


---

---

---

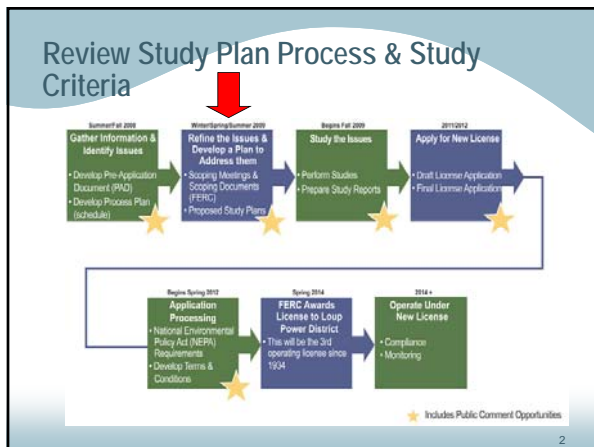
---

---

---

---

---




---

---

---

---

---

---

---

---

- ### FERC Study Request Criteria
1. Goals & Objectives of Study
  2. Relevant Resource Management Goals, or
  3. Relevant Public Interest
  4. Background & Existing Information
  5. Project Nexus
  6. Proposed Methodology
  7. Level of Effort and Cost
- 18CFR §5.9

---

---

---

---

---

---

---

---

## Link Between Hydropower and Recreation

- Federal Power Act
- Existing LPD Operating License
- New Application Requirements

4

---

---

---

---

---

---

---

---

## Summary of Recreation Study Requests

- Federal Energy Regulatory Commission (FERC)
- National Park Service (NPS)
- Nebraska Game and Parks Commission (NGPC)

5

---

---

---

---

---

---

---

---

## FERC Recreation Study Plan Request

- Objectives
  - Quantify & document existing recreation use by season
  - Identify user perceptions
  - Document public awareness of existing recreation facilities
  - Assess impact of project operations on recreation experiences
  - Identify potential measures to alleviate any negative impacts and enhance recreation opportunities
  - Develop a recreation plan for the project
  - Identify recreation opportunities in the Bypass Reach

6

---

---

---

---

---

---

---

---

### FERC Recreation Study Plan Request

- Methods
  - 12-month mechanical entrance counts
  - 12-month visitor intercept survey
  - Mail or phone survey

7

---

---

---

---

---

---

---

---

### NPS Recreation Study Plan Request

- Objectives
  - Identify current and future recreation demand
  - Locate existing conflicts and/or opportunities for future recreation area(s) and public access
  - Develop barrier-free access
  - Identify existing and future shoreline protection and enhancement measures
  - Improve Tailrace Park maintenance and upgrading
- Methods
  - Land use inventory
  - Visitor use survey
  - Recreation Plan

8

---

---

---

---

---

---

---

---

### NGPC Recreation Study Plan Request

- Objectives
  - Determine the quality of the fishery
  - Identify angler perception of the fishery
  - Determine angler species targets, needs, expectations, and catch rates
  - Determine need for additional regulations or regular stocking
- Methods
  - Open Water Season Creel Survey

9

---

---

---

---

---

---

---

---

## Study Plans Overview – Recreational Resources

1. Sedimentation
2. Hydrocycling
3. Water Temperature in the Platte River
4. Water Temperature in the Loup River Bypass Reach
5. Flow Depletion and Flow Diversion
6. Fish Sampling
7. Fish Passage
8. Recreation User Survey
9. Creel Survey
10. Land Use Inventory
11. Section 106 Compliance
12. Ice Jam Flooding on the Loup River

10

---

---

---

---

---

---

---

---

## 8. Recreation User Survey

### Goal

- Determine public awareness, usage, and demand of the Project's existing recreation facilities to determine if potential improvements are needed.

### Objectives

- Measure usage.
- Document types of recreation use.
- Determine whether facilities meet current demand.
- Determine public's perception/awareness of facilities.
- Determine if Project operations affect recreation.
- Develop recreation management plan.

11

---

---

---

---

---

---

---

---

## 8. Recreation User Survey

### Activities

- On-site observation & recreation user survey.
- Trail counts.
- Telephone survey.
- NOHVA survey.
- Analyze results.
- Synthesize with results from other studies.

12

---

---

---

---

---

---

---

---

## 9. Creel Survey

### Goal

- Determine the status of Project fisheries and how the fisheries are used by anglers; assess angler perception of fisheries.

### Objectives

- Identify species targeted by anglers.
- Determine catch rates.
- Identify angler perception, expectation, and level of satisfaction related to Project fisheries.
- Contribute to the recreation management plan.

13

---

---

---

---

---

---

---

---

## 9. Creel Survey

### Activities

- Conduct stratified, random survey using NGPC standard methodologies.
  - May through September; 4 weekend days & 6 weekdays per month
  - 2-hour instantaneous counts
  - Angler interviews
- Analyze results.
- Synthesize with results from other studies.

14

---

---

---

---

---

---

---

---

## 10. Land Use Inventory

### Goal

- Determine specific land uses of Project lands and adjacent properties to identify potential conflicts and/or opportunities relating to Project operations, public access, recreation, and environmental resource protection.

15

---

---

---

---

---

---

---

---

## 10. Land Use Inventory

### Objectives

- Inventory land uses and access points.
- Identify opportunities to improve access and enhance public safety.
- Determine conflicts and incompatible uses.
- Identify solutions for conflicts.
- Contribute to the recreation management plan.

16

---

---

---

---

---

---

---

---

## 10. Land Use Inventory

### Activities

- Use existing data and aerial photography to classify land uses.
- Conduct site visit to confirm land use classification.
- Document land uses on maps.
- Analyze results and identify conflicts.
- Synthesize with results from other studies.

17

---

---

---

---

---

---

---

---

## Current Recreation and Management Approach

- No Formalized Plan
- No Recreation Line Item in Existing Budget
- Informal Process

18

---

---

---

---

---

---

---

---

## Existing Recreational Partnerships

- NOHVA – Headworks OHV Park and OHV Jamborees
- CART – Extensive Trail Network and Park Benches
- NGPC – Loup Lands WMA and Picnic Shelters
- Boy Scouts – Community Service Projects

19

---

---

---

---

---

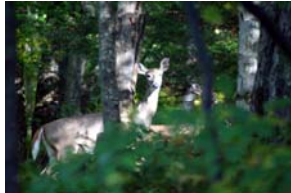
---

---

---

## Recreational Facilities: Loup Lands Wildlife Management Area

- Partner – NGPC
- 485 Acre Parcel
- Leased to & Managed by NGPC
- Public Access for Wildlife Viewing and Hunting



20

---

---

---

---

---

---

---

---

## Recreational Facilities: Headworks Park

Existing:

- Partner - NOHVA
- 10 Acre Recreation Area
- Camping (with electricity)
- Picnic Areas
- Potable Water
- Wheelchair Accessible Toilets
- Swimming and Fishing Access



21

---

---

---

---

---

---

---

---

## Recreational Facilities: Headworks OHV Park

Existing:

- Partner - NOHVA
- 1,200 Acre Site
- 50 miles of OHV Trails
- 20,000 Annual User Visits
- Host to NOHVA's Spring and Fall OHV Jamborees



22

---

---

---

---

---

---

---

---

## Recreational Facilities: Loup Power Canal

Existing:

- 70 Miles of Accessible Shoreline
- Fishing
- Primitive Camping
- Hiking
- Biking
- Bird Watching / Eagle Viewing



23

---

---

---

---

---

---

---

---

## Recreational Facilities: Monroe Powerhouse

Existing:

- Fishing
- Bird Watching / Eagle Viewing



24

---

---

---

---

---

---

---

---



## Recreational Facilities: Lake Babcock Park

Existing:

- Partner – CART; Scouts
- 40 Acre Site
- Camping (50 trailer w/electricity and 120 tent)
- Fishing Access
- Playgrounds
- Pedestrian / Bike Trails
- Picnic Shelter (partner with NGPC)
- Potable Water
- Wheelchair Accessible Toilets



25

---

---

---

---

---

---

---

---

## Recreational Facilities: Lake Babcock Waterfowl Refuge

- Partner – NGPC
- Includes Lake Babcock, Lake North, and Adjoining Lands
- Established in the 1940s; Regulated by NGPC



26

---

---

---

---

---

---

---

---

## Recreational Facilities: Lake North Park

Existing:

- Two Miles of Beaches
- Two Boat Ramps (unrestricted boating)
- Fishing Access to 200 Acre Lake North
- Camping (25 trailer w/electricity, 100 tent)
- Picnic Shelters (partner with NGPC)
- Potable Water
- Wheelchair Accessible Toilets



27

---

---

---

---

---

---

---

---

## Recreational Facilities: Trails

### Existing:

- Partners – CART/NGPC/NDOR
- Two Lakes Trail
  - 2.4 Miles Concrete
  - ADA-Compliant
  - North of Lake Babcock and Lake North
- Bob Lake Trail
  - 1.3 Miles Crushed Limestone
  - Southwest of Lake Babcock
- Robert White Trail
  - 1.5 Miles Crushed Limestone
  - Southern Perimeter of Lake Babcock
  - Connects Bob Lake Trail to 18th Ave



28

---

---

---

---

---

---

---

---

## Recreational Facilities: Powerhouse Park

### Existing:

- Four Acre Park
- Camping
- Playground
- Picnic Area
- Fishing Access
- Wheelchair Accessible Toilets



29

---

---

---

---

---

---

---

---

## Recreational Facilities: Tailrace Park

### Existing:

- Nine Acre Park
- Exceptional Fishing
- Playground Area
- Picnic Facilities
- Riverine Scenery



30

---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---

### Proposed Methodology Discussion

<b>Goals:</b>	<b>Methodologies:</b>
<ul style="list-style-type: none"><li>• Identify Needs</li><li>• Develop Recreation Plan</li><li>• Strengthen Partnerships</li><li>• Improve Recreation<ul style="list-style-type: none"><li>- Facilities</li><li>- Opportunities</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Proposed Study Plans</li><li>• Alternative: Charrette</li></ul>

32

---

---

---

---

---

---

---

---

### Definition of Charrette

A multi-day collaborative planning event that harnesses the talents and energies of all affected parties to create and support a feasible plan.

33

---

---

---

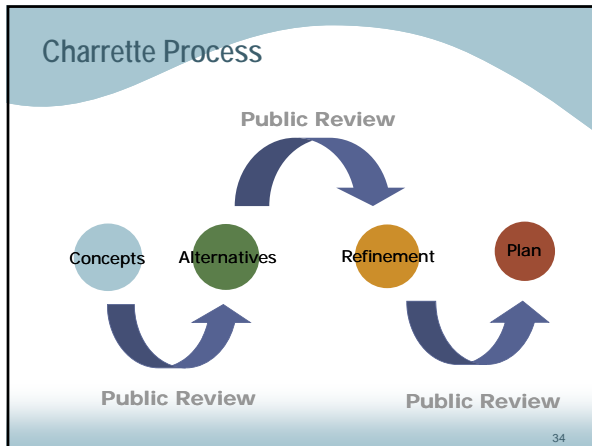
---

---

---

---

---




---

---

---

---

---

---

---

---

- ### Charrette Benefits
- Cost Savings – Concentrated work effort limits re-work
  - Time Savings – Interdisciplinary team and immediate stakeholder and public feedback saves time
  - Participation – Active participation by partners during the planning process builds on existing partnerships and provides opportunities for new ones
  - Public Acceptance – Transparent process with immediate feedback and repeated refinements leads to consensus
- 35

---

---

---

---

---

---

---

---

### Pros of Each Method

<p><b>Study Plans</b></p> <ul style="list-style-type: none"> <li>• Extensive data collection</li> <li>• Development of large base of knowledge for District</li> <li>• Identifies awareness of nonusers</li> <li>• Uses standard methodology</li> <li>• District controls recreation plan development</li> </ul>	<p><b>Charrette</b></p> <ul style="list-style-type: none"> <li>• Comprehensive involvement of partners and stakeholders</li> <li>• Process allows public and stakeholder feedback</li> <li>• Condensed schedule</li> <li>• Encourages/promotes new ideas through collaboration</li> <li>• Builds consensus for outcome</li> </ul>
--	---

36

---

---

---

---

---

---

---

---

## Cons of Each Method

### Study Plans

- Cost of Studies
- Length of time to complete studies
- Limited public input on development of the recreation plan

### Charrette

- Less controlled process
- Does not use standard data collection methodology
- Less emphasis on quantitative data collection

37

---

---

---

---

---

---

---

---

## Future Meetings & Next Steps

- May 27-28: Continued Discussion as needed; Studies 1-12
- July 1: Additional discussion as needed
- Others as necessary

38

---

---

---

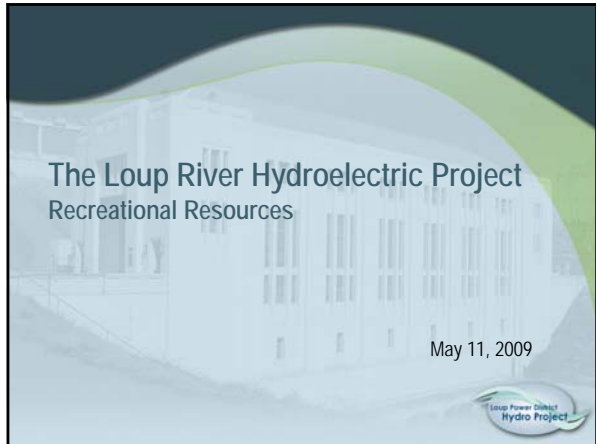
---

---

---

---

---



---

---

---

---

---

---

---

---

### 8. Recreation User Survey

**Goal**

- Determine public awareness, usage, and demand of the Project's existing recreation facilities to determine if potential improvements are needed.

**Objectives**

- Measure usage.
- Document types of recreation use.
- Determine whether facilities meet current demand.
- Determine public's perception/awareness of facilities.
- Determine if Project operations affect recreation.
- Develop recreation management plan.

2

---

---

---

---

---

---

---

---

### 8. Recreation User Survey

**Activities**

- On-site observation & recreation user survey.
- Trail counts.
- Telephone survey.
- NOHVA survey.
- Analyze results.
- Synthesize with results from other studies.

3

---

---

---

---

---

---

---

---

## 8. Recreation User Survey

### FERC Study Request

- Elements not included:
  - Year round survey
  - Mechanical counters
  - Mail Survey
- Locations not includes:
  - Monroe Powerhouse
  - Loup Power Canal
  - Loup Lands Wildlife Management Area
  - Loup River Bypass Reach

4

---

---

---

---

---

---

---

---

## 8. Recreation User Survey - Activities

### On-Site Observation & Recreation User Survey

- Study Sites:
  - Headworks Park & OHV Park
  - Lake Babcock Park (aka Loup Park)
  - Lake North Park
  - Columbus Powerhouse Park
  - Tailrace Park

5

---

---

---

---

---

---

---

---

## 8. Recreation User Survey - Activities

### On-Site Observation & Recreation User Survey

- Study Period
  - May 1 through November 1
  - Peak activity periods
  - Goal of 300 responses
- Survey Instrument
- Field Observation Form

6

---

---

---

---

---

---

---

---

## 8. Recreation User Survey - Activities

### Trail Counts

- Study Sites
  - Two Lakes Trail
  - Bob Lake Trail
  - Robert White Trail
- Study Period
  - May 1 through October 31

7

---

---

---

---

---

---

---

---

## 8. Recreation User Survey - Activities

### Telephone Survey

- Survey Period
  - May 1 through November 1
  - Goal of 400 responses
- Survey Instrument

8

---

---

---

---

---

---

---

---

## 8. Recreation User Survey - Activities

### NOHVA Survey

- Survey included in NOHVA newsletter
- Survey instrument

9

---

---

---

---

---

---

---

---



## 8. Recreation User Survey - Activities

- Data Analysis
  - Annual usage
  - Average weekday usage
  - Average weekend usage
  - Peak weekend usage
  - Percent of capacity
  - Analysis of user experience responses
- Recreation Management Plan
  - Develop plan using data from Studies 8, 9 & 10

10

---

---

---

---

---

---

---

---

## 9. Creel Survey

### Goal

- Determine the status of Project fisheries and how the fisheries are used by anglers; assess angler perception of fisheries.

### Objectives

- Identify species targeted by anglers.
- Determine catch rates.
- Identify angler perception, expectation, and level of satisfaction related to Project fisheries.
- Contribute to the recreation management plan.

11

---

---

---

---

---

---

---

---

## 9. Creel Survey

### Activities

- Conduct stratified, random survey using NGPC standard methodologies.
  - May through September; 4 weekend days & 6 weekdays per month
  - 2-hour instantaneous counts
  - Angler interviews
- Analyze results.
- Synthesize with results from other studies.

12

---

---

---

---

---

---

---

---

## 9. Creel Survey - Activities

- Study Sites
  - Skimming weir to Monroe powerhouse
  - Monroe powerhouse to 48<sup>th</sup> Avenue
  - 48<sup>th</sup> Avenue to Columbus powerhouse (includes lakes)
  - Columbus powerhouse to outlet weir
- Study Period
  - May 1 through September 30
  - 4 weekend days and 6 weekdays per month (identified with NGPC software)

13

---

---

---

---

---

---

---

---

## 9. Creel Survey - Activities

- Methods
  - NGPC standard protocol
  - 2-hour “instantaneous count”
  - Angler interviews
    - 50 percent of instantaneous count
  - Complete trip interviews
    - 25 percent of instantaneous count

14

---

---

---

---

---

---

---

---

## 9. Creel Survey - Activities

- Data Analysis
  - Angler effort
  - Catch
  - Angler success
- Recreation Management Plan
  - Develop plan using data from Studies 8, 9 & 10

15

---

---

---

---

---

---

---

---

## 10. Land Use Inventory

### Goal

- Determine specific land uses of Project lands and adjacent properties to identify potential conflicts and/or opportunities relating to Project operations, public access, recreation, and environmental resource protection.

16

---

---

---

---

---

---

---

---

## 10. Land Use Inventory

### Objectives

- Inventory land uses and access points.
- Identify opportunities to improve access and enhance public safety.
- Determine conflicts and incompatible uses.
- Identify solutions for conflicts.
- Contribute to the recreation management plan.

17

---

---

---

---

---

---

---

---

## 10. Land Use Inventory

### Activities

- Use existing data and aerial photography to classify land uses.
- Conduct site visit to confirm land use classification.
- Document land uses on maps.
- Analyze results and identify conflicts.
- Synthesize with results from other studies.

18

---

---

---

---

---

---

---

---

## 10. Land Use Inventory - Activities

- Study Sites
  - Recreation Areas
  - Lake Babcock Waterfowl Refuge
  - Loup Lands Wildlife Management Area
  - North & South Sand Management Areas
  - Siphons
  - Urban areas of Genoa, Monroe & Columbus
  - Areas with evidence of heavy informal use

19

---

---

---

---

---

---

---

---

## 10. Land Use Inventory - Activities

- Classify Land Uses
  - Using existing data and aerial photography
  - Inside and outside Project Boundary
  - Site visit to confirm
- Document land uses on maps
  - Aerial photo base
  - Scale: 1" = 1000'

20

---

---

---

---

---

---

---

---

## 10. Land Use Inventory - Activities

- Data Analysis
  - Identify conflicting land uses
  - Identify potential mitigation
  - Identify opportunities
    - Improve Project operations
    - Public access
    - Recreation
    - Environmental protection
- Recreation Management Plan
  - Develop plan using data from Studies 8, 9 & 10

21

---

---

---

---

---

---

---

---

### 9. Fish Sampling - Goal

- The goal of fish sampling is to determine the species abundance, composition, and distribution of sport fish in the Loup Power Canal, including Lake Babcock and Lake North.

22

---

---

---

---

---

---

---

---

### 9. Fish Sampling - Objectives

1. To determine species composition.
2. To determine relative abundance (catch per unit effort [CPUE]).
3. To determine length frequency, body conditions, and age and growth of select species.
4. To document sampling results.

23

---

---

---

---

---

---

---

---

### 9. Fish Sampling – Field Activities

#### Electrofishing

- Will be conducted during daylight hours in May, to determine a general species inventory.
- Will include nine 10-minute stations, with at least one station occurring immediately below the Skimming Weir, Monroe Powerhouse, and Columbus Powerhouse, respectively.
- Four 10 minute stations will be sampled at both Lake Babcock and Lake North.
- Electrofishing specific to flathead catfish will occur during late July.

24

---

---

---

---

---

---

---

---

## 9. Fish Sampling – Field Activities

### Trap Netting

- Will be conducted in May to collect a general sport fish inventory at four stations each in Lake Babcock and Lake North.

25

---

---

---

---

---

---

---

---

## 9. Fish Sampling – Field Activities

### Hoop Netting

- Will be conducted at nine stations during June.
- A minimum of two hoop nets will be set at each station on opposite sides of the canal.
- At a minimum, six hoop net nights per canal segment will be sampled.
- All hoop nets will be cheese-baited to target channel catfish.

26

---

---

---

---

---

---

---

---

## 9. Fish Sampling – Field Activities

### Gill Netting

- Will be conducted at three stations each at Lake Babcock and Lake North during the last 2 weeks of September or the first week of October.
- Three gill net nights each at Lake Babcock and Lake North.

27

---

---

---

---

---

---

---

---

## 9. Fish Sampling - Activities

### Data Analysis

- Catch per Unit Effort (CPUE)
- Fish length frequency
- Relative body condition in relation to multiple variables
- Age and growth for select species by canal segment

28

---

---

---

---

---

---

---

---