

State of Wisconsin
Department of Natural Resources

Fish, Wildlife and Parks Division, Bureau of Fisheries
Management



REQUEST FOR ARCHITECTUAL AND ENGINEERING SERVICES

Kettle Moraine Springs Hatchery Recirculation Aquaculture Facility and
Renovation Project

July 2016

DFD Project Number 16G1S

Table of Contents

Background and Purpose	3
Project Scope and Description	4
Scope of Services	4
Project Budget Summary	6
Project Schedule	6
General Requirements:	6
Site Considerations:	6
Appendix A: Site Location	8
Appendix B: Main Hatchery Property Boundary.....	9
Appendix C: Schematic of proposed aquaculture facilities	10

Background and Purpose

The Kettle Moraine Springs State Fish Hatchery (KMSH) is one of two Department facilities that produce the majority of game fish stocked into the waters of Lake Michigan. Currently, KMSH produces all of the feral rainbow trout also known as steelhead that are stocked into Lake Michigan. Traditionally, KMSH raised three strains of steelhead: Chambers Creek, Ganaraska and Skamania. Each of the strains matures and returns to spawning streams at different times throughout the year which is intended to make the fish available to anglers during much of the open water fishing season. Due to major infrastructure failures and the lack of available water, the Department is not able to produce enough fish to meet stocking and harvest goals for steelhead in Lake Michigan waters. Target production at KMSH is 510,000 Steelhead yearlings of the three different strains requested for stocking annually. In recent years, water supply, biosecurity and infrastructure have limited production to 270,000 yearling steelhead of two strains instead of the desired three. To gain production efficiencies and meet biosecurity policy, the Department eliminated the Skamania strain of steelhead from the program until a renovation or new construction project could increase the available water and facilities for holding and rearing. In addition, KMSH currently supports the Lake Michigan fishery by raising Chinook salmon for stocking and incubation of Coho salmon eggs for other hatcheries. A partially renovated and newly constructed facility would allow the Department to meet the target for steelhead and Coho salmon production for Lake Michigan.

Construction and renovation efforts will address the need to replace the facility's poor quality wells and unreliable spring water sources, out of date and failing infrastructure, and need for increased fish rearing capacity. Modern buildings equipped with the latest recirculating aquaculture system (RAS) technology in fish rearing will increase the number of fish that can be reared per unit of effort. Wells that will be drilled into the sandstone and Silurian aquifer will eliminate the dependence on ground water that is high in iron and hydrogen sulfide and guarantee a sufficient quantity and quality to meet production goals.

Certain pre-design work is currently underway as a separate study (DFD Project 16C3D) which will further refine the program requirements and project objectives. This pre-design work establishes basic unit processes for the proposed hatchery facility, provides general site layout and a preliminary cost estimate. More specifically, this work reviews hatchery process, fish species hatchery aquaculture systems, water supply, wastewater treatment, utilities, potential buildings (office space, lab, aquaculture hatchery units), process mechanical/electrical and I&C systems. The pre-design study will be made available when complete.

Completion of this project will allow the Department to come closer to reaching system wide stocking goals outlined in the Lake Michigan Integrated Fisheries Management Plan 2015 and the ten year strategic plan for Fisheries Management in Wisconsin 2015-2025. Meeting these goals is important because fishing is an important economic force in Wisconsin. The state of Wisconsin ranks seventh in the nation for annual angler expenditures. According to the 2011 National Survey of Fishing, Hunting and Wildlife Associated Recreation (Wisconsin) and the ASA, American Sport fishing Association, the economic impact of Fishing in Wisconsin can be summarized as:

- Sport fishing annually generates \$2.3 billion in economic benefits and supports 22,000 jobs in Wisconsin.
- Sport fishing annually generates \$148 million in state and local tax revenues.
- Sport fishing brings more than 330,000 nonresident anglers annually to our state - behind only Florida and Michigan.
- Sales for fishing trip-related equipment generate \$1.4 billion annually in direct expenditures.
- Wisconsin anglers spent 14.6 million days fishing and took 10.3 million trips in Wisconsin in 2011.
- The average Wisconsin angler spends over \$1,100 over the fishing season and \$29 a fishing trip
- Visiting anglers spent a total of 6.7 million days and \$211 million on retail goods in 2011.

Project Scope and Description

This project renovates Building 3 on the existing hatchery property for use as a bio-secure broodstock holding facility for adult Skamania steelhead. A new aquaculture facility is required under the project. The new facility will need to be sufficiently sized to produce 510,000 yearling steelhead and 500,000 yearling Coho salmon per year. Construction of processes for aquaculture activities, wells, and wastewater treatment facilities are to meet guidelines in the Great Lakes Water Compact, and discharge rules related to the hatchery's WPDES permit. The hatchery design must also anticipate discharge limits that may be put in place for TMDL limits on phosphorus in the future. The project should attempt to maximize staff process productivity while minimizing energy consumption, overhead expenses, and maintenance costs whenever possible. The project will modernize access to the location to facilitate the delivery of fish and of commodities routinely used in fish culture, and provide access for routine maintenance. The project will also include a visitor's center and access to viewing of fish rearing activities by the public in a bio secure way.

Scope of Services

The A/E will provide pre-design through construction administration services as indicated in the DFD *"Policy and Procedure Manual for Architects/Engineers and Consultants"* and the *"A/E Contract for Professional Services"* as directed by DFD at the Design Kickoff meeting. The services may be contracted for in multiple contracts, or a multi-part contract with project specific review, approval, and authorization points in the contract, as determined by the needs of the project. Authorization for subsequent services will be issued in writing upon satisfactory performance and completion of contracted service and deliverables.

In addition to the scope of services outlined by DFD policy and procedure, the following clarification of anticipated services should be noted for this project:

- Design considerations should be made to minimize interruption in fish production in the existing facilities during construction activities.
- Design and construct aquaculture facilities using the latest in RAS technology

- Design and construct wells, water supply structures, and wastewater treatment structures required for aquaculture that minimize impacts to surface water features and groundwater resources. Utilize information provided in the USGS groundwater study project. The groundwater study will be made available when complete.
- Design and construct aquaculture facilities to meet current well codes, Great Lakes Water Compact guidelines, and WPDES waste water rules and future TMDL phosphorus requirements.
- Design and construct a modern, energy efficient building and MEP building systems to house the aquaculture operations including staff needs for; personal protective equipment storage, office space, break rooms, and bio-secure public visitation.
- Design needs to include the development of a biological operations plan for the new and renovated facility. This plan must be delivered as part of the preliminary design phase.
- Phased design and construction may be utilized to develop some of the new wells in advance of the main construction. This will allow the hatchery to increase production by better utilizing the existing infrastructure during the new facility construction.
- The A/E should provide web-conferencing capabilities for all project design meetings.

Note that the following services will not be included in the scope of services and will be contracted separately:

- Preparation of Type 2 Environmental Actions.
- Third party (Level II) commissioning.
- Hazardous materials survey, testing, and abatement bid documents.

Project Budget Summary

<i>Budget Item</i>	<i>Cost</i>
Construction	\$20,138,300
Hazardous Material Abatement	\$140,000
Contingency	\$2,013,800
Other Fees	\$50,000
A/E Design Fee	\$1,671,500
DFD Fee	\$886,100
Moveable Equipment	\$1,700,300
<i>Total</i>	<i>\$26,600,000</i>

Project Schedule

A/E Selection	September 2016
A/E Contract	October 2016
Preliminary Design / Design Report	April 2017
Joint Finance Committee Approval	May 2017
State Building Commission Approval	June 2017
Bid Opening	May 2018
Construction Start	July 2018
Substantial Completion	October 2019
Project Closeout	December 2019

General Requirements:

Occupants and Users: The primary users of this facility will be WDNR hatchery staff that will be operating the facility as a recirculation aquaculture facility and members of the public that come to visit the facility. Access by members of the public will be restricted to areas where bio-security will be in place to control the spread of fish pathogens.

Site Considerations:

General: Construction and renovation will occur at the current location of the Kettle Moraine Springs State Fish Hatchery. The proposed site will need to be tested to determine if a building of sufficient size can be built at the location. Upgrades to the current road will be required to facilitate the procurement of commodities needed to rear fish and to transport fish to the waters of Lake Michigan.

Zoning: We anticipate no zoning changes will be required to construct, or renovate facilities at this site. There is currently an effort underway to understand the future zoning needs in the Town of Scott, Sheboygan County, and it is possible that the facility will be rezoned sometime in the future. Department staff will keep themselves informed of these efforts and pass results of the rezoning efforts to the architectural and engineering firm that designs the new facility.

Historic Preservation: Construction shall be in a location that will not affect archeological sites on the KMHS property. No buildings of historical significance are found on the property. A cultural resource review has been completed by Department staff and the project has been cleared to proceed.

Hazardous Materials: Building three must be evaluated for hazardous materials and the need for removal or abatement as part of the design process. All buildings and associated fish rearing structures that will be demolished and removed must be evaluated for hazardous materials prior to demolition and removal. Removal and disposal of hazardous materials must be done in a safe manner consistent with all applicable regulations. The Department does not anticipate finding any hazardous materials on the site proposed for the construction of the new building for aquaculture activities.

WEPA: To comply with the Wisconsin Environmental Policy Act (WEPA) this project will require Type 2 Environmental Action that will be contracted separately.

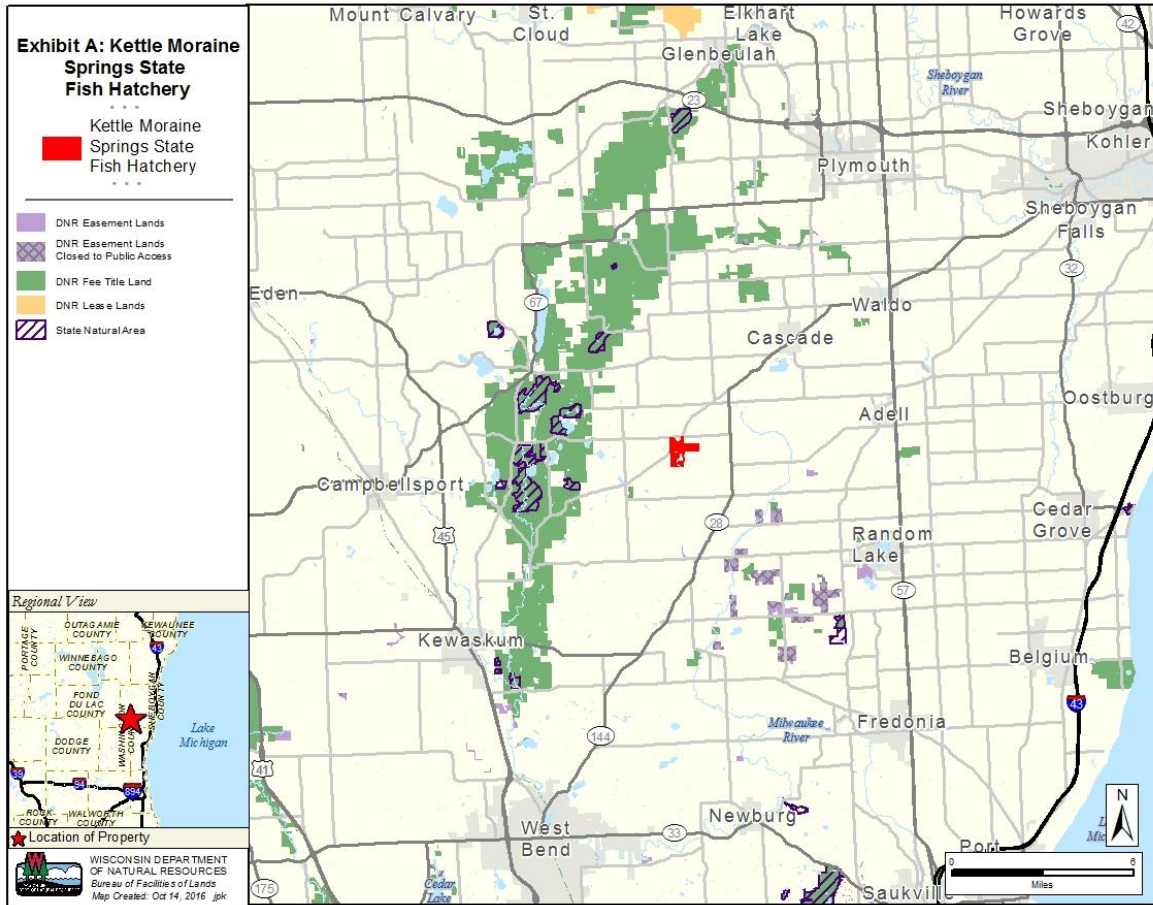
Utilities: The facilities current electrical service is supplied from Plymouth Utilities and is currently adequate for the facility. A renovation and construction of a new aquaculture facility will require an electrical service and backup emergency generator upgrade or additional service that will need to be provided by the project.

Telecommunications: Hardwired connections for office space will be provided as part of the design of the facility. Hardwired connections will be provided in the visitor's area and in each of the aquaculture rearing sections to facilitate communications between staff. Wireless access points will need to be provided by the project in all new and renovated areas.

Aquaculture facility monitoring: The site must be electronically monitored and emergency power features must be in place to avoid catastrophic loss of fish due to the loss of power at the facility. The monitoring must be able to summon staff to the site to tend fish in the event of a loss of power or other significant infrastructure failure.

Access Control: Construct access control for building number three to restrict access by the public. Construct access control between public and aquaculture rearing areas. Gated control for the main access to the facility. Use fobs to control door access between public and aquaculture areas.

Appendix A: Site Location



The data shown on this map have been obtained from various sources, and are of varying age, reliability and resolution. This map is not intended to be used for navigation, nor is this map an authoritative source of information about legal land ownership or public access. Users of this map should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map.

Appendix B: Main Hatchery Property Boundary

