

DRAFT  
**Water Resources Data and Information Management**

**Description**

Water resources data and information management includes accurate and appropriate measurements and data analysis procedures that will support modified operations and effective use of California's limited water resources. Water resources management encompasses beneficial uses for agricultural and urban water supplies and environmental requirements for the aquatic, riparian, and wetland habitats. Data is needed on meteorologic and hydrologic conditions (e.g., precipitation and streamflow), reservoir operations, diversions and exports, water use rates and patterns, and groundwater levels and pumping rates. Data is also needed on water quality (e.g., temperature and salinity), habitat conditions, other environmental phenomena, and populations of organisms that depend on hydrologic conditions. The California Irrigation Management Information System (CIMIS) and California Data Exchange Center (CDEC) provide good examples of what can be accomplished. The Interagency Ecological Program (IEP) is actively pursuing real-time data management goals for the Bay-Delta resources.

This category includes the following actions:

- establish a comprehensive water data system,
- implement real-time data management system,
- integrate data for adaptive management decisions, and
- establish accessible data management system.

**Purpose**

Water resources data and information must be accurate and comprehensive to adaptively manage operation of the state's water supply system. Available data need to be compiled to identify historical management actions and disclose the environmental effects of these actions, and to guide future allocations and the development of management objectives that may differ from historical patterns. Adaptive management of the water supply system means altering operation of the system based on current real-time conditions rather than on average data or theoretical models. As changes in operations are made and the results measured, future operations may be altered based on the knowledge gained. Comprehensive water resources and ecological data must be collected, processed, and provided to all participants in adaptive management decisions, evaluations, and policy formulation.

**Constraints**

Data collection for biological variables will probably always require labor-intensive efforts and experienced staff will be needed for data analysis and interpretation. Data must be transformed into usable (understandable and reliable) information for adaptive management decision support. More time and money will be needed to not only collect, but to analyze and interpret available data. Considerable costs are associated with routine data collection procedures, even with the sophisticated

electronic measurement and communications systems available today. Budget allocations for traditional water resources data collection (e.g., U.S. Geological Survey stream gages) are declining.

### **Linkages to Other CALFED Action Categories**

Water resources data and information management actions can be implemented with other actions to enhance supplies and increase predictability to produce greater overall benefits to the Bay-Delta system.