

State of Oregon  
Department of Environmental Quality

Memorandum

**Date:** May 31, 2016

**To:** Environmental Quality Commission

**From:** Pete Shepherd, Interim Director

**Subject:** Agenda item C, Informational item: Eastern Region highlights  
June 8-9, 2016, EQC meeting

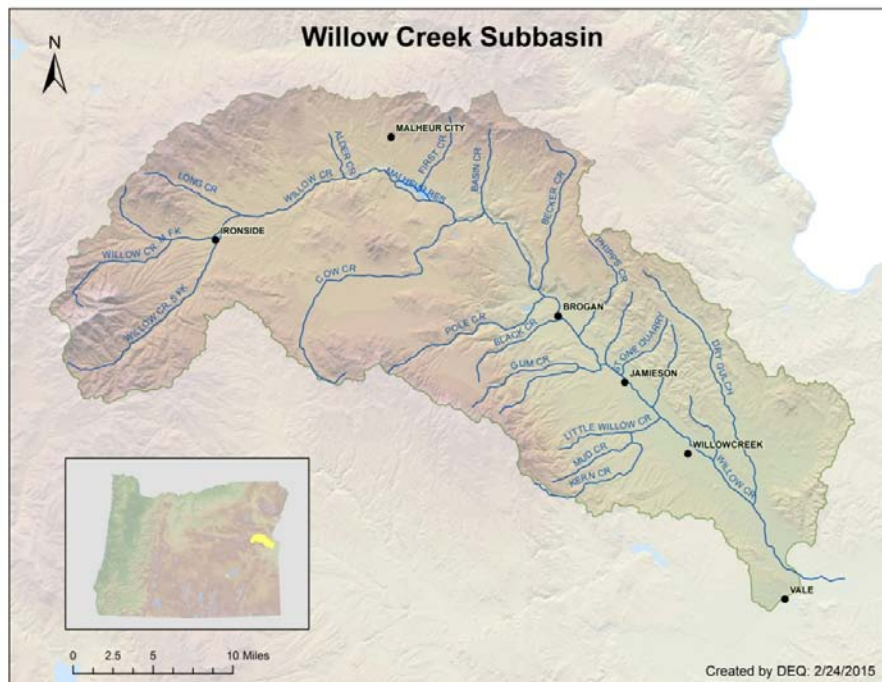
**Purpose of item** DEQ will present highlights of projects, local issues and other environmental matters specific to the agency's Eastern Region.

**Background** The commission has asked for place-based updates and information when meetings are held around the state. Linda Hayes-Gorman, the Regional Division Administrator for Eastern Region, will discuss these updates with the commissioners. This item will also provide preparatory or contextual information for item E, an afternoon tour in the John Day area. Additional information is provided for restoration efforts done along Willow Creek, and that update will be presented by Jerry Erstrom, of the Malheur Watershed Council.

**Willow Creek restoration** Willow Creek, a tributary to the Malheur River in eastern Oregon, encompasses about 500,000 acres. Intensive agriculture occurs on the approximately 31,000 acres of land adjacent to Willow Creek and its tributary streams, from Brogan Canyon downstream to the confluence with the Malheur River. The upper portion of the watershed is a mixture of public and private range and pastureland, while the lower watershed is private irrigated cropland and pastureland. In the 1930s, Willow Creek was channelized to facilitate farming and to serve as a conveyance for irrigation water and tail-water. Croplands and pasturelands in lower Willow Creek are irrigated with a mixture of sprinkler, drip, furrow, and flood irrigation systems.

The Willow Creek watershed has several water quality challenges. In the 1990s, the Malheur Watershed Council and the Malheur Soil and Water Conservation District began a program of monitoring in the Willow Creek drainage. DEQ maintains an ambient water quality site near the mouth of Willow Creek that has been monitored for over 20 years. This monitoring identified elevated levels of bacteria and sediment. In 2002, DEQ placed Willow Creek and some of its tributary streams on the 303(d) list of impaired water bodies for chlorophyll *a* and bacteria. In 2010, DEQ issued the Malheur River Basin Total Maximum Daily Load, which requires reductions in bacteria and

phosphorus in Willow Creek to address exceedances of the state's bacteria and chlorophyll *a* standards. These exceedances in Willow Creek and its tributary streams are primarily the result of high livestock densities and irrigation-induced erosion.



The Willow Creek Working group, formed in 2000, continues to focus on addressing water quality issues within Willow Creek. The Malheur Watershed Council, Malheur SWCD, Willow Creek Working Group, Vale Oregon Irrigation District, Orchard Water Company, Owyhee Irrigation District, Warm Springs Irrigation District, irrigators, ODA, NRCS, DEQ and many other partners have been working on water quality improvement projects in the Willow Creek watershed for over a decade. Landowners in the watershed have been very open to completing a variety of projects and funding agencies and stakeholders have invested nearly \$15 million in improvements in the watershed, and additional “shovel-ready” projects exist if more funding becomes available.

To date, nearly 12,000 acres have been converted to sprinkler irrigation in the Willow Creek watershed, totaling 39 percent of the total irrigated acreage, and over 80 miles of canals, ditches and laterals have been piped, resulting in an estimated:

- 124,320 pounds of phosphorus prevented from leaving fields annually

- 210,000 tons of soil loss prevented annually
- 6 billion colonies of e. coli bacteria prevented from getting into surface water annually
- 4.86 million kilowatt hours of electricity saved annually
- 37,500 gallons of diesel fuel conserved annually
- 800,000 pounds CO<sub>2</sub> eliminated annually

**EQC  
involvement**

There is no commission action associated with this item.

Report prepared by Stephanie Caldera  
*Commission assistant*

*Information provided by DEQ and project partners*