

Swalley Irrigation District – Irrigation Modernization Project

Summary

Introduction

The Swalley Irrigation District (SID) – Irrigation Modernization Project is an agricultural water conveyance efficiency project in Deschutes County, Oregon. The project would pipe 16.6 miles of SID’s canals and laterals over a 7-year period in order to improve water conservation, water delivery reliability, and public safety. The project would improve stream habitat in the middle Deschutes River while improving the economic sustainability of agriculture in the Deschutes Basin.

Project Sponsors

- Lead Federal Agency: Natural Resources Conservation Service (NRCS)
- Lead Project Sponsor: Deschutes Basin Board of Control (DBBC)
- Project Co-Sponsor: Swalley Irrigation District (SID)

Background

- Swalley Irrigation District provides irrigation water to 668 patrons and 4,333 acres using one diversion on the Deschutes River which is shared with Central Oregon Irrigation District.
- Water is delivered to patrons through a series of pipes and open canals; un-piped sections lose approximately 23% of the water to seepage and evaporation.
- SID cannot always fully meet its obligations to deliver water to its patrons due to conveyance inefficiencies.
- The Deschutes River and its tributaries experience low streamflows every year due to the storage and diversion of water for agricultural use. Low flows diminish water quality and habitat quality for fish and aquatic species.

Resource Concerns

The following resource concerns and issues have been identified by NRCS, the project sponsors, and other stakeholders:

- Low streamflow in the middle Deschutes River affecting fish and aquatic habitat
- Inefficient irrigation water delivery leading to low drought tolerance for local agriculture
- Inefficient energy use from individual patron pumps
- Risks to public safety from open canals

Project Overview

- Pipe and pressurize 16.6 miles of SID’s system with HDPE pipe ranging in diameter from 8 to 48 inches.
- Upgrade 178 District-owned turnouts to pressurized delivery systems.
- Install a 400 horsepower, variable-frequency drive booster pump and associated pump house to pressurize water for patrons downstream of the existing hydroelectric plant.

- Construction would be completed over 7 years across 2 project groups, beginning with the Rogers Lateral and Sublateral.
- Total project cost is estimated to be \$14,975,000.

Project Benefits

- Eliminate water seepage and evaporation losses from the open canals of up to 19.2 cubic feet per second (cfs), equivalent to 6,172 acre-feet or 2 billion gallons over the entire irrigation season.
- Protect 75% of the total water saved instream in the Deschutes River, an estimated 4,627 acre-feet annually, through Oregon's Allocation of Conserved Water Program.
- Improve water delivery reliability for patrons throughout the irrigation season by alleviating supply shortages.
- Convert the conveyance system into an on-demand system as sections are piped to allow water to remain instream when not being used.
- Piping would allow for pressurized deliveries to patrons, reducing or eliminating the need for patron pumping and saving patrons up to \$228,000 annually in pumping costs.
- Accounting for the booster pump's energy use, the project would have a net energy conservation of approximately 1,056 megawatt-hours per year, avoiding about 509 metric tons of carbon dioxide emissions per year.
- Improve public safety by eliminating the risk of drowning in open canals.

Figure 1. Overview map of the Swalley Irrigation District Watershed Planning Area.

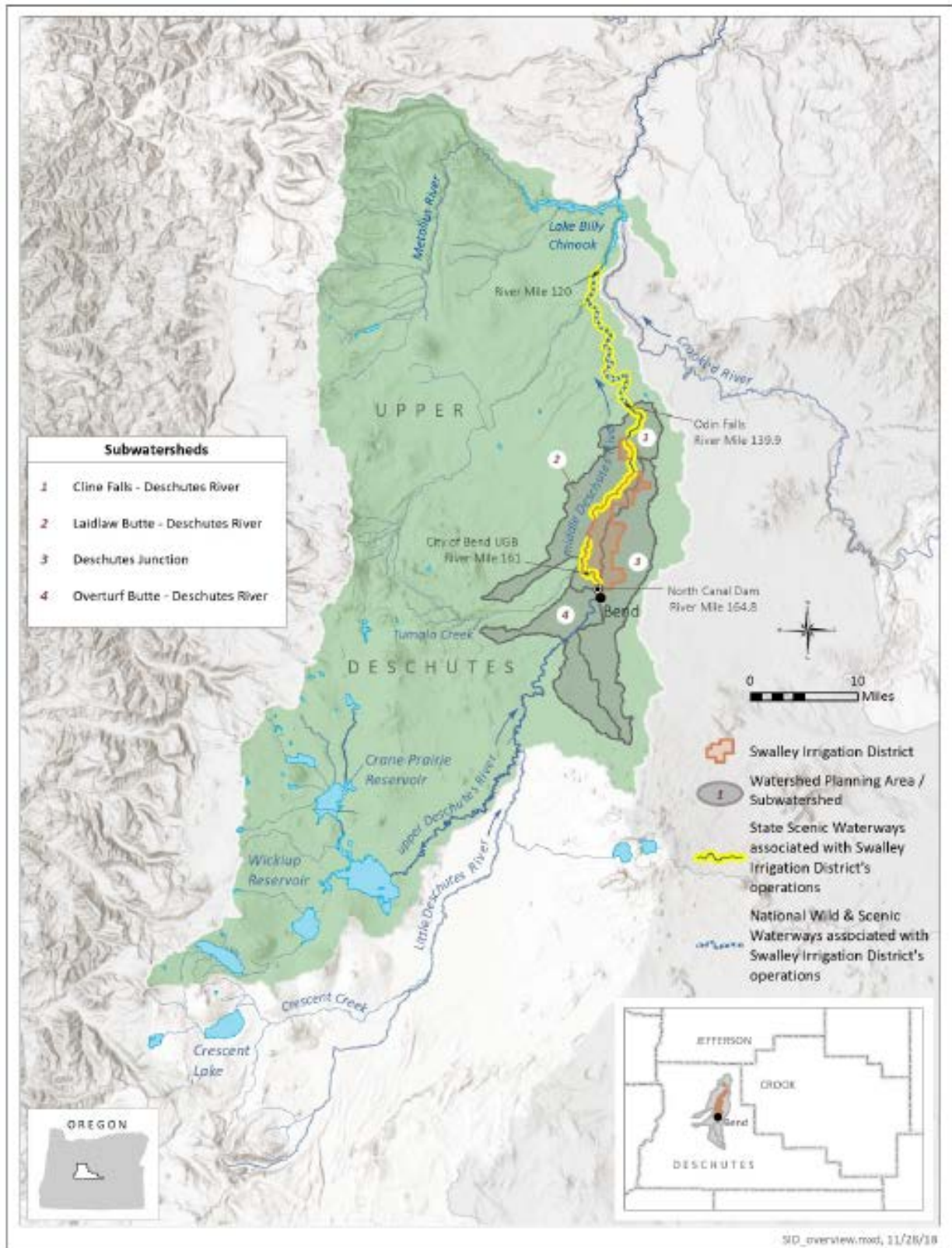


Figure 2. Location of the Swalley Irrigation District – Irrigation Modernization Project

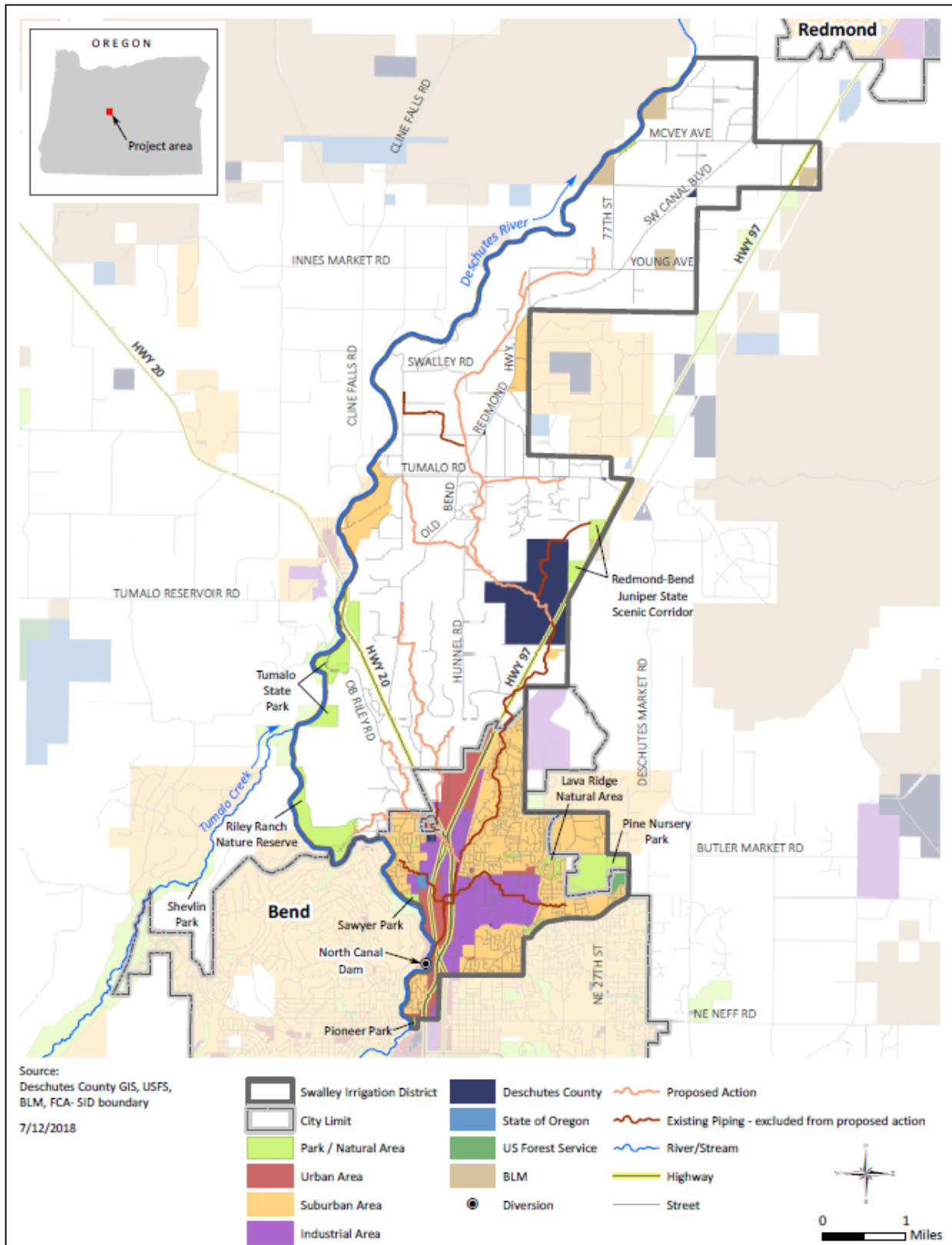


Figure 3. Project Groups for the Swalley Irrigation District - Irrigation Modernization Project.

