

Project Title: *O'Dell Creek Revegetation Phase 4 Project*

Date: November 10, 2022

Applicability to Project 2188 License Article(s)

The O'Dell Creek Revegetation Phase 4 project 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. 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.

Priority Classification

The O'Dell Creek Revegetation Phase 4 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 0.4 miles of the Madison River, and will address limiting factors related to degraded wildlife habitat, wetlands, and aquatic resources.

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

Location of Proposed Project

The proposed Revegetation Phase 4 Project is in Madison County approximately five miles south of the town of Ennis, Montana, on the Longhorn Ranch and/or Granger Ranches, both working cattle ranches (Figure 1). It is located in Sections 20, 21, 28, 29, and 33 of Township 6 South, Range 1 West, and Sections 4 and 9 of Township 7 South, Range 1 West.

Geocodes: 25-0423-33-1-01-01-0000; 25-0423-28-1-01-01-0000; 25-0423-29-1-01-01-0000;
25-0334-04-1-01-01-0000.

Latitude (Center of Project Area): 45.267 **Longitude (Center of Project Area):** -111.731

Total Project Cost: \$24,742

WildTAC Funds Requested for Project: \$24,742

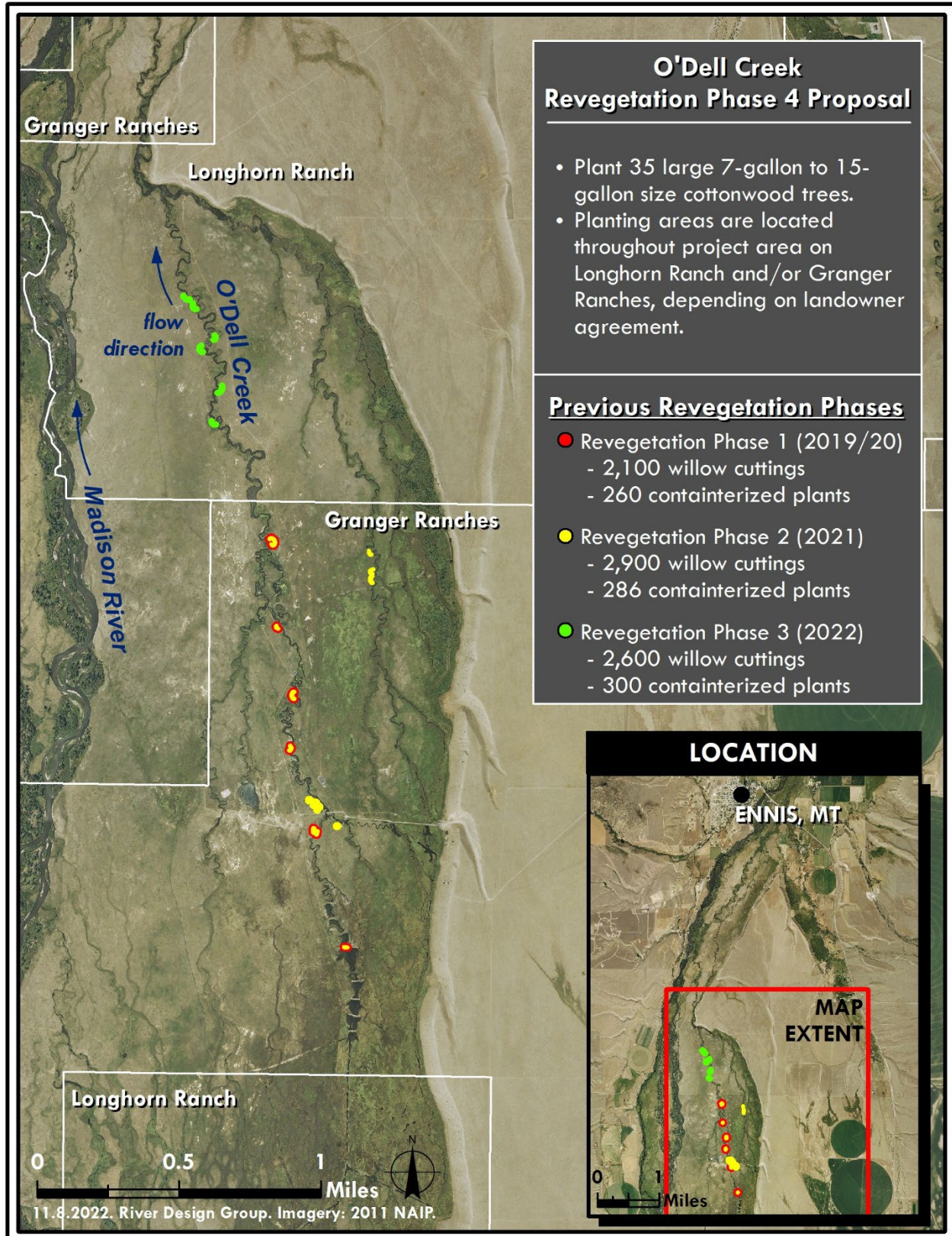


Figure 1. Overview of O’Dell Creek Revegetation Phase 4 area (O’Dell Creek on Longhorn Ranch and Granger Ranches), with implemented Revegetation Phase 1-3 locations highlighted in red, yellow, and green.

I. Introduction

O'Dell Creek and its spring creek tributaries are important ecological connections to the Madison River, providing a source of cool fresh water to the river as well as a variety of aquatic, riparian and terrestrial habitats that are utilized by a host of plant and animal species. Since 2005, 16 phases of stream and wetland restoration have resulted in the restoration of 16 miles of spring creek and ~900 acres of wetlands in the O'Dell Creek drainage. While in-stream and wetland habitat have been significantly restored and enhanced over the past 16 years, active vegetation restoration has been limited to planting wetland sod on streambanks and seeding grasses in disturbed areas on floodplains. Passive vegetation restoration techniques have focused on creating appropriate habitat and microsites for vegetation recruitment. While this has resulted in natural recruitment of graminoids (sedges, rushes, grasses), woody vegetation remains lacking through much of the project area streambanks and floodplains. Where present, the woody species which mainly include various willows, are browsed by large resident deer, elk and moose populations and do not grow past two to three feet in height.

Woody riparian vegetation provides stream shading which reduces stream temperatures and improves cover for aquatic species. Over time, woody vegetation on streambanks also provides a source of large woody debris to the stream, which improves fish habitat conditions by promoting pool formation and aquatic habitat heterogeneity. In addition, woody riparian vegetation serves as a seed source for other floodplain areas and provides habitat for a wide range of avian species and small and large mammals. As seen in vegetation reference reaches downstream of the project area, woody vegetation was likely a large component of the O'Dell Creek riparian system prior to anthropogenic modifications including land clearing for grazing and agriculture. This project aims to restore the vegetation component of the ecosystem to the condition it would have been in had habitat degradation not occurred.

II. Objectives

The prime objective of the O'Dell Creek Revegetation Phase 4 Project is to establish cottonwood trees in grouped planting locations on the O'Dell Creek Stream and Wetland Restoration Project. It builds on the past three phases of revegetation work, which occurred between 2019 and 2022. Previous revegetation work focused on planting willow cuttings in trenches on the floodplain, and also included smaller containerized nursery plant stock to increase species diversity. This Phase 4 work focuses on planting large cottonwood trees to supplement the mostly willow plantings on outer meander bends of the creek. Establishing cottonwood tree clusters will provide additional vertical structure to the riparian environment, as well as shelter and nesting sites for a variety of bird species.

In addition, Phase 1 of revegetation work in 2019 included the identification of naturally-colonized existing willows on O'Dell Creek floodplains and building browse exclosure fences around them, as the limiting factor to their growth was wildlife browse. This strategy has proven effective in allowing existing willows on floodplains to grow without browse pressure, and has resulted in significant willow growth over the last 3 years. This Phase 4 revegetation project further builds on the success of browse exclosures around existing willows with the addition of five browse exclosure fences utilizing polypropylene deer fence and T-posts at a 15-ft spacing.

Furthermore, cleanup of old experimental willow plantings on Granger Ranches is proposed. Willow cuttings/stakes were planted outside of some browse exclosure units during Revegetation Phase 2 in 2021. These willow cuttings have been heavily browsed and have not survived. The dead willow cuttings will be cut at the ground surface during Phase 4 implementation.

Specific objectives of the O’Dell Creek Revegetation Phase 4 project are below.

1. Design and implement a cottonwood planting plan, focusing on large tree stock and two native species, black cottonwood and narrowleaf cottonwood.
2. Build wildlife browse exclusion cages around cottonwood trees to exclude ungulates and allow trees to grow without browse pressure for a minimum of five years.
3. Build wildlife browse exclusion fence around existing willows on O’Dell Creek floodplains that are currently suppressed by deer browse.
4. Remove dead experimental willow cuttings on floodplains.

III. Methods

Implementation of the Revegetation Phase 4 project will occur in late September 2023. Thirty-five (35) cottonwood trees, including a combination of black cottonwood (*Populus trichocarpa*) and narrowleaf cottonwood (*Populus angustifolia*), will be planted along O’Dell Creek on the Granger and Longhorn Ranches. Browse protection will be welded metal wire fence cages around individual trees, kept upright with three steel T-bars each. Cottonwood trees will be planted in groups (3 to 7 trees per grouping) throughout the project area. Specific locations will be determined by the River Design Group project manager on-site, who will ensure that planting locations are appropriate with regard to elevation above creek, groundwater availability, and soil properties.

The RDG project manager will also select appropriate sites to enclose existing willows on O’Dell Creek floodplains, and will mark locations of dead experimental willow cuttings to be removed.

IV. Schedule

RDG will oversee subcontractor project planning in June 2023. Tree planting site selection, as well as existing willow exclosure location site selection will occur the same week as tree and fence installation to reduce travel cost.

Table 1. Revegetation Phase 4 Project implementation schedule, for year 2023.

Task	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
Task 1. Project Management									
Task 2. Project Design									
Task 3. Project Review									
Task 4. Project Implementation									

V. Personnel

RDG will be responsible for project design and planting oversight. 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 stream and wetland restoration on O’Dell Creek except for Stream Restoration Phases 1 and 2, and has designed and implemented Revegetation Phases 1, 2, and 3. Ms. Selita Ammond, Restoration Ecologist and GIS Analyst, will serve as the project manager.

Implementation of the Revegetation Phase 4 Project will occur with a qualified revegetation contractor such as Forestoration, Inc. who implemented the Revegetation Phase 2 and Phase 3 project in 2021 and 2022. RDG will provide construction oversight during installation to ensure the project meets all specifications.

VI. Budget

The table below includes a not-to-exceed cost estimate to perform the Scope of Work (SOW). The total cost to perform the SOW is \$24,742.

Cost Estimate: Revegetation Phase 4 Project	
Task 1. Project Management	\$ 780
Coordination with NorthWestern Energy and Landowners	\$ 780
Task 2. Project Design	\$ 1,300
Site Selection (on-site)	\$ 1,300
Task 3. Project Implementation	\$ 21,500
Construction Oversight (RDG)	\$ 3,900
Subcontractor	
Mobilization, Equipment	\$ 1,500
Browse Protection	\$ 3,200
Cottonwood Trees and Delivery	\$ 4,900
Planting Labor	\$ 4,800
Fencing Labor	\$ 2,400
Experimental Planting Removal Labor	\$ 800
Task 4. Direct Costs	\$ 1,162
Mileage	\$ 442
Per Diem	\$ 200
Lodging	\$ 520
Total TAC Funds Requested	\$ 24,742

VII. Deliverables

Planting and fencing site selection will occur on-site, and the project deliverable will be the on-the-ground planting and fencing. Success for the project will be monitored in future years by visually estimating percent survivorship of planted willow cuttings and containerized plants.

VIII. Cultural Resources

Cultural resources will not be impacted as the project will result in minimal ground disturbance.

IX. Water Rights

Streams or wetlands will not be impacted with this project, and Montana water rights laws, policies, and guidelines do not apply.