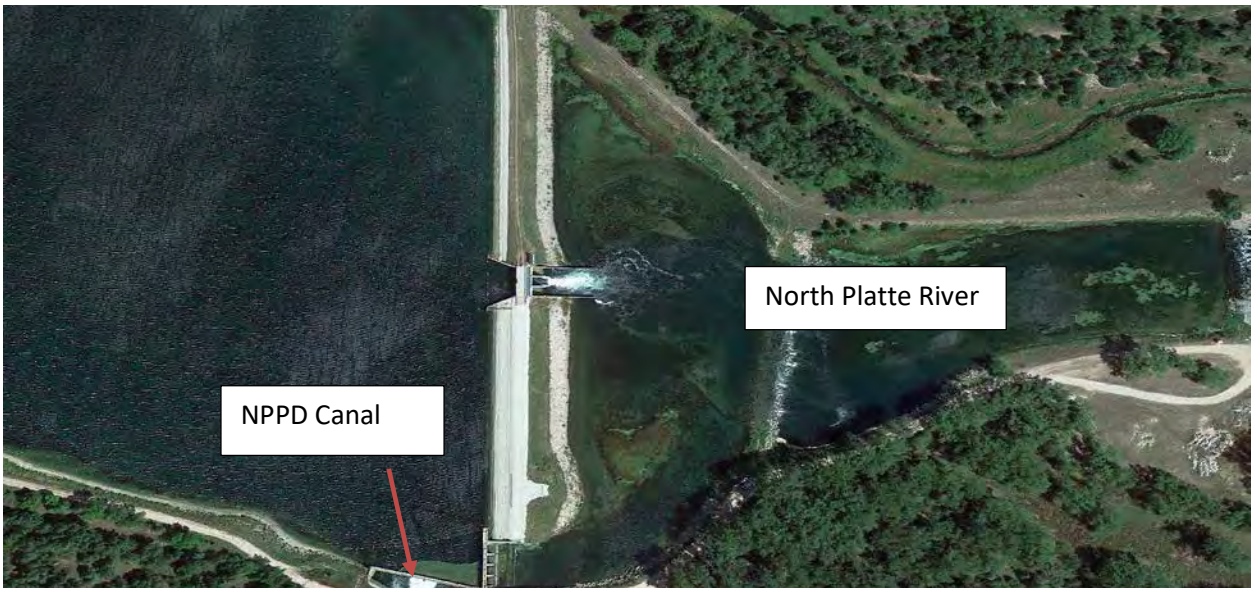

Figure 4 - Keystone Diversion Dam

There have been no major equipment upgrades during the prior LIHI certification period or plans for any facility upgrades at the facility.

B. Central Diversion Dam

The Central Diversion Dam was constructed in 1941 and is located at river mile (RM) 310.5 of the Platte (Latitude: 40° 06' 50" Longitude: -100° 40' 33") in Lincoln County, NE (See Figure 5).

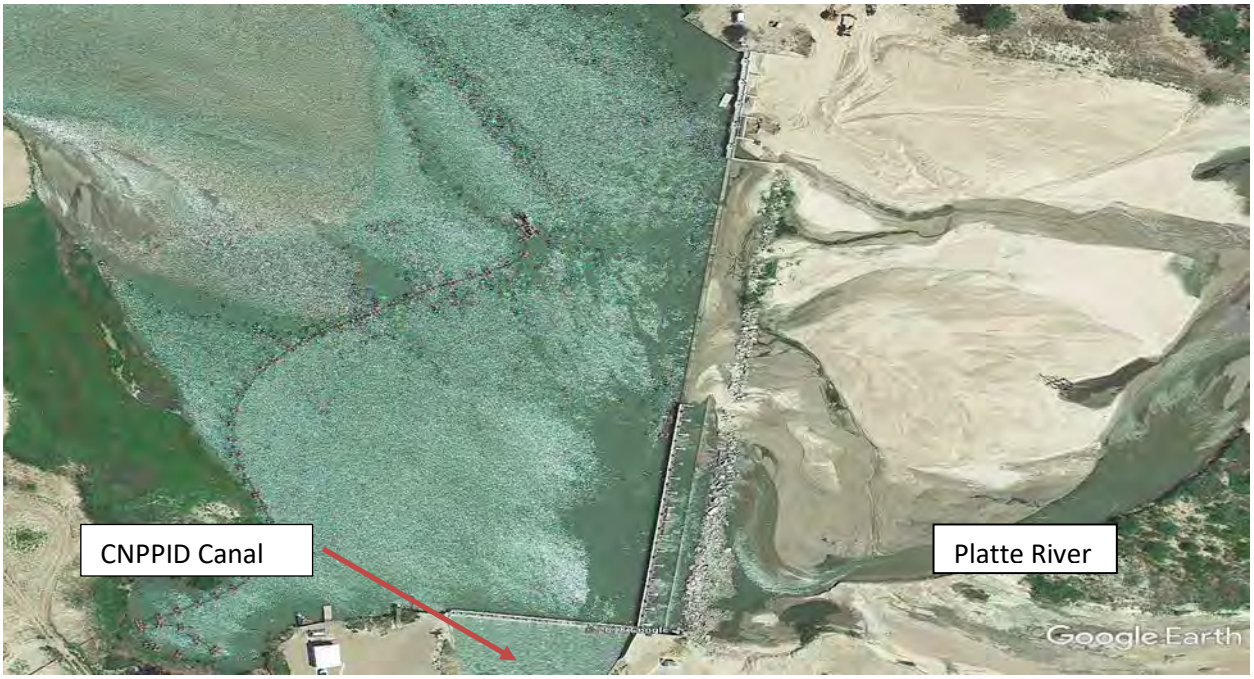

Figure 5 - Central Diversion Dam

The dam is 874 feet long and stretches completely across the Platte River. It backs up water to form a 25-acre pond that extends from the dam upstream some 2,000 feet to the confluence of the South Platte and North Platte Rivers. The intervening local drainage area is 377 SQMI[4].

The USGS gage North Platte at North Platte (06693000) records upstream North Platte flows, while the USGS gage South Platte at North Platte (06765500) records upstream South Platte flows. The sum of these flows is the inflow at the Central Diversion Dam. The period of record average flow (October 1, 1931 through September 29, 1994) at gage (06693000) is 812 CFS. The average flow for the same period at gage (06765500) is 424 CFS, for a total average inflow of 1,263 CFS.

Other components of the structure consist of:

- A 342-foot-long radial gate section;
- A 371-foot-long reinforced concrete ogee;
- A 161-foot-long radial gate section;
- A 3,738-foot-long north dike;
- A 10,700-foot-long south dike, and appurtenant facilities.

Any water released from the upstream Lake McConaughy reservoir is diverted into the 75-mile-long CNPPID Supply Canal and eventually empties into the Jeffrey Reservoir. Excess water is released into the Platte River through the radial gates or over the ogee spillway.

[4] Drainage area at the Central Diversion Dam minus the drainage area at the Kingsley Dam.

During the storage season, from October through May, little or no water is released unless there is excess water supplied by the two rivers or the U.S. Fish and Wildlife Service (USFWS) requests water from the Environmental Account [5].

During the irrigation season, June through September, natural flow (water attributed from the local contributing drainage area) is released into the Platte River to downstream water right holders. Average annual natural flow over the last ten years is 1,184 CFS or 3.14 CFS per SQMI. This section of the Platte River flows 21 miles downstream to NPPD's Gothenburg Canal Diversion Dam (RM 289.2), owned by the NPPD.

There have been no major equipment upgrades during the prior LIHI certification period or plans for any facility upgrades at the facility.

C. Jeffrey Dam

The Jeffrey Dam is located at canal mile (CM) 21.2 of the CNPPID Supply Canal (Latitude: 40° 57' 36" Longitude: -100° 24' 17") in Brady and Lincoln County, Nebraska.

The dam creates the Jeffrey Reservoir, a regulating reservoir for the Jeffrey Hydro (CM 23.7) with a surface area of 575 acres and a gross storage capacity of 11,500 ACFT. Both the dam and hydro started operating in 1941. Inflow into the reservoir is from the CNPPID Supply Canal, which averaged 1,340 CFS over the last ten years. Outflow from the reservoir is through the Jeffrey Hydro plant. The designated purpose of the dam is for power and downstream irrigation (See Figure 6).

The reservoir can fluctuate from 2759.0 FMSL to 2750.5 FMSL. The normal operational range is from 2758.5 FMSL to 2757.0 FMSL. Elevation fluctuations are mainly in response to available water supply.

Figure 6 - Jeffrey Dam & Hydro

[5] Environmental Account Plan - A block of water set aside in Lake McConaughy dedicated for fish and wildlife purposes. The environmental account is credited using 10% of the storable inflows into Lake McConaughy with a cap of 200,000 ACFT.

The dam is compacted earth, 70 feet high. A 700-foot-long concrete lined inlet canal passes water through two 360-foot-long, 12-foot-diameter penstocks to the hydro plant.

The Jeffrey Hydro contains two 10,440 kW turbines and 10,800 kW generators. The hydro operates in a peaking mode with one or both turbines operating at flows from 300 CFS to 1,300 CFS. There is no by-pass structure around the hydro. All water exits the reservoir through the turbines. Turbine outflows continue downstream to the Central Double Check Gate (See Figure 7).

Figure 7 - Double Check Gate

The Central Double Check Gate can release the Jeffrey Hydro outflow back to the Platte River via the Gothenburg Diversion Dam through the Jeffrey Hydro Return or continue to pass downstream into the CNPPID Supply Canal to the Johnson Reservoir.

The NPPD owns the Gothenburg Diversion Dam. This diversion dam can pass flow back into the Platte River or through the Gothenburg Diversion Canal to supply irrigation flows (See Figure 8).

Figure 8 - Gothenburg Diversion Dam

There have been no major equipment upgrades during the prior LIHI certification period or plans for any facility upgrades at the facility.

D. Johnson Dam

The Johnson Dam is located at (Latitude: 40° 41' 34" Longitude: -99° 49' 07") in Lexington and Dawson County, Nebraska. (See Figure 9).

The 8,336-foot-long, 47-foot-high dam creates the Johnson Reservoir, a regulating reservoir for the Johnson #1 Hydro (J1 Hydro) with a surface area of 2,500 acres and a gross storage capacity of 52,200 ACFT. Both the dam and hydro started operating in 1941. The designated purpose of the dam is for power and irrigation.

The maximum and minimum water surface elevations of the reservoir are 2619.0 FMSL to 2617.2 FMSL. Normal operating elevations for the reservoir fluctuate from elevation 2616.7 FMSL to 2618.2 FMSL.

Inflow into the reservoir is from the CNPPID Supply Canal through the Central Double Check Gate at CM 63.3, which averaged 1,012 CFS over the last ten years. Outflow from the reservoir is through the J1 Hydro plant (CM 66.1).

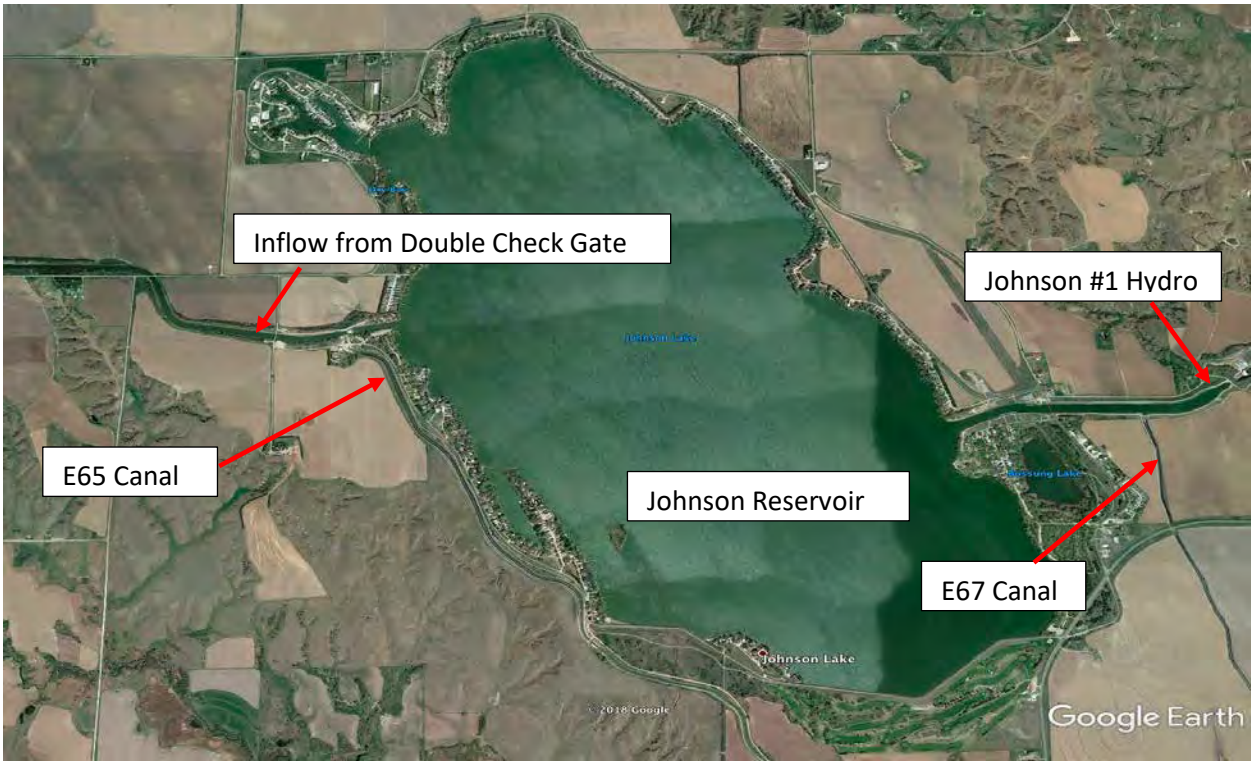

Figure 9 - Johnson Reservoir

There are two irrigation systems associated with Johnson Reservoir. The E67 Canal is located between the Johnson Reservoir and the J1 Hydro and it provides water to approximately 5,000 acres.

The E65 Canal is located just upstream of the inlet to the reservoir. Water can be diverted into the E65 Canal to supply 43,000 acres of farmland with irrigation water. The Elwood Reservoir is located south of the CNPPID Supply Canal and west of the E65 Canal (See Figure 10).

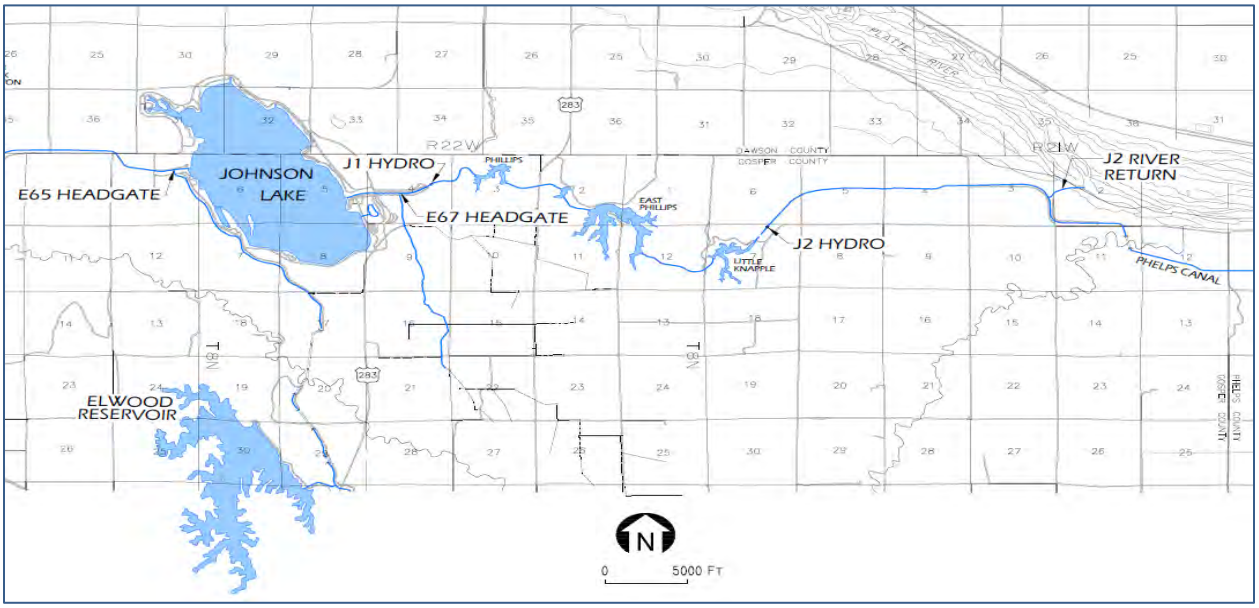

Figure 10 -Elwood Reservoir

The Elwood Reservoir, with a capacity of about 40,000 ACFT, is filled during the non-irrigation season by diverting water from the CNPPID Supply Canal into the E65 Canal and pumping approximately 24,700 ACFT into the Elwood Reservoir at the Carl T. Curtis Pump Station. During the irrigation season, the pumped volume flows back into the E65 Canal for delivery to irrigation customers.

The Johnson Reservoir elevation depends primarily on available water supply. During the irrigation season, the reservoir elevation is kept lower as a part of CNPPID's Flow Attenuation Plan (SAP), also known as the Spike-Flow Plan. CNPPID collaborated with the USFWS and the Nebraska Game and Parks Commission (NGPC) to develop the SAP. The plan helps to lower flow and reduce flow fluctuations in the Platte River below Overton, NE during the least tern and piping plover nesting seasons.

Water passes from the reservoir through two 358-foot-long, 12-foot-diameter penstocks to provide flow to the J1 Hydro plant (See Figure 11). Similar to the Jeffrey Hydro, the J1 Hydro consists of two 10,030 kW turbines and 10,800 kW generators and operates in a peaking mode. A 4.5-foot diameter pipe can optionally pass flow downstream without using the turbines.

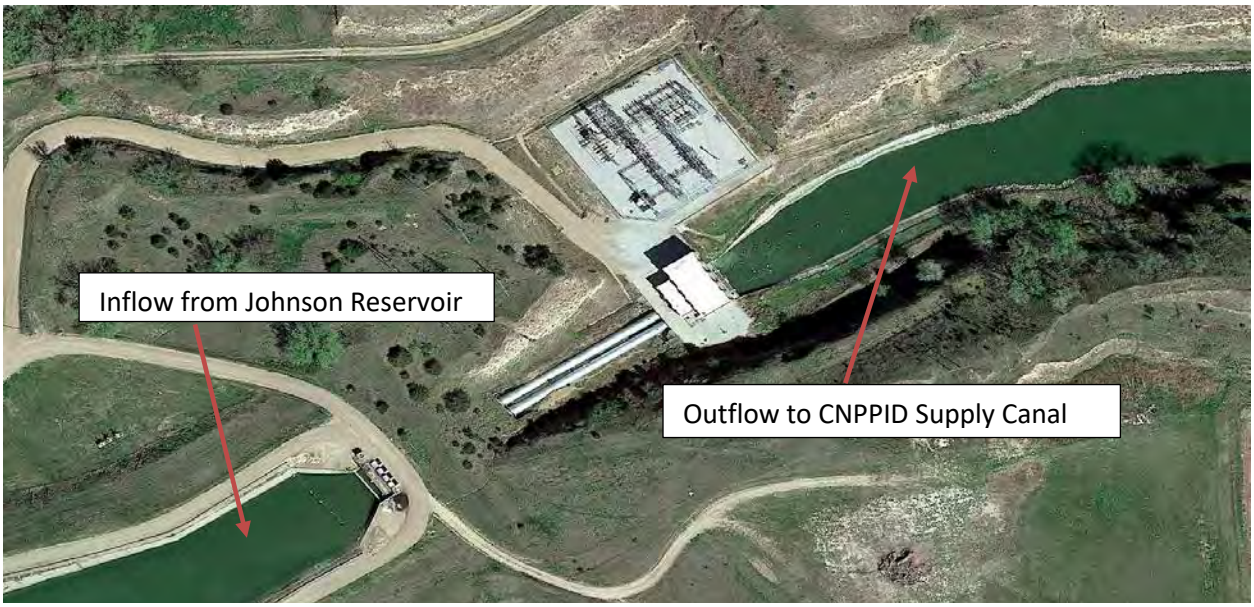

Figure 11 - Johnson #1 Hydro

Water released from J1 Hydro exits the plant though the tailrace and travels through the CNPPID Supply Canal 5.7 miles to the Johnson #2 Hydro Plant (J2 Hydro).

The J2 Hydro (Latitude: 40° 40' 51" Longitude: -99° 44' 51") contains a single 22,960 kW turbine and 22,500 kW generator (See Figure 12).

Upstream of the J2 Hydro forebay is approximately 1,000 ACFT of storage capacity. However, this storage amount is minor and the J2 Hydro primarily passes the outflows from the J1 Hydro. The CNPPID inflow to the J2 Hydro has averaged 985 CFS over the last ten years. Water passes from the CNPPID Supply Canal through a 1,054-foot-long, 14 foot-diameter steel penstock to provide flow to the J2 Hydro plant. A bypass tube within the plant routes water around the turbine during maintenance operations if necessary.

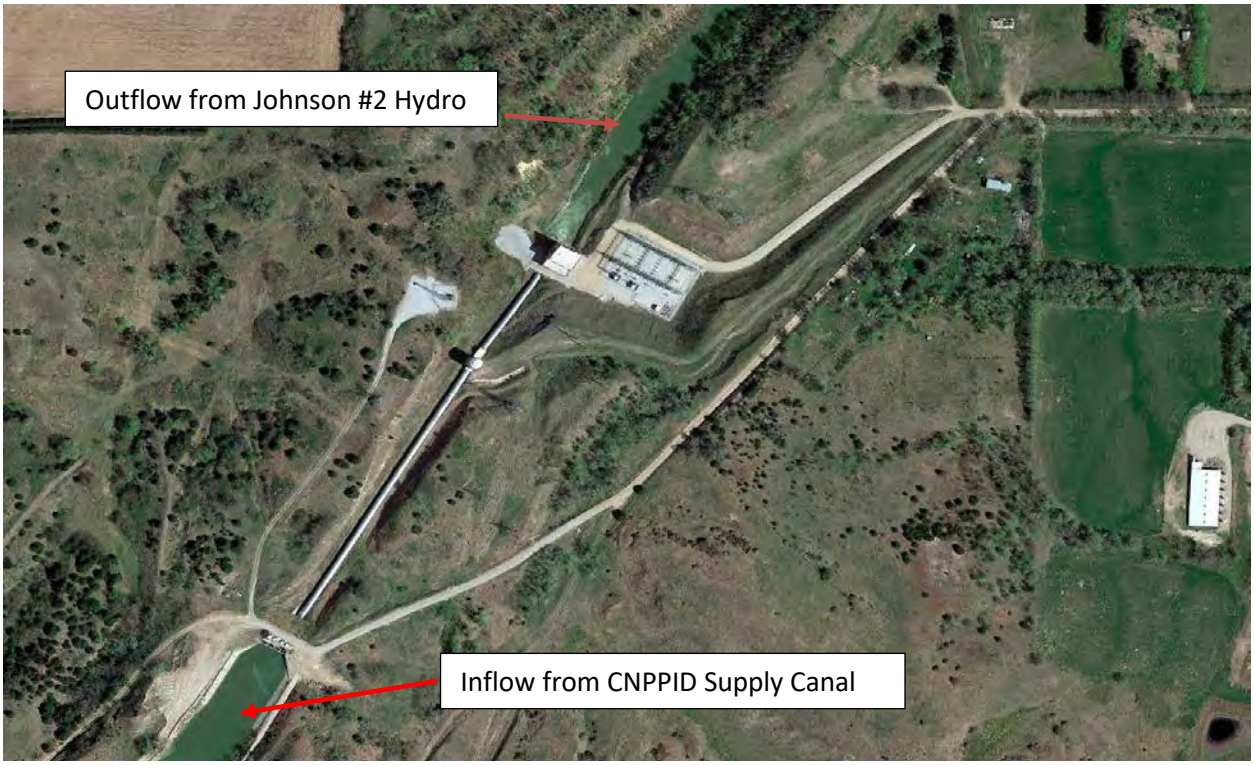

Figure 12 - Johnson #2 Hydro

J2 Hydro outflow is released through its tailrace (CM 71.8) into the final 2.3 miles of the CNPPID Supply Canal (See Figure 13).

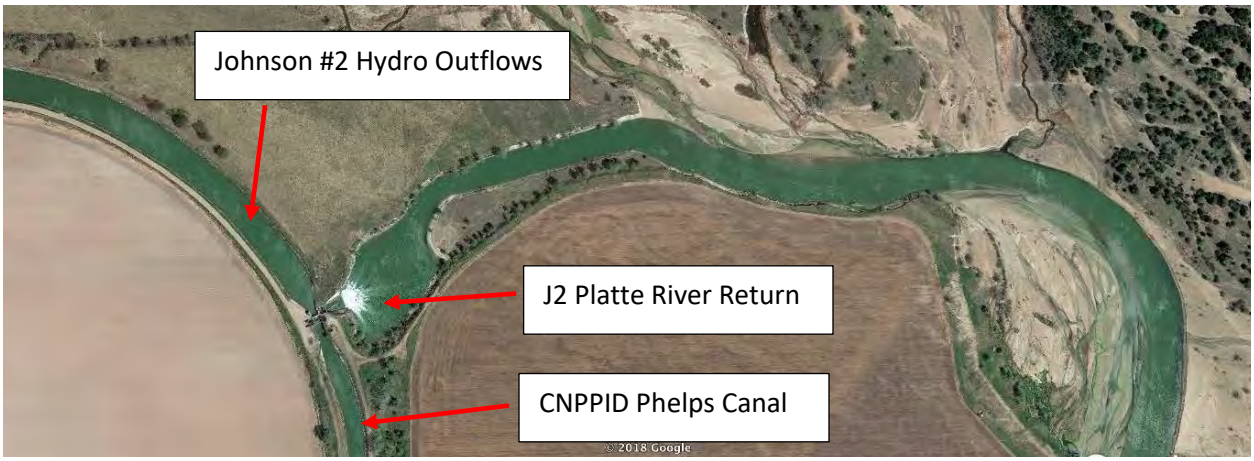

Figure 13 - Below Johnson #2 Hydro

Downstream flow may continue into CNPPID's Phelps County Canal to provide irrigation water to approximately 60,000 acres or is returned to the Platte River via the J2 River Return (CM 75.5). The USGS gage Platte River at Overton (06768000) is used to record flows below the J2 Return.

During the non-irrigation season, water released from Johnson Reservoir passes through the J1 Hydro and then the J2 Hydro and is returned to the Platte River via the J2 River Return. During the irrigation season the water continues on into CNPPID's Supply Canal and no water is returned to the river unless a request

is made by the USFWS to utilize the Environmental Account for in-stream use or to pass natural flow downstream to meet water right holders.

The next dam downstream of the J2 Hydro plant is the Kearney Diversion Dam, located on the Platte River at RM 218.5, owned and operated by the NPPD.

There have been no major equipment upgrades during the prior LIHI certification period or plans for any facility upgrades at the facility.

4. REGULATORY SUMMARY

A. Summary of Project Licensing and Agency Consultation Process

The Nebraska Department of Environmental Control, now the NDEQ, originally issued the Section 401 Water Quality Certification (WQC) on August 30, 1988 (Appendix A, Page A-2).

As required by LIHI recertification application review, on June 4, 2018, the NDEQ submitted an updated response on WQC issued for the Project (Appendix A, Page A-6). The NDEQ states the CNPPID is operating in compliance with the WQC.

On July 29, 1998, FERC approved the Offer of Settlement (OOS) submitted on May 15, 1998. The OOS pertains to operations at both the CNPPID's Kingsley Dam Project (P-1417) and NPPD's Project (P-1835). On the same day, FERC issued licenses to both Projects. A 40-year license for the Project expires on July 29, 2038.

The primary environmental issues within the Platte River basin are instream flows for fish and wildlife, endangered and threatened species, and the potential effects of releasing those flows on the availability of water for irrigation and recreation.

FERC found the OOS provided an appropriate balance between developmental and environmental resources, and ensures adequate protection for endangered and threatened species.

The OOS covers all major issues within the Platte River basin. It is supported by both CNPPID and NPPD and all major parties, including:

- The US. Department of the Interior (USDOI);
- The States of Nebraska, Colorado, and Wyoming;
- The Platte River Whooping Crane Critical Habitat Maintenance Trust (Trust);
- The National Audubon Society;
- American Rivers;
- Sierra Club;
- Nebraska Wildlife Federation, and
- The Nebraska Water Users.

On June 16, 2014[6], CNPPID filed a non-capacity license amendment with FERC. The filing contained an Initial Consultation Document (ICD) for the proposed J2 Regulating Reservoirs Project, located on the Platte River, in Gosper and Phelps Counties, Nebraska. Specifically, the proposed J2 Regulating Reservoirs Project would extend the existing main CNPPID Supply Canal, construct, operate, and maintain two new regulating reservoirs and add two new return flow points to the Platte River.

On July 24, 2015[7], CNPPID filed with FERC a comprehensive study plan for the proposed J2 Regulating Reservoirs Project, located on the Platte River, in Gosper and Phelps Counties, Nebraska.

On January 13, 2016[8], a Cultural Resources Study Plan for the J2 Regulation Reservoir Project was filed with FERC based on comments received at subsequent ICD agency meetings during the months of September 2014 through June 2015, and landowner/public hearings held in November 2014.

In discussion with CNPPID, this proposed license amendment was postponed in November of 2017 due to cost concerns.

B. Compliance Issues

During the prior LIHI Certification period, on July 13, 2016[9], the USFWS notified FERC concerning recreational users' non-compliance with measures intended to protect least tern and piping plovers in Lake McConaughy. The USFWS stated that discussions with CNPPID and NGPC were ongoing and that the USFWS would notify FERC of the outcome of these discussions. No other correspondence is documented until the filing of the annual Least Tern and Piping Plover Nest Monitoring Reports on November 14, 2016[10]. I assume all concerns were addressed in this report. Subsequently, CNPPID filed the 2017 annual report on November 7, 2017[11] and the 2018 annual report on November 16, 2018[12].

On September 30, 2016[13], CNPPID reported a September 21, 2016 oil spill to FERC stating 75 gallons of hydraulic fluid discharged from the Kingsley Hydro to Lake Ogallala resulting from a mechanical failure during an emergency shutdown of a generation unit. Once a CNPPID employee noticed an oil sheen on the river, CNPPID notified the NDEQ within 15 minutes. CNPPID quickly placed oil booms to prevent the downstream spread of the hydraulic oil.

On September 23, 2016, CNPPID removed the oil booms and restored normal flows. On September 27, 2016, the NDEQ assessed the situation and found no evidence of any environmental impacts. The NDEQ included five actions be undertaken by December 2, 2016:

- Develop a plan of action to be taken to prevent a reoccurrence of such a release;
- Review state and federal regulations pertaining to spill notifications;
- Purchase spill mitigation equipment to be kept at the facility for easy access should another release occur;

[6] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13572132
[7] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13939274
[8] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14117232
[9] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14308133
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[12] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15098151
[13] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14367348

- Prepare and submit to the NDEQ a written emergency response plan. The plan should also include a notification call list of the entities CNPPID is to notify when a release to the land and/or waters of the state occurs, and;
- Prepare a training plan for personnel pertaining to the containment, cleanup, and proper disposal of contaminated materials from releases.

On December 21, 2016[14], CNPPID filed supplemental information with the FERC including a December 12, 2016, letter from NDEQ stating the compliance in completing the required actions and that no further action would be taken regarding this matter.

On January 11, 2017[15], FERC informed CNPPID that the oil spill is not a license violation but required CNPPID to develop a plan by March 15, 2017, for installation of an oil monitoring and discharge prevention system at the Project.

The plan should include measures to detect when oil is present in the sump, along with an alarm when oil is present, and measures to prevent the system from pumping until the alarm is cleared. The plan should include measures to actively collect and separate oil that may have passively reached the sump over time, or in the event of a large oil release to the sump.

CNPID submitted their response on March 8, 2017[16] stating adherence to the development and implementation of the oil monitoring and collection plan.

C. Complaints

On December 22, 2016[17], Jeffrey Lake Development, Incorporated (JLDI), a Nebraska non-profit corporation, filed a Complaint alleging CNPPID violated one or more provisions of its FERC license (P-1417). JLDI requested that FERC issue an Order:

- Directing CNPPID to stop its interference with JLDI's residential and recreational use and enjoyment of Jeffrey Lake, and;
- Directing CNPPID to stop violating its own land and shoreline management plan by requiring CNPPID to both participate in, and allow adequate measures to prevent what has become continuing and significant erosion to the shorelines surrounding Jeffrey Lake, and, in particular, and to reasonably regulate the water level maintained in Jeffrey Lake, so as to not encourage erosion.

On January 11, 2017[18], CNPPID responded by refuting JLDI's allegations and stating CNPPID's actions are appropriate and consistent with the FERC license. CNPPID asserts JLDI's complaint is merely trying to achieve outcomes contrary to past FERC decisions and their lease with CNPPID. On January 16, 2017[19], JLDI filed amendments and added documentation to its original complaint. On August 28, 2017, and supplemented on September 19, 2017, JLDI filed a request for rehearing. On November 16, 2017[20], FERC issued an order denying rehearing to JLDI.

[14] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14448141
[15] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14464017
[16] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14513855
[17] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14450160
[18] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14465768
[19] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14467244
[20] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14758515

On May 26, 2017, FERC requested information from CNPPID based on a complaint regarding an erosion issue near Robb Ranch on the Platte River below the J2 Return. CNPPID responded to the information request on June 22, 2017[21]. On November 3, 2017[22], FERC responded to CNPPID and stated after examining the accessible data, FERC's conclusion agrees with CNPPID. The Platte River in this area is a meandering, braided stream, in which channels are unconstrained by natural features allowing the stream to migrate. Furthermore, it does not appear that operation of the Project is exacerbating lateral movement of river channels. FERC closed the investigation into this compliant.

In a FERC letter to CNPPID on August 29, 2018[23], FERC states an individual landowner on Lake McConaughy has filed multiple complaints about the erosion of his property. FERC referenced annual progress reports indicating CNPPID has been aware of the private property erosion in this area for at least several years, and that land may be continually eroding. FERC states that under License Article 19, CNPPID "*… is responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters …*"

FERC directs CNPPID to immediately respond to the individual complaint and take action to address erosion on property owned by the individual and additional property in the Mako-Ch-Mni subdivision, if necessary, by implementing shoreline protection measures, initiating the acquisition of any and all necessary property rights from affected landowners, or other means deemed appropriate.

On September 28, 2018[24], CNPPID submitted a meticulous response. The Mako-Ch-Mni subdivision was discussed in detail using aerial photos and property lot delineations. The letter presented a review of the historical erosion and actions taken by CNPPID to address erosion within the area along with an assessment of future erosion within the area. Actions taken within the last 30 days were documented and proposed measures to address erosion were offered. CNPPID stated they are in the process of agency and public consultations regarding the potential changes to the boundary review, with an anticipated completion of June 2019. In the interim, until the erosion issue is addressed, CNPPID stated:

- By November 28, 2018, CNPPID will provide to Mako-Ch-Mni Lot owners the results of the recent survey;
- CNPPID will annually acquire orthorectified aerial photography of the shoreline near the Lake Lots, and include the results in the annual boundary review report to FERC.

5. ZONES OF EFFECT (ZOEs)

The Project has eight ZOEs. The Applicant has defined ZOEs at each development from upstream to downstream and numbered them consecutively.

A. Kingsley Dam

The Kingsley Dam has two ZOEs:

- ZOE 1 – Lake McConaughy -The North Platte River from Kingsley Dam approximately 16 miles upstream.

[21] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14621156
[22] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14700168
[23] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15005593
[24] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15054418

- ZOE 2 – Lake Ogallala - The downstream side of Kingsley Dam (Lake Ogallala) to the Keystone Diversion Dam located approximately 1.5 miles below Kingsley Dam.

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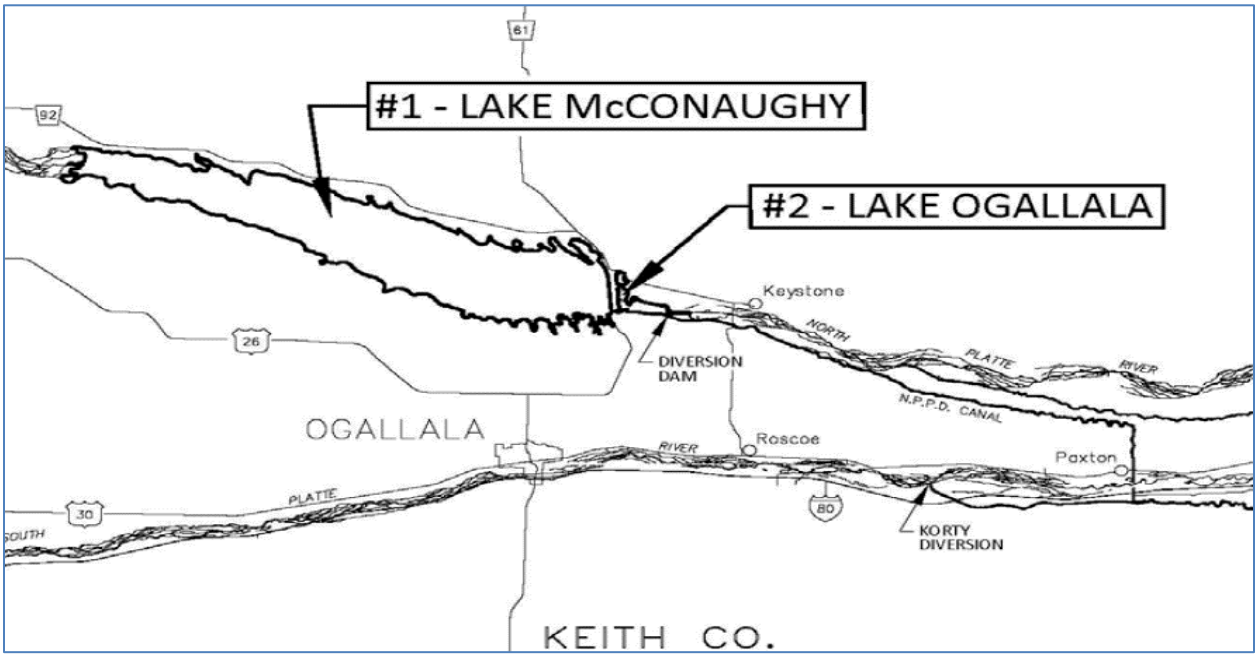


Figure 14 - ZOE 1 & 2

B. Central Diversion Dam

The Central Diversion Dam has two ZOEs:

- ZOE 3 – Central Diversion Pond - From the Central Diversion Dam approximately 2,000 feet upstream to the confluence of the North and South Platte Rivers.

- ZOE 4 – Platte River RM 310.5 to RM 289.2 - The Platte River from the Central Diversion Dam (River Mile 310.5) to the Jeffrey River Return/Gothenburg Diversion (Platte River Mile 289.2).

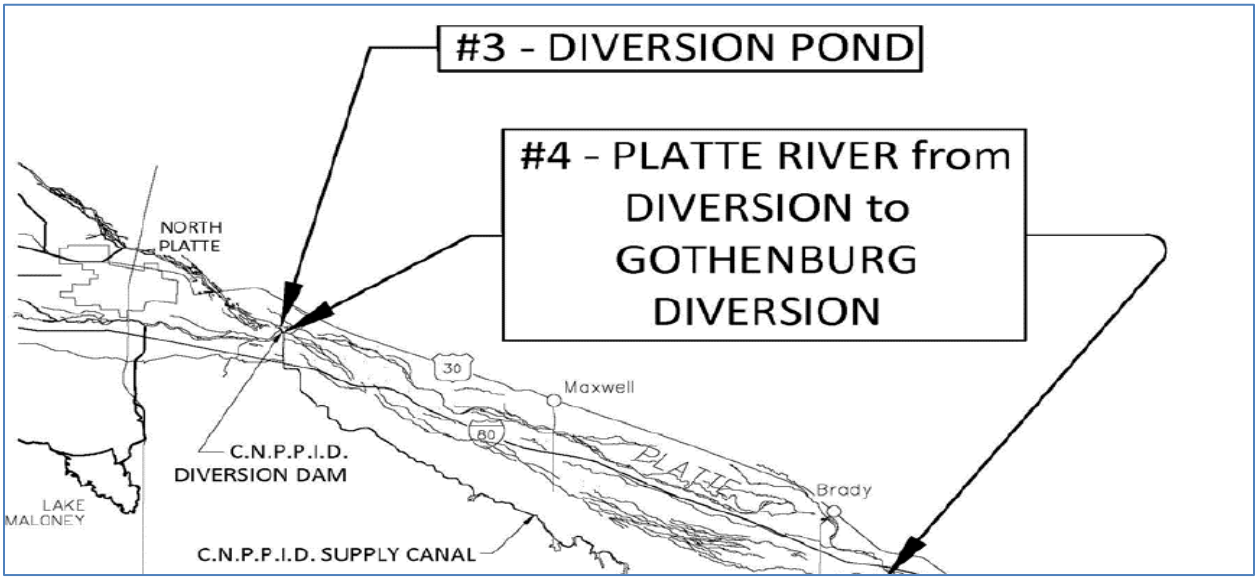


Figure 15 - ZOE 3 & 4

Note that the CNPPID Supply Canal adjacent to the Platte River down to the Jeffrey Lake inlet is included in this ZOE.

C. Jeffrey Dam

The Jeffrey Dam has two ZOEs:

- ZOE 5 – Jeffrey Reservoir - From the inlet gate into Jeffrey Reservoir (CM 21.2) to the Jeffrey Hydro (CM 23.7).
- ZOE 6 – Jeffrey Return - From the tailrace of Jeffrey Hydro to the Central Double Check Gate (CM 26.9) and the Gothenburg Diversion Dam.

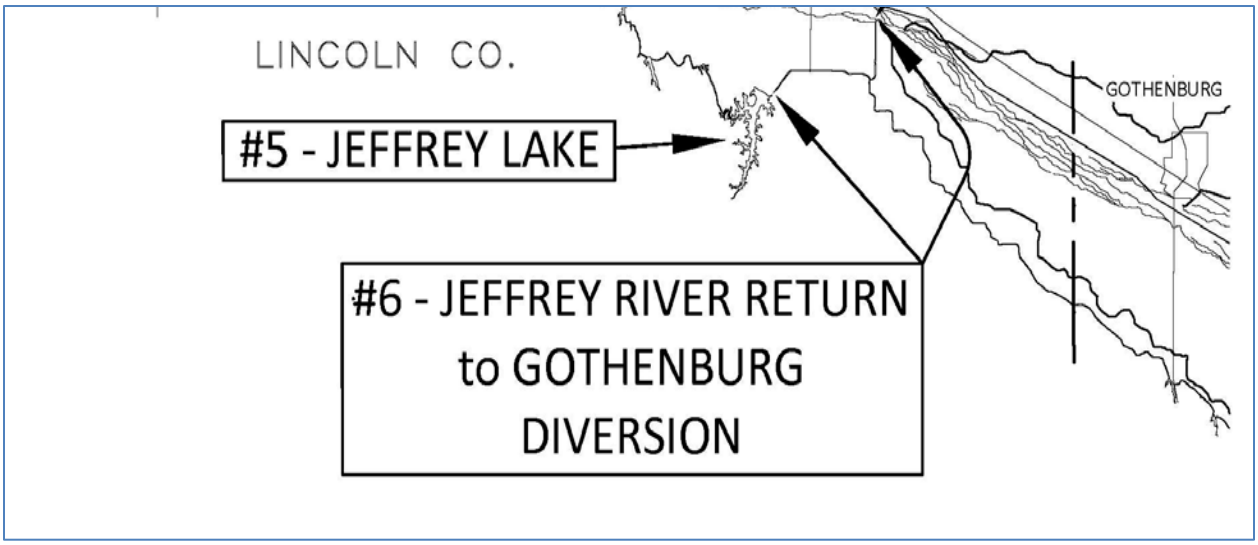


Figure 16 – ZOE 5 & 6

D. Johnson Dam

The Johnson Dam has two ZOEs:

- ZOE 7 – Johnson Reservoir & J1 Hydro - From the Johnson Lake inlet downstream to the J1 Hydro. Within this overall reach are two diversions, E65 Canal and E67 Canal. The E67 Canal is located between the Johnson Reservoir and the J1 Hydro and it provides water to approximately 5,000 acres. The E65 Canal is located just upstream of the inlet to the reservoir. Water can be diverted into the E65 Canal to supply 43,000 acres of farmland with irrigation water. The Elwood Reservoir is located south of the CNPPID Supply Canal and west of the E65 Canal. ZOE 7 includes ZOE 7A included in the revised application.
- ZOE 8 – J2 Hydro & Return - From the J1 Hydro tailrace, through the J2 Hydro to the J2 Return

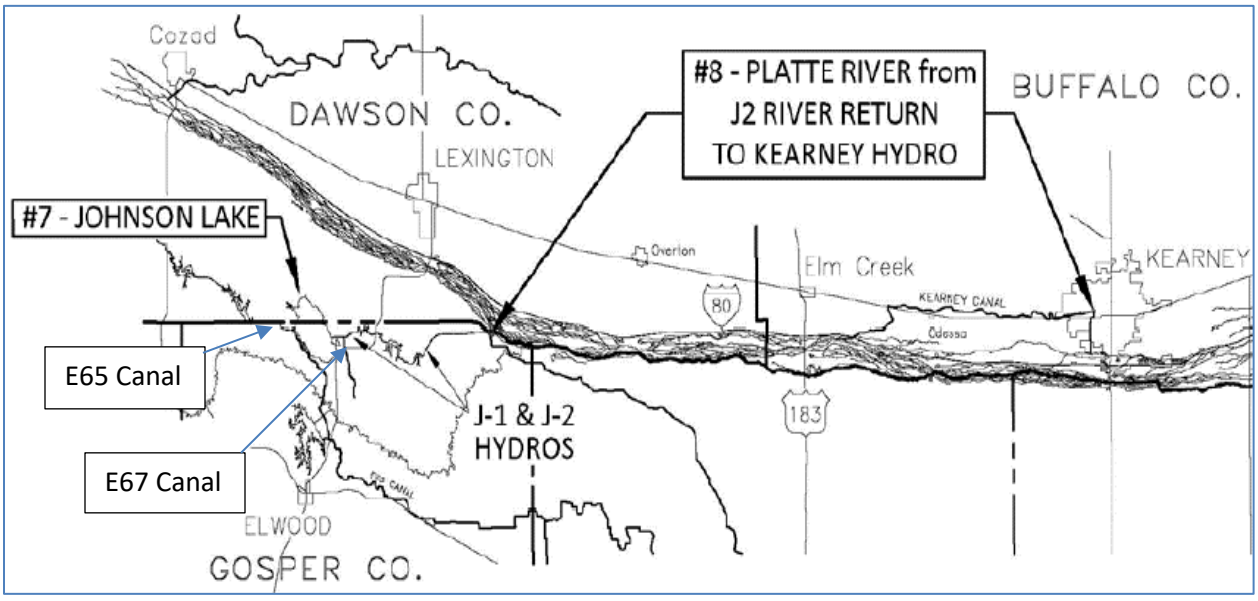


Figure 17 - 7 & 8

6. LIHI RE-CERTIFICATION PROCESS

The Project's current LIHI certification was set to terminate on May 22, 2018. On May 15, 2018, to allow sufficient time for the recertification process to be completed, LIHI extended the certification term of the Project to December 31, 2018 and again to April 30, 2019.

CNPPID submitted an application for recertification of the Project on June 29, 2018. On August 14, 2018, LIHI notified CNPPID that the Stage I recertification review for the Project was complete. Given the review was processed under the new, Second Edition LIHI Certification Handbook, the need for a Stage II review is necessary.

The Stage I review deemed it unnecessary to submit a new revised application, but found supplemental information was needed. On October 23, 2018, CNPPID supplied the requested supplemental information.

In the original LIHI application, CNPPID mentioned the J-2 Regulating Reservoirs Project, which would constitute a material change[25]. This project would require a non-capacity license amendment with FERC. However, CNPPID has stated as of November 2017, the Project has been postponed given unfavorable economics. However, given that the Stage I recertification review was processed under the new, Second Edition LIHI Certification Handbook, the need for a Stage II review was necessary. The Stage I review deemed it unnecessary to revised and submit a new recertification application. On August 7, 2018, LIHI assigned Mr. Gary Franc to perform the Stage II recertification review.

A. Comment Letters

On October 23, 2018, LIHI received a complete application for the Project and therefore, started to seek comments on the application. Comments could be submitted until 5 pm Eastern time on December 22, 2018.

On November 16, 2018, LIHI received a comment letter from John J. Shadle (jjshadl@nppd.com) of the Nebraska Public Power District that owns and operates the Keystone and Gothenburg diversion dams. Mr. Shadle states, *" … After reviewing the material provided regarding Central's project and operations, and knowing and working alongside of Central (and others) in the Platte River Recovery Implementation Program, compared against the Criteria and Standards set by the Institute, it is my opinion that Central meets or exceeds the Institute's Criteria and Standards. Fortunately, fish passage upstream or downstream have not been an issue on the Platte River and in my opinion do not apply in this case. The Environmental Account set aside in Lake McConaughy along with base flows through Central's project (which are returned to the Platte River) provide significantly to base flows in the Platte River for T&E and other species. Central maintains rigorous programs to protect cultural resources, watershed and shoreline management, recreational resources, etc. in part through their FERC license, but mostly as a public entity with the charge of protecting such resources ..."*

On December 7, 2018, LIHI received a comment letter dated December 6, 2018 from John Rissetto (John.Rissetto@nebraska.gov), Preservation Archeologist at the Nebraska Historical Preservation Office (SHPO). The letter states, *" … it is my opinion that Central meets or exceeds the Institute's criteria and standards for Cultural and Historic Resource Protection necessary for the recertification of Kingsley Dam structures located along the North Platte River and Platte River. This determination is based on the*

[25] http://www.cnppid.com/wp-content/uploads/2014/05/J-2-Regulating-Reservoirs-Initial-Consultation-Document-June-2014-eFiled-at-FERC-by-Kleinschmidt-6-16-2014.pdf

successful channels of communication and Section 106 reporting procedures developed between Central and the NeSHPO. These processes assist Central in proactively identifying and mitigating potential impacts to prehistoric or historic cultural resources either on or eligible for listing on the National Register of Historic Places caused by future construction projects …"

On December 22, 2018, LIHI received a comment letter dated December 21, 2018 from Michelle Koch (michelle.koch@nebraska.gov), Assistant Division Administrator in the Planning and Programming Division of the Nebraska Game and Parks Commission. The letter addresses fish passage, water quality and recreation. The letter notes that Project structures can fragment fish populations, but that passage is not required for resident species to complete their lifecycles and there can be a positive effect by reducing movement of invasive species such as Asian carp and maintenance of a sport fishery in Lake McConaughy, although when spilling at Kingsley Dam some nongame fish are able to move downstream into Lake Ogallala. The agency notes that the Project is in compliance with water quality standards, the occasions of low dissolved oxygen (DO) in Lake Ogallala are not the fault of Project operations, and that CNNPID has worked to address low DO. Lastly the agency acknowledges the Project's recreational opportunities and coordination with agency representatives and other stakeholders. The letter concludes, "*Overall, it appears Central meets the criteria set forth by the LIHI for recertification"*.

B. Agency Correspondence

As part of my review, I conducted a FERC e-library search to verify claims in the recertification application. My review concentrated on the period from the start of the previous LIHI Certification, May of 2013 through November of 2018, for FERC docket number P-1417.

On November 14, 2018, I emailed contacts[26] listed in the Project application as knowledgeable about the Project stating, *"…I am the LIHI reviewer tasked with determining whether Central Nebraska Public Power and Irrigation District's Kingsley Hydroelectric Project (FERC No. 1417) should be LIHI recertified. I am emailing you today because the owner has identified you in the application as resource agency contacts familiar with the project. I would appreciate your perspective regarding the project's proposed operation with regard to satisfying its environmental obligations (FERC articles, MOUs, etc.). Without your input, my review can only be based on the documents found in the application and FERC docket. Thank you for your time in this matter. The LIHI application can be found at this web address – https://lowimpacthydro.org/lihi-certificate-37-kingsley-dam-project-nebraska-ferc-1417/ "*

7. RE-CERTIFICATION REVIEW

This section contains my Stage II recertification review of the Project with regard to LIHI's Certification criteria.

A. LIHI Criterion-Flows

Water released from Lake McConaughy during the irrigation season serves more than 100,000 irrigated acres primarily in Gosper, Phelps and Kearney counties. Releases from Lake McConaughy take four to five days to travel the 125 miles to the headworks of the irrigation systems. The CNPPID Supply Canal also

[26] Bill Taddicken (btaddicken@audubon.org) ; Dave Tunink (dave.tunink@nebraska.gov); Eliza Hines (Eliza_Hines@fws.gov); Jason Farnsworth (farnsworthj@headwaterscorp.com); John Rissetto (John.Rissetto@nebraska.gov); John Shadle (jjshadl@nppd.com); Marty Link (marty.link@nebraska.gov); Rich Walters (rwalters@tnc.org); Tim McCoy (tim.mccoy@nebraska.gov)

collects rainfall runoff in its watershed, so its flow may vary beyond what is diverted at the Central Diversion Dam.

Occasional large rainfall events increase river flows and often prompt many irrigators to stop taking water. Since these rain events can occur unexpectedly, it is common that water has already been released to meet irrigation demands, resulting in excess irrigation water moving through the CNPPID Supply Canal. This excess water must either be regulated through the CNPPID Supply Canal's reservoirs or returned to the Platte River. Returning the water to the river means losing precious storage water for irrigation purposes.

To reduce the amount of water returned to the Platte River, 2,500 acre-feet of storage volume is available in Johnson Reservoir to hold rain and rejected irrigation water. This requires targeting the reservoir at the lower end of normal levels.

From June 1 to August 15 each year, Johnson Reservoir operates near the low end of the normal operation range so that space is available if attenuation is required. When attenuating flows, Johnson Reservoir levels will increase until the water is released to the river at low flows or diverted to the irrigation canals. The water levels will then decline to the lower end of the operating range in preparation for another attenuation event.

CNPPID is in discussions with the State of Nebraska, the Tri-Basin Natural Resources District (TBNRD) and the Platte River Program (PRP) to develop an accounting procedure to divert excess Platte River flow into the CNPPID Supply Canal, E65 Canal and the Elwood Reservoir for groundwater recharge.

I. Kingsley Dam

The application states that the dam satisfies the LIHI flows criterion standard in ZOE 1 and ZOE 2 by meeting alternative standard A-1[27]. ZOE 1 is Lake McConaughy on the North Platte River from Kingsley Dam approximately 16 miles upstream. ZOE 2 is Lake Ogallala from the downstream side of Kingsley Dam to the Keystone Diversion Dam located approximately 1.5 miles downstream.

The Kingsley Dam's maximum water surface elevation is 3,260 feet mean sea level (FMSL) to 3,265 FMSL depending on the time of year. The level of Lake Ogallala varies from 3,123.5 FMSL – 3,126.3 FMSL.

CNPPID operates the Kingsley Dam for power production and water supply to support downstream irrigation demands for CNPPID customers. All releases from Kingsley Dam through the Kingsley Hydro flow into Lake Ogallala. Releases from Lake Ogallala pass through the NPPD Keystone Diversion Dam into the North Platte River or through the NPPD Canal to meet irrigation demands from NPPD customers. NPPD Canal water eventually flows into the South Platte River near Paxton, NE and returns to the confluence with the North Platter River just upstream of the Central Diversion Dam.

Neither the Kingsley Dam nor Keystone Diversion Dam use flashboards. No minimum or base flows are required for release from Kingsley Dam or the Keystone Diversion Dam. However, License Article 404 requires the establishment of the Environmental Account. The USFWS manages the Environmental Account block of storage water. If the USFWS manager schedules releases for the

[27] Agency recommendation.

protection of endangered and threatened species the water is passed through the Keystone Diversion Dam into the North Platte River.

Article 404 also requires the filing of the Annual Operating Plan for the Environmental Account (AOPEA). The AOPEAs filed during the prior LIHI Certification period were the 2014 AOPEA[28], 2015 AOPEA[29], 2016 AOREA[30], 2017 AOPEA[31] and the 2018 AOPEA[32].

II. Central Diversion Dam

The application states that the dam satisfies the LIHI flows criterion standard in ZOE 3 and ZOE 4 by meeting alternative standard A-1[33]. ZOE 3 defines the Central Diversion Pond, from the Central Diversion Dam approximately 2,000 feet upstream to the confluence of the North and South Platte Rivers. ZOE 4 defines the Platte River from RM 310.5 to RM 289.2. Note that the CNPPID Supply Canal adjacent to the Platte River down to the Jeffrey Lake inlet is included in ZOE 4.

Two sections of radial gates allow water to pass from the Diversion Pond into the Platte River. Located between the sections of gates is the ogee spillway, which allows excess flows into the Platte River if needed. On the south end of the Diversion Dam are the Canal gates that divert into Central's 75-mile long Supply Canal. There is little to no storage within the pond. Water passes into the Platte River or into the Supply Canal.

Water is only passed into the Platte River:

- If there is an overabundance of water in the North and South Platte Rivers;
- If water right holders located below the diversion are exercising their rights to the water; or
- If the USFWS request water from the Environmental Account be used to provide for in-stream flows.

III. Jeffrey Dam

The application states the dam satisfies the LIHI flows criterion standard in ZOE 5 and ZOE 6 by meeting alternative standard A-1[34]. ZOE 5 defines the Jeffrey Reservoir, from the inlet gate into Jeffrey Reservoir (CM 21.2) to the Jeffrey Hydro (CM 23.7). ZOE 6 defines the Jeffrey Return, from the tailrace of Jeffrey Hydro to the Central Double Check Gate (CM 26.9) and the Gothenburg Diversion Dam.

Water entering the CNPPID Supply Canal travels 21 miles downstream to the Jeffrey Dam and Jeffrey Hydro Plant. The Jeffrey Dam creates the Jeffery Reservoir. Jeffrey Reservoir is a regulating reservoir for the Jeffrey Hydro. Water can be temporarily stored and released to maximize power production. There is no bypass structure around the Jeffrey Hydro and all water exiting the Jeffery Reservoir must pass through one or both turbines.

[28] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13561611
[29] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13908730
[30] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14149735
[31] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14485123
[32] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14818970
[33] Not applicable.
[34] Not applicable.

The maximum and minimum elevations for the Reservoir are 2759.0 and 2750.5 FTMSL. Normal operational levels are 2758.5 to 2757.0 FTMSL when the hydro is operating. For planned outages, the lake is lowered to a minimum elevation of 2750.5 FTMSL so that during the outage water can re-fill the reservoir.

From the hydro's tailrace, the CNPPID Supply Canal directs water 3.5 miles to the Central Double Check Gate. Water can be returned back to the Platte River via the Gothenburg Diversion Dam through the 1.5-mile-long Jeffrey Hydro Return or continue to pass downstream into the CNPPID Supply Canal to the Johnson Reservoir.

IV. Johnson Dam

The application states that the dam satisfies the LIHI flows criterion standard in ZOE 7 and ZOE 8 by meeting alternative standard A-1[35]. ZOE 7 defines the Johnson Reservoir & J1 Hydro, from the Johnson Lake inlet downstream to the J1 Hydro. Within this overall reach are two diversions, E65 Canal and E67 Canal. The E65 Canal flows can be pumped into the Elwood Reservoir until irrigation demands increase at which time water is released back in the E65 Canal. ZOE 8 defines the J2 Hydro & Return, from the J1 Hydro tailrace, through the J2 Hydro to the J2 Return.

Inflow into the reservoir is from the CNPPID Supply Canal through the Central Double Check Gate. Outflow from the reservoir is through the J1 Hydro plant. Water released from J1 Hydro exits the plant though the tailrace and travels through the CNPPID Supply Canal to the J2 Hydro.

J2 Hydro outflow is released through its tailrace into the CNPPID Supply Canal. Downstream flow may continue into CNPPID's Phelps County Canal to provide irrigation water to approximately 60,000 acres or is returned to the Platte River via the J2 River Return. During the non-irrigation season, water released from Johnson Reservoir passes through the J1 Hydro and then the J2 Hydro and is returned to the Platte River via the J2 River Return.

During the irrigation season the water continues into CNPPID's Supply Canal and no water is returned to the river unless a request is made by the USFWS to utilize the Environmental Account for in-stream use or to pass natural flow downstream to meet water right holders.

V. Criterion-Flows Summary

Throughout the prior LIHI Certification period, on two occasions, CNPPID requested a temporary partial waiver for releases of non-irrigation season flows[36] covering the water years 2014 and 2015. License Article 405 requires CNPPID to operate the Project in accordance with the Environmental Account. CNPPID is required to provide certain flows at the Central Diversion Dam and at the Keystone Diversion Dam, such flow requirements based on water supply conditions and projections. These flow requirements were based on an understanding and expectation that upstream available flows to the Project would not significantly change. In 2013, inflows on the North Platte River were substantially below historical flows.

Non-irrigation season inflows are the primary source of water for Lake McConaughy. The median non-irrigation season flow prior to CNPPID's relicensing was approximately 1,400 CFS. The median non-irrigation season flow in 2013 and 2014 dropped to approximately 1,000 CFS, representing nearly a 30% reduction in the inflows needed to cover Lake McConaughy demands, including the non-irrigation-season flow requirements.

The requested waivers excluded the period from March 1 through May 10in both 2014 and 2015 in combination with the condition that CNPPID not store water in Elwood Reservoir for irrigation. CNPPID consulted with the USFWS, NGPC and NPPD in the development of the waiver requests. The waivers were expected to result in more flow in the Platte River during the spring Whooping

[35] Not applicable.
[36] On 9/19/2013 - https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13353047 and on 10/10/2014 - https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13657150

Crane migration, a high priority for USFWS, even while allowing for less total release from Lake McConaughy for the non-irrigation season as a whole. FERC approved both waiver requests[37]. No additional waiver requests have occurred since October of 2014.

The development complies with resource agency conditions and recommendations issued regarding flow conditions and impoundment fluctuation, and therefore satisfies the flows criterion.

B. LIHI Criterion-Water Quality

The Nebraska Department of Environmental Control, now the NDEQ, originally issued the Section 401 Water Quality Certification (WQC) on August 30, 1988 (Appendix A, Page A-2). As required by LIHI recertification application review, on June 4, 2018, the NDEQ submitted an updated response on WQC issued for the Project (Appendix A, Page A-6). The NDEQ states the CNPPID is operating in compliance of WQC issues.

I. Kingsley Dam

The Applicant states that the dam satisfies the LIHI water quality criterion in ZOE 1 & 2 by meeting alternative standard B-2[38].

According to the NDEQ's 2018 Water Quality Integrated Report (WQIP)[39], the North Platte River is not a Water Quality Limited river reach and is categorized as Category 1, a waterbody where all designated uses are met (page NP-8). Lake McConaughy water quality supports beneficial use for recreation, agriculture water supply, industrial water supply, and aesthetics and is listed as Category 5 in the WQIP, Page NP-3. Category 5 is a waterbody where one or more pollutants impair one or more beneficial uses and not all of the Total Maximum Daily Loads (TMDL) have been developed.

Category 5 waters constitute the Section 303(d) list subject to EPA approval/disapproval. Lake McConaughy's aquatic life use is impaired for Total Phosphorus, Chlorophyll a, Hazard Index Compounds and Mercury. The WQIP states the causes for these impairments is unknown. Data gathered in 2014 determined the waterbody's aquatic life use is supported for Total Phosphorus. There are no other agency recommendations related to water quality and no monitoring compliance activities pertaining to Lake McConaughy.

Lake Ogallala is listed on the 303(d) list of impaired waters for low dissolved oxygen (DO). CNPPID, along with NPPD, NGPC, University of Nebraska-Lincoln, and the NDEQ conducted studies to determine the TMDL and the cause of the low DO. The cause of low DO is upstream pollution entering the lake and not caused by the Dam's operation. In 2009, a cut channel through a peninsula and through shallow areas of the lake helps improve circulation in an effort to address the low DO concerns.

CNPPID maintains a minimum DO 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. The

[37] On 10/29/13 - https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13381752 and on 11/4/2014 - https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13676484

[38] Agency recommendation.

[39] http://deq.ne.gov/Press.nsf/xsp/.ibmmodres/domino/OpenAttachment/Press.nsf/21F656B5D005B33B8625824200764784/Body1/2018%20Nebraska%20Water%20Quality%20Integrated%20Report%20Draft.pdf

amount of water passed through the bypass is determined by instantaneous monitoring of DO at the end of the tailrace. In addition, CNPPID monitors DO and temperature at one-meter intervals at five separate stations around the lake on a weekly basis to assure adequate DO.

II. Central Diversion Dam

The Applicant states that the dam satisfies the LIHI water quality criterion in ZOE 3 & 4 by meeting alternative standard B-2[40].

The Central Diversion Dam is not Water Quality Limited. The Diversion Pond does accumulate fine grain sediment (sand) as the water from the North and South Platte Rivers enter the pond. With the Diversion ponding 2,000 feet upstream, the sand that makes up the bulk of the sediment carried by the rivers settles out. This sand is removed on an annual basis and is dredged and stored upriver in large spoil either piles, or when flow is sufficient, is passed over the Diversion Dam and into the Platte River.

Dredging begins in early spring and continues through fall. CNPPID has permits from the U.S. Army Corps of Engineers (USACE) and the NDEQ to discharge the dredged sand directly into the Platte River downstream of the Diversion Dam. There is a minimum flow of 100 CFS required downstream of the Diversion Dam during dredging activities, which is monitored remotely from the downstream Gothenburg Control Room.

In addition, CNPPID takes water samples on a weekly basis to determine if DO is sufficient in the river below to allow discharging the dredged sand back into the river. If DO falls below 6.0 mg/l from April 1 to September 30 and 4.0 mg/l from October 1 to March 31, discharge into the Platte River is curtailed.

III. Jeffrey Dam

The Applicant states that the dam satisfies the LIHI water quality criterion in ZOE 5 & 6 by meeting alternative standard B-2[41].

There is a fish consumption warning for most of the CNPPID Supply Canal and the Jeffrey Reservoir due to Hazard Index Compounds. Fish consumption assessments are currently being conducted along the entire length of the system. The assessment is complete for the Jeffrey Reservoir. The reservoir is listed as Category 2, a water body in which all designated uses are met, but as yet insufficient information exists to designate it as a Category 1 water body. The consumption advisory has no connection with CNPPID's Supply Canal operations or the Jeffrey Hydro operation.

There are no other agency recommendations or compliance activities related to water quality.

[40] Agency recommendation.
[41] Agency recommendation.

IV. Johnson Dam

The Applicant states that the dam satisfies the LIHI water quality criterion in ZOE 7 & 8 by meeting alternative standard B-2[42].

Johnson Reservoir is an impaired water body due to elevated chlorophyll from total nitrogen and phosphorus caused by runoff from agricultural operations. This water quality concern is not due to any of CNPPID's operations.

There are no other agency recommendations or compliance activities related to water quality.

V. Criterion – Water Quality Summary

Throughout the prior LIHI Certification period, no new areas of concern have occurred. Therefore, the Project satisfied the water quality criterion.

C. LIHI Criterion-Upstream Fish Passage

On July 24, 2018, the NGPC provided a letter pertaining to fish passage at the Project's facilities (See Appendix A, page A-7). The NGPC is familiar with the Project and manages the sport fisheries in Project's waterbodies. With regard to fish passage upstream, the letter states:

- These structures all prevent the upstream migration of all fish species. Asian Carp have been observed on the Platte River near the J2 return. These structures could have a positive impact on reducing the chance of Asian Carp entering other parts of the system;
- While these blockages do not prevent any of the native species from completing their lifecycle, it does fragment fish populations and prevents the intermixing of genetics within a species that would normally occur with the natural migration of these species;
- The NGPC believes there are no current fish population issues. However, NGPC has not evaluated the system for potential negative impacts on any of the native fish species that are present in this section of the Platte River.

I. Kingsley Dam

The Applicant states that the dam satisfies the LIHI upstream fish passage criterion in ZOE 1 & 2 by meeting alternative standard C-1[43].

There is no impediment for the fish to move upstream from the Kingsley Dam into the North Platte River. The NGPC manages the fish within Lake McConaughy and regularly monitors the population status of game and forage species.

NGPC treated Lake Ogallala with rotenone[44] in 2009 to remove all fish from the Lake. In 2010, the lake was restocked with rainbow trout and yellow perch. The NGPC considers the impoundment a put-and-take lake with no expected natural reproduction of the selected species. Any other fish found

[42] Agency recommendation.
[43] Not applicable.
[44] Rotenone - a chemical that interferes with the ability of fish to utilize oxygen.

in the lake have come into the lake by successfully passing downstream through the turbine of the Kingsley Hydro.

The NGPC position is that to maintain the quality of the trout fishery, renovation of Lake Ogallala to remove all fish is required on a ten-year basis. If this management is maintained, the next renovation of Lake Ogallala is probable in 2019.

II. Central Diversion Dam

The Applicant states that the dam satisfies the LIHI upstream fish passage criterion in ZOE 3 by meeting alternative standard C-1[45] and in ZOE 4 by meeting alternative standard C-2[46].

There are no structures separating the North and South Platte Rivers from the upstream end of the Diversion Pond therefore fish within the pond can freely move upstream at any time.

III. Jeffrey Dam

The Applicant states that the dam satisfies the LIHI upstream fish passage criterion in ZOE 5 by meeting alternative standard C-1[47] and in ZOE 6 by meeting alternative standard C-2[48].

Fish are free to move throughout ZOE 5, which is limited to the Jeffrey Reservoir from the Hydro to the inlet. Fish are not able to move from the Jeffrey River Return upstream into the Supply Canal.

IV. Johnson Dam

The Applicant states that the dam satisfies the LIHI upstream fish passage criterion in ZOE 7 by meeting alternative standard C-1[49] and in ZOE 8 by meeting alternative standard C-2[50].

The NGPC manages the Johnson Reservoir for fish abundance and diversity. The fish are unable to move from the reservoir upstream and into the CNPPID Supply Canal because the inlet drops the water 10 feet from the CNPPID Supply Canal to the reservoir. Fish are restricted from downstream movement by the J1 Hydro.

V. Criterion – Upstream Fish Passage Dam

Throughout the prior LIHI Certification period, the Project has operated to meet NGPC concerns for upstream passage of anadromous and catadromous fish. No new issues have arisen. The Project satisfies the upstream fish passage criterion.

[45] Not applicable.
[46] Agency recommendation
[47] Not applicable.
[48] Agency recommendation
[49] Not applicable.
[50] Agency recommendation

D. LIHI Criterion-Downstream Fish Passage

On July 24, 2018, the NGPC provided a letter pertaining to fish passage at the Project's facilities (See Appendix A, page A-7). The NGPC is familiar with the Project and manages the sport fisheries in Project's waterbodies. With regard to fish passage downstream, the letter states:

- Kinsley Dam does reduce the movement of fish species out of Lake McConaughy, which assists in maintaining the quality sport fisheries for such species as Walleye, Smallmouth Bass and White Bass. Lake Ogallala has the ability to provide some quality trout fishing but non-game fish still gain access via release from Kinsley Hydro. Overtime these non-game species compete with the trout limiting their growth and productivity;
- Some of the best trout fishing is in the CNPPID Supply Canal and the North Platte River. The trout fishery in the North Platte River could be much higher quality fishery if winter flows were maintained higher than the 15 CFS typically released.
- The NGPC believes there are no current fish population issues. However, NGPC has not evaluated the system for potential negative impacts on any of the native fish species that are present in this section of the Platte River.

I. Kingsley Dam

The Applicant states that the dam satisfies the LIHI downstream fish passage criterion in ZOE 1 by meeting alternative standard D-2 and in ZOE 2 by meeting alternative standard D-1.

Fish passage downstream is restricted from Lake McConaughy to Lake Ogallala by Kingsley Dam and the Kingsley Hydro. However, a large percentage of the fish in both Lake McConaughy and Lake Ogallala are introduced, non-native sport fish and the lack of movement from Lake McConaughy to Lake Ogallala does not limit the completion of their lifecycle for any native fish in Lake McConaughy.

In addition, since NGPC manages Lake Ogallala as a Cold Water put and take fishery for trout, movement of fish from Lake McConaughy is unwanted. There has never been a concern by the NGPC about downstream movement of fish from Lake McConaughy. Any movement that occurs degrades the value of the Lake Ogallala fishery.

Fish can pass through the Keystone Diversion Dam river gates and the canal gates as well as over the ogee spillway. Trout stocked in Lake Ogallala are caught below the dam and miles downstream in the NPPD's Keystone Canal.

II. Central Diversion Dam

The Applicant states that the dam satisfies the LIHI downstream fish passage criterion in ZOE 3 & 4 by meeting alternative standard D-2.

There are no provisions for fish passage required by any agency at the Central Diversion. Dam. Fish are restricted from moving downstream into the Platte River most of the time. If water is released to the Platte River through the river gates or over the ogee spillway, fish can at that time move down river. Fish can also move into the CNPPID Supply Canal through the Canal gates.

III. Jeffrey Dam

The Applicant states that the dam satisfies the LIHI downstream fish passage criterion in ZOE 5 by meeting alternative standard D-2 and in ZOE 6 by meeting alternative standard D-1.

Fish are restricted from downstream movement by the Jeffrey Hydro. Native species can still complete their lifecycle due to this restriction. The Jeffrey River Return flows directly into the Platte River. There are no gates or any other structures separating the mouth of the return and the Platte River and fish are free to move downstream from the Jeffrey River Return to the Platte River.

IV. Johnson Dam

The Applicant states that the dam satisfies the LIHI downstream fish passage criterion in ZOE 7 by meeting alternative standard D-2 and in ZOE 8 by meeting alternative standard D-1.

Fish are restricted from downstream movement by the J1 Hydro. Native species can still complete their lifecycle due to this restriction. The J2 River Return below the J2 tailrace does not prevent any movement of fish downstream into the Platte River.

V. LIHI Criterion-Downstream Fish Passage - Summary

The FERC license has no reserved authority for mandatory downstream fishway prescriptions. Throughout the prior LIHI Certification period, no new issues have arisen, and the Project satisfies the downstream fish passage and protection criterion.

E. LIHI Criterion-Shoreline and Watershed Protection

The Applicant states the LIHI shoreline and watershed protection criterion in ZOEs 1, 2, 5, 6, 7 and 8 are satisfied by meeting alternative standard E-2, and in ZOE 3 & 4 by meeting alternative standard E-1.

CNPPID, in conjunction with the USFWS, NGPC on other stakeholders submitted a revised Shoreline Management Plan (SMP) approved by FERC [51] on April 11, 2014. The revised SMP[52] states:

- The updated species protection plans are filed concurrently with the April 1, 2015 Form 80 recreation report[53] and every three years thereafter;
- A revised Land and Shoreline Management Plan (LSMP) is filed with the FERC for approval, every six years along with the Form 80 recreation report, beginning in April 1, 2021.

[51] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13512085
[52] https://www.cnppid.com/news-info/regulatory-and-legislative-information/land-and-shoreline-management-plan/
[53] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13816015

I. Kingsley Dam

The LSMP covers management of all CNPPID property along the lakes and canal system. CNPPID leases the shorelines of Lake McConaughy and Lake Ogallala to the NGPC. The NGPC Master Plan[54], adopted on October 21, 2016, is used as a guide for CNPPID in making decisions regarding the future use of land, and as a baseline to evaluate development proposals and recreational needs. The Master Plan helps to minimize land-use conflicts and improve CNPPID's ability to administer its land and environmental policies in a fair and consistent manner.

II. Central Diversion Dam

Within the diversion pond a spoil pile of sand dredged from the pond in the early 1990's annually attracts a couple of pairs of least terns and one or two pair of piping plovers. CNPPID protects that pile of sand as part of the Tern and Plover Management plan[55].

On both the north and south side of the diversion pond are constructed dikes to prevent water during times of flooding from going around the diversion dam. These dikes are on private property owned by CNPPID.

All land and shoreline below the Diversion Dam are private lands with the exception of a few hundred feet. Normal river erosion and accretion occur throughout the 20 miles of this ZOE.

III. Jeffrey Dam

All the shoreline in the Jeffrey Reservoir area is protected through the LSMP. The entire length of the Jeffrey River Return is owned and controlled by CNPPID and is managed through the LSMP.

IV. Johnson Dam

All the shoreline in the Johnson Reservoir and J1 Hydro area is protected through the LSMP. The entire length of the Johnson Lake inlet downstream to the J1 Hydro, including the E65 Canal and E67 Canal and Jeffrey River Return is owned and controlled by CNPPID and is managed through the LSMP.

V. Criterion – Shoreline and Watershed Protection Summary

As previously discussed in Section 4.C, on September 28, 2018[56], CNPPID stated they are in the process of agency and public consultations regarding the potential changes to the boundary review, with an anticipated completion of June 2019. In the interim, until the specific shoreline erosion issues are addressed, CNPPID will:

- By November 28, 2018, provide to Mako-Ch-Mni Lot owners the results of the recent survey,
- Annually acquire orthorectified aerial photography of the shoreline near the Lake Lots, and include the results in the annual boundary review report to FERC.

[54] http://outdoornebraska.gov/wp-content/uploads/2017/03/Lake-McConaughy-Master-Plan_final.pdf
[55] https://www.cnppid.com/operations/wildlife-habitat/least-terns-and-piping-plovers-in-the-central-district/
[56] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=15054418

A review of the FERC docket indicates that during the prior LIHI Certification period, no findings of non-compliance with the LSMP were found and the shoreline erosion issues were adequately addressed. Therefore, the Project satisfies the shoreline and watershed protection criterion. Since the final actions pertaining to erosion issues in Lake McConaughy are ongoing, CNPPID should provide a status update in their annual compliance submittal to LIHI.

F. LIHI Criterion-Threatened and Endangered Species

The Applicant states the LIHI Threatened and Endangered Species criterion in ZOEs 1, 2 & 3 are satisfied by meeting alternative standard F-3, in ZOEs 4, 5, 6 and 7 by meeting alternative standard F-1, and in ZOE 8 by meeting alternative standard F-2.

I. Kingsley Dam

CNPPID annually, in consultation with the USFWS and NGPC, and under the specifications of the approved LSMP developed a management plan to protect nesting terns and plovers along the shore of Lake McConaughy[57].

The river otter is a State listed threatened species that was reintroduced along the North Platte River upstream of Lake McConaughy. The species is doing well and expanding its range in Nebraska both upstream and downstream of Lake McConaughy. According to the NGPC[58], River otter populations have expanded since their reintroduction. High survival rates and the adaptability of this species have contributed to their success. With continued protection and habitat conservation, the river otter is likely to make a full recovery in Nebraska.

No known federally endangered or threatened species utilize area within Lake Ogallala. Whooping cranes have been reported from the shore of the lake with the last sighting in 2011.

II. Central Diversion Dam

Present in the diversion pond are annually nesting least terns and piping plovers. Both are State and Federal listed species. The nesting area is a large spoil pile on lands owned by CNPPID.

Annually, as required by license article 420, pre-emergent herbicide is applied to maintain the area as vegetation free. Monitoring is conducted twice weekly and the results of that monitoring are presented to the USFWS and NGPC on an annual basis as part of the annual Lake McConaughy Tern and Plover Monitoring Report.

Below the dam, no known federally endangered or threatened species utilize the area. Whooping cranes have been reported roosting in this area.

[57] https://www.cnppid.com/operations/wildlife-habitat/least-terns-and-piping-plovers-in-the-central-district/
[58] http://rarespecies.nebraska.gov/portfolio/river-otter/

III. Jeffrey Dam

No listed species are present in the Jeffrey Reservoir. American burying beetles, both a Federal and State listed species, are present in the surrounding areas. The beetles are protected on CNPPID property through the LSMP.

There are no known listed species along this stretch of the CNPPID Supply Canal. During the winter, it is common for bald eagles to perch in trees lining the lower end of the Jeffrey Return.

IV. Johnson Dam

There are no listed species present in Johnson Reservoir. The American bald eagle does used the area and its presence is protected under the LSMP.

No listed species are present in the CNPPID Supply Canal between the J1 and J2 Hydro plants. American burying beetles, both a Federal and State listed species, are present in the surrounding areas. The beetles are protected on CNPPID property through the LSMP.

The USFWS designates the Platte River below J2 Return as Critical Habitat for the endangered whooping crane. Present during the summer are foraging least terns and piping plovers. CNPPID owns and manages 4,100 acres in this area for these listed species.

In addition, CNPPID is active within the Platte River Recovery Implementation Program (PRRIP), a three-state and Federal program designed to aid in the recovery of these species by providing both instream flows via the Environmental Account in Lake McConaughy and an additional 10,000 acres of habitat, approximately 4,000 of which is found in this stretch of the river. CNPPID's Jeffrey Island Habitat Area and the Program's lands comprise almost 8,000 acres of the protected habitat.

The first three-year report on endangered species required under the LSMP and license article 421 was filed on March 26, 2015[59]. The latest report was filed on March 28, 2018[60].

V. Criterion – Threaten and Endangered Species Summary

A review of the FERC docket indicates that during the prior LIHI Certification period, the Project complies with both State and Federal resource agencies concerns and recommendations pertaining to threatened and endangered species and that no new areas of concern have occurred. The Project satisfies the threatened and endangered species protection criterion.

[59] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13816015
[60] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14854964

G. LIHI Criterion-Cultural Resource Protection

All developments satisfy the LIHI cultural and historic resources criterion in all ZOEs by meeting alternative standard G-2.

All cultural and historic resources within the Project are protected via the Cultural and Historic Resources Management Plan (CRMP). Compliance under the CRMP is monitored by CNPPID and any non-compliance issues are reported directly to FERC and the State Historical Preservation Officer (SHPO). No reports of non-compliance have been made during the last LIHI certification.

The latest CRMP report was filed with FERC on February16, 2018[61].

On January 13, 2016, a Cultural Resources Study Plan for the J2 Regulation Reservoir Project was filed with FERC based on comments received at subsequent ICD agency meetings during the months of September 2014 through June 2015, and landowner/public hearings held in November 2014. In discussion with CNPPID, this proposed license amendment was postponed in November of 2017 due to cost concerns.

Throughout the prior LIHI Certification period, the Project has complied with all requirements regarding cultural resource protection, mitigation or enhancement included in the FERC license and no new areas of concern have arisen. Therefore, the Project satisfies the cultural and historic resources protection criterion.

H. LIHI Criterion-Recreation

The Applicant states the LIHI recreation criterion in ZOEs 1, 2, 5, 6, 7 and 8 is satisfied by meeting alternative standard H-2 and in ZOE 3 & 4 by meeting alternative standard H-1. The LSMP outlines recreational access and accommodations.

I. Kingsley Dam

CNPPID leases Lake McConaughy and Lake Ogallala lands to NGPC for recreational use. The NGPC has designated these lands as State Regulation Areas (SRA). All SRAs have signage at their entrances to inform the public. CNPPID does not charge any fee to NGPC for this lease. NGPC requires a fee-paid park entry sticker for access to the designated SRA's.

NGPC charges additional fees for camping facilities and special use permits. All fees collected by the NGPC help offset SRA facility operation and maintenance. The lease pertains only to the surface use of the land. NGPC must maintain the recreation areas in good condition. The uses and rights conveyed are subordinate to use and rights of CNPPID and subordinate to all FERC rules and regulations.

The Applicant is asking for a PLUS determination regarding recreation on the Kingsley Dam. Independent from license requirements, CNPPID built the Kingsley Eagle Viewing Building (KEVB), a freestanding frame structure in 1996. CNPPID owns, operates and maintains the facility. The facility is open each season and on weekends from approximately December 23 to February 28. Groups or photographers may schedule special viewings throughout the week.

[61] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14824065

Throughout the 2017-18 viewing season, 1,476 people signed the guest book. Visitors to the KEVB came from 15 different states. Groups hosted at the facility included a community college class, one high school class and three elementary school classes. The NGPC provides a Park Naturalist to give presentations on bald eagles every weekend through the month of January 2018 at the facility.

II. Central Diversion Dam

All of the Central Diversion Dam property, including the north and south dikes, the pond and the area around the diversion and canal is a controlled access area with no fishing, no trespassing, and no entry signs posted. This is both a public safety issue and for protection from vandalism of the structure and parked vehicles.

CNPPID owns the first 3,000 feet of riverfront on the south side of the Platte River, recently purchased for storing dredging material. CNPPID returns this material into the river downstream when river flows are high. CNPPID neither owns nor controls any other land between the Central Diversion Dam and the Gothenburg Diversion. Both shorelines of the Platte River are private property and the State of Nebraska controls access to the river.

III. Jeffrey Dam

The Jeffrey Reservoir is part of the recreational lease with the NGPC. The lake is open for fishing, boating and waterskiing. A small public use area is located at the reservoir. Public boat ramps are located on CNPPID property. CNPPID has worked with NGPC to improve the public boat ramp and to do significant dredging within the lake to open up boat passage from one area to another. The Applicant is asking for a PLUS determination regarding recreation for the dredging efforts.

The limited amount of property owned by CNPPID along the Jeffrey River Return is open to the public per the LSMP.

IV. Johnson Dam

CNPPID leases property located at the Johnson Dam for recreational activities with NGPC that include public boat docks, camping facilities, a hike/bike trail and swimming beach. NGPC operates the recreational facilities in compliance with the LSMP.

There is a small area at the East Phillips Lake containing a public boat ramp that provides access to this section of the CNPPID Supply Canal. The rest of the shoreline along the supply canal is inaccessible.

The Jeffrey Island Management Plan (JIMP), developed in conjunction with the USFWS and the NGPC and approved by FERC on August 21, 2001[62] covers management of CNPPID recreational property located in the J2 River Return. The latest annual status report was filed with FERC on February 19, 2018 (See Appendix A, page A-11). Any non-compliance issues are reported to FERC, the NGPC and the USFWS. No findings of non-compliance with the LSMP have occurred during the current LIHI certification.

[62] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=10334487

The Applicant is asking for a PLUS determination regarding recreation at the Johnson reservoir. CNPPID has been working with JLDI to complete a 10-mile hike/bike trail. CNPPID constructed a bridge across the outlet canal of the reservoir and did the dirt preparation for the pouring of concrete for the trail. (See Figure 18).

The trail is approximately 90% completed and CNPPID is working with JLDI on the possibility of constructing a similar bridge across the inlet canal to the Lake.

The outlet bridge is right next to the highway bridge that crosses the canal and it does not hinder boat access to the lake. In addition, the outlet canal only continues for approximately 2,000 feet where the forebay to the J1 Hydro limits any further movement down the canal.

Figure 18 - Bridge across Outlet Canal

CNPPID allows hunting, fishing, hiking, horseback riding, camping, bird watching, mushroom hunting, and other non-invasive forms of recreation on the 4,000 plus acres of the Jeffrey Island Habitat Area as long as there are no endangered species present. Multiple trail riding clubs use the property for weekly trail rides or special annual events. CNPPID personnel monitor all the activities occurring on the property and there have been no instances of adverse impacts.

V. Criterion – Recreation Summary

Article 424 of the FERC license requires CNPPID to make reasonable efforts to participate in public education programs and to file an annual report with FERC by May 1 of each year for the preceding period of April 1 through March 31. CNPPID's latest report to FERC is contained in Appendix A, page A-8).

CNPPID, through a lease with NGPC, permits free public access to the shorelines of all developments across CNPPID's lands where Project facilities, hazardous areas and existing leases, easements, and private ownership do not preclude access.

Independent from license requirements, CNPPID built the Kingsley Eagle Viewing Building (KEVB), a freestanding frame structure in 1996. CNPPID owns, operates and maintains the facility. The facility is open each season and on weekends from approximately December 23 to February 28.

CNPPID, working with the JLDI, constructed a bridge across the outlet canal of the Johnson reservoir and did the dirt preparation for the pouring of concrete for the trail. The trail is approximately 90% completed and CNPPID is working with JLDI on the possibility of constructing a similar bridge across the inlet canal to the Lake.

Throughout the prior LIHI Certification period, the Project has complied with recreational access, accommodation, and facilities conditions in the FERC licenses. The Project allows access to the reservoir via a lease with NGPC. Additionally, no new areas of concern were found.

In addition, CNPPID has independently built the KEVB and constructed a bridge across the Johnson outlet canal as part of the canal trail. Therefore, I recommend that the PLUS certification for recreation is satisfied.

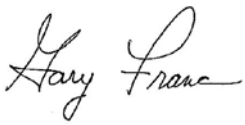
The Project satisfies the recreational resources criterion and should be awarded an additional three years of LIHI certification.

8. RECOMMENDATION

A review of the recertification application and a FERC docket search from the start of the previous LIHI Certification shows CNPPID has been proactive in meeting the FERC license and settlement agreement requirements associated with the Project. Most required filings were on time without the need of time extension requests. Two non-compliance issues pertaining to recreational users' non-compliance with measures for least tern and piping plover protection, and oil spillage occurred during the prior Certification period. However, CNPPID proactively reported and addressed each incident. The docket search review resulted in no major non-compliance issues surfacing in the record.

With regard to the requested PLUS standard for recreation, CNPPID's actions should be awarded three additional years of certification. I recommend issuing to CNPPID a LIHI Certificate for an additional eight years for the Kingsley Dam with the following condition intended to ensure that the remaining erosion concerns are addressed:

- Since the final actions pertaining to the erosion issues in Lake McConaughy are not yet completed, CNPPID should provide status updates on progress made to address these issues in their annual certification submittal to LIHI. Copies of all FERC filings, FERC approvals, and consultation summaries should also be provided to LIHI in annual submittals.



Gary M. Franc

FRANC LOGIC

Licensing & Compliance
Hydropower Consulting & Modeling

APPENDIX A
DOCUMENTS

STATE OF NEBRASKA

DEPARTMENT OF ENVIRONMENTAL CONTROL

KAY A. ORR
GOVERNOR

DENNIS GRAMS
DIRECTOR

August 30, 1988

SWS

Mr. Frank Dragoun
General Manager
Central Nebraska Public Power
and Irrigation District
4th and Lincoln
P.O. Box 356
Holdrege, NE 68949

RE: Section 401 State Water Quality Certification: FERC Project number 1417

Dear Mr. Dragoun:

We have reviewed FERC Project No. 1417 for State Water Quality Certification in accordance with Section 401 of the federal Clean Water Act (33 U.S.C. § 1251 et seq.). FERC Project No. 1417 is comprised of Central Nebraska Public Power and Irrigation District's (Central) hydroelectric facilities and appurtenant structures on the North Platte River in Garden and Keith Counties, and on and off stream of the Platte River in Lincoln, Dawson, and Gosper Counties. It is our determination that operation of this project will comply with State Water Quality Standards and the applicable provisions of the federal Clean Water Act subject to meeting the following conditions:

1. At all times, except for the force majeure conditions set forth in paragraph 2 below, the site-specific criteria for Lake Ogallala defined in NDEC's Title 117 shall be maintained (i.e., Title 117, Chapter 4, 003.01I1).

2. Any failure to comply with Title 117, Chapter 4, 003.01I1 shall not be deemed noncompliance if such failure is a result of earthquake, flood, or other acts of God, fire, work stoppage, riot, or failure of materials or equipment to be delivered as promised, labor disturbances, equipment failure, strikes, civil disturbances boycotts, acts of military authority, acts of local authorities, arrests, or other occurrences resulting in impossibility of compliance and such occurrence or noncompliance was beyond the party's control and was not due to a lack of good faith or diligence on the part of the party. Central shall advise NDEC in the event such an occurrence has prevented or may prevent Central from such compliance and shall specify the additional time it needs to bring the Kingsley Hydro back into compliance.

3. During the period of July 1 through October 15, Central shall conduct the following water quality monitoring when Kingsley Hydro is in operation and submit the results to NDEC on a monthly basis:

a) Monitor dissolved oxygen in Lake Ogallala at the midpoint of the buoy line (1987 location at the outer edge of the stilling basin) at a 1 meter depth every 10 minutes,

b) Monitor dissolved oxygen at the Kingsley Hydro powerhouse every hour, and

c) Monitor water temperature at the Kingsley Hydro powerhouse every hour.

However, we reserve the right to apply our appropriate regulatory authority to various elements of Central's system. Specifically, we will continue to regulate the discharge from Canaday Stream Plant under Section 402 of the Clean Water Act (NPDES permit number NE0000680). It is noted that a Corps of Engineers Section 404 permit for maintenance dredging activities at the North Platte Diversion Dam (NE 2SB OXT 2 001311) was reissued on April 26, 1988 and will expire on April 30, 1989. We will apply the appropriate authority under Section 401 for a Section 404 permit or Section 402 for these elements of Central's system as needed to carry out our responsibilities. The same holds true for any future activities which are applicable under Sections 402 and 404 of the federal Clean Water Act or the Nebraska Environmental Protection Act.

We therefore, by this letter, provide Water Quality Certification for FERC Project 1417.

Sincerely,

U. Gale Hutton, Chief
Water Quality Division

JB/krs

Attachments

cc: Kenneth Plumb, Federal Energy Regulatory Commission

John McClure, Nebraska Public Power District

Gary Rex, Nebraska Policy Research Office

Bill Bailey, Nebraska Game and Parks Commission

Dennis Buechler, U.S. Fish and Wildlife Service

Kathrine Biggs, U.S. Environmental Protection Agency

Agreement
Between the Central Nebraska Public Power
and Irrigation District and the
Nebraska Department of Environmental Control

WHEREAS, the Central Nebraska Public Power and Irrigation District ("Central District") and the Nebraska Department of Environmental Control ("NDEC") entered into an Agreement on the existing use of Lake Ogallala on August 14, 1987, and

WHEREAS, the Agreement provided that the specific dissolved oxygen levels to be maintained at Lake Ogallala for 1988, 1989 and 1990 are to be determined by mutual agreement by the month of January preceding each critical dissolved oxygen period (July through October 15) and will be based on all available information, and

WHEREAS, Central District and NDEC have agreed upon site-specific Water Quality Standards for Lake Ogallala, which were adopted by the Nebraska Environmental Control Council May 20, 1988, to wit:

"(1) A one day minimum of not less than 3.0 mg/l;

(2) A one day mean of not less than 4.0 mg/l and no more than 20 percent of the one day mean values shall be less than 4.2 mg/l; and

(3) A seven day mean of not less than 4.3 mg/l. These criteria apply from July 1 through October 15 at daily mean water temperatures of 18^{o}C or less and must be met at the midpoint of the buoy line at a one meter depth."

NOW THEREFORE, IT IS AGREED by Central District and NDEC that:

1. The foregoing proposed standards are the standards which shall apply at Lake Ogallala from July 1 to October 15, 1988; and

2. Central District agrees to monitor the dissolved oxygen levels at the buoy line every ten minutes and the temperature at the power house every hour during said period when Kingsley Hydro is on the line; and

3. Central District will send NDEC copies of the monitoring and results as recorded for each ~~two~~ four weeks ~~period~~ during the critical period and will mail the ~~first set of~~ monitoring records to NDEC ~~by July 15, 1988~~. on or about August 1, September 1 and October 1 of each year

THE CENTRAL NEBRASKA PUBLIC POWER AND IRRIGATION DISTRICT

~~By:~~ _____

Frank J. Dragoun, P.E.,
General Manager

Date: _____

THE NEBRASKA DEPARTMENT OF ENVIRONMENTAL CONTROL

By: George H Rudberg
for Dennis Grams, P.E.
Director

Date: August 16, 1988

Effective the date of the last signature hereto.

NEBRASKA
Good Life. Great Environment.
DEPT. OF ENVIRONMENTAL QUALITY

June 4, 2018

Mr. Eric Hixson
Engineering Services Manager
Central Nebraska Public Power and Irrigation District
P.O. Box 740
Holdrege, NE 68949-0740

Dear Mr. Hixon:

The Nebraska Department of Environmental Quality (NDEQ) has reviewed waterbodies in its 2018 Water Quality Integrated Report that are associated with hydroelectric generating facilities operated by the Central Nebraska Public Power and Irrigation District (CNPP&ID) and offers the following observations regarding the potential impact of these facilities on water quality.

Site-specific dissolved oxygen criteria in Nebraska's Water Quality Standards were developed for Lake Ogallala in response to the construction of the Kingsley Hydroelectric Facility. This facility uses water stored by the Kingsley Dam in Lake McConaughy and releases it into Lake Ogallala after using it for power generation.

CNPP&ID is operating the Kingsley Hydroelectric Facility such that the site-specific dissolved oxygen criteria for Lake Ogallala are not violated and the fishery is supported. This is accomplished by use of a Howell-Bunger bypass valve that aerates water in order to meet criteria at a compliance point in the Lake. Real-time monitoring is conducted at the compliance point so that the bypass can be responsive in advance of any problems. CNPP&ID operates this monitoring and aeration program in response to the NDEQ's Clean Water Act Section 401 Water Quality Certification condition for the relicensing of FERC Project 1417.

Although portions of the Tri-County Supply Canal are impaired based on fish tissue samples showing elevated mercury levels and Johnson Lake is impaired due to excess nutrients and chlorophyll *a*, NDEQ does not believe the structures and operation of CNPP&ID facilities have caused the listed impairments.

The Nebraska Department of Environmental Quality appreciates the Central Nebraska Public Power and Irrigation District's efforts to operate its system in a manner that values water quality.

Sincerely,

Marty Link

Marty Link
Water Quality Division Administrator

NEBRASKA
GAME PARKS

2200 N. 33rd St. • P.O. Box 30370 • Lincoln, NE 68503-0370 • Phone: 402-471-0641

Note: The Keystone Diversion Dam at Lake Ogallala is owned and operated by the Nebraska Public Power District (NPPD). NPPD has a FERC requirement to maintain 25 cfs in the North Platte River below the Keystone Diversion Dam.

The North Platte Diversion Dam , also called the Central Diversion is owned by the applicant and located at the confluence of the North and South Platte Rivers. See the CNPPID Project Map in the Stage 1 recert folder \ Background info folder.

July 24, 2018

Mr. Eric Hixson
Eng. Services Mgr.
Central Nebraska Public Power & Irrigation District
Holdrege, NE 68949-0740

Re. Low Impact Hydro Institute

Dear Mr. Hixson:

The Fisheries Division of the Nebraska Game and Parks Commission is very familiar with Central's System with Lake McConaughy, Lake Ogallala, North Platte Diversion Dam, Jeffrey Lake and Johnson Lake and manage the sport fisheries in these waterbodies. This letter is to provide comments required for the renewal process of the Low Impact Hydro Institute certification concerning the impact of these structures located on the North Platte River and downstream on the Platte River. This review is related to the issue of fish passage downstream and upstream of these structures. These structures all prevent the upstream migration of all fish species. Asian Carp have been observed on the Platte River near the J-2 return. These structures could have a positive impact on reducing the chance of them entering other parts of the system. While these blockages don't prevent any of the native species from completing their lifecycle, it does fragment fish populations and prevents the intermixing of genetics within a species that would normally occur with the natural migration of these species. Kinsley Dam does reduce the movement of fish species out of Lake McConaughy which assists in maintaining the quality sport fisheries for such species as Walleye, Smallmouth Bass and White Bass. Lake Ogallala has the ability to provide some quality trout fishing but non-game fish (i.e. Common Carp and suckers) still gain access via release from Kinsley. Over time these non-game species compete with the trout limiting their growth and productivity. Some of the best trout fishing is in the supply canal and the North Platte River. The trout fishery in the North Platte River could be a much higher quality fishery if the winter flows would be maintained at a level higher than the normal 15 cfs that usually is released. While the Commission doesn't believe there are current fish population issues, we have not evaluated the system for potential negative impacts on any of the native fish species that are present in this section of the Platte River system.

Sincerely,

Dave Tunink
Assist. Division Admin.
Fisheries Management Section

TIME OUTDOORS IS TIME WELL SPENT

OutdoorNebraska.org

REPORT ON
PUBLIC EDUCATION ACTIVITIES AND PUBLICATIONS
APRIL 1, 2017 - MARCH 31, 2018

THE CENTRAL NEBRASKA PUBLIC POWER AND IRRIGATION DISTRICT
PROJECT NO. 1417

Prepared pursuant to Article 424
April 18, 2018

REPORT ON
PUBLIC EDUCATION ACTIVITIES AND PUBLICATIONS
(APRIL 1, 2017 - MARCH 31, 2018)

The Central Nebraska Public Power and Irrigation District
Project No. 1417

On July 29, 1998, the Federal Energy Regulatory Commission (FERC) issued a 40-year license for The Central Nebraska Public Power and Irrigation District (Central) to operate FERC Project No. 1417, the Kingsley Dam Project in Nebraska. Article 424 of that license requires Central to "make reasonable efforts to participate in public education programs such as eagle viewing." Central is required to report annually on or about May 1 on its efforts during the previous April 1 through March 31.

During the period of April 1, 2017 through March 31, 2018, Central was involved in numerous public information and education activities to promote a better understanding of its system and operations, as well as issues pertaining to water resources, public power, environmental issues, recreation, and agriculture. Central has also provided information to the public pertaining to the Platte River Recovery and Implementation Program to address endangered species issues in the central Platte River region. Central has also made information available to the public regarding water conservation measures, the storage levels at Lake McConaughy, and project operations.

In addition to the above general description of Central's public education activities, below is a detailed summary of Central's public education activities that are directly related to Central's FERC license.

Eagle Viewing

For many years Central has offered the public opportunities for viewing wintering bald eagles that congregate to feed in areas of open water just downstream from Central's power houses. Central first admitted the viewing public to its Johnson No. 2 (J-2) powerhouse -- located at the downstream end of Central's supply canal near Lexington, Nebraska -- in 1988. In 1990, Central added a facility below Kingsley Dam, near Ogallala, Nebraska. Admission to both viewing facilities is free. Only those visitors who sign the guest book at the facilities are included in visitor counts, therefore the attendance figures are not precise. The number of visitors who have signed the guest books since 1988 is 94,287.

During the winter of 2017-18, the J-2 powerhouse was open to the public for eagle viewing. A total of 1,688 people signed the guest book at J-2 during the 23 days the facility was open to the public between Dec. 23, 2017 and February 25, 2018, compared with 1,106 in 2016-17. Central staff hosted multiple school groups, a small group from an assisted living facility, and a wind energy group for eagle-viewing this year.

At the Kingsley Eagle Viewing Building, a freestanding frame structure constructed in 1996 to facilitate wildlife viewing and public education, 1,476 people signed the guest book during the

2017-18 viewing season. Visitors who attended the Kingsley facility this year came from 15 different states, and one visitor was from Belgium. The facility was open on 24 days between December 23, 2017 and February 25, 2018. Groups hosted at the facility this year included a community college class, one high school class and three elementary school classes. Again this year, the Nebraska Game and Parks Commission provided a Park Naturalist to give presentations on bald eagles every weekend through the month of January 2018 at Central's Kingsley Eagle Viewing Facility.

This winter provided an excellent climate for eagle habitat and a good water supply for hydro generation, so the eagle counts at Central facilities were higher than average. At our J-2 facility, a total number of 714 eagles were sighted with an average daily count of 31 eagles. Eagle numbers at the Kingsley facility were lower this year, with a total of 933 eagles sighted, which averaged to 38 eagles per day.

Leading up to and during the winter of 2017-18, Central continued its annual practice of distributing brochures (sample attached to 1998-99 report) advertising its eagle-viewing facilities and providing information about the status and habits of bald eagles. The brochures are available to the public at the eagle-viewing facilities, Central's offices, area chambers of commerce, trade shows and conferences, rest stops along Interstate 80, motels and various other sites. An ad about the opportunity also runs annually in a Lake McConaughy visitor's guide published by the Keith County News. The brochures are also mailed to individuals requesting information about eagles and eagle-viewing opportunities. Online and print ads were purchased across the state of Nebraska to promote both the J-2 and Kingsley Viewing Centers. In addition to paid advertisements, Central also publicized eagle-viewing from its' Facebook page this year. Information about eagle-viewing opportunities near Central's facilities is also available on Central's Internet web site (www.cnppid.com).

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JEFFREY ISLAND HABITAT AREA

ANNUAL STATUS REPORT

FOR CALENDAR YEAR 2017

February 19, 2018

THE CENTRAL NEBRASKA PUBLIC POWER AND IRRIGATION DISTRICT
FERC PROJECT NO. 1417

JEFFREY ISLAND HABITAT AREA
ANNUAL STATUS REPORT
FOR CALENDAR YEAR 2017

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INTRODUCTION

The Long-Term Enhancement and Maintenance Plan for the Jeffrey Island Habitat Area (Plan) approved by the Federal Energy Regulatory Commission (FERC) on August 21, 2001, required The Central Nebraska Public Power and Irrigation District (Central) to report annually in each of the first eight years of implementation (2002 to 2009 for calendar years 2001 through 2008) to FERC regarding activities conducted under the Plan and regarding Central's discussions with the U.S. Fish and Wildlife Service (USFWS) and the Nebraska Game and Parks Commission (NGPC) (collectively, the Agencies).

Following the habitat enhancement period, every seventh year beginning in 2016, Central will prepare for FERC a Status Report on the activities outlined in the Plan. The first Status Report covered all activities from 2009 – 2015 and the second Status Report will cover all activities from 2016 – 2022.

The *Jeffrey Island Habitat Area Annual Status Report for Calendar Year 2017* (Report) is an annual summary of activities conducted in 2017 under the Plan so as to assist in the development of the Long-Term Status Report. The Report will also be used as part of the annual consultation with the Agencies concerning Jeffrey Island Habitat Area activities.

I. SUMMARY OF ACTIVITIES UNDER THE PLAN

1. Protection, Management, and Maintenance Activities for 2017

The primary habitat maintenance activities for 2017 were:

(1) **Weed Control Maintenance:** Historically, a noxious weed infestation has been identified as a serious problem on the property. Management efforts consist of a combination of planned grazing, controlled burning and herbicide application. Overall, this combined management has drastically improved the grass community and greatly reduced the presence of thistle. Herbicide application consists of spot-spraying, broadcast ground applications and aerial applications. Under the current grazing lease agreement with Dave and Kurt Karlberg, Central is responsible for noxious weed control.

If at any time it is determined that spot spraying efforts are not adequately controlling noxious weed infestations, Central will hire a contractor to assist with herbicide application. This determination is made on an annual basis. In previous years, Central has contracted with both the Dawson County Weed Control Authority and Mid-State

Aviation for assistance with herbicide application when deemed necessary. During 2017, Central spent $23,771 on noxious weed control. The primary method for control was extensive spot spraying efforts conducted over the vast majority of the property. In 2017, this effort was assisted with the use of a new GPS system known as Spray Logger. Spraying was done using Milestone at recommended rates. In addition to the spot spraying efforts, Central also contracted Mid-State Aviation to apply herbicide to a 70-acre patch of dense thistle in pasture 4N.

Central again made a $25,000 contribution to the Platte Valley Weed Management Authority to help fund their Phragmites basin wide spraying effort.

(2) **Fence Maintenance:** Fence repair continues to be an expensive activity due to the multiple years of flooding. In 2016, $24,089 was spent repairing and rebuilding the fence throughout the property. High water and general ware and tare results in the need for annual attention.

(3) **Road and Dike Maintenance:** The roadways once again required significant attention due to flooding. In addition to the typical maintenance, erosion caused by high flows in the South channel damaged the main bridge that provides the only access to the property. In all, $30,559 was spent reworking and rebuilding the roads and repairing the bridge ($11,009 for bridge). In 2017, a road groomer was utilized to assist in reworking damaged roads.

(4) **Livestock Water System Maintenance:** A total of $8,256 was spent repairing a damaged windmill in addition to the annual maintenance required to ensure the rest of the watering systems are in proper working condition.

(5) **Grazing Maintenance Activities:** The current grazing regime indicates progression towards restoring native plant diversity and vigor. This improvement has led Central to continue with this spring/fall/rest rotation. Central went out for bid prior to the 2016 grazing season. The bid was awarded to David and Kurt Karlberg. Central continues to be very pleased with the Karlbergs and has exercised the option to extend the lease with them for the 2018 grazing season.

(6) Other Maintenance Activities: The tree clearing project from 2012 was starting to see some woody vegetation regrowth. In 2017, this woody vegetation was removed using an Eco Mulcher attachment for a skid steer.

Grazing Summary – See Appendix A for the following documents: *Jeffrey Island Habitat Area 2017 Grazing Activity & 2018 Grazing Goals; Jeffrey Island Habitat Area Management Units* map

2. **Actual Maintenance Costs for 2017**

Table 1: Actual Maintenance Costs for 2017	
Activity	Costs
Fence Construction/Maintenance	$24,089.08
Road and Dike Maintenance	$30,559.43
Noxious Weed Control	$23,771.36
Livestock Water System Maintenance	$8,256.52
Grazing Maintenance Activities	$585.22
Administration	$21,016.40
Other Maintenance	$20,279.65
Total Actual Costs for 2016	**$ 128,557.66**

3. **Results of Monitoring in the Habitat Area Conducted Under the Article 423 Monitoring Plan**

The *2017 Wildlife Monitoring Report*, prepared according to Article 423's May 25, 2007 Annual Wildlife Monitoring Plan (joint biological monitoring plan with FERC Project No. 1835, the Nebraska Public Power District), will be filed with FERC on or before its due date of April 27, 2018.

4. **Assessments made of the Wetlands, and Lowland and Upland Grasslands**

The initial enhancement of wetlands and grasslands has met the cost cap of the Plan. Central has transitioned to a maintenance operation and is monitoring the condition of the property to ensure it is providing high quality habitat for a variety of species. Central is conducting discussions with the U.S. Fish and Wildlife Service and the Nebraska Game and Parks Commission about the implementation of future enhancement measures if funding is available.

5. Any Changes or Adjustments to Enhancement or Maintenance Activities Resulting from the Adaptive Management Processes

Woody vegetation control was required in the areas where tree clearing occurred in previous years.

6. Projected Activities for 2018

(A) Potential Enhancement Activities Planned for 2018

Central intends to burn approximately 200 acres of grassland in pastures A2 in the spring of 2018. This area will then be monitored for noxious weeds and herbicide control will be deployed if necessary. Central is also exploring the possibility of enhancing portions of the property for pollinators. This enhancement may include adding milkweed and violets to the seed mix applied with native forb overseeding following a prescribed burn. Central intends to control the broadleaf brush and trees that are returning in some of the previously cleared areas with a combination of prescribed fire and mechanical removal where necessary. There have also been a few potential areas identified where additional tree clearing could prove to be beneficial. At this time, the total number of acres and estimated cost are not known.

(B) Maintenance Activities Planned for 2018

While the activities described below represent Central's current maintenance plan for 2018, actual activities (and expenditures) will be dictated by weather conditions, availability of contractors, actual costs of materials, supplies and labor and modifications to the original plans to take care of immediate maintenance needs or to conform with state and local regulations.

(1) **Description of Maintenance Activities Planned for 2018:**

(a) Continue noxious weed control throughout the property.

(b) During 2018, Central will graze pastures 5 and 6 in the spring beginning on or about 1 May and ending on or about 31 July. During the fall grazing season, pastures 1 and 2 will be grazed beginning on or about 1 August and ending on or about 31 October. The specifics of the 2018 Grazing Plan are identified in the *Jeffrey Island Habitat Area 2017 Grazing Activity & 2018 Grazing Goals* document (see Appendix A).

(c) Routine grading and gravel treatments will be conducted as necessary on all roads and along the dike.

(d) Windmill Repair: All pumps, solar panels and windmills will have annual maintenance and occasional repairs.

(e) Control woody vegetation in cleared areas through the use of prescribed fire and/or mechanical removal.

(2) **Estimated Maintenance Costs for 2018:**

Table 2: Estimated Maintenance Costs for 2018

Activity	Estimated Cost
Fence Maintenance and construction	20,000.00
Road and Dike Maintenance	10,000.00
Noxious weed control	25,000.00
Livestock Water System Maintenance	5,000.00
Other Maintenance and Enhancement	25,000.00
Administration	10,000.00
Total Estimated Maintenance Costs for 2017	**$95,000.00**

7. The Record of Consultation with the Agencies Regarding the Annual Status Report

The Annual Status Report is a Central in-house report that does not require consultation with the Agencies; however, Central personnel provided a Draft copy of the Report to the Agencies on February 19, 2018 and provided 45 days for an informal review. The record of consultation is in Appendix B.

The Central Nebraska Public Power and Irrigation District
FERC Project No. 1417
License Articles 417 and 418

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Appendix A

GRAZING

Appendix A includes the following documents:

1. Jeffrey Island Habitat Area 2017 Grazing Activity & 2018 Grazing Goals (February 19, 2018)

2. Jeffrey Island Habitat Area Management Units map

The Central Nebraska Public Power and Irrigation District
FERC Project No. 1417
License Articles 417 and 418

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Appendix B

AGENCY COMMENTS AND RECORD OF CONSULTATION

The Agencies were provided a draft copy of this report on February 19, 2018 and given 45 days for an informal review.