

## SECURE Reservoir Operations Pilots

### Great Plains: *Upper Washita Basin, Fort Cobb and Foss Reservoirs*



*Photo: Foss Reservoir's water supply intakes that were exposed during the low water levels in 2014.*

**Background:** Until recently, the area has been stricken by one of the worst, prolonged droughts on record. The drought presented numerous operational challenges as the operators sought measures to both temporarily access water at lower levels of the conservation pool, and to curtail demands to maximize/prolong reservoir storage. The reservoir operations pilot study will consider ways to better forecast water availability during times of drought, and utilize those forecasts to understand the implications of various decisions and approaches to managing the reservoirs during drought.

**Study Area:** The Upper Washita Basin is comprised of over 5,000 square miles of drainage area in west central Oklahoma and the Texas panhandle, and includes two Reclamation reservoirs: Foss Reservoir and Fort Cobb Reservoir. Although Reclamation still maintains ownership responsibility of the dam and conveyance infrastructure, operations and maintenance responsibilities have been transferred to the two respective water districts, Foss and Fort Cobb Reservoir Master Conservancy Districts. Together, Foss and Fort Cobb Reservoirs provide 90 percent of the surface water supply source in the study area, including municipal water for 40,000 people.

**Pilot Objectives:** Reclamation will modify existing reservoir firm yield models to evaluate the historical period of record and develop re-sequenced inflow data sets representing potential variations in inflow that could be anticipated in the future using tree-ring-based reconstructions over a paleo-period. Reclamation will identify risks associated with various water supply availability projections developed by comparing the paleo-adjusted hydrology to climate change-adjusted hydrology. The improved reservoir firm yield models will be used to identify demand management options to help ensure water supply availability in these Reclamation's reservoirs during critical drought periods.

**Coordination:** This Pilot is being carried out by Reclamation's Oklahoma-Texas Area Office (OTAO) and Technical Service Center (TSC) in coordination with the Oklahoma Water Resources Board and Foss and Fort Cobb Reservoir Master Conservancy Districts.