Low-Impact Hydropower Power Institute Certification Application

Red Rock Hydroelectric Project

(FERC No. P-12576-99)

July 2021

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1.0 FACILITY DESCRIPTION

The Red Rock Hydroelectric Project (RRHP) is located at the Red Rock Dam on the Des Moines River, approximately 3.8 miles southwest of the Pella, IA in Marion County Iowa (Figure 1); approximately 45 miles southeast of Des Moines, Iowa; and approximately 143 miles above the confluence of the Des Moines River with the Mississippi River.

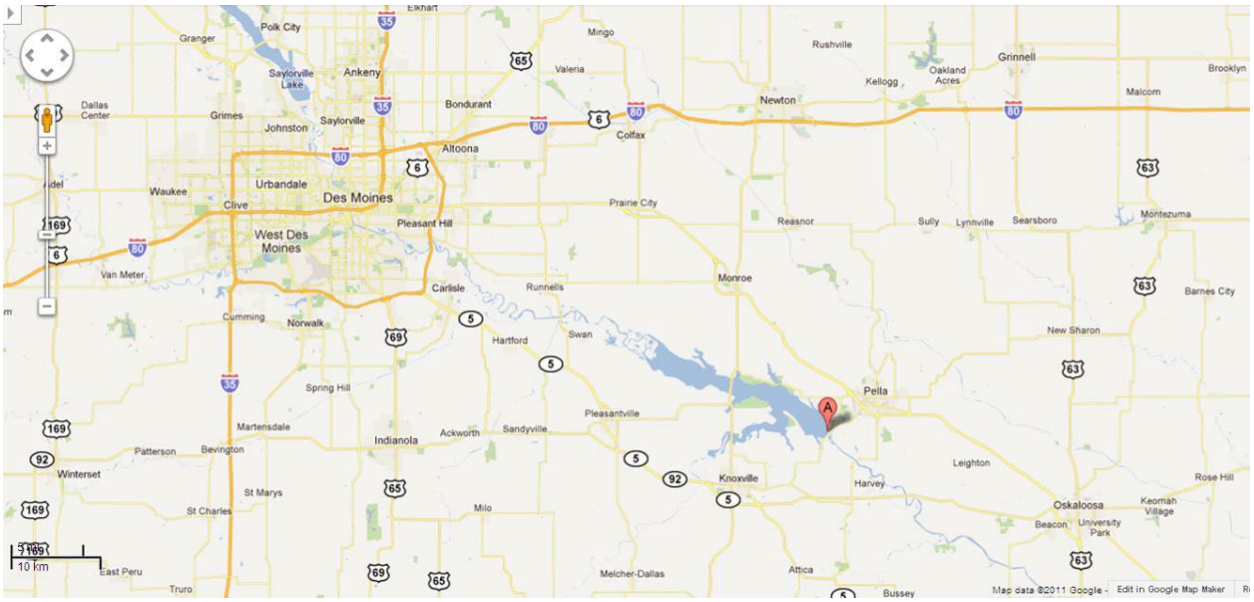


Figure 1. Project Location

The U.S. Army Corps of Engineers (USACE) constructed Red Rock Dam between 1960 and 1969 to impound Lake Red Rock for flood control, recreational, and fish and wildlife purposes. The dam, reservoir, and adjacent land are owned by the United States of America and operated by the Rock Island District of the USACE. The RRHP has been constructed immediately adjacent to the left (northeast) side of the dam's existing concrete spillway (Figure 2).

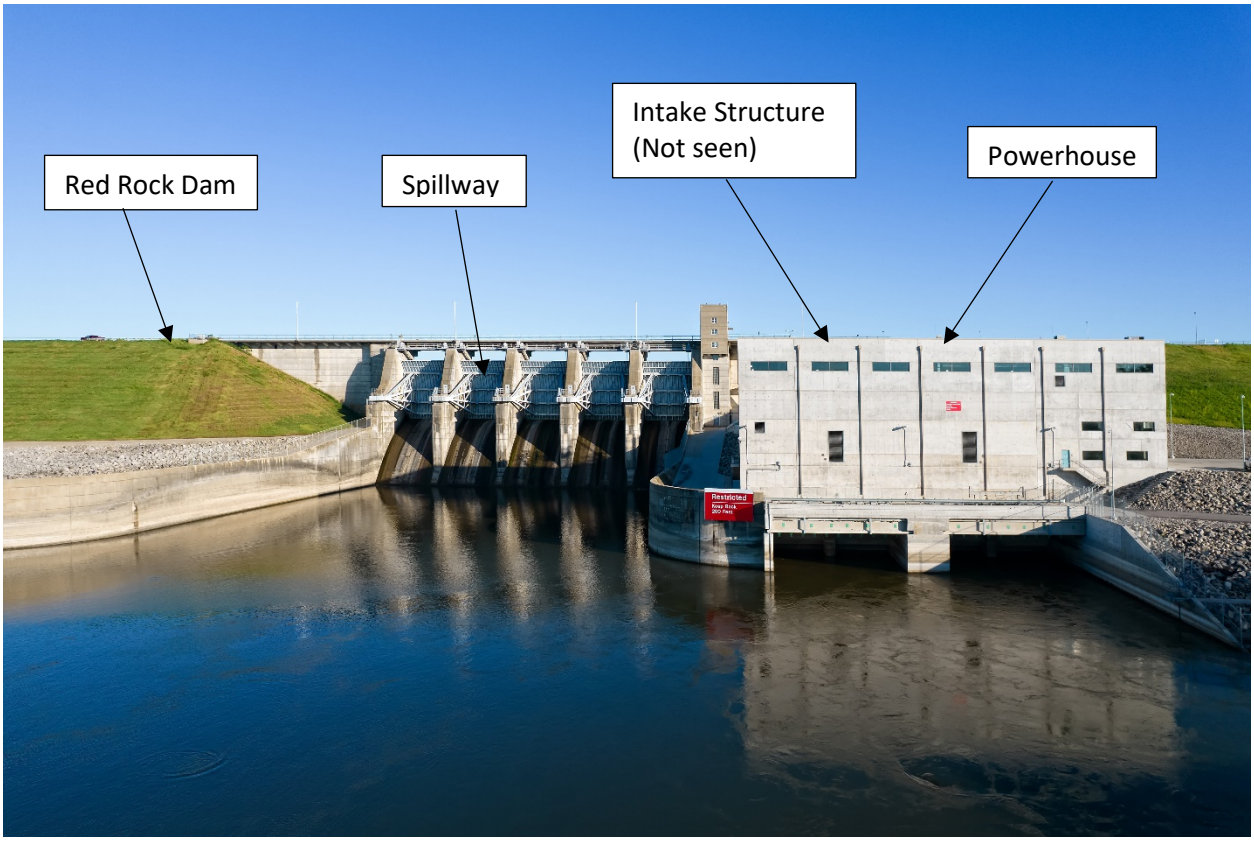


Figure 2. Photo of Project/Identification of Project Parts

The RRHP (FERC No. P12576) is owned by Western Minnesota Municipal Power Agency (WMMPA) as the Licensee of the project. Project operations are conducted by Missouri River Energy Services (MRES), as agent for WMMPA.

1.1 Project Description Existing Red Rock Dam and Reservoir

Red Rock Dam is a composite earthfill and concrete gravity dam with an overall length of 6,260 ft, an embankment base width of about 655 ft, and a height of 110 ft. The crest elevation is approximately El. 797. The dam's center section is comprised of a concrete ogee spillway with five tainter gates and fourteen bottom outlet conduits. Marion County Highway T15 (Highway T15) traverses the length of the dam along the crest.

The dam consists of two earthfill segments with a combined length of 5,676 ft, which are linked by a concrete gravity section that contains the dam's outlet works and spillway. On each side of the spillway is a non-overflow concrete gravity section that extends into the adjoining embankment. Large concrete gravity sections are located on each side of the spillway structure. The concrete gravity section on the northeast side, where the Project is located, consists of three non-overflow monoliths (1, 2, and 3) and one spillway transition monolith (4).

The concrete ogee spillway (crest El. 736.0) is 241-ft long and fitted with five (5) tainter crest gates. The top-of-gate elevation in the closed position is El. 781.0. Fourteen (14) bottom outlet conduits are located within the spillway structure. Each outlet discharges below minimum tailwater to a hydraulic

jump-type stilling basin measuring 241 ft wide and 213.5 ft long. Baffle blocks in the stilling basin are in two rows (staggered), each 12 ft high, 16 ft long, 8 ft wide, and spaced 10 ft apart in each row. The basin floor is at El. 654 ft and the end sill of the basin is at El. 664.

1.2 Project Description Red Rock Hydroelectric Project

RRHP consists of a concrete intake structure, two penstocks, a concrete powerhouse, 69 kV substation, transmission line, and utilities.

The concrete intake structure used to bring water into the project, is founded on concrete pilings and consists of trash racks, emergency closure gates, stoplogs for maintenance purposes, and associated equipment. The emergency closure gates are designed to fail closed under all conditions, including loss of power to the intake structure.

Two penstocks route water from the intake structure through the dam to the powerhouse. Each penstock is entirely buried underground and penetrates two of the concrete monoliths of the original dam. Each penstock incudes a vent shaft located near the intake structure, otherwise access to the penstocks can only be achieved through the powerhouse.

The concrete powerhouse is founded on bedrock and contains two vertical-kaplan turbine generators and associated equipment. The multi-level building includes all equipment necessary to transfer energy from flowing water to electrical energy. Plant and Unit Control systems are located in the powerhouse and control all aspects of water flow through the project and power generation.

Energy produced by the generator(s) is routed to the substation where it is transformed from 13.8 kV to 69 kV before being sent to the electrical grid via the projects transmission line. When not generating, power is supplied to the project from the transmission grid. The approximately 4.5 mile long transmission line consists of above and below ground segments and transmits power generated by the project to the transmission grid at a connection point located in the Pella West Substation (Pella, IA).

Utilities to the project include backup electrical, water, and wastewater which are provided by the City of Pella, IA. Service of the powerhouse from utility connection points takes place through underground cable and pipelines built at the time of project construction. Easements with the USACE ensure proper access for maintenance of the utilities on land owned by the United States and administered by the USACE.

Operation of RRHP is coordinated with the USACE to ensure compliance with the Federal Energy Regulatory Commission (FERC) issued license and related project plans. The USACE controls the timing and quantity of water released through Red Rock Dam and coordinates those releases with MRES staff located in Sioux Falls, SD. Water can be released through the project, and/or through existing dam infrastructure controlled by the USACE.

Table 1. Facility Description Information for the Red Rock Hydroelectric Project

Item	*Information Requested*	*Response (include references to further details)*
Name of the Facility	Facility name (use FERC project name or other legal name)	Red Rock Hydroelectric Project FERC No. P-12576
Reason for applying for LIHI Certification	1. To participate in state RPS program (specify the state and the total MW/MWh associated with that participation (value and % of facility total MW/MWh) 2. To participate in voluntary REC market (e.g., Green-e) 3. To satisfy a direct energy buyer's purchasing requirement 4. To satisfy the facility's own corporate sustainability goals 5. For the facility's corporate marketing purposes 6. Other (describe)	To participate in voluntary REC market.
	If applicable, amount of annual generation (MWh and % of total generation) for which RECs are currently received or are expected to be received upon LIHI Certification	Expected Annual Generation of 178,800 Megawatt-hours.
Location	River name (USGS proper name)	Des Moines River
	Watershed name - Select region, click on the area of interest until the 8-digit HUC number appears. Then identify watershed name and HUC-8 number from the map at: https://water.usgs.gov/wsc/map_index.html	Upper Mississippi; Region 07100008
	Nearest town(s), county(ies), and state(s) to dam	City of Pella; Marion County; Iowa
	River mile of dam above mouth	142.2 Miles
	Geographic latitude and longitude of dam	-92.98062222 & 41.3692000
Facility Owner	Application contact names (Complete the Contact Form in Section B-4 also)	Brent Moeller
	Facility owner company and authorized owner representative name. **For recertifications: If ownership has changed since last certification, provide the effective date of the change.**	Western Minnesota Municipal Power Agency (WMMPA); Austin Hoekman
	FERC licensee company name (if different from owner)	Western Minnesota Municipal Power Agency
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	P-12576 License issued on April 18, 2011 and expires on March 31, 2061 for a duration of 50 years
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified	Major License

Item	*Information Requested*	*Response (include references to further details)*
	conduit", “non-jurisdictional”)	
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	401 Certification; October 28, 2013; State of Iowa, Department of Natural Resources – see Appendix A.7.2
	Hyperlinks to key electronic records on FERC e-library website or other publicly accessible data repositories[2]	FERC License: https://elibrary.ferc.gov/eLibrary/filedownload?fileid=12623528 FERC Environmental Assessment: https://elibrary.ferc.gov/eLibrary/filedownload?fileid=12525342 USACE Water Control Procedure 2019: https://usace.contentdm.oclc.org/utils/getfile/collection/p266001coll1/id/9010 License Amendment, 2013: https://elibrary.ferc.gov/eLibrary/filedownload?fileid=13378488 License Amendment Application, 2013: https://elibrary.ferc.gov/eLibrary/filedownload?fileid=13276050
Powerhouse	Date of initial operation (past or future for pre-operational applications) Total installed capacity (MW) **For recertifications: Indicate if installed capacity has changed since last certification**	Commercial Operation date for Unit 1 was June 11, 2021 and for Unit 2 was May 19, 2021. The FERC authorized installed capacity is 43.13 MW, with a capability of up to 55 MW during high water conditions in the reservoir.
	Average annual generation (MWh) and period of record used **For recertifications: Indicate if average annual generation has changed since last certification**	Expected Annual generation of 178,800 MWh.
	Mode of operation (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.) **For recertifications: Indicate if mode of operation has changed since last certification**	Run of Release as directed by the USACE.
	Number, type, and size of turbine/generators, including maximum and minimum hydraulic capacity and maximum and minimum output of each turbine and generator unit	2 vertical Kaphan turbines: 6,048 cfs Max Hydraulic/each (10,235 cfs maximum plant discharge) 1,200 cfs Min Hydraulic/each

Item	*Information Requested*	*Response (include references to further details)*
		27.45 MW Max Electric/each 3.00 MW Min Electric/each
	Trashrack clear spacing (inches) for each trashrack	3.75" open bar spacing.
	Approach water velocity (ft/s) at each intake if known	2.2 ft/sec
	Dates and types of major equipment upgrades **For recertifications: Indicate only those since last certification**	Not Applicable
	Dates, purpose, and type of any recent operational changes **For recertifications: Indicate only those since last certification**	Not Applicable
	Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments	Not Applicable
Dam or Diversion	Date of original dam or diversion construction and description and dates of subsequent dam or diversion structure modifications	1960 to 1969 was the original dam construction. Hydropower project construction was August 2014 to October 2020.
	Dam or diversion structure length, height including separately the height of any flashboards, inflatable dams, etc. and describe seasonal operation of flashboards and the like	6,260 ft in length and 110 ft in height.
	Spillway maximum hydraulic capacity	104,500 cfs
	Length and type of each penstock and water conveyance structure between the impoundment and powerhouse	Two 230 ft long penstocks between intake structure and powerhouse. The inside diameter of each penstock is 21 ft in dimeter.
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Flood Control
Conduit Facilities Only	Date of conduit construction and primary purpose of conduit	Not Applicable
	Source water	USACE operated Red Rock Lake.
	Receiving water and location of discharge	Lake Red Rock immediately upstream of dam, and the Des Moines River immediately downstream of dam.
Impoundment and Watershed	Authorized maximum and minimum impoundment water surface elevations **For recertifications: Indicate if these values have changed since last certification**	780* to 736* Foot Elevation, NGVD29

Item	*Information Requested*	*Response (include references to further details)*
		*The USACE does not have an authorized maximum or minimum impoundment water surface elevation. See link below for USACE Red Rock Dam regulation instructions. 9010 (oclc.org)
	Normal operating elevations and normal fluctuation range **For recertifications: Indicate if these values have changed since last certification**	Conservation pool is set at 742 Foot Elevation and can be raised during portions of the year. Depending on the year, the reservoir elevation can fluctuate 15 feet or more. See link below for USACE Red Rock Dam regulation instructions. 9010 (oclc.org)
	Gross storage volume and surface area at full pool **For recertifications: Indicate if these values have changed since last certification**	Flood Storage: 1,436,000 Ac-Ft storage 65,500 Ac area
	Usable storage volume and surface area **For recertifications: Indicate if these values have changed since last certification**	Normal Pool: 189,020 Ac-Ft Storage 15,250 Ac area
	Describe requirements related to impoundment inflow and outflow, elevation restrictions (e.g., fluctuation limits, seasonality) up/down ramping and refill rate restrictions.	Not Applicable; USACE dictates water flows and releases. See link below for USACE Red Rock Dam regulation instructions. 9010 (oclc.org)
	Upstream dams by name, ownership and river mile. If FERC licensed or exempt, please provide FERC Project number of these dams. Indicate which upstream dams have downstream fish passage.	Saylorville Lake Reservoir; USACE, 213.7 miles. No upstream fish passage (Asian carp fish barrier).
	Downstream dams by name, ownership, river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	City of Ottumwa Dam; City of Ottumwa; 94.5 miles. No upstream fish passage.
	Operating agreements with upstream or downstream facilities that affect water availability and facility operation	Not Applicable; USACE dictates water flows and releases.
	Area of land (acres) and area of water (acres) inside FERC project boundary or under	31.1 Ac of Federal Lands and 41.8 Ac of Non-Federal Lands, of this 6.5 Ac is in water.

Item	*Information Requested*	*Response (include references to further details)*
	facility control. Indicate locations and acres of flowage rights versus fee-owned property.	
Hydrologic Setting	Average annual flow at the dam, and period of record used.	10,662 cfs; from 1/1/2010 through 12/31/2020.
	Average monthly flows and period of record used	Jan – 5,343; Feb – 4,991; Mar – 10,305; Apr – 14,443; May – 14,863; Jun – 18,570; Jul – 17,774; Aug – 11,380; Sept – 8,522; Oct – 8695; Nov – 5,750 in cfs; and Dec – 6,038 Period: 2010-2020
	Location and name of closest stream gaging stations above and below the facility	Upstream gage: Lake Red Rock Reservoir, 142.3 miles above the mouth of the Des Moines River. Downstream gage: Des Moines River downstream of Lake Red Rock, 141.8 miles above the mouth of the Des Moines River
	Watershed area at the dam (in square miles). Identify if this value is prorated from gage locations and provide the basis for proration calculation.	12,323 $Mile^2$
	Other facility specific hydrologic information (e.g., average hydrograph)	See link below for Des Moines River Basin Master Reservoir Regulation Manual Feasibility Report with Integrated Environmental Assessment, Appendix D – Hydrology and Hydraulics for more information. App D Hydrology and Hydraulics final (oclc.org)
Designated Zones of Effect	Numbers and names of each zone of effect (e.g., Zone 1: Impoundment)	Zone #1, Dam: from the Red Rock Dam downstream to the confluence of English Creek, which is approximately 4.5 river miles downstream to river mile 137.7.
	River mile of upstream and downstream limits of each zone of effect (e.g., Zone 1 Impoundment: RM 6.3 - 5.1)	Zone 1 Dam: RM 142.2 – 137.7.
Pre-Operational Facilities Only		
Expected operational date	Date generation is expected to begin	Commercial operation of the project began on June 11, 2021.

Item	*Information Requested*	*Response (include references to further details)*
Dam, diversion structure or conduit modification	Description of modifications made to a pre-existing conduit, dam or diversion structure needed to accommodate facility generation. This includes installation of flashboards or raising the flashboard height. Date the modification is expected to be completed	Cut two 26' diameter holes into the existing gravity dam concrete monoliths for the penstocks to connect the upstream intake structure to the downstream powerhouse. Modifications were completed in 2020.
Change in water flow regime	Description of any change in impoundment levels, water flows or operations required for new generation	None.

2.0 Standard Matrices

2.1 Tailrace/Downstream Reach

		Alternative Standards				
	Criterion	***1***	***2***	***3***	***4***	***Plus***
A	**Ecological Flow Regimes**	X				
B	**Water Quality**		X			
C	**Upstream Fish Passage**	X				
D	**Downstream Fish Passage**	X				
E	**Watershed and Shoreline Protection**	X				
F	**Threatened and Endangered Species Protection**		X			
G	**Cultural and Historic Resources Protection**	X				
H	**Recreational Resources**		X			X

3.0 Supporting Information

3.1 Ecological Flows Standards: Tailrace/Downstream Reach

Criterion	***Standard***	***Instructions***
A	1	<u>Not Applicable / De Minimis Effect:</u> • Confirm the location of the powerhouse relative to dam/diversion structures and demonstrate that there are no bypassed reaches at the facility. • For run-of-river facilities, provide details on operations and describe how flows, water levels, and operations are monitored to ensure such an operational mode is maintained. In a conduit facility, identify the source waters, location of discharge points, and receiving waters for the conduit system within which the hydropower facility is located. This standard cannot be used for conduits that discharge to a natural waterbody. • For impoundment zones only, explain water management (e.g., fluctuations, ramping, refill rates) and how fish and wildlife habitat within the zone is evaluated and managed. ***NOTE:*** this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.

- As shown in Figure 2, Photograph of Project/Identification of Project Parts, the powerhouse is located adjacent to the existing dam outlet works operated by the USACE. There are no bypassed reaches located at the dam or hydro project.
- Under Article 403 of the License, WMMPA must operate the project in a run-of-release mode meaning that WMMPA shall not deviate from the flow constraints, including flow releases, established by the USACE. If operation of the project causes a deviation from the USACE flow constraints, WMMPA shall notify the FERC as soon as possible, but no later than 10 days after each such incident.
    - Article 404 required WMMPA to file with FERC an Operation Compliance and Monitoring Plan which described how WMMPA will comply with the operational requirements of the License, including the run-of-release mode required by Article 403. A copy of the plan has been included in Appendix A.7.1, and a summary of the plan provisions is as follows:
        - The plant control system will monitor headwater levels, tailwater levels, and turbine discharges. Data will be received by the plant control system from two level transmitters (one for headwater and one for tailwater), and Winter-Kennedy pressure taps in the spiral case for turbine flows. All data received by the plant control system will be captured by Historical Data Management (HDM) software for collecting, storing, and reporting historical operating data.
        - Deviations from run-of-release operations are to be reported to the USACE and FERC.

        - A summary report of annual monitoring and operational data for the project is to be submitted to the Iowa Department of Natural Resources (IDNR), U.S. Fish and Wildlife Service (USFWS), USACE, and FERC each year.
    - Specific operating procedures are described in detail in the Memorandum of Agreement for Operations between the USACE and WMMPA.
- The Tailrace/Downstream Reach is not an impoundment ZOE.

3.2 Water Quality Standards: Tailrace/Downstream Reach

Criterion	***Standard***	***Instructions***
B	2	<u>Agency Recommendation:</u> • Provide a copy of the most recent Water Quality Certificate and any subsequent amendments, including the date(s) of issuance. If more than 10 years old, provide documentation that the certification terms and conditions remain valid and in effect for the facility (e.g., a letter from the agency). • Identify any other agency recommendations related to water quality and explain their scientific or technical basis. • Describe all compliance activities related to water quality and any agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

- This reach of the Des Moines River and Lake Red Rock are designated as Class A1 Primary contact recreational use. These waters in which recreational or other uses may result in prolonged and direct contact with the water, involving considerable risk of ingesting water in quantities sufficient to pose a health hazard. This reach of the Des Moines River and Lake Red Rock are also designated as Class B (WW-1) which are waters in which temperature, flow and other habitat characteristics are suitable to maintain warm water game fish populations along with a resident aquatic community that includes a variety of native nongame fish and invertebrate species. This reach of the Des Moines River and Lake Red Rock are also designated as Class HH, human health, which are waters in which fish are routinely harvested for human consumption or waters both designated as a drinking water supply and in which fish are routinely harvested for human consumption. All surface waters in Iowa, including wetlands and those designated for Class "A", "B", and/or "C" are classified for the following general uses: livestock and wildlife watering, noncontact recreation, crop irrigation, industrial, agricultural, domestic, and other incidental withdrawal uses. See link below for an interactive map of Iowa's impaired waters. This reach of the Des Monies River and Lake Red Rock are not included on the state's section 303(d) list of impaired waters.
    - ADBNet - 2020 Impaired Waters Map DRAFT (iowadnr.gov)
- A copy of the Section 401 Water Quality Certification issued by the IDNR on October 28, 2013 has been included in Appendix A.7.2.
- All agency recommendations for water quality are included in the 401 Water Quality Certification, the Water Quality Protection and Monitoring Plan, and the FERC License.

- In accordance with the documents listed above, WMMPA monitors Dissolved Oxygen (DO) levels in the projects tailrace between May 1st and October 31st of each year. Continuous monitoring during that timeframe is accomplished by DO probes located in the tailrace which collect DO and temperature measurements which are transmitted to the plant control system. All data collected is stored in the HDM for future reporting. An alarm is setup in the plant control system to notify plant operators in the event that DO levels in the projects tailrace approach 5 mg/L. Should this occur, operators will open the valves to the bypass piping and discharge water through the bypass system to a manifold located under the tailrace bridge. Water will be discharged from the nozzles in the manifold to the tailrace causing aeration of the water existing the powerhouse and augmentation of DO levels. Should discharge of water through the bypass system fail to keep the DO level of water exiting the powerhouse above the state required minimum of 5 mg/L, project operations would be temporarily suspended until such time that operations can resume and maintain DO levels above the state minimum standard.
- In addition to the aforementioned DO mitigation strategy, provisions have been included in the turbine design to allow compressed air to be discharged from the turbines in order to augment DO. Should project operations become severally impacted by low DO levels in the tailrace, air compressors will be purchased and installed to place this system into operations.

3.3 Upstream Fish Passage Standards: Tailrace/Downstream Reach

Criterion	***Standard***	***Instructions***
C	1	<u>Not Applicable / De Minimis Effect:</u> • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no facility barrier to further upstream movement. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is not or was not the cause of the extirpation.

- The following summary from the FERC Environmental Assessment issued for the project described the fishery of the Des Moines River and Lake Red Rock.
  - Formation of the Red Rock Reservoir in 1969 transformed the fishery of the reach impounded by the project from a riverine fishery composed mainly of carp, river carpsucker, and channel catfish, to a more lacustrine fishery. In the license application, CRD (preceded WMMPA as Licensee) identified 37 species representing 15 families in the Des Moines River near Ottumwa, Iowa, about 45 miles southeast of Red Rock Dam.
  - The IDNR identified walleye, northern pike, largemouth bass, smallmouth bass, hybrid striped bass (wiper), white bass, white crappie, black crappie, flathead catfish, and channel catfish as valued sport fish in the Red Rock Reservoir. Currently, the game fish population is stable and the IDNR has no plans for new stocking programs. However,

IDNR plans to continue on-going stocking programs at Red Rock Reservoir for wiper and walleye. Typically 10 million walleye fry are stocked each year. Although game fish in the Red Rock Reservoir are vulnerable to flushing through the spillway, fish that are attracted to rock habitat, like small mouth bass and flathead catfish, are especially susceptible to flushing through the spillway. The cause for fish being flushed through the spillway occurs when the spawning seasons are concurrent with large spillway flows, because of the tendency for some species to use the submerged rock portion of the dam face as a spawning habitat.

- There is a significant sport fishery composed of white bass, walleye, channel catfish, black crappie, white crappie, freshwater drum, and carp in the tailrace of Red Rock Dam. The tailrace is easily accessible for shore anglers. There is a boat ramp about a half mile below the Red Rock Dam. A creel survey conducted by the IDNR in 2000-2001 shows that an estimated 14,433 anglers harvested of 44,500 fish in 2000 and 17,376 anglers harvested over 51,500 fish in 2001. The top species creeled were white bass, walleye, channel catfish, black crappie, white crappie, freshwater drum, and carp. These seven species comprised of 99 percent of the numerical harvest.
- Two of the species known to inhabit the Des Moines River (paddlefish and shovelnose sturgeon), typically exist only below the nearby Ottumwa Dam but are capable of traveling upstream to the Red Rock tailrace during significant flood events. The Ottumwa Dam is otherwise a barrier to upstream fish migration on the Des Moines River. In years without major flooding events, fish are unable to move beyond this dam, which has caused upstream migration from the Mississippi and lower Des Moines rivers to be impossible. The majority of fish below Red Rock Dam either resides between the spillway and the Ottumwa Dam or migrates downstream to the river, below the Ottumwa Dam.

- The Red Rock Dam is a barrier to upstream migrating fish. As the proliferation of Asian Carp has occurred in recent decades, the Red Rock Dam has served as an important barrier to the migration of this invasive species into the upper reached of the Des Moines River. Construction of the RRHP had no change in the effectiveness of the Red Rock Dam as a barrier to Asian Carp.

3.4 Downstream Fish Passage Standards: Tailrace/Downstream Reach

Criterion	***Standard***	***Instructions***
C	1	<u>Not Applicable / De Minimis Effect:</u> • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no facility barrier to further upstream movement. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is not or was not the cause of the extirpation.

- Operation of the RRHP does prevent larger fish from migrating downstream due to the 3.75 inch spacing on the bars of the trashrack. However, smaller fish can successfully migrate downstream through the project. The following summary from the FERC issued Environmental Assessment considers fish mortality through the project based on previous study at an existing hydroelectric project.
    - At Wisconsin hydroelectric project where entrainment studies have been conducted, small fish (less than 4 inches long) accounted for 79 percent of fish entrained during the field studies (Electric Power Research Institute, or EPRI, 1997). Some of these small fish species could be surrogates for fish species at the Red Rock project. Due to their small size, the vast majority of small fish from the study survived turbine passage into downstream aquatic habitats. The survival of these smaller fish was relatively high, because they were less prone to mechanical injury from turbine passage than larger fish. Smaller fish also are less prone to injury resulting from shear stresses and rapid pressure changes. Trends in turbine passage survival at hydroelectric projects with Kaplan and Francis turbines predict average survival rates on the order of 95 percent for small and moderate-sized fish and 88 percent for larger fish (EPRI, 1997).
- Based on the analysis presented in the Environmental Assessment, FERC concluded that the overall effect on the fishery due to entrainment and/or mortality would likely be minimum for the Red Rock Reservoir fish population.

3.5 Shoreline and Watershed Protection Standards: Tailrace/Downstream Reach

Criterion	***Standard***	***Instructions***
E	1	<u>Not Applicable / De Minimis Effect:</u> • If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary, and absence of critical habitat for protected species). • Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.

- The project lands within the FERC project boundary consist of maintained grass/lawn, rirprap shoreline with sidewalks for fishing access, USACE dam infrastructure, and public right-of-way (transmission line). Adjacent to the project boundary is the North Tailwater Recreation Area with fish cleaning stations, restrooms, picnic shelters, playground, and parking. Across the river, the South Tailwater Recreation Area has similar amenities.
- No shoreline management plans exist for the RRHP.

3.6 Threatened and Endangered Species Protection: Tailrace/Downstream Reach

Criterion	*Standard*	*Instructions*
F	2	<u>Finding of No Negative Effects:</u> • Identify all federal and state listed species that are or may be in the immediate facility area based on current data from the appropriate state and federal natural resource management agencies. • Provide documentation that there is no demonstrable negative effect of the facility on any listed species in the area from an appropriate natural resource management agency or provide documentation that habitat for the species does not exist within the ZoE or is not impacted by facility operations.

- The following summary from the FERC Environmental Assessment describes the threatened and endangered species considered during evaluation of the project.
    - In its Scoping Document issued on October 29, 2009, Commission staff identified three federally listed species that could potentially use the project area: the endangered Indiana Bat (*Myotis sodalist*), the threatened western prairie fringed orchid (*Platanthera leucophaea*), and the prairie bush clover (*Lespedeza leptostachya*). Staff eliminated the western prairie fringed orchid and the prairie bush clover from detailed analysis in this EA due to the lack of suitable habitat within the proposed project boundary. Based on our assessment of vegetation at the project, potential suitable habitat may only be present for the Indiana bat.
- Under Article 407 of the License, WMMPA was required to file with FERC a report documenting the results of its findings regarding the presence of Indiana bat habitat within the transmission line corridor and documenting consultation with the National Resource Conservation Service (NRCS) on WMMPA's findings. If potential Indiana bat habitat existed, WMMPA would include an Indian Bat Protection Plan for FERC approval. The plan was to be prepared in consultation with the USFWS, IDNR, and NRCS.
    - Results of the Indiana Bat Habitat Assessment found four potential areas of Indiana bat habitat. Three areas were found near the route of the proposed transmission line, and one was found near the proposed utility lines. Due to the findings, an Indiana Bat Protection Plan was created in consultation with the two of the three required agencies. When contacted, the NRCS informed WMMPA that it would not participate in the process.
    - The Indiana Bat Protection Plan was approved by FERC on April 25, 2013 and the protection of Indiana bat habitat during the Indiana bat maternity season.
    - A copy of the Indiana Bat Protection Plan is included in Appendix A.7.3.
    - None of the four potential areas of Indiana bat habitat were disturbed by construction activities, nor are they being disturbed by operations.
- Under Article 406 of the License, WMMPA was required to file with FERC for approval, an Avian Protection Plan to protect birds from collision hazards and electrocution that may be caused by above-ground portions of the project's transmission line. The plan was to include provisions for

implementing site-specific practices to reduce the potential for adverse effects on bald eagles and other birds in accordance with Avian Power Line Interaction Committee (APLIC) guidelines and suggested practices. WMMPA consulted with the USFWS, USACE, and IDNR on the plan, and implemented comments received from the agencies into the final plan which was approved by FERC.

  - The plan identified the type and location of bird diverters that were installed on the project's transmission line.
  - The plan also specified the use of perch guards where spacing of conductors on the distribution underbuild sections of the line in accordance with APLIC standards.
  - A copy of the Avian Protection Plan is included in Appendix A.7.4.

- Through consultation with the USFWS on the Avian Protection Plan, it was determined that a Non-Purposeful Take Permit for Bald Eagles was required. This permit was received on March 24, 2013. The permit addressed the possibility disturbance or non-purposeful take associated with project construction, along with inspections and logging of eagle activities in and immediately around the projects boundary.
  - No eagles were disturbed or taken during construction of the project.

3.7 Cultural and Historic Resources Protection: Tailrace/Downstream Reach

Criterion	***Standard***	***Instructions***
G	1	<u>Not Applicable / De Minimis Effect:</u> • Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility; or • Document that the facility construction and operation have not in the past, nor currently adversely affect any cultural or historic resources that are present on facility lands.

- By letter dated September 10, 2010, the State Historical Society of Iowa concurred with FERC's determination that no historic properties will be affected by construction of the project.

3.8 Recreational Resources: Tailrace/Downstream Reach

Criterion	***Standard***	***Instructions***
H	2	<u>Agency Recommendation:</u> • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

Criterion	*Standard*	*Instructions*
H	PLUS	Bonus Activities: • Document any new public recreational opportunities that have been created on facility lands or waters beyond those required by agencies (e.g., campgrounds, whitewater parks, boating access facilities and trails). • Document that such new recreational opportunities did not create unmitigated impacts to other resources.

- Early in development of the project, WMMPA and the USACE recognized that public access to the North Tailwater Recreation Area could not be maintained during construction of the project due to safety risks to the public. As such, WMMPA agreed to the construction of recreation amenities at other locations around Lake Red Rock to offset the temporary impacts to the public that closing of the North Tailwater Recreation Area would impose. These recreation amenities are described in detail in the Recreation Mitigation Plan (see Appendix A.7.5 for a copy of the plan)created by WMMPA and approved by the USACE. As described by the plan, the following amenities were constructed prior to the temporary closure of the North Tailwater Area. Pictures of some of the amenities have been included at the end of this section.
    - At the South Tailwater Area
        - Picnic Shelter
        - Playground
        - Fish Cleaning Station
        - Additional Parking Spaces
    - Robert's Creek Trailhead
        - Restroom
        - Picnic Shelter
        - Parking Lot
        - Kiosk
    - Cordova Park
        - Large Event Shelter
    - Bike Trail
        - Added approximately 7,000 ft of new bike trail to existing trail system.
- This was an investment of approximately $2 million made by WMMPA into the local area just for outdoor recreation amenities.
- The North Tailwater Recreation Area reopened to the public upon completion of project construction.
- During construction, the General Contractor requested to use the North Overlook Area for staging of equipment and materials for the project during non-summer months. The contractor agreed to install a new restroom and sidewalk, repave the parking lot, and restripe the parking lot to offset any impacts of the temporary closure to the public.
- Under Article 405 of the License, WMMPA was required to submit for FERC approval, a Fishing Access Design and Management Plan to address the design, construction, and maintenance of fishing access facilities located in the project's tailrace that would improve public fishing access to the Des Moines River downstream of the dam.

- The plan was approved by FERC on April 7, 2014 and the fishing access facility was constructed in parallel with construction of the project. The facility was opened to the public when the USACE reopened the North Tailwater Recreation Area.
- A copy of the plan is included in Appendix A.7.6.

Figure 3. South Tail-Water Picnic Shelter

Figure 4. Roberts Creek Trailhead

Figure 5. Cordova Park Picnic Shelter

4.0 Contacts Form

4.1 Applicant-Related Contacts

Facility Owner:	
Name and Title	Brent A. Moeller, P.E.; Director of Generation Resources
Company	Western Minnesota Municipal Power Agency
Phone	605-330-6969
Email Address	Brent.moeller@mrenrgy.com
Mailing Address	3724 W Avera Drive, Sioux Falls, SD 57109-8920
Facility Operator (if different from Owner):	
Name and Title	Brent A. Moeller, P.E.; Director of Generation Resources
Company	Missouri River Energy Services
Phone	605-330-6969
Email Address	Brent.moeller@mrenergy.com
Mailing Address	3724 W Avera Drive, Sioux Falls, SD 57109-8920
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Austin Hoekman, P.E.; Director of Operations
Company	Missouri River Energy Services
Phone	605-330-330-4888
Email Address	Austin.hoekman@mrenergy.com
Mailing Address	3724 W Avera Drive, Sioux Falls, SD 57109-8920
Party responsible for accounts payable:	
Name and Title	Pauline Roberts; Senior Accountant
Company	Missouri River Energy Services
Phone	605-330-6959
Email Address	Pauline.roberts@mrenergy.com
Mailing Address	3724 W Avera Drive, Sioux Falls, SD 57109-8920

4.2 Current and relevant state, federal and tribal resource agency contacts.

Agency Contact		***Area of Responsibility***
Agency Name	Federal Energy Regulatory Commission	_X_ Flows _X_ Water Quality _X_ Fish/Wildlife ___ Watershed _X_ T&E Species _X_ Cultural/Historic _X_ Recreation
Name and Title	John Zygaj, Regional Engineer	
Phone	312-596-4437	
Email address	John.zygaj@ferc.gov	
Mailing Address	230 South Dearborn Street Room 3130 Chicago, IL 60604	
Agency Contact		***Area of Responsibility***
Agency Name	U.S. Army Corps of Engineers	_X_ Flows ___ Water Quality ___ Fish/Wildlife _X_ Watershed ___ T&E Species ___ Cultural/Historic _X_ Recreation
Name and Title	James Bartek, Hydropower Coordinator	
Phone	309-794-5599	
Email address	James.w.bartek@usace.army.mil	
Mailing Address	Clock Tower Building 1500 Rock Island Drive Rock Island, IL 61201	
Agency Contact		***Area of Responsibility***
Agency Name	U.S. Fish and Wildlife Service	___ Flows _X_ Water Quality ___ Fish/Wildlife ___ Watershed _X_ T&E Species ___ Cultural/Historic ___ Recreation
Name and Title	Kraig McPeek,	
Phone	309-757-5800 ext. 202	
Email address	Kraig_mcpeek@fws.gov	
Mailing Address	USFWS 1511 47th Ave Moline, IL 61265	
Agency Contact		***Area of Responsibility***
Agency Name	Iowa Department of Natural Resources	___ Flows _X_ Water Quality ___ Fish/Wildlife ___ Watershed ___ T&E Species ___ Cultural/Historic ___ Recreation
Name and Title	Joe Larscheid, Fisheries Bureau Chief	
Phone	515-725-8200	
Email address	Joe.larscheid@dnr.iowa.gov	
Mailing Address	IA Dept. of Natural Resources 503 E 9th St Des Moines, IA 50319-0034	

Sworn Statement and Waiver Form

All applications for LIHI Certification must include the following sworn statement before they can be reviewed by LIHI:

SWORN STATEMENT

As an Authorized Representative of Missouri River Energy Services, the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's certification program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The Undersigned further acknowledges that if LIHI Certification of the applying facility is granted, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified®.

The Undersigned further agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's certification program.

FOR PRE-OPERATIONAL CERTIFICATIONS:

The Undersigned acknowledges that LIHI may suspend or revoke the LIHI Certification should the impacts of the facility, once operational, fail to comply with the LIHI program requirements.

Company Name: Missouri River Energy Services

Authorized Representative:

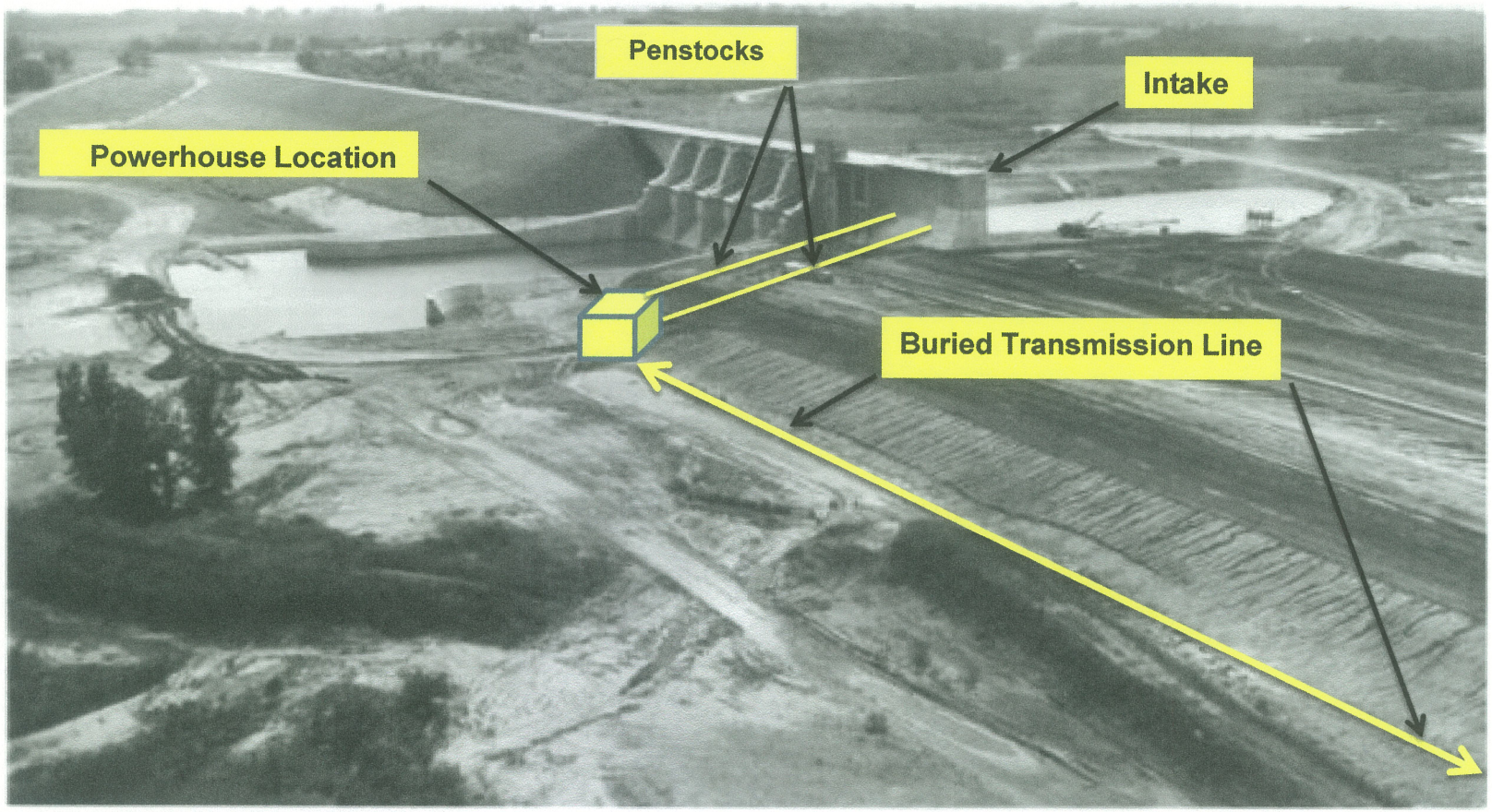
Name: Austin Hoekman

Title: Director of Operations

Authorized Signature: Austin G. Hoekman

Date: 7/8/2021

6.0 Appendix A, Project Photo’s and ZOE



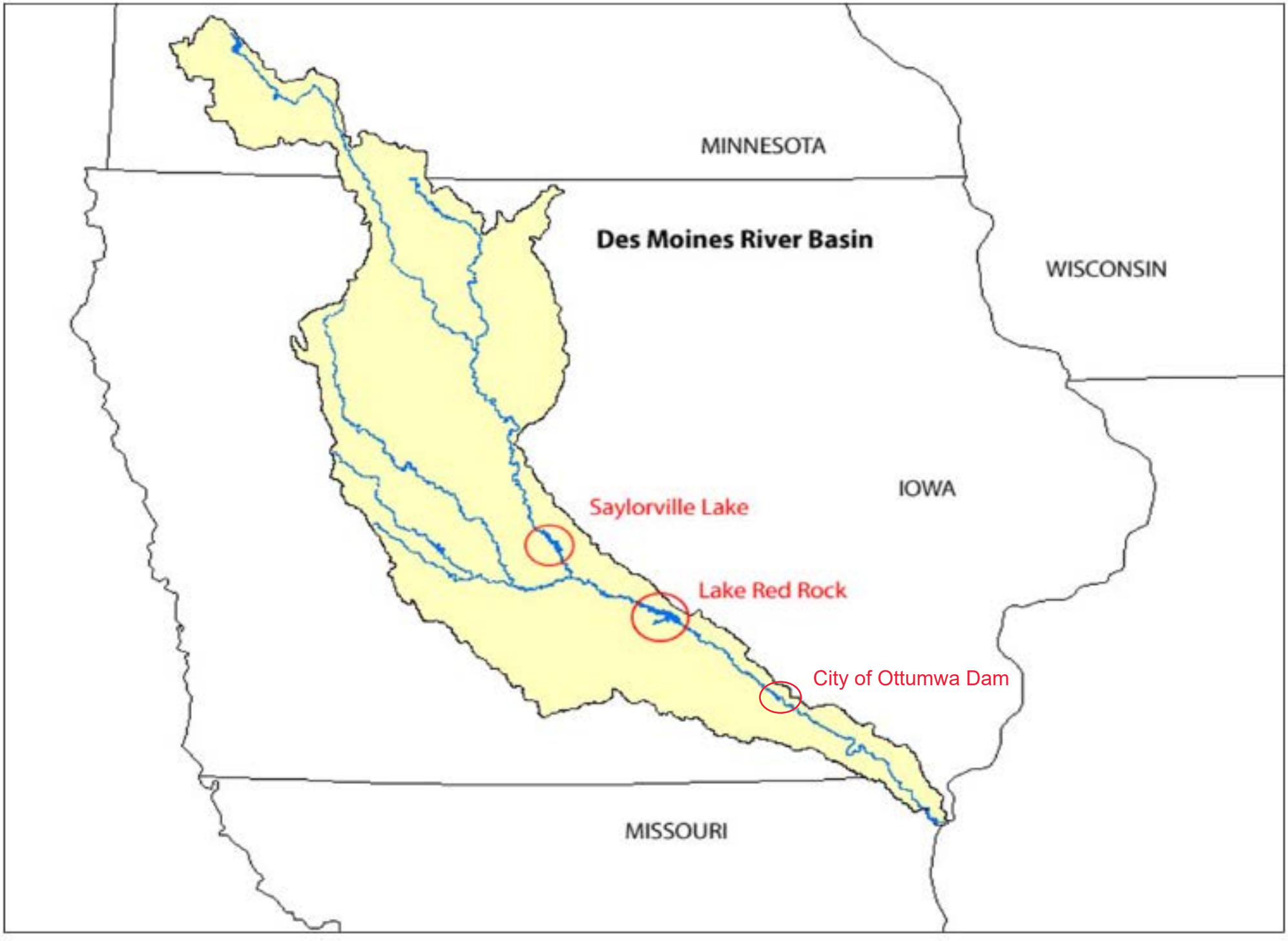
ROCK ISLAND DISTRICT. CORPS OF ENGINEERS, U. S. ARMY. ROCK ISLAND, ILLINOIS.

Construction of Dam - Stage III, Red Rock Reservoir, Des Moines River, Iowa. Contractor: Wm. A. Smith Contr. Company, Inc., 1401 Fairfax Trafficway, Kansas City, Kansas. Contract No.: DA-11-117-CIVENG-66-348, dated 18 January 1966. Funds: 96X3122, Construction General.

Aerial view looking West across valley.

2179 5 July 1967

FIGURE 1


MINNESOTA
Des Moines River Basin
WISCONSIN
IOWA
Saylorville Lake
Lake Red Rock
City of Ottumwa Dam
MISSOURI


Red Rock Dam
Zone of Effect 1 -
Tailrace/Downstream Reach
Durham
Harvey
Google Earth
©2020 Google
N
2 mi

7.0 Appendix A, Reference Documents

- 7.1 Operation Compliance and Monitoring Plan
- 7.2 401 Water Quality Certification
- 7.3 Indiana Bat Protection Plan
- 7.4 Avian Protection Plan
- 7.5 Recreation Mitigation Plan
- 7.6 Fishing Access Design and Management Plan

MISSOURI RIVER® ENERGY SERVICES

3724 West Avera Drive
PO Box 88920
Sioux Falls, SD 57109-8920
Telephone: 605.338.4042
Fax: 605.978.9360
www.mrenergy.com

August 3, 2020

Letter No. F-MRES-FERC-1592
Submitted by eFile

Federal Energy Regulatory Commission
Attention: John Zygaj
230 S Dearborn St., Suite 3130
Chicago, IL 60604

Reference: Submittal of Revision to the Operations Compliance Monitoring Plan. Red Rock Hydroelectric Project FERC License P-12576

Dear Mr. Zygaj,

Attached is the revised Operations Compliance Monitoring Plan for the Red Rock Hydroelectric Project that captures the one comment from the April 30, 2020, FERC Order approving the Plan for your information and records.

Feel free to contact me at 605-330-6969 or at brent.moeller@mrenergy.com should you have any questions.

Respectfully,

Brent A Moeller

Brent A. Moeller, P.E.
Director of Generation Resources
Missouri River Energy Services
Agent for Western Minnesota Municipal Power Agency

Enclosed:
Operations Compliance Monitoring Plan, Revision August 2020

c: Thomas Andrews (MWH)
USACE (ProjectWise)

RED ROCK HYDROELECTRIC PROJECT

FERC Project No. 12576

OPERATIONS COMPLIANCE MONITORING PLAN
License Article 404

PELLA, IOWA

Western Minnesota Municipal Power Agency (WMMPA)
Missouri River Energy Services (MRES)

Revision
August 2020

Prepared by:

Western Minnesota
Municipal Power Agency

COMPLIANCE MONITORING PLAN

TABLE OF CONTENTS

ATTACHMENT(S):

1.0 INTRODUCTION

On April 18, 2011, the Federal Energy Regulatory FERC (Commission) issued an original license (License), to CRD Hydroelectric LLC (CRD), to construct, operate and maintain the Red Rock Hydroelectric Project (Project), FERC Project No. 12576. On January 19, 2012, the Commission approved the transfer of the license from CRD to Western Minnesota Municipal Power Agency (Licensee). The Licensee has designated Missouri River Energy Services (MRES) as its duly authorized agent to operate and maintain the Project. When constructed, the Project will be located on the Des Moines River at the existing U.S. Army Corps of Engineers (Corps) Lake Red Rock Dam approximately 142.9 miles upstream from its confluence with the Mississippi River. The Red Rock Dam is one of two Corps dams on the Des Moines River, the other being Saylorville Dam located approximately 70 miles upstream from Lake Red Rock Dam. The Project is located entirely within Marion County, Iowa with the closest cities being Pella to the northeast and Knoxville to the southwest.

Pursuant to Article 403 of the Red Rock License, the Project will be operated in run-of-release mode in accordance with the Operating Memorandum of Agreement (MOA) between the Licensee and the Corps, and in accordance with the Corps Water Control Manual for the Des Moines River basin. Project operation will be coordinated with the Corps operation of the Red Rock Dam gates to maintain flood control and other congressionally authorized purposes. The Corps maintains the reservoir at a conservation pool elevation between 741.5 feet and 743.0 feet NGVD from March 1st thru August 31st and a conservation pool elevation between 741.5 feet and 747.0 feet NGVD from September 1st and March 1st under normal conditions. Additionally, the Corps maintains a minimum flow discharge of 300 cubic feet per second (cfs) into the Des Moines River to maintain downstream water quality. The Red Rock Dam has five tainter gates and fourteen sluice gates. Under normal conditions, the Corps releases water through the sluice gates first and through the tainter gates for higher discharges. The powerhouse at Red Rock Dam will discharge through the two generating units (design discharge of 10,235 cfs) and the turbine bypass system (maximum discharge of 300 cfs), which are operated by the Licensee.

Upon Commission approval, the Project will be executed in a manner so as to comply with all License articles and appropriate federal and state rules, guidelines and regulations. The requirements of License Article 403 (run-of-release operating mode) will be met throughout the

duration of the Project. This Plan outlines the Article 404 (operations compliance monitoring plan) License requirements and measures to be taken to meet the run-of-release operation mode requirements.

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2.0 ARTICLE 404 REQUIREMENTS

The Commission requires that, at least 90 days before the start of project operation, the Licensee shall file with the Commission, for approval, an Operations Compliance Monitoring Plan that describes how the Licensee will comply with the operational requirements of the FERC license. Article 404 of the License states that the Operation Compliance Monitoring Plan shall include, but not necessarily be limited to, the following:

(1) Provisions to monitor compliance with the run-of-release mode of operation required by Article 403;

(2) a description of the exact location of all gages and/or measuring devices, or techniques that would be used to monitor compliance; the procedures for maintaining and calibrating monitoring equipment; the frequency of recording for each gage and/or measuring device; the protocols or methods to be used for reporting the monitoring data to the Commission; and a monitoring schedule;

(3) a provision to maintain a log of project operations; and

(4) an implementation schedule.

The licensee shall prepare the plan after consultation with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and the Iowa Department of Natural Resources. The licensee shall include with the plan, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Project operation shall not begin until the licensee is notified by the Commission that the plan is approved. Upon

Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 403 of the License, which is reference by Article 404, states:

The licensee shall operate the project in a run-of-release mode meaning that the licensee shall not deviate from the flow constraints, including flow releases, established by the U.S. Army Corps of Engineers (Corps) at the dam. If operation of the project causes a deviation from the Corps' flow constraints, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

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3.0 PROJECT OPERATION

3.1 Red Rock Hydroelectric Project Operation

Article 404 of the Red Rock Project license requires that the Licensee provide the Commission with a plan describing what gages and/or measuring devices, as well as the requisite maintenance and calibration procedures employed, to verify run-of-release operation. This Plan will be used to operate the Project as required by the License, and within the constraints required by the Corps.

In compliance with License Article 403, the Licensee will operate the Project in a run-of- release mode meaning and will adhere to the flow constraints, including flow releases, established by the Corps, Rock Island District. Operation of the Project will be subordinate to the authorized purposes of the Corps dam. Flow releases at the Red Rock Dam will be controlled by the Corps in accordance with the MOA and the Water Control Manual for the Des Moines Basin and will be allocated by the Corps for passage through the powerhouse. The Licensee and Corps will jointly develop comprehensive communication and coordination procedures and protocols so that the permitted flow allowance information for the Project operation is quickly and accurately transferred.

The Project generating units will be operated between its minimum hydraulic capacity of 800 cfs and its maximum hydraulic capacity of 10,235 cfs. The flow that is permitted to be passed through the dam will be dictated by the Corps. The Licensee will then program the flow value permitted by the Corps into the control system for the power plant, which will then establish the set points for one or more of the units based upon programmed logic to achieve the optimal generating output for that given flow.

Run-of-release operation may be temporarily modified if required by operating emergencies beyond the control of the Licensee or as directed by the Corps to accommodate the authorized purpose for the Corps facilities. If the flow is modified outside the tolerance stipulated in the MOA, the Licensee will notify the Corps (if they did not order the modification) as soon as the modification is identified and the Commission no later than 10 days after each such incident.

3.2 Corps Red Rock Dam Operation

The Corps operates the Red Rock Dam as a flood control facility. Outflows are controlled principally by operation of the 14 sluice gates and 5 tainter gates by the Corps, as well as turbine discharges and the operation of the turbine bypass system by the Licensee.

The Corps operates the Lake Red Rock gates in accordance with the standing instructions provided to them by the reservoir forecaster, Water Control Section, Hydrology and Hydraulics Branch of the Corps, Rock Island District. The reservoir forecaster will analyze the hydrologic data and issue instructions to the reservoir operations manager for all gate operations. These instructions are furnished by email or telephone. Under emergency conditions, the reservoir manager will operate the gates in accordance with the Corps standing instructions based on the following four conditions (Regulation Schedule):

a. Normal Operation – Schedule A (Pool is above 741.5 and below 770)
b. Large Magnitude Flood Operation – Schedule B (Above 770)
c. Inflow Less than 300 cfs – Schedule C (Below 734)
d. Flash Flood Operations – Schedule D (Above 741.5 and Below 760)

An "emergency" exists when communication cannot be established between the reservoir operations manager and the Water Control Section. In this case, the reservoir operations manager will follow the Corps Regulation Schedule. The communication protocol for adjusting flows through the dam between the Corps and Licensee is discussed in the MOA.

Attachments 1, 2, 3 and 4 shows the Corps headwater and tailwater rating curves for the Project.

Operation of the Project will provide an additional facility that can be used to discharge flow, but will not change the manner in which the Corps maintains run-of-release operation. The Corps will continue to be responsible for determining the flows required to maintain run-of-release operations. The Licensee will coordinate with the Corps who will establish the flow that is available to be discharged through the dam and the Licensee will use the available flow to operate the hydropower plant. At low flows and flows in excess of the maximum plant discharge, the Licensee will evaluate the plant operating characteristics, will determine the amount of the flow

that can be used by the hydropower Project, and will inform the Corps of the amount of flow that it will use. The Licensee will also notify the Corps when a generating unit is out of service and the maximum plant discharge is reduced. The Licensee will then continuously monitor its plant discharge and will keep the Corps informed of any changes in plant flow in accordance with the MOA between the Licensee and the Corps.

Project operation will result in a change in location of releases. Currently, under normal operations, all discharges are released through the dam sluice gates. With the Project in place, discharges may also be released from the powerhouse. At river discharges less than the powerhouse maximum capacity of approximately 10,235 cfs, the flow will be released through the Project tailrace except for the gate leakage during normal operations. Leakage through the dam gate seals is released along the length of the gated portion of the spillway. Gate leakage flows cannot be readily computed and likely varies with the season, maintenance of the gates, debris loads in the river, etc.

Should the units be unexpectedly offline for any reason (load rejection, transmission line trip, etc.), the turbine bypass system consisting of valves, piping and discharge nozzles have been installed in the powerhouse and below the tailrace bridge deck to provide a minimum discharge to the tailrace of 300 cfs. The Licensee will, within the timeframe specified in the MOA, notify the Corps in the event that the turbine bypass system operates as the result of load rejection or transmission line trip.

If water quality monitoring in the tailrace indicate low dissolved oxygen, the turbine bypass control valve can be opened manually to provide additional aeration to the tailrace for dissolved oxygen augmentation. The total discharge from the generating units and turbine bypass system will conform to the total flow allocated by the Corps to pass through the powerhouse.

3.3 Red Rock Hydroelectric Project Regulating and Operating Plan (Article 310)

On December 16, 2013, the Commission issued Order Approving Regulating and Operating Plan under Article 310 submitted by WMMPA.

3.4 Red Rock Hydroelectric Project Water Quality Protection and Monitoring Plan (Article 402)

On November 8, 2013, the Commission issued Order Modifying and Approving Water Quality Protection and Monitoring Plan Under Article 402 submitted by WMMPA.

3.5 Red Rock Hydroelectric Project Fishing Access Design and Management Plan (Article 405)

On April 7, 2014, the Commission issued Order Approving Fishing Access Design and Management Plan under Article 405 submitted by WMMPA.

3.6 Red Rock Hydroelectric Project Avian Protection Plan (Article 406)

On July 18, 2013, the Commission issued Order Approving Avian Protection Plan under Article 406 submitted by WMMPA.

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4.0 INSTRUMENTATION AND MONITORING

4.1 Red Rock Dam

The Corps currently monitors the elevation of Lake Red Rock with instruments within of the dam. Stream flow is computed by the U.S. Geological Survey (USGS) and the Corps, based on water levels recorded at gauges located upstream and downstream of the Red Rock Dam, on the Des Moines River and its tributaries. These gauges are monitored continuously, and the information is published in real time on the internet.

The Corps prepares estimates of current and forecasted river conditions, including inflows to the Lake Red Rock, based on real time monitoring of the gauges and weather information from the National Weather Service. The Corps uses this information as well as direct communications with the upstream Saylorville Dam, observed water levels immediately upstream and downstream of Red Rock Dam, and the hydraulic characteristics of the spillway to determine the gate openings required to maintain run-of-release operation.

4.2 Existing USGS Flow Gauges

There are four USGS gauging stations located on the Des Moines River between the Red Rock Dam and the next upstream facility at Saylorville Dam. Information regarding these stations is provided below:

- USGS 05481650 Des Moines River near Saylorville, IA
- USGS 05482000 Des Moines River at 2nd Avenue at Des Moines, IA
- USGS 05485500 Des Moines River below Raccoon River at Des Moines, IA
- USGS 05487520 Des Moines River near Swan, IA

There are five USGS and one USACE gauging stations located on the Des Moines River between the Red Rock Dam and the confluence with the Mississippi River. Information regarding these stations is provided below:

- USGS 05488110 Des Moines River near Pella, IA

- USGS 05488500 Des Moines River near Tracy, IA
- USACE Des Moines River at Eddyville, IA
- USGS 05489500 Des Moines River at Ottumwa, IA
- USGS 05490500 Des Moines River at Keosauqua, IA
- USGS 05490600 Des Moines River at St. Francisville, MO

Additional USGS gauging stations are located on tributaries of the Des Moines River, both upstream and downstream of the Red Rock Dam. A complete list of stream gauges on Des Moines River basin (and other rivers in Iowa) can be found at http://waterdata.usgs.gov/ia/nwis/current.

4.3 Additional Stream Flow Gauges

The Licensee does not propose to install any additional stream gauges as these are not needed to monitor compliance with the run-of-release operation requirement. The existing stream gauging facilities remains adequate to accurately monitor flows through the dam and will be used to monitor compliance with the run-of-release requirements.

Operation of the Project will provide an additional facility that can be used to discharge flow, but will not change the manner in which the Corps maintains run-of-release operation. The Corps will continue to be responsible for determining the flows required to maintain run-of-release operations. The Licensee will coordinate with the Corps who will establish the flow that is available to be discharged through the dam and the Licensee will use the available flow to operate the hydropower plant. At low flows and flows in excess of the maximum plant discharge, the Licensee will evaluate the plant operating characteristics, will determine the amount of the flow that can be used by the hydropower Project, and will inform the Corps of the amount of flow that it will use. The Licensee will also notify the Corps when a generating unit is out of service and the maximum plant discharge is reduced. The Licensee will then continuously monitor its plant discharge and will keep the Corps informed of any changes in plant flow in accordance with the MOA between the Licensee and the Corps.

4.4 Powerhouse Monitoring & Reporting

The generating units are equipped with a state-of-the-art Plant Control System (PCS). The PCS will monitor headwater and tailwater levels and control the plant turbine discharges. The PCS will provide local and centralized control and monitoring of the power plant from Human Machine Interfaces (HMI) located in the plant control room or throughout the powerhouse. A fully redundant Global Positioning System (GPS) based Time System will be included to provide a time and frequency reference signal.

Information gathered by the PCS will include headwater and tailwater levels, turbine flows, and generator output. Two water level transmitters are installed. One is installed in the intake structure for headwater elevation, and one is installed in the powerhouse for tailwater elevation. Each turbine is supplied with piezometer taps at the turbine inlet, draft tube cone liner, and draft tube outlet to determine the net effective head. Additional Winter-Kennedy pressure taps in the spiral case of each turbine are used to calculate turbine flows (cfs) by the PCS. Historical Data Management (HDM) software will be provided for collecting, storing, and reporting historical operating data of the powerplant. This information will be stored electronically on secure servers with storage capacity of not less than 1TB. The PCS will be capable of extracting process, calculations and system data and developing reports using MS Excel, and thus providing a log of project operations.

Dissolved oxygen monitoring probes (HACH LDO Model 2 Probe) and controllers (HOCH Model sc200 Controller) are installed at the tailrace bridge and tailrace landside retaining wall to measure and record the amount of dissolved oxygen on the downstream sides of the Project. Two probes and one controller are installed at the downstream location.

Flow meters (Caldon Model LEFM 880-G3 Ultrasonic Flowmeter) are installed in each penstock near the intake structure that will measure and record instantaneous flow (cfs) through each penstock and transmit the data to the PCS.

A secure website has been established and made available to the Corps that displays real time parameters from the PCS which include Mega-Watt energy production and flow for both units, Lake Red Rock water elevation, tailwater elevation, tailwater temperature and dissolved oxygen.

The generating unit instruments and equipment will be maintained and calibrated in accordance with the operations and maintenance manual prepared by the instrument manufacturer and Voith Hydro, the turbine manufacturer for the Project.

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5.0 DEVIATIONS FROM RUN-OF-RELEASE OPERATION

As discussed in Section 3.0: Project Operation, run-of-release operation may be temporarily modified if required by operating emergencies beyond the control of the Licensee. In this situation, the Licensee will notify the Corps as soon as deviations from run-of-release operations are identified in accordance with the MOA and the commission no later than 10 days after each such incident.

Deviations may also occur for short periods upon mutual agreement between the Licensee and the Corps, or as directed by the Corps to accommodate the authorized purpose for the Corps facilities. Any deviations to the Des Moines River Water Control Manual that are requested by the IDNR or USFWS will continue to be communicated to, and coordinated with, the Corps by the requesting agency. If the Licensee fails to maintain flows within the directed values for any period longer than two hours of time, the Licensee will notify the Commission Regional Engineer as soon as possible, and no later than 10 days after each such incident. The Licensee will coordinate with the Corps to restore run-of-release flows through the Project or the dam gates in accordance with the MOA.

The notification to the Commission Regional Engineer shall include (1) operational data necessary to determine compliance with the license article; (2) a description of any corrective measures implemented or proposed to ensure that similar incidents do not recur; and (3) comments or correspondence, if any, received from the resource agencies regarding the incident.

The Licensee will coordinate with the Corps any scheduled operation or maintenance activity that may require deviations from run-of-release operations in accordance with the MOA.

[The rest of this page is intentionally blank.]

6.0 IMPLEMENTATION SCHEDULE

The Red Rock Compliance Monitoring Plan will be implemented when the Project commences commercial operations after commissioning of the first turbine/generator unit.

The Licensee will prepare a summary report of annual monitoring and operational data for the IDNR, USFWS, Corps and the Commission. This report will document compliance with the run-of-release operating mode. The summary report will include data such as headwater and tailwater elevations at the powerhouse, turbine flows, and generation on four hour intervals when the turbines are in operation. No reporting is necessary when the Project is not operating. The summary report will be submitted to the aforementioned entities no later than January 31 of the following year.

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7.0 AGENCY CONSULTATION

Article 404 requires the Licensee to prepare the Plan after consultation with the following entities: Iowa Department of Natural Resources (IDNR), U.S. Army Corps of Engineers (Corps) and the U.S. Fish and Wildlife Service (USFWS). Comments and recommendations provided by these agencies, pertaining to Operation Compliance Monitoring Plan, and the Licensee's response to those comments are included in Attachment 5.

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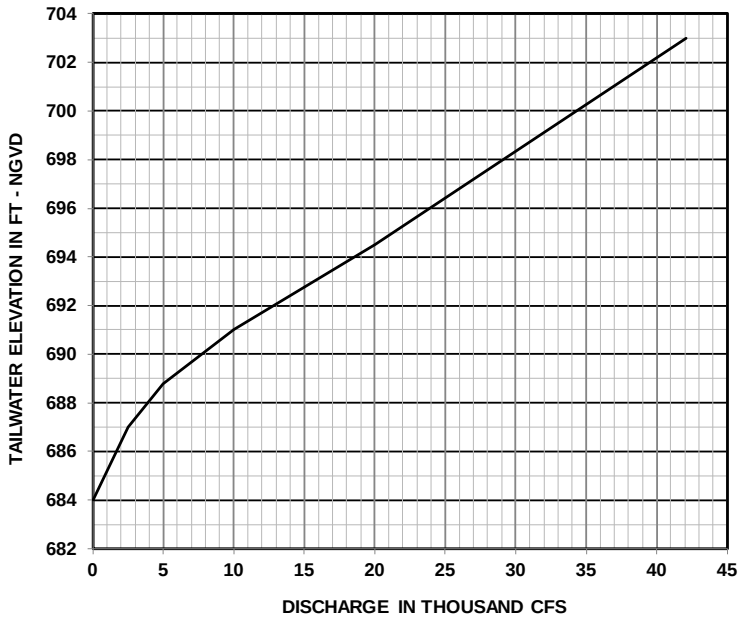
ATTACHMENTS 1, 2, 3 and 4:

HEADWATER & TAILWATER RATING CURVES

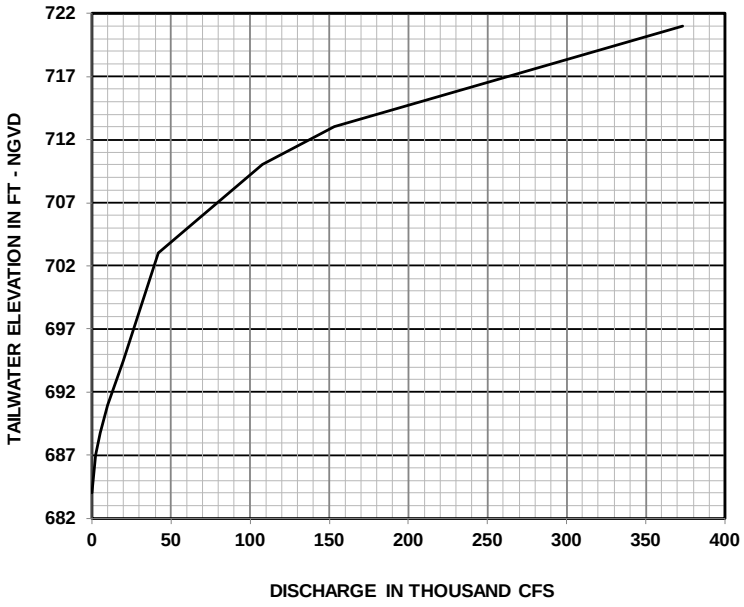
ATTACHMENT 1: Des Moines River at Red Rock Dam - Tailwater Rating Curve Detail

Flow (cfs)	TW El. (ft)
0	684.0
2,500	687.0
5,000	688.8
10,000	691.0
20,000	694.5
42,067	703.0

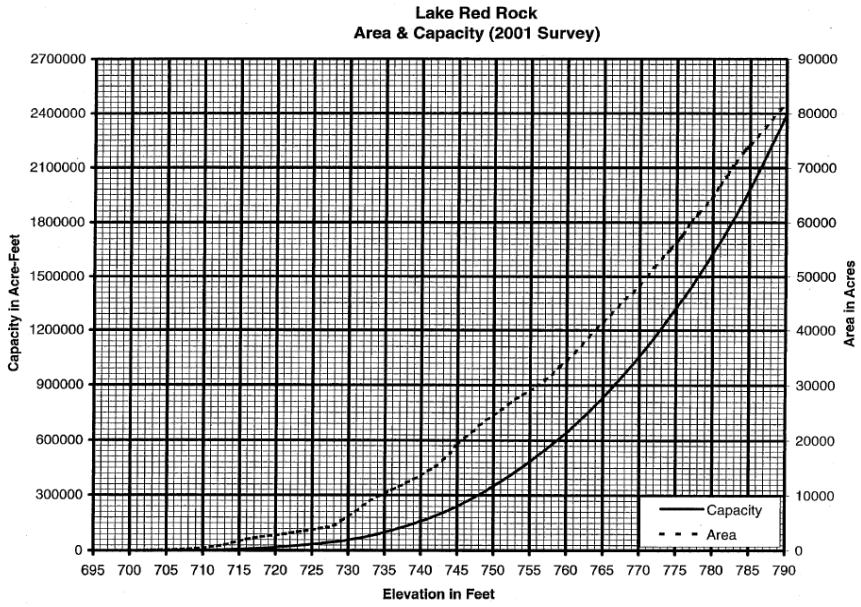


ATTACHMENT 2: Des Moines River at Red Rock Dam - Tailwater Rating Curve

Flow (cfs)	TW El. (ft)
0	684.0
2,500	687.0
5,000	688.8
10,000	691.0
20,000	694.5
42,067	703.0
107,637	710.0
153,062	713.0
373,000	721.0



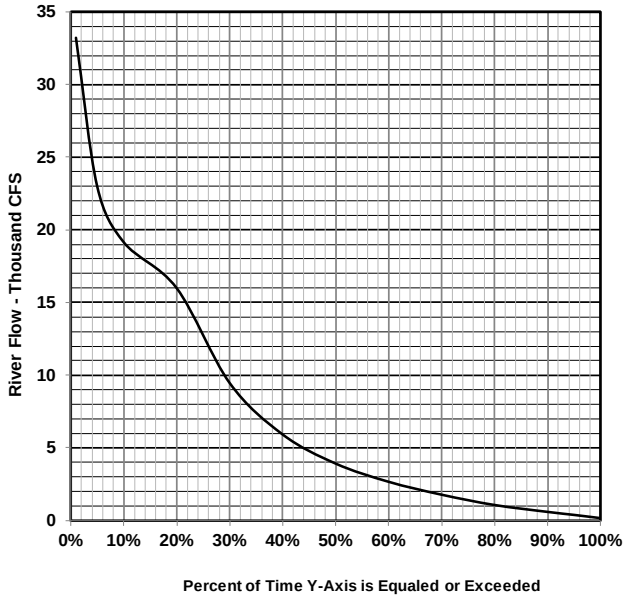
ATTACHMENT 3: Reservoir Area-Capacity Curves - Red Rock Dam



ATTACHMENT 4: Annual Flow Duration Curve - Des Moines River at Red Rock Dam

1971 through 2008

DURATION CURVE	
PERCENT OF TIME EXCEEDED	RIVER FLOW (CFS)
1%	33,221
5%	23,009
10%	19,157
20%	15,997
30%	9,470
40%	5,925
50%	3,920
60%	2,666
70%	1,777
80%	1,066
90%	592
95%	385
100%	163



ATTACHMENT 5:

DOCUMENTATION OF AGENCY CONSULTATION

The initial issue of the Operations Compliance Monitoring Plan was submitted to the Commission on February 12, 2020 and an Order was issued on April 30, 2020, approving the Plan with the following comment.

Comments		Licensee's Response
1.	All deviation reports filed pursuant to Article 403 of the license must include (1) operational data necessary to determine compliance with the license article; (2) a description of any corrective measures implemented or proposed to ensure that similar incidents do not recur; and (3) comments or correspondence, if any, received from the resource agencies regarding the incident.	Comment incorporated in Section 5.0.

A draft Plan was submitted to the Iowa Department of Natural Resources (IDNR) to the attention of Roger Bruner on January 8, 2019. No acknowledgement or comments were received from the IDNR after the 30 day comment period. The U.S. Fish and Wildlife Service acknowledged the receipt of the draft Plan and issued a letter (included) noting that they had no comments to the Plan. The following is a summary of the Corps' comments and the Licensee's response to each as incorporated into the final Plan.

Comments		Licensee's Response
1.	3.1, third paragraph. Recommend changing "through the powerhouse" to "through the Dam". "The flow that is permitted to be passed through the powerhouse will be dictated by the Corps. The Licensee will then program the flow value permitted by the Corps..." These statements imply that the Corps will tell MRES what flows to run through the powerhouse. The intent is for USACE to tell MRES a total flow, for MRES to determine its need (if it's above 10,235 cfs), for MRES to communicate to USACE its taking, and for USACE to adjust gates accordingly.	Comment incorporated.
2.	3.2 Corps Red Rock Dam Operation. When the Plan references the Licensee coordinating with "the Corps," it should specify which entity of the Corps that it will coordinate with or identify another plan in which this data can be found. The Plan acknowledges that "An 'emergency' exists when communication cannot be established between the reservoir operations manager and the Water Control	Comment incorporated. Added reference to the MOA since Article 6, 'Communication Network and Information Exchange' addresses communication specifics.

	Section." The Plan should indicate how the Hydropower Project will operate if their communication cannot be established between the Project and the Water Control Section or reference the appropriate plan that may also currently be under development (e.g. MOA, Communications, etc.).	
3.	3.2, Page 6, last paragraph. "The Licensee will coordinate with the Corps who will establish the flow that is available to be discharged through the Project powerhouse and the Licensee will use the available flow to operate the hydropower plant." This statement implies that the Corps will tell MRES what to release through the powerhouse. Recommend changing "through the Project powerhouse" to "through the Dam".	Comment incorporated.
4.	3.2, page 7, second paragraph. It states that "With the Project in place, discharges will also be released from the powerhouse." The Corps retains the option of where to direct discharges, the details of which are described in the MOA. Recommend changing “will” to “may”.	Comment incorporated.
5.	3.2 Page 7, third paragraph, change last sentence to say “The licensee will immediately notify…”	Comment not incorporated. Added ‘within the timeframe specified within the MOA’.
6.	4.1, paragraph 1. Please note in the first sentence that the Corps monitors the elevation of the lake with instruments on the INSIDE (versus upstream) of the dam. This instrument is the gage well, and is not accurate when flows are pushed to the left side of the dam (e.g., 1-4 sluice gates). The gage well is a failed or partially failed instrument.	Comment incorporated.
7.	Section 4.1, paragraph 2. Remove "... and the downstream Ottumwa Dam".	Comment incorporated.
8.	4.2, last paragraph. It should be noted that the Ottumwa gage is downstream of the Ottumwa facility. There is also an additional gage at Eddyville. USACE recommends the following rewrite to better match the constraints in the approved Water Control Plan. “There are six USGS gauging stations located on the Des Moines River between the Red Rock Dam and the confluence with the Mississippi River. Information regarding these stations is provided below: USGS 05488110 - Des Moines River near Pella, IA USGS 05488500 - Des Moines River near Tracy, IA USACE - Des Moines River at Eddyville, IA	Comment incorporated.

	USGS 05489500 - Des Moines River at Ottumwa, IA USGS 05490500 - Des Moines River at Keosauqua, IA USGS 05490600 - Des Moines River at St. Francisville, MO"	
9.	Section 4.3, paragraph 2. Consider replacing paragraph with the last paragraph on page 6, which is stated more simply and clearly.	Comment incorporated.
10.	4.4, paragraph 1. Powerhouse Monitoring & Reporting, the section references the state of the art Plant Control System (PCS) that will monitor headwater, tailwater levels and plant turbine discharges. This data should be provided in real time to the Water Control Section and Red Rock.	Comment incorporated.
11.	5.0, paragraph 1. Update last sentence to "…Licensee will notify the Corps as soon as possible, but no later than 12 hours from deviations from…"	Comment not incorporated. Actions are stated to be taken in accordance with the MOA, and the MOA addresses flow deviation actions in Appendix B, 'Emergency Bypass Operation'.
12.	5.0, final paragraph. Reword to state the Licensee will coordinate with the Corps at least 90 days prior to any scheduled O&M activity such as periodic inspections requiring a reduction in outflows. If any natural resource damages occur as a result of an O&M needed drawdown, the Licensee, in coordination with the Corps and resources agencies, will mitigate these damages. Reduction in dam outflows will adhere to the 2019 Des Moines River Regulation Manual, page 79, which states: "...the District would impose strict guidelines for operation or maintenance induced low flow periods during cold temperatures (40 degrees F or below for water and or air temperature). If the District or other entity requests the flows out of either dam be reduced for dam inspections, maintenance, or any other activity, the District would follow these guidelines: If possible (not under emergency conditions), the District would notify the resource agencies concerning the proposed drawdown at least 60 days in advance. During an emergency, the District would notify the agencies as soon as possible. 2. The District would obtain all required permits prior to commencing a drawdown.	Comment not incorporated. Any scheduled operation or maintenance activity that may require a flow deviation is to be coordinated in accordance with the MOA. The MOA addresses maintenance and construction activities in Article 7.

	3. Graduated drawdowns over 5 days prior to the outflow goal thereby reducing the outflows by no more than 20 percent per day. 4. Outflow reductions should coincide with fall-pool raises, normally during the first 2 weeks in September. This would prevent freezing or peak summer heat. 5. Outflows will not fall below the minimal low flow augmentation levels (Saylorville Lake – 200 cfs; Lake Red Rock – 300 cfs) range during each day of the drawdown. 6. The outflows would be raised each night to at least normal or near normal operating levels up to a maximum of 3,000 cfs."	
13.	Attachment 1, the rating curves provided are out of date on pages 16 and 17. While this does not appear to affect the rest of the document, MRES may want to update these curves to the current ones.	Comment noted. The curves provided in the Attachments are the current curves used by the Project. An updated tailwater curve can be developed based upon the Project's tailwater elevation gauge once operational data is obtained.

Fields of Opportunities

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

October 28, 2013

MR RAY WAHLE
WESTERN MINNESOTA MUNICIPAL POWER AGENCY
PO BOX 88920
SIOUX FALLS SD 57109-8920

Dear Mr. Wahle:

After reviewing your request for State 401 Water Quality Certification, the Iowa Department of Natural Resources has issued the enclosed Certification. Please read the attached conditions carefully before beginning work on the project.

A copy of this Certification has been forwarded to the office of the Army Corps of Engineers as indicated below. You are advised to contact that office upon receipt of this certification.

If you have any questions or comments about the certification or any conditions contained therein, please contact me at the address shown below or call (515) 281-6615.

Sincerely,

Christine M. Schwake

Christine M. Schwake
Environmental Specialist

cc: Mr. Wayne Hannel, Department of the Army Corps of Engineers, Rock Island District, Clock Tower Building, P.O. Box 2004, Rock Island, IL 61204-2004

IOWA DEPARTMENT OF NATURAL RESOURCES

SECTION 401 WATER QUALITY CERTIFICATION

Certification issued to: **Effective:** October 28, 2013

Western Minnesota Municipal Power Agency
PO Box 88920
Sioux Falls, SD 57109-8920

Project certified: US Army Corps of Engineers No. CEMVR-OD-P-2010-1427
State 401 Water Quality Certification No. 13-D-125-06-02-S
FERC No. P-12576

Project Description: To perform work in association with the development of a new 36.4-MW hydroelectric power plant adjacent to the left (north) side of the existing Red Rock Dam spillway near Pella, Iowa (S19, T76N, R18W, Marion County).

The project consists of: an equipment staging area and access road on the upstream side of the dam; temporary cofferdam upstream of the intake structure; an approach channel and intake structure located on the upstream face of the dam structure; temporary cofferdam downstream of the intake structure; two penstock conduits through the existing concrete monolith dam structure, and a surface powerhouse and tailrace located on the downstream side. The powerhouse will contain two 18.2-MW vertical Kaplan turbines with draft tubes that discharge into tailrace channels.

Staging Area. An equipment staging area for construction and support of the intake will be constructed on USACE property at Whitebreast Beach (upstream of the intake structure). A temporary docking facility will be constructed for the required barges and tugs. The ramps and docking facility will be fabricated from sectional barges with spuds which would allow for the fluctuations in the reservoir water levels so that marine support of the intake can remain constant except for extreme flood conditions.

Work upstream of the dam. The existing riprap will be removed from the upstream face of the dam to facilitate construction of the land access from County Highway T-15. Once the riprap has been cleared, a ramp and work platform on the upstream face of the dam adjacent to the intake will be constructed by fill material that will be brought in via the entrance from County Highway T-15. A temporary cofferdam will be constructed. Once project construction is complete, all temporary construction material will be removed and disposed of off-site. Riprap will be stored on the face of the dam north of the intake. Once intake construction is complete, the stored riprap will be placed in conformance with the new elevations of the approach channel and new dam slopes around the intake.

Work in the dam. Two 21-foot-high penstock tunnels will be constructed in the dam structure to connect the intake structure with the powerhouse. The approach channel is located to the left of the northeast spillway approach wall between the upstream toe of the dam and the non-overflow concrete gravity dam monoliths. It is formed by excavating the material between the embankment dam and spillway, constructing a reinforced concrete diaphragm wall to retain the remaining upstream earth fill. The reinforced concrete intake structure is located approximately

56 feet upstream of the existing concrete non-overflow gravity structure and is complete with emergency closure slide gates, bulkhead slots, trash racks, and trash rake. The intake structure is 60 feet wide by 112 feet long. The top of the intake will be at elevation 781.0, immediately above the normal flood pool at elevation 780.0. Trash racks with 3 ¾–inch vertical bar spacing will be installed at the intake entrance.

Work downstream of the dam. The construction of the downstream works will consist of cofferdam installation, powerhouse and tailrace excavation, construction of the powerhouse and yards, removal of the cofferdam, and final grading and site work. The downstream cofferdam will be a combination of earth fill with steel sheeting acting as a cut-off wall in the center and round steel sheeting. A temporary cofferdam encompassing approximately 0.4 acres in the water will be constructed. Approximately 8,400 square feet of steel sheeting and 16,000 cubic yards of fill will be required to construct the downstream cofferdam. The downstream cofferdam will be removed after the powerhouse concrete has been placed above downstream flood elevation and the tailrace channel has been excavated. Excess excavated material will be used to construct a fishing access facility along the left and downstream of the tailrace. Remaining excess excavated material will be hauled off site and permanently disposed of at an approved location. Existing riprap that has been stored will be placed to protect the new slope surfaces. A new access road with a bridge across the tailrace will be constructed to provide access by the Corps of Engineers to the dam spillway structure. Permanent fences and gates will be installed and all other areas affected by construction will be restored. Excavation equipment for the downstream works will be comprised of backhoe excavators, cranes with clam buckets, dozers, end loaders, small (25 tons) off road trucks and highway trucks.

Project Area Clearing. The regulation of the pool will not change with the addition of the hydropower project. Removal of dead trees around the periphery of the reservoir will not be needed. No vegetative clearing is proposed along the shoreline of Lake Red Rock. Minimal vegetative clearing is proposed along the northern shoreline of the Des Moines River downstream of the existing Red Rock Dam. Tree clearing will take place between October 1 and March 31 to protect Indiana bats. The majority of proposed clearing activities will involve removal of riprap and stripping of turf grass.

Wetlands - Staging and lay down areas. The work area, including staging and lay down areas, will be limited to upstream of the wetlands formed by the old river channel. No fill will be placed into any wetland areas as a result of this portion of the project.

Wetlands - Water / wastewater lines. Two trenches will be excavated for the water / wastewater lines. Top width of the trenches will not exceed 30 feet. A minimum of 6 feet of cover will be placed over the lines. Length of wetland affected is approximately 500 feet (approximately 0.34 acres). Once the lines have been installed, preexisting land contours will be established.

Federal Energy Regulatory Commission. The permittee has been licensed by the FERC to construct, operate, and maintain the proposed Red Rock Hydroelectric Project (license number P-12576). The FERC prepared an Environmental Assessment dated December 23, 2010, for the project.

Water quality use designation:

This reach of the Des Moines River and the Red Rock Reservoir are designated as Class A1 Primary contact recreational use. These are waters in which recreational or other uses may result in prolonged and direct contact with the water, involving considerable risk of ingesting water in quantities sufficient to pose a health hazard. This reach of the Des Moines River and the Red Rock Reservoir are also designated as Class B(WW-1) which are waters in which temperature, flow and other habitat characteristics are suitable to maintain warm water game fish populations along with a resident aquatic community that includes a variety of native nongame fish and invertebrate species. This reach of the Des Moines River and the Red Rock Reservoir are also designated as Class HH, human health, which are waters in which fish are routinely harvested for human consumption or waters both designated as a drinking water supply and in which fish are routinely harvested for human consumption. All surface waters in Iowa, including wetlands and those designated for Class "A", "B", and/or "C" are classified for the following general uses: livestock and wildlife watering, noncontact recreation, crop irrigation, and industrial, agricultural, domestic, and other incidental withdrawal uses.

The Iowa Department of Natural Resources (IDNR) has issued this State 401 Water Quality Certification pursuant to Section 401 of the Clean Water Act. The Army Corps of Engineers (Corps) requires state Certification before a Section 404 permit can be issued. Section 401 Certification represents the IDNR's concurrence that the project certified is consistent with the Water Quality Standards of the state of Iowa as set forth in Chapter 61, Iowa Administrative Code.

Subject to the attached conditions, incorporated by reference herein, the IDNR has determined that there is reasonable assurance the proposed activities will be conducted in a manner that will not violate water quality standards of the state of Iowa.

Prepared By: Christine M. Schwake Date Executed: October 28, 2013

Christine M. Schwake, IDNR, Wallace State Office Building, Des Moines, IA 50319-0034 (515) 281-6615

GENERAL CONDITIONS

1. Prior to construction, the permittee is responsible for securing and for compliance with such other permits or approvals as may be required by the IDNR, federal, state, or local governmental agencies for the project activities described.

2. You are encouraged to conduct your construction activities during a period of low flow.

3. Clearing of vegetation, including trees located in or immediately adjacent to waters of the state, shall be limited to that which is absolutely necessary for construction of the project. All vegetative clearing material shall be removed to an upland non-wetland disposal site. Until vegetative cover has been successfully established, maintain seeded areas and silt fences.

4. All construction debris shall be disposed of on land in such a manner that it cannot enter a waterway or wetland. Construction equipment, activities, and materials shall be kept out of the water to the maximum extent possible. Equipment for handling and conveying materials during construction shall be operated to prevent dumping or spilling the material into waterbodies, streams or wetlands except as approved herein.

5. All temporary storage facilities for petroleum products, other fuels, and chemicals shall be located and protected to prevent accidental spills from entering waters of the U.S. within the project area. In the event of an accidental spill, please contact our office immediately (515-281-8694). If the hazardous condition involves the release of an EPA regulated material or an oil as defined by the EPA, the release may also need to be reported to the National Response Center at (800) 424-8802.

6. Erosion control features (i.e., silt fences, silt ditches, silt dikes, silt basins, etc.) must be installed to provide continuous erosion control throughout the construction and post construction period as well as the revegetation of all disturbed areas upon project completion. Where siltation control features have been reduced in capacity by 50% or more, the features shall be restored to their original condition with a minimum of delay.

7. All disturbed areas not covered with riprap shall be seeded with native grasses, excluding Reed Canarygrass (*Phalaris arundinacea*) or any aggressive or invasive species, during an optimal seeding period. If excavation and construction are completed outside an optimal seeding period, temporary erosion control protection shall be implemented immediately upon completion of excavation and construction and shall be maintained until such time as seeding can be completed during an optimal period. The applicant shall monitor revegetated areas continuously to assure success of revegetation. If rye is initially planted to stabilize the soil then native warm season grasses shall be planted during the following growing season.

8. Riprap shall consist of clean native fieldstone, clean quarry run rock or clean broken concrete. If broken concrete is used all reinforcement material shall be completely removed from it; if removal is not possible, said reinforcement material shall be cut flush with the flat surface of the concrete. It shall be the applicant's responsibility to maintain the riprap such that any reinforcement material that becomes exposed in the future is removed. The concrete pieces shall be appropriately graded and no piece shall be larger than 3 feet across the longest flat surface. No asphalt or petroleum based material shall be used as or included in riprap material.

9. Once project construction is complete, all temporary construction material will be removed and disposed of off-site in an approved upland non-wetland location.

10. The amount of wetland affected is approximately 500 feet (approximately 0.34 acres). Once the water and wastewater lines have been installed, the preexisting land contours will be established.

11. Excess excavated material from the project will be used to construct a fishing access facility along the left and downstream of the tailrace. Remaining excess excavated material will be hauled off site and permanently disposed of at an approved location.

12. To protect Indiana bat habitat, removal and trimming of trees will be conducted between October 1 and March 31, which is outside of the Indiana bat maternity season. In the event that tree removal or trimming is required outside of the timeframe listed above, the permittee will contact the USFWS (309-757-5800) for approval prior to tree removal or trimming. In addition, vegetation will only be trimmed to levels necessary to establish adequate spacing and clearance for access and safety to the transmission line and project utilities.

13. The project shall not violate Iowa's water quality standards (Iowa Administrative Code 567 Chapter 61) at any time.

14. Prior to the operational start-up of the facility, provide the IDNR and Corps the name and phone number of a person at the facility to contact in the event of an emergency.

15. The Corps or hydroelectric project will maintain a minimum flow discharge of 300 cubic feet per second (CFS) into the Des Moines River below the dam to maintain downstream water quality.

16. The project will operate in a run-of-release mode.

17. An erosion and sediment control plan will be implemented that includes measures to minimize erosion and sediment runoff prior to, during, and after construction of the project until after vegetation is reestablished.

18. A water quality protection and monitoring plan has been developed and reviewed by the IDNR to ensure that project discharges are consistent with state water quality standards for dissolved oxygen (DO) and water temperature. The hydroelectric project is to follow the provisions of the approved plan.

19. A water quality protection and monitoring plan has been developed and reviewed by the IDNR to ensure accurate measurements of DO levels and water temperature. As directed by the water quality protection and monitoring plan, two DO probes will be installed downstream of the powerhouse in such a manner as to protect the probes from being damaged by debris. At a minimum, the water quality monitors should record on an hourly basis, 24 hours a day, the DO, water temperature, time of day, and project flow from May 1st through October 31st of each year of project operation. The IDNR will be notified when the DO falls below 5.0 mg/L. The results of all water quality monitoring will be electronically submitted to the IDNR, Corps and U.S. Fish and Wildlife Service according to the following schedule:

Monitoring period	Report due date
May – June	July 15
July – August	September 15
September – October	November 15

VanNess Feldman
ATTORNEYS AT LAW
WASHINGTON, DC • SEATTLE, WA

A LIMITED LIABILITY PARTNERSHIP
1050 Thomas Jefferson Street, NW
Washington, DC 20007-3877
(202) 298-1800 Phone
(202) 338-2416

John Clements
(202) 298-1933
jhc@vnf.com

February 20, 2013

Ms. Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Re: Western Minnesota Municipal Power Agency
Red Rock Project No. 12576

Submission of Indiana Bat Protection Plan

Dear Secretary Bose:

Pursuant to Article 407 of the license for the Red Rock Project No. 12576, Western Minnesota Municipal Power Agency hereby submits for Commission approval a Indiana Bat Protection Plan.

If you have any questions regarding this filing, please contact Nick Fanning at (605) 330-6984 or nfanning@mrenergy.com.

Respectfully submitted,

/s/ John Clements
John Clements

Counsel for Western Minnesota Municipal Power Agency

Enclosure

cc: Raymond J. Wahle
Nick Fanning

Indiana Bat Protection Plan

For The
Red Rock Hydroelectric Project FERC No. 12576

Dated
February 20, 2013

Introduction

The following plan describes measures to be undertaken by Western Minnesota Municipal Power Agency (WMMPA) to minimize effects of construction, operation, and maintenance related to the Red Rock Hydroelectric Project (Project) on the Indiana bat.

FERC License Requirements

On April 18, 2011, CRD Hydroelectric, LLC (Applicant) obtained an original license (FERC No. 12576-004) from the Federal Energy Regulatory Commission (FERC) to construct, operate and maintain the Red Rock Hydroelectric Project (Project). On January 19, 2012, FERC issued an order (FERC No. 12576-008) approving transfer of the license from CRD Hydroelectric, LLC to WMMPA. On April 13, 2012, FERC issued an order (FERC No. 12576-007) amending the license to reflect changes that reduce impacts on the dam's existing structures and improve constructability and dam safety.

Article 407 of the license states:

> *Indiana Bat Protection Measures*. The licensee shall implement measures to minimize project construction, operation, and maintenance effects on the Indiana bat, including the following:
>
> (1) At least 90 days before the start of project construction, the licensee shall file with the Commission for approval, a report documenting the results of its findings regarding the presence of Indiana bat habitat within the transmission line corridor and documenting consultation with the National Resource Conservation Service (NRCS) on the licensee's findings. If potential Indiana bat habitat exists, the licensee shall include with the report, an Indiana Bat Protection Plan for Commission approval. The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service, Iowa Department of Natural Resources, and the NRCS. The licensee shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee

does not adopt a recommendation, the filing shall include the licensee's reasons based on project-specific information. The Commission reserves the right to require changes to the plan. No ground-disturbing or land-clearing activities within the transmission line corridor shall begin until the Commission notifies the licensee that the report, including any associated Indiana Bat Protection Plan, is approved; and

(2) Throughout the license term, limit tree trimming along the transmission line corridor as follows: (a) conduct tree trimming outside of the Indiana bat maternity season (April 1 to September 30) if suitable trees and habitat are present and (b) trim vegetation to only those levels necessary to establish adequate spacing and clearance for access and safety to the transmission line.

Project Description

The Project features include (a) a 185-foot-wide, 114-foot-long powerhouse located directly downstream of the existing Corps' Red Rock Dam; (b) a 54-foot-wide, 110-foot-long intake located directly upstream of the existing Red Rock dam; (c) a 184-foot-long by 58-foot-wide switchyard located next to the powerhouse on the upstream side; (d) a 4.5-mile-long, 69-kilovolt (kV) transmission line, parts of which will be buried (approximately 1.24-miles) and the remainder of which (approximately 3.26-miles) will be overhead, extending from the switchyard to the City of Pella West Substation.

In addition to the major project features listed above, powerhouse utilities such as communications, water, wastewater, and backup power will be constructed for the Project.

Indiana Bat Habitat Assessment

As per the FERC license, the National Resource Conservation Service (NRCS) was contacted on August 14, 2012 via a phone call with Jeff Matthias at the Knoxville, Iowa office regarding the potential for Indiana bat habitat and followed up via email with information about the Project. In response, WMMPA received a letter from the NRCS on October 15, 2012 stating that the NRCS would not be consulting with the licensee on the project. A copy of the letter is included in Appendix A for reference.

An Indiana bat habitat assessment (Assessment) was conducted by Snyder & Associates, Inc. to determine the presence of Indiana bat habitat within the Project's transmission line corridor. In addition to the transmission line corridor, the survey area also included Project laydown areas that will be used during construction and utility routes for backup power, water, and wastewater services. A report of the survey findings is included in Appendix B.

The assessment found four potential areas of Indiana bat habitat. As per the FERC license, "If potential Indiana bat habitat exists, the licensee shall include with the report, an Indiana Bat Protection Plan for Commission approval."

Indiana Bat Habitat Protection Measures

To reduce impact to Indiana bat habitat, removal and trimming of trees will be conducted, throughout the license term, between the dates of October 1st and March 31st, which is outside of the Indiana bat maternity season identified in Article 407 of the license. In the event that tree removal or trimming is required outside of the timeframe listed above, the licensee will contact the USFWS for approval prior to tree removal or trimming. Vegetation will only be trimmed to levels necessary to establish adequate spacing and clearance for access and safety to the transmission line and Project utilities. For more information regarding replacement of trees removed due to construction of the Project, see the proposed Clearing Plan, which was filed with FERC for approval on November 2, 2012.

As indicated in the Indiana Bat Habitat Assessment (Assessment), attached in Appendix B, four locations were identified as potential Indiana bat habitat. In response to comments received from the U.S. Fish and Wildlife Service (USFWS) on the draft Indiana Bat Protection Plan, WMMPA anticipates that the removal of trees identified in the Assessment as suitable Indiana bat habitat will not be required. Should removal of said trees be required due to unforeseen circumstances, tree removal would take place between the dates of October 1st and March 31st, which is outside of the Indiana bat maternity season identified in Article 407 of the license. In the event that tree removal or trimming of said trees is required outside of the timeframe listed above, the licensee will contact the USFWS for approval prior to tree removal or trimming. WMMPA anticipates that construction of the Project may affect, but will not adversely affect the Indiana bat.

Agency Consultation

A draft Indiana Bat Protection Plan dated December 13, 2012, was initially distributed for review and comment on December 14, 2012, to the following agencies listed below:

Iowa Department of Natural Resources (IDNR)
502 E 9th St.
Des Moines, IA 50319-0034

U.S. Army Corps of Engineers (USACE)
Rock Island District
Clock Tower Building
P.O. Box 2004
Rock Island, IL 61204-2004

U.S. Fish and Wildlife Service (USFWS)
Rock Island Field Office
1511 47th Ave
Moline, IL 61265

Comments on the draft Indiana Bat Protection Plan were received from each agency and are included in Appendix C. A summary of the comments and the licensee's response to each as incorporated into the final Plan are as follows:

Comment	Licensee's Response to Comment
IDNR Comment "The DNR endangered species specialist found the Plan to be acceptable. The project site has a low potential for Indiana bat habitat and the Plan follows U.S. Fish and Wildlife Service guidelines to minimize impact in case Indiana bat does utilize the Project area."	Acknowledged.
USFWS Comment 1 – "The draft plan does not meet the requirements for a Section 7 Consultation." "Since suitable habitat was found, normally a mist netting survey would be required if the trees are to be removed. A survey may not be required if the trees are not disturbed or they will be removed in the winter. You should evaluate each of the four locations and determine if the suitable habitat will be affected or not. Your determination for each of the four locations should be included in the draft plan in order to comply with consultation requirements. Your determination should include consideration of measures taken to minimize effects."	Based on the coordinates of potential Indiana bat habitat locations identified in the Indiana Bat Habitat Assessment and design survey's for the Project, WMMPA does not anticipate the removal of trees considered to be potential Indiana bat habitat. In addition, WMMPA has included measures in the "Indiana Bat Habitat Protection Measures" section of the plan that will be implemented during Project construction, operation, and maintenance to minimize the effects on the Indiana bat, such as trimming/removal of trees during the time of year which is outside of the Indiana bat maternity season.
USFWS General Comments – Typographical errors and correction of a heading on page 8.	Typographical errors identified by the USFWS have been corrected. However, since the Indiana Bat Habitat Assessment is a final report which was provided by Snyder and Associates, Inc., the suggested heading name change was not made.
USACE General Comment – Typographical Errors.	The typographical errors have been corrected by WMMPA.

USACE Comment 1 – "This plan should include necessary steps to comply with the U.S Fish & Wildlife Service February 3, 2012 draft Indiana Bat Summer Survey Guidance and any final guidance when it becomes available."	As indicated above in the response to Comment 1 from the USFWS, Snyder & Associates, Inc. has conducted an Indiana Bat Habitat Assessment in accordance with the Iowa Department of Natural Resources Survey Methods for Indiana Bat Summer Habitat (IDNR 2007). The draft guidance identified by the USACE identifies additional requirements for mist net and acoustic surveys. Due to the findings of the Assessment, and the anticipation by WMMPA that potential Indiana bat habitat locations identified in the Assessment will not be removed, WMMPA does not intend to conduct additional mist net or acoustic surveys.
USACE Comment 2 – "Include in the plan a discussion of the Endangered Species Act, Section 7 and Section 10 procedures if any action associated with this project may affect or may result in a Take Statement."	As indicated above in the response to Comment 1 from the USFWS, WMMPA does not anticipate that activities associated with the Project will require a "Take Statement".
USACE Comment 3 – "Include in the plan other potentially harmful activities to Indiana bats and explain how the impacts of these activities will be abated to include, night time activities, dust and noise near potential Indiana bat habitat."	Neither the USFWS 2007 Indiana Bat Recovery Plan, the Indiana Bat Habitat Assessment, nor comments from the USFWS on the draft Indiana Bat Protection Plan list nighttime activities, dust, or noise as activities which could impact the Indiana Bat. WMMPA is also unaware of any other Indiana Bat protection plan that limits nighttime activities or requires noise or dust control measures to protect this species. As such, WMMPA anticipates that construction of the Project will not have an adverse effect on the Indiana bat.
USACE Comment 4 – "Recommend removing any reference to the Natural Resource Conservation Service (NRCS) for Indiana Bat coordination and consultation."	WMMPA contacted the NRCS as directed by Article 407 of the FERC license. Inclusion of consultation with the NRCS and that agencies response to WMMPA's request for consultation is included in this Plan as a means to show that WMMPA has complied with Article 407 of the FERC license.

References

FERC (Federal Energy Regulatory Commission). 2011. *Order Issuing Original Major License.* Project No. 12576-004

APPENDIX A

NRCS Response to Consultation

NRCS
Natural Resources Conservation Service
1445 Lake Drive, Suite 1
Knoxville, IA 50138

October 11, 2012

Mr. Ray Wahle, Director Power Supply and Operations
Missouri River Energy Services
3724 West Avera Drive
P.O. Box 88920
Sioux Falls, SD 57109-8920

RE: Endangered Species Consultation

Sir,

Thank you for contacting me to consult about the possible impacts on Endangered Species with your proposed project. I have been directed by my supervisor that NRCS should not consult on the project. I was instructed that the US Army Corps of Engineers should be the lead agency for the consultation.

Thank you,

Jeff Matthias
District Conservationist

cc: Kevin McCall, ASTC-FO, Fort Dodge Area Office

APPENDIX B

Indiana Bat Habitat Assessment

INDIANA BAT HABITAT ASSESSMENT

RED ROCK
HYDROELECTRIC PROJECT
MARION COUNTY, IOWA

PREPARED FOR:

WESTERN MINNESOTA MUNICIPAL POWER AGENCY

PREPARED BY:

SNYDER & ASSOCIATES, INC.
ENGINEERS AND PLANNERS

2727 SW Snyder Blvd.
Ankeny, Iowa 50023

PROJECT NUMBER 112.0785

DECEMBER 2012

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Exhibits

LIST OF ACRONYMS

dbh	diameter at breast height
IDNR	Iowa Department of Natural Resources
NE	Northeast
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

Western Minnesota Municipal Power Agency (WMMPA) obtained a license from the Federal Energy Regulatory Commission (FERC No. 12576-004) to construct, operate, and maintain the Red Rock Hydroelectric Project (Project) and associated transmission line, located at the existing U.S. Army Corps of Engineers (Corps) Red Rock dam, which was constructed by the Corps in 1969 for flood control. The project site is located in Section 4, 8, 9, 17, 18, and 19, Township 76N, Range 18W in Marion County, Iowa (Exhibit 1).

Marion County is listed as a county containing suitable summer Indiana bat (*Myotis sodalis*) habitat. Therefore, an Indiana bat habitat survey was conducted on September 21, 2012 to determine the potential occurrence for Indiana bat habitat prior to removing any vegetation, especially mature trees or large snag trees.

1.1 Site Description

The powerhouse and switchyard are located along the Des Moines River, southeast of the Red Rock Dam spillway. This area consists of sandbar floodplain adjacent to the river.

The transmission line traverses Corps property parallel with the dam on the downstream side. The proposed transmissions line follows the County Highway T15 ROW north to County Highway G28 and Fifield Road where it turns east. The proposed transmission line crosses under the Pella Municipal Airport property and Iowa Highway 163. It follows West 11th Street north until it terminates at the City of Pella substation. The proposed transmission line is primarily located within road right-of-way which is adjacent to undeveloped forested land, agricultural land, and developed land.

1.2 Project Description

The Project features include: (a) a 54-foot-wide, 110-foot-long intake located directly upstream of the existing spillway; (b) a 185-foot-long, 114-foot-wide powerhouse located directly downstream of the existing Corps Red Rock Dam spillway; (c) a 184-foot-long by 58-foot-wide switchyard located next to the powerhouse on the upstream side; (d) a 4.5-mile-long, 69-kilovolt (kV) transmission line, parts of which will be buried (a total of approximately 1.24-miles or 6,520-feet) and the remainder of which will be overhead, extending from the switchyard to the City of Pella West Substation.

1.3 Indiana Bat Preferred Habitat

The Indiana bat is a federally-listed endangered species under 50 CFR Part 17 and state-listed endangered species under the Code of Iowa, Chapter 481B. Female Indiana bats have their young beneath the loose or peeling bark of trees. Most nursery colonies have been found beneath the bark on the trunk or large branches of standing dead trees. Dead trees that retain sheets or plates of bark such as several of the oaks (red oak and post oak) along with cottonwood are potential roost trees. Live trees with the same characteristics, such as shagbark (*Carya ovata*) and shellbark (*Carya lacinosa*) hickory are also used for roosting (Iowa Department of Natural

Resources [IDNR] 2007). Generally, nursery colonies are located near streams and rivers in upland forests due to insect populations being higher and serving as a primary food source. In Iowa, Indiana bat occurrences have been recorded in areas of 15 percent or greater forest cover and near permanent water. As with other states, roost tree species have been identified as shagbark and shellbark hickory (alive or dead), bitternut hickory, American elm, slippery elm, eastern cottonwood, silver maple, white oak, red oak, post oak, and shingle oak with slabs or plates of loose bark. Suitable summer habitat requirements in Iowa have been considered as having the following within a ½ mile radius of a location of:

- Forest cover of 15 percent or greater
- Permanent water
- One or more of the listed tree species having 9 dbh or greater
- The potential roost trees ranked as moderate or high for peeling or loose bark

Indiana bats have been found in both urban and rural areas but generally exclude city park areas with manicured and mowed grasses. In Iowa, the counties that are affected by the Indiana bat's summer range includes: Appanoose, Clarke, Davis, Decatur, Des Moines, Henry, Iowa, Jasper, Jefferson, Keokuk, Lee, Louisa, Lucas, Madison, Mahaska, Marion, Monroe, Muscatine, Poweshiek, Ringgold, Union, Van Buren, Wapello, Warren, Washington, and Wayne. Additionally, the US Fish and Wildlife Service (USFWS) considers all counties south of Interstate 80, including portions of Dallas, Polk, Jasper, Poweshiek, Iowa, Johnson, Muscatine, and Scott counties south of Interstate 80, as being within the potential range of the Indiana bat (IDNR 2007).

2.0 METHODS

The Project area was assessed for potential Indiana bat habitat on September 21, 2012. The project area was assessed following the IDNR's Survey Methods for Indiana Bat Summer Habitat (IDNR 2007). The assessment began along Fifield and Washington Streets to the north. The assessment then turned south from Washington Street (County Highway G28) and followed south along County Highway T15 to the point where the corridor aligned with the Corps land below the Lake Red Rock dam where the assessment was completed within the identified project area (Exhibits 1 and 2).

The project corridor was traversed in the direction described while searching for living shagbark (*Carya ovata*) or shellbark (*Carya lacinosa*) hickory. Additionally, the area was assessed for dead trees of the following species: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya lacinosa*), bitternut hickory (*Carya cordiformis*), American elm (*Ulmus americana*), slippery elm (*Ulmus rubra*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), white oak (*Quercus alba*), red oak (*Quercus rubra*), post oak (*Quercus stellata*), and shingle oak (*Quercus imbricaria*). If any of these species were found the diameter at breast height (dbh) was measured to determine if the dbh was greater than 9 inches. Additionally, the tree was evaluated, based on a visual estimate, whether 10 percent or more of the bark was loose or peeling on the trunks or main limbs.

3.0 RESULTS

A large percentage of the Project area is developed recreational areas and cleared highway right of way (ROW). The Project area contains a large percentage of green ash (*Fraxinus pennsylvanica*), white and red mulberry (*Morus sp.*), hackberry (*Celtis occidentalis*), eastern cottonwood (*Populus deltoides*), interspersed with other shrubs, vines, and immature trees species as listed above. Throughout the Project area only four locations met the habitat requirements listed in the IDNR's survey methodology.

3.1 Location IBH-1

Location IBH-1 is located along Washington Street approximately 150 to 200 yards west of the intersection of Washington and Fifield Roads at North latitude 41°, 24', 25.92" and West 92° 57', 36.98" (Exhibit 2). This location was depicted by one potential Indiana Bat roost tree (Photographs 1 through 3). The tree is located downgradient on the south side of the road in a small strip of trees located along the edge of the pasture. The diameter of the tree was too large to measure with the available diameter tape but was approximated at over 30 inches.

Photograph 1: Illustrates potential Indiana bat habitat tree located at Location IBH-1.

Photograph 2: Illustrates the diameter of the potential Indiana bat habitat tree located at Location IBH-1.

Photograph 3: Depicts the peeling bark characteristic of Indiana Bat roost trees.

3.2 Location IBH-2

Location IBH-2 was located along the west side of County Highway T15 on private property near the highway ROW (Exhibit 2). The area was depicted by approximately seven clusters of potential roost trees (Photographs 4 and 5). The coordinates of the specific trees were not taken since they were on private property; however coordinates of the nearest location along the boundary fence was collected. The coordinates were North latitude 41°, 24', 4.68" and West longitude 92°, 57', 45.73". The diameters of the trees were unknown since they were inaccessible for measuring but from a distance appear to be 9 inches or greater.

Photograph 4: Illustrates potential Indiana bat habitat trees located at Location IBH-2.

Photograph 5: Depicts the proximity of the potential roost trees to the highway ROW.

3.3 Location IBH-3

Location IBH-3 is located along the ROW border of County Highway T15, the Corps property boundary, and private property (Exhibit 2). This area contains a dead tree with peeling bark and a dbh greater than 9 inches. The tree is located in a mature forested area (see Photograph 6). Due to being potentially located on private property the tree was viewed and the coordinates collected from the known highway ROW making a positive identification unlikely. Coordinates were taken approximately 15 feet from the tree at North latitude 41°, 22', 48.37" and West longitude 92°, 58', 3.02".

Photograph 6: Illustrates the potential Indiana Bat roost tree located along the borders of the highway ROW, private property, and the Corps land.

3.4 Location IBH-4

Location IBH-4 is located in an area of mature hardwoods within the utility ROW that has been marked by surveyors. The tree is on Corps property immediately adjacent to the field located at the intersection of 198th Place and 216th Place (Exhibit 2). Identification of the tree was difficult due to minimal bark and no leaves but appeared to be a large dead cottonwood tree with peeling bark and a dbh greater than 9 inches (Photograph 7). The coordinates of IBH-4 is North latitude 41°, 22', 13.53" and West longitude 92°, 57', 53.76".

Photograph 7: Illustrates the potential Indiana Bat roost tree located along the borders of both the highway ROW and the Corps land.

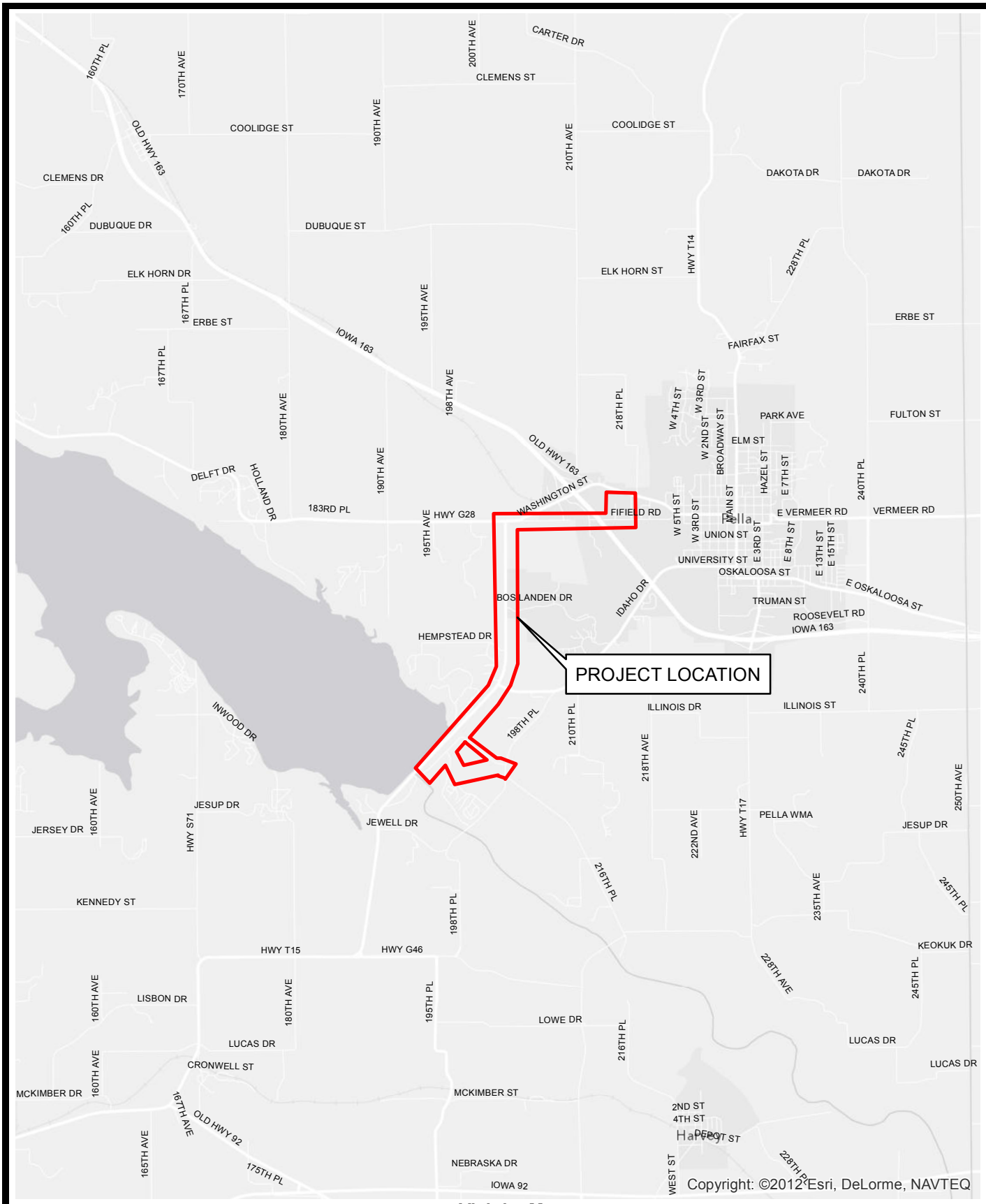
4.0 RECOMMENDATIONS

Based on the results of the Indiana bat habitat evaluation, a slight potential exists for the species to be present in the project area. It is unlikely due to the habitat being marginal and sparse. Based on this conclusion, the recommendation is that removal of any potential roost trees identified during the habitat study or during project construction be conducted between October 1 and March 31.

5.0 REFERENCES

Iowa Department of Natural Resources. 2007. Guidelines for Protection of Indiana Bat Summer Habitat. June.

EXHIBITS



Vicinity Map
Red Rock Hydroelectric Project
Marion County, Iowa

SNYDER & ASSOCIATES
Engineers and Planners

0 5,000 10,000 20,000 Feet

NAD_1983_StatePlane_Iowa_South_FIPS_1402_Feet

EXHIBIT 1

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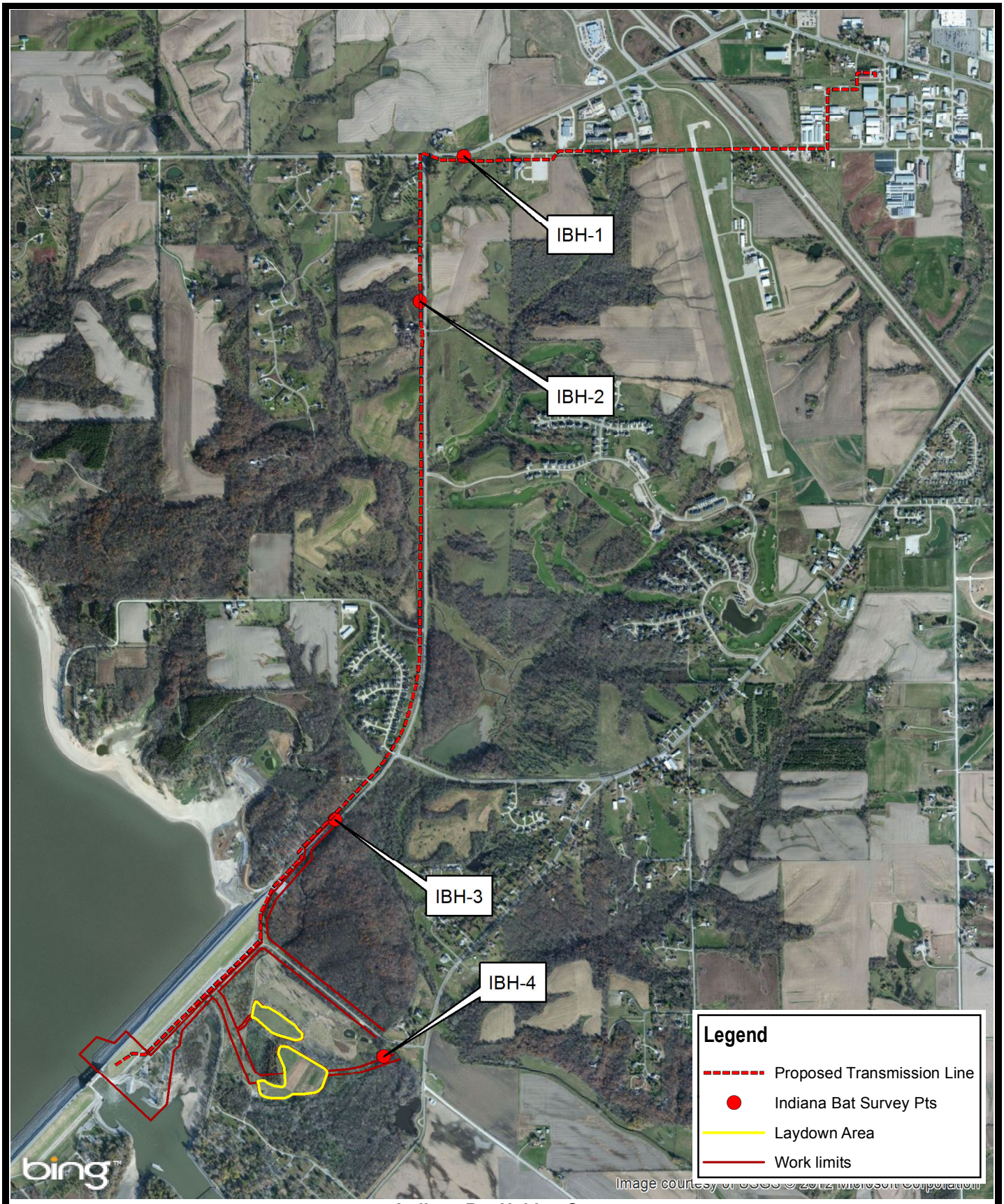


Indiana Bat Habitat Survey
Red Rock Hydroelectric Project
Marion County, Iowa

0 500 1,000 2,000 Feet

NAD_1983_StatePlane_Iowa_South_FIPS_1402_Feet

SNYDER & ASSOCIATES
Engineers and Planners

Path: J:\2012_Projects\112.0785\GIS\BatSurvey.mxd

EXHIBIT 2

APPENDIX C

Agency Comments

Fields of Opportunities

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

December 18, 2012

Mr. Raymond Wahle, P.E.
Missouri River Energy Services
3724 West Avera Drive
Sioux Falls, SD 57109-8920

Subject: FERC #12576 Indiana Bat Protection Plan

Dear Mr. Wahle,

Iowa Department of Natural Resource staff has completed its review of MRES Red Rock Hydroelectric Project Draft Indiana Bat Protection Plan. The DNR endangered species specialist found the Plan to be acceptable. The project site has a low potential for Indiana bat habitat and the Plan follows Federal U. S. Fish and Wildlife Service guidelines to minimize impact in case the Indiana bat does utilize the Project area.

Sincerely,

Martin Konrad,
Executive Officer

Nick Fanning

From: Duyvejonck, Jon <jon_duyvejonck@fws.gov>
Sent: Wednesday, January 02, 2013 10:56 AM
To: Brent Moeller
Cc: Nick Fanning
Subject: Re: Red Rock Hydro - Indiana bat Protection Plan

Brent,

The Rock Island Field Office offers the following comments regarding the draft Indiana Bat Protection Plan:

1. The draft plan does not meet the requirements for a Section 7 Consultation. You should refer to the Service's Region 3 Endangered Species Act Consultation Website, which is: **www.fws.gov/midwest/endangered/section7/index.html** Since suitable habitat was found, normally a mist netting survey would be required if the trees are to be removed. A survey may not be required if the trees are not disturbed or they will be removed in the winter. You should evaluate each of the four locations and determine if the suitable habitat will be affected or not. Your determination for each of the four locations should be included in the draft plan in order to comply with consultation requirements. Your determination should be include consideration of measures taken to minimize effects. For example, since the plan indicates that construction that may affect suitable habitat will occur during the winter, you might conclude that the project will not affect the bat, ***or*** that it may affect, but not adversely affect the Indiana Bat.

2, There are several minor typos. Page 3. "Indiana" is misspelled in Par. 1 and 2. Page 2 of the Habitat Assessment-Par 1, "9dbh" should be "9 inches dbh"

3. You may consider renaming the Heading on Page 8 from "Recommendations" to "Conclusions to reflect your determinations referenced above.

On Wed, Dec 19, 2012 at 4:10 PM, Brent Moeller <brent@mrenergy.com> wrote:

Jon,

At this time we are not anticipating the removal of any of the trees identified as potential bat habitat in locations IBH-1, IBH-2, and IBH-3 in the survey. IBH-4 may need to be removed depending on the final route of the project utilities. Should you have any further questions, feel free to contact me of Nick Fanning.

Regards,

Brent A. Moeller, P.E.

Manager, Generation Resources

Missouri River Energy Services

Phone No. 605-330-6969

Cell No. 605-254-4076

Email: bmoeller@mrenergy.com

From: Duyvejonck, Jon [mailto:jon_duyvejonck@fws.gov]
Sent: Tuesday, December 18, 2012 2:18 PM
To: Brent Moeller
Subject: Red Rock Hydro - Indiana bat Protection Plan

Brent,

Our office received the draft Indiana bat Protection plan dated 12/14/2012. I have a question concerning the protection plan. four locations having potential habitat were identified in the plan. Several trees were identified along the right of way that could be potential roost trees. Are these trees being targeted for removal or is it only possible that they will be removed?

--
Jon Duyvejonck

US Fish and Wildlife Service

Rock Island Field Office

tel. 309/757-5800, ex 207

--
Jon Duyvejonck
US Fish and Wildlife Service
Rock Island Field Office
tel. 309/757-5800, ex 207

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, ROCK ISLAND DISTRICT
PO BOX 2004 CLOCK TOWER BUILDING
ROCK ISLAND, ILLINOIS 61204-2004

REPLY TO
ATTENTION OF

January 15, 2013

Environmental Engineering Section

D-MRES-USACE-0178

Mr. Brent Moeller
Missouri River Energy Services
3724 West Avera Drive
PO Box 88920
Sioux Falls, South Dakota 57109-8920

Dear Mr. Moeller:

In response to your request for review of the Draft Indiana Bat Protection Plan for the subject project, the US Army Corps of Engineers, Rock Island District (USACE) reviewed the subject document and has the following comments.

In several locations, the word "Indian" is used; this should be corrected to read "Indiana".

This plan should include necessary steps to comply with the U.S Fish & Wildlife Service February 3, 2012 draft Indiana Bat Summer Survey Guidance and any final guidance when it becomes available. This information can be found at the following website: http://www.fws.gov/midwest/Endangered/mammals/inba/pdf/DraftINBASurveyGuidance.pdf

Include in the plan a discussion of the Endangered Species Act, Section 7 and Section 10 procedures if any action associated with this project may affect or may result in a Take Statement.

Include in the plan other potentially harmful activities to Indiana bats and explain how the impacts of these activities will be abated to include, night time activities, dust and noise near potential Indiana bat habitat.

Recommend removing any reference to the Natural Resource Conservation Service (NRCS) for Indiana Bat coordination and consultation. Additionally, USACE is not the lead agency for Endangered Species Act consultation on this project, contrary to the October 11, 2012 NRCS letter. Per the 1998 USFWS Endangered Species Consultation Handbook available here: http://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf, FERC is the responsible party for any endangered species impacts associated with the hydropower project.

"When two or more Federal agencies are involved in an activity affecting listed species or critical habitat, one agency is designated as the lead (50 CFR §402.07), often based on which agency has the principal responsibility for the project (e.g., a dam is maintained to provide a pool for generating electricity - a Federal Energy Regulatory Commission (FERC) responsibility, but

the capacity behind the dam also provides flood storage - a Corps responsibility. In this case, FERC has lead for the consultation as the dam would probably not be there except for the power generation need). Although one agency has the lead, the other still has to provide data for effects analyses and development of reasonable and prudent alternatives and measures if its activities may affect listed species or critical habitat."

Should you have any other questions, please contact Mr. Jim Bartek at (309) 794-5599 or by e-mail at james.w.bartek@usace.army.mil or Anthony Heddlesten at (309) 794-5886 or email at anthony.d.heddlesten@usace.army.mil.

Sincerely,

Denny A. Lundberg, P.E.
Chief, Engineering & Construction Division

~~Enclosure~~

VanNess Feldman
ATTORNEYS AT LAW
WASHINGTON, DC • SEATTLE, WA

A LIMITED LIABILITY PARTNERSHIP
1050 Thomas Jefferson Street, NW
Washington, DC 20007-3877
(202) 298-1800 Phone
(202) 338-2416

John Clements
(202) 298-1933
jhc@vnf.com

March 15, 2013

Ms. Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Re: Western Minnesota Municipal Power Agency
Red Rock Project No. 12576

Submission of Avian Protection Plan

Dear Secretary Bose:

Pursuant to Article 406 of the license for the Red Rock Project No. 12576, Western Minnesota Municipal Power Agency hereby submits for Commission approval an Avian Protection Plan.

If you have any questions regarding this filing, please contact Nick Fanning at (605) 330-6984 or nfanning@mrenergy.com.

Respectfully submitted,

/s/ John Clements
John Clements

Counsel for Western Minnesota Municipal Power Agency

Enclosure

Cc: Raymond J. Wahle
Nick Fanning

Avian Protection Plan

For The
Red Rock Hydroelectric Project FERC No. 12576

Dated
March 18, 2013

Introduction

The following plan describes measures to be undertaken by Western Minnesota Municipal Power Agency (WMMPA) to address potential impacts to avian species associated with the proposed Red Rock Hydroelectric Project (Project) transmission line.

Nearly all native North American avian species are protected from "take" (i.e., to hunt, capture, kill, harass, or possess) under the federal Migratory Bird Act of 1918, as amended (16 U.S.C. 703-712, et. seq.). Other laws and regulations that prohibit unauthorized take of birds include the federal Endangered Species Act (16 U.S.C. 1531-1543, et. seq.) and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668C, et. seq.). Electric transmission and distribution systems are a potential source of bird electrocution or collision mortality, which may be considered "take".

The extensive research devoted to the causes and solutions to address bird electrocution and collision mortality associated with electric transmission and distribution systems has been summarized by the Avian Power Line Interaction Committee (APLIC) (2006). APLIC members consist of the Edison Electric Institute and its member utilities, U.S. Fish & Wildlife Service, Rural Utilities Service, and other electric utilities. APLIC first published "Suggested Practices for Raptor Protection on Power Lines: The State of the Art" in 1975 with periodic updates. APLIC is considered the industry standard.

This research has prompted state and federal resource agencies, in concert with the electric utility industry, to adopt various standards for structural designs to minimize bird electrocutions and collisions. The key standard for avoidance of bird electrocutions is a minimum spacing of 60 inches horizontal between energized and/or grounded parts (APLIC 2006).

Project License Requirements

On April 18, 2011, CRD Hydroelectric, LLC (Applicant) obtained an original license (FERC No. 12576-004) from the Federal Energy Regulatory Commission (FERC) to construct, operate and maintain the Red Rock Hydroelectric Project (Project). On January 19, 2012, FERC issued an order (FERC No. 12576-008) approving transfer of the license from CRD Hydroelectric, LLC to WMMPA. On April 13, 2012, FERC issued an order (FERC No. 12576-007) amending the original license.

Article 406 of the license states:

> At least 90 days before start of any land-disturbing or land-clearing activities, the licensee shall file with the Commission for approval, an Avian Protection Plan to protect birds from collision hazards and electrocution that may be caused by above-ground portions of the project's transmission line.
>
> The plan shall include provisions for implementing site-specific practices to reduce the potential for adverse effects on bald eagles and other birds in accordance with the following raptor protection guidelines: (1) *Avian Protection Plan Guidelines: A Joint Document prepared by the Edison Electric Institute's Avian Power Line Interaction Committee (APLIC) and U.S. Fish and Wildlife Service*; (2) APLIC's *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006*; and (3) APLIC's *Mitigating Bird Collisions with Power Lines: The State of the Art in 1994*, or the most current editions of these documents.
>
> The plan shall be prepared after consultation with the U. S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and Iowa Department of Natural Resources. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the entities, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.
>
> The Commission reserves the right to require changes to the plan. The plan shall not be implemented until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Project Description

The Project features include (a) a 185-foot-long, 114-foot-wide powerhouse located directly downstream of the existing U.S. Army Corps of Engineer's (Corps) Red Rock Dam spillway; (b) a 105-foot-long, 54-foot-wide intake structure located upstream of the existing U.S. Army Corps of Engineer's (USACE) Red Rock Dam; (c) a 185-foot-long by 58-foot-wide substation located next to the powerhouse on the upstream side; (d) a 4.5-mile-long, 69-kilovolt (kV) transmission line, parts of which will be buried (approximately 1.24-miles) and the remainder of which (approximately 3.26-miles) will be overhead, extending from the substation to the City of Pella West Substation.

Potential Risk to Avian Species

High voltage transmission lines (69kV or greater) tend to pose a much lower risk of electrocution than lower voltage lines because of the required conductor spacing and above-ground clearance (National Electrical Safety Code 2012). Risks increase in weather that hinders flight maneuverability or when feathers are wet, thereby increasing conductivity.

Bird collisions with transmission lines generally become biologically significant only in very specific localized situations (e.g., where major flight paths between feeding and nesting/roosting areas are intersected by a transmission line), or under the influence of distracting lighting at night or adverse weather conditions (APLIC 2006). Overhead ground wires are the major engineering factor contributing to the potential for bird collisions because these narrow wires (often only 0.4-0.5 inches in diameter) may not be detected by birds, particularly under dim lighting. The use of bird flight diverters to mark the overhead shield wire where the proposed line crosses any affected streams or migratory paths will help mitigate bird strikes. Diverters similar to the Bird-Flight Diverter, model BFD-MS-11430 manufactured by Preformed Line Products will be installed on the shield wire beginning at the edge of USACE lands and ending at approximately the intersection of Highway T-15 and Idaho Drive. Additional diverters will be installed where necessary as determined by the results of ongoing monitoring efforts listed in this Plan.

The final design of the Project transmission line will provide adequately spaced and configured conductors to minimize bird electrocution and collision. The electrocution of raptors is primarily a distribution concern due to the close phase spacing of the conductors. Recent publications recommend 60 inches of spacing between phases to minimize raptor electrocution. If a raptor would perch on the end of the 69 kV transmission insulator only one-half of the recommended phase spacing will be necessary since only one-half of the bird would be in close proximity of the conductor and structure. The design of the proposed structure will utilize transmission insulators that are 36 inches in length. The distance between the transmission phase conductors will be greater than 72 inches.

The 12.47 kV distribution conductors will be installed on a crossarm mounted ten feet below the 69 kV transmission line conductors. The distribution conductor phase spacing on the 12.47 kV distribution underbuild will be approximately 36 inches. This distance does not meet the

recommended conductor spacing. Due to this, guards similar to the PG-1 Perch Guard manufactured by the Electrical Materials Company will be installed on the horizontal cross member of the distribution line to ensure that birds do not perch on the cross member.

General Design Configuration

The Project transmission route includes construction of a new 69 kV transmission line extending from the substation to an interconnection point at the City of Pella's existing West Substation near the intersection of Washington Street and West 10th Street in Pella, IA, as shown in Appendix A. The transmission line will be located within an existing, publically-owned right-of-way, portions of which currently possess electrical distribution lines owned by the Pella Cooperative Electric.

The above-ground segments of the transmission line will be approximately 3.26 miles long and will follow the alignment and route of existing distribution lines. The underground portions of the transmission line will occupy USACE lands as well as Pella Municipal Airport lands located near Fifield Road. The types of pole design and conductor configuration will be as shown in Appendix B. Figures 1-2 below, are photos of the pole configurations of the existing distribution line to be upgraded. The Pella Cooperative Electric distribution lines would be combined with the new Project transmission line so that only a single pole line would be present after construction is complete.

Figure 1. Existing single phase distribution line between USACE lands and the intersection of Highway T-15 and Idaho Drive. (Photo looking northeast along T-15 near the intersection of Idaho Drive.)

Figure 2. Three phase distribution line in place along Highway T-15. (Photo looking north along T-15 near Hempstead Drive.)

Corporate Policy and Training Program

Bird interactions with power lines may cause bird injuries and mortalities, which, in turn, may result in outages, violations of bird protection laws, grass and forest fires, or raise concern by employees, resource agencies, and the public.

Corporate policy intends to ensure compliance with legal requirements, while improving transmission system reliability. WMMPA is responsible for managing bird interactions with power lines for the Project and is committed to reducing the detrimental effects of these interactions.

To fulfill this commitment for the Project, WMMPA will:

- Implement and comply with the Avian Protection Plan (APP).
- Ensure its actions comply with applicable laws, regulations, permits, and APP procedures.
- Document bird mortalities, problem poles, and problem nests.
- Provide information, resources, and training to improve its employees' and agents knowledge and awareness of the APP.
- Construct all new or rebuilt facilities for the Project, to avian-safe standards.

WMMPA will likely hire a local utility or qualified subcontractor to conduct line maintenance after Project start-up. WMMPA will require the finally selected line operator and maintenance provider to adopt this APP, or provide its own APP, to ensure proper corporate policy and training programs are initiated.

Maintenance and the repairs to the distribution lines after the construction of the project will be the responsibility of the Pella Cooperative Electric. WMMPA will request Pella Cooperative Electric to follow all Federal and State Avian Protection requirements with regard to the distribution lines.

Permit Compliance

All transmission line construction will comply with this APP and requirements of the FERC license articles. A permit from the USFWS is required prior to removing or relocating a nest. In addition, the USFWS has identified a permit for the non-purposeful take of bald eagles which will be required prior to start of construction. WMMPA submitted an application for this permit on March 6, 2013.

Construction Design Standards

Final design of the Project transmission line is in the process of being completed. Should changes to the APP be required as a result of final design, at completion of final design and prior to start of construction, the FERC record APP will be updated to include final design details and provided to resource agencies and FERC. It is the intent of WMMPA to provide a final design that meets the avian protection standards set forth by APLIC (2006), as well as the National Electrical Safety Code (2012). WMMPA intends to work closely with state and

federal resource agencies throughout design, construction, and operation of the Project transmission line to ensure avian protection.

Nest Management

All construction and maintenance activity involving active nests on Project transmission line facilities will be coordinated with the Region 3 USFWS Migratory Bird Regional Permit Office. Prior to trimming trees, line clearing personnel will inspect the trees during the nesting season (early May to late July) for nests and avoid any trees with active *(i.e.,* eggs or young birds present) nests. If the trees with nests present an emergency, then Region 3 USFWS Migratory Bird Regional Permit Office will be immediately contacted and informed of the situation. Avoiding trees is especially important in the vicinity of riparian areas (streams, creeks, or other water bodies). Line clearing personnel will make every attempt to schedule tree-trimming activity to avoid riparian areas during the nesting season. In addition, tree trimming will be conducted outside of the Indiana bat maternity season as described in the Indiana Bat Protection Plan.

Avian Reporting System

Decision making flow diagrams of company procedures regarding bird and nest management that can be distributed to field personnel as part of employee training are provided in Appendix C. All raptor and non-raptor electrocutions and collisions and nest management reporting will be recorded using the reporting forms also provided in Appendix C. Raptor electrocutions and power line collisions shall be reported to the USFWS Rock Island Field Office within 24 hours of discovery or notification of a carcass and documented using the Animal/Bird Mortality Report. If an active or inactive nest is found on any pole structure, a Raptor/Bird Nesting Record form will be filled out and the USFWS Rock Island Field Office will be contacted.

The completed forms will be kept in accordance with corporate document management policies and applicable regulatory requirements. Copies of all completed reports will be provided to the following:

USFWS Rock Island Field Office
1511 47th Ave
Moline, IL 61265

Mortality Reduction Measures

For new construction, the use of raptor safe pole design and wire configuration provides the best means of reducing avian mortality. In addition, post construction inspections will take place annually in conjunction with transmission line maintenance inspections. Future needs for mortality reduction measures will be based on avian reporting data collected under this APP and post construction inspections. The first step in this process will be increased monitoring of any structures or line segments that show elevated avian mortality. The need for and type of mortality reduction measures will be developed in cooperation with state and federal resource agencies.

Agency Consultation

A Draft Avian Protection Plan dated August 7, 2012, was initially distributed for review and comment on August 7, 2012, to the State and Federal resource agencies listed below:

Iowa Department of Natural Resources
502 E 9th St.
Des Moines, IA 50319-0034

U.S. Army Corps of Engineer's
Rock Island District
Clock Tower Building
P.O. Box 2004
Rock Island, IL 61204-2004

U.S. Fish and Wildlife Service
Rock Island Field Office
1511 47th Ave
Moline, IL 61265

Comments on the draft APP were received from:

Martin Konrad
Executive Officer
Iowa Department of Natural Resources

Richard C. Nelson
Field Supervisor
U.S. Fish and Wildlife Service

Denny A. Lundberg, P.E.
Chief, Engineering & Construction Division
U.S. Army Corps of Engineer's
Rock Island District

Comments on the draft Plan were received from each agency and are included in Appendix D. A summary of the comments and the licensee's response to each as incorporated into the final Plan are as follows:

Agency	Comment	Licensee's Response to Comment
Iowa Department of Natural Resources	The DNR recommends two alternatives to MRES in efforts to resolve electrocution risk to Bald Eagles. The first is to design for 60 inch spacing between phase conductors as recommended in published literature. The second is to install proven perch guards that will minimize perching on the distribution crossarms. Either alternative is accepted by the DNR provided MRES commits itself, in the Plan, to at least one of the alternatives. If selected, perch guard design shall be approved by the DNR.	Construction of the transmission line conductors will meet minimum spacing requirements. Perch guards will be utilized on the distribution cross arms in lieu of maintaining 60 inch conductor spacing. Additional language has been added to the Plan for clarification. Documentation of perch guard approval by the IDNR has been provided in Appendix D.
U.S. Fish and Wildlife Service – Comment 1	The Service would like the opportunity to review planned use of bird diverters on this line. It is unclear from this plan where, or if diverters will be used.	The USFWS has received additional information on the use of bird diverters in the Permit Application for the Non-purposeful Take of Bald Eagles. In addition, language has been added to the Plan for clarification.
U.S. Fish and Wildlife Service – Comment 2	In addition to the permits mentioned, a permit is also required for the non-purposeful take of bald eagles. It is unlawful to take or disturb eagles without first obtaining a permit for non-purposeful take of eagles.	WMMPA submitted the permit application on March 6, 2013.
U.S. Fish and Wildlife Service – Comment 3	The Service requests post construction monitoring to identify segments with elevated avian mortality. It is unclear from the APP if post construction monitoring is planned.	WMMPA intends to visually inspect the line on an annual basis for maintenance purposes. During the annual inspection, personnel will be required to also look for signs of dead birds directly below and immediately adjacent to the transmission line. In instances where a dead bird is found, personnel will be required to document the find

		and contact the appropriate agency according to this Plan. Additional language has been added to the Plan for clarification.
U.S. Army Corps of Engineer's – Comment 1	The tailwaters below the dam are turbulent and free of ice during winter, even in the most frigid conditions. The tailwater is an attractive area for resting, feeding, loafing and roosting bald eagles, gulls, ducks, pelicans and Canada geese. The large concentration of bird species provides an excellent viewing opportunity for bird watchers. The plan should discuss impacts to those species that rely on the dam and future powerhouse outlet works for open water, feeding, etc. especially during construction.	WMMPA has not proposed to alter the amount or timing of flows through the spillway during construction. However, WMMPA may request a change in the gates used during certain times throughout the construction process to minimize turbulent water next to the coffer dams. Due to this, the Project will have minimal if any impacts on open water conditions currently present at the dam during construction. During Project construction, the North Tailwater Area will see an increase in activity due to construction workers and equipment. Potential impacts to bird species due to increased activity in the North Tailwater Area is not known and cannot be definitively determined. However, WMMPA will ensure that the General Contractor is made aware of USACE concerns so that where possible the General Contractor can minimize potential impacts to bird species. During Project operations, the North Tailwater Area will see a negligible increase in activity. Most operations and maintenance activities will take place indoors by one or two individuals. Due to this, the

		Project will have minimal if any impacts on bird species.
U.S. Army Corps of Engineer's – Comment 2	Winter water flow out of the dam is low in comparison to other seasons. The plan should identify if the turbulence of the water will be sufficient to maintain open water for birds if all flow out of the reservoir passes through the turbines.	Winter water flow volumes exiting the dam will not be altered by the project. For flows below the minimum hydraulic capacity of a single turbine (approximately 800 cfs), all water exiting the dam will be discharged via the Corps sluices hence the downstream conditions will be unchanged. For flows exceeding the minimum hydraulic capacity of one turbine but below the maximum plant capacity, all water exiting the dam will be discharged from the turbines. While the water velocity profile in the tailrace of the Project will be different than the water velocity profile in the stilling basin, flow of water through the Project will be sufficient to maintain essentially equivalent open water in the tailrace of the Project.
U.S. Army Corps of Engineer's – Comment 3	Currently, some larger fish and gizzard shad pass through the Red Rock Dam sluice gates at elevation 690-699. These fish may be stunned or disoriented, but easy prey for gulls and bald eagles. The penstocks will divert water that would have gone through the sluice gates through the turbines. The plan should address whether the fish entrainment through the penstocks and turbines leave fish in a similar condition to recover, for avian feeding, or if they will be ground up for bottom feeding fish.	According to the study report, Fish Entrainment and Mortality Assessment for the Red Rock Hydroelectric Project – FERC Project No. 12576-Iowa, by Troy Lyons (IHIR-Hydroscience & Engineering, The University of Iowa) Mr. Lyons presented the results of an extensive literature review of potential and likely fish entrainment and mortality impacts of the Red Rock Hydroelectric Project. Based on the Electric Power Research Institute (EPRI 1997) review of some 50 fish entrainment

		studies, Mr. Lyons found that for Kaplan turbines, the survival rates of entrained fish "tended to range from 90 to 98%". In addition, paragraph 33 (pages 8 and 9) of the FERC license states, "[FERC]Staff concluded that survival of fish through the project's powerhouse would be about 95 percent for small and moderate-sized fish and 88 percent for larger fish, and therefore, the low level of mortality (i.e., 5-12 percent) would likely have minimal effects on the project area fishery." In addition to the low level of mortality rates found by Lyons and FERC Staff, the basic design of a Kaplan turbine can be better described as that of a slow moving window fan with dull blades and not a meat grinder. Water will flow through the turbine blades much like air flows through the blades of the fan. Once again, Mr. Lyons review of EPRI research found that "fish tend to strike a turbine blade rather than the blade's leading edge striking the fish (EPRI 1987)". Mr. Lyons goes on to state that "EPRI (1987) suggests it is reasonable to assume 70% of fish entrained in the penstock reach the turbine runner adjacent to the hub, about 20% approach the blade mid-sections, and the remaining 10% arrive near the perimeter." In addition to the design of the Kaplan turbine, turbine speed is also thought to

		be a factor in fish survival. Mr. Lyons stated that "The highest mean survival rates were reported from Kaplan/propeller sites with runner speeds < 300 rpm (Winchell et al. 2000)." The turbine proposed for the Project will operate at 120 rpm. Due to this, fish that do not survive passage through the turbine are likely to be in a similar condition as fish that are "stunned and disoriented" by passing through the existing sluice gates and not "ground up" for bottom feeding fish.
U.S. Army Corps of Engineer's – Comment 4	The plan should address whether or not there will be any bird hazards at the power plant building, or if any electric components associated with generation outside of the plant may be hazardous.	The substation will be located adjacent to the powerhouse on the upstream side between the powerhouse and the crest of the dam. The substation will consist of transformers, lightning protection masts with shield wires, and aluminum busswork supported by steel structures all of which will be surrounded by chainlink fence to prevent unauthorized access. Electrical hazards will be present within the substation. However, due to the configuration and location, supporting structures and other non-current carrying components will be taller than any energized electrical components located within the substation, thereby greatly reducing the likelihood of birds perching on the lower, energized components. In addition, bird diverters will be installed on the shield wires within the substation in order to minimize the risk of bird collisions with the shield wire.

U.S. Army Corps of Engineer's – Comment 5	The plan should address if there will be any effects to avian activity due to electromagnetic fields from the power plant or transmission equipment. This includes avian feeding, resting, roosting, migration and nesting. Cliff swallows, tress, swallows, purple martins, bluebirds and wrens are all known to nest below the dam.	WMMPA does not have information of any plant that causes EMF interference. The powerhouse acts like a Faraday cage due to all its rebar and the exposed 69 kV substation has low current (<500 A) and balances phases, so there should not be any concern of EMF even in the vicinity of the plant. Some higher voltage lines cause interference at a very short distance, but in this Project the line goes underground as soon as it leaves the substation. The closeness of the three conductors in the underground line eliminates any EMF concerns.
U.S. Army Corps of Engineer's – Comment 6	The plan should reflect that Red Rock is listed as an Important Bird Area by the Audubon Society due to its importance to migrating waterfowl and water birds.	Noted. The proposed plan seeks to protect birds from collision hazards and electrocution that may be caused by above-ground portions of the Project's transmission line as instructed by FERC in Article 406 of the license and in accordance with the Avian Power Line Interaction Committee's suggested practices and guidance
U.S. Army Corps of Engineer's – Comment 7	In the section titled, "Potential Risk to Avian Species" on page 3, it is stated that MRES will attempt to utilize perch guards instead of using the 60" recommended spacing. Perch guards must be used if the recommended spacing is not met.	See response to the IDNR comment above.
U.S. Army Corps of Engineer's – Comment 8	As per discussion with the Marion County engineer, a permit from Marion County is required for the transmission line. Include coordination with	The Marion County engineer has been contacted and discussions are underway regarding a permit.

	the Marion County engineer and permit application in the plan.	

References

APLIC (Avian Power Line Interaction Committee). 2005. *Avian Protection Guidelines.* A Joint document prepared by the Edison Electric Institute's Avian Power Line Interaction Committee (APLIC) and U.S. Fish and Wildlife Service (USFWS).

APLIC (Avian Power Line Interaction Committee). 2006. *Suggested Practices for Avian Protection on Power Lines: State of the Art in 2006.* Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA.

APLIC (Avian Power Line Interaction Committee). 1994. *Mitigating Bird Collisions with Power Lines: The State of the Art in 1994.* Edison Electric Institute and APLIC. Washington, D.C.

FERC (Federal Energy Regulatory Commission). 2011. *Order Issuing Original Major License.* Project No. 12576-004

National Electrical Safety Code. 2012. C2-2012. Published by the Institute of Electrical and Electronics Engineers, Inc. and the American National Standards Institute. New York, N.Y. 257

APPENDIX A

Map of Transmission Route

REV	DATE	DESCRIPTION

DeWild Grant Reckert & Assoc. Co.
Consulting Engineers
Rock Rapids, Iowa

Date:	4-11
Designed By:	DJH
Project Manager:	DJH
Project Number:	418516

MISSOURI RIVER ENERGY SERVICES
SIOUX FALLS, SOUTH DAKOTA

RED ROCK HYDRO ELECTRIC PROJECT
TRANSMISSION ROUTING
PELLA WEST SUBSTATION

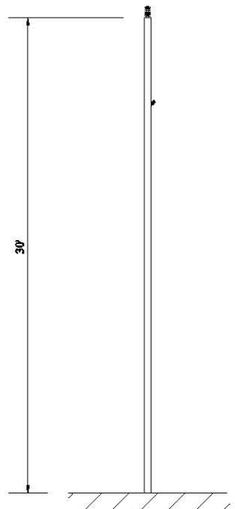
DWG NO

Fig. 1

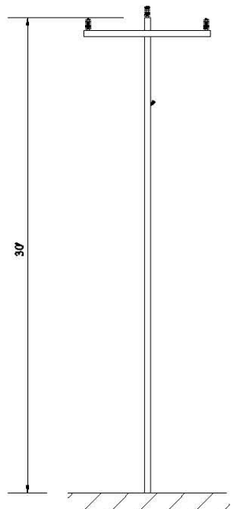
P:\04\11851\GDWG\XSMROUTEPLAT.DWG

APPENDIX B

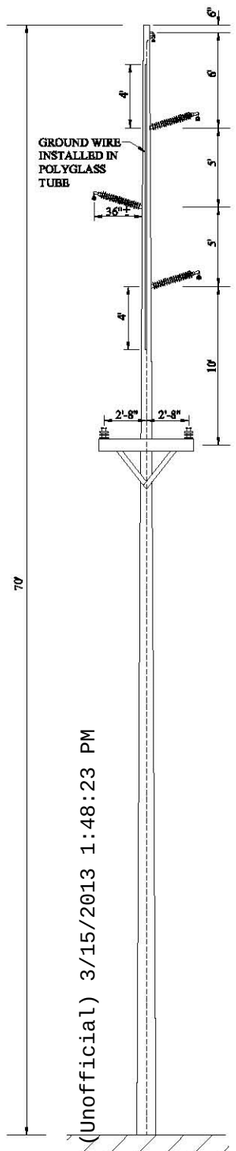
Pole Structural Diagrams



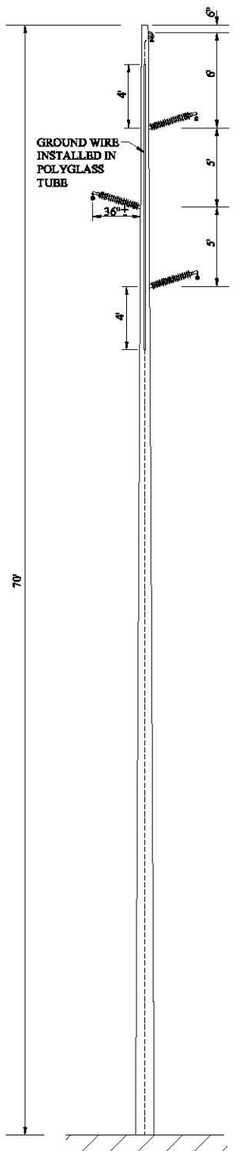
15 kV
EXISTING STRUCTURE
TYPE A



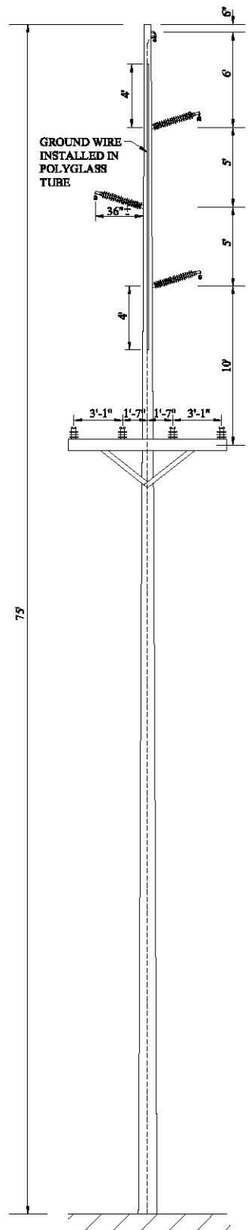
15 kV
EXISTING STRUCTURE
TYPE B



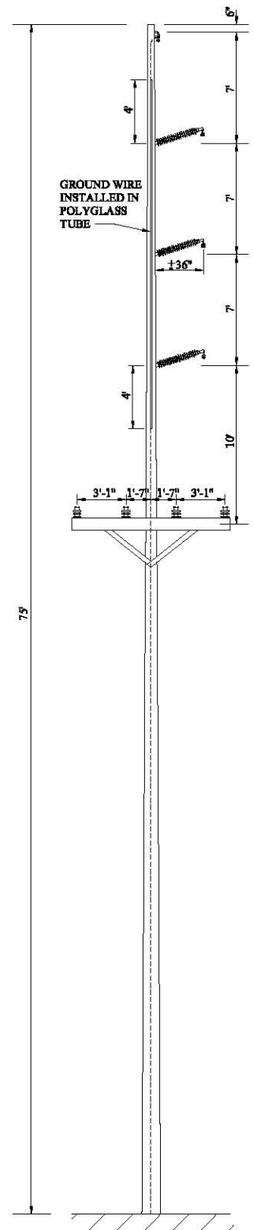
69 kV
PROPOSED STRUCTURE
TP-69
TYPE C



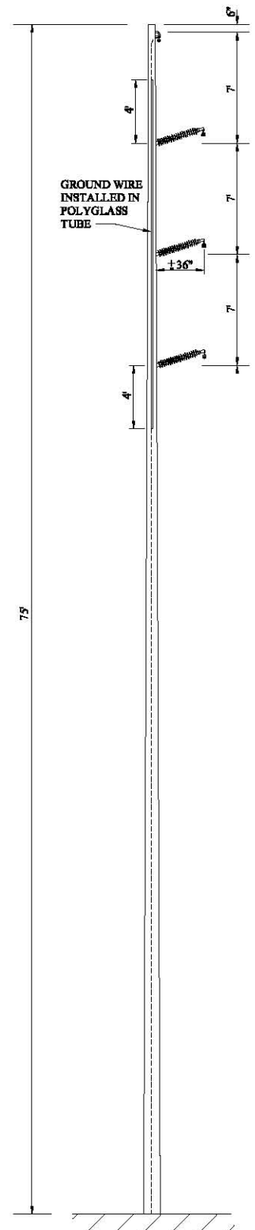
69 kV
PROPOSED STRUCTURE
TP-69
TYPE D



69 kV
PROPOSED STRUCTURE
TP-69 UB
TYPE E



69 kV
PROPOSED STRUCTURE
TP-69B UB
TYPE F



69 kV
PROPOSED STRUCTURE
TP-69B UB
TYPE G

P:\04\18516\DWG\STRDIAGRAM.DWG

REV	DATE	DESCRIPTION

DeWild Grant Reckert & Assoc. Co.
Consulting Engineers
Rock Rapids, Iowa

Date:	7-12
Designed By:	DJH
Project Manager:	DJH
Project Number:	418516

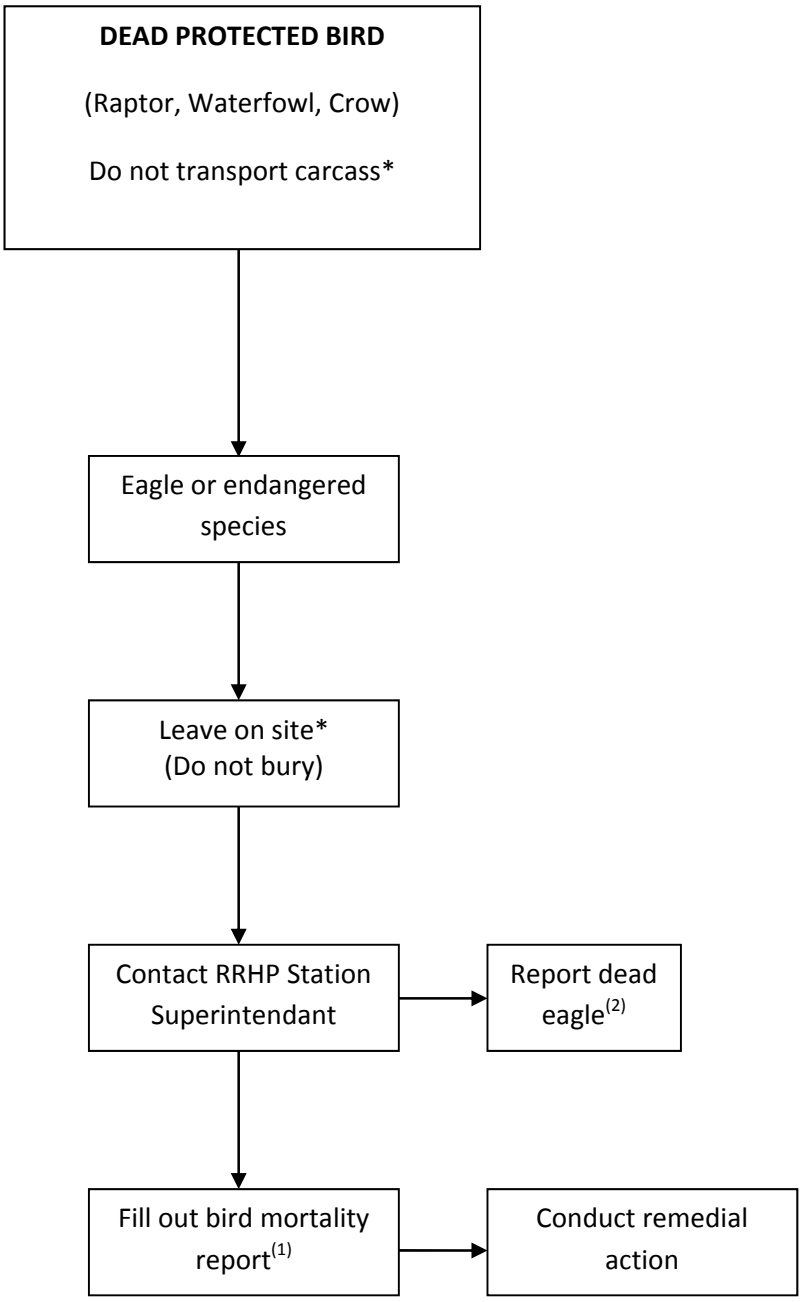
WESTERN MINNESOTA
MUNICIPAL POWER AGENCY
SIOUX FALLS, SOUTH DAKOTA

RED ROCK HYDRO ELECTRIC PROJECT
STRUCTURE DIAGRAMS

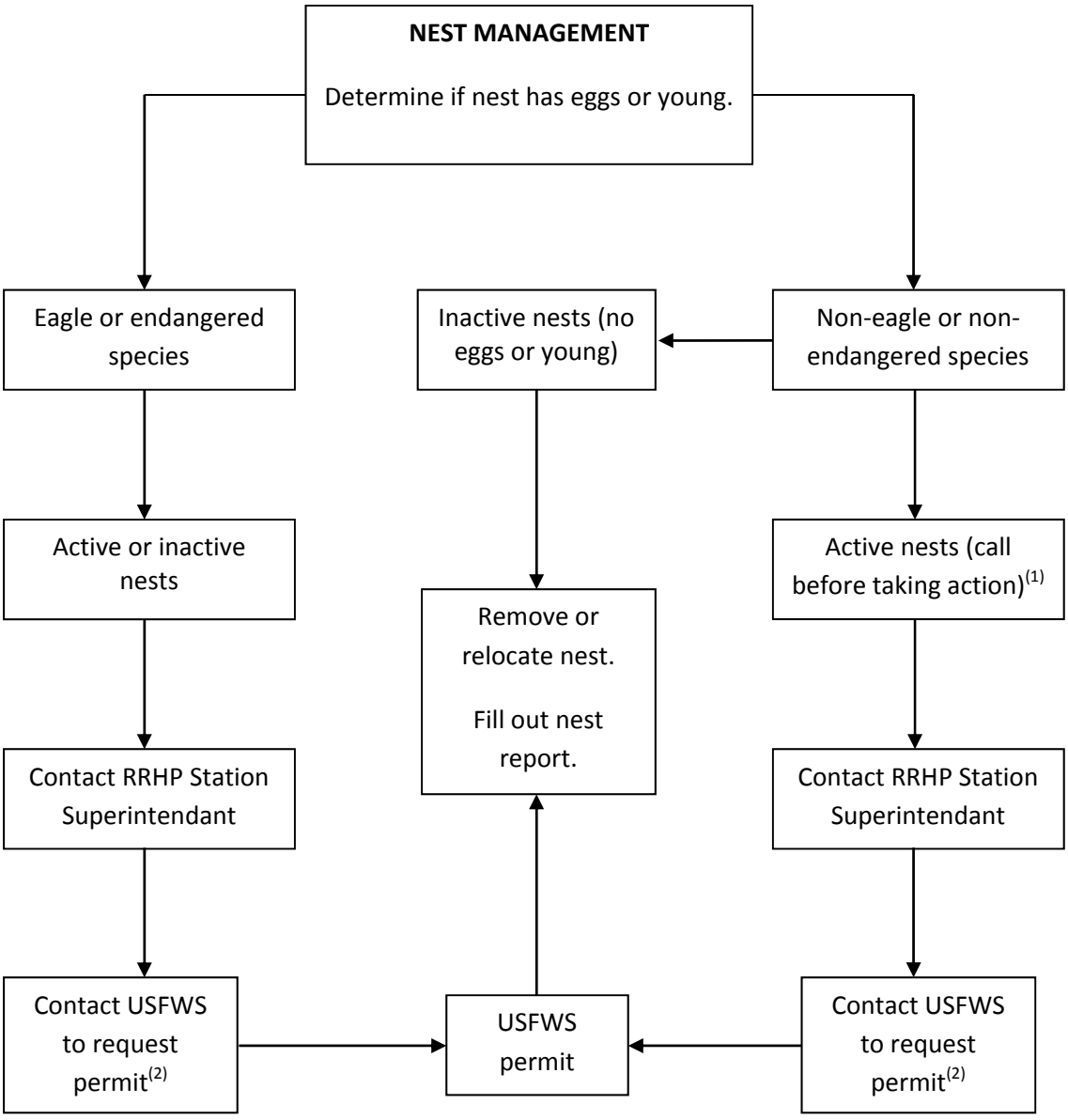
DWG NO: GL-1

APPENDIX C

Decision Flow Diagrams & Reporting Forms



(1) Bird mortality report is entered in MRES Record's Management System.
(2) Contact USFWS if eagle or banded bird. Injured birds should be reported to the USFWS Rock Island Field Office.



(1) If imminent danger exists, conduct necessary action first; then call the USWFS Rock Island Field Office immediately.

(2) Contact the USFWS Rock Island Field Office to request necessary permit(s) for active nest or eagle nest removal/relocation.

Animal/Bird Mortality Report

Date _____

Name _____

Work location _____ Phone _____

Describe the species of the animal or bird that was mortally injured (electrocution/collision)

_____

_____

If any bands or tags please return to Environmental Department or write number and agency here

_____

_____

Describe how the animal or bird was mortally injured (bird contacted transformer bushings, etc.)

_____

_____

_____

_____

Weather conditions at time of death if known (e.g. rainy and cold, sunny and warm, etc.)

_____

_____

_____

Circuit name & voltage _____

Specific problem location (e.g. pole #/address/cross streets, etc.)

_____

_____

_____

Description of terrain and vegetation in area (e.g. near agricultural area, urban area, residential, etc.)

_____

_____

_____

Recommended corrective action

_____

_____

Please attach picture of the bird or animal if possible.

APLIC (2006)

Raptor/Bird Nesting Record

Date _____

Name _____

Work location _____ Phone _____

Species of raptor/bird (if known) _____

Circuit name and voltage _____

Specific nest location (pole no.) _____

Condition of nest

_____

_____

Are eggs or young birds apparent? If so, please describe.

_____

_____

_____

Description of terrain and vegetation in area (e.g. near agricultural area, urban area, residential, etc.)

_____

_____

_____

History of previous nesting on this circuit

_____

_____

_____

History of electrocutions/mortality on this circuit

_____

_____

_____

Recommendations

_____

_____

_____

Please attach picture of the bird and/or nest, if possible.

APLIC (2006)

APPENDIX D

Agency Consultation

Fields of Opportunities

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

August 29, 2012

Missouri River Energy Services
3724 West Avera Drive
P.O. Box 88920
Sioux Falls, SD 57109-8920

RE: Red Rock Hydroelectric Project Draft Avian Protection Plan

Dear Mr. Wahle,

DNR Wildlife Bureau staff completed their reviewed the Draft Avian Protection Plan (Plan) for the Red Rock Hydroelectric Project and found overall the Plan to be acceptable. It considers avian protective laws, and the avian reporting system and nest management protocol is expected to prove effective in monitoring raptor/transmission line interactions.

However the proposed 36 inch spacing between phase conductors is very concerning. The Midwinter Bald Eagle Survey data indicate the potential for over 1,500 individual eagles to utilize the Des Moines River each winter. The underground transmission line in the immediate vicinity of the dam will eliminate raptor collisions and electrocution in this major Bald Eagle wintering area. But in referencing phase conductor spacing the Plan states “recent publications recommend 60 inches of spacing between phases to minimize raptor electrocution,” yet the Plan only proposes approximately 36 inches of spacing. Female Bald Eagles can attain a 72 inch wingspan, this wingspan reach presents a significant potential for Bald Eagle electrocution. The DNR recommends two alternatives to MRES in efforts to resolve electrocution risk to Bald Eagles. The first is to design for 60 inch spacing between phase conductors as recommend in published literature. The second is to install proven perch guards that will minimize perching on the distribution crossarms. Either alternative is accepted by the DNR provided MRES commits itself, in the Plan, to at least one of the alternatives. If selected, perch guard design shall be approved by the DNR.

Sincerely,

Martin Konrad

Martin Konrad
Executive Officer

c: Brent Moeller, MRES

Nick Fanning

From: Konrad, Martin [DNR] <Martin.Konrad@dnr.iowa.gov>
Sent: Monday, February 25, 2013 8:46 AM
To: Nick Fanning
Cc: Brent Moeller
Subject: RE: Red Rock Hydroelectric Project

Mr. Fanning,
As long as a perch guard is placed on the cross arm on each side of the pole supporting it, that should minimize the opportunity for perching raptors. Another concern might be the potential for eagles to perch atop the pole itself. But that will not be a concern if the top of the pole is at least 36 inches from a transmission line. If the PG-1 Perch Guard is installed on the cross arm on each side of the pole and the top of the pole is at least 36 inches from a transmission line the Iowa DNR will approve the PG-1 Perch Guard.

Martin Konrad
Iowa DNR
502 E 9th Street
Des Moines, IA. 50319
email: Martin.Konrad@dnr.iowa.gov
ph. 515/281-6976
fax 515/281-6794

From: Nick Fanning [mailto:nfanning@mrenergy.com]
Sent: Thursday, February 21, 2013 1:38 PM
To: Konrad, Martin [DNR]
Cc: Brent Moeller
Subject: Red Rock Hydroelectric Project

Mr. Konrad,

As stated in your letter dated August 29, 2012 regarding the draft Avian Protection Plan for the Red Rock Project, "If selected, perch guard design shall be approved by the DNR." The engineer for the transmission line has selected the PG-1 Perch Guard manufactured by the Electrical Materials Company to be installed on the horizontal cross member of the distribution line. Please confirm that the proposed perch guard is acceptable to the Iowa Department of Natural Resources.

Respectfully,

Nick Fanning
Resource Engineer I
Missouri River Energy Services
Phone: 605-330-6984
Cell: 605-370-4559
Fax: 605-978-1015

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Rock Island Field Office
1511 47th Avenue
Moline, Illinois 61265
Phone: (309) 757-5800 Fax: (309) 757-5807

IN REPLY REFER TO:
FWS/RIFO

September 4, 2012

Mr. Raymond Wahle
Missouri River Energy Services
3724 West Avera Drive
PO Box 88920
Sioux Falls, South Dakota 57109

Dear Mr. Wahle:

We have reviewed your August 7, 2012 request for comments on the Red Rock River Hydroelectric Project Draft Avian Protection Plan. The U.S. Fish and Wildlife Service (Service) has the following comments.

Potential Risk to Avian Species

The Service would like the opportunity to review the planned use of bird diverters on this line. It is unclear from this plan where, or if diverters will be used.

Permit Compliance

In addition to the permits mentioned, a permit is also required for the non-purposeful take of bald eagles (*Haliaeetus leucocephalus*). It is unlawful to take or disturb eagles without first obtaining a permit for non-purposeful take of eagles. However, no permit would be available unless an applicant has first taken all practicable steps to avoid take of eagles. Information about eagle permits can be found online at the following link:
http://www.fws.gov/midwest/MidwestBird/eaglepermits/

Mortality Reduction Measures

The Service requests post construction monitoring to identify segments with elevated avian mortality. It is unclear from the APP if post construction monitoring is planned.

Thank you for the opportunity to provide comments. We appreciate the efforts already made to reduce the potential for birds to collide with this line. If you have any additional questions or concerns, please contact Drew Becker of my staff, extension 216.

Sincerely,

Richard C. Nelson
Field Supervisor

cc: USFWS, RIFO (Andress)

s:\office users\drew\letters\app\red rock hydroelectric.doc

DEPARTMENT OF THE ARMY
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS
CLOCK TOWER BUILDING - P.O. BOX 2004
ROCK ISLAND, ILLINOIS 61204-2004

http://www.mvr.usace.army.mil

REPLY TO
ATTENTION OF

CEMVR-EC-DN

Mr. Brent Moeller
Missouri River Energy Services
3724 West Avera Drive
PO Box 88920
Sioux Falls, SD 57109-8920

SUBJECT: Review of Red Rock Hydroelectric Project, P-12576, Draft Avian Protection Plan

Dear Mr. Moeller:

In response to your request for review of the Draft Avian Protection Plan dated 7 August 2012 for the subject project, the US Army Corps of Engineers, Rock Island District has reviewed the subject document and offers comments on the attached pages.

Should you have any other questions, please contact Mr. Jim Bartek at (309) 794-5599 or by e-mail at james.w.bartek@usace.army.mil or Anthony Heddlesten at (309) 794-5886 or email at anthony.d.heddlesten@usace.army.mil.

Sincerely,

Denny A. Lundberg, P.E.
Chief, Engineering & Construction Division

Encl

Enclosures:

Comments on Draft Avian Protection Plan:

1. The tailwaters below the dam are turbulent and free of ice during winter, even in the most frigid conditions. The tailwater is an attractive area for resting, feeding, loafing and roosting bald eagles, gulls, ducks, pelicans and Canada geese. The large concentration of bird species provides an excellent viewing opportunity for bird watchers. The plan should discuss impacts to those species that rely on the dam and future powerhouse outlet works for open water, feeding, etc. especially during construction.
2. Winter water flow out of the dam is low in comparison to other seasons. The plan should identify if the turbulence of the water will be sufficient to maintain open water for birds if all flow out of the reservoir passes through the turbines.
3. Currently, some larger fish and gizzard shad pass through the Red Rock Dam sluice gates at elevation 690-699. These fish may be stunned or disoriented, but easy prey for gulls and bald eagles. The penstocks will divert the water that would have gone through the sluice gates through the turbines. The plan should address whether the fish entrainment through the penstocks and turbines leave fish in a similar condition to recover, for avian feeding, or if they will be ground up for bottom feeding fish.
4. The plan should address whether or not there will be any bird hazards at the power plant building, or if any electric components associated with generation outside of the plant may be hazards.
5. The plan should address if there will be any effects to avian activity due to electromagnetic fields from the power plant or transmission equipment. This includes avian feeding, resting, roosting, migration and nesting. Cliff swallows, tree swallows, purple martins, bluebirds and wrens are all known to nest below the dam.
6. The plan should reflect that Red Rock is listed as an Important Bird Area by the Audubon Society due to its importance to migrating waterfowl and water birds.
7. In the section titled, "Potential Risk to Avian Species" on page 3, it is stated that MRES will attempt to utilize perch guards instead of using the 60" recommended spacing. Perch guards must be used if the recommended spacing is not met.
8. Per discussion with the Marion County engineer, a permit from Marion County is required for the transmission line. Include coordination with the Marion County engineer and permit application in the plan.

CF w/o encls:
EC-DG (Bartek)
EC-D (Dist File)

Recreation Mitigation Plan

For The
Red Rock Hydroelectric Project FERC No. 12576

Dated
May 14, 2013

Introduction

The following plan describes measures to be undertaken by Western Minnesota Municipal Power Agency (WMMPA) to address impacts to recreational facilities owned by the U.S. Army Corps of Engineer's (USACE) and are affected by construction of the Red Rock Hydroelectric Project.

FERC License Requirements

On April 18, 2011, CRD Hydroelectric, LLC (Applicant) obtained an original license (FERC No. 12576-004) from the Federal Energy Regulatory Commission (FERC) to construct, operate and maintain the Red Rock Hydroelectric Project (Project). On January 19, 2012, FERC issued an order (FERC No. 12576-008) approving transfer of the license from CRD Hydroelectric, LLC to WMMPA. On April 13, 2012, FERC issued an order (FERC No. 12576-007) amending the license to reflect changes that reduce impacts on the dam's existing structures and improve constructability and dam safety.

Article 308 of the license states:

> The licensee shall within 90 days from the issuance date of the license, enter into an agreement with the Corps to coordinate its plans for access to and site activities on lands and property administered by the Corps so that the authorized purposes, including operation of the Federal facilities, are protected. In general, the agreement shall not be redundant with the Commission's requirements contained in this license, shall identify the facility, and the study and construction activities, as applicable, and terms and conditions under which studies and construction will be conducted. The agreement shall be mainly composed of reasonable arrangements for access to the Corps site to conduct studies and construction activities, such access rights to be conditioned by the Corps as may be necessary to protect the federally authorized project purposes and operations. Should the licensee and the Corps fail to reach an access agreement, the licensee shall refer the matter to the Commission for resolution.

Article 17 of the terms and conditions of the license states:

> The Licensee shall construct, maintain, and operate, or shall arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves,

launching ramps, beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration to the needs of the physically handicapped, and shall comply with such reasonable modifications of the project, as may be prescribed hereafter by the Commission during the term of this license upon its own motion or upon the recommendation of the Secretary of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

USACE Agreement Requirements

On October 24, 2011, an agreement for Access, Design and Construction of the Red Rock Hydroelectric Project was entered into by the Department of the Army and CRD Hydroelectric, LLC.

Paragraph 1, page 4 states:

> The Congressionally authorized and primary purpose of the Federal Project is flood control. The Licensee shall design, construct, operate, and maintain the Hydroelectric Project in a manner consistent with the Corp's mandate to operate, maintain, and improve the Federal Project for flood control and other federally authorized purposes, including, but not limited to, protection and enhancement of water quality, fish and wildlife, and recreation.

Article IV, paragraph G, page 17 states:

> Plans for access to Corps recreation and operation facilities during construction and a construction schedule will be provided to the Corps a minimum of 60 days prior to start of on-site construction by the Licensee.

Article IX, paragraph A, page 19 states:

> The Licensee shall include in all construction contracts a requirement that the construction contractor restore the Federal Project to the condition existing prior to construction of the Hydroelectric Project, to the extent that the condition requiring restoration is caused by construction of the Hydroelectric Project, including the following, as applicable:
>
> 1. Resurfacing access roads damaged during construction.
> 2. Disposal area rehabilitation and re-vegetation.
> 3. Erosion control where slopes are changed from existing conditions.
> 4. Repair of damages to utilities.
> 5. Repair or replacement in a manner acceptable to the Corps of other Federal property, facilities, and/or equipment damaged or destroyed or rendered useless as a result of investigation for, or construction of, the Hydroelectric Project.

Project Description

The Project features include (a) a 185-foot-wide, 114-foot-long powerhouse located directly downstream of the existing Corps' Red Rock Dam; (b) a 54-foot-wide, 110-foot-long intake located directly upstream of the existing Red Rock dam; (c) a 184-foot-long by 58-foot-wide switchyard located next to the powerhouse on the upstream side; (d) a 4.5-mile-long, 69-kilovolt (kV) transmission line, parts of which will be buried (approximately 1.24-miles) and the remainder of which (approximately 3.26-miles) will be overhead, extending from the substation to the City of Pella West Substation.

In addition to the major project features listed above, powerhouse utilities such as communications, water, wastewater, and backup power will be constructed for the Project.

Affected Areas and Mitigation Measures

Meetings were held on March 22, 2012 and May 15, 2012, to discuss areas of Lake Red Rock that will be affected by construction of the Project. During the meeting held on May 15, 2012, the Corps provided WMMPA with a list of recreation facilities that could potentially be affected by construction activities given the expected areas affected that were previously suggested by WMMPA. A summary of the recreation facilities presented by the USACE is attached in Appendix A.

After further review by WMMPA, construction of the Project will affect the North Tailwater Area, the North Overlook Area, and the Whitebreast Recreation Area. A brief description of each area and the expected duration that each area will be affected is listed below. In addition, a map showing the location of each area is attached in Appendix B.

A. The North Tailwater Area will be affected for the entire duration of Project construction, which is estimated to last for three years. During this time, access to the North Tailwater Area will be denied to the public to ensure site safety and security. A security checkpoint is to be installed near the intersection of 216th Place and 198th Place to ensure public safety.

B. The North Overlook Area will be affected during construction of the underground transmission line, which is estimated to last for three months. During this time, access to the North Overlook Area will be denied to the public to ensure public safety.

C. The Whitebreast Recreation Area will be affected off and on during construction of the Project upstream works, which is estimated to last for two and a half years. During this time, public access to this area will be denied to ensure public safety.

D. The Volksweg Trail will be affected for the entire duration of Project construction, which is estimated to last for three years. During this time, access to approximately 5,200-feet of the Volksweg Trail will be denied to the public to ensure site safety and security.

North Tailwater Area
The North Tailwater Area is located immediately downstream of the dam and on the left side (looking downstream) of the existing spillway as shown in the Map of Affected Areas attached in Appendix B. A more detailed description of each recreation facility in the North Tailwater Area is attached in Appendix C.

The North Tailwater Area consists of the following recreation facilities.

1. Picnic Shelter #1
2. Picnic Shelter #2
3. Playground
4. Fish Cleaning Station
5. Five Parking Lots Containing 95 Parking Spaces
6. Fishing Access
7. Restroom
8. Approximately 2,800-feet of the Volksweg Bike Trail
9. Volksweg Trail Connection

Access to items 1 through 9 listed above will be denied to the public for the duration of Project construction, which is estimated to last three years.

To mitigate the denial of public access to these facilities during construction, the following actions are to be taken, see Appendix D for the Map of the Mitigation Areas and Appendix E for a more detailed description of each feature:

1. A new picnic shelter is to be constructed at the South Tailwater Area.
2. A new playground is to be constructed at the South Tailwater Area.
3. A new fish cleaning station is to be constructed at the South Tailwater Area.
4. Additional parking spaces are to be constructed at the South Tailwater Area.
5. A new restroom is to be constructed at the Robert's Creek Trailhead.
6. A new shelter is to be constructed at the Robert's Creek Trailhead.
7. A new graveled parking lot is to be constructed at the Robert's Creek Trailhead.
8. The Volksweg Bike Trail will be extended from the Fifield Recreation Area to the Robert's Creek Trailhead, approximately 7,000 ft (assuming that the bike trail is to be located on the shoulder along Robert's Creek dam without extending the shoulder by installation of a retaining wall).
9. A new kiosk will be constructed at the Robert's Creek Trailhead

North Overlook Area
The North Overlook Area is located on the downstream side of the dam and to the northeast of the North Tailwater Area as shown in the Map of Affected Areas attached in Appendix B.

The North Overlook Area consists of the following recreational facilities.

1. Picnic Shelter
2. Parking Lot Containing 60 Parking Spaces
3. Restroom
4. Hiking Trail
5. Volksweg Trailhead

Access to items 1 through 5 listed above will be denied to the public for approximately three months during construction of the underground transmission line. In addition, there may be occasional use of the North Overlook Parking Lot during construction of the Project.

To minimize potential impacts to the public, construction activities in the North Overlook Area will be scheduled in the fall and winter months. In addition, a new shelter will be constructed at Cordova Center. See Appendix D for a Map of the Mitigation Areas and Appendix E for a detailed description of the shelter.

Whitebreast Recreation Area

The Whitebreast Recreation Area is located upstream of the dam on the south side of the reservoir as shown in the Map of Affected Areas attached in Appendix B, and consists of a parking lot for day use.

Public access to this area will be denied and the area will be secured by a fence with gated access for construction personnel and equipment during construction of the intake, which is expected to take two and a half years.

Miscellaneous Items

In order to minimize noise pollution in the Howell Station and North Overlook Campgrounds, night truck traffic during the camping season will be kept to a minimum, whenever possible. In addition, any lighting used for construction of the Project will be directed away from the campgrounds. Reasonable dust and dirt control measures will be utilized to control infiltration of dirt and dust into the campgrounds from construction operations.

Recreation Mitigation - Post Construction Mitigation

Where practical, recreation facilities not removed during construction will be repaired to a condition equivalent to that which was found prior to start of construction. The general construction contractors for the recreation mitigation features will be responsible for videotaping all features, parking lots, and roads within the recreation mitigation areas in order to document the condition of the features prior to start of construction. All recreation facilities removed or damaged beyond repair during construction will be replaced with new facilities comparable in size, type, quality, and appearance. Repair and restoration of any damaged or removed facilities will be made without delay after recreation mitigation work in the area has been completed.

All roads and parking lots located on Corps property that are damaged due to construction traffic will be repaired where practical. Parking lots and section of roads that are damaged beyond

repair due to construction traffic will be rebuilt to be comparable in size, type, quality, and appearance with existing parking lots and roads.

In addition to the measures proposed in this plan, a fishing access facility is to be constructed in the North Tailwater Area, downstream of the Project. For more information about the fishing access facility, see the Fishing Access Design and Management Plan and Article 405 of the FERC license.

General Requirements

The following is a list of general requirements for all Recreation Mitigation work.

1. Construction activity shall comply with all pertinent provisions of the most current printing of the UCASE Safety and Health Requirements Manual, EM-385-1-1. A Safety Plan shall be submitted to and approved by the USACE prior to start of work.
2. A Quality Assurance Plan will be submitted to the USACE for review and approval prior to start of work. The plan will describe responsibilities for Quality Assurance and required documentation that will be provided to the USACE.
3. All construction contracts shall require provisions for identifying utilities prior to work at any location, and shall require coordination with the USACE to identify USACE owned utilities.
4. All construction contracts shall require the contractor to properly sign and secure construction areas to prevent public entry. Closure of work areas (in total or partial) will be coordinated with the Lake Red Rock Project Manager.
5. Contractors will be required to provide all necessary traffic control to ensure safety in and adjacent to the work sites.
6. All construction contracts shall require the contractor to coordinate the location of material delivery and equipment staging areas with the Lake Red Rock Project Manager.
7. WMMPA is responsible for determining site conditions and all site preparation.
8. All drawings and specifications for the work shall have a State of Iowa Professional Engineer's Stamp.
9. Exact location of facilities shall be field verified by WMMPA and the Lake Red Rock Project Manager or other USACE representative prior to start of construction.
10. WMMPA shall submit five (5) copies of the design drawings and specifications of the proposed recreation mitigation features to the USACE for review and approval prior to start of construction of the recreation mitigation features.

Licensing and Turnover

Authorization for use of USACE lands and construction thereon of all recreation mitigation facilities and features listed in this Plan will be granted by a Department of the Army License, to which this Plan will be made an exhibit to. Upon completion, turnover of all recreation mitigation facilities and features will be done pursuant to the execution by WMMPA and the USACE of the Turnover Certificate attached in Appendix F.

Agency Consultation

A Draft Recreation Mitigation Plan dated August 3, 2012, was initially distributed for review and comment on August 3, 2012 to the agency listed below:

U.S. Army Corps of Engineer's
Rock Island District
Clock Tower Building
P.O. Box 2004
Rock Island, IL 61204-2004

A consultation meeting was held on September 25, 2012 with the Corps to review the draft Plan. Follow-up meetings were also held on December 5, 2012 and December 19, 2012 to discuss access for construction of the recreation mitigation features and preliminary layouts. Input received from the Corps was included in the draft Plan and a second draft was issued to the Corps for review and comment on XXXXX.

Comments on the second draft Plan from the Corps are included in Appendix G. A summary of the USACE comments and the Licensee's response to each as incorporated into the final Plan are as follows:

References

FERC (Federal Energy Regulatory Commission). 2011. *Order Issuing Original Major License.* Project No. 12576-004

Agreement Between the Department of the Army and CRD Hydroelectric, LLC for Access, Design and Construction of the Red Rock Hydroelectric Project. FERC Licensed Project No. 12576 Pursuant to License Article 308. Executed October 24th, 2011.

APPENDIX A

Meeting Notes and Information

Impact	Proposed Mitigation	Impact	Proposed Mitigation	Impact	Proposed Mitigation
North Tailwater: Picnic Shelter #1	Shelter at South Tailwater	North Tailwater: Restroom	Restroom at Howell Station Landing	North Overlook Picnic Area: Parking Lot	Parking at Cordova Park
North Tailwater: Picnic Shelter #2	Shelter at Robert's Creek Trailhead	North Tailwater: Volksweg Trailhead		North Overlook Picnic Area: Restroom	Restroom at Robert's Creek Trailhead
North Tailwater: Playground	Playground at South Tailwater	North Tailwater: Volksweg Trail Connection	2 Mile Trail: Fifield to Cordova Boatramp	North Overlook: Campground & Beach Entrances	Maintain Access to North Overlook Campground & Beach
North Tailwater: Fish Cleaning Station	Fish Cleaning Station at South Tailwater	North Overlook Picnic Area: Volksweg Trailhead	Trailhead at Robert's Creek Dam	North Overlook & Howell Station Campgrounds	Minimize Night Truck Traffic
North Tailwater: Parking Lots	Parking at South Tailwater; Robert's Creek Dam; Cordova	North Overlook Picnic Area: Hiking Trail	Maintain Limited Parking at North Overlook Picnic	Partial and/or Total Dam Road Closure	Minimize Closure & Improve Detour
North Tailwater: Fishing Access	See Individual Affected Facilities	North Overlook Picnic Area: Picnic Shelter	Shelter at Cordova Park		

APPENDIX B

Map of Affected Areas


Whitebreast
Recreation Area
Volksweg Trail
Affected Segment
North Overlook
Area
North Tailwater
Area
© 2013 Google
Google earth

APPENDIX C

Details of Existing Recreation Facilities

North Tailwater Area Picnic Shelter #1
Picnic Shelter #1 consists of a 30-foot-long by 30-foot-wide, open sided shelter with a roof, concrete floor, group grill (located off on the southeast side), lighting, electric outlets, and five tables which can accommodate 40 people.

North Tailwater Area Picnic Shelter #2
Picnic Shelter #2 consists of a 35-foot-long by 35-foot-wide, open sided shelter with a roof, concrete floor, group grill (located off on the northeast side), lighting, electric outlets, and seven tables which can accommodate 56 people.

North Tailwater Playground
The North Tailwater Playground is considered to be a mid-size playground consisting of a manufactured play system, a wood chip base, and four logs for climbing.

North Tailwater Fish Cleaning Station
The North Tailwater Fish Cleaning Station consists of a 14-foot-long by 14-foot-wide, open sided shelter with a roof, concrete floor, fish cleaning table, lighting, electric outlets, and water/waste water connections.

North Tailwater Parking Lots
The North Tailwater Parking Lots contain 95 marked parking spaces within the five separate lots.

North Tailwater Restroom
The North Tailwater Restroom is a 28-foot-long by 16-foot-wide, heated restroom with block walls and an overhang.

North Tailwater Volksweg Trailhead
The North Tailwater Volksweg Trailhead provides day-use trail access to the Volksweg Trail.

Volksweg Trail And Connection
The Volksweg Trail Connection consists of a paved asphalt path from the North Tailwater Volksweg Trailhead to Recreation Facilities in the North Tailwater Area, and is approximately 10-foot-wide with 2-foot shoulders and 2,800-foot-long. The Volksweg Trail affected by construction of the Project extends from the Howell Station Campground Area to the North Overlook Campground Area (approximately 5,200-foot-long), and is approximately 10-foot-wide with 2-foot shoulders.

North Overlook Volksweg Trailhead
The North Overlook Volksweg Trailhead provides day-use access to the Volksweg Trail from the North Overlook Area.

North Overlook Hiking Trail

The North Overlook Hiking Trail consists of an unpaved path that is accessed from the North Overlook Volksweg Trailhead.

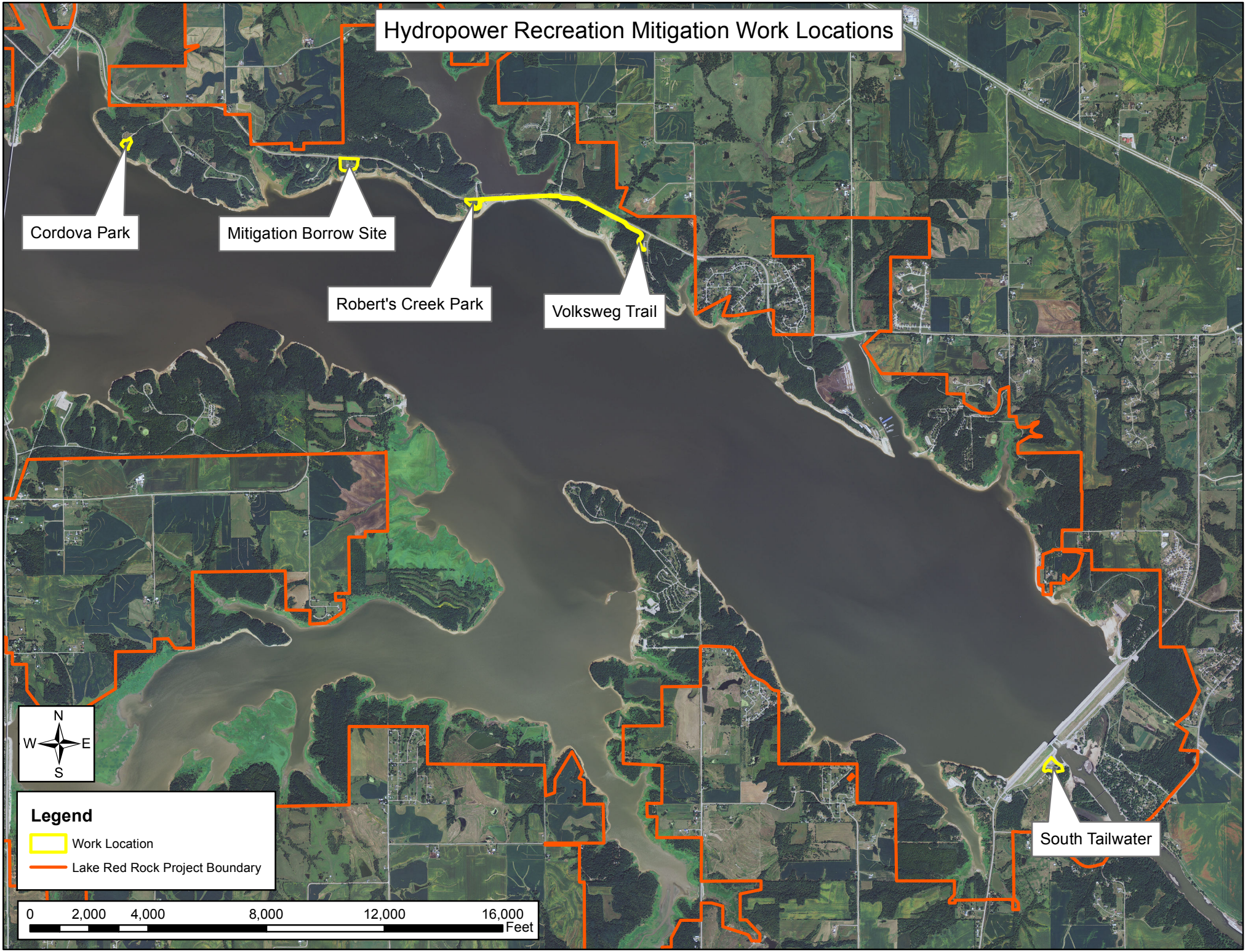
North Overlook Picnic Shelter
The North Overlook Picnic Shelter consists of a shelter with two enclosed sides and a roof, concrete floor, fireplace, deck, lighting, electric outlets, and fifteen tables which can accommodate 120 people.

North Overlook Parking Lot
The North Overlook Parking Lot consists of 60 parking spaces and asphalt construction.

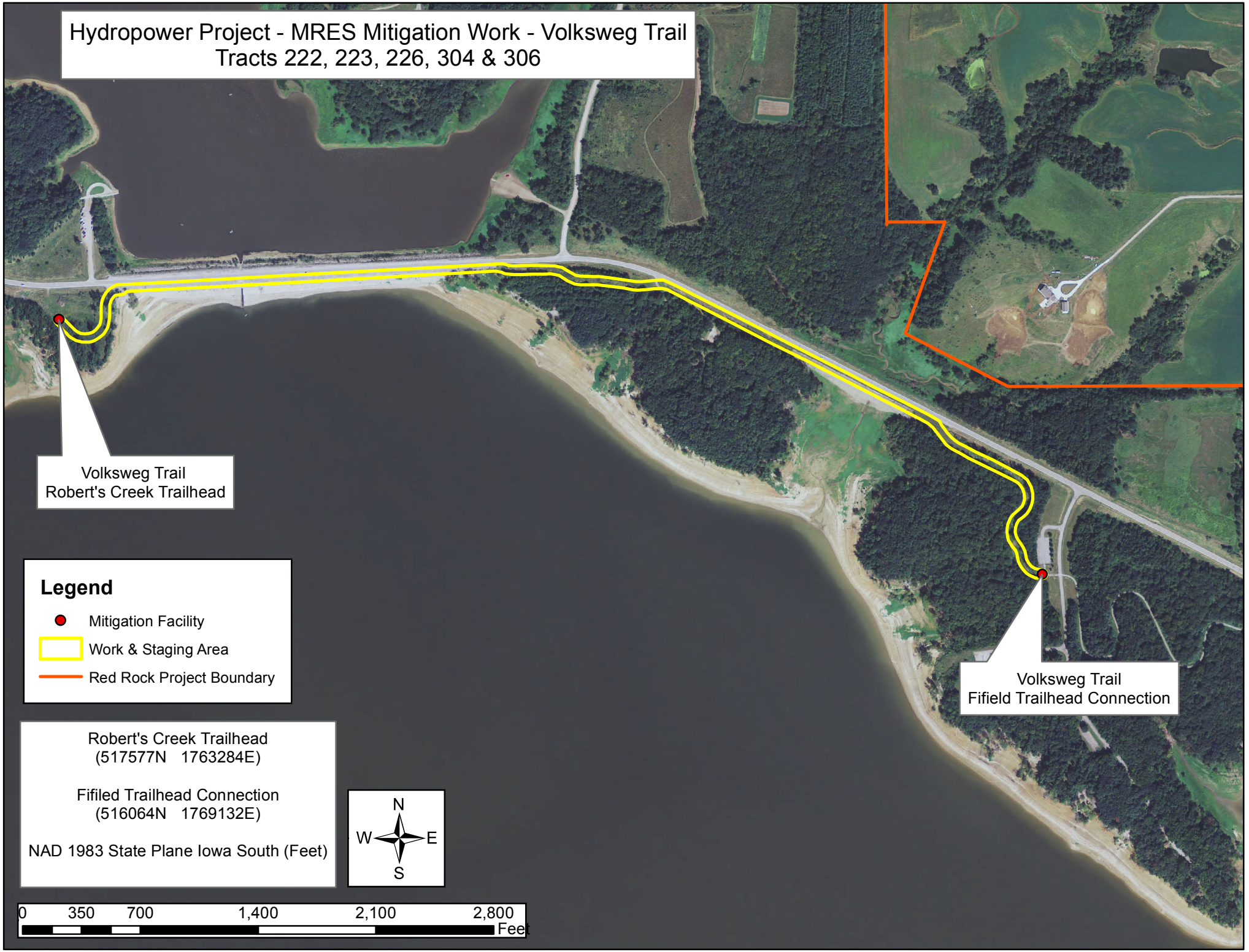
North Overlook Restroom
The North Overlook Restroom is a 17-foot-long by 25-foot-wide restroom.

APPENDIX D

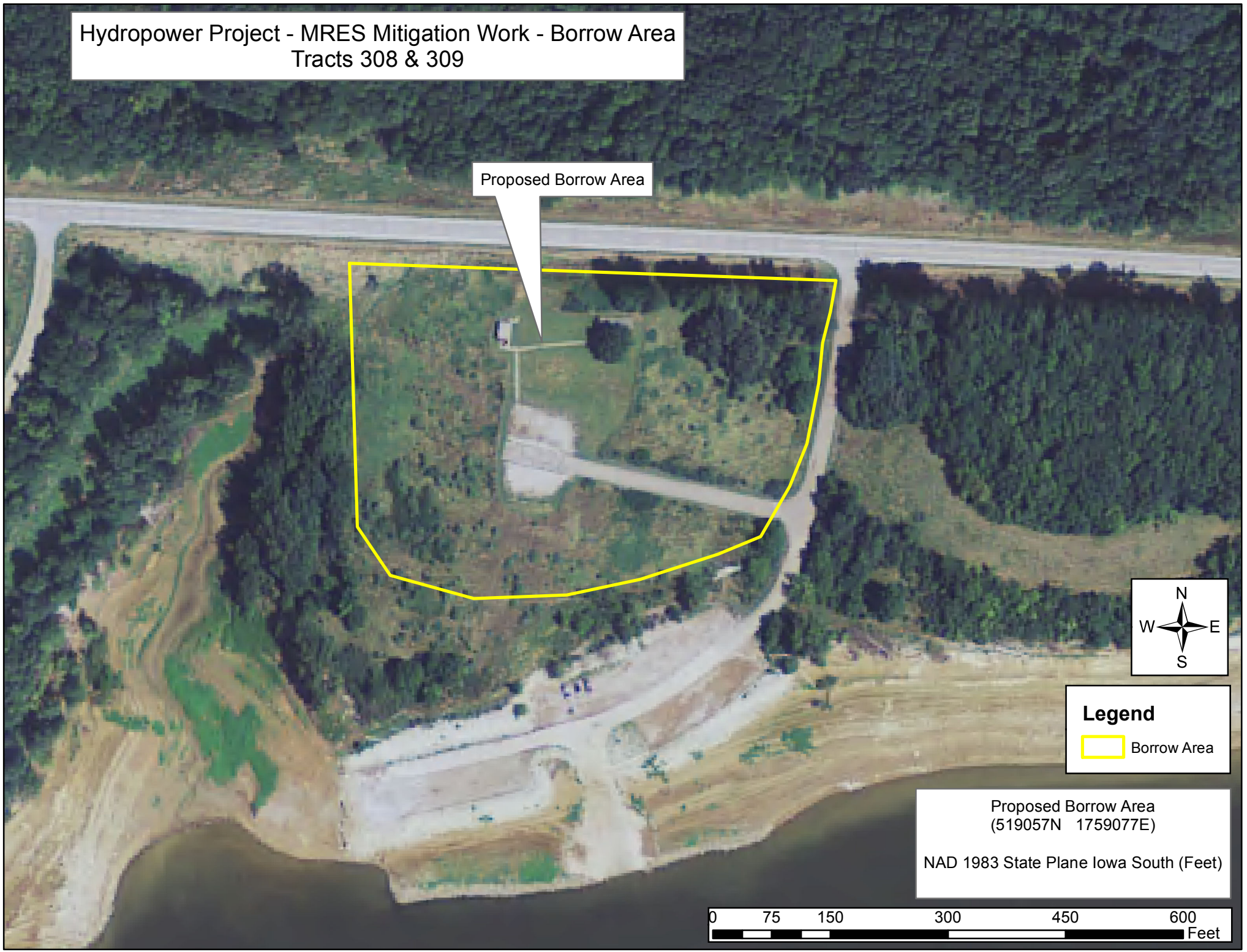
Map of Mitigation Areas


Hydropower Recreation Mitigation Work Locations
Cordova Park
Mitigation Borrow Site
Robert's Creek Park
Volksweg Trail
South Tailwater
N
W
E
S
Legend
Work Location
Lake Red Rock Project Boundary
0
2,000
4,000
8,000
12,000
16,000
Feet


Hydropower Project - MRES Mitigation Work - South Tailwater
Tract 100
Proposed Fish Cleaning Station
Proposed Picnic Shelter (30'x30')
Proposed Hard Surface
Parking Lot (10 Spaces)
Proposed Playground
N
W
E
S
Legend
Mitigation Facility
Work Area
Staging Area
Proposed Playground
(498482N 1783142E)
Proposed Picnic Shelter (30'x30')
(498630N 1783050E)
Proposed Fish Cleaning Station
(498698N 1782976E)
Proposed Hard Surface Parking Lot (10 Spaces)
(498520N 1782703E)
NAD 1983 State Plane Iowa South (Feet)
0 75 150 300 450 600
Feet


Hydropower Project - MRES Mitigation Work - Volksweg Trail
Tracts 222, 223, 226, 304 & 306
Volksweg Trail
Robert's Creek Trailhead
Volksweg Trail
Fifield Trailhead Connection
Legend
Mitigation Facility
Work & Staging Area
Red Rock Project Boundary
Robert's Creek Trailhead
(517577N 1763284E)
Fifiled Trailhead Connection
(516064N 1769132E)
NAD 1983 State Plane Iowa South (Feet)
N
W
E
S
0 350 700 1,400 2,100 2,800
Feet


Hydropower Project - MRES Mitigation Work - Robet's Creek Trailhead
Tracts 304 & 306
Proposed Gravel Parking Lot
(55 Spaces)
Proposed Picnic Shelter (35'x35')
Proposed Vault Toilet
Proposed Information Kiosk
N
W
E
S
Legend
Mitigation Facility
Work & Staging Area
Proposed Picnic Shelter (35'x35')
(5175500N 1763401E)
Proposed Vault Toilet Station
(517551N 1763464E)
Proposed Gravel Parking Lot (15 Spaces)
(517659N 1763396E)
Proposed Information Kiosk
(517550N 1763440E)
NAD 1983 State Plane Iowa South (Feet)
0 75 150 300 450 600
Feet


Hydropower Project - MRES Mitigation Work - Borrow Area
Tracts 308 & 309
Proposed Borrow Area
N
W
E
S
Legend
Borrow Area
Proposed Borrow Area
(519057N 1759077E)
NAD 1983 State Plane Iowa South (Feet)
0 75 150 300 450 600
Feet


Hydropower Project - MRES Mitigation Work - Cordova Park
Tract 708
Proposed Picnic Shelter
(105'x60')
N
W
E
S
Legend
Mitigation Facility
Work & Staging Area
Proposed Picnic Shelter (105'x60')
(519670N 1751603E)
NAD 1983 State Plane Iowa South (Feet)
0 100 200 400 600 800
Feet

APPENDIX E

Details of Mitigation Facilities

Picnic Shelter at South Tailwater Area
To mitigate the loss of the North Tailwater Area Picnic Shelter #1 during construction, a new shelter is to be constructed at the South Tailwater Area in the location shown on the design drawings. The basis of design for the picnic shelter is as follows.

1. Shelter manufacturer Enwood Structures Magnolia Shelter (30 ft by 30 ft hexagon) shall be used as standard for quality, type, and appearance. Shelter color shall be Enwood quick drying stain ML-729. An equivalent product from another manufacturer can be supplied.
2. Shelter shall have surface mount wood columns.
3. Shelter shall have 4/12 pitch roof with 25 year 3-Tab fiberglass shingles with an Autumn Brown color.
4. Shelter shall have electric panel box ready to connect to existing electric utility. The USACE will provide and install electrical service to the panel.
5. Shelter shall have a total of three (3) 110 volt GFI duplex electrical outlets. Outlets shall be evenly spaced on columns.
6. Shelter shall have one (1) switch controlled light that adequately illuminates inside of shelter. Light shall be mounted in the center of the shelter.
7. Shelter shall have a 5.5 inch reinforced concrete slab. Slab shall extend 2 ft past drip line of shelter roof.
8. Shelter concrete foundation piers shall be constructed per manufacturer's specifications.
9. Shelter shall have one (l) large group grill, manufacturer: Jamestown Advanced Products model BK-200 or equivalent. Grill shall be surface mount with black powder coat finish, adjustable grates, stay-cool spring grips, and a firebox with approximate dimensions of 36 inches by 31 inches by l0 inches. Grill shall be installed adjacent to the shelter on a 10 ft by l0 ft concrete slab. Grill slab shall be connected to shelter slab by a concrete apron (dimensions of the apron will be approximately 5 ft by l5 ft).
10. Shelter shall be installed per manufacturer's specifications.

In addition, WMMPA shall provide one (1) Model 700A SMSS water fountain manufactured by Most Dependable Fountains or equivalent. The water fountain shall be surface mount with a hose bib, push bar, and stainless steel chrome matte oven baked powder coat finish. USACE will be responsible for installation of the water fountain and water supply.

Playground at South Tailwater Area
To mitigate the loss of the North Tailwater Playground during construction, a new playground will be constructed in the South Tailwater Area, in the location shown on the design drawings. The basis of design for the playground is as follows:

1. Playground shall be approximately 44 ft long by 28 ft wide.
2. Playground shall have one log crawl. A molded concrete log crawl as manufactured by ThemeScapes Inc. shall be used as the standard for quality, type, and appearance. The log crawl shall be approximately 3 ft wide by 3 ft tall by 6 ft long. An equivalent product

from another manufacturer can be supplied.

3. Playground shall have one molded concrete catfish. A molded concrete catfish as manufactured by ThemeScapes Inc. shall be used as the standard for quality, type, and appearance. The catfish shall be approximately 3 ft wide by 3 ft tall by 12-16 ft long.
4. Playground shall have one toddler rock climber. A molded toddler rock climber as manufactured by ThemeScapes Inc. shall be used as the standard for quality, type, and appearance. The toddler rock climber shall be approximately 6 ft wide by 3 ft tall by 6 ft long. An equivalent product from another manufacturer can be supplied.
5. Playground shall have one natural bridge. A Natural Garden Bridge as manufactured by Grounds for Play shall be used as the standard for quality, type, and appearance. The bridge shall be approximately 4 ft wide by 6 ft long. An equivalent product from another manufacturer can be supplied.
6. Playground shall have one sand box with sand activity wall. A Model 60008 (10 ft by 12 ft) sand box as manufactured Grounds for Play shall be used as the standard for quality, type, and appearance. An equivalent product from another manufacturer can be supplied. A Model 62217 sand activity wall as manufactured by Grounds for Play shall be used as the standard for quality, type, and appearance. An equivalent product from another manufacturer can be supplied. The 3-sided sand activity wall shall be located in the center of the sandbox.
7. Playground shall have engineered wood fiber fall surface material. Wood fiber as manufactured by Greensoft Surface shall be used as the standard for quality, type, and appearance. An equivalent product from another manufacturer can be supplied. Fall surface material shall have a depth of 12 inches.
8. Playground shall have black high-density polyethylene borders. Borders shall be 12 inches high and installed using 30 inch galvanized steel spike anchors. Black polyethylene playground borders as manufactured by Greensoft Surfaces shall be used as the standard for quality, type, and appearance. An equivalent product from another manufacturer can be supplied. Exterior earth fill needs to be within 1 inch of the top of playground border.
9. Address drainage in design.

Fish Cleaning Station at South Tailwater Area

To mitigate the loss of the North Tailwater Fish Cleaning Station during construction, a new fish cleaning station will be constructed in the South Tailwater Area, in the location shown on the design drawings and separate from the existing South Tailwater Fish Cleaning Station. The basis of design for the fish cleaning station is as follows:

1. Shelter manufacturer Enwood Structures Timberland Shelter (12 ft by 12 ft) shall be used as standard for quality, type, and appearance. Shelter color shall be Enwood quick drying stain ML-729. An equivalent product from another manufacturer can be supplied.
2. Shelter shall have surface mount wood columns.
3. Shelter concrete foundation piers shall be constructed per manufacturer's specifications.
4. Shelter shall have a 5.5 inch reinforced concrete slab.
5. Shelter shall have 6/12 pitch roof with 25 year 3-Tab fiberglass shingles with an Autumn Brown color.
6. Fish Cleaning Station Table shall be centered on the shelter's concrete slab. All four legs of the fish cleaning table shall be anchored to the concrete slab.
7. A Fish Cleaning Station Table manufactured Quality Control Equipment Company

(QCEC), Model 4260D shall be used as the standard for quality, type, and appearance. An equivalent product from another manufacturer can be supplied. Station shall have two (2) stainless steel rinse hoses, and one (1) Sanolite cutting board. The table shall not have a stainless steel chute and shall not have a grinder, but shall have an opening under the sink basin that allows for fish waste to evacuate into a 32 gallon garbage can. The table shall not have a GFI 110 volt duplex electrical outlet.

8. Fish Cleaning Station Table shall be ready to connect to existing water and wastewater utilities. The USACE will provide and install water and wastewater services to the table.
9. Shelter shall have electric panel box ready to connect to existing electric utility. The USACE will provide and install electrical service to the panel.
10. Shelter shall have a total of two (2) 110 volt GFI electrical outlets. Outlets shall be suspended from the shelter ceiling over the center of the fish cleaning table.
11. Shelter shall have one (1) switch controlled light that adequately illuminates inside of shelter. Light shall be mounted in the center of the shelter.
12. Fish Cleaning Shelter and Table shall be installed per manufacturer's specifications.

Parking Spaces at South Tailwater Area

To mitigate the loss of parking in the North Tailwater Area during construction, ten (10) additional parking spaces will be constructed in the South Tailwater Area. The basis of design for the parking spaces is as follows:

1. Parking lot shall be hard surfaced (asphalt or concrete) and shall have ten (10) parking spaces. Each parking space shall be 10 ft by 20 ft.
2. Parking spaces shall be delineated by striping and shall have anchored parking blocks.

Kiosk at Robert's Creek Trailhead

To mitigate the loss of the kiosk in the North Tailwater Area during construction, a new kiosk will be constructed at the Robert's Creek Trailhead, in the location shown on the design drawings. The basis of design for the kiosk is as follows:

1. Kiosk manufacturer Barco Products model KMC4010 Single-Sided Horizontal Message Center shall be used as standard for quality, type and appearance. An equivalent product from another manufacturer can be supplied.
2. Kiosk shall be approx. 6.5 ft long by 4.5 ft tall by 7.5 inches wide. Viewing area shall be approx. 5.5 ft long by 3.5 ft high.
3. Kiosk shall have lockable acrylic glass doors, stainless steel door hinges, and a rubber tackboard.
4. Kiosk shall be brown in color.
5. Kiosk shall have surface mount posts and bases.
6. Kiosk shall be mounted on concrete walkway (constructed as part of Robert's Creek Parking)
7. Kiosk shall be installed per manufacturer's specifications.

Restroom at Robert's Creek Trailhead

To mitigate the loss of the North Tailwater Area Restroom, a new restroom will be constructed at the Robert's Creek Trailhead, in the location shown on the design drawings. The basis of design for the restroom is as follows:

1. Vault toilet manufacturer CXT Precast Products model Tioga with Chase (ADA accessible double vault toilet, approximately 15 ft by 12 ft with a chase) shall be used as the standard for quality, type, and appearance. An equivalent product from another manufacturer can be supplied.
2. Vault toilet shall have two (2) 1,000 gallon ABS lined vaults that match the perimeter of the building & provide a stable footing structure to support the weight of the vault building.
3. Vault toilet shall have simulated split face block textured exterior walls and simulated cedar shake textured roof. Building exterior, interior, and roof color will be earth tone colors (exterior and interior: Sand Beige, roof: Java Brown)
4. Vault toilet shall have solar electrical package with interior and exterior lighting. Interior lighting will be motion eye controlled and exterior lighting will be photo eye controlled. Vault toilet shall also have a full electric and conduit package ready to connect to future electric utility.
5. Vault toilet shall have plastic urinals, stainless steel grab bars, stainless steel double coat hooks with upper and lower hooks, stainless steel toilet paper holders, and Lexan windows to provide passive lighting.
6. Vault toilet shall have steel doors with door sweeps, door closers, dead bolts, and inside push button lever handle locksets that have lever handles on inside and outside of door. Either handle shall operate latch unless outside handle is locked by the inside push button. Inside push button shall release when inside lever handle is turned or door is closed. Outside lever handle shall have emergency slot so door can be unlocked from outside.
7. Vault toilet shall have steel vault cleanout cover that is lockable with a padlock.
8. Vault toilet shall have vent pipe system to minimize smell inside of the vault toilet building.
9. Vault toilet building shall be installed per manufacturer's specifications.

Picnic Shelter at Robert's Creek Trailhead

To mitigate the loss of Picnic Shelter #2 during construction, a new shelter is to be constructed at the Robert's Creek Trailhead Area in the location shown on the design drawings. The basis of design for the shelter is as follows:

1. Shelter manufacturer Enwood Structures Magnolia Shelter (35 ft by 35 ft hexagon) shall be used as standard for quality, type and appearance. An equivalent product from another manufacturer can be supplied.
2. Shelter shall have surface mount powder coated steel columns. Columns shall be natural earth tone brown color.
3. Shelter shall have a 4/12 pitch, 28 gauge steel roof. Roof shall be natural earth tone brown color.
4. Shelter shall have an electrical panel ready to connect to existing electric utility. The USACE will provide and install electrical service to the panel.
5. Shelter shall have a total of three (3) 1l0 volt GFI duplex electrical outlets. Outlets shall be evenly spaced on columns.
6. Shelter shall have one (1) switch controlled light that adequately illuminates inside of shelter. Light shall be mounted in the center of the shelter.
7. Shelter shall have 5.5 inch reinforced concrete slab. Slab shall extend 2 ft past drip line

of shelter roof.

8. Shelter concrete foundation piers shall be constructed per manufacturer's specifications.
9. Shelter shall be installed per manufacturer's specifications.
10. Shelter shall have one (l) large group grill, manufacturer: Jamestown Advanced Products model BK-200, or equivalent. Grill shall be surface mount with black powder coat finish, adjustable grates, stay-cool spring grips, and a firebox with approximate dimensions of 36 inches by 31 inches by l0 inches. Grill shall be installed adjacent to the shelter on a 10 ft by 10 ft, 4,000 psi concrete slab. Grill slab shall be connected to shelter slab by a 4,000 psi concrete apron (dimensions of the apron will be approximately 5 ft by 15 ft).

Parking Spaces at Robert's Creek Trailhead

To mitigate the loss of parking in the North Tailwater Area during construction, a parking lot will be constructed at the Robert's Creek Trailhead. The basis of design for the parking lot and concrete walkway is as follows:

1. Parking lot shall be gravel surfaced and have a minimum of 55 parking spaces.
2. Three (3) of the spaces shall be designated handicap accessible spaces with handicap accessible parking signs.
3. All non-handicap accessible parking spaces will be 10 ft by 20 ft.
4. All parking spaces except for those which are bordered by concrete curbing shall have anchored parking blocks.
5. The parking lot and entrance road will be rocked to a minimum depth of 4 inches using gradation 11 rock.
6. Concrete curbing shall be placed between parking lot and adjacent concrete sidewalk. A concrete walkway shall be installed from the gravel parking lot to the adjacent vault toilet, picnic shelter, and bike path.
7. The sidewalk adjacent to the gravel parking lot and concrete walkway should be at the same general finish elevation and provide positive drainage away from the restroom and picnic shelter. The concrete walkway should provide a smooth transition into the picnic shelter and restroom. The picnic shelter and restroom floors should be of the same general finish elevation as the concrete walkway.
8. Address groundwater drainage in design.

Volksweg Bike Trail Extension

To mitigate the loss of the bike trail in the North Tailwater Area during construction, the existing Volksweg Bike Trail will be extended from the Fifield Recreation Area to the Robert's Creek Trailhead. Construction of the bike path is to be of a hard surface (asphalt or concrete) with a minimum width of 10-feet. (The bike trail is to parallel Highway G28 along Robert's Creek dam and be located on the shoulder without extending the shoulder by the installation of a retaining wall.). The exact route of the bike bath is shown on the design drawings.

Picnic Shelter at Cordova Center

To mitigate the loss of facilities in the North Overlook Area during construction of the transmission line, a new shelter is to be constructed at Cordova Center in the location shown on the design drawings. The basis of design for the shelter is as follows:

1. Shelter manufacturer Enwood Structures Raleigh II Shelter (105 ft x 60 ft) shall be used

as standard for quality, type, and appearance. Shelter color shall be Enwood quick drying stain, ML-729. An equivalent product from another manufacturer can be supplied.

2. Shelter shall have in ground columns that are spaced at 10 ft on center or as recommended by the manufacturer. Each column will have RCMU rockface concrete block at the base extending 2 ft up from the concrete slab. Each rock face concrete block will have a precast concrete cap. Rockface concrete block will be earthstone in color.
3. Shelter shall have 5/12 pitch roof with 25 year 3-tab fiberglass shingles with an Autumn Brown color.
4. Shelter roof shall have a 2.5 ft overhang.
5. Shelter shall have an electrical panel ready to connect to existing electric utility. The USACE will provide and install electrical service to the panel.
6. Shelter shall have a total of ten (10) 110 volt GFI duplex electrical outlets. Outlets shall be evenly spaced on columns.
7. Shelter shall have five (5) switch controlled lights that adequately illuminate the inside of the shelter. Lights shall be evenly spaced along centerline of shelter and mounted at the peak of the roof between trusses.
8. Shelter slab shall extend 5' past drip line of shelter roof.
9. Shelter concrete foundation piers shall be constructed per manufacturer's specifications.
10. Shelter shall be installed per manufacturer's specifications.
11. Shelter shall have two (2) large group grill, manufacturer: Jamestown Advanced Products model BK-200, or equivalent. Grill shall be surface mount with black powder coat finish, adjustable grates, stay-cool spring grips, and a firebox with approximate dimensions of 36 inches by 31 inches by l0 inches. Grills shall be installed adjacent to the shelter on a 10 ft by l0 ft concrete slab. Grill slabs shall be connected to shelter slab by concrete aprons (dimensions of the apron will be approximately 5 ft by l0 ft).

In addition, WMMPA shall provide one (1) Model 700A SMSS water fountain manufactured by Most Dependable Fountains, or equivalent. The water fountain shall be surface mount with a hose bib, push bar, and stainless steel chrome matte oven baked powder coat finish. USACE will be responsible for installation of the water fountain and water supply.

APPENDIX F

TURNOVER CERTIFICATE

The U.S. Army Corps of Engineers ("USACE") and Western Minnesota Municipal Power Agency ("WMMPA") hereby execute this certificate, affirming and agreeing that the following recreation facilities and features have been constructed pursuant to the WMMPA Recreation Mitigation Plan for the Red Rock Hydroelectric Project FERC No. 12576 dated _____, 2013.

Facilities and features in the South Tailwater Area (include the cost of each facility or feature below):

1. Picnic Shelter
2. Playground
3. Fish Cleaning Station
4. Additional Parking Spaces

Facilities and features at the Robert's Creek Trailhead (include the cost of each facility or feature below):

1. Restroom
2. Picnic Shelter
3. Parking Lot
4. Kiosk

Other Facilities and features (include the cost of each facility or feature below):

1. Extension of the Volksweg Bike Trail.
2. Shelter at Cordova Park.
3. Supply of two (2) water fountains for USACE installation.

By signing below, the USACE and WMMPA acknowledge and agree that the above-referenced recreation facilities and features, as further described in the WMMPA Recreation Mitigation Plan, have been inspected by the USACE and found by the USACE to have been completed in accordance with the WMMPA Recreation Mitigation Plan and all other applicable requirements. Effective as of the date of this certificate, the USACE accepts the above-referenced facilities and features as so constructed and takes over and assumes control of and responsibility for such facilities and features.

Each contract WMMPA entered into for the construction of the above-referenced recreation facilities and features contains a one year warranty of workmanship on the contractor's work, which warranty is assignable by WMMPA to the USACE. WMMPA hereby assigns to the USACE all rights and interests of WMMPA under such warranties. WMMPA also hereby assigns to the USACE all rights and interests of WMMPA under all warranties on equipment and materials purchased by WMMPA for incorporation into the above-referenced facilities and features, to the extent such warranties are assignable by WMMPA.

IN WITNESS WHEREOF, the parties have signed this certificate on the date indicated below.

U.S. ARMY CORPS OF ENGINEERS	WESTERN MINNESOTA MUNICIPAL POWER AGENCY
Sign:_____	Sign:_____
Print: Sherri Richardson-Duey	Print: Raymond J. Wahle
Title: Operations Manager, Lake Red Rock	Title: Second Assistant Secretary

VanNess Feldman
ATTORNEYS AT LAW
WASHINGTON, DC • SEATTLE, WA

A LIMITED LIABILITY PARTNERSHIP
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(202) 298-1800 Phone
(202) 338-2416

John Clements
(202) 298-1933
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February 12, 2014

Ms. Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Re: Western Minnesota Municipal Power Agency
Red Rock Project No. 12576

Submission of Fishing Access Design and Management Plan

Dear Secretary Bose:

Pursuant to Article 405 of the license for the Red Rock Project No. 12576, Western Minnesota Municipal Power Agency hereby submits for Commission approval a Fishing Access Design and Management Plan.

If you have any questions regarding this filing, please contact Nick Fanning at (605) 330-6984 or nfanning@mrenergy.com.

Respectfully submitted,

/s/ John Clements
John Clements

Counsel for Western Minnesota Municipal Power Agency

Enclosure

Cc: Raymond J. Wahle
Nick Fanning

Fishing Access Design and Management Plan

For The
Red Rock Hydroelectric Project FERC No. 12576

Dated
February 12, 2014

INTRODUCTION

The following plan describes provisions to be undertaken by Western Minnesota Municipal Power Agency (WMMPA) to identify features and a location, construct, operate, and maintain a fishing access facility (facility) for the Red Rock Hydroelectric Project (Project).

FERC LICENSE REQUIREMENTS

On April 18, 2011, CRD Hydroelectric, LLC (Applicant) obtained an original license (FERC No. 12576-004) from the Federal Energy Regulatory Commission (FERC) to construct, operate and maintain the Red Rock Hydroelectric Project (Project). On January 19, 2012, FERC issued an order (FERC No. 12576-008) approving transfer of the license from CRD Hydroelectric, LLC to WMMPA. On April 13, 2012, FERC issued an order (FERC No. 12576-007) amending the license to reflect changes that reduce impacts on the dam's existing structures and improve constructability and dam safety. An additional non-capacity amendment was approved by FERC on October 25, 2013.

Article 405 of the license states:

> *Fishing Access Design and Management Plan*. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee shall file for Commission approval, a Fishing Access Design and Management Plan. The plan shall include, but not be limited to, the following: (1) the methodology used to determine the optimum location of the fishing access facility along the left (north) tailrace bank; (2) a schedule to file conceptual design drawings showing the type and location of the fishing access facility; (3) provisions to construct, operate, and maintain the fishing access facility over the term of the license; (4) a discussion of how the needs of the disabled were considered in the planning and design of the fishing access facility; and (5) a schedule to construct the fishing access facility.
>
> The licensee shall prepare the fishing access design and management plan after consultation with the Iowa Department of Natural Resources and the U.S. Army Corps of Engineers. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee

shall allow a minimum of 30 days for the agencies to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons based on project-specific information.

The Commission reserves the right to require changes to the plan. The plan shall not be implemented until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan according to the approved schedule, including any changes required by the Commission.

The fishing access facility, built in accordance with this plan, shall be shown on the as-built drawings filed pursuant to Article 304 of this license.

USACE AGREEMENT REQUIREMENTS

On October 24, 2011, an agreement for Access, Design and Construction of the Red Rock Hydroelectric Project was entered into by the Department of the Army (USACE) and CRD Hydroelectric, LLC.

Article I, paragraph C.14, page 9 states:

> Article 405: *Fishing Access Design and Management Plan*. At least 90 days before the start of any land-disturbing or land-clearing activities, the Licensee is required to file for FERC approval, a Fishing Access Design and Management Plan. The plan shall be developed in consultation with the Corps and other agencies specified in the article. The agencies shall be provided with a minimum of 30 days to comment on a draft plan.

PROJECT DESCRIPTION

The Project features include (a) a 185-foot-wide, 127-foot-long powerhouse located directly downstream of the existing USACE Red Rock Dam; (b) a 54-foot-wide, 105-foot-long intake located directly upstream of the existing Red Rock dam; (c) a 184-foot-long by 64-foot-wide substation located next to the powerhouse on the upstream side; (d) a 4.5-mile-long, 69-kilovolt (kV) transmission line, parts of which will be buried (approximately 1.24-miles) and the remainder of which (approximately 3.26-miles) will be overhead, extending from the substation to the City of Pella West Substation.

In addition to the major project features listed above, powerhouse utilities such as communications, water, wastewater, and backup power will be constructed for the Project.

SCHEDULE FOR DESIGN AND CONSTRUCTION

In submitting an application for a FERC License, CRD proposed to wait until after Project operations to determine the location of the facility. As noted in the FERC Environmental Assessment dated December 2010, flow patterns could not be conclusively modeled to determine the optimum location for bank fishing at that time. This was primarily due to the configuration of the Project and the need to finalize detailed design. Since that time, design of the Project has progressed significantly. Design changes, which have been approved by FERC, include moving the powerhouse downstream to better align with the existing spillway retaining wall and filling in the existing "blow out" caused by previous floods so that flows from the Project are better directed to the main river channel. In addition, Computational Fluid Dynamics (CFD) models have been created and evaluated to determine water velocities downstream of the existing spillway and the Project's tailrace.

Although the Applicant proposed to wait until after Project operations had started to determine the location of the facility, waiting until after Project operations would further delay safe public access to fishing downstream of the tailrace. Additional construction traffic coupled with a construction area in close proximity to the recreational features of the North Tailwater Area would also present a public safety concern for those visitors wishing to use the recreational features within the North Tailwater Area. Furthermore, constructing the facility after the start of Project operations will require additional riprap and grouting to support the facility and to ensure riverbank stability. These additions would be better incorporated during construction of the Project rather than waiting until after the initial riprap is installed for riverbank protection. Due to these concerns, WMMPA recommends that construction of the fishing access facility be conducted concurrently with construction of the Project.

The fishing access facility concept design as shown in Appendix A, places a 5 foot wide concrete access path at two separate elevations all along the tailrace channel from the powerhouse to approximately 430 feet (excluding the access ramp) downstream of the powerhouse. The optimum fishing location would be expected to be at some location along the proposed facility. By agreement with the USACE, no further studies would be performed to identify the optimum fishing location. Access to the facility would be accomplished by connecting to the Volksweg Bike Trail on the upstream and downstream sides of the facility.

Upon receiving FERC approval of this Plan, WMMPA will commence with detailed design of the facility based on the concept shown in Appendix A. At least 90 days before construction of the facility is set to begin, WMMPA will file the detailed design drawings with FERC for review and comment. Once approved, WMMPA will work with the General Construction Contractor for the Project to ensure that the fishing access facility is constructed concurrently with the Project's tailrace.

METHODOLOGY FOR DETERMINING LOCATION OF FISHING ACCESS FACILITY

The following objectives were used in determining the location of the facility:

1. Ensure ease of access by the public, including the needs of the disabled, while ensuring public safety.
2. Evaluate historical river elevations to determine fishing tier elevations.
3. Minimize the disturbance to flows within the tailrace while preserving the stability of the riverbank.

Access to the facility would be accomplished by connecting to the Volksweg Bike Trail on the upstream and downstream sides of the facility. See Appendix A for a concept of the proposed facility. Due to the slope of the riprap, upstream access to the facility would be accomplished using concrete stairs and a handrail similar to what is presently installed on the opposite side of the river in the South Tailwater Area. The upstream stairs also provide the public access to the facility that is a safe distance from the powerhouse and tailrace. Access on the downstream side of the facility will be accomplished by construction of a concrete ramp for wheelchair access with a slope not greater than 12H:1V. This will ensure that anglers who are not physically capable of using the stairs can access the facility.

The elevation of the facility was selected by analyzing historical data for the Des Moines River downstream of Red Rock Dam. Data from April 15, 1992 through December 31, 2008[1], was reviewed and the tailwater elevation of the Project was calculated. An analysis of the data was conducted to determine the number of days per year that the downstream river elevation was at or above a given elevation. Next, further analysis was conducted to determine the number of days per year between April 1st and November 30th that the downstream river elevation was at or above a given elevation. The time period of April 1st through November 30th represents the time of year when icing conditions are not present and the weather is most favorable to support fishing. The results are presented in Table 1 below.

[1] Original analysis included data from January 1, 1971 through December 31, 2008. During the October 10, 2013 site meeting with the USACE and IDNR, it was determined that a reduced data set which is more reflective of current USACE operations was to be used.

Table 1. Historical River Elevation

	Full Year[1]		April 1 - November 30[2]	
Elevation	Days at or Above El.	Percent	Days at or Above El.	Percent
685	5469	90%	3709	90%
686	4695	77%	3300	80%
687	4000	66%	2905	70%
688	3168	52%	2459	59%
689	2580	42%	2118	51%
690	2074	34%	1771	43%
691	1810	30%	1585	38%
692	1584	26%	1414	34%
693	1345	22%	1228	30%
694	963	16%	882	21%
695	627	10%	569	14%
696	331	5%	293	7%
697	259	4%	236	6%
698	194	3%	185	4%
699	114	2%	114	3%
700	103	2%	103	2%
1. Total Days = 6,105				
2. Total Days = 4,134				

In order to ensure safe access by the public and to address the needs of the disabled, a balance needs to be struck when selecting the elevation of each tier of the facility. Placement of a single tier at El. 700 ensures that the facility will be above the downstream water elevation 98% of the time. However, approximately 49% of the time the downstream elevation is below El. 689 (from April 1 through November 30), which would place the public approximately 33 feet from the edge of the waterline. Due to this, most anglers would need to walk over the riprap to get closer to the edge of the water which presents a public safety concern. In addition, anglers who are not physically capable of walking over the riprap would be at a disadvantage. Due to this, WMMPA proposes to construct a two tiered facility with the lower tier at El. 689.75 and the upper tier at El. 694.25. These elevations ensure that at least one tier of facility would be available to anglers at least 79% of the time between April 1st and November 30th while providing easy, safe access to the edge of the waterline[2]. The tier elevations selected are also slightly higher than the most common flow discharge elevations as determined by the USACE. It should also be noted that in the event that each tier is underwater, the access stairs and access ramp would still provide

[2] During a meeting with the USACE and IDNR on October 10, 2013, it was determined that an analysis should be conducted to identify, using historical data, when flows would be discharged from the existing spillway only, the existing spillway and the Project, and the Project only. The results of this analysis have been included in Appendix B.

anglers easy access to water's edge.

The facility as proposed in this Plan and shown in Appendix A, follows the contours of the Project as designed, and minimizes any disturbance to flows downstream of the tailrace. Furthermore, by constructing the facility at the same time as the Project, the need to disturb riprap after construction of the Project is alleviated.

PROVISIONS TO CONSTRUCT, OPERATE, AND MAINTAIN

As noted above, WMMPA proposes to construct the facility concurrently with construction of the Project. This ensures that construction of the facility will be completed in conjunction with the completion of construction of the Project. Once construction is complete, responsibility for operation and maintenance of the fishing access facility would be turned over to the USACE for the remainder of the term of the license.

AGENCY CONSULTATION

A draft Fishing Access Design and Management Plan dated September 20, 2013, was initially distributed for review and comment on September 20, 2013 to the agencies listed below:

Iowa Department of Natural Resources
502 E 9th St.
Des Moines, IA 50319-0034

U.S. Army Corps of Engineers
Rock Island District
Clock Tower Building
P.O. Box 2004
Rock Island, IL 61204-2004

The draft Plan was discussed with the USACE during a meeting on October 3, 2013. A follow-up meeting was held with the USACE and IDNR at the site on October 10, 2013 to discuss the proposed facility concept. Subsequent to the site meeting, additional analysis was conducted and submitted to the USACE and IDNR. Based on the additional analysis and further discussions, the draft Plan was revised and a subsequent draft dated January 9, 2014 was submitted to the USACE and the IDNR on January 9, 2014 for review and comment. Comments on the second draft were received from:

Iowa Department of Natural Resources
502 E 9th St.
Des Moines, IA 50319-0034

U.S. Army Corps of Engineers
Rock Island District
Clock Tower Building
P.O. Box 2004
Rock Island, IL 61204-2004

Comments on the second draft from responding Agencies are included in Appendix C. A summary of the Agency comments and WMMPA's response to each as incorporated into the final Plan are as follows:

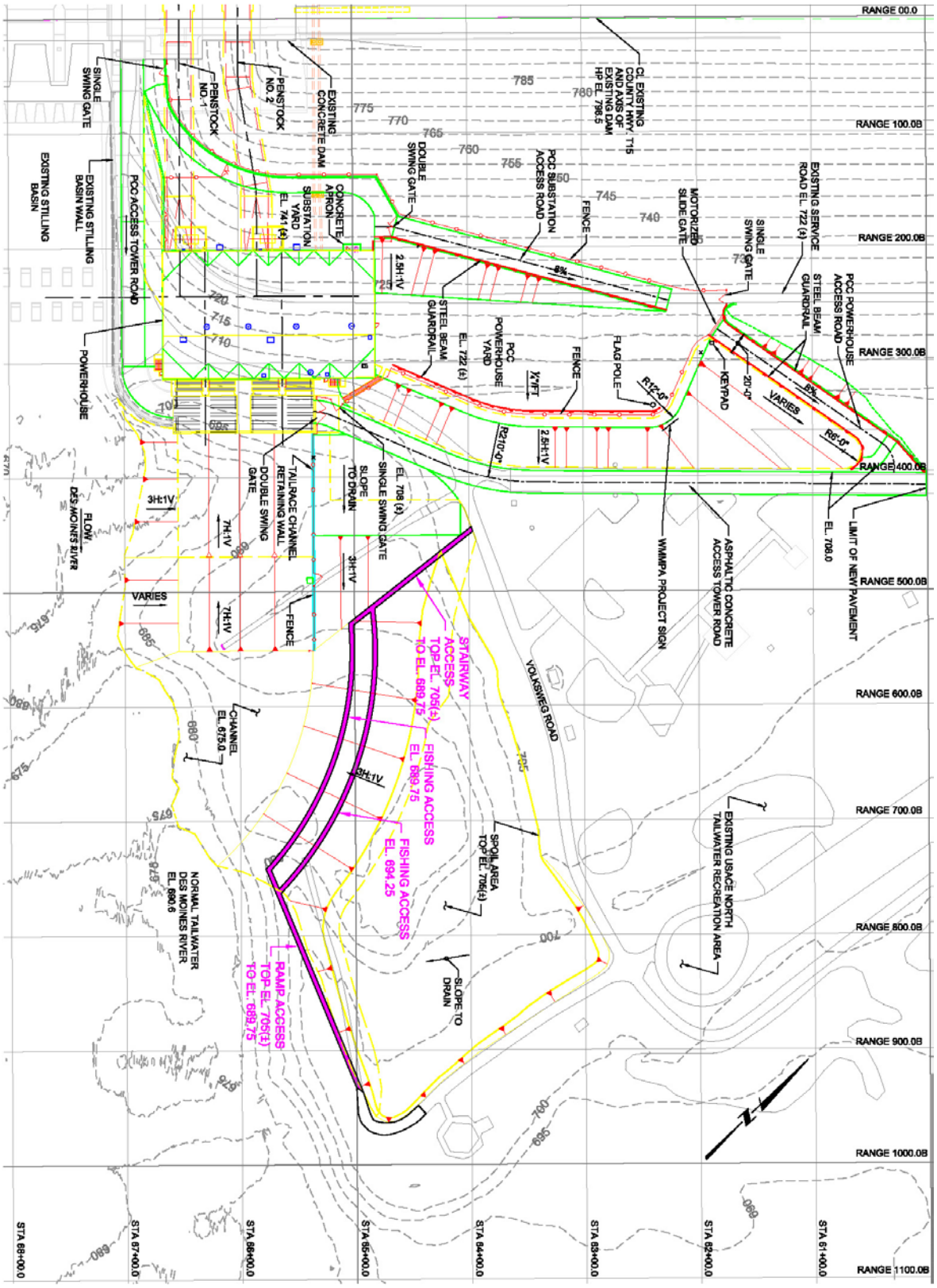
Agency	Comment	Licensee's Response to Comment
Iowa Department of Natural Resources	The Iowa DNR requests that WMMPA revise the Plan stating that they will make the fishing access facility available to anglers at the time of its completion even if it is completed before the hydropower facility.	WMMPA agrees that the facility should be made available to anglers as soon as possible. However, ensuring public safety must take first priority. As such WMMPA will not allow public access to the facility until conditions at the construction site allow for the safe entry and use of the facility by the public. Since the Project is located on Federal lands administered by the USACE, WMMPA will coordinate with the USACE on the timing of making the facility available to the public.
U.S. Army Corps of Engineers	Should changes to the facility be required to facilitate public access or use of the facility after the hydroelectric facility is operational, WMMPA will be responsible for such changes. Changes must be mutually agreed upon by the IDNR, MRES, and the Corps.	WMMPA agrees that post construction changes to the facility must be mutually agreed upon. However, any proposed changes must also be submitted to FERC for review and approval prior to implementation.

REFERENCES

FERC (Federal Energy Regulatory Commission). 2011. *Order Issuing Original Major License.* Project No. 12576-004

APPENDIX A

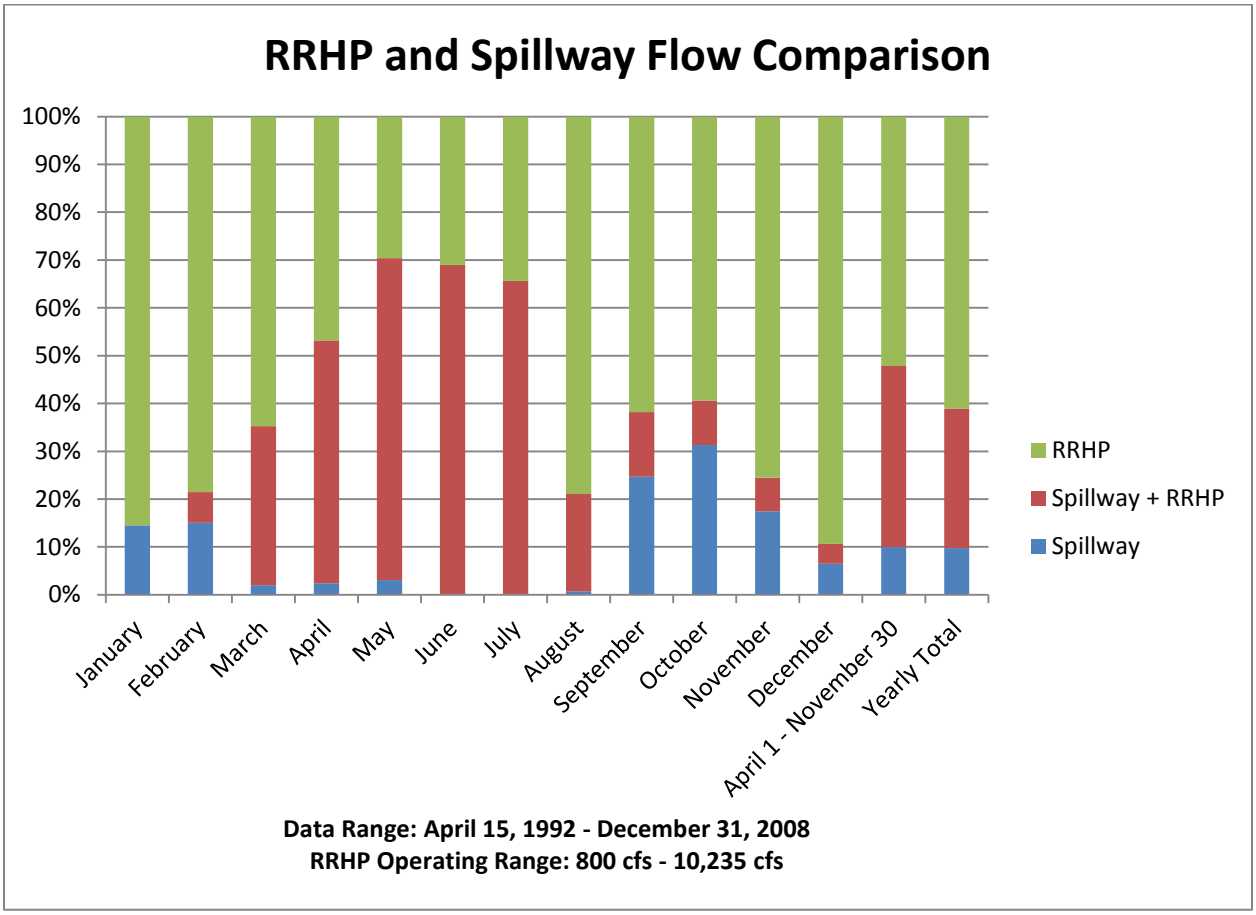
Fishing Access Facility Concept



Fishing Access Design and Management Plan
Red Rock Hydroelectric Project, FERC No. 12576

APPENDIX B

Results of Flow Discharge Analysis



RRHP and Spillway Flow Comparison

January		
Total Days:	496	
Days of Spillway Discharge:	72	15%
Days of Spillway and RRHP Discharge:	0	0%
Days of RRHP Discharge:	424	85%

February		
Total Days:	452	
Days of Spillway Discharge:	68	15%
Days of Spillway and RRHP Discharge:	29	6%
Days of RRHP Discharge:	355	79%

March		
Total Days:	496	
Days of Spillway Discharge:	10	2%
Days of Spillway and RRHP Discharge:	165	33%
Days of RRHP Discharge:	321	65%

April		
Total Days:	496	
Days of Spillway Discharge:	12	2%
Days of Spillway and RRHP Discharge:	252	51%
Days of RRHP Discharge:	232	47%

May		
Total Days:	527	
Days of Spillway Discharge:	16	3%
Days of Spillway and RRHP Discharge:	355	67%
Days of RRHP Discharge:	156	30%

June		
Total Days:	510	
Days of Spillway Discharge:	0	0%
Days of Spillway and RRHP Discharge:	352	69%
Days of RRHP Discharge:	158	31%

July		
Total Days:	527	
Days of Spillway Discharge:	0	0%
Days of Spillway and RRHP Discharge:	346	66%
Days of RRHP Discharge:	181	34%

August		
Total Days:	527	
Days of Spillway Discharge:	4	1%
Days of Spillway and RRHP Discharge:	107	20%
Days of RRHP Discharge:	416	79%

September		
Total Days:	510	
Days of Spillway Discharge:	126	25%
Days of Spillway and RRHP Discharge:	69	14%
Days of RRHP Discharge:	315	62%

October		
Total Days:	527	
Days of Spillway Discharge:	165	31%
Days of Spillway and RRHP Discharge:	49	9%
Days of RRHP Discharge:	313	59%

November		
Total Days:	510	
Days of Spillway Discharge:	89	17%
Days of Spillway and RRHP Discharge:	36	7%
Days of RRHP Discharge:	385	75%

December		
Total Days:	527	
Days of Spillway Discharge:	34	6%
Days of Spillway and RRHP Discharge:	22	4%
Days of RRHP Discharge:	471	89%

April 1 - November 30 Totals		
Total Days:	4,134	
Days of Spillway Discharge:	412	10%
Days of Spillway and RRHP Discharge:	1,566	38%
Days of RRHP Discharge:	2,156	52%

Yearly Totals (All Months Included)		
Total Days:	6,105	
Days of Spillway Discharge:	596	10%
Days of Spillway and RRHP Discharge:	1,782	29%
Days of RRHP Discharge:	3,727	61%

Data Range: April 15, 1992 - December 31, 2008
RRHP Operating Range: 800 cfs - 10,235 cfs

APPENDIX C

Agency Comments

Iowa
Fields of Opportunities

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

January 16, 2014

Mr. Raymond Wahle, P.E.
Missouri River Energy Services
3724 West Avera Drive
P.O. Box 88920
Sioux Falls, SD 57109 4042

Dear Mr. Wahle,

The Iowa DNR has completed its reviewed to the Draft Fishing Access Design and Management Plan (Plan) for the Red Rock Hydroelectric Project (FERC No. 12576) and found overall the Plan to be acceptable. The conceptual design and management plan that was provided does cover the five items listed in Article 405. Although the DNR finds the Plan favorable, it must be acknowledged that it is a draft and the conceptual design is without any associated cost. The Iowa DNR is willing to approve the Plan with a FERC condition that WMMPA will construct the proposed fishing access facility as shown in the conceptual design regardless of cost. But the Iowa DNR is receptive to WMMPA making minor changes necessary to alter the design to meet site conditions. Any design changes shall be approved the U.S. Army Corps of Engineers and Iowa DNR prior to FERC approval.

The Iowa DNR requests that WMMPA revise the Plan stating that they will make the fishing access facility available to anglers at the time of its completion even if it is completed before the hydropower facility.

Sincerely,

Martin Konrad

Martin Konrad
Executive Officer

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, ROCK ISLAND DISTRICT
PO BOX 2004 CLOCK TOWER BUILDING
ROCK ISLAND, ILLINOIS 61204-2004

REPLY TO
ATTENTION OF

January 23, 2014

Environmental Engineering Section

F-USACE-MRES-0399

Mr. Brent Moeller
Missouri River Energy Services
3724 West Avera Drive
PO Box 88920
Sioux Falls, South Dakota 57109-8920

Dear Mr. Moeller:

In accordance with Article 405 of the License, the Rock Island District has reviewed the January 9, 2014 Draft Fishing Access Design and Management Plan for the Red Rock Hydroelectric Project, Federal Energy Regulatory Commission (FERC) No. P-12576. In addition, a meeting was held at the site on October 10, 2013 with representatives of Western Minnesota Municipal Power Agency (WMMPA) and the Iowa DNR to discuss the proposed plan.

The License application by CRD Hydroelectric LLC proposed that the fishing access facility be constructed after the hydroelectric facility is operational to allow the committee (Corps, DNR, anglers) to observe and monitor actual flow conditions. Western Minnesota Municipal Power Agency (WMMPA) has proposed to construct the left bank facilities during construction of the Red Rock Hydropower facility for ease of construction and efficiency and to avoid possible safety issues by otherwise having the fishing access construction occurring near recreational facilities when they would be open for public use. The Rock Island District of the U.S. Army Corps of Engineers is in agreement that construction of the fishing access facility during Red Rock Hydropower facility construction would result in better safety for visitors and efficiencies of construction.

This Draft Fishing Access Design and Management plan meets the intent to mitigate the hydroelectric project's potential disruption/loss of fishing opportunities. Since the proposed project is confined within a developed area, this project does not require any additional National Environmental Policy Act documentation (per Engineer Regulation 200-2-2, paragraph 9(a). The proposed action would not affect any endangered or threatened species protected under the Endangered Species Act and no additional consultation under Section 7 of this act is required. The project is compatible with the existing masterplan and will not impact the ongoing masterplan revision's schedule, or intended purpose for the North Tailwater Recreation Area. The project has been previously evaluated and there are no documented historic properties within the proposed project area.

The left bank fishing access facilities as proposed in this Plan accommodate anglers and mitigate for lost fishing access along the left bank. The Corps concludes that the Fishing Access Design and Management Plan satisfies the mitigation requirement established by Article 405 of the License.

Should changes to the facility be required to facilitate public access or use of the facility after the hydroelectric facility is operational, WMMPA will be responsible for such changes. Changes must be mutually agreed upon by the IDNR, MRES, and the Corps. Should you have any other questions, please contact Mr. Jim Bartek, (309) 794-5599 or by e-mail at james.w.bartek@usace.army.mil or Mr. Anthony Heddlesten, (309) 794-5886 or email at anthony.d.heddlesten@usace.army.mil.

Sincerely,

Roger Perk

FOR Denny A. Lundberg, P.E.
Chief, Engineering & Construction Division

CF:
CEMVR-EC-DN (HEDDLESTEN)
CEMVR-EC-DG (BARTEK)
CEMVR-EC-D (DIST FILE)

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