

**IOWA DEPARTMENT OF NATURAL RESOURCES  
NATURAL RESOURCE COMMISSION**

**Teleconference Meeting Date:** Wednesday, September 26, 2012  
**Teleconference Meeting Location:** Wallace Bldg – 4th Floor Conference Room (West)  
502 E. 9<sup>th</sup> Street, Des Moines, IA

**Teleconference Meeting Agenda**

Meeting convenes at 1:15pm

1.	Engineering Construction Project - Contract for Iowa Great Lakes Electric Fish Barrier	Decision	Joe Larscheid
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**Upcoming NRC Meeting Dates:**

- *October 10, 2012 – NRC Field Tour, Harrison/Monona County, IA*
- *October 11, 2012 – Loess Hills State Forest Visitor’s Ctr, 206 Polk St, Pisgah, IA*
- *November 8, 2012 – Henry Wallace State Office Building, Des Moines, 9:30am*
- *December 13, 2012 – Henry Wallace State Office Building, Des Moines, 9:30am*

For details on the NRC meeting schedule, visit:

<http://www.iowadnr.gov/InsideDNR/BoardsCommissions/NaturalResourceCommission.aspx>

Comments during the public participation period regarding proposed rules or notices of intended action are not included in the official comments for that rule package unless they are submitted as required in the Notice of Intended Action.

**Iowa Department of Natural Resources  
Natural Resource Commission**

**#1**

**Decision Item**

**Engineering Construction Project - Contract for Iowa Great Lakes Electric Fish Barrier**

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IOWA GREAT LAKES - ELECTRIC FISH BARRIER; DICKINSON -- PROJECT # 13-01-30-03

Unprecedented flooding in 2011 allowed Asian carp species to invade the Iowa Great Lakes. Future invasions of these injurious species causes concern to the harm they could have on the local fauna and economy. The Minnesota DNR also has voiced concern that Asian carp may invade Minnesota waters by way of the Iowa Great Lake chain. An electric barrier in the vicinity of the Lower Gar Lake spillway is the best management strategy to prevent future invasions.

In June 2012 the Commission approved a consulting contract to investigate and design an electric fish barrier in the vicinity of the Lower Gar Lake spillway. All water flowing through the Iowa Great Lakes spills over this spillway. At the site assessment phase, Fisheries staff and Smith-Root, Inc., (Consultant) agreed that the best location for the barrier is immediately below the Lower Gar Lake spillway apron. The barrier will span the width of spillway and extend up the channel banks. It will have a 27' depth.

Strong local community support and interest in the electric barrier has resulted in a successful fund raising campaign and a commitment to donate funds toward the construction of a barrier. The purpose of the barrier is to prevent the invasion of Asian carp species into the Iowa Great Lakes (IGL). The barrier will operate when water is leaving the lakes during high flow events. The low-frequency pulsed direct current (DC) produced by the barrier's power source is set to deter fish away from the barrier; the current intensity is not intended to stun or immobilize fish.

The DNR is very cognizant of potential concerns associated with the construction of an electric fish barrier below the IGL weir structure. Implementation of safety measures were part of the decision making process when the DNR awarded a contract to Smith-Root, Inc. (SRI), for project design. The SRI barrier and behavioral guidance system is designed to be non-lethal and use only low-frequency pulsed direct current (DC) to create electric fields. Humans are three times more likely to be harmed by alternating current (AC) than by DC. Pulse frequency, duration, and current can all contribute to potential injury, thus SR typically sets these values well below the electrocution threshold of a typical ground fault interrupter. The electrical field dissipates quickly beyond the barrier pad. The pulse frequencies for the barrier are much lower than those used by Fisheries Bureau staff in traditional electrofishing units to conduct fish surveys.

Safety concerns were taken serious even though the maximum power consumption of the IGL barrier is not significant. 230<sup>th</sup> Avenue separates the barrier site from the Iowa Great Lakes; this prevents boat access to the site. The water area between 230<sup>th</sup> Avenue and the weir is small, has a shallow water depth shallow and not conducive for boating opportunities. However the DNR is aware that the barrier is located on public land and will attract attention from onlookers. Recreational opportunities are limited to people who are sightseeing, wildlife watching, and fishing. It is important that people visiting the barrier location area are alerted to the potential danger of the barrier and an effort will be made to educate people of potential safety risks. Fencing and signage are the two measures selected to alert people visiting the area of safety risks. Safety fencing will be constructed around the building housing equipment and electrical components for the barrier, fuel container for the back-up generator and the north and south

ends of the barrier to create an exclusion zone. Signage alerting visitors of electrical danger will be posted on all fencing. Signs will also be attached to posts encompassing the entire area between 230<sup>th</sup> Avenue and the barrier fences.

The area will be under observation during routine patrol by both DNR and local enforcement officers. A surveillance camera will be mounted on-site so DNR staff located at Spirit Lake Hatchery can monitor the site. As part of the contract, SRI is required to submit a training and operations manual with safety instruction. The contract also stipulates SRI to conduct an onsite two day training for five people. DNR staff will be given preference to attend the training, and local enforcement and emergency medical technician (EMT) personnel will be invited to fill open spaces.

**DNR Project Manager:** Mike Broderick, PE; Engineering Bureau  
Martin Konrad, Fisheries Bureau  
**Designer:** Aaron Murphy, PE; Smith Root Inc.  
**Green Features:** Silt Fence and Hydro Seeding  
**DNR Inspector:** Jeff Felts, PE; Engineering Bureau  
**Operating Bureau:** Fisheries  
**Funding Source:** 71% Marine Fuel Tax, 29% Local match (Capital Link 138)  
**Cost Estimate:** \$627,464.00  
**Plans Issue Date:** 09/05/12  
**Bid Letting Date:** 09/25/12  
**Plan Holders:** 7  
**Number of Bids Received:** 3

**Bidders**

Christensen Construction & Design Company, Inc	Estherville, IA	\$843,101.04
Graves Construction Company Inc.	Spencer, IA	\$986,945.38
Dixon Construction Company	Correctionville, IA	\$1,189,713.40

**IDNR recommends awarding the Bid to Christensen Construction & Design Company, Inc.**

Joe Larscheid, Fisheries Bureau Chief  
Conservation and Recreation Division  
September 26, 2012