

State of Oregon  
Department of Environmental Quality

Memorandum

**Date:** Sept. 6, 2017  
**To:** Environmental Quality Commission  
**From:** Richard Whitman, Director  
**Subject:** Agenda item A: Tour  
Sept. 13-14, 2017, EQC meeting



**Purpose of item** Commissioners and DEQ staff will meet with leaders from the City of Prineville and tour the Crooked River Wetlands Complex in Prineville.

**Background** The City of Prineville officially opened the Crooked River Wetlands Complex in April 2017, marking a significant expansion of the city's wastewater treatment capabilities and a transition to more natural treatment of wastewater. The wetlands were constructed over the course of a year with funding from multiple state and federal agencies, including a \$3.5 million loan from the Oregon Clean Water State Revolving Fund.

The original treatment plant was built in the 1960s and served the city's 3,200 residents with traditional wastewater treatment. That process included the direct discharge of the treated waters into the Crooked River. In-water discharge of treated wastewater increases stream temperatures and adds to nutrient loads that can be harmful to fish and water quality. Since the 1960s, the City of Prineville has seen a dramatic growth in population and industrial investment by technology corporations who have located data servers and other water-intensive facilities in this city in central Oregon. The existing plant could no longer provide effective wastewater treatment for the expanded city's needs and the city pursued a natural treatment system that would reduce direct in-stream discharges and provide other co-benefits for the City of Prineville.

The wetlands provide a natural wastewater treatment system capable of supporting the current population, about 10,000 people, with a design that can be expanded in the future to accommodate additional residents or other wastewater needs from the burgeoning high-tech industrial sector in the area. The wetlands cover 120 acres of land, with public access along approximately five miles of trails and 13 interpretive kiosks, created in collaboration with local schools. The construction of the wetlands also included upgrades to the city's sewer and water service lines, pump station and wastewater aeration lagoons.

<b>Attachments</b>	A. Grand opening brochure B. Project award from the League of Oregon Cities
<b>EQC involvement</b>	This tour is informational, and discussion of general project information will occur; however, no commission action is requested at this time.

*Report compiled from project and agency information*



The benefits of this project are many, including;

**Civic Improvements -**

By utilizing the natural environment to treat our wastewater, City ratepayers will save \$57 million dollars over the life of the project. These savings will stabilize future rates and attract new businesses to invest in Prineville.

**Recreational Opportunities -**

Amenities abound with over 5.4 miles of new loop and out and back hiking trails, 3.25 miles of which are be paved for use year-round.

**Educational Values -**

Thirteen separate colorful kiosks present topics ranging from the Crooked River Watershed to agriculture in our economy. Local schools helped to design these informative kiosks.

**Environmental Benefits -**

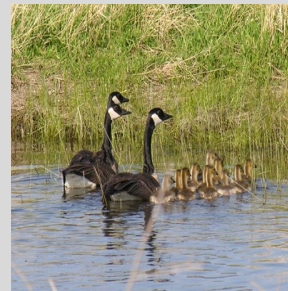
Over two miles of riparian improvements to the Crooked River have been implemented, as well as the construction of over 120 acres of wetlands, benefitting many species of fish and wildlife.

The City of Prineville's wastewater system has been designed to service the City's projected needs through the year 2040±. The system is easily expandable to meet additional requirements beyond that period and can effectively process a wide range of design flows.

**Financial contributors to this project include the following:**

- ◆ U.S. Department of Agriculture Rural Development
- ◆ Infrastructure Finance Authority
- ◆ Oregon Department of Environmental Quality
- ◆ Confederated Tribes of Warm Springs and PGE (Pelton Fund)
- ◆ Oregon Watershed Enhancement Board
- ◆ Oregon State Parks

Follow our progress on Wetlands Web Cam  
<http://goo.gl/hL1e90>



**Crooked River Wetlands  
Grand Opening Ceremony**

**April 21, 2017**

**11:00 a.m.– 1:00 p.m.**

**4035 NW Rimrock Acres Loop  
Prineville, Oregon**







# Crooked River Wetlands Complex

(Graphical Presentation)

Disposal Wetlands,  
Typical



Riparian Plantings, Habitat  
Structures, Bank Protection,  
Pools, and Side Channels,  
Typical Along Crooked River

5.4 Miles of  
Walking Paths

Pivot  
Irrigation,  
Typical

Constructed Wetlands, Typical

Parking

Covered Event Center and Restrooms







# City of Prineville

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## DEPARTMENT OF PUBLIC WORKS

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## The Crooked River Wetland Project

### Introduction

The City of Prineville's successful Crooked River Wetland Complex is now complete and providing remarkable social, economic and environmental benefits to the community. Through this 120-acre, multipurpose project, the City is responsibly expanding its wastewater capacity, lowering residential and business System Development Charges, stabilizing monthly wastewater rates, created a new public hiking trail system with numerous educational opportunities and improving riparian and instream conditions in the Crooked River.

### General Background

Due to increased residential growth in 2004-2005, the City of Prineville learned that their existing wastewater treatment system needed to be replaced with a \$62 million mechanical treatment plant. In anticipation of the \$62 million plant expansion, the City raised its Wastewater System Development Charges from approximately \$3,800 per home to \$9,147 per home. At the time, this was three times higher than the rates charged by neighboring communities and it was determined that these rates were hindering residential and commercial/industrial development.



Conceptual Rendering Crooked River Wetland Complex

System Development Charges only generate funds to upgrade treatment processes for future customers. The 3,600 existing wastewater customers would have been tasked with contributing funds to upgrade mechanical treatment as well. This mandate would have also increased the existing monthly wastewater utility rate, doubling what was already the highest rate in the region.

Seeking a more sustainable solution, the City in 2008 began exploring a more holistic and cost-effective way to expand its wastewater capacity. A \$75,000 grant from the Economic Development Administration funded several groundwater studies and

concurrently, two small wetland test plots were constructed. In January of 2011, the City Council shifted to embrace the 120-acre wetland complex plan rather than a traditional mechanical solution. Future treatment costs were reduced from \$62 million to \$7.77 million and the Wastewater System Development Charge was reduced from \$9,147 per home to \$3,875 per home, making the City of Prineville once again competitive for responsible residential and business development.

Oregon Watershed Enhancement Board and Pelton Fund grants totaling \$280,000 and \$75,000 respectively allowed the project design to begin in 2012. Multiple stakeholders engaged in the interactive design of the facility that resulted in the projects' many ancillary benefits.

On April 22, 2016 (Earth Day), the City held a groundbreaking ceremony on the project, and a grand opening was celebrated one year later on April 21, 2017.



Mayor Roppe at Groundbreaking

### **Sustainable Benefits**

The Crooked River Wetland project provides the following benefits:

- **Civic Improvements** - Future treatment costs were reduced from \$62 million to \$7.77 million. The City provided \$4.75 million of the funding and secured over \$3 million in grants to finance the project. These savings will stabilize future rates and attract new businesses to Prineville.
- **Recreational Opportunities** - Amenities abound with over 5.4 miles of new walking, running and hiking trails, 3.25 miles of which are paved for use year-round. A covered pavilion and restrooms make for a wonderful gathering place prior to a birdwatching or recreational hiking tour.
- **Educational Values** - Thirteen separate colorful kiosks present topics ranging from the Crooked River Watershed to macroinvertebrates. Local schools helped to design these informative kiosks and have taken ownership in the project. The facility is expected to serve many generations of schoolchildren to come.
- **Environmental Benefits** - Over two miles of riparian improvements to the Crooked River have been implemented, as well as the construction of over 120 acres of wetlands, benefitting many species of fish and wildlife, including lower river temperatures.

The Crooked River Wetland Complex has innovatively solved many problems for the City of Prineville. This project is easily replicable in other communities that have the same geologic conditions.

**Financial contributors include the following:**

- U.S. Department of Agriculture Rural Development - \$1,000,000 grant
- Infrastructure Finance Authority - \$750,000 grant
- Oregon Department of Environmental Quality – Interim financing
- Confederated Tribes of Warm Springs and Portland General Electric (Pelton Fund) - \$75,000 design and \$750,000 construction grants
- Oregon Watershed Enhancement Board - \$280,000 design and \$258,417 construction grants
- Oregon State Parks - \$260,000 grant
- Prineville Kiwanis - \$2,500 grant
- East Cascades Audubon Society - \$2,000 grant
- City low interest debt - \$4,750,000

**Project supporters include the following:**

- Crook County School District
- Powell Butte Community Charter School
- Bend Westside Magnet School
- East Cascades Audubon Society
- Crook County Parks and Recreation
- Crook County Health Department
- US Fish and Wildlife Service
- National Oceanic and Atmospheric Administration