APPLICATION NUMBER 13-
Farmington Bay Waterfowl Management Area
Project Title: Farmington Bay Waterfowl Management Area Unit 1 Enhancement Proposal
(FBWMA's Fourth Priority Project)

UTAH DIVISION OF WATER QUALITY
195 North 1950 West
PO Box 144870
Salt Lake City, Utah 84114-4870

Red Butte Creek Project Proposal Form

NOTE: Proposal must be no longer than 6 pages. Supplemental documents such as letters of support, information to demonstrate previous project implementation and other relative supportive documents may be submitted in addition to this form.

Applicant Name: Rich Hansen

Co-Applicant Name(s) (if applicable):

Project Title: **Farmington Bay Waterfowl Management Area Unit 1 Enhancement**

Agency or Business Name (if applicable): Utah Division of Wildlife Resources

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☐ Individual ☐ Non-Profit ☒ Govt. Agency ☐ Academic ☐ Commercial ☐ Other

1. Estimated Project Costs:

Labor	$ 63,850
Materials	$ 25,550
Equipment	$ 89,400
Administration	$ 25,500
Miscellaneous	$ 51,120
TOTAL	**$255,420**

Other sources of project funding:

UDWR	$15,000 (Possible)	_____	$_____
Source	Amount	Source	Amount

Total project cost including other sources of funding: $270,420. (please include bids for labor, equipment, rentals, etc.). A project proposal requesting $15,000 for the water control structures will be submitted to the Utah Division of Wildlife Resources Habitat Council for funding consideration. The proposal deadline is December 31, 2011, with project review in March 2012 with funding available for use on July 1, 2012.

2. Describe the purpose and need of the project:

The purpose of this project is to create a new 350 acre impoundment in Unit 1 of Farmington Bay Waterfowl Management Area (FBWMA).

FBWMA is comprised of approximately 12,000 acres (with an indefinite west boundary into the Great Salt Lake) and is located at the base of the Jordan River delta along the southeast bay of the Great Salt Lake in Davis and Salt Lake Counties. For management purposes, it is divided into four units; Unit 1, Unit 2, Turpin Unit, and the Crystal Unit. Private lands surround the majority of the WMA, with the Great Salt Lake bordering on the west. The development of FBWMA began on July 1, 1935, with a plan to convert the alkaline lake bed into productive waterfowl habitat. The first impoundments, Units 1 and 2, were completed in 1940 by the Civilian Conservation Corps.

At FBWMA, there are over 26.5 miles of channels and water delivery systems, over 42 miles of dikes and over 200 water control structures. The water is stair-stepped through a series of dikes and units to maximize the available water. Within the dikes are water control structures that provide the ability to manage units at different water depths at different times of the year thus maximizing the benefit to waterfowl and shore birds.

The area where the impoundment would be constructed is currently dominated by dense monotypic stands of cattail, Phragmites (a non-native aggressive reed), and hard-stem bulrush. There is very little wildlife use on the nearly 350 acres. In order to attract more waterfowl, shorebirds, and other migratory bird species, the area needs to be flooded with 12-14 inches of water. Given current topography, it is not possible to efficiently flood the 350 acres with the appropriate amount of water. If the area could be flooded, monotypic stands of vegetation could be controlled. The 350 acres would also naturally grow sub-mergent vegetation (sago-pond weed) which would attract waterfowl.

The project will be designed and engineered, and contractors will create a new system of dikes and water control structures to impound water. Water control structures will be installed every quarter mile along the west end of the new dike, thereby giving managers the ability to control and manipulate water.

The two Chevron Oil Spill events in 2010 discharged oil into Red Butte Creek, the Jordan River and Liberty Park Pond, and impacted both wild and domestic waterfowl. Some birds had direct mortality, some had to be euthanized due to their injuries, while others became coated with oil and were hand-washed. It is UDWR's understanding that 391 birds were recovered and 65 waterfowl died as a result of the spill. The majority of these birds were wild Canada geese and mallards. In addition, waterfowl nesting and feeding habitats in these waterways were also negatively affected by the oil spill. This project will greatly enhance waterfowl habitats on FBWMA and will provide some measure of compensatory mitigation for both the Chevron Oil Spill impacts.

3. Estimated time frame of the project with significant milestones (Note:Project must be completed with final reports filed by November 10, 2014):

Permits would be obtained from the Army Corps of Engineers by December of 2012. Water control structures will be completed by June 2013. The contractor can move 1000 cubic yards of material per day, and work should take approximately 85 days.

Work on the new dike construction should begin in the summer of 2013 (conditions permitting), and should be completed by September 15, 2013.

4. Describe the location of the project with attached location map, including details on the total area that will be directly enhanced by the project:

The project will be located at FBWMA; specifically, on the south-east side of unit 1 (see map). The southeast corner of the new impoundment is located at Township 2N Range 1W Sections 2 and 11 and there would be approximately 2.15 miles of new dike created. The project will enhance approximately 350 acres of habitat.

5. Describe how the project will specifically enhance and protect waterways affected by the Red Butte releases and improve the conditions of one or more of the following: wildlife, habitat, natural vegetation, water quality or emergency response:

Red Butte Creek flows into the Jordan River, which is the main water source for FBWMA. Water enters FBWMA through the State canal and is diverted as needed throughout the management area. This project would be beneficial for waterfowl and other migratory bird species. Currently, waterfowl are not using the area in question because it is dominated by dense, monotypic stands of emergent vegetation. This project will turn nearly 350 acres of low quality habitat into a variety of open water and emergent marsh that will have a variety of species such as alkali bulrush, hardstem bulrush, Olney's three-square and salt grass that will attract waterfowl and other migratory birds. Large monotypic stands of undesirable vegetation will be burned and then flooded with water. The dike will provide the opportunity to impound water, while the water control structures will allow the area to be filled to optimum levels and drained. Native sub-mergent aquatic vegetation (sago-pondweed) would naturally grow in the impoundment and would attract and feed waterfowl. Furthermore, the new impoundment will serve as an area where sediments can settle out of the system.

Beneficial uses of the Jordan River, which include warm water fish, water birds, and aquatic organisms in their food chains, are protected by a variety of water quality standards, but every segment of the Jordan River has been found to be impaired for one or more beneficial uses due to exceeding one or more water quality standards. Segments of the lower Jordan River are currently impaired due to low levels of dissolved oxygen, organic enrichment, total dissolved solids, high water temperatures, and *E. coli.* The Jordan River receives pollutants from many sources, including Utah Lake, wastewater treatment facilities, tributaries, stormwater, and diffuse runoff. While the quality of Jordan River water is not ideal for supporting the uses by fish and wildlife, it nevertheless serves as the life-blood of a series of ponds and wetlands at the lower end of the Jordan River and Farmington Bay. Management of the Jordan River is crucial to protecting the existing beneficial uses and potentially improving the condition of this waterway and wetland habitat that is supported by it.

6. Describe project's connectivity to other natural areas or projects that further enhance wildlife, habitat, natural vegetation, water quality or emergency response:

The Great Salt Lake (GSL) is of hemispheric importance to migratory water birds (waterfowl, shorebirds and wading birds), and many species use the GSL as nesting, feeding and staging areas. At times, millions of birds may be found on the GSL and the surrounding wetland/upland habitat complexes. Since the GSL is a dynamic system with the lake elevation changing seasonally and annually, the abundance and location of salt, brackish and freshwater habitats continually change over time. These changes create a continual diversity and continuity of available habitats, such that wildlife, especially waterfowl and shorebirds, will move around the GSL to find those habitats that supply their needs. It is because of these habitats that the GSL has become so critically important to wildlife, with the Lake sometimes supporting over 50% of the worldwide populations of some avian species. The FBWMA is located immediately adjacent to the GSL and it's freshwater ponds and marshes annually support hundreds of thousands of water birds.

The new impoundment will enhance other impoundments and migratory bird habitat at FBWMA. For instance, the project would enhance the water quality of Unit 1 at FBWMA. Unit one is a large impoundment at FBWMA and the waterfowl rest area is located in the northwest corner. Unit one suffers from significantly negative algae blooms due to nitrogen and phosphorous loaded water from the Jordan River. The new impoundment will filter water before flowing into the main impoundment of Unit 1 and into the rest area. During the waterfowl hunt, Unit 1 holds as many as 80,000 ducks in the waterfowl rest area. No trespassing or disturbances are permitted in the rest area, so the ducks are heavily concentrated in this area. However, the high numbers of ducks quickly eat the area out of sago-pond weed. This project will give waterfowl more habitat close to the rest area.

7. Describe any additional social benefits of implementing this project:

This project will enhance waterfowl hunting, bird-watching and other recreational opportunities at FBWMA. Since the 350 acres is dominated by thick, tall stands of monotypic vegetation and bird use is minimal, waterfowl hunters are missing hunting opportunities they could be having on public land. Also, this project will enhance watchable wildlife opportunities by attracting more waterfowl and shorebird species for the public to view.

8. Project plans and details, including rights to work on specified piece of land:

The FBWMA is owned and managed by the Utah Division of Wildlife Resources (UDWR). UDWR will design and draw up the plans for dike construction including the location of the water control structures. UDWR will obtain any necessary permits from the U.S. Army Corps of Engineers. In addition, UDWR will purchase five water control structures with pipe at $3,000 per structure (Total of $15,000). An RFP will be released requesting bids for this project.

The contractor will be required to supply all labor, material, and equipment required to complete the construction of dikes. Borrow areas for dike construction will be located in a wetland area adjacent to the dike construction. The crown of the dike shall be drivable by maintenance vehicles. The crest, side slope, and berms of the new dike shall be trimmed to conform to the design plans. The dike will be 5' high, with a 12' foot crown, and a 36' base with a 3:1 slope. At $3.00 per cubic yard for construction of the dike, there will be 56,760 cubic yards moved to create 2.15 miles of new dike, at a cost of $170,280. Construction of a new dike of this type will experience 50% shrinkage and therefore an additional 28,380 cubic yards of material will need to be moved to complete dike construction for an additional cost of $85,140. Approximately five water control structures will be required for the project and will be placed every quarter mile on the west side of the impoundment. The water control structures will be cement with wing-walls, will be five feet high, will accommodate a 40" wide stop-log, and be affixed with a 24" diameter poly-urethane pipe. The grand total for the cost of the project should be around $270,420. A project proposal requesting $15,000 for the water control structures will be submitted to the Utah Division of Wildlife Resources Habitat Council for funding consideration. The proposal deadline is December 31, 2011, with project review in March 2012 with funding available for use on July 1, 2012.

9. Describe your experience in implementing projects of similar scope and magnitude:

I have worked for the Utah Division of Wildlife Resources for nine years. I was the assistant at Ogden Bay WMA for one year, the assistant at FBWMA for two years and I have been the manager of FBWMA for the last six and a half years. During that time, we have constructed a new unit (The Doug Miller Unit), cleaned approximately 8 miles of channels, breached and repaired a dike due to flooding, replaced ten failed water control structures and repaired miles of damaged dikes. In addition to this maintenance, we have sprayed thousands of acres of noxious weeds and improved the habitat quality for waterfowl, shorebirds, and wading birds. We have also managed 60 acres of wetlands and uplands for the Utah Transit Authority that was mitigation for the Frontrunner transit project. We have met all of the U.S. Army Corps of Engineers mitigation requirements for this project. We have also created a 4 acre pond with islands as mitigation for the FBWMA Nature center road and parking lot.

10. Describe how ongoing maintenance of the project will be funded and carried out:

Ongoing maintenance should be minimal and should be absorbed into our standard operating budget. However, special projects or maintenance on the project in the future will be submitted as a habitat project proposal to the Utah Division of Wildlife Resources Habitat Council for funding consideration.

11. List consultants or agency partners that have participated in project development:

Ducks Unlimited supports the project and is willing to help out with engineering and Technical Assistance. Although these mitigation funds cannot be used to leverage additional federal funds, Ducks Unlimited can use these monies as non-match and show support towards a NAWCA (North American Waterfowl Conservation Act) grant that would benefit additional wetlands of the Great Salt Lake ecosystem. Please see the attached letter of support.

The following organizations also support this project. Please see the attached letters of support:

- USFWS
- Utah Airboat Association
- Delta Waterfowl
- Utah Mud Motor Association
- Utah Waterfowl Association

Signature Richard O Hansen Date 12/13/11
Applicant

SAME LETTERS OF SUPPORT AS APPLICATION NUMBER 10