

Project Title: *O'DELL CREEK PHASE 19 STREAM AND WETLAND RESTORATION PROJECT
DESIGN-ENGINEERING PROPOSAL*

Date: November 2, 2023

Applicability to Project 2188 License Article(s)

Phase 19 will offset impacts to river resources associated with Project 2188 (Madison-Missouri River). The project meets the purpose and intent of License Article 423, which requires development of a vegetation and wildlife monitoring and enhancement plan intended to enhance native plants and wildlife populations on Project 2188 wildlife habitats adjacent to the Madison River. Specifically, NorthWestern Energy is successfully enhancing Project 2188 wildlife habitats through funding aimed to protect, restore, and enhance riparian, wetland, and upland habitats on private lands. The O'Dell Creek project, and the benefits that have resulted from 16 phases of restoration work in the O'Dell Creek headwaters, are specifically referenced in Article 423 (see Updated Five Year 2013-2017 Project 2188 Wildlife Plan). NorthWestern Energy continues to monitor prior phases of work to assess the effectiveness of previously implemented projects, including the benefits to stream temperature, streamflow quantity, avian species richness and numbers, sensitive plants, and acres of restored/enhanced wetlands.

Justification for Priority 2 Classification

The O'Dell Creek Phase 19 Stream and Wetland Restoration Project classifies as a Priority 2 2188 license project. The project is located on O'Dell Creek, a major cold-water spring creek tributary to the Madison River, within 0.3 miles of the Madison River, and will address limiting factors related to degraded wildlife, wetland and aquatic resources.

Project Sponsor(s): NorthWestern Energy, Inc.
Granger Ranches, L.P.
Madison River Foundation
River Design Group, Inc.

Location of Proposed Project

The project is in Madison County approximately three miles south of the town of Ennis, Montana. The project is located on Granger Ranches, a working cattle ranch. The legal description of the project area is Sections 16 and 17, Township 6 South, Range 1 West. Please refer to Figure 1.

Geocodes: 25-0423-16-1-01-01-0000

Latitude: 45.316; **Longitude:** -111.741

Total Project Cost: \$32,950

WildTAC Funds (Cost-Share) Requested for Project: \$17,500

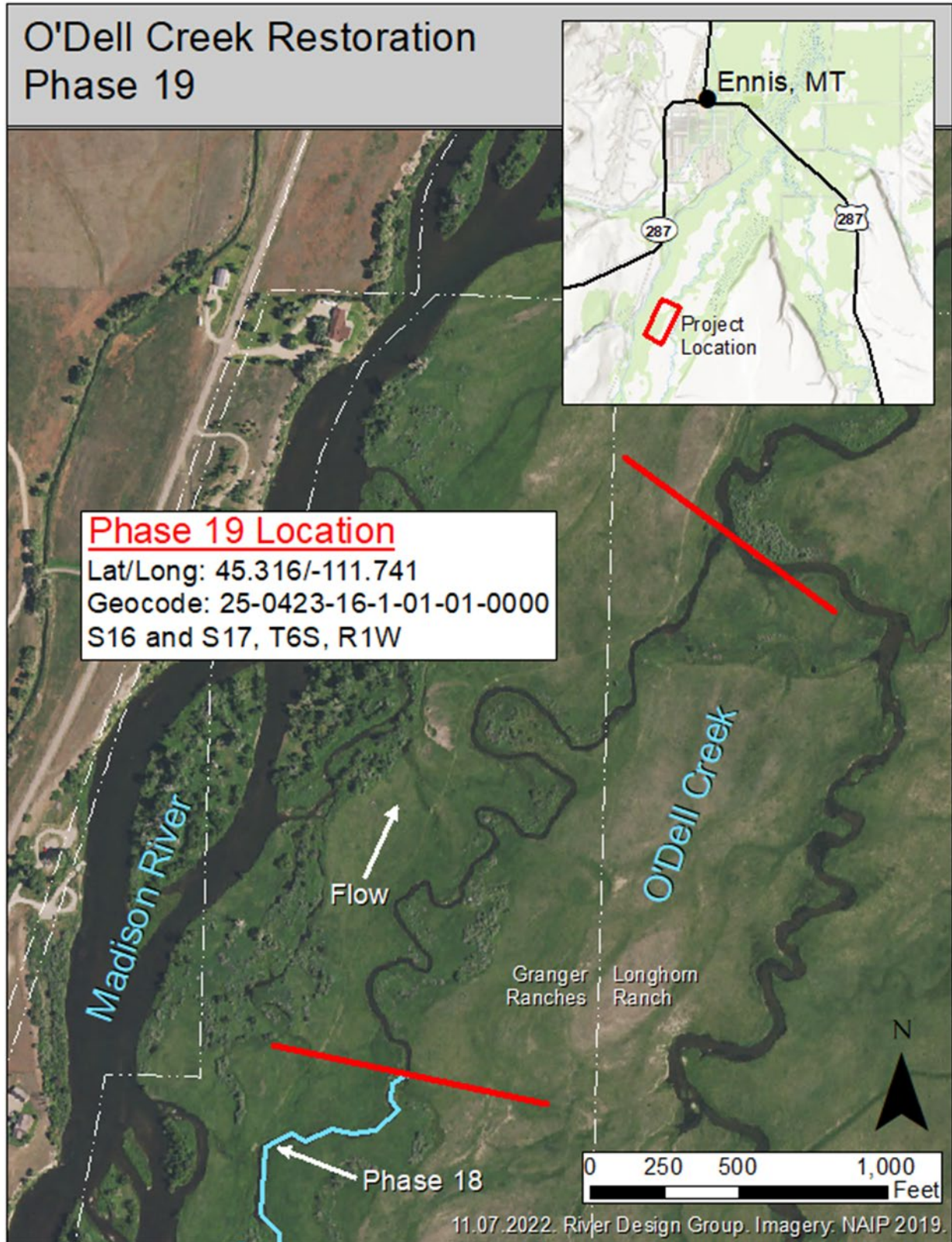


Figure 1. O'Dell Creek Phase 19 project vicinity map.

I. INTRODUCTION

O'Dell Spring Creek and floodplain wetlands are important ecological resources to the Madison River. Over the past 17 years, 16 phases of restoration work have culminated in the restoration of 15.5 miles of spring creek, and close to 900 acres of improved wetland functions. Restoration suitability, willing landowners, and private-public partnerships are the reasons for the success of this large-scale, comprehensive restoration project. In 2018, NorthWestern Energy, Granger Ranches, Longhorn Ranch, and the US Fish and Wildlife Service received the ***Society for Ecological Restoration Northwest Restoration Project of the Year Award***. The award recognizes the important wildlife habitat gains resulting from permanently protecting and restoring wetland habitats. Accomplishments include:

- Approximately 900 acres of restored wetlands, with over 265 wetland plant taxa detected on restored floodplain surfaces, representing 20% of Montana's wetland flora including 5 rare species. A range of wetland types and wetland plant communities including fens, saline meadows, open water and emergent complex.
- 115 bird species are now documented in the project area compared to 29 species prior to restoration, with 18 Montana Species of Concern.
- The project now supports over 50 over-wintering trumpeter swans following the successful release of juvenile birds in 2012.
- 8 documented species of waterfowl broods compared to 4 species prior to restoration.
- Increasing distribution and abundance of songbirds and wetland-dependent species.
- 15.5 miles of stream channel restoration, with an estimated ten-fold increase in the availability of adult holding and juvenile rearing habitat compared to pre-restoration conditions.
- Reduction in stream water temperatures due to improvement to channel morphology and hyporheic exchange between surface water and groundwater.

This project proposal furthers restoration and conservation efforts on the Granger Ranch, a working cattle ranch owned by the Laszlo family. The legal description of the project area is noted above (Figure 1). In 2018, the NorthWestern WildTAC funded a master plan to identify and prioritize restoration opportunities on O'Dell Creek from Fever Point (end of Phase 16 project) to Highway 287 near Ennis, Montana (see Figure 1). The west branch O'Dell Creek was identified as a high priority segment for restoration actions. In 2020 and 2021, the upper 1.5 miles of the west branch was restored. This proposal for Phase 19 will complete design and engineering for the remainder of the west branch, or approximately 0.5 miles of spring creek and floodplain riparian area. Completing restoration work on the west branch O'Dell Creek will be a significant accomplishment and milestone, as articulated in the master plan.

The purpose of this project is to improve aquatic habitat conditions of O'Dell Creek and associated riparian wetland functions. This will be accomplished by restoring the proper channel and floodplain dimensions and creating off-channel, disconnected shallow emergent, and shallow to deep open water wetlands. New floodplain surfaces supporting emergent and scrub-shrub wetland communities will be created in over-widened channel areas. Specifically, the goals of this project include: 1) improving aquatic, riparian, and terrestrial habitat diversity for fish and wildlife; 2) establishing riffle and pool sequences and reducing channel width-to-depth ratios; 3) creating a complex matrix of variable depth wetlands in over-widened channel sections; 4) isolating wetlands from the channel to lower stream temperature; and 5) converting areas within the existing upland herbaceous plant communities to wetlands by creating new, lower surfaces adjacent to O'Dell Creek.

II. Objectives

The following objectives have been developed for the Phase 19 project area in conjunction with the project partners and landowners:

1. Produce clean water consistent with supporting aquatic life and beneficial uses in the O’Dell Creek watershed and downstream receiving waterbody, the Madison River;
2. Create complex aquatic habitat components such as depth, velocity, substrate, cover, and pools that support populations of wild trout and other aquatic organisms;
3. Construct a stream channel that is connected to and interacts with the floodplain in terms of hyporheic flow and nutrient exchange; and
4. Create a more complex matrix of wetlands in over-widened channel sections by creating backwater areas, open water wetlands, and new floodplain surfaces that support emergent and scrub-shrub wetland communities.

III. Methods

RDG will prepare preliminary and final design plan set in coordination with NorthWestern Energy and Granger Ranches. The field assessment and survey effort will utilize RTK GPS complemented with terrestrial Light Detection and Ranging Data (LiDAR). Longitudinal profiles will be collected at upstream (end of Phase 18 project) and downstream (confluence with mainstem O’Dell Creek) to support the channel tie-in analysis. Project designs will be completed in AutoCAD Civil 3d. and ArcGIS. To complement future permitting, RDG’s will complete a routine wetland delineation as required for the Nationwide 27 Section 404 submittal to the US Army Corps of Engineers.

IV. Schedule

The following project schedule has been developed. The field assessment, survey and wetland delineation will be completed in August and September 2023. Engineering and design tasks including wetland reportin will be completed in October and November in advance of the 2024 NorthWestern Energy Technical Advisory Committee meetings. Following contract award, RDG and project partners will complete project design and regulatory permitting. Table 1 includes a proposed project schedule.

Table 1. Proposed project schedule.

Task	August	September	October	November
Task 1. Field Assessment and Survey				
Task 2. Engineering, Design, Wetland Reporting				

V. Personnel


Similar to past phases of restoration on O’Dell Creek, the project will be designed and implemented under the auspices of a diverse group of stakeholders including NorthWestern Energy, Madison River Foundation, and Granger Ranches, LP. As a team, we have established a track record of successful collaboration on 16 projects on O’Dell Creek. Our continued collaboration and history working on this project underscores the

importance we place on offering a team that will continue to be compatible with the community and stakeholders.

RDG is an approved consultant on NorthWestern Energy’s Qualified Vendor’s List for stream and wetland restoration services. RDG has prepared and implemented all previous phases of restoration on O’Dell Creek with the exception of Phases 1 and 2. John Muhlfeld will serve as the project manager and technical lead on behalf of the design team. Nate Wyatt, P.E., with RDG, will serve as the project engineer.

VI. Budget

Table 2 includes a not-to-exceed cost estimate to perform the Scope of Work (SOW). The total cost to perform the SOW is \$32,950. Because benefits to both fisheries and wildlife habitats are anticipated, this application assumes a \$10,000 match from MadTAC (30%), and \$5,000 from Granger Ranches and Madison River Foundation (15%). Funds requested from WildTAC total \$17,950, or 55% of the total project cost.

Table 2. O'Dell Creek Phase 19 Assessment and Design Cost Proposal		Direct Expense		Selita Ammond, GISP Restoration Ecologist	John Muhlfeld Principal Hydrologist and Project Manager	Nate Wyatt, PE Water Resources Engineer	David Busy Fluvial Geomorphologist	Hours Subtotal
		Mileage, Lodging & Per Diem	Equipment					
								
Task 1. Field Assessment and Survey								
1.1 Office Preparation								
1.1.1. LiDAR and Remote Sensing Mapping				4	4			8
1.2 GPS Survey and Data Collection								
1.2.1. Reference Cross-Sections	\$ 2,200	\$ 300			16		16	32
1.2.2. Wetland Delineation				36				36
1.2.3. Channel Bathymetry - Tie-In Analysis					16		16	32
1.3 Data Processing								
1.3.1. GPS Data						4		4
1.3.2. Wetland and Geomorphic Data				8	2		10	20
	\$ 2,200	\$ 300		\$ 6,240	\$ 5,700	\$ 460	\$ 4,200	\$ 19,100
Task 2. Engineering, Design & Wetland Reporting								
2.1 Draft and Final Plan Sets and Drawings								
2.1.1. Preliminary Planset Production					24	40		64
2.1.2. Final Plan Set Production					4	10		14
2.1.3. Wetland Reporting				30				30
	\$ -	\$ -		\$ 3,900	\$ 4,200	\$ 5,750	\$ -	\$ 13,850
	\$ 2,200	\$ 300		\$ 10,140	\$ 9,900	\$ 6,210	\$ 4,200	\$ 32,950
Cash Cost Share Match from Granger Ranches & Madison River Foundation								\$ 5,000
Cost Share Match from MadTAC								\$ 10,000
Total 2023WildTAC Request								\$ 17,950

VII. Deliverables

Project deliverables will include the following:

- Preliminary and final design plan sets;
- Wetland delineation report including GIS mapping exhibits and field forms;
- Construction cost estimate (engineer’s estimate).

VIII. Cultural Resources

NorthWestern Energy will procure the necessary cultural resources investigations prior to project implementation.

IX. Water Rights

Appropriate analysis will be performed to demonstrate that the project complies with the intent of Montana DNRC’s “*Guidance for Landowners and Practitioners Engaged in Stream and Wetland Restoration Activities*”, issued by the Water Resources Division on March 9, 2016. DNRC guidelines state that “any wetland project (restoration) whose final design approximates the natural characteristics of adjacent natural wetlands or approximates something smaller in magnitude does not require a water right”. The guidelines also state that restored wetlands should have characteristics similar to other natural wetlands in the area and should function entirely in the absence of artificial controls and diversions of water that intentionally appropriate water for wetland use.

This Phase 19 will restore wetland habitat by enhancing existing wetlands through grading and revegetation. The restored wetlands will have identical hydrologic and vegetative characteristics to existing wetlands in the immediate area. Riverine wetland habitat will be converted to shallow open water and emergent wetlands by narrowing of the current over-widened stream channel. Wetlands will be located within the floodplain and will be very similar in size and habitat characteristics to pre-settlement open water wetlands in the area. The small open water wetlands will not involve the construction of any berms, dams, or dikes; will not involve any diversion of water; will partially offset the loss of riverine wetland habitat; and will not increase water consumption.