

Agenda Item 7.b.

MEMORANDUM

TO: Programs, Projects and Operations Subcommittee

SUBJECT: Report on Request for Funding for P/J Fishery Funds from the Federal Sport Fish Restoration Program

DATE: July 1, 2009

FROM: Ralph Puls, Land/Water Programs Coordinator, Paul Woodward, Olsson Associates

A part of the Pigeon/Jones Dam Site #15 project is the development of fish habitat in and around the 228 acre lake. Funds for fishery development are available through the Federal Sport Fish Development Program through a program administered by the Nebraska Game and Parks Commission. Olsson Associates has prepared the grant application as part of their professional services contract with the District, and they have been working with Game and Parks Commission Fisheries Division to prepare the plan. The District will seek funding from this program for items including a boat ramp, fishing pier, breakwaters and a number of fishery enhancement structures shown and described in the attached grant application and letter to the Nebraska Game and Parks Commission. The funds are provided on a 75% - 25% cost sharing with the 75% coming from the Sport Fishery Program.

The total estimated cost for the fishery enhancement is \$1,616,500 with the Fishery Development Program providing \$1,212,375 and the P-MRNRD \$404,125.

July 1, 2009

Mr. Kirk Nelson, Assistant Director
Nebraska Game & Parks Commission
2200 North 33rd Street
P.O. Box 30370
Lincoln, NE 68503-0370

RE: Pigeon/Jones Creek Site 15 Lake and Recreation Area, Dakota County, NE

Dear Mr. Nelson:

The Papio-Missouri River Natural Resources District (P-MRNRD) is requesting funding assistance through the Federal, Sport Fish Restoration Program for the new Pigeon/Jones Creek Site 15 Reservoir in Dakota County, NE, located 1.5 miles southwest of Hubbard. The dam has been designed and is expected to begin construction in 2010. The structure has 5,340 acres of drainage and has a permanent pool of 238 acres. The primary benefits of the project include flood reduction, sediment control, and outdoor recreation. The steep terrain of the Missouri River bluffs surrounding the lake provides a unique location and an excellent average lake depth of nearly 15 feet. Please find attached a more detailed project narrative and map.

The Papio-Missouri River NRD has worked with Steve Satra and Jeff Schuckman of your staff, Nebraska Department of Environmental Quality staff, and has retained the services of Olsson Associates to complete the preliminary design and cost estimate for the entire project. As part of the project, fisheries enhancements will include the installation of a concrete boat ramp and a handicap accessible fishing pier. In addition, the project will focus on shoreline development/stabilization and the strategic grading of the lake bottom to provide greater depth diversity to promote the formation of natural aquatic habitat.

The Papio-Missouri River NRD has limited funding available to include all the features proposed, but together with your assistance, we hope we can include everything possible to enhance and protect aquatic habitat. Like most aspects of this project, the NRD is cost-sharing with numerous entities to construct the dam, realign county roadways, develop recreational facilities, and implement upstream conservation practices. Other committed or anticipated funding sponsors include the Nebraska Resources Development Fund, the Nebraska Environmental Trust, NDEQ/EPA Section 319, Dakota County, and NRCS.

The NRD requests your assistance with funding all or portions of all eligible components under the Sport Fish Restoration Programs. The preliminary construction cost estimate for fisheries enhancement and shoreline stabilization is \$1,616,500 (75% - \$1,212,375). This estimate includes engineering, construction, and contingency costs and a detailed description and cost estimate for each amenity is attached. The Papio-Missouri River NRD Board of Directors has

obligated funds to complete the projects identified in this request and is able to provide local matching funds required by the Federal Sport Fish Restoration Program.

The Papio-Missouri River NRD plans to begin in-lake construction and the motor boat access improvements in the summer of 2010 with completion by 2011. The project schedule and improvements to the lake are all contingent upon approval of funding.

Thank you for your consideration of this request. Please contact Ralph Puls, Land and Water Programs Coordinator, at 402.444.6222 if you have any questions.

Sincerely,

John Winkler, General Manager

Attachments

CC Marlin Petermann and Ralph Puls, P-MRNRD
Steve Satra and Jeff Schuckman, NGPC
Elbert Traylor, NDEQ
Paul Woodward, Olsson Associates

Program Narrative

State: Nebraska

Grant Number: F-179-D

Category: Development

Grant Title: Pigeon/Jones Creek Site 15 Lake and Recreation Area

Location: 1 mile East of Hubbard, Nebraska in the SE ¼ of Section 23, Township 28 North, Range 27 East, in the Jones Creek Watershed, Dakota County, Nebraska.

Need:

Most recent studies indicate that the number of recreational anglers and outdoor enthusiasts have increased in Nebraska and the United States during the last two decades. New reservoir construction and reservoir rehabilitation has provided some relief for this increase and growing number of boaters and outdoor enthusiasts. However, new reservoir construction today is limited in Nebraska due mainly to public opinion, land use changes, loss of property and the tax base to smaller local communities.

Pigeon/Jones Creek Site 15 Lake and Recreation Area is a unique opportunity to bring outdoor recreation to the northeast corner of Nebraska. Once reservoirs of any real size present themselves for construction, we need to capitalize on these opportunities to provide good facilities which have plenty of boating access (ramps) designed for minimum maintenance and an extended life expectancy. This proposed new reservoir and public recreation area will provide an opportunity for the local community to generate economic revenue and provide an area for recreational activities that will serve our constituents for many years to come.

According to the 2006 - 2010 Nebraska State Comprehensive Outdoor Recreation Plan (SCORP), this northeast area holds 11.1% of Nebraska's population, about 190,000 citizens. Known as SCORP Region 3, it has seen a 4.72% increase in population from 1990 to 2000. Specifically, Dakota County has seen nearly a 21% increase in the number of citizens during that timeframe. Region 3 has 30,225 acres of available recreational lands, water, and wetlands and is the lowest of all regions studied. This is only .028 % of the total acres (1,058,120) in the entire State of Nebraska. Overall, northeast Nebraska is deficient in recreational lands, waters, and wetland areas and could use more public use recreational facilities.

Evaluations of Pigeon/Jones Creek Site 15 indicate a need for more than 19,000 acres of water-based recreation within 30 miles of Hubbard, NE. This demand translates into an enormous recreational benefit to the Dakota County area that will only be realized if measures are taken to ensure the sustainability of the reservoir for many years to come. These studies also show that Jones Creek Site 15 protects the watershed from flooding, sediment, nutrients, and increased stream degradation.

This new dam and 228 acre lake will include "in-lake" structures or controls including: three sediment trapping basins, six perpendicular breakwater structures, and several offshore breakwater and large shoreline protection areas. These structures will aid in containing and buffering sediment material and protect shorelines from wind and wave erosion. Excavation

from the lake bottom will be a major component of this new reservoir which will also assure its longevity for boating and boating access as the in-lake structures will slow down the natural lake succession processes. Ultimately, the features will ensure that the lake will be protected from watershed sediment, internal nutrient loading, sediment re-suspension, and wind driven shoreline wave erosion. As always the need for Best Management Practice (BMP) implementation within the watershed should always be a high priority and a watershed plan is currently being completed. This project is designed to benefit boating access and improve the lake's aquatic environment.

Objective:

The objective of this project is to develop new motorboat access facilities for the proposed 228 acre lake and 750 acre recreation area.

Expected Results & Benefits:

An estimate of 7,695 annual angler days of boat fishing can be expected by the proposed developments and reservoir enhancements. In addition, almost 5,900 annual boater days could become a reality on this new recreational, flood control structure. The warm water species projected for introduction will include largemouth bass, black crappie, bluegill, channel catfish, and walleye. The high mean depth of 14.7 feet may also allow for the introduction of other species, such as pike. These species are very popular and actively pursued by anglers. The planned developments and incorporated in-lake structures are expected to remain functional and beneficial for over 50 years.

Combining the reduction of sediment and nutrients being delivered from the Jones Creek watershed, the structural features and projected trapping efficiencies in the upper reservoir reaches along with shoreline erosion protection measures, will all collectively extend the recreational boating life of this new reservoir.

Upon completion, the Jones Creek Site 15 recreation area and reservoir will provide the citizens of northeast Nebraska with an excellent facility to enjoy activities such as motor boating, fishing, hiking, wildlife watching, and the many other types of recreation addressed in the SCORP. The vicinity of the project will provide prime access for both anglers and boaters in nearby Hubbard, Homer, Dakota City, South Sioux City, and Sioux City, IA. With this type of facility you can count on the economic benefits that will come upon the local community and area from the visitors.

The proposed developments will be accomplished as part of the motorboat access development and are identified as eligible activities under the Motor Boat Facilities Guidelines, 522 FW 16.4B (2 and 3).

Approach:

Due to the relocation of 200th Street, a county road across the middle of the reservoir, a majority of the lake (approx 200 ac) will be unobstructed to boat access. Additionally, the entire shoreline of the 228 acre lake will be made available to anglers as public property. In order to make these goals mesh, a lot of shoreline protection and habitat improvement is needed.

This is a cooperative project between the Papio-Missouri River Natural Resources District (P-MRNRD) and the Nebraska Game and Parks Commission and will be constructed by a

competent contractor selected through the competitive bidding process advertised by the NRD. The proposed fishery and lake enhancements will include the following development activities:

1. Construct a boat launch area which will be located on the southwest shoreline of the lake. This launch facility will include a breakwater structure, a concrete boat ramp, vegetation barriers and selective deepening. The breakwater is intended to provide calm/quiet waters in the area for ease of launching and loading. No parking lot or public access will be constructed during this portion of the project, but are planned in the future.
2. Install a public fishing pier in the northwest corner of the lake that will extend from a perpendicular breakwater. This breakwater will protect an excavated cove area and nearby scallops, shoals, and vegetative barriers which will create great fish habitat near the pier.
3. Construct three large perpendicular and one offshore breakwater structure within the upper half of the lake to protect against wave erosion from northern winds. Excavation areas adjacent to these breakwaters and the shoreline will create deeper areas for fishing. In addition, underwater shoals will be placed within the deeper areas of the lake to provide depth diversity.
4. One additional perpendicular breakwater structures is planned on the existing alignment of 200th Street. This section of county road will be abandoned as part of the project, allowing it to be used as the base for a breakwater. Scallops and shoals are planned near these structures to allow for multiple depths of fish habitat. All unprotected shoreline along the new proposed roadway and nearby point will be lined with rock riprap to attenuate wave action.
5. Multiple underwater shoals are planned in specific deeper areas of the lake to promote depth diversity and a variety of habitats within the lake. These shoals are placed near selective areas of excavation needed for construction of the dam, road, or the fishery structures themselves.
6. Construct one large, offshore breakwater structure along the northeast shoreline. This structure is located just east of the dam and will utilize a unique approach using just rock riprap, again protecting the reservoir shorelines from wind generated waves and undesired water turbidity.
7. Lake deepening/excavation will be completed in selected locations within the main lake. This will increase reservoir mean depth and extend boating access. Design of the excavation will provide positive drainage when the reservoir is drained and the excavation will complement existing topography and existing channels. All excavation is being planned to minimize costs, excavated borrow material will be used in nearby breakwater structures where possible.
8. Clearing of hardwood trees in the reservoir will be done only to allow for construction purposes. Any remaining trees will remain standing within the reservoir and will benefit as structure and fish attractors. Cleared trees will be anchored to the bottom to provide deep water habitat.
10. Engineering related services: Survey information, production of preliminary and final design plans, plan specifications, bidding documents and all contract construction

oversight. Pre-agreement engineering cost are included and are requested as part of the grant.

The proposed developments will be accomplished in 2010. All work will be completed under contract by the NRD. The contractor for the construction will be selected by required competitive bidding process. All required permits will be obtained before construction work begins. Olsson Associates of Omaha, Nebraska has been contracted by the Papio-Missouri River NRD and have professional certified engineers on staff that have designed and engineered the proposed developments as shown on the attached plan set.

Nebraska Game and Parks Commission, Fisheries Division and NRD staff have assisted with the design features of the project. Construction oversight and final inspections will be completed by Olsson Associates personnel and coordinated by Ralph Puls of the NRD. This motorboat access project construction will be inspected periodically by Steve Satra, Lincoln, Jeff Schuckman, Fisheries Division, Norfolk office, and Marilyn Tabor, Lincoln Federal Aid office.

This dam and reservoir project will be funded by several state and federal funding sources: Nebraska Environmental Trust Funds (NETF), Nebraska Resource Development Fund (NRDF), and Papio-Missouri River Natural Resources District funding. Property for the Jones Creek Site 15 Dam and recreation development area is still being acquired by the P-MRNRD. The future operation and maintenance of the dam and recreation area will be performed by the P-MRNRD.

No program income is expected to be generated by this project. This development project is expected to be completed by October 2010.

Pigeon/Jones Creek Fisheries

Preliminary Structures Quantities and Costs

Updated: 06/22/2009

Perpendicular Breakwater Construction

Item	Quantity	Unit	Unit Price	Extension
<u>Perpendicular Breakwater (1-5)</u>				
Class "A" Earth Embankment	15,405	CY	\$2.75	\$42,363.75
Class "B" Earth Embankment	0	CY	\$2.50	\$0.00
Gravel Surfacing	56	CY	\$20.00	\$1,114.29
Gravel Embedment	56	CY	\$25.00	\$1,392.86
Type "B" Quartzite Rock Riprap	3,114	CY	\$55.00	\$171,246.43
Type "A" Quartzite Rock Riprap	343	CY	\$50.00	\$17,142.86
Geotextile Filter Fabric	6,710	SY	\$2.00	\$13,420.00
Subtotal:				\$246,680.18
10% Contingency:				\$24,668.02
Total:				\$271,348.20

Shoreline Riprap Protection

Item	Quantity	Unit	Unit Price	Extension
<u>Shoreline Protection (1-2)</u>				
Class "B" Earth Embankment	4,600	CY	\$2.50	\$11,500.00
Type "B" Quartzite Rock Riprap	1,882	CY	\$55.00	\$103,517.86
Type "A" Quartzite Rock Riprap	657	CY	\$50.00	\$32,857.14
Type "C" Quartzite Rock Riprap	1,229	CY	\$60.00	\$73,740.00
Geotextile Filter Fabric	6,280	SY	\$2.00	\$12,560.00
Gravel Surfacing	72	CY	\$20.00	\$1,440.00
Subtotal:				\$235,615.00
10% Contingency:				\$23,561.50
Total:				\$259,176.50

Offshore Breakwater Construction

Item	Quantity	Unit	Unit Price	Extension
<u>Offshore Breakwater 1</u>				
Class "A" Earth Embankment	5,410	CY	\$2.75	\$14,877.50
Type "B" Quartzite Rock Riprap	654	CY	\$55.00	\$35,946.43
Type "A" Quartzite Rock Riprap	107	CY	\$50.00	\$5,357.14
Geotextile Filter Fabric	4,100	CY	\$2.00	\$8,200.00
Subtotal:				\$64,381.07
10% Contingency:				\$6,438.11
Total:				\$70,819.18

Cove and Boat Ramp Excavation

Item	Quantity	Unit	Unit Price	Extension
<u>Boat Ramp Excavation</u>				
Earth Excavation*	10780	CY	---	---
Subtotal:				\$0.00
10% Contingency:				\$0.00
Total:				\$0.00

*Earth Excavation will be paid base on fill placed

Underwater Shoal Construction (1-9)

Item	Quantity	Unit	Unit Price	Extension
Class "B" Earth Embankment	26,025	CY	\$2.50	\$65,062.50
Gravel Surfacing	432	CY	\$ 20.00	\$8,642.86
Type "A" Quartzite Rock Riprap	454	CY	\$ 50.00	\$22,700.00
Subtotal:				\$96,405.36
10% Contingency:				\$9,640.54
Total:				\$106,045.89

Vegetation Barrier Construction (1-11)

Item	Quantity	Unit	Unit Price	Extension
Geotextile Filter Fabric	3,968	SY	\$2.00	\$7,936.00
Type "A" Quartzite Rock Riprap	70	CY	\$ 50.00	\$3,500.00
Gravel Surfacing	306	CY	\$ 20.00	\$6,128.57
Subtotal:				\$17,564.57
10% Contingency:				\$1,756.46
Total:				\$19,321.03

Additional Fisheries Construction Items

Item	Quantity	Unit	Unit Price	Extension
Boat Ramp	2400	SFT	\$ 10.00	\$24,000.00
Handicap Accessible Fishing Pier	1	LS	\$ 100,000.00	\$100,000.00
Seeding- Cover Crop (within permanent pool)	32	acres	\$500.00	\$16,000.00
Clearing and Grubbing	1	LS	\$10,000.00	\$10,000.00
Roadway Wave Protection Type "C" Quartzite Rock Riprap	10154	CY	\$60.00	\$609,240.00
Subtotal:				\$759,240.00
10% Contingency:				\$75,924.00
Total:				\$835,164.00

	All Fisheries Amenities w/o Contingency:	\$1,419,886.18
	All Fisheries Amenities w/ Contingency:	\$1,561,874.80
	Additional Engineering Fees (estimate):	\$54,620.00
	Fisheries Amenities and Engineering Services Total:	\$1,616,494.80

		Percentage
Total Estimated Costs	\$1,616,500	
Federal Share	\$1,212,375	0.75
Non-federal Share	\$404,125	0.25

Project Grant Agreement Period: November 19, 2009- November 19, 2011

Project Leaders: Steve Satra, Program Specialist
Marilyn Tabor, Federal Aid Coordinator

Appendix A - Supporting Documentation

**Fisheries Construction Plans - Permit Review Set - Sheets 2.1 thru 2.15 dated
06/19/2009**

**Papio-Missouri River NRD Board of Directors resolution supporting this
application**