APPENDIX A

SUMMARY OF CONTACTS AND CONSULTATION

SUMMARY OF CONTACTS AND CONSULTATION

The potential applicant must include in the pre-application document an appendix summarizing contacts with Federal, state, and interstate resource agencies, Indian tribes, non-governmental organizations, or other members of the public made in connection with preparing the pre-application document sufficient to enable the Commission to determine if due diligence has been exercised in obtaining relevant information.

In accordance with 18 CFR § 5.6(d)5, the following is a summary of Loup Power District's contact with Federal, state, and interstate resource agencies, Indian tribes, non-governmental organizations, the public, and others in preparing the Pre-Application Document.

The District initiated contact via letter with key state and federal resource agencies in 2006 to introduce them to the FERC relicensing process. Included with the letters was information regarding the Loup River Hydroelectric Project as well as the Integrated Licensing Process (ILP). Follow-up meetings were conducted with these agencies, some of which included tours of the Project.

In early 2008, the District contacted a wide range of federal, state, and local resource agencies as well as non-governmental organizations and conducted a series of stakeholder and resource agency meetings to introduce the ILP relicensing process and discuss issues and concerns related to the Project. Additional meetings were conducted to discuss potential study needs to address these issues. From these agency meetings, two workgroups were developed to discuss issues related to specific topics:

- Water Rights Workgroup
- Recreation, Land Use, and Aesthetics Workgroup

These workgroups each met once and provided summaries of their discussions at the larger agency meetings.

In June 2008, the District conducted a series of public information meetings to gather information and comments from the general public. Specific letters requesting information were sent to landowners adjacent to the canal, landowners adjacent to the bypass reach of the Loup River, and to persons who use water from the canal for irrigation.

A record of the contacts and discussions related to the District's consultation and coordination are summarized in Table 7-1 and included after the table.

Table 7-1 Summary of Contacts

Date	Agency	Contact Type[a]
Meetings and Project Tours		
April 28, 2006	Nebraska State Historic Preservation Office	Informal Discussion
May 1, 2006	Nebraska Department of Natural Resources	Informal Discussion
May 1, 2006	U.S. Geological Survey	Informal Discussion
May 2, 2006	U.S. Fish & Wildlife Service Nebraska Game & Parks Commission	Informal Discussion
May 18, 2006	Nebraska Department of Environmental Quality	Informal Discussion
September 6, 2006	U.S. Fish & Wildlife Service Nebraska Game & Parks Commission	Project Tour
June 6, 2007	Nebraska State Historic Preservation Office	Project Tour/ Informal Discussion
November 5, 2007	Nebraska State Historic Preservation Office	Meeting
March 27, 2008	Nebraska Department of Natural Resources	Project Tour
April 2008	Lower Loup River Natural Resources District	Project Tour
May 7, 2008	All Agencies	Orientation Meeting
June 10, 2008	General Public & Non-Governmental Organizations	Open House – Columbus
June 11, 2008	General Public & Non-Governmental Organizations	Open House – Genoa
June 16, 2008	Nebraska Natural Resources District Association	Project Tour
June 24, 2008	National Parks Service	Project Tour
June 25, 2008	All Agencies	Meeting - Issues Discussion
July 17, 2008	Recreation, Land Use, Aesthetics Workgroup	Teleconference
July 22, 2008	U.S. Fish & Wildlife Service	Meeting
July ??, 2008	Water Rights Workgroup	Teleconference
July 24, 2008	All Agencies & Non-Governmental Organizations	Meeting - Issues/Studies Discussion

Date	Agency	Contact Type[a]
August 19, 2008	All Agencies & Non-Governmental Organizations	Meeting - Issues/Studies Discussion
Agency Letters and Correspondence		
June 20, 2008	Nebraska Department of Natural Resources	Memo
July 10, 2008	U.S. Geological Survey	Memo
July 21, 2008	U.S. Fish & Wildlife Service	Letter
July 31, 2008	Nebraska Game & Parks Commission	E-mail
August 14, 2008	U.S. Fish & Wildlife Service	E-mail
August 29, 2008	Nebraska Department of Natural Resources	Letter
September 18, 2008	U.S. Fish and Wildlife Service	Letter
September 23, 2008	Nebraska Game and Parks Commission	Letter

Note:

[a] Meeting notes were not prepared for informal discussions or project tours.

THIS PAGE INTENTIONALLY LEFT BLANK

HDR | ONE COMPANY *Many Solutions*℠

MEETING MINUTES

To:	Jim Frear		
From:	George Waldo	Project:	Lower Power District – FERC Re-License
cc:	Michael Madson		
Date:	November 05, 2007	Job No:	

Re: Meeting with Nebraska SHPO - Section 106 Compliance for Re-licensing November 5, 2007

Participants: Jim Frear, Ron Ziola (Loup Power)
Bob Puschendorf, Stacy Stupka-Burda (Nebraska SHPO)
Michael Madson, George Waldo (HDR)

Purpose of meeting was to continue the dialogue between the Nebraska State Historic Preservation Office (SHPO) and Loup Power District (Loup) prior to the filing of a re-licensing application to the Federal Energy Regulatory Commission (FERC). A previous meeting in June 2007 was at Loup facilities and included an extensive tour of the property, at which time the SHPO representatives (Puschendorf, Stupka-Burda) stated their opinion that the property would likely be eligible for listing on the National Register of Historic Places (NRHP). They agreed to provide a sample programmatic approach for FERC Section 106 compliance in Nebraska. The example, developed for the North Platte/Keystone Dam Hydroelectric Power Project in the late 1990s, stipulated an ongoing relationship between the project developer, Nebraska Public Power District (NPPD), and the SHPO and moderated by a series of agreement and management documents, namely a Programmatic Agreement (PA), with an appendix and a Cultural Resources Management Plan (CRMP), also with appendices.

In October 2007 HDR developed an alternative approach to limit the nature of that ongoing relationship throughout the life of the license but still demonstrate to FERC that adverse effects to properties eligible for listing on the NRHP could be taken into consideration, thereby allowing that agency to maintain compliance with Section 106 of the National Historic Preservation Act (NHPA). In summary, the approach suggested that a Memorandum of Agreement (MOA) be drafted to address planned and future adverse effects to the historic property by preparing Historic American Engineering Record (HAER) documentation to the Level 2 standard, thereby providing the documentation necessary to resolve any such effects and precluding constant, project-specific communication between Loup and the SHPO.

During the November 5 meeting the SHPO clearly stated their desire to retain ongoing communication with Loup Power District throughout the life of the license, suggesting that

HEAR documentation was premature. The programmatic approach outlined in the sample NPPD documentation was the preferred path for FERC Section 106 compliance. During the meeting Loup representatives agreed that the process would be followed.

SHPO stated that three work products would be prepared, namely:

- A NRHP nomination package for the Loup Power Historic District, including standard photographic (35mm), contextual, and physical documentation
- A PA describing the protocols for FERC Section 106 compliance among FERC, SHPO, and Loup (and the Advisory Council on Historic Preservation, if necessary)
- A CRMP to outline how Loup would and SHPO would communicate on a project-specific basis, including to descriptions of maintenance and operation activities divided into one of two categories, namely those requiring communication with SHPO and those not.

Prior to meeting adjournment, Loup agreed to outline a process for preparing that documentation and to forward that process and a draft schedule to SHPO and FERC.

April, 22, 2008

<NAME>
<TITLE>
<AGENCY NAME>
<ADDRESS>
<CITY>, <STATE> <ZIP>

Re: Loup Power District Hydro-Electric Relicensing

Dear <NAME>,

Loup Power District (District) intends to file a Notice of Intent in October 2008 to begin the relicense process for our hydroelectric facilities located near Columbus, Nebraska. The Federal Energy Regulatory Commission (FERC) has an extensive relicensing process that will begin thereafter. The District has contracted with HDR Engineering to assist with the relicensing process.

Your attendance is requested at an Agency Orientation meeting where the District will share an overview of our hydro-electric operation, explain the relicensing process, discuss on-going agency involvement opportunities, and project schedule.

What: Agency Orientation Meeting
When: Wednesday, May 7th: 10:00 a.m. – 3:00 p.m. Lunch will be provided
Where: Wunderlichs, 304 E. Highway 30, Columbus, Nebraska, 68601
RSVP: Emily Buss, HDR, 763-278-5904

It is very important for resource agencies to stay involved throughout the relicensing process as it is an intensive process with a demanding schedule that is set by federal regulation. The District will keep you informed of future meetings and input opportunities that may take place regarding the project.

To assist your preparation for this meeting I have enclosed the following items: a Layout Map showing the project area, a white paper on *Relicensing the Loup River Hydroelectric Project*, and a list of invitees for the meeting. If you require further information please call me directly.

We look forward to working with you throughout the relicensing process.

Sincerely,

Neal D. Suess, PE
President/CEO

Enclosures: Layout Map
White paper on Relicensing the Loup River Hydroelectric Project
Meeting Invitee List

White Paper
Relicensing the Loup River Hydroelectric Project

INTRODUCTION

The Loup River Hydroelectric Project is located on the Loup River in Nance and Platte Counties, Nebraska. It is a public power development owned and operated by the Loup River Public Power District of Columbus, Nebraska. The project is licensed by the Federal Energy Regulatory Commission (FERC) under authority granted by the Federal Power Act. The project was last relicensed in 1984 for a 30-year term. Because of the complexity and length of time involved in applying for a new FERC operating license, Loup River Public Power District initiated planning, coordination and information gathering efforts in early 2006 to facilitate the relicensing process.

PROJECT HISTORY AND DESCRIPTION

In 1933 the State of Nebraska approved the formation of the Loup River Public Power District (District) and granted it the right to appropriate Loup River water (water right of 3,500 cubic feet per second) for power generation purposes. The original 50-year federal license for the Loup River Project (FERC Project No. 1256) was granted on April 17, 1934. Project construction began in late 1934 and was completed in the spring of 1937.

The Loup River Project utilizes long gently sloping canal segments and two powerhouses to capture the energy potential of water moving from a higher to a lower elevation. Principal constructed features consist of a diversion weir and gated intake structure located on the Loup River between the towns of Fullerton and Genoa; a linear settling basin; a power canal to the Monroe Powerhouse a 3 unit, 8.25 megavolt amp (MVA) total facility; Monroe Powerhouse; a power canal to the regulating reservoirs – Lake Babcock and Lake North; a forebay canal to the Columbus Powerhouse a 3 unit, 48 MVA total facility ; and a tailrace canal that discharges to the Platte River just downstream of Columbus. The attached figure shows the location of these features on an aerial photo base. The only significant modification since project completion was construction of Lake North in 1963 to expand Lake Babcock, the original regulating reservoir. A major re-build of turbine-generating equipment in both project powerhouses was completed in 2007. Over the years the District has added numerous enhancements for environmental protection, safety, and public recreation associated with the project.

PROJECT OPERATION

The project functions by diverting water from the Loup River through adjustable gates into the two mile-long settling basin. Much of the heavier sediment material settles out in the basin; sediment is pumped from the basin to adjacent disposal areas at various intervals throughout the year. Clarified water exits the basin at a concrete weir, enters the upper power canal, and flows approximately 11 miles to the Monroe Powerhouse. Power is generated as water flows through three identical turbine-generator units under a normal head of 32 feet and discharges to the lower power canal. This 12 mile canal segment leads to a concrete weir structure which overflows into Lake Babcock and Lake North. The District holds a water right of 3,500 cfs, which is also the maximum hydraulic capacity of the power canals. However, the average canal flow is considerably less. In addition to supporting power generation, the project canal delivers water to several dozen small irrigation interests along the route. Water accumulates in the 1100-acre regulating reservoirs and is then available on demand at the Columbus Powerhouse via a 2 mile forebay canal which has a maximum flow capacity of 5,000 cfs. The forebay canal terminates at

a concrete intake structure where water enters three steel penstocks leading to three turbine-generators. Each penstock is 20 feet in diameter and 320 feet in length. Normal operating head at the Columbus Powerhouse is 112 feet. Discharge from the powerhouse enters a 5 mile tailrace canal which empties into the Platte River a short distance downstream from the confluence of the Loup River.

The project does not include any transmission lines. All electric power generated by the project is purchased at the source by the Nebraska Public Power District (NPPD). This purchased power is one component of the overall generation portfolio from which NPPD services its retail and wholesale electric customers. Generation at the 48 MVA Columbus Powerhouse is managed to respond to electrical demand in the NPPD system – while taking into account the amount of diverted flow entering the power canal and the available water storage in the reservoirs. Water flow from the reservoirs into Columbus Powerhouse is actively regulated throughout the day by adjusting the turbine wicket gates. This hydro-cycling arrangement allows the District to provide a specified level of power production – within minutes after it is requested by NPPD.

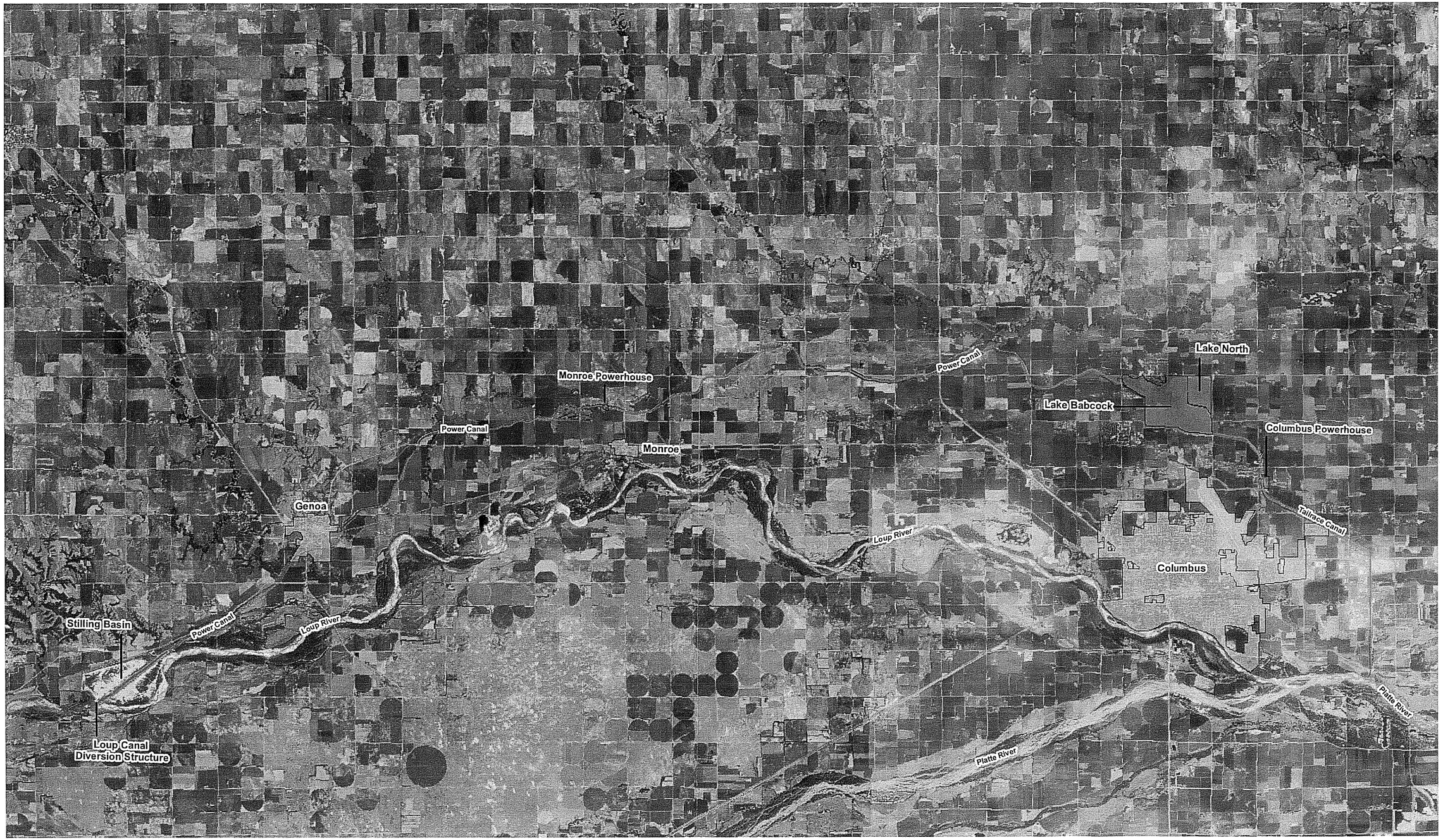
The Loup River Hydroelectric Project was conceived, licensed and specifically designed for a variable output or hydro-cycling mode of operation; the District is seeking to relicense the project according to existing operations.

FERC RELICENSING PROCESS

Relicensing a hydroelectric power project is a highly structured process that involves the license applicant, FERC, numerous regulatory agencies, stakeholders, tribal interests, special interest groups and the public. Relicensing is also a lengthy process. Depending on the issues involved, it is not uncommon for an applicant to spend 7 to 9 years obtaining a new operating license. The current Loup River Project license will not expire until April 2014. However, FERC regulations require a licensee to formally initiate the relicense process by filing a comprehensive pre-application document (PAD) 66 to 60 months before its current license expires. The District has retained HDR Engineering as relicensing consultant. Together they have initiated planning, outreach and data gathering activities and intend to prepare a PAD for submittal in late-October 2008, the earliest date that the relicense process can officially begin. The District will be the first Nebraska licensee to employ the new Integrated Licensing Process (ILP) which became FERC's default (preferred) process in 2005. As its name implies, the ILP procedure involves earlier and more collaborative participation among all interested parties throughout the relicensing process.

IDENTIFICATION AND RESOLUTION OF ISSUES

All water resource and energy developments involve some degree of economic, cultural and environmental impacts. Different parties may view these impacts as desirable, undesirable, or both. A new project license must comply with many regulations - including the Federal Power Act (FPA), the National Environmental Policy Act (NEPA), the Clean Water Act (CWA), the Endangered Species Act (ESA), and the National Historic Preservation Act (NHPA). Therefore an environmental assessment (EA) or, if appropriate, an environmental impact statement (EIS) will be prepared. The FERC is charged with evaluating input from all sources and seeking a balance between the power and non-power aspects of each licensed project. Concerns and potential impacts raised related to continued project operation will be investigated during the relicensing process. The Loup River Public Power District is committed to working responsibly with all concerned parties to properly investigate and seek appropriate resolution of all legitimate issues raised during relicensing.



2 1 0 2
Miles

Serving You Electrically
LOUP POWER DISTRICT

HDR

LAYOUT MAP
LOUP RIVER PROJECT
FERC Project No. 1256

LOUP POWER DISTRICT

DATE
April 2008

FIGURE
1

D:\temp\Talbitzer\LOOP, Feb. 2006, tct

MEETING INVITEE LIST

Barb Friskopp	Army of Corps of Engineers
Ron Bishop, General Manager	Central Platte Natrual Resource District
Mike Moser, Mayor	City of Columbus
Joseph Mangiamelli, Administrator	City of Columbus
James Kramer, City Administrator	City of Fullerton
Gretchen Treadway, Mayor	City of Fullerton
Lacie Andreasen, City Administrator	City of Genoa
Gary Juracek, Mayor	City of Genoa
Steve Kirby, Board Chairperson	City of Monroe
Connie Kramer, City Clerk	City of Monroe
Director	Conservation & Survey Div. Geological Survey, UNO
Robert Johnson, Commissioner	Department of Interior, Bureau of Reclamation
John Askew, Regional Administrator	Environmental Protection Agency Regional Office
Joe Wegner	Fullerton Area Economic Development Committee/Chamber of Commerce
Leon Koehlmoos, Manager	Lower Loup Natrual Resource District
John Miyoshi, Manager	Lower Platte North Natural Resource District
Glenn Johnson, General Manager	Lower Platte South Natrual Resource District
Janet Lawson, Planning and Zoning	Nance County
Henry Santin Jr., Board of Supervisors	Nance County
Ernie Quintana, Director	National Park Service Midwest Regional Office
Steve Chick, State Conservationist	Natural Resources Conservation Service
Jay Ringenberg, Deputy Director	NE Department of Environmental Quality
Mike Linder, Director	NE Department of Environmental Quality
Chris Peterson, CEO	NE Department of Health and Human Services
Brian Dunnigan, Acting Director	NE Department of Natural Resources
Timothy Kadavy, Director	NE Federal Emergency Management Agency
Rex Amack, Director	NE Game and Parks Commission
Richard Hadenfeldt, Loup River Basin & Vice Chairperson	NE Natural Resources Commission
Jon Bruning, Attorney General	NE Office of the Attorney General
Ron Asche, President	NE Public Power District
Brian Barels, Water Resources Manager	NE Public Power District
Robert Puschendorf, Deputy State Historical Preservation Officer	NE State Historical Preservation Office
Director	NE Water Science Center-US Geologic Survey
John Winkler, General Manager	Papio-Missouri Natural Resource District
Bob Boyd, County Superintendent	Platte County
Board of Supervisors	Platte County
Director	Regional Hydropower US Depart of Agriculture US Forest Service
Greg Ibach, Director	State of NE Department of Agriculture
Director	US Fish & Wildlife Service Regional Office
Phil Soenksen, NE Water Science Center	US Geologic Survey
Kevin Hood, District Conservationist	Upper Loup Natural Resource District
Director	US Bureau of Land Management
Regional Director	US Forest Service
Angie Tornes	US National Park Service Rivers & Trails Midwest Region
Rick Cables	USDA Forest Service
David Ozman, Regional Contact	USGS Water Resources

Meeting Notes

Project:	Loup River Hydroelectric Project FERC Project No. 1256
Subject:	Agency Orientation Meeting
Meeting Date:	May 7, 2008, 10:00 am – 2:00 pm
Meeting Location:	Wunderlichs, Columbus, NE
Notes by:	HDR

Attendees:

Loup Public Power District (District)	Jim Frear Tom Kumpf, Board Member Neal Suess Ron Ziola
HDR	Emily Buss Pat Engelbert Dennis Grennan Bill Sigler Shannon Snow George Waldow Stephanie White
US Fish and Wildlife Service (USFWS)	John Cochnar Robert Harms Mike LeValley Jeff Runge Martha Tacha Greg Wingfield
US Geological Survey (USGS)	Phil Soenksen
National Park Service (NPS)	Randy Thoreson Mark Weekley
Nebraska Game and Parks Commission (NGPC)	Frank Albrecht Jeff Schuckman Kristal Stoner Gene Zuerlein
Nebraska Department of Natural Resources (DNR)	Mike Thompson
Nebraska Department of Environmental Quality (NDEQ)	John Bender
Lower Loup Natural Resources District (NRD) and Nebraska Natural Resources Commission (NRC)	Dick Hadenfeldt
Central Platte Natural Resource District (NRD)	Mark Czaplewski
City of Genoa	Lacie Andreasen
City of Columbus	Joe Mangiamelli

Meeting Agenda:

I. Welcome and Introductions
II. The History of Loup Power District
III. Loup Hydro Facilities and Operations (Neal)
IV. FERC Licensing Process (George/Neal)
V. The Role of the Agencies (Neal)
VI. Next Steps

Discussion:

Topic	Detail	Interested Agency
Loup Power District History Book	▸ Includes information about park sites and available recreation through the Loup Power District offices.	NPS
Water Right	▸ The District has a water right to divert up to 3,500 cubic feet per second (cfs) from the Loup River for power generation purposes.	USFWS
Irrigation	▸ The District has 40 irrigation customers and 78 irrigation diversion points with water rights to water in the canal ▸ Irrigator rights, approved by the State, are junior water rights to the District's but are given preference for agricultural use as priority users of water ▸ District is compensated for acre-feet pumped by irrigators through a subordination arrangement ▸ Most irrigators are west of Lake Babcock; only four irrigators are located below the Columbus Powerhouse.	USFWS
Water Capacity	▸ There are no plans to increase the hydraulic capacity of the canal. ▸ Both the power canal and the Monroe Powerhouse are designed for a hydraulic flow capacity of 3,500 cfs.	USFWS
NPPD Partnership	▸ All energy produced at the two powerhouses (Monroe and Columbus) is sold directly to NPPD as a portion of their overall power portfolio. ▸ All power the District distributes is purchased back from NPPD ▸ The District has a negotiated contract with NPPD; price of energy fluctuates yearly, based on average cost of NPPD generation. ▸ Because generation is based on flow availability, the District is not always able to meet NPPD's needs/requests.	NDEQ, NGPC, USFWS
Sluice Gates	▸ Used to periodically flush sand and debris away from intake gates. ▸ Original settling basin sluice pipe was an open flume but has now been filled with sand and abandoned. ▸ Gate operation is based on water conditions and sand or debris accumulation; there is no defined schedule of operation. ▸ Operation moves a large amount of sand.	USFWS, NDEQ, NGPC
Sand Management	▸ There are sand management areas on the north and south side of the settling basin. ▸ One to two million tons of sand are dredged from the settling basin per year. ▸ Water flows from dredge on the north side are conveyed through a series of ditches and discharged back into the Loup River upstream of the diversion	NGPC

	structure.	
Bypass Reach	▸ There are control gates adjacent to the diversion structure which allow flows to be bypassed back into the Loup River channel. ▸ River overtops the low weir or wall when there is sufficient flow.	NPS
Power Canal	▸ Canal gradient is approximately 1 foot per mile ▸ The canal can only hold 3,500 cubic feet per second (cfs) – the system is running at capacity when the canal bank is full ▸ There are several siphons along the canal that convey natural drainage from the north side of the canal to the south side of the canal; they include Beaver Creek siphon, Looking Glass Creek siphon, Dry/Cherry Creek siphon, and the Oconee siphon.	USFWS, NGPC
Monroe Powerhouse	▸ Monroe Powerhouse is operated in a run-of-river manner and has no water storage capabilities. ▸ Most of the time, all units are available to run near capacity but there is often insufficient water to do so. The system runs at full capacity only a few days per year.	NPS
Lake Storage	▸ Lake Babcock and Lake North are used to manage the flow going into the Columbus Powerhouse. ▸ Generally, the water level rises at night and then lowers during the day when the Columbus facility runs to cover NPPD's peak. ▸ Lake North is significantly deeper than Lake Babcock; can not be totally drained.	USFWS
Silt at Lake Babcock	▸ The District has considered dredging the lake but it is not economically prudent. ▸ District flushes sediment out of the lake through the Columbus Powerhouse to keep the original flow channel open. ▸ Alternative methods to reclaim some of the storage capacity are currently being evaluated.	NGPC
Columbus Powerhouse	▸ Columbus Powerhouse is a peaking facility operated by the District but dispatched by NPPD according to their system requirements. ▸ The units are generally run to cover NPPD peak load or conditions when NPPD generation facilities go off-line. NPPD has a double peak in winter and there is a very late night peak in the summer due to irrigation. ▸ NPPD's needs mandate daily generation activity. ▸ Any two of the three units at the Columbus Powerhouse can accommodate the 3,500 cfs canal design. When all three units are used at capacity, the 5,000 cfs intake canal design flow is utilized. ▸ If the entire plant went off line, lake water levels are maintained to contain the flow, once diversion is stopped at the headgates. ▸ Vertical trash rack bars are several inches apart and	NGPC, USGS, NDEQ, USFWS

	are not intended as a screen to exclude fish.	
Fish	▸ Fish are present in the canal; the state record Flathead catfish was taken from the canal. ▸ There are no fish protection screens at the powerhouses.	USGS
Endangered Species	▸ Section 7 of the Endangered Species Act will be considered in the relicensing process. ▸ FERC will initiate informal consultation 60 days following filing of the NOI/PAD.	USFWS
Drought Concerns	▸ The Loup River is classified as one of the most consistent flowing rivers in the US. During recent droughts, summer Loup River flows were near normal.	USGS

Action Items:

Who	Task	Date Assigned
LPD	Determine issuance process for 401 Water Quality Certification associated with the FERC public process.	5/7/08
LPD	Distribute agency contact information.	5/7/08
All Agencies	Provide list of NGOs that may be interested in the Project to the District.	5/7/08

Next Meeting:

What: Agency Follow-up Meeting
When: Wednesday, June 25, 2008: 10:00 a.m. – 2:00 p.m. Lunch will be provided
Where: Wunderlichs, 304 E. Highway 30, Columbus, NE 68601
RSVP: On or before Friday, June 20, 2008 to Emily Buss, emily.buss@hdrinc.com or 763-278-5904

The purpose of the meeting is to introduce, discuss and compare the hydropower related issues and concerns identified by the participating agencies. Our objectives for this meeting are to talk through and reach a mutual understanding of the basis or rationale for each issue or concern.

Meeting Summary

Project:	Loup River Hydropower Relicensing FERC Project No. 1256		
Subject:	June 2008 Public Open House Meetings		
Meeting Dates:	June 10, 2008: 4 – 6 pm and 6 – 8 pm June 11, 2008: 6 – 8 pm	Meeting Location:	June 10, 2008: VFW in Columbus, NE June 11, 2008: Genoa Senior Center in Genoa, NE
Notes by:	HDR		

Staff Attendees:

Loup Power District	Jim Frear Theresa Petr Neal Suess Ron Ziola
Loup Power District Board Members	Robert Clausen Chuck Gonka Tom Kumpf Don Pearson
HDR	Emily Buss Dennis Grennan Lisa Richardson George Waldow Stephanie White

Meeting Overview:

Public open houses for Loup Power District's Federal Energy Regulatory Commission (FERC) Relicensing Project (FERC Project No. 1256) were held on June 10 and June 11, 2008. There were two open houses held on June 10, 2008 at the VFW in Columbus, Nebraska from 2:00 to 4:00 pm and then from 6:00 to 8:00 pm. The June 11, 2008 open house was held at the Genoa Senior Center in Genoa, Nebraska from 6:00 to 8:00 pm.

The purpose of the meeting was to inform the public that the existing license for Loup Power District's hydroelectric project will expire in April 2014. The process for relicensing begins this year as mandated by the FERC. The goals for the meeting were to provide information about Loup Power District's hydroelectric project and to describe the licensing process necessary for continued operation of the project.

The meetings were attended by a total of 41 people including members of the public, Loup Power District Board Members, District employees, and Non-Governmental Organizations (NGOs). There were no members of the news media in attendance at the meetings. These notes document the comments expressed at the meetings.

General Comments:

- The majority of attendees at the meeting expressed their general support for the project and its operation. They were pleased to hear that the District is not proposing any changes to the hydro facility or its operation.
- Several attendees asked why they received the letter and what exactly constitutes the project.
- There was one question about whether the cost of relicensing would be assessed to adjacent property.
- There were several questions from people who use the canal for irrigation regarding how relicensing would affect their water rights.
- There were a few comments expressing interest in dredging Lake Babcock to provide better aesthetics and utilization as a lake.
- The Tern and Plover Conservation Partnership noted that the North Sand Management Area at the Settling Basin provides excellent habitat for those species that would otherwise not exist. They noted this as a positive attribute of the project.
- There was a comment speculating that diversion of Loup River water for power generation may have allowed the downstream channel segment to become constricted by sand and encroaching shoreline vegetation. The commenter believes this reduced flow capacity and may have contributed to the recent flooding problems in the Lower Loup segment.
- The Lower Platte River Corridor Alliance noted that some of the key issues they deal with along the Platte River are related to water quality and they asked whether or not the silt and sand removed from the canal is being tested for toxins.
- The Lower Platte River Corridor Alliance also noted that sand management area provides good habitat for terns & plovers and noted that they are not finding very many nests for these species in along the Loup & Platte Rivers. They noted that the fluctuations from peaking may be beneficial to keep vegetation off of sandbars in the river.
- There was some confusion by the public about whether relicensing and the public meetings were associated with Loup Power District's 75th Anniversary celebration.
- There were questions about hydrocycling and the frequency of flow pulses into the Platte River.
- There were several questions for the District related to specific local drainage issues (from recent heavy rains) not related to the hydroproject or relicensing.
- The Nebraska Off Highway Vehicle Association commented that their membership was very appreciative of the access and hospitality provided by the District at the South Sand Management Area.

Summary of Written comments:
Five comment forms were received at, or immediately following the meeting; only two of these forms included a written comment, the others provided information related to the mailing list or meeting notification methods. Below is a summary of the two written comments received at the meetings.

- A property owner along the canal expressed they would like to keep updated regarding the potential for dredging sediment from Lake Babcock.

- A landowner expressed how much people love to use the trails, camping and parks. They also mentioned that campers appreciate the no-fee improved campsites and electrical hook-ups.

19 people asked to be added to the project mailing list and one person expressed an interest in being contacted for further participation in the relicensing process.

Information Requests:
There were no requests for additional information.

Meeting Notes

Project:	Loup River Hydroelectric Project FERC Project No. 1256
Subject:	Agency Follow-up Meeting – Identify Issues & Concerns
Meeting Date: June 25, 2008, 10:00 am – 2:00 pm	Meeting Location: Wunderlichs, Columbus, NE
Notes by:	HDR

Attendees: See Attached

Meeting Agenda:

1. Welcome
2. Introductions
3. Process Review
4. Issues Received to Date
5. Issues Discussion
6. Next Steps

Discussion:

1. Welcome

This meeting was a follow-up to the agency orientation meeting held on May 7, 2008. The purpose of the meeting was to introduce, discuss and compare the hydropower related issues and concerns identified by the participating agencies. The objectives for this meeting were to talk through and reach a mutual understanding of the basis or rationale for each issue or concern.

2. Introductions

The protocol for the meeting was intended to be an open dialog to get the issues identified.

Items of housekeeping discussions included that each agency was asked to review the point of contact information for their agency for accuracy.

A first draft of meeting notes from each agency meeting will be provided by HDR within one (1) week. Comments on meeting notes from the agencies are requested to be sent to HDR within one (1) week so the final notes can be posted to the relicensing website.

The question was raised as to whether non-governmental organizations (NGOs) should be included in the agency meetings to discuss issues? The District noted that NGOs were invited to the public meetings and that three attended the meeting (Nebraska Off Highway Vehicle Association, Tern and Plover Partnership, and the Lower Platte River Corridor Alliance). The National Park Service (NPS) noted they like to see NGO participation at the agency meetings. It was decided to include NGOs at the next agency meeting.

The question was also raised as to whether tribes were included for the meeting. The District noted that tribal coordination is occurring independently and they are working to identify a time to meet. Tribal coordination will continue separately because of their sovereign nation status - unless they would prefer to join the larger group.

Matt Pillard, HDR, will be the new point of contact for agencies (Emily Buss was the previous point of contact). He will be responsible for coordinating with agencies throughout the relicensing process.

3. Process Review

HDR provided a review of the FERC Integrated Licensing Process (ILP), the opportunities for agency input, and the current stage process is in. It was noted that the process requires a long-term commitment from all involved.

The general timing of key milestones was discussed (see attached for general submittal time frames). HDR noted that if the Project is not relicensed by mid-April of 2014, FERC will issue an annual license that allows the District to operate under the previous license terms and conditions until a new license can be issued. It was also noted that the relicensing effort does not stop after the new license is issued. Certain items, such as plan development, mitigation and monitoring, may continue or be required after the new license is issued. FERC establishes comment timeframes and other milestones based on submittals and it is important for each agency to monitor these timeframes. When the Pre-Application Document (PAD) is submitted, a schedule identifying these milestones will be made available.

Agency study requests were discussed. The agencies were encouraged to provide their preliminary list of study needs for inclusion in the PAD. There will be other opportunities after the PAD submittal to identify and discuss studies, it was noted that this is the time to think about specific study needs to address issues of concern. Study requests should ultimately consider the seven (7) basic study criteria identified by FERC. However they do not need to address every criteria at this time. Eventually all study requests will need to address the seven criteria in order for FERC to include them in the Study Plan to be conducted by the District (as the applicant).

The National Park Service (NPS) asked if Loup Power District would entertain a settlement agreement or if was too early to tell. HDR responded that while it is too early to tell at this time, that it is a possibility. Any agreement on the issues at hand is important and the process to resolve them is also important. It was noted that FERC will consider how the group has collaborated relative to study requests and settlement agreements.

4. Issues Received to Date

Based on the request for comments, eight (8) agencies responded. The US Environmental Protection Agency (Kansas City Regional Office) responded that they had no comments at this time. A summary of the agency issues identified prior to the meeting is included in the presentation handout. Additionally, specific comment letters received from US Fish & Wildlife Service/NE Game & Parks, NE Department of Natural Resources, and US Geological Survey are attached.

5. Issues Discussion

Each agency was asked to provide a discussion of their comments:

- National Park Service – Agency authority for participation in relicensing is provided through the Wild and Scenic Rivers Act and Section 10A of the Federal Power Act. The NPS provided six issues:
  - Recreation – land and water based. Land recreation issues are focused on trails, outdoor recreation opportunities, fishing, and camping (interest to improve/expand existing). Water based recreation issues are focused on opportunities for canoeing/boating.
  - Land Use – issues relate primarily to access points to recreational facilities and conflict/opportunity points with adjacent land uses.
  - Aesthetics – aesthetics can cover the whole spectrum of analysis. NPS noted that this will be one area where the level of analysis needs to be discussed as a group prior to submittal of the PAD.

- Natural Resources – NPS is an agency within the Department of Interior and thus has interest in natural resource impacts.
- Stakeholders/NGOs – NPS is interested in input from these groups.
- Project Operations – Flows and how project operation affects the above listed interests. NPS noted this area was not a major interest, but is considered.
- The District asked if NPS would be detailing more specific issues. NPS said they would and that the tour of the facilities will be of help in that regard.

- United States Geologic Survey (USGS) – The USGS has no regulatory authority on the Project. However, they have a responsibility as a technical resource to the Department of Interior to provide technical information and to ensure that good science is applied. The questions the USGS have relative to the Project are related to (specific issues questions are attached):
  - Water temperature changes in the Loup River bypassed reach and in the Platte River below the return point
  - Sediment budget in the bypassed reach and below the discharge point – how much sediment is removed and how does that affect the Loup River and once returned, how does that affect the Platte River?
  - Effects from hydrocycling – have enough studies been done to know the effects on sand bar characteristics and longevity, change in sediment moisture and its effect on water content in sand bars, vegetation composition, and erosion.
  - Habitat connectivity
  - Effects on in-channel vegetation – does hydrocycling effect soil moisture regime and its implications on nesting habitat? Does removal of water in the Loup River by-pass reach effect woodland expansion/species composition? How does hydrocycling after a natural high or low-water event effect plant establishment?

  HDR inquired about USGS studies that might be of some assistance in beginning to look at how to address their questions. USGS identified that they currently monitor turbidity and temperature at the gauge at Louisville (since 2002). No studies have been performed to date on temperature.

- U.S. Fish and Wildlife Service (USFWS) & Nebraska Game and Parks Commission (NGPC) – The USFWS has authorities under the Endangered Species Act, the Fish and Wildlife Coordination Act, the National Environmental Policy Act, the Migratory Bird Treaty Act, and other federal policies and procedures. The NGPC has authorities under the Non-game and Endangered Species Conservation Act. The USFWS works closely with the NGPC through the Fish and Wildlife Coordination Act and prepared a single list of issues (attached)

  The USFWS and NGPC provided a list of seven (7) issues, concerns, and related questions relative to the Project, copies were provided to attendees (list attached). Each item was not discussed in detail but summarized:
  - Flow depletions on the Loup River below Genoa – diversion effect on sandbars and tern/plover habitat; low flow effects on fish migration, water temperature, fish kills
  - Flow depletion above the diversion – lack of water upstream and water rights. The question was asked if Loup Power District can sell credits/water rights to upstream users. It was noted that the District does not have the authority to sell water rights; however, through preference (agriculture over industry) and under low flow conditions, upstream irrigators receive water before the District. A negotiated interference agreement exists which provides for irrigators to compensate the District for the equivalent power generation lost due to water use for irrigation. The District has no control over the appropriations. It was noted that upstream water appropriation issues that are not within the District's control are not part of the relicensing project.
  - Flow depletions on the Platte River – concerns relate to evaporation from the District's Power Canal/Regulating Reservoirs and losses due to irrigation along the canal.

- Sediment-deprived flows – effect sediment removal has on downstream sandbar creation.
- Dredging operations at the settling basin – effects on tern and plover nests and fish entrainment/stranding.
- Hydrocycling – effect of daily stage changes on tern/plover nests, loss of nesting and foraging habitat, erosion of sandbars, fish passage and thermal stress.
- Recreational benefits – impediments to fish passage in the Power Canal, access to facilities and camping. It was noted that Section 10(J) was still part of the relicensing process.

The NGPC added that the Project does provide some very good recreation resources and that they have had a good working relationship with the District relative to maintenance timing and flow releases. They added that some items needed a closer look, such as impediments to fish passage, the Diversion Weir as a potential barrier to fish passage and that they don't have a good handle on how this affects fish.

The comment was made that the positive benefits of the Project should be mentioned, such as increased water surface area, recreation, lakes, wetlands via seepage in some areas. It was acknowledged that there are some good benefits and that the issues raised by the USFWS and NGPC were questions that they have and some of the issues may become non-issues pending studies or subsequent information.

USFWS noted that they expect this Project to require formal consultation (under Section 7 of the Endangered Species Act).

HDR noted that some of the comments appear to be written as if considering a new construction project. However, this is a relicensing of an existing project. The process is not intended to go back to look at situations prior to the project being constructed. However, it was also noted that the relicensing action may result in a change in operations and the process will evaluate how would this could affect resources.

NGPC also noted that the river otter historically occurred in the Loup River Basin and the impact to this species is unknown.

- Nebraska Department of Environmental Quality (NDEQ) – NDEQ's authority is provided under administering the Section 401 water quality certification as part of the Clean Water Act. However, the conditions they have authority on relate only to water quality. They need to determine if there is a discharge of pollution that affects water quality. There have been a few fish kills reported, but they were determined to be disease related. Lake Babcock is currently on the impairments list (low priority) to have a TMDL established. They are obligated to coordinate with NGPC to make sure no NDEQ action affects state non-game or endangered species. The question was asked relative to placing dredged material back into the Loup River (for added sediment). NDEQ commented that that would be a Section 404 issue. It was also noted that the other item to consider under this scenario is the ability of the bypassed reach flow to carry the sediment.

- Nebraska Department of Natural Resources (DNR) – The DNR is involved in the Project through the appropriation for the diversion (1934*) and a permit for power generation. The DNR commented that the District does not hold a storage permit; however, power companies are allowed to store water for 24 hours to build up head for generation. Water rights are determined through age of appropriations (first in time) and preference. A higher preference (domestic, irrigation, industry) allows for water from a junior appropriation to be satisfied before a senior appropriation, but the junior water right must compensate the senior water right holder for its loss of water. DNR noted an issue for the District to consider is the possibility that, if there are enough requests for water with higher preference, will enough be left for power generation?

Another concern of the DNR is that the District is charging different amounts for compensation for loss of water from the canal verses requests for water upstream from the diversion. This shouldn't be a problem as long as the amount is less than the just compensation amount.

DNR speculated that the District is in a unique situation where it has a canal that is acting as a river. DNR questioned under what agreements were adjacent property owners accessing the canal. DNR noted that the District could potentially decide not to grant irrigators access to get water out of the canal. The District noted that all District properties (with some exceptions for public safety) are publicly accessible. Another DNR concern is that irrigators who get water from the canal are using an appropriation from a 1934* permit, even though their water right may be younger than other permits along the bypass reach.

Another concern of the DNR is - what happens to irrigators if water in the canal is down and they can't get water? All irrigators from the canal are adjacent to District property, and the ability to use the canal water for irrigation is provided through an agreement or easement that provides access to the irrigators. This access is allowed under the existing FERC license (access to water is only provided if the requestor has a water right from the State). The agreement between the irrigators and the District grants the ability to pump water, but there is no guarantee of water being in the canal. It was also noted that the DNR issues priority shut-off notices to irrigators in times of water shortage.

There are 78 diversion points and 42 irrigators on the Loup Power Canal. The District noted that there is a meter on every irrigation pump. These meters are checked at the beginning and end of the irrigation season. On the Loup River, the DNR has done the pump inspections for 55 years. The District will take over this task in 2009. Pumping books are used to check appropriations.

Waters of the State was also discussed. All water in Nebraska is considered to be in the public trust and a water of the state. The DEQ uses the definition of waters of the State as defined by the legislature and provides added definition per their regulations. The Power Canal has defined stream segments and is not unique in this regard as being considered a waters of the State. These segments clearly differentiate the Power Canal from the Loup River bypassed reach.

**Per DNR water right application A-2287, Priority Date of 1932.*

- Lower Loup Natural Resources District – Their only concern/issue noted was the issue of appropriations in the Loup River Basin.

- Nebraska Public Power District – Their primary issue is that, under the new FERC license, Loup Power District retains the operational flexibility to the follow fluctuations in power demand (hydrocycling). They also stressed the importance of basing relicensing decisions on good science.

- Health and Human Services – Their issues/concerns are related to public drinking water supply. There are a number of supplies in the basin which become an appropriations issue. They have seen an increase in lake front developments and they need to consider how supply and overall quality and quantity of drinking water sources are affected.

Issue Categories

The issues were grouped into basic categories:

- Sediment Budget
- Hydrocycling
- Flow Depletions
- Project Maintenance and Operations (timing)

- Recreation/Land Use/Aesthetics
- Threatened and Endangered Species Habitat
- Water Rights/Appropriations

The formation of working groups was discussed - it was decided that the majority of the issues are interrelated and cannot be broken into working groups. Two working groups were identified: 1) Recreation/Land Use/Aesthetics and 2) Water Rights and Appropriations. Members of working groups were established (see attached).

The working groups will discuss categorical issues and to help define the questions/issues that are to be answered. The intent of the working groups was discussed as a way to have smaller groups address the issues and report back to the larger group.

USFWS noted that it would need to maintain some autonomy due to Section 7 Consultation.

6. Next Steps

Data Request

Agencies were requested to provide data that they may have relative to the Project and the issues identified. The purpose of providing this information is to allow the District to determine data gaps and will relate to the need for studies.

- NDEQ will provide information relative to fish kills.
- USFWS will review its information to determine what can be provided.
- NGPC will look for information available on the lower Loup River.

Study Needs and Requests

The District requested that agencies begin to formulate study needs that may be necessary to address the issues and concerns identified by the agencies and forward that information to HDR as soon as possible. When developing study needs and requests, agencies should keep in mind the seven (7) criteria FERC uses to asses study viability. At this point it is not necessary for agencies to address every item of the FERC criteria, the intent of the request is to consider what kind of information can be used to address the defined issues/concerns. The District is interested in collaboration on study requests, to the extent the agencies wish. Studies should focus on specific project related issues.

Eventually the FERC criteria will be used to determine which studies the District (as the applicant) will perform. There will be additional opportunities to introduce study requests after the PAD is submitted and during the FERC scoping process. A Study Plan will be developed in 2009 that must be approved by FERC.

USFWS asked what flexibility the District has in changing project operations and addressing the issues and noted that there will need to be an alternatives analysis under NEPA. HDR noted that the issue of flexibility is still too early to address, as of now, we have a list off issues/concerns and multiple assumptions of impacts. HDR noted that, as the studies are conducted, the data is reported and may result in alteration of some studies and that some studies may include testing of ways to mitigate impacts.

The USFWS noted that the Section 7 Consultation process may also require studies to be performed.

The next agency meeting is scheduled for July 24, 2008 from 9:00 a.m. to 1:30 p.m. at the Holiday Inn Express in Columbus, Nebraska to discuss study needs and requests. Prior to that meeting, HDR and the District may contact agencies for further clarification of issues and to request data.

Action Items:

Who	Task	Date Assigned
All Agencies	Identify preliminary study needs and requests.	6/25/08
Recreation/Land Use/Aesthetics Working Group	Coordinate and determine date/time for conference call meeting	6/25/08
Water Rights/ Appropriations Working Group	Coordinate and determine date/time for conference call meeting	6/25/08
NPS	Further definition of issues.	6/25/08
USFWS	Review available information to provide to the District relative to threatened and endangered species.	6/25/08
NGPC	Information available on the Lower Loup River	6/25/08
NDEQ	Provide the District with information on fish kill reports.	6/25/08

Next Meeting:

What: Potential Studies Discussion
When: Thursday, July 24, 2008: 9:00 a.m. – 1:30 p.m. Lunch will be provided
Where: Holiday Inn Express, 524 E 23rd St, Columbus, NE 68601 (402) 564-2566
RSVP: On or before Friday, July 18, 2008 to Matt Pillard, matt.pillard@hdrinc.com or 402-399-1186

The purpose of the meeting is to discuss the potential studies to be performed to address Project related issues.

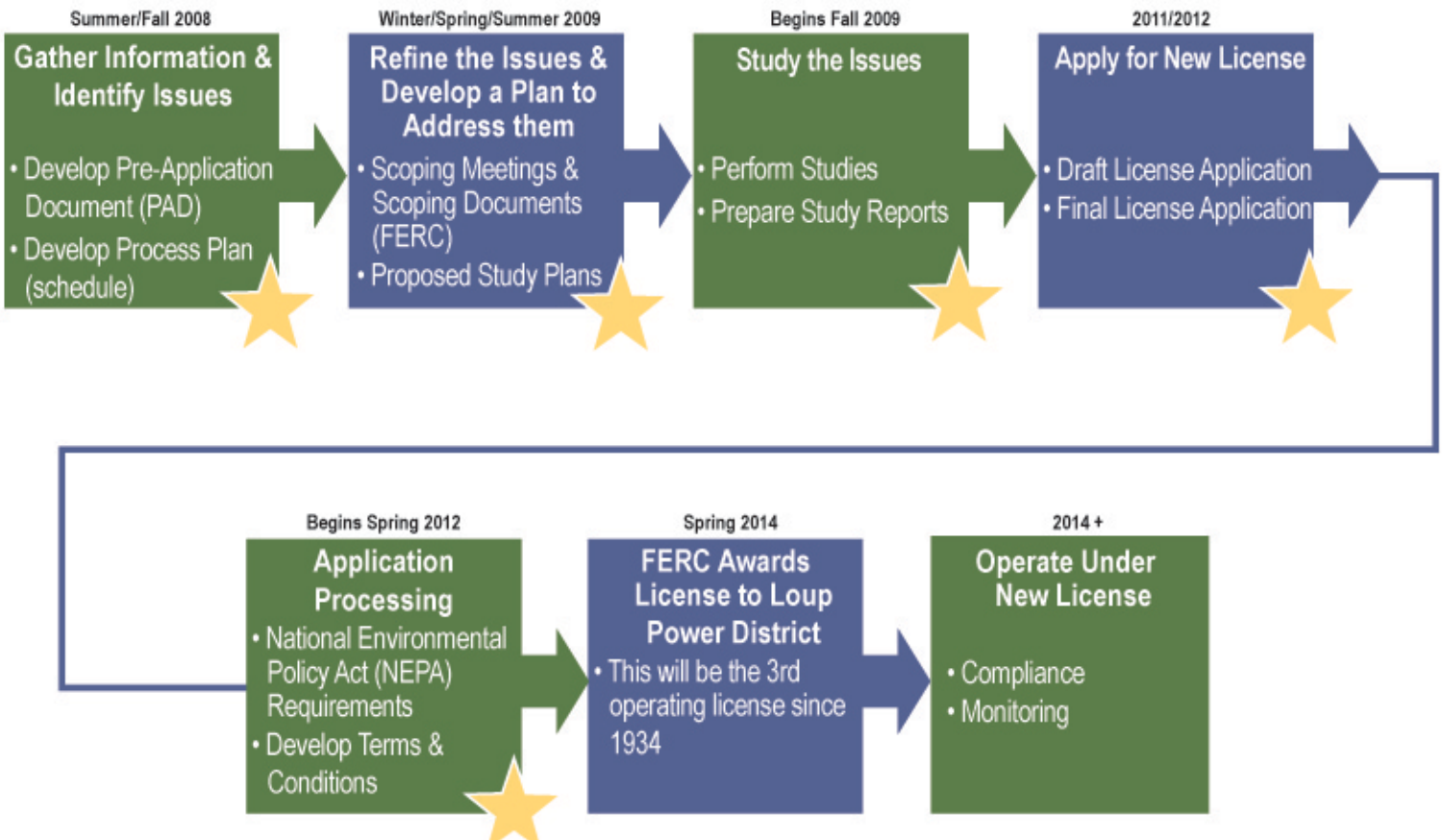
Hydroelectric Relicensing
FERC Project 1256
Project #37104

Agency Meeting Attendees
June 25, 2008
10:00 AM to 2:00 PM

Last Name	First Name	Agency / Organization
Albrecht	Frank	Nebraska Game and Parks
Alexander	Jason	United States Geological Survey
Angell	Jean	Nebraska Department of Natural Resources
Bender	John	Nebraska Department of Environmental Quality
Cochnar	John	United States Fish and Wildlife Service
Engelbert	Pat	HDR
Frear	Jim	Loup Power District
Harms	Bob	United States Fish and Wildlife Service
Jundt	David	Nebraska Department of Health and Human Services; Division of Public Health
Mangiamelli	Joe	City of Columbus
Mohler	Robert	Lower Loup Natural Resources District
Pillard	Matt	HDR
Richardson	Lisa	HDR
Runge	Jeff	United States Fish and Wildlife Service
Santin	Henry	Nance County Supervisors
Shadle	John	Nebraska Public Power District

Last Name	First Name	Agency / Organization
Sigler	Bill	HDR
Soenksen	Phil	United States Geological Survey
Stoner	Kristal	Nebraska Game and Parks
Sunneberg	Jon	Nebraska Public Power District
Tacha	Martha	United States Fish and Wildlife Service
Thoreson	Randy	National Park Service
Tunink	Dave	Nebraska Game and Parks
Waldow	George	HDR
Weekley	Mark	National Park Service
White	Stephanie	HDR
Zelt	Ronald	United States Geological Survey; Nebraska Water Science Center
Ziola	Ron	Loup Power District
Zuerlein	Gene	Nebraska Game and Parks

What is the Relicensing Process and Timeline?



★ Includes Public Comment Opportunities

First Name	Last Name	Organization	Address 1	Address 2	City	State	Zip Code	Phone	Fax	E-Mail
Randy	Thoreson	National Park Service Field Office	111 E. Kellogg Blvd., Suite 105		St. Paul	MN	55101-1256	1-651-290-3004	1-651-290-3815	randy_thoreson@nps.gov
Dave	Tunink	Nebraska Game and Parks Commission	2201 North 13th		Norfolk	NE	68701	1-402 471-5553		Dave.Tunink@ngpc.ne.gov
Henry	Santin Jr.	Nance County	209 Esther St		Fullerton	NE	68638	1-308-894-5495		santin@hamilton.net
Bob	Harms	United States Fish and Wildlife Service	Federal Building	203 West Second Street	Grand Island	NE	68801	1-308-382-6468 ext. 17		robert_harms@fws.gov
Matt	Pillard	HDR Engineering, Inc.	8404 Indian Hills Drive		Omaha	NE	68114-4049	402-399-1186		matt.pillard@hdrinc.com
Ron	Ziola	Loup Power District	P.O. Box 988	2404 15th Street	Columbus	NE	68602-0988	402-564-3171 ext. 254		rziola@loup.com

Loup Power District
Hydroelectric Relicense Project
Water Rights Work Group Contact List

First Name	Last Name	Organization	Address 1	Address 2	City	State	Zip Code	Phone	Fax	E-Mail
Jean	Angell	Nebraska Department of Natural Resources	State Office Building, 4th Floor	300 Centennial Mall South; P.O. Box 4676	Lincoln	NE	68509-4676	1-404-471-3931	1-402-471-2900	jangell@dnr.ne.gov
Bob	Harms	United States Fish and Wildlife Service	Federal Building	203 West Second Street	Grand Island	NE	68801	1-308-382-6468 ext. 17		robert_harms@fws.gov
Phil	Soenksen	U.S. Geologic Survey	5231 South 19th		Lincoln	NE	68512-1271	1-402 328-4150		pjsoenks@usgs.gov
Robert	Mohler	Lower Loup NRD	2620 Airport Drive, P.O. Box 210		Ord	NE	68862-0210	1-308-728-3221	1-308 728-5669	mohler@nctc.net
David	Jundt	Nebraska Department of Health and Human Services; Division of Public Health; Northeast Regional Office	304 North 5th St. Suite C		Norfolk	NE	68701-4093	1-402-370-3404	1-402-370-3493	david.jundt@dhhs.ne.gov
Pat	Engelbert	HDR Engineering, Inc.	8404 Indian Hills Drive		Omaha	NE	68114-4049	1-402-399-4917		pat.engelbert@hdrinc.com
John	Engel	HDR Engineering, Inc.	8404 Indian Hills Drive		Omaha	NE	68114-4049	1-402-926-7110		john.engel@hdrinc.com
Jim	Frear	Loup Power District	P.O. Box 988	2404 15th Street	Columbus	NE	68602-0988	1-402-564-3171 ext. 255		jfrear@loup.com
John	Shadle	Nebraska Public Power District	P.O. Box 519		Norfolk	NE	68702-0519	1-402-563-5489		jjshadl@nppd.com

Meeting Notes

Project:	Loup River Hydroelectric Project FERC Project No. 1256
Subject:	Recreation / Land Use / Aesthetics Work Group
Meeting Date:	July 17, 2008, 2:00 pm – 3:00 pm
Meeting Location:	Conference Call
Notes by:	HDR

Attendees:

Mr. Randy Thoreson – National Park Service
Mr. Dave Tunink – Nebraska Game and Parks Commission
Mr. Jeff Schuckman – Nebraska Game and Parks Commission
Mr. Ron Ziola – Loup Power District
Mr. Neal Suess – Loup Power District
Mr. Matt Pillard – HDR
Mr. Quinn Damgaard – HDR
[Mr. Bob Harms (USFWS) and Mr. Henry Santin (Nance Co.) were unable to attend]

Topics Discussed:

1. Group organization
2. Project issues related to recreation, land use, and aesthetics
3. Initial identification and format of study requests
4. Next steps

Action/Notes:

Group Organization

- Work group currently contains a broad cross section of entities including National Park Service (NPS), Nebraska Game and Parks Commission (NGPC), U.S. Fish and Wildlife Service (USFWS), Loup Power District (LPD), and HDR Engineering, Inc. (HDR)
- Letters have been mailed to Non-Governmental Organizations (NGOs) including the Nebraska Off-Highway Vehicle Association (NOHVA), Columbus Area Recreational Trails (CART), and the Tern and Plover Partnership requesting their participation in the next agency meeting and/or their interest in joining the work group

NPS Interest Items (Ref. Meeting notes from the June 25, 2008 Agency Meeting)

- Outdoor recreation, trails, fishing, boating/canoeing, and access
- Land Use – NPS requests a map of adjacent landowners along the Project Boundary. Their particular interest involves conflict points and access points
- Aesthetics – This can be a diverse item

NGPC and USFWS Interest Items

- NGPC is specifically interested in fisheries and fishing opportunities
- NGPC reps did not receive June 25, 2008 notes and were directed to Loup.com for reference
- USFWS is currently working on the Technical Assistance Letter (TAL) for the Project. This will reference the Endangered Species Act (ESA) and the Migratory Bird Treaty Act (MBTA)
- Bullet No. 7 of the June 25, 2008 USFWS and NGPC "Preliminary Concerns" document lists seven items related to recreation and asks if benefit components have been completed, maintained, and operated, or enhanced during the project period.

- Discussed whether or not there were initial recreational intentions at Project implementation and determined that the Project was originally constructed for power production and economic development with no specified intent related to recreational resources. Recreation components of the Project came later and at the District's expense or through public/private partnerships (especially during the 1963 construction of Lake North).

Identification of Potential Recreational Study Requests

- Assess existing recreational opportunities against current and projected demand
  - Recreational User Survey
    - Include frequency of use, what amenities are commonly used, what could be improved, current conditions, and plans for implementation
    - Loup currently performing weekly camper and tent counts for incorporation into 2008 Form 80 (to be submitted March 2009)
  - Evaluate hunting opportunities and needs
  - Coordinate with CART on trail development and connectivity of off-site trails with trails within the Project Boundary
  - Potentially improve Tailrace Park (vandalism is a problem which may require creative ideas to resolve)
  - Develop a plan to incorporate needed facilities identified during subsequent studies and determine project mitigation and enhancements (PMEs)
  - Creel Survey – what are anglers targeting, angler needs and expectations, catch rates, quality of fishery, determination of needed regulations or stocking
    - Should consist of angler interviews spanning one open-water fishing season
    - NGPC has existing creel survey cards that could be manipulated for use on the Project
    - Rupp performed creel survey on the canal in 1983-1984
    - Canal is included in Platte River survey
- NGPC would like to develop a "Fishery Plan" specific to Lake North. This plan should be approached as a study related to the relicensing process.
  - Could fish habitat/brush piles be installed
  - Could shoreline erosion be avoided by construction of jetties in the corner of the lake
  - Could angler access be improved
  - NGPC has other "Fishery Plan" models previously produced for other state and NRD lakes
  - Fishery improvements on Lake Babcock are limited due to the need for expansive dredging
  - LPD would be open to consider fishery improvements so long as Project operations are not impeded

Initial Identification and Format of Land Use Study Requests

- Assess potential for additional access
- Document removal of sand off-site for processing
- Concern with OHV use on private property, generally in the river channel (adjacent landowners own to the center of the channel).

Initial Identification and Format of Aesthetics Study Requests

- The group discussed aesthetics, but did not identify any specific study requests related to aesthetics
- It is not anticipated that a formal Project Aesthetic Resource Assessment or Visual Quality Assessment will be required
- At this time, it is assumed that any studies related to aesthetics would result following PAD submittal and review

Fisheries Studies Relative to Biology

- NGPC will likely suggest further studies related to the fisheries as part of the Biological Opinion

- NGPC would also like to perform fish counts (species, length, frequency) in the canal
  - Special access would be required to perform the counts. LPD could likely accommodate the effort
  - Non-motorized boating is not restricted on the canal, but it is also not advertised. It is inconvenient for boater use as frequent portages are required at bridges

- Flows will also be an issue that will require study
  - LPD is entitled 3,500 cfs; however, fish kill in the bypass reach may be an issue
  - LPD should notify and work with NGPC prior to performing draw downs to assure fish kill is not an issue

Next Steps

July 24, 2008 Meeting – Present meeting summary to act as a model for other Project work groups

Meeting Notes

Project:	Loup River Hydroelectric Project FERC Project No. 1256
Subject:	Agency Meeting
Meeting Date: July 22, 2008	Meeting Location: Loup District Office, Columbus, NE
Notes by:	HDR

Attendees:
Bob Harms – USFWS; Neil Suess - LPPD; Matt Pillard – HDR; Dick Gorton - HDR

Meeting Agenda:
The purpose of the meeting was to discuss the correlation between the ILP and ESA processes, discuss the baseline that would be used to establish impacts, and discuss potential studies that would be needed.

Discussion:
1) Process
   - Bob inquired about Loup's experience with ESA. Neil said they hadn't needed to go through it. Bob said his goal for the day was to discuss the ESA process and what it means. He said that everyone wishes to have a smooth and efficient process.
   - Bob asked if FERC had a representative yet. George said that Kim Winn is current point of contact and once the PAD is submitted she would likely be the licensing coordinator assigned after the PAD is submitted.
   - Bob said he had reviewed FERC's guidance on ESA and it was useful. Matt pointed out there was another document, the Interagency....that was also done that provides some additional information. Bob asked if we could send that to him.
   - Bob discussed that a Technical Assistance letter was sent to Neil's attention on July 21. This letter provides the parameters of their authority for Section 7, provides list of species that could be present, and identifies their list of concerns that were previously provided.
   - Bob said that we are currently in informal consultations. This is a give and take and information sharing period. Bob explained that there are two requirements on Federal agencies:
     1) identify that no jeopardy (extinction) of species or modification of critical habitat be found; and
     2) enter into formal Section 7 consultations on finding of may affect of T&E species.

   - Bob said that there is no critical habitat in this area as it has been rescinded, but identified it anyway as part of the federal agency requirement.
   - Bob explained that the biological opinion (BO) could result in a jeopardy, but with inclusion of reasonable and prudent measures, jeopardy could be eliminated. Reasonable and prudent measures address a specific species, like individual nests.
   - In the BO, the whole and complete project is considered. That is the reason for their inquiries of elements that may seem outside of the project, such as upstream irrigation. It is important for them to have an understanding of the whole project.
   - An example of US 34 project for the Iowa DOT was provided in that USFWS wished to have impacts relative to potential development discussed that were outside of that project's footprint. FHWA declined to include it, and it became an issue in the BO.
   - George asked how this affects water rights and the relationship between questions relative to water rights and relicensing. Dick provided that the US 34 project, the issue of development was related to indirect effects and that USFWS must consider indirect and cumulative effects.
   - Bob agreed and provided their guidelines reference to inter-related and inter-dependant actions and they don't need to be in the District's control to be considered. If the Project enables something else

to happen, it must be looked at. Dick provided that this is commonly call the "but for" the project approach. This terminology is no longer used due to a recent court case, but the theory is still applied.

2) Baseline
   - Bob explained that a whole and complete project is important in establishing the baseline for the project to determine effects. The effects analysis will use a with project/without the project comparison to determine effects.
   - Neil asked how other effects are considered under this approach. Bob said they need to consider cumulative effects. Bob said the baseline is tied to what would happen if the FERC license is not renewed.
   - A scenario of no relicensing was discussed and that factors such as water rights and facilities need to be considered to determine what would reasonably happen under this scenario. It was discussed that this is just used to establish the baseline and that the Service is not suggesting this as an alternative. A discussion on the water right occurred based on what might reasonably occur. No conclusion was developed, but Dick pointed out that this type of discussion is necessary to identify what would happen under this scenario and to have all agree to this outcome.

3) Studies
   - Bob discussed that the NGPC, USGS and the USFWS meet to discuss issues. Bob said it is FERC and Loup's responsibility to develop studies to address issues. They are not obligated to fill out a form that follows the 7 steps to make a study request, but they are open to discuss potential studies and provide technical assistance in getting studies developed. It was discussed that in the ESA process, it is Loup's job, on behalf of FERC, to develop the BA. The closer we are on issues in the BA, from baseline to studies, the easier the process will be in development of the BO and the reasonable and prudent measures.
   - Bob suggested we engage the USGS, as they are technical experts and can provide insight on data gaps and study formulation.
   - Bob also provided at that a one year study, depending on the study, is not a lot of time. There is an effort to identify a cause and effect, and that we may need to study design and/or operations changes as part of that and evaluate the effect of these changes.

4) It was decided that after Thursday's meeting, another small group meeting be scheduled to discuss elements of the baseline condition.

Meeting Notes

Project:	Loup River Hydroelectric Project FERC Project No. 1256
Subject:	Water Rights Work Group
Meeting Date:	July 22, 2008, 1:30 pm – 2:30 pm
Meeting Location:	Conference Call
Notes by:	HDR

Attendees:

Ms. Jean Angell – Nebraska Department of Natural Resources
Ms. Pam Andersen - Nebraska Department of Natural Resources
Mr. Mike Thomopson - Nebraska Department of Natural Resources
Mr. Jim Frear – Loup Power District
Mr. Ron Ziola – Loup Power District
Mr. Neal Suess – Loup Power District
Mr. John Shadle - NPPD
Mr. Brian Barels – NPPD
Mr. Bill Sigler – HDR
Mr. George Waldow – HDR
Mr. Pat Engelbert – HDR
[Mr. Bob Harms (USFWS) Mr. David Jundt (NeHHS), Mr. Robert Mohler (LLNRD), Mr. Phil Soenksen (USGS), Mr. Gene Zuerlein (NGPC), and Mr. John Engel (HDR) were unable to attend]

Topics Discussed:

1. Items distributed by DNR;
2. List of DNR issues as detailed in June 20, 2008 DNR letter and discussed by DNR at June 24, 208 agency meeting;
3. Next steps.

Action/Notes:

The meeting minutes listed below reflects information as discussed during the conference call. They are not to be misconstrued as the official position of DNR or LPPD.

Items Distributed by DNR

The following items were sent to the work group members prior to the conference call. They include:

- Pump irrigation agreements, rules and regulations between LPPD and irrigators, and a page from the existing FERC license regarding access to LPPD's land and water;
- A CD containing an aerial photo of the water rights along the canal and the points of diversion;
- State of Nebraska statues giving preference to irrigation appropriations over power appropriations, and compensation for exercise of preference;
- A list of the surface water appropriations on the LPPD canal;
- A list of the surface water appropriations junior to, and downstream of, the confluence of the canal tail race and the Platte River.

There was no indication from the call participants that information had yet to be received.

List of DNR issues as detailed in June 20, 2008 DNR letter and discussed by DNR at June 24, 2008 agency meeting

DNR stated that they did not bring up the issues because of opposition to re-licensing the Project; DNR wishes that the Project be re-licensed and that stakeholders be served well by it. There was extensive discussion as to whether the issues were re-licensing issues or state water policy issues. DNR's position is that FERC should determine whether or not the issues are re-licensing issues. The following is a list of the issues from the DNR letter dated June 20, 2008, and the discussion on each topic.

1. Nebraska law provides that waters used for irrigation have preference over waters used for manufacture of power. This means an irrigator with an appropriation junior to LPPD's appropriation may require the senior water right for power – LPPD -- to subordinate its water use. The law also provides that just compensation must be paid by an irrigator to LPPD when subordination is demanded. Just compensation is not an arbitrary amount, but an amount not greater than the cost of replacing the power which would be generated by the water so acquired. LPPD has set amounts for irrigators to take water out of priority. The rate for those irrigators taking water from the canal between the diversion on the Loup River and the power plants at Monroe and Columbus is different than the rate charged for those irrigators taking water upstream of the diversion. How does LPPD figure "just compensation"? The Power Interference Agreement states that the amount charged irrigators is not just compensation.

Discussion:

- The just compensation amount has been developed and adjusted by LPPD over the 70 years of operation;
- DNR would like to know how the rate was determined, and what the current rate is;
- LPPD is currently reviewing the just compensation policy.

2. Why does LPPD allow farmers to irrigate out of its canal? The Nebraska Department of Natural Resources knows of no easements in place for those irrigators taking from the canal. LPPD appears to operate as an irrigation district, rather than a power district.

- There are surface water appropriators that have water rights along the canal. LPPD has pump irrigation agreements and easements with adjacent property owners.
- There was lengthy discussion on how to distinguish between a canal appropriator and a downstream or bypass reach appropriator. Several scenarios were discussed.

3. At times LPPD diverts most or all of the Loup River, in effect changing the channel of the river. What if an irrigator requests water be delivered out of the river downstream of the diversion point and upstream of the discharge into the Platte River, willing to pay LPPD just compensation?

- LPPD will follow Nebraska law and allow the necessary water to be diverted for just compensation.
- To LPPD's knowledge there were no subordination agreements on the bypass reach.
- No one on the call was aware of any preference calls on the bypass reach.

4. Has LPPD considered its response in the event irrigation development continued in areas upstream of LPPD's plants to the point of making the manufacturing of electricity no longer feasible?

- Historically, high flows on the Loup River occur in the spring during the non irrigation season, which historically is LPPD's highest power generating months. If LPPD were unable to divert due to irrigation preference, assuming the irrigation season lasted 3 months, they would receive just compensation under the preference system, and would continue generating during the remainder of the year.
- It was noted that speculation regarding future scenarios is not part of the re-licensing process.
- DNR noted that preference also applies to the canal water, and that LPPD has a responsibility to deliver the water.
- LPPD noted that it would be the same as if there was no water in the river for them divert.

5. Should LPPD be allowed to divert their entire appropriation when making power with less than the entire appropriation, given that LPPD has no storage permit?

- LPPD diverts water 24 hours a day, 7 days a week. If the Columbus Powerhouse has to shut down, LPPD would soon curtail or halt diversion from the Loup River because they do not have the reservoir capacity to pond more than approximately two feet of water.

Next Steps

July 24, 2008 Meeting – Review aerial photo of irrigators and present summary of conference call.

Meeting Notes

Project:	Loup River Hydroelectric Project FERC Project No. 1256
Subject:	Agency Follow-up Meeting – Study Needs
Meeting Date: July 24, 2008, 9:00 am – 1:30 pm	Meeting Location: Holiday Inn Express, Columbus, NE
Notes by: HDR	

Attendees: See Attached

Meeting Agenda:

1. Welcome/Introductions
2. Summary of June 25th Meeting
   - Overview of Key Issues
   - Workgroups
3. Discussion of Potential Studies
4. Next Steps

Discussion:

1. Welcome/Introductions

The purpose of the meeting was to discuss the potential studies to be performed to address Project related issues. Introductions were made and the two NGO's present at the meeting provided a description of their group's mission and activities:

- The Tern and Plover Partnership provided that they are advocates for the species and look for ways for industry and bird populations to co-exist.

- The Nebraska Off-Highway Vehicle Association (NOHVA) is a 3500 member organization that manages 5 facilities. The Headworks Park property that they manage in association with the District is an important destination and their organization values this facility.

2. Summary of June 25th Meeting

The issues identified at the meeting on June 25th were presented in summarized form (see attached). This was used to frame the discussion of the days meeting. The question was asked if there were any new issues to add or issues to table/eliminate.

- The NGPC asked that the river otter be added to the list, noting that there is little information available about the river otter in this reach of the Loup River.

- The DNR added that an expansion of the Just Compensation issue is that compensation to the district from irrigators for lost power generation should depend on where the withdrawal point is located within the system.

- It was noted that threatened and endangered species issues are threaded through many of the issue groupings.

- NPPD added that another key issue is the economic value of the established load following aspect of project operation (hydrocycling). They are also interested in any future limitations on project operations as might result from the relicensing process.

Recreation Work Group Report

Dave Tunink (NGPC) provided a summary of the Recreation Workgroup discussions:

- The workgroup discussed issues and possible studies related to recreation, land use, and aesthetics. Recreational components included outdoor recreation, trails, fishing, boating/canoeing, and access. Land use issues involved conflicting land uses and access conflicts. The group noted that aesthetics can be a difficult item to address.

- The workgroup identified the following potential studies/data needs:
  - Recreation: review of existing resources, recreational user survey, evaluation of hunting opportunities, coordination with CART, angler and creel survey, and development of an overall recreation plan.
  - Fisheries: develop a fisheries plan and provide for improved fisheries at Lake North via jetties or brush piles. Fish passage at the diversion may also be an issue.
  - Land use: evaluate location of access points and identify any conflicting land uses.
  - Aesthetics: there are multiple ways to study aesthetics, but there may not need to be a study for this project.

NGPC asked if coordination with agencies would be beneficial through the FERC licensing process. HDR responded that yes, coordination is absolutely beneficial.

NGPC would like access to the canal to do fish surveys. The purpose is to sample species distribution, densities, and other details. The District is working with them to find locations.

NGPC also noted that the economic impacts associated with recreation could also be evaluated. This information could be gathered from the recreation use survey. NOHVA added that they did an economic survey in 2003 and could do another one. They can also get input from their national organization regarding economic impacts.

From a land use perspective, one potential conflict is that the Headworks OHV Park may provide access to exposed sand areas in the Loup River. Beyond the District property line, this constitutes trespass on private property. NOHVA noted that there is a sign at east end of the park noting that riding on private property is trespassing to discourage this practice. As organization policy, NOHVA does not encourage trespass and tries to inform/educate others. The Tern & Plover Conservation Partnership noted that off-road vehicles, in general, are believed to account for the largest loss of tern and plover nests.

Water Rights Report

Jean Angell (NDNR) provided a summary of the Water Rights Workgroup discussions:

- DNR and the District have been providing information to the group relative to the issues identified, including: a map of local irrigators, list of appropriators, irrigation agreements, relevant state statutes, information from the current license. The group discussed this information and will be sharing more information in the future.

- Issues still under discussion and research include:
  - How much water can be used for irrigation and still have the Project be economically viable. The group discussed this and it was noted that irrigation would only affect operations for part of the year, the cost of replacement power will continue to increase, and it would require irrigation of approximately 300,000 acres of land to utilize all the District's water (based on 1 cfs/70 acres).

- Does the lake need to be full to provide head for operating only one turbine? The district will provide this information.

- Overall the Water Rights Workgroup feels that these issues can be addressed through information exchange over the next couple of months.

A question was asked about how the cost of replacement power is figured to establish just compensation. NPPD position is that the cost of replacement is the value of the cost to purchase replacement power, which may or may not cover actual operational costs. The District's determination of the cost of replacement may be different.

3. Discussion of Potential Studies

HDR provided clarification on how the study request process works. The District is not requesting Formal Study Requests at this time. That request will be made by FERC as part of scoping. Process for developing final study plan:

- District will identify a preliminary list of requested and proposed studies in the PAD (based on input from 2008 agency discussions)
- FERC will issue Scoping Document which asks agencies to submit formal study requests.
- FERC will conduct scoping meetings (and receive comments).
- *Agencies provide comments on scoping document and PAD and submit formal study requests.*
- FERC may issue second Scoping Document if needed based on comments
- District prepares Proposed Study Plan
- District conducts Study Plan meeting (and receives comments)
- *Agencies provide comments on Proposed Study Plan*
- District may develop Revised Study Plan if needed
- FERC issues a Study Plan Determination, noting final list of studies District will be required to perform for relicensing.
- *Agencies may submit formal study disputes if there are concerns about proposed studies*
- Study Plan will be approved if there are no disputes.

It was noted that the Endangered Species Act (ESA) process is a separate process in which Loup will be working with the USFWS and that the information needs and studies related to various issues will apply to the ESA process as well as the ILP process.

The group discussed possible studies for the following issues. These discussions focused on identifying elements to be considered relative to the issue , resources that are affected by the issue, what question about that resource would a study answer, how could it be studied, what data is available, and what data is needed? For each issue, it was discussed that identifying the Project's effect to the issue will be important to determine.

<u>Water Temperature</u>

Elements of consideration for Project-effects to temperature:

- Flow
- Ambient air temperature
- Water temperature
- Season of interest is June to September
- Critical reach is bypass reach from headgates to Beaver Creek confluence

Resources potentially affected:

- Fisheries

- Tern and plover food sources
- Pallid sturgeon spawning

Possible ways to study:

- Monitor water temperature, air temperature and flow rate. Develop thermographs and temperature modeling for the Loup River bypass reach and the Platte River below the tailrace outlet weir.

Questions to be answered:

- When (combination of air & water temperature and flow) will Loup River temperatures downstream of the headworks diversion point reach critical thermal max thresholds for species?
- Do water pulses associated with hydrocycling change downstream water temperatures enough to affect pallid sturgeon spawning?

Data Needed:

- Temperature & flow data
- Species critical thermal max & pallid sturgeon spawning temperature range

Discussion:

- Dewatering of the Loup River system downstream of the headgates to the mouth and the Platte River system from the Loup River confluence to the District tailrace increases water temperatures which affects the fish community and macroinvertebrates.
- Hydropower cycling will affect temperatures in the Platte River from the District tailrace to the mouth which affects the fish community (including pallid sturgeon) and macroinvertebrates.
- Macroinvertebrates are likely to be more affected by flow than temperature.
- NGPC would prefer to see Lake North full of water for fisheries resources.
- NHHS noted that public water wells could be affected by increased temperature of surface water in areas where there is a direct interconnection.
- There has been at least one documented fish kill in the power canal. This resulted from reduced DO levels that occurred during a reduced flow period for turbine refurbishment at Monroe Powerhouse. The District has made operational modifications to avoid future issues.
- NGPC discussed fisheries in the canal as a good fisheries area. The need to understand the temperature change compared with species critical thermal max thresholds is needed.
- What will temperature affects be in the future considering *NDNR estimates (1,536 cfs decline in 25 years at the North Bend streamgage and a 2,768 cfs decline in 25 years at the Louisville streamgage)*?
- How much of the temperature impacts are related to hydro project operation?

<u>Sediment Budget, Sandbars, Sediment deprived flow into Platte River system</u>

Elements of consideration for Project-effects to sediment:

- Flow
- Duration
- Sediment supply
- Sediment composition (grain distribution)
- Sandbar formation
- Sandbar erosion
- Bank erosion
- Sediment carrying capacity

Resources potentially affected:

- Tern and plover food source
- Tern and plover nesting habitat
- Fisheries
- Invertebrates
- Macro invertebrates

Possible ways to study:

- Sediment budget
- Review rating curves
- Establish relationship between stage/discharge and elevation of sandbars
- Timing of potential re-suspension of sediment
- Aggregation/degradation analysis

Question to be answered:

- How do Project operations affect sediment budget (current sediment load from the tailrace)?
- To what degree does current and future sediment supplies affect habitat for terns and plovers?
- Will the possible studies answer these questions?

Data Needed:

- Aerial photographs
- Flow information
- Sediment sampling (grain size distribution)
- Bed elevation changes
- Water quality information

Discussion:

- Need to isolate cause and effect related to hydro project operation.
- Affects of bank stabilization on sediment load.
- Review of aerial photos may not be helpful for review of historical sandbar formation and channel erosion because high flows have a major affect on channel formation.
- Channel entrenchment
- Less moist soil interface
- Prevalence of invasive plant species (includes exoctics and expansion of native plants) – stabilizes soil and diminishes native vegetation diversity
- Natural vegetation can be affected
- Can sediment removed at the settling basin be put back into the river during high flows?

Hydrocycling

Elements of consideration for Project-effects to hydrocycling:

- Temperature
- Flow and timing of flow
- Change of stage
- Sediment carrying capacity
- Ramp up and ramp down rates

Resources potentially affected:

- Tern and plover food source

- Tern and plover habitat
- Fisheries
- Invertebrates
- Macro invertebrates
- Pallid sturgeon
- River otter
- Power generation operations and economics

Possible ways to study:

- Hydraulic model
- Difference of flooding nests relative to natural flows in comparison to flows with hydrocycling

Question to be answered:

- How does flow affect physical habitat (bar formation, foundation, erosion)
- Effects of operation on hydrocycle stage
- Effects of hydrocycling on erosion of sandbars
- Evaluation of peak flows compared to hydrocycling – effect on sandbars
- Effects on stage to pallid issue – how it effects physical habitat

Data Needed:

- Additional flow information (more gauges)
- Sandbar elevations
- Cross sections
- Determination of bed degradation (hydraulic modeling or physical studies) would help determine physical habitat needed for pallid

Discussion:

- Hydrocycling has less proportional effect with higher flows.
- Wetness of sand and how it affects macro invertebrate drift densities
- Flow magnitude affects sandbar formation – by itself apart from sediment flows
- The proportion of tern & plover nests are lowest in the upstream portions of the lower Platte River, and numbers generally increase towards Plattsmouth (thus more habitat exists further down stream on the Platte River).
- Does hydrocycling actually benefit terns & plovers by prompting them to build their nests on higher sandbars?
- There is always some flow in the tailrace due to leakage and inflow from Lost Creek storm control project
- Can information from other studies provide information relevant to the Project (ex. Platte River stage change study)
- How does hydrocycling affect vegetation on sandbars and shoreline?
- Historic high flows in late May/ early June aid in regenerating barren sandbars through erosion and sediment mobilization.
- Hydrocycling may facilitate sandbar erosion later in the nesting period (late June through August).

4. Next Steps

Work Groups will continue to meet to discuss studies and resolve issues. The Tern and Plover Partnership and NOHVA would like to be added to the Recreation/Land Use/Aesthetics Workgroup. Gene Zuerline (NGPC) would like to be added to the Water Rights Workgroup.

The need for another group meeting was discussed. It was decided that anther group meeting would be needed to discuss the remaining issues to identify potential study needs. Those issues are:

- Flow depletions on the Loup River bypass reach (below the diversion)
- Flow depletions on the Loup river above the diversion
- Flow depletions on the Platte River system
- Dredging and discharge at the settling basin
- Hydraulic habitat connectivity and distribution
- Vegetation species composition and distribution

The meeting will be held on August 19. Time and place to be determined.

Attendance by Meeting

Hydroelectric Relicensing
FERC Project No. 1256

Meeting Type: Agency
Meeting Name: Agency Meeting
Date: 7 /24/2008
Time: 09:00 AM
Location: Holiday Inn Express

Name	Organization	Contact Type
Jean Angell	Nebraska Department of Natural Resources	Agency - Local
Brian Barels	Nebraska Public Power District	Agency - Local
Mary Bomberger Brown	Tern and Plover Conservation Partnership	NGOs & Stakeholders
Ben Dietsch	U.S. Geologic Survey	Agency - Federal
Pat Engelbert	HDR Engineering, Inc.	HDR
Jim Frear	Loup Power District	LPD Project Team
Dennis Grennan	HDR Engineering, Inc.	HDR
Robert Harms	U.S. Fish and Wildife Service	Agency - Federal
David Jundt	Nebraska Department of Health and Human Services;	Agency - Local
Robert Mohler	Lower Loup Natural Resources District	Agency - Local
Dan Nitzel	NOHVA	NGOs & Stakeholders

Name	Organization	Contact Type
Matt Pillard	HDR Engineering, Inc.	HDR
Lisa Richardson	HDR Engineering, Inc.	HDR
Jeff Runge	U.S. Fish and Wildife Service	Agency - Federal
Henry Santin Jr.	Nance County	Agency - Local
Jeff Schuckman	Nebraska Game and Parks Commission	Agency - Local
John Shadle	Nebraska Public Power District	Agency - Local
Bill Sigler	HDR Engineering, Inc.	HDR
Phil Soenksen	U.S. Geologic Survey	Agency - Federal
Kristal Stoner	Nebraska Game and Parks Commission	Agency - Local
Neal Suess	Loup Power District	LPD Project Team
Martha Tacha	U.S. Fish and Wildlife Service	Agency - Federal
Dave Tunink	Nebraska Game and Parks Commision	Agency - Local
George Waldow	HDR Engineering, Inc.	HDR
Stephanie White	HDR Engineering, Inc.	HDR

Name	Organization	Contact Type
Gene Zuerlein	Nebraska Game and Parks Commission	Agency - Local

Meeting Notes

Project:	Loup River Hydroelectric Project FERC Project No. 1256		
Subject:	Agency Follow-up Meeting – Study Needs Continued		
Meeting Date:	August 19, 2008, 10:00 am – 2:00 pm	Meeting Location:	New World Inn, Columbus, NE
Notes by:	HDR		

Attendees: See Attached

Meeting Agenda:

1. Welcome/Introductions
2. Workgroup Reports
3. Continuation of Issues and Potential Study Discussion
4. Supplementary Issues Discussion
5. Agency Information Needs
6. Next Steps

Discussion:

1. Welcome/Introductions

All in attendance introduced themselves. Project notebooks were distributed to new attendees, the meeting packet of information was explained, and the agenda for the meeting was discussed.

2. Workgroup Reports

HDR explained that neither workgroup had met since the July 24th agency meeting. The Water Rights Workgroup intends to reconvene when the workgroup receives requested water rights information from Loup Power District (District) (see Section 5 - Agency Information Needs). The National Park Service (NPS) asked if the workgroups could have some time at the meeting to meet and it was decided that some time would be set aside during the day's meeting. The District asked to be included on all workgroup correspondence as a member of those workgroups. Although workgroups are encouraged to meet into the future, input to the relicensing process would occur after the PAD is available for agency review.

3. Continuation of Issues and Potential Studies Discussion

Flow Depletion in the By-Pass Reach

It was discussed that the amount of flow going past the diversion could affect river morphology and temperature. The first step is to analyze the data to determine the effects of the District's operations on river flows and sediment supply. The next step in the process after evaluating sediment and flow is to identify the corresponding biological response. It was added that the effect of future depletions, while not a direct Project effect, needs to be considered (reference the DNR Fully Appropriated Basin Report). USFWS added that, under the Endangered Species Act, the District/FERC will need to consider direct and indirect effects as well as future trends and reference effects to the baseline. It was added that seasonal quantification of flow is also important, such as flows depleted during irrigation season.

It was discussed that flow affects multiple items, such as sediment transport, and a fundamental understanding of flow may help evaluate the effects to other resources, such as sand bar development and erosion. Again, it was noted that the first step is to analyze the data to determine the effects of the District's operations on river flows and sediment supply. If operational effects are minimal, then the habitat/biology issues may go away.

It was suggested that evaluation of issues related to the project is moving toward a modeling exercise to be able to evaluate how the system responds to changes in flows. The USFWS added that a simple model can be used to evaluate a river system before more detailed modeling is required, the key being to understand the system at the reach level under past and present flow regimes.

Information relative to how the Headworks Structures work was discussed. In general, diversion is affected by river flows and existing capacity in the settling basin (dredged verses not-dredged). It is a manual process requiring certain activities to admit flow, but minimize sedimentation in the basin. It is a variable process relative to how much and how often the gates can be open. In this particular year, it was discussed that due to mechanical issues, not as much was dredged as the District would have liked before they had to shut down due to presence of terns and plovers. Therefore, although flows were high in the Loup, the District was not able to divert commensurate flow due to too much sediment in the settling basin.

The availability of data was discussed. It was noted that gage data and rating curves have been requested from the USGS. This information can be analyzed to help gain an understanding of flow. USGS noted that they have information on sediment and grain size. It was added that some historical cross-sections from the 1970s and 1990s are available from the Corps and/or NDNR to assist with understanding historical river morphology.

Flow Depletion Above the Diversion at Genoa

It was noted that the District's intent for relicensing is to maintain their existing water right of 3,500 cfs and thus they would not sell their water right to upstream users. The USFWS noted that flow depletion above the diversion is not a direct project effect, but it affects the future baseline for consideration of future project effects and needs to be considered when evaluating future conditions. The group agreed that flow depletions due to upstream use would be part of the baseline for future conditions, and this issue can be folded into the evaluation of flow depletion of the bypass reach and flow depletion downstream of the tailrace. The DNR noted that they would like to continue discussions with the District for clarification on this issue.

Flow Depletion on the Platte River System

HDR provided information regarding the water budget for the canal system based on gage and irrigation data from the last five years:

- 8th Street Gage (1.5 miles upstream of re-entry) – ~1.1 million ac-ft/year
- Loup withdrawal at Diversion (skimming weir gage)– ~1.1 million ac-ft/year
- Irrigation withdrawals – 2,000 ac/ft year
- Canal, lake, and settling basin evaporation – 6,000 to 7,000 ac-ft/year

It was noted that there are two commercial withdrawals from the canal [ADM (downstream of 8th Street) & Preferred Rocks of Genoa (Preferred) of Genoa (upstream of the skimming wier gage)]; however, commercial uses are non-consumptive. It was also noted that the evaporative losses are likely less in the canal than in the bypass reach, based on an average of 120 ft width verses the much wider bypass reach. The water budget analysis included Lake North/Lake Babcock.

Seepage from the system is estimated at 4 to 5 percent; however, the seepage is likely intercepted by the Lost Creek flood control project and returned to the canal system as seen by the increases in the flows at the 8th Street gauge. It was noted that the total irrigation and evaporation is within the level of accuracy of

the gages. Overall, HDR's initial studies suggest that the canal is a relatively closed system with essentially no net loss.

Other inflows were asked about. It was provided that there are a few locations where small local drainage areas drain to the canal. The District is getting those quantified, but the canal system is pretty close to flow-through system.

It was noted by the USFWS that based on this preliminary discussion, the data used for determining the water budget may be sufficient but, as USFWS has not yet reviewed the methodology, they are not yet prepared to endorse HDR's conclusions. The USFWS asked if the water budget report would be made available for review prior to issuing the PAD. It was discussed that while it would be more efficient to have agency input on the report prior to the PAD being issued, there would likely not be time for a preliminary review. It was understood that USFWS may have comments that would need to be addressed after the PAD has been submitted.

Although HDR' initial studies suggest that the water budget shows that the canal system does not contribute to flow depletions on the Platte River, USFWS does not yet endorse this conclusion and also noted that Project operations may have a more pronounced affect on the Platte River as flows on the Platte are reduced over time.

Hydraulic Habitat Connectivity & Distribution and Vegetation Species Composition and Distribution

These items were discussed as sub-sets of the broader issues of sediment budgets and flows. A conceptual understanding of sediment budget and the impacts on morphology are needed as a framework for further evaluation of habitat issues.

Dredging and Discharge at the Settling Basin

It was discussed that there are two main categories associated with this issue: overcovering of tern and plover nests and fish entrainment/entrapment.

Overcovering of Nests
HDR provided details on District protocols relative to dredging and the birds.

- Dredging has no impact on the birds unless Loup is discharging on the north side of the Settling Basin
- District personnel watch closely for the arrival of the first birds of the season
- When the District personnel are checking the dredge discharge pipe lines, and the birds simulate being injured, the District will contact the USFWS or the Tern and Plover Partnership. At this time the District will also begin to make plans to stop dredging very soon because they know this is a nesting sign. Typically this is early June when dredging is stopped for bird nesting.
- Dredging is stopped until mid-late August with start-up resuming on the south side of the Settling Basin.
- Nesting areas are protected prior to stoppage of dredging by establishing a sand berm/cut trees positioned to divert the dredge water and protect the nesting colonies. This has worked well for the District over the years.
- This Bird Protection process has been in place prior to the current headwork's supervisor's employment, which was the late 90's and he believes the protection was initiated in the early 1990's.

The Tern and Plover Partnership added that sediment size is the key for nesting locations. They primarily nest between outlet pipes 9 and 14. This is the area that is bermed for protection. In addition, the slurry and resultant mud flats from dredging operations are good foraging areas. Bird numbers were fairly good this year. It was noted that there were no nests on the Loup River due to extended high water and that the sand pile provided a critical area for nesting.

USFWS asked about the MOU with Preferred. It was provided that the participating members of the MOU are Preferred, NGPC, and USFWS. The District and the Tern and Plover Partnership, are cooperating parties to the MOU. The USFWS stated that as a signatory, they were OK with all conditions in the MOU.

USFWS agreed that there doesn't appear to be anything to study regarding overcovering of nests. However, there may be ways to improve the situation through the Adaptive Management Plan. The USFWS noted that the management plan may be discussed as part of the section 7 consultation.

Fish Entrainment/Entrapment
NGPC asked if any monitoring has been done to identify the types or quantity of species that dredging operations affect – no studies have been done, but the majority of fish observed on the sandpile are small minnows and shiners. The Tern and Plover Partnership noted that the birds like beak length food or longer and that the dredging operations provide a good food source for the birds.

The Tern and Plover Partnership asked why dredging must occur the way it does. The District explained that in the spring, the southeast corner of the settling basin is the only place deep enough to start the dredge and they work upstream towards the intake structure. They dredge a section on the south side and then move to the north side as they move west up the settling basin.

It was discussed that as there were no indications that dredging activities are depleting the fish population or negatively affecting the birds; therefore, entrainment and entrapment of fish may not be an issue.

Economic Value

NPPD noted that the District sells all of the power produced by the hydroelectric project to NPPD. It was discussed that the following items were important for consideration:

- Changes in operations and effect on economics
- Value of water bypassed for species protection verses used for Project purposes
- Value of peaking ability
- Value of irrigation from the canal
- Recreational value to Platte & Nance counties and Columbus
- Aesthetic value
- Employment value of the hydroelectric project
- Incremental effects on the economy
- Cost of operations compared to net value of benefits

Fish Passage

The NGPC noted that the question relative to fish passage is how much of a barrier is the diversion structure. The goal of a study would be to determine the extent of the barrier to fish passage.

They elaborated that one way to do this was through tagging. Specifically, they are interested in channel catfish and flathead catfish as highly valued sport fish, smaller species may also be a concern. If the diversion is determined to be a barrier, a bypass may be needed.

HDR asked if a distribution sample of species above and below would identify if species are equally distributed above and below the diversion. NGPC said that would be a starting point. However, there could be an isolating effect on catfish because they migrate upstream to spawn. If the diversion is a barrier to this, there may be a decline in the species upstream.

Types of fish passages were discussed. NGPC added that it is important to focus on a species when considering fish passage and it is too early to speculate on the type or probable success of fish passages.

4. Supplementary Issues

Prior to the meeting, USFWS had provided a list that included the following supplementary issues for discussion. The USFWS indicated that they would provide a supplement to their Technical Advisory Letter to include these issues.

Power Lines and Migratory Birds

It was noted that all transmission lines connecting with the Project are owned by NPPD. USFWS asked about past work orders that were discussed at District board meetings regarding replacement of power poles. The District provided that it sells the hydropower to NPPD, and the District then buys power back from NPPD to distribute to their customers. The power lines that the District has are not part of the relicensing. It was noted that NPPD has an easement for its transmission lines on District property. Therefore, power lines would remain with or without the relicensing project.

The USFWS provided that the issue would be listed in their Technical Advisory letter for the District to respond to, but may not be an issue.

Water Quality

The USFWS provided that as they learn more about the Project, new issues may arise and the need to supplement the Technical Advisory letter may occur. The USFWS' questions about water quality, especially Project area waterbody impairments by *E coli*, nutrients, and PCBs and reasons for concern were discussed.

It was discussed that the source for nutrient impairment in Lake North/Lake Babcock was unknown but NDEQ is working with the District to identify other potential in-flows to the canal system.

The data available for PCBs is fish tissue data from the power canal. The USFWS noted that the District had issued a work order to replace a transformer containing insulating oil with PCBs and noted that PCBs had been found in fish caught in the canal. Although no source has been identified, the District canal system is the furthest known upstream location in the lower Platte River/Loup River basin with PCB contamination. There is no history of sediment sampling for PCBs in the Project area. It was noted by USFWS that either: 1) the source of the contamination is located within the Project area, or b) contaminated fish migrated from the lower Platte River into the canal system. It was noted that both the USGS and NDEQ have sampled water and fish tissue for PCBs either within or near the Project area. The District provided that no information has been requested from them.

It was discussed that PCBs were prevalent in the use of transformers 1940-1970. The NDEQ added that PCBs are a legacy contaminant that will be around for decades. However, overall, there is a decreasing trend in PCB level in the environment.

The USFWS provided that PCBs are a concern because they can be toxic to humans and wildlife, including threatened & endangered species. They added that fish tissue samples are good indicators of PCBs. Specifically, PCBs are a concern for pallid sturgeon all the way down in the lower Platte River. A study conducted by the Service identified PCBs as a contaminant of concern in shovelnose sturgeon from the lower Platte River and it is presumed that pallid sturgeon life history characteristics likely place them at greater risk than shovelnose sturgeon to reproductive effects from exposure to PCBs. Terns and plovers may also be impacted by PCBs because of their foraging habits. The USFWS provided that segments of the Platte River downstream from the Project are also listed for PCBs. However, it is unknown whether the power canal is a possible source.

Possible ways to study this issue would be to identify all possible sources of PCBs and perform sediment sampling of the canal to determine if the canal is a source.

Ice Jams

The DNR and USFWS both noted that the District's operations may affect ice jams. The DNR cited a report from the Corps of Engineers regarding the March 1993 flood on the Loup River that indicated that the affect of the District's operation on ice jams is unknown and that a study of this affect would be beneficial. It was provided by DNR that in past studies performed by the Corps, it was decided that there was not good information. The DNR has 12 years of data on the river and the Corps suggested models be developed to help determine the occurrence and location of ice jams. The report suggested that frazil ice combined with river morphology of the bypass reach is creating problems. The report suggested that the District look at maintenance issues and operations. It was also discussed that the report notes (page 15) that the Project may affect the flow and sediment regime which may also have impacted ice formation and transport processes.

Information relative to the formation of frazil ice was provided and the District's experience was that it was more prevalent at Columbus. Frazil ice is formed underwater on District structures when subzero air temperatures, wind & turbulence create super cooled water which then forms needle shaped crystals of ice. This crystal slush is not particularly buoyant and can extend throughout the water column. It can attach to metal screens and very quickly close off flow at pump stations, hydros, and water intakes.

The USFWS noted that ice jams and habitat forming flows are good for terns and plovers because they scrub vegetation off of sandbars used for nesting and foraging. However, destruction of property is not desirable. The DNR noted that their concern with ice jams revolves around floodplain management and potential loss of human life.

Lost Creek

USFWS requested information relative to hydrology of Lost Creek. The District noted that there is a drain in the tailrace in which the District discharges water for cattle based on a landowner agreement from when the canal was built. It was noted that the hydrology of Lost Creek changed dramatically after the Corps constructed the Lost Creek flood control ditch.

5. Agency Information Needs

Several agencies have requested additional information to assist with their understanding of the Loup River Hydroelectric project. The agency information needs discussed at the meeting were:

- USFWS & NPS requested a map showing FERC boundaries for the Project (digital format if possible) – It was discussed that this information is currently being prepared for inclusion in the PAD. HDR and the District will investigate if these can be posted separately on the website but would not be available prior to the PAD.

- USFWS requested a copy of the existing license articles
- USFWS requested information relative to hydrology of Lost Creek at the tailrace including: a) when water is released into lost creek, b) purpose for releasing water, c) quantities of water released.
- USFWS requested locations where small local drainage areas drain to the Project's canal system.
- DNR and USFWS requested information from the District relative to calculation of Just Compensation agreements which include: a) number of agreements, b) points of diversion, c) times of diversion, d) quantity of water diverted e) compensation costs on a per acre-foot basis, f) estimated power produced per acre-foot
- DNR requested the agreement between NGPC and the District to release water for protection of species in the Loup River bypass reach – it was noted that there is no formal agreement for this practice.
- DNR and USFWS requested copies of all of the District's agreements with entities made since the inception of the project, particularly agreements pertaining to irrigation or water. (DNR provided a list of known irrigators with water rights at the diversion).
- DNR requested information on what FERC does if a new license isn't granted. HDR will furnish regulation references.

6. Next Steps

HDR provided that all of the information gathered during the agency meetings will be used to develop the PAD. The PAD will include study concepts for studies that the District proposes to conduct. Upon submittal to FERC, the PAD will be made available to agencies for review. While the PAD is being reviewed, the District will begin development of detailed studies and may contact various agencies for input. HDR and the District noted that it is their intention to continue to meet with agencies and provide information as needed after the PAD is submitted in order to continue to work through issues and develop detailed study plans.

Within 90 days after the PAD is submitted, FERC will issue a scoping document and request comments on the PAD and scoping document. A draft study plan (with details of each study) will be submitted after the formal comment period ends. Agencies will have several opportunities to comment on the study plan which will be finalized in 3rd quarter 2009. HDR re-iterated that the PAD is a starting point in the process and that there are multiple opportunities for review and there would likely be the need for coordination throughout the rest of the project.

It was added that when the PAD is filed, the FERC "clock" starts and locks in milestone dates. We will all know the dates for these milestones and that we will be locked into meeting those milestone dates. The deadlines will be firm and are driven from the FERC process.

Attendance by Meeting

Hydroelectric Relicensing
FERC Project No. 1256

Meeting Type: Agency
Meeting Name: Study Needs Continued
Date: 8 /19/2008
Time: 10:00 AM
Location: New World Inn & Conference Center

Name	Organization	Contact Type
Frank Albrecht	Nebraska Game and Parks Commission	Agency - Local
Don Anderson	U.S. Fish and Wildlife Service	Agency - Federal
Jean Angell	Nebraska Department of Natural Resources	Agency - Local
John Bender	Nebraska Department of Environmental Quality	Agency - Local
Ryan Bjerke	Lower Platte River Corridor Alliance	NGOs & Stakeholders
Mary Bomberger Brown	Tern and Plover Conservation Partnership	NGOs & Stakeholders
Pat Engelbert	HDR Engineering, Inc.	HDR
Jim Frear	Loup Power District	LPD Project Team
Dennis Grennan	HDR Engineering, Inc.	HDR
Robert Harms	U.S. Fish and Wildife Service	Agency - Federal
David Jundt	Nebraska Department of Health and Human Services;	Agency - Local

Name	Organization	Contact Type
Jerry Kenny	Platte River Recovery Implementation Program	NGOs & Stakeholders
Joseph Mangiamelli	City of Columbus	Agency - Local
Robert Mohler	Lower Loup Natural Resources District	Agency - Local
Matt Pillard	HDR Engineering, Inc.	HDR
Lisa Richardson	HDR Engineering, Inc.	HDR
Jeff Runge	U.S. Fish and Wildlife Service	Agency - Federal
Jeff Schuckman	Nebraska Game and Parks Commission	Agency - Local
Matt Schwarz	U.S. Fish and Wildlife Service	Agency - Federal
John Shadle	Nebraska Public Power District	Agency - Local
Bill Sigler	HDR Engineering, Inc.	HDR
Kristal Stoner	Nebraska Game and Parks Commission	Agency - Local
Neal Suess	Loup Power District	LPD Project Team
Robert Swanson	U.S. Geological Survey	Agency - Federal
Randy Thoreson	National Park Service Field Office	Agency - Federal

Name	Organization	Contact Type
Dave Tunink	Nebraska Game and Parks Commision	Agency - Local
George Waldow	HDR Engineering, Inc.	HDR
Mark Weekley	National Park Service	Agency - Federal
Stephanie White	HDR Engineering, Inc.	HDR
Ron Ziola	Loup Power District	LPD Project Team
Gene Zuerlein	Nebraska Game and Parks Commission	Agency - Local

TO: Emily Buss

RE: Issues concerning the relicensing of the Loup Public Power District with FERC.

FROM: Nebraska Department of Natural Resources

DATE: June 20, 2008

1. Nebraska law provides that waters used for irrigation have preference over waters used for manufacture of power. This means an irrigator with an appropriation junior to LPPD's appropriation may require the senior water right for power – LPPD -- to subordinate its water use. The law also provides that just compensation must be paid by an irrigator to LPPD when subordination is demanded. Just compensation is not an arbitrary amount, but an amount not greater than the cost of replacing the power which would be generated by the water so acquired. LPPD has set amounts for irrigators to take water out of priority. The rate for those irrigators taking water from the canal between the diversion on the Loup River and the power plants at Monroe and Columbus is different than the rate charged for those irrigators taking water upstream of the diversion. How does LPPD figure "just compensation"? The Power Interference Agreement states that the amount charge irrigators is not just compensation.

2. Why does LPPD allow farmers to irrigate out of its canal? The Nebraska Department of Natural Resources knows of no easements in place for those irrigators taking from the canal. LPPD appears to operate as an irrigation district, rather than a power district.

3. At times LPPD diverts most or all of the Loup River, in effect changing the channel of the river. What if an irrigator requests water be delivered out of the river downstream of the diversion point and upstream of the discharge into the Platte River, willing to pay LPPD just compensation?

4. Has LPPD considered its response in the event irrigation development continued in areas upstream of LPPD's plants to the point of making the manufacturing of electricity no longer feasible?

5. Should LPPD be allowed to divert their entire appropriation when making power with less than the entire appropriation, given that LPPD has no storage permit?

The following are USGS Questions related to FERC relicensing and operations of LPD. The questions are not intended to imply known effects of LPD operations on the Loup-Platte river systems, but rather to suggest some questions that my be relevant to LPD and agencies interested understanding the LPD operations for the purposes of FERC relicensing. The core subject of each series of questions is in bold, italics, and underlined.

1. LPD operations have the potential to affect ***water temperature*** in several ways, some of which are listed below:

    a) Diversion of Loup River water has potential to affect temperature by:
        i. increasing temperatures in the Loup River below LPD headworks by decreasing flow depths and, potentially turbidity; the LPD effects on the lower Loup may have an effect on water temperature in the Platte River below the confluence.
        ii. water in the LPD canal, holding basins, and reservoirs undergoes temperature alterations that are subject to water depth and time/surface area in contact with atmosphere; thus temperature of tailrace water may have an effect on water temperature on the lower Platte River.

    b) Hydrocycling has the potential to affect water temperatures in the lower Platte. The lower Platte is a wide and shallow river (very high width to depth ratio), and as such is more sensitive to air temperature fluctuations than a river with equivalent hydrology, but lower width to depth ratios. As a result, hydropower operations have the potential to affect especially the daily maximum water temperature by changing water depths in the channel over a power cycle. This is of special concern during the mid to late-summer season when large percentages of the discharge of the lower Platte River are from the Loup River and LPD tailrace, and when daily maximum temperatures are most likely to reach levels causing maximum stress to aquatic biota. The biological stress may be direct effects of high water temperatures or by indirect effects as water temperature affects dissolved oxygen concentrations and stream metabolism processes.

2. Diversion of the Loup River at LPD headworks diverts sediment and water. The sediment must be removed for maintenance of the power canal, and protection of the turbines. This has the potential to affect the ***sediment budget*** of the Loup-Platte river system in several ways, some of which are:

    a) Reduction of sediment supply in Loup River below LPD headworks. The reduction in supply may be less important when both water and sediment supply are reduced, but possibly more important during larger magnitude annual channel maintenance floods, when sediment would be more likely to be mobilized from bar and bank storage, which consequently may become depleted over longer time scales.

b) Reduction of sediment supply in Platte River below Loup River confluence. Water from the LPD tailrace canal enters the lower Platte River essentially as 'clear' water, and as such contributes energy for transporting sediment, but virtually no sediment. The clearwater contribution from the LPD tailrace may create a sediment deficit similar to the J2 return from NPPD on the Central Platte. A sediment deficit may be expected to result in channel bed, bar, and bank degradation.

c) Alteration of sediment particle-size distributions by:
    i. Alteration of sediment supply from headworks diversion and sediment trapping of coarse fraction, ultimately affecting bed sediment particle sizes in lower Platte River below Loup River confluence and LPD tailrace.
    ii. Potentially reduced sediment supply, may have effects on sediment transport rates during seasonal floods. For example, increased daily transport rates from hydrocycling may cause the sediment supply on the bed of the river to coarsen downstream, which may decrease overall transport rates.

3. LPD hydropeaking (hydrocycling) from the Loup tailrace canal may affect ***sandbars*** in the lower Platte by:
    a) Wave action on bars may increase bar degradation by scalloping banks, increasing bank slopes, and subsequent increased sloughing of sediment from bars into deeper portions of the channel; this ultimately may reduce elevation differential between bar and bed elevation (implications for bird and fish habitat respectively).
    b) Rapidly changing sediment transport rates from hydropeaking (sometimes in conjunction with seasonal floods) may affect the type, size, and distribution of bar and bedforms (implications for distribution and abundance of types of hydraulic habitat).

4. LPD operations may affect ***hydraulic habitat connectivity and distribution*** in several ways, including:
    a) At times of the year when LPD headworks are diverting large proportions of the Loup River discharge, reduction of flows in the LPD headworks may cause disconnection of channel habitats between and within channels of the lower Platte and Loup Rivers.

    b) LPD hydrocycling may change hydraulic habitat (combinations of water depth and velocity) connectivity and distribution by:
        i. Reduced flows in the Loup and Lower Platte during times of water storage in LPD canals and reservoirs may cause deep thalwegs to become discontinuous habitats or patch habitats to disconnect from the main flow. Some organisms may become

stranded and unable to reach refugia where they can survive the low-flow condition.

ii. Altering the bed configuration (types and distributions of bedforms) of the Lower Platte during ramping operations, may have an effect on the spatial and temporal distribution and abundance of some specific hydraulic habitats preferred by or critical for aquatic species.

5. LPD operations may affect ***vegetation species composition and distribution*** in the Loup-Platte River system in several ways, some of which are:
    a) Alteration of bar substrate moisture content through hydrocycling (alteration of the hydroperiod).
    b) Alteration of vegetation establishment success through alteration of growth substrate resulting from potential alteration of the sediment supply and particle size distribution.
    c) Disturbance of vegetation hydrochory due to hydrocycling.
    d) Alteration of plant seedling and sapling population survival due to potential alteration of bank and bar erosion patterns and scalloping and sloughing of banks.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Nebraska Field Office
203 West Second Street
Grand Island, Nebraska 68801

July 21, 2008

FWS-NE: 2008-494

Mr. Neal Suess
Loup Power District
2404 15th Street, PO Box 988
Columbus, NE 68602-0988

RE: Technical Assistance, Relicensing; Loup River Hydroelectric Project; Federal Energy Regulatory Commission Project Number 1256; Nance and Platte Counties, Nebraska

Dear Mr. Suess:

This is in regards to the proposed relicensing of the Loup River Hydroelectric Project (Project) by the Federal Energy Regulatory Commission (FERC), Project Number 1256. The Loup Power District manages operation of the Project, and is the non-federal project sponsor for the proposed relicensing action. The Project encompasses a diversion at Headwaters Park, near Genoa, Nebraska where flow at a maximum capacity of 3,500 cubic feet per second is diverted from the Loup River into a 35-mile-long canal. Flow from that canal is used to generate electricity at the Monroe and Columbus powerhouses. The Monroe Powerhouse is a run-of-the-river powerhouse. Lakes North and Babcock are located along the canal and are used to generate head pressure for the generation of electricity at the Columbus Powerhouse. Once exiting the Columbus Powerhouse, flows are discharged into the Platte River, approximately 1-mile downstream from the Loup and Platte rivers confluence. The 35-mile-long canal concurrently provides a water source to meet the irrigation needs of approximately 80 entities holding junior water rights to the Loup Power District's water right, dated 1935. Electricity generated by the Loup Power District is sold to the Nebraska Public Power District. The original 50-year federal license for the Loup River project was granted on April 17, 1934. The current license will expire in April 2014.

The U.S. Fish and Wildlife Service (Service), in coordination with the Nebraska Game and Parks Commission (Commission), has completed its preliminary review of the proposed relicensing project based on information and documentation provided at meetings on May 7, 2008, and June 25, 2008. The following comments are submitted to assist Loup Power District and its consultant HDR, in the preparation of a Pre-application document (PAD) for submittal to FERC in October 2008. A summarization of our preliminary concerns is included with this letter as an enclosure.

AUTHORITIES

The Service has responsibility under a number of authorities for the conservation and management of fish and wildlife resources. Chief among the federal statutes with which this office deals are the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), Fish and Wildlife Coordination Act (FWCA) (488 Stat. 401; 16 U.S.C. 661 *et seq.*), Bald and Golden

Eagle Protection Act (BGEPA) (16 U.S.C. 703-712, as amended), and Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712, as amended). Compliance with all of these statutes and regulations is required to be in compliance with the National Environmental Policy Act (NEPA) (42 U.S.C. 4321-4347). In addition to these statues, the Service has authority under several other legislative, regulatory, and executive mandates to promote the conservation of fish and wildlife resources for the benefit of the American public.

In Nebraska, the Service has special concerns for endangered and threatened species, migratory birds, and other important fish and wildlife resources. We also are concerned about any impacts on Federal and State wildlife refuges and management areas and other public lands, as well as to other areas that support sensitive habitats. Habitats frequently used by important fish and wildlife resources are wetlands, streams, and riparian (streamside) woodlands. Special attention is given to proposals that include modification of wetlands, stream alteration, loss of riparian habitat, or contamination of important habitats. The Service recommends ways to avoid, minimize, rectify, reduce, or compensate for damaging impacts to important fish and wildlife resources and their habitats that may be attributed to land and water resource development proposals.

Please note that the Service's position on a project under the authorities of ESA, BGEPA, MBTA, FWCA, and NEPA cannot be assumed without our official written response. Pursuant to the "take" provisions under section 9 of ESA; 16 U.S.C. 688 (a and b) of BGEPA; and 16 U.S.C. 703 of MBTA, the project proponent is responsible for compliance with these federal laws regardless of whether the Service is able to respond within requested time frame.

ENDANGERED SPECIES ACT

Pursuant to section 7 of Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), every federal agency, in consultation or conference with the U.S. Fish and Wildlife Service (Service), is required to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any federally listed or proposed species and/or result in the destruction or adverse modification of designated and/or proposed critical habitat. In accordance with section 7(a) (2) of ESA, the lead federal agency (FERC) should determine if any federally listed threatened or endangered species and/or designated/proposed critical habitat would be directly and/or indirectly affected by this proposed project. The assessment of potential impacts (direct and indirect) must include an "affect" or "no effect" determination and be presented to the Service in writing. If the Service agrees with the lead federal agency's determination, the Nebraska Ecological Field Office in Grand Island, Nebraska would provide a letter of concurrence. If federally listed species and/or designated/proposed critical habitat would be adversely affected by this action, the lead federal agency would need to continue section 7 consultation with the Service prior to making any irretrievable or irreversible commitments of resources in support of the proposed project or action.

Section 9 of ESA prohibits the taking of any federally listed endangered or threatened species. Section 3(18) of ESA defines take to mean to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Our regulations (50 CFR 17.3) define harm to include significant habitat modification or degradation which actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. Harassment is defined as an intentional or negligent action that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. The ESA provides for civil and criminal penalties for the unlawful taking of listed species. Exemptions to the prohibitions against take may be obtained through coordination with the Service in two ways:

through interagency consultation for projects with federal involvement pursuant to section 7 or through the issuance of an incidental take permit under section 10(a)(1)(B) of ESA.

In accordance with section 7 of ESA, the Service has determined that the following federally listed species may occur in the Project area or be affected by proposed relicensing of the proposed Project:

Listed Species	Expected Occurrence
Pallid sturgeon (*Scaphirhynchus albus*)	Lower Platte River and Missouri River
Interior least tern (*Sterna antillarum*)	Migration, nesting
Piping plover (*Charadrius melodus*)	Migration, nesting
Western prairie fringed orchid (*Platanthera praeclara*)	Tallgrass prairie and wet meadows

Pallid Sturgeon

The pallid sturgeon was federally listed as an endangered species on September 6, 1990. In Nebraska, the pallid sturgeon is found in the Missouri and lower Platte rivers. Floodplains, backwaters, chutes, sloughs, islands, sandbars, and main channel waters formed the large-river ecosystem that provided macrohabitat requirements for the pallid sturgeon, a species that is associated with diverse aquatic habitats. These habitats historically were dynamic and in a constant state of change due to influences from the natural hydrograph, and sediment and runoff inputs from an enormous watershed spanning portions of ten states and Canada. Navigation, channelization and bank stabilization, loss of connectivity between a river and its floodplain, and hydropower generation projects have caused the widespread loss of this diverse array of dynamic habitats once provided to the pallid sturgeon in the Missouri and Platte Rivers, resulting in a precipitous decline in its population. Please refer to the enclosure for additional information regarding direct and indirect impacts to pallid sturgeon that are expected due to proposed relicensing of the Project.

Least Tern and Piping Plover

The least tern, federally listed as endangered, and piping plover, federally listed as threatened, nest on unvegetated or sparsely vegetated sandbars in river channels in the Missouri, Platte, Loup, and Niobrara rivers. The nesting season for the least tern and piping plover is from April 15 through September 1. Least terns feed on small fish in the river and piping plovers forage for invertebrates on exposed beach substrates. Navigation, channelization and bank stabilization, loss of connectivity between a river and its floodplain, and hydropower generation projects can adversely affect the least tern and piping plover. Please refer to the enclosure for additional information regarding direct and indirect impacts to the least tern and piping plover that are expected due to proposed relicensing of the Project.

Western Prairie Fringed Orchid

The western prairie fringed orchid, federally listed as threatened, inhabits tall-grass calcareous silt loam or sub-irrigated sand prairies. Declines in western prairie fringed orchid populations have been caused by the drainage and conversion of its habitats to agricultural production, channelization, siltation, road and bridge construction, grazing, haying, and the application of

herbicides. Populations are known to occur in Boone, Cherry, Dodge, Garfield, Grant, Greeley, Hall, Holt, Lancaster, Loup, Madison, Otoe, Pierce, Rock, Saline, Sarpy, Seward, and Wheeler counties, and may occur at other sites in Nebraska. Changes in the hydrology of adjacent riverine wetlands and wet meadow habitats may adversely affect populations of the western prairie fringed orchid as summarized in the attached enclosure.

Depletions to the Lower Platte River

Since 1978, the Service has concluded in all of its section 7 consultations on water projects in the Platte River basin that the Platte River ecosystem is in a state of jeopardy, and any federal action resulting in a water depletion to the Platte River system will further or continue the deterioration of the stressed habitat conditions. Due to the cumulative affect of many water depletion projects in the Platte River basin, the Service considers any depletion of flows (direct or indirect) from the Platte River system to be significant. Consequently, the Service has adopted a jeopardy standard for all section 7 consultations on federal actions which result in water depletions to the Platte River system. The Service considers the Platte River and its associated wetland habitats to be resources of national and international importance.

Affect/No Affect Determination

The Service recommends that the Loup Power District, in coordination with FERC, the lead Federal agency, consider the information provided above with regard to making its assessment of potential impacts of the proposed relicensing project on federally listed species and designated critical habitat and in making the "affect/no affect determination." Further, the Service recommends that the lead federal agency not limit its consideration of affect to that information located within the project footprint, but other potential affects as they become apparent during the course of other project studies and/or project development and modification. If it is determined that the proposed project may affect (beneficial of adversely) federally listed species or federally designated critical habitat, further consultation under section 7 of ESA with this office is required.

State Listed Species

In addition, all federally listed species are also State-listed under the Nebraska Nongame and Endangered Species Conservation Act. Further, there maybe State-listed species affected by the proposed project that are not federally listed. Specifically, lake sturgeon *(Acipensar fulvescens)*, an inhabitant of the Missouri and Platte rivers, utilizes the slip-faces of submerged sandbars as foraging and resting habitat, and is thought to spawn over gravel, cobble, or other similarly-sized substrate. The lake sturgeon is listed as threatened by the State of Nebraska. The sturgeon chub (*Macrhybopsis gelida*) is listed as endangered in Nebraska, and is found in main channel habitats associated with gravel and swift current. Reasons for the decline of both species are due to the loss of suitable habitat through modification of fluvial processes, loss of floodplain connectivity, and modification to natural hydrological cycles. Additionally, the least tern and pallid sturgeon are also listed as endangered by the State of Nebraska; and the piping plover and bald eagle are listed as threatened. To determine if the proposed project may affect State-listed species, the Service recommends that the project proponent contact Kristal Stoner, Nebraska Game and Parks Commission, 2200 N. 33rd Street, Lincoln, NE 68503-0370.

REVIEW, COMMENTS, AND RECOMMENDATIONS ON THE PROPOSED RELICENSING ACTION UNDER OTHER FISH AND WILDLIFE STATUTES

Bald and Golden Eagle Protection Act

The BGEPA provides for the protection of the bald eagle *(Haliaeetus leucocephalus)* and golden eagle (*Aquila chrysaetos*) by prohibition, except under certain specific conditions, the taking, possession, and commercial use of such birds. The golden eagle is found in arid, open country with grassland for foraging in western Nebraska and usually near buttes or canyons which serve as nesting sites. Golden eagles are often a permanent resident in the Pine Ridge area of Nebraska. Bald eagles utilize mature, forested riparian areas near rivers, streams, lakes, and wetlands and occur along all the major river systems in Nebraska. Bald eagles are also attracted to power plant facilities in the winter because they provide ice free conditions and feeding habitat. The bald eagle southward migration begins as early as October and the wintering period extends from December-March. Additionally, many eagles nest in Nebraska from mid-February through mid-July. Disturbances within 0.5-mile of an active nest or within line-of-sight of the nest could cause adult eagles to discontinue nest building or to abandon eggs. Both bald and golden eagles frequent river systems in Nebraska during the winter where open water and forested corridors provide feeding, perching, and roosting habitats, respectively. The frequency and duration of eagle use of these habitats in the winter depends upon ice and weather conditions. Human disturbances and loss of wintering habitat can cause undue stress leading to cessation of feeding and failure to meet winter thermoregulatory requirements. These affects can reduce the carrying capacity of preferred wintering habitat and reproductive success for the species. To comply with the BGEPA, it is recommended that the project proponent determine whether the proposed project would impact bald or golden eagles. If it is determined that either species could be affected by the proposed project, the Service recommends that the project proponent notify this office as well as the Nebraska Game and Parks Commission (Commission) for guidance regarding avoiding adverse impacts to bald and golden eagles.

Fish and Wildlife Coordination Act

The FWCA requires consultation with the Service and State fish and wildlife agency for the purpose of preventing loss of and damage to fish and wildlife resources in the planning, implementation, and operation of federal and federally funded, permitted, or licensed water resource development projects. This statute requires that federal agencies take into consideration the effect that the water related project would have on fish and wildlife resources, to take action to prevent loss or damage to these resources, and to provide for the development and improvement of these resources. The comments in this letter are provided as technical assistance only and is not the document required of the Secretary of the Interior pursuant to Section 2(b) of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*) on any required federal environmental review or permit. This technical assistance letter is valid only for the described conditions and will have to be revised if significant environmental changes or changes in the proposed project take place. The Service anticipates FERC to include conditions to protect, mitigate damages to, and enhance the referenced fish and wildlife resources under Section 10(j) of the Federal Power Act of 1935.

To determine if the proposed project may affect fish and wildlife resources of the State of Nebraska under the FWCA, the Service recommends that the project proponent contact Carey Grell, Nebraska Game and Parks Commission, 2200 N. 33rd Street, Lincoln, NE 68503-0370.

<u>Wetlands, Streams, Grassland, and Riparian Habitats</u>

If wetlands or streams will be impacted by the proposed Project, a Department of the Army permit from the U.S. Corps of Engineers may be needed. The Service recommends that impacts to wetlands, streams, and riparian areas be avoided or minimized. In accordance with the Section

404(B)(1) Guidelines (Guidelines) of the Clean Water Act, the Guidelines emphasize that avoidance and minimization precede compensation, which is to be considered solely for unavoidable adverse impacts on fish and wildlife resources and supporting ecosystems. For projects that do not require access or proximity to, or location within aquatic environments (i.e., non-water dependant project) to fulfill its basic project purpose, it is assumed that practicable alternatives exist that would cause less damage to aquatic resources than projects that are located in aquatic ecosystems. In addition to determining the least environmentally damaging practicable alternative, 40 CFR Part 230.10(a) of the Guidelines also states, "... no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, **so long as the alternative does not have other significant adverse environmental consequences** (emphasis added).

If after an alternatives analysis has been completed in accordance with the Guideline, and unavoidable impacts are to occur to aquatic habitats, the Service recommends that compensation (i.e., restoration of a degraded wetland or creation) occur for like wetland type at a ratio of 2:1 (acres of wetlands restored/created to acres of wetlands impacted). For unavoidable impacts to streams, the Service recommends that stream pattern, profile, and dimension be mitigated at a ratio of no less that 1:1 (stream length and number, pattern, and length of meanders created/restored versus stream length and number, pattern, and length of meanders impacted; sequence and number of pools and riffles created/restored versus sequence and number of pools and riffles impacted). Additionally, compensation for impacts to riparian habitats should occur at a minimum ratio of 3:1 (i.e., acres of riparian habitat replaces for acres of riparian habitat impacted) The 3:1 ratio is based on the loss of the habitat and the amount of time that will be required for planted trees to reach maturity.

Migratory Bird Treaty Act

Under the MBTA, activities in grassland, wetland, stream, and woodland habitats that would otherwise result in the taking of migratory birds, eggs, young, and/or active nests should be avoided. Although the provisions of MBTA are applicable year-round, most migratory bird nesting activity in Nebraska occurs during the period of April 1 to July 15. However, some migratory birds are known to nest outside of the aforementioned primary nesting season period. For example, raptors can be expected to nest in woodland habitats during February 1 through July 15, whereas sedge wrens which occur in some wetland habitats normally nest from July 15 to September 10.

If various Project actions would occur during the primary nesting season or at any other time which may result in the take of nesting migratory birds, the Service recommends that FERC/Loup Power District arrange to have a qualified biologist conduct a field survey of the affected habitats and structures to determine the absence or presence of nesting migratory birds. For example, migratory birds can be electrocuted or collide with powerlines and be killed or injured. Bank swallows can nest on cut banks of canals and cliff swallows can nest on powerhouse and siphon structures. Routine maintenance of the canal, powerhouse, siphons and other facilities by FERC/Loup Power District could result in loss of these active nests. Surveys must be conducted during the nesting season. The Service further recommends that field surveys for nesting birds, along with information regarding the qualifications of the biologist(s) performing the surveys, be thoroughly documented and that such documentation be maintained on file by FERC/Loup Power District.

The Service requests that the following be provided to this office prior if the above conditions occur. The purpose of the request is to assist the project proponent to avoid the unnecessary take of migratory birds and the possible need for law enforcement action:

a) A copy of any survey(s) for migratory birds done in conjunction with FERC/Loup Power District activities, if any. The survey should provide detail in regards to survey methods, date and time of survey, species observed/heard, and location of species observed.

b) Written description of any avoidance measures implemented to avoid the take of migratory birds.

c) Written description of any circumstances where it has been determined by the project proponent that one or more active bird nests cannot be avoided by FERC/Loup Power District activities.

The Service appreciates the opportunity to provide comments on this proposed project. Should you have any questions regarding these comments, please contact Mr. Robert Harms within our office at (308) 382-6468, extension 17.

Sincerely,

John Cochnar

John Cochnar
Assistant Nebraska Field Supervisor

Enclosure

cc: FERC; (Attn: Kim Nguyen)
HDR; Minneapolis, MN (Attn: George Waldow)
NGPC; Lincoln, NE (Attn: Frank Albrecht)
NGPC; Lincoln, NE (Attn: Kristal Stoner)
NGPC; Lincoln, NE (Attn: Carey Grell)
USACE; Omaha, NE (Attn: John Moeschen)
NPS; St. Paul, MN (Attn: Randall Thorson)
FWS; Denver, CO (Attn: Don Anderson)

Enclosure

Preliminary Concerns,

Loup River Hydroelectric Project
Federal Energy Regulatory Commission
Loup Power District

U.S. Fish and Wildlife Service
Nebraska Game and Parks Commission

1) Flow depletion on the Loup River below the diversion at Genoa. Affected resources include:

a) diminished natural peak flows and sediment supply affecting sand bar development and suitability for nesting and foraging piping plover and least tern;

b) increased susceptibility of invasive and/or woody plant species becoming established on sandbar habitats;

c) water diversion for hydropower, irrigation, and any associated evaporation from the Loup River may increase susceptibility of land-based predation due to shallow water in channels affecting least tern and piping plover;

d) water diversion from the Loup River may increase human disturbance which may affect nest initiation and/or abandonment for the least tern and piping plover;

e) water diversion from the Loup River may lower production of invertebrates and fish affecting food availability for the least tern, piping plover, Tier 1 species, and other riverine fish and wildlife species;

f) low flows affecting fish movement/migration;

g) water diversion from the Loup River will increase probability of fish kills due to stranding of fish in pools and increased water temperatures;

h) loss and/or degradation of adjacent wetland habitats connected to the river via groundwater; and

i) narrow channels could result in vegetative encroachment.

2) Flow depletion on the Loup River above the diversion at Genoa to other water users due to preference system of water rights in exchange for just compensation. Affected resources include:

a) diminished peak flows affecting sand bar suitability for nesting and foraging piping plover and least tern;

b) increased susceptibility of invasive and/or woody plant species becoming established on sandbar habitats;

c) water withdrawals for other uses on the Loup River may increase susceptibility of land based predation due to shallow water in channels affecting least tern and piping plover;

d) water withdrawals from the Loup River may increase human disturbance which may affect nest initiation and/or abandonment for the least tern and piping plover;

e) water withdrawals from the Loup River may lower production of invertebrates and fish affecting food availability for the least tern, piping plover, Tier 1 species, and other riverine fish and wildlife species;

f) low flows affecting fish movement/migration;

g) water withdrawals from the Loup River will increase probability of fish kills due to stranding of fish in pools and increased water temperatures;

h) loss and/or degradation of adjacent wetland habitats connected to the river via groundwater; and

i) narrower channels could result in vegetative encroachment.

3) Flow depletion on the Platte River system from: a) evaporative losses within the power canal system, and b) withdrawal of water from canal for irrigation uses. Affected resources include:

a) diminished peak flows affecting sand bar suitability for nesting piping plover and least tern;

b) reduced production of invertebrates and fish potentially affecting food availability for the least tern, piping plover, pallid sturgeon, Tier 1 species, and other riverine fish and wildlife resources;

c) reduced flows affecting pallid sturgeon migration/movement;

d) increased susceptibility of invasive and/or woody plant species becoming established on sandbar habitats;

e) potential impact on spawning cues for pallid sturgeon, catfish, sauger, and other river fish;

f) loss and/or degradation of adjacent wetland habitats connected to the river via groundwater;

g) narrower channels could result in vegetative encroachment; and

h) thermal stress on fish.

4) Sediment-deprived flow that is discharged from the tailrace into the Platte River may have the following impacts:

a) reduced sandbar formation/maintenance for least tern, piping plover nesting and foraging habitats;

b) channel degradation resulting in disconnected side-channels, backwaters, a deeper, narrower main channel, and floodplain affecting least tern, piping plover and other riverine fish and wildlife resources;
c) changes in sand particle size may affect formation of sandbar habitats; and

d) changes in water temperature may affect abundance and distribution of forage.

5) Dredging and discharge activities at the settling basin. Impacts include:

a) overcovering of nests with discharge on nesting least terns and piping plovers;

b) entrapment of fish on spoil pile; and

c) entrainment and mortality of fish during dredging operations.

6) Hydrocycling. Affected resources include:

a) inundation of sandbars and loss of least tern and piping plover nests;

b) inundation of sandbars results in the loss of sandbar habitat that could have otherwise been used by least terns and piping plovers for nesting and foraging;

c) frequent daily erosion of sandbars affecting least tern and piping plover habitat needs;

d) impacts to benthic production affecting food resources for riverine fish and wildlife including listed threatened endangered species;

e) hydrocycling impacts to pallid sturgeon and other riverine fish species affecting fish passage, stranding fish in pools, heat stress, impacts to benthic invertebrates, and elevated levels of predation; and

f) water temperature changes and affects on forage abundance and distribution.

7) Recreation. Recreational benefits of the multiple use project may have degraded over the project period. Have the proposed benefit components been completed, maintained and operated, or enhanced during the project period? Affected resources include:

a) aquatic habitat for recreational fish species in storage reservoirs;

b) impediments in canal delivery system for distribution of recreational fish species;

c) access to project property for public fishing and hunting;

d) project operation activities resulting in fish kills within the canal and storage reservoirs;

e) degradation of the recreational fishery due to project-related activities;

f) a barrier to fish movement at the diversion dam; and

g) Canal maintenance activities may affect fish.

Richardson, Lisa (Omaha)

From: Pillard, Matt
Sent: Thursday, August 07, 2008 8:20 AM
To: King, Wendy
Cc: Richardson, Lisa (Omaha)
Subject: FW: Re: Loup Hydro Project - Agency Meeting: Study Needs Continued

-----Original Message-----
From: "Jeff Schuckman" <jeff.schuckman@ngpc.ne.gov>
To: "Pillard, Matt" <Matt.Pillard@hdrinc.com>
Cc: "Dave Tunink" <dave.tunink@ngpc.ne.gov>
Date: Thu, 31 Jul 2008 17:48:44 -0500
Subject: Re: Loup Hydro Project - Agency Meeting: Study Needs Continued

Matt,

One study need NGPC has is concerning fish passage upstream through the Loup diversion. A tagging/sampling study is needed to determine the extent of fish passage. This does tie in to the dewatering issues of the Loup River below the diversion and should be considered as an integral part of the project evaluation during various flow scenarios. Tagged fish (sonic or conventional tagging) can be followed through the LPPD project area to evaluate upstream migration success and/or fish species assemblages above and below should be sampled for relative abundance and size stucture.

Jeff Schuckman
District III Fish Mgt Supv
Norfolk, NE

Richardson, Lisa (Omaha)

From: Pillard, Matt
Sent: Thursday, August 14, 2008 4:35 PM
To: Richardson, Lisa (Omaha); Engelbert, Pat; Sigler, Bill; Waldow, George
Subject: FW: Loup Hydro Project - 7/24 Meeting minutes and 8/19 Meeting Agenda

-----Original Message-----
From: Robert_Harms@fws.gov [mailto:Robert_Harms@fws.gov]
Sent: Thursday, August 14, 2008 4:24 PM
To: Pillard, Matt
Cc: frank.albrecht@ngpc.ne.gov; jangell@dnr.ne.gov; jeff_runge@fws.gov; Donald_Anderson@fws.gov; Martha_Tacha@fws.gov
Subject: RE: Loup Hydro Project - 7/24 Meeting minutes and 8/19 Meeting Agenda

Matt:

I agree that as we become familiar with Loup Power District operations, additional affects on fish and wildlife resources may become apparent. For example, the following are items I would like to discuss at the next meeting as concerns:

Lost Creek siphon and changes in hydrology in Lost Creek due to tail race flows
Powerlines and their potential to result in electrocution and/or collisions of migratory birds
PCBs
Changes in sediment/flow discharge below the canal diversion and its affects on ice jam development on the Loup and Platte rivers.

I also request that an additional item be put on the agenda: Agency Information Needs. Additional information needs include the FERC project boundaries, original license articles, number of subordinate agreements, acre-feet of water provided by subordinate agreements, etc. Jean Angel (DNR), leader of the water rights work group (of which the FWS is a member) has several information requests which are essential in order for the work group to make progress.

If you have any questions or need clarifications, please contact me on my cell phone (308) 390-0871. Thanks.

Bob

Robert R. Harms
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
203 West Second Street
Grand Island, Nebraska 68801
Phone: 308-382-6468, Extension 17
Fax: 308-384-8835
robert_harms@fws.gov

Dave Heineman
Governor

STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES
Brian P. Dunnigan, P.E. [redacted]
Acting Director

August 29, 2008

IN REPLY TO:

Pat Engelbert
HDR Engineering, Inc.
8404 Indian Hills Drive
Omaha, NE 68114-4049

Dear Mr. Engelbert:

Please find enclosed a copy of the requests the Nebraska Department of Natural Resources would like to have included in the Pre-application Document for the relicensing of the Loup Power District hydroelectric project. Also enclosed is a copy of the July 1994 study, Lower Platte River Ice Jam Flooding, completed by the US Army Corps of Engineers. Please include the study with our requests. If you desire additional information about any of the concerns, please feel free to contact me.

Sincerely,

Jean E. Angell
Legal Counsel

cc: Joe Mangiamelli, City Administrator, City of Columbus, P.O. Box 1677, Columbus, NE 68602-1677
Mike Moser, Mayor, City of Columbus, P.O. Box 1677, Columbus, NE 68602-1677
Loup Public Power Relicensing Water Rights Workgroup Committee Members

Enclosures

legal/angell/2008

Request to address issues in the FERC relicensing of Loup Public Power District

Requested by the Nebraska Department of Natural Resources

August 29, 2008

1. Diversions of the Loup River into the Loup Power Canal, and the very occasional suspensions of diversions when frazil ice is present, may cause ice jam flooding in the Lower Platte River basins.

In March of 1993, severe flooding occurred downstream of the LPPD power canal along the south side of the Loup River at Columbus, due to an ice jam, causing millions of dollars worth of damage. The flood waters nearly overtopped the levee protecting the City of Columbus. The devastation included the destruction of a major highway, a state weigh station and several commercial concerns, and put a housing develop in imminent danger of inundation, as well as causing extensive damage to miles of farms. In response, the Federal Emergency Management Agency (FEMA), Region VII, formed an Interagency Hazard Mitigation Team to review this event and others, and suggest measures which might be implemented to predict and mitigate similar events in the future.

The US Corps of Engineers (USCE) studied the ice jam flooding in the Lower Platte River basin and published a report for the State of Nebraska Civil Defense Agency and the Nebraska Natural Resources Commission in July of 1994. (A copy of the study is being provided with this request.) The USCE noted that recurring ice jams take place on the Loup River between Genoa and Columbus, the stretch within which LPPD diverts water into their power canal. Local residents expressed the opinion that the fluctuations in the Loup River Power Canal diversions cause or exacerbate ice jams downstream of the canal diversion. The USCE noted that the diversion fluctuations in the LPPD power canal may affect ice formation and ice transport through the instantaneous variances of flow between zero and 3160 cfs during the period of January through March, as well as the change in the sediment regime of the river.

The USCE did not definitively conclude that diversion fluctuations cause ice jam flooding because of the lack of detailed historical data. The USCE suggested an ice data collection program for input into a predictive ice jam model, analysis of contributions to ice jams, as well as mitigation procedures Since that time, the Nebraska Department of Natural Resources has collected ice data for an ice jam prediction model.

Upon collection of ice data, the USCE recommended a study to evaluate the impact of the operation of the Loup Power Canal on downstream ice conditions. Such study has not been conducted. USCE noted that an analysis could address such issues at the potential effects of LPPD diversion fluctuation on the formation of border ice, frazil production,

frazil ice transport, and the effects of sudden decreases in river flow on ice movement (e.g., stranding ice clocks, increased frazil deposition).

The Nebraska Department of Natural Resources asks that studies be conducted on what contributions the operation of the LPPD canal have on ice jam flooding as well as what measures could be taken to mitigate ice jam flooding and resulting damages.

2. **LPPD's appropriations are permitted only for the production of power. LPPD has been using their appropriations for other uses.**

LPPD entered into an agreement with the Nebraska Game and Parks Commission to at certain times refrain from taking their full appropriation so as to keep a minimum waterflow in the reach of the river below the diversion. LPPD is using a portion of their appropriation for other than the use permitted, putting that portion of its appropriation at risk of cancellation.

LPPD entered into an agreement with farmers to divert water from the power canal into Lost Creek. LPPD is using a portion of their appropriation for other than the use permitted, putting that portion of its appropriation at risk of cancellation.

The Nebraska Department of Natural Resources has brought to LPPD's attention the fact that they are diverting water for unpermitted uses. As of this date, LPPD has not applied for a change of use. The Department will pursue the matter.

3. LPPD has failed to quantify the cost of replacement power.

Nebraska law provides that waters used for irrigation have preference over waters used for manufacture of power. This means an irrigator with an appropriation junior to LPPD's appropriation may require the senior LPPD to subordinate its water use in return for just compensation. Just compensation is not an arbitrary amount. State law requires that it be an amount not greater than the cost of replacing the power which would be generated by the water so acquired. LPPD has set amounts for irrigators to take water out of priority. The rate for those irrigators taking water from the canal between the diversion on the Loup River and the power plants at Monroe and Columbus is different than the rate charged for those irrigators taking water upstream of the diversion, and at times has varied within the canal itself. How does LPPD figure "just compensation"? LPPD's Power Interference Agreement states that the amount charged irrigators is not just compensation. LPPD has not responded to this question, despite repeated requests. Charging an amount greater than just compensation puts LPPD's appropriation, and its production of power, at risk.

The Nebraska Department of Natural Resources requests that LPPD study the cost of replacement power.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Nebraska Field Office
203 West Second Street
Grand Island, Nebraska 68801

September 18, 2008

Mr. Neal Suess
Loup Power District
2404 15th Street, PO Box 988
Columbus, NE 68602-0988

RE: Supplementary Technical Assistance, Relicensing; Loup River Hydroelectric Project; Federal Energy Regulatory Commission Project Number 1256; Nance and Platte Counties, Nebraska

Dear Mr. Suess:

This is to supplement a technical assistance letter from the U.S. Fish and Wildlife Service (Service) dated July 21, 2008, in regards to the proposed relicensing of the Loup River Hydroelectric Project (Project) by the Federal Energy Regulatory Commission (FERC), Project Number 1256. In that letter, the Service identified several concerns that the proposed relicensing action may have on federal trust fish and wildlife species including federally listed threatened and endangered species and migratory birds. However, since the date of that letter, our knowledge of Loup Power District Operations has increased thanks to discussions with the Loup Power District and its consultant and other representatives from other agencies. For this reason, it has become necessary to supplement our previous July 21 letter with some additional issues.

Additional issues include water quality impairments and data gaps for water bodies within the Project area. In particular, there is a concern that potential PCB contamination in Loup River Canal sediments may be resulting in PCB exposure and effects to fish and wildlife resources within and downstream from the Project area. We are also concerned about the ability for ice to scour and maintain sandbar habitats in the Loup River below the Genoa Diversion to the confluence of the Loup and Platte rivers. A hydrologic modification to the Lost Creek drainage due to canal discharge is also a concern. The balance of this letter will provide a brief overview of each of these concerns.

Water Quality

The Project area includes at least four water bodies that have been listed as impaired under Section 303(d) of the federal Clean Water Act (CWA) (33 U.S.C. 1311-1313 and 1315-1317 et seq.). Lake Babcock (LP1-L0450) and the Loup River Canal (segment MP1-10200) are listed as impaired by *Esherichia coli* (NDEQ, 2008). The middle segment of the Loup River Canal (LP1-21800) is listed as impaired by polychlorinated biphenyls (PCBs). Lake North (segment LP1-L0440) was previously listed as impaired by pH and nutrients (NDEQ, 2006), but nutrients were delisted using less stringent assessment methods in 2008 (NDEQ, 2008). Furthermore, water bodies within the Project area may have water quality impairments, but have not yet been fully evaluated. Such water bodies include the most upstream segment of the Loup River Canal (LO1-20200) and five Head gate Ponds (segments LO1-L0060, LO1-L0070, LO1-L0080, LO1-L0090, and LO1-L0100).

Water quality impairments that have been identified within the Project area may adversely affect fish and wildlife. Nutrient enrichment is a leading cause of water quality impairment in our Nation's waters and can result in toxic algal blooms, reduced water clarity, noxious odors, dissolved oxygen depletion, fish kills, and excessive macrophyte growth (USEPA, 2000). Although there are no aquatic life water quality standards based on *E. coli*, sources for high concentrations of *E. coli* may also be a source for other bacterial pathogens or water quality contaminants (e.g., nutrients, metals and ammonia) that can adversely affect fish and wildlife. Potential PCB contamination within the Project area is especially a concern. PCBs have a tendency to bioaccumulate in aquatic organisms and can adversely affect fish and avian reproduction. Fish-eating predators may be especially at risk of exposure to PCBs from bioaccumulation across food-chain pathways; therefore, the Service is especially concerned with PCB exposure and effects to the federally endangered least tern *(Sterna antillarum)* and pallid sturgeon (*Scaphirhynchus albus*). Adverse reproductive effects in fish exposed to PCBs are well documented and include ovarian atresia, decreased egg viability, and reduced growth of larvae (Niimi, 1996). A study conducted by the Service to evaluate contaminant exposure and effects to shovelnose sturgeon and pallid sturgeon in the lower Platte River identified PCBs as a contaminant of concern (Schwarz et al., 2006). Concentrations of total PCBs in shovelnose sturgeon carcass and ovary tissues exceeded toxicity thresholds. Ovarian atresia and high macrophage aggregate density were also observed in shovelnose sturgeon from the lower Platte River and have been observed elsewhere in other fish species from PCB contaminated sites (Collier et al., 1992; Papoulias and Tillitt, 2003). Pallid sturgeon may be especially at risk to PCBs that bioaccumulate and cause reproductive impairment because they have a more piscivourus diet, greater maximum life-span, and a longer reproductive cycle than shovelnose sturgeon.

It is recommended that all designated water bodies within the Project area be fully evaluated for beneficial use impairments in time for the 2010 303(d) assessment report. In addition, it is recommended that Loup Power District, with input from the Service and the Nebraska Game and Parks Commission, develop an appropriate sampling plan to evaluate PCB contamination within and downstream of the Project area. At the August 19, 2008, meeting, the Loup River Canal system was described as a closed system that receives insubstantial runoff from sources outside of the Project area. In addition, fish downstream of the Loup River Canal are not expected to move into the Project area above the Columbus Power House. This indicates that PCB contamination in fish from the Loup River Canal is likely a result of fish exposure to PCBs within the Project area. PCB exposure in aquatic systems generally stem from past PCB deposits that reside in sediments (Rice et al., 2003). Therefore, sediment sampling is needed to identify potential PCB source areas within and downstream from the Project area. Biological sampling may also be needed to evaluate PCB exposure and effects to aquatic and terrestrial receptors.

Ice Flow

Changes in the sediment regime of the Loup River resulting from canal operations may have impacted ice formation and transport processes (U.S. Army Corps of Engineers 1994). As such, the Service is concerned that sediment modifications at the Genoa Diversion may influence the formation of ice flows. Late winter/early spring thaws can result in large ice sheets moving down river. As they move, ice sheets scour the surface of sandbar islands free of vegetation. Sandbar islands scoured free of vegetation provide important nesting and foraging habitats for the least tern and federally threatened piping plover *(Charadrius melodus)*. High and sustained spring flows can also act to scour islands free of vegetation. However, stage changes on the Loup River are not as pronounced as what would be expected on the Platte River and thus scouring due to high flows is limited. High stages occur too infrequently on the Loup River and probably do little to scour island

free of vegetation. For these reasons, ice scour is believed to have a greater role than what it might have in other river systems in terms of maintaining habitat for the least tern and piping plover.

Lost Creek

The Service is concerned that the release of canal water into Lost Creek may have an adverse affect on aquatic resources found there. It is understood that releases of water into Lost Creek are done at certain times of the year to provide water for livestock. Aquatic species evolved under a natural hydrologic regime. Artificial modifications to that regime could adversely affect some species and favor others. For example, an input of canal water could rapidly change stream water temperature and result in a fish kill in Lost Creek. The life cycles of some invertebrate species involves utilizing habitats along the bank and streamline interface. Loss or degradation of these habitats due to changes in water levels may affect the reproductive cycles of these aquatic invertebrates and other vertebrate species that rely on these species as a food resource.

The Service appreciates the opportunity to provide supplemental comments on the proposed relicensing project. Should you have any questions regarding these comments, please contact Mr. Robert Harms within our office at (308) 382-6468, extension 17.

Sincerely,

June M DeWeese

June M. DeWeese
Nebraska Field Supervisor

cc: EPA; Kansas City, KS (Attn: Ann Laverty)
EPA; Kansas City, KS (Attn: Larry Shepard)
EPA; Kansas City, KS (Attn: Joe Cothern)
NDEQ; Lincoln, NE (Attn: John Bender)
FERC; (Attn: Kim Nguyen)
HDR; Minneapolis, MN (Attn: George Waldow)
NGPC; Lincoln, NE (Attn: Frank Albrecht)
NPS; St. Paul, MN (Attn: Randall Thorson)
FWS; Denver, CO (Attn: Don Anderson)

REFERENCES

Collier TK, Stein JE, Sanborn HR, Hom T, Myers MS, Varanasi U. 1992. Field studies of reproductive success and bioindicators of maternal contaminant exposure in English sole (*Parophtys vetulus*). *Sci Total Environ* 116:169-185.

Nebraska Department of Environmental Quality (NDEQ). 2006. 2006 surface water quality integrated report. Water Quality Division. http://www.deq.state.ne.us/

Nebraska Department of Environmental Quality (NDEQ). 2008. 2008 surface water quality integrated report. Water Quality Division. http://www.deq.state.ne.us/

Niimi, A.J. 1983. Biological and toxicological effects of environmental contaminants in fish and their eggs. *Canadian Journal of Fisheries and Aquatic Sciences* 40:306-312.

Papoulias DM, Tillitt DE. 2003. An assessment of the reproductive success of small mouth bass from Lake Pepin, a PCB-contaminated site. Biochemistry & Physiology Branch Final Laboratory Report FY 2003-30-17. 87 p.

Rice PR, O'Keffe PW, Kubiak TJ. 2003. Sources, pathways, and effects of PCBs, dioxins and dibenzofurans. In Hoffman DJ, Rattner BA, Burton GA Jr, Cairns J Jr., eds. Handbook of Ecotoxicology 2nd Edition. Lewis Publishers pp 501-573.

Schwarz MS, Lydick CD, Echols KR. 2006. Evaluation of a swine confined animal feeding operation using mallard sentinels: implications for water quality at McMurtrey National Wildlife Refuge. Draft Contaminant Report. US Fish and Wildlife Servicet, Grand Island, NE.

U.S. Environmental Protection Agency (USEPA). 2000. Information supporting the development of state and tribal nutrient criteria for lakes and reservoirs in nutrient ecoregion VI: cornbelt and northern great plains. EPA-822-B-00-008. 85 pp. http://www.epa.gov/waterscience/criteria/nutrient/ecoregions/lakes/lakes_6.pdf

Nebraska Game and Parks Commission
2200 N. 33rd St. / P.O. Box 30370 / Lincoln, NE 68503-0370
Phone: 402-471-0641/ Fax: 402-471-5528 / www.OutdoorNebraska.org

September 23, 2008

Ms. Melissa Marinovich
HDR
8404 Indian Hills Dr.
Omaha, NE 68114-4098

Re: Data Request for the areas surrounding the Loup River, Loup Diversion Canal, and Platte River near Genoa and Columbus, Nebraska

Dear Ms. Marinovich

Please make reference to your request dated September 16, 2008 requesting information about designated threatened or endangered species for areas located in Nance, Platte, and Butler Counties. Specifically examined, were the areas surrounding the Loup River, Loup Diversion Canal, and Platte River. All records were approximately located between Fullerton and Richland and Platte Center and Clarks, within an estimated 600 square mile area.

The Nebraska Natural Heritage Program tracks occurrences of "at-risk" species and native plant communities within the state. "At-risk" species and communities are defined as those which are declining in Nebraska, declining globally or unique to Nebraska. State listed threatened and endangered species are among those tracked by the Natural Heritage Program. All at-risk species and communities are considered a valuable state resource worthy of ensuring continued existence in Nebraska and are present within the area indicated in this request.

Small white lady's slipper *(Cypripedium candidum)* is a state threatened species. This species grows in clumps with one flower at the tip of a flowering stem consisting of a white, pouch-shaped "slipper." This insect pollinated plant is found in moist to wet prairies, fens and sedge meadows. This orchid flowers from mid-May to June in Nebraska.

Whooping cranes (*Grus americana*) use shallow, sparsely vegetated streams and wetlands to feed and roost during their migration. According to our records whooping cranes have been present within the area of request, specifically in areas upstream of Genoa, NE. The migration period in Nebraska is approximately March 23 through May 10 and from September 16 through November 16. In addition, a 3-mile wide, 56 mile long reach of the Platte River from Lexington to Shelton, Nebraska has been federally listed as critical habitat for whooping cranes. Alterations to feeding and roosting habitats from human disturbance and depletions of instream flows have negative impacts on whooping cranes.

The least tern (*Sterna antillarum athalassos*) and piping plover (*Charadrius melodus*) nest on unvegetated or sparsely vegetated sandbars in river channels and can also utilize sandpits. The nesting season for the least tern and piping plover is from April 15 through September 15. Channel constrictions and

obstructions that disrupt natural flows in the river and influence sandbar complexes in the river limit potential habitat for these birds. Depletions of instream flows from the Platte River have also have negative impacts. Human activity in the vicinity of feeding and nesting habitats can disturb least terns and piping plovers.

The bald eagle (*Haliaeetus leucooephalus*) nests, migrates and winters statewide. Bald eagles use mature, forested, riparian areas including rivers, streams, lakes and wetlands, and occurs along all major river systems in Nebraska. The bald eagle southward migration begins as early as October and wintering period extends from December-March. The nesting season in Nebraska extends from mid-February through mid-August. Disturbances within 0.5 mile of an active nest or within line-of-sight of the nest could cause adult eagles to discontinue nest building or to abandon eggs.

River otters (*Lutra canadensis*) require large amount of space to meet their annual requirements. During a year, an otter may occupy 50 or more miles of stream course and will often move from one area to another. River otters are most often active from early evening through early morning, but may also be active during the day. This is a highly mobile species, and if present, is likely to leave during disturbance. However, otters are susceptible when they have young pups in the natal den. This species, like other Mustelidae, exhibit delayed implantation meaning that fertilized egg development can be delayed, resulting in highly variable reproductive cycles. The pups are helpless until about seven weeks of age. In Nebraska, female otters enter the natal den beginning in late February through April. River otters use dens that were dug by other species such as beaver and utilize upland dens.

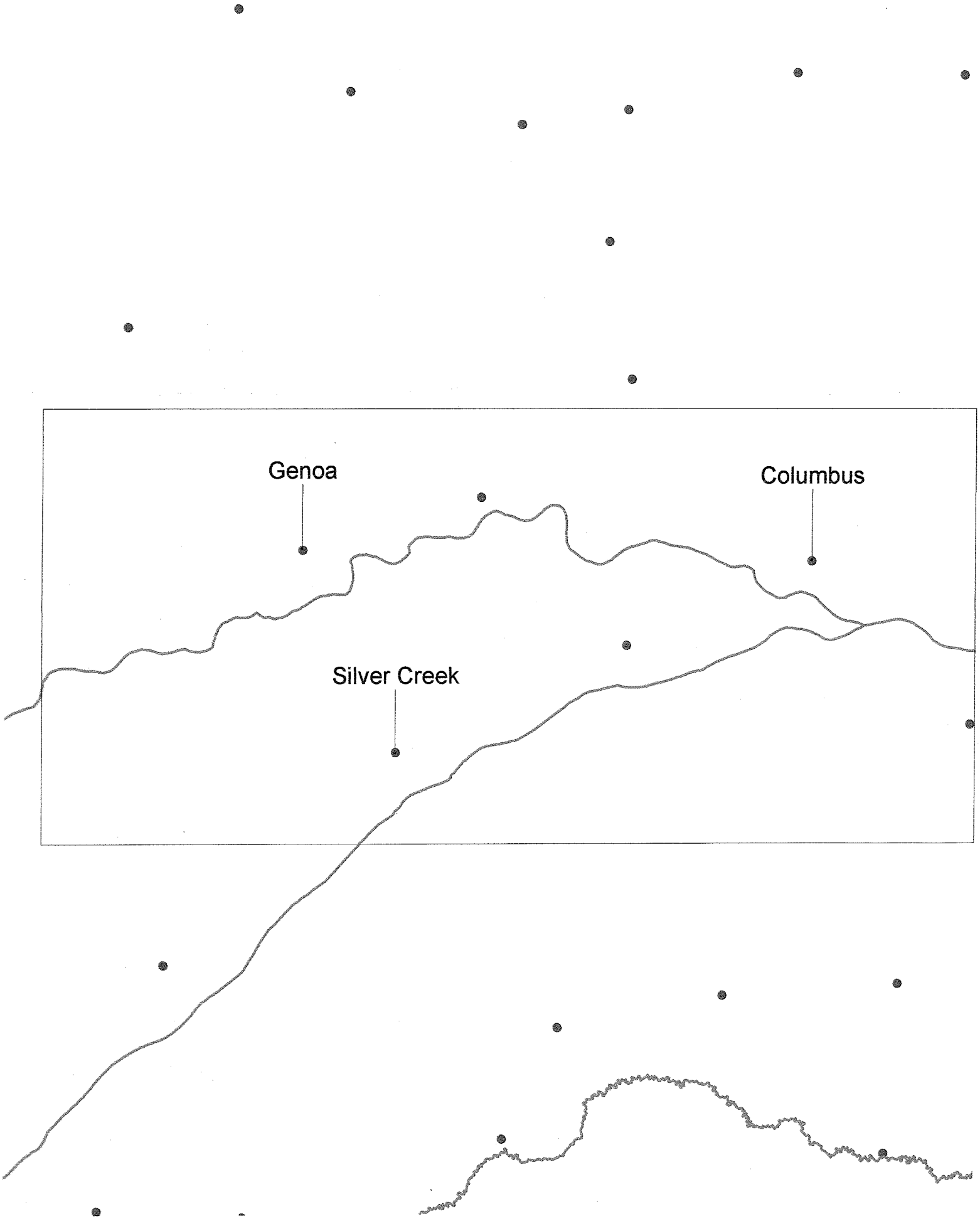
All federally listed threatened and endangered species are also state listed. However, for assessment of potential impacts on federally listed, candidate or proposed threatened or endangered species, please contact John Cochnar, Nebraska Field Office, U.S. Fish and Wildlife Service, 203 W. Second St., Grand Island, NE 68801.

Please note that this correspondence does not satisfy requirements of the Nongame and Endangered Species Conservation Act. Under the authority Neb.Rev.Stat. §37-807 (3) of the Nebraska Nongame and Endangered Species Conservation Act, all Nebraska state agencies are required to consult with the Nebraska Game and Parks Commission to ensure that any actions authorized, funded or carried out by them do not jeopardize the continued existence of a state listed species. This requirement would extend to any state permit issued. Please contact me if you need assistance with determining the potential of an action to affect listed species.

If you have any questions or need additional information on this site or on the jurisdiction of the Commission under the authorities listed above, please feel free to contact me.

Sincerely,

Kristal Stoner
Environmental Analyst Supervisor
Nebraska Natural Heritage Program
Nebraska Game and Parks Commission
(402) 471-5444
Kristal.stoner@ngpc.ne.gov


Genoa
Columbus
Silver Creek