

# Scoggins Dam Raise Alternatives

To address water supply needs, the Tualatin Basin Water Supply Project Partnership (Partners) is evaluating alternatives for raising Scoggins Dam, a 151-foot-high zoned embankment 25 miles west of Portland, Oregon. The dam's owner, the Bureau of Reclamation, is simultaneously conducting a dam safety evaluation of the existing facility.

## PROJECT RESULTS

*Through its innovative approach and collaboration with project stakeholders, Kleinfelder has maintained an aggressive schedule and provided design alternatives that meet future water supply needs and address seismic hazards and dam safety concerns. Kleinfelder continues to work with the client as the Bureau of Reclamation works through its corrective action study.*



## ADDRESSING STORAGE CAPACITY AND SEISMIC RISK

The project provides 52,000 acrefeet of additional yield to meet multiple long-term needs, including instream flow restoration and municipal supply. The raised embankment design must double the existing storage capacity and address potential seismic hazards from a M9 Cascadia Subduction Zone megathrust or a local M7 earthquake. The need for additional storage by 2016 requires a fast-track design and construction schedule.

## INNOVATIVE DESIGN ALTERNATIVES

Kleinfelder's three separate design teams simultaneously developed conceptual level design alternatives, including raising the existing dam 40 feet, constructing a raised roller-compacted concrete/embankment dam at the downstream toe of the existing dam, and constructing a new embankment dam further downstream to either raise or replace the existing dam. Innovative and unconventional design elements addressed seismic hazards, including using stiffened embankment core or shell elements to provide resistance to seismic deformation and shear joints to accommodate fault rupture.

### Location:

Washington County, Oregon

### Owner:

Tualatin Basin Water  
Supply Project Partnership



Spillway gates



Spillway chute walls

