

Project Factsheet for: Red Rock Drawdown and Cable Replacement

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Project Location Information

Location: Marion County, IA

River Basin(s): Des Moines / Skunk, Des Moines / Skunk, Iowa / Cedar, Iowa / Cedar

State(s): IA

Congressional District(s): IA-3

Status

Insufficient O&M funding for the Red Rock Project has limited the amount of work that can be done this drawdown. The serious risk involved with cable failure during a flood (Cables are at their expected lifecycle end) is the over-riding need. So the drawdown will take place after Labor Day, to replace the cables. Heavy rains and flooding in the area postponed the drawdown an additional 30 days. The pool will be drawn down at allowable rates, to remove additional water due to rains, until achieving the conservation pool level of 742 and then draw down will be slowed to 1/2 foot per day until 732 is attained. This is expected to be attained by early to mid October. Once the elevation of 732 is attained, cable replacement will be completed by in-house labor crews. Cable replacement should be completed by early November 2007 and the drawdown will be completed (refilling) over the winter of 2007 and with normal rains and snows should be back to conservation pool in March. The IDNR has asked for an extension of the drawdown of 28 days and this extension was approved. The IDNR will use the additional drawdown time to continue to place and build fish habitat in various areas of the lake and build a high water boat ramp.

Description

Lake Red Rock Project has significant impact on the local economy. The Project includes Iowa's largest lake and is the states largest contiguous public land base. Over half the population of Iowa lives within 100 miles of Lake Red Rock.

The impact of the Lake Red Rock Project is evident in the economic growth of the County and nearby communities. The population of Marion County, in which Lake Red Rock is located, is growing at twice the State average. Annual traveler expenditures to Marion County are approximately \$ 32 million. The nearby community of Pella has invested \$ 50 million in new tourism attractions and support.

There are significant private developments planned for land adjacent to Lake Red Rock whose success is dependent on the continued operation of the Red Rock Project. "The Point" is a major resort conference center with 200 condominium units and a water based marina. Earthpark is a \$ 150 million development slated to be the top tourist attraction in the state of Iowa. Earthpark has significant funding from Department of Energy and focuses on global stewardship.

Lake Red Rock provides approximately 40,000 nights of camping each year. In addition to camping the lake has extremely high use of beach, boat ramps and other day use facilities.

PROJECT WORK:

1. Cable Replacement and Associated Maintenance

The Lake Red Rock outlet control structure was designed and constructed with the lake water level at elevation 725 feet. The outlet structure consists of five cable operated tainter gates and 14 sluice gates. The spillway tainter gates have a sill elevation of elevation 735 feet which is 1 foot below the spillway crest of 736 feet. There are eight 1inch diameter lifting cables (4 located at each side of the tainter gates) that are used to raise or lower the tainter gates. The cable connection bracket is at an elevation of 735 feet. When the conservation pool was raised in the Spring of 1992 to an elevation of 742 feet, seven feet of the tainter gate lifting cables and brackets were permanently submerged. During the Flood of 1993, five of the forty lifting cables failed due to corrosion and added stress caused by the flood, rendering the two outer gates inoperable. The tainter gate cables (a total of 40) were replaced in 1993. The cables have an estimated service life of 15 years. In order to maintain the conservation pool at 742 the tainter gates must be kept in a closed position making inspection, maintenance, and repair of the tainter gates and the tainter gate lifting cables virtually impossible without a drawdown of the conservation pool. Along with the cable replacement seal replacement and some minor sill work will be completed. The vinyl paint system on the tainter gates, applied in 1989, has an expected service life of 25-30. Minor touch up and repair will extend the life of the gates. The estimated cost of this project work is \$2,020,000,

2. Cable Replacement with no associated maintenance (Chosen due to insufficient funding for other work)

The primary risk factor item of the authorized drawdown is to replace the Tainter gate cables. If funds are unavailable for all work items 1 above, funding of just the cable replacement portion of these items would be a priority. Estimated cost of this project is \$250,000.

3. Bulkhead Installation

Alternatives for inspection and maintenance of the dam outlet structure and tainter gates were developed and include a periodic drawdown to elevation 732 feet; modification of project design and/or materials; installation of a bulkhead dewatering system; or no action. An alternative to a conservation pool draw down was strongly recommended during the public review period of the Environmental Assessment. The preferred alternative is the installation of a bulkhead dewatering system that would allow dewatering of an individual tainter gate bay. A bulkhead system installed on a bi-rail could be moved to each gate bay as required or secured to the side of the outlet structure when not in use. Similar systems are successfully being used at other Corps dam sites. A maximum of two

operators would be required to move the bulkhead from the storage position to a gate and dewatering can be completed in a few minutes. The system can be installed on the existing bridge and dam structure with minimal modification to existing conditions. Periodic inspections and routine maintenance, repair and replacement of the tainter gates and cables could be performed using the bulkhead without the need for a drawdown. The estimated cost for the bulkhead system including planning, design, and construction management is \$2,330,000.

Summarized Financial Data

Federal Cost (Operations and Maintenance)	\$250,000
Non-Federal Cost	\$0
Total Cost	\$250,000
Federal Allocations through FY 2007 (Thru Red Rock Operational Funds)	\$128,000
Scheduled Federal Allocation for FY 2008 (Thru Red Rock Operational Funds)	\$122,000
Balance to Complete after FY 2008	\$0

Authority

OM - Operations and Maintenance --

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