



AMERICAN RIVER WATER INFORMATION INSTRUMENTATION NETWORK

A Comprehensive Snowpack and Flow Monitoring Network for Drought, Flood, and Wildfire Preparedness

Need for Project

Water from the upper American River watershed flows directly into Folsom Reservoir which is a part of the statewide system that provides water and flood protection to the greater Sacramento region and to nearly 2.5 million Californians and more than 3 million acres of farmland. Shifting weather patterns, decreasing snowpack reliability, and increasing frequency of wildfires have significantly altered the watershed's hydrology. These changes have created an urgent need to improve snowpack and flow monitoring in the American River Basin to provide comprehensive real-time data.

El Dorado Water Agency formed the American River Water Instrumentation Network (ARWIN) to identify key monitoring snowpack and flow gaps and priorities. ARWIN convened a group of stakeholders to strengthen partnerships and improve data quality, access, and network sustainability. This collaboration will enhance operational water management, flood planning, and long-term resource allocation.

Project Benefits

- Improve availability and quality of data to increase accuracy of hydrologic modeling and forecasting.
- Provide access to near real-time data to support operational needs of federal, state, and local water managers.
- Advance long-term sustainability and efficiency of monitoring network, maintenance, and data management.
- Foster data sharing, resource allocation, joint initiatives, avoid redundancy of collected data, and reduce infrastructure maintenance and replacement costs.
- Strengthen reservoir operations to improve water supply, hydropower generation, and flood control operations.
- Monitor post-fire burn areas to track increased runoff and erosion to improve water management.

Assistance Needed

\$4.5 million is needed for project implementation to fill remaining critical gaps in the monitoring network. Previous federal and local investments enabled improvements to a portion of the monitoring locations, but additional funding is needed to fully upgrade or replace old snowpack and flow monitoring equipment with current technology and install new monitoring sensors and stations to create a comprehensive network.

ARWIN Collaborative Members

California Department of Water Resources

Center for Western Weather and Water Extremes

El Dorado Irrigation District

El Dorado Water Agency

Georgetown Divide Public Utility District

National Oceanic and Atmospheric Administration's California Nevada River Forecasting Center

Placer County Water Agency

Sacramento Municipal Utility District

Sacramento Area Flood Control Agency

UC Berkeley, Sierra Snow Laboratory

U.S. Bureau of Reclamation

U.S. Geological Survey

U.S. Forest Service

Effective monitoring is imperative for making water decisions as California's risk of wildfires, droughts, and floods and water demands continue to grow.

ARWIN will provide comprehensive snowpack and flow monitoring to Inform:



Water Supply Availability



Flood Forecasting & Preparedness



Forecast-Informed Reservoir Operations



Stormwater & Local Drainage



Burned Forest Management

Existing monitoring sites to be upgraded and integrated

Stations Owner/Operator

- ▲ 250 - ARHO Stations
- 1, 702, 703, 722 - CA Dept of Water Resources
- 13 - Pacific Ranger District
- 63 - Pacific Gas and Electric Company, Auburn
- 14 - Placerville Ranger District
- 43 - Central Sierra Snow Lab
- 50 - US Bureau of Reclamation
- 54 - Natural Resources Conservation Service
- 85 - Sacramento Municipal Utility District
- 87 - Placer County Water Agency
- 209 - El Dorado Irrigation District
- 255 - UC Davis
- 999 - None Specified

Stream Gages (Cooperator)

- ◆ EID Note: Labels with a "(D)" at the end correspond with discontinued stream gages.
- ◆ FPUD
- ◆ GDPUD
- ◆ PCWA
- ◆ PG&E
- ◆ Rock Creek Limited Partnership
- ◆ SMUD
- ◆ N/A

Elevation Range (ft)

- < 3,000
- 3,000 - 5,000
- 5,000 - 7,000
- > 7,000

— American River Watershed

■ Fires (2013-2022)

