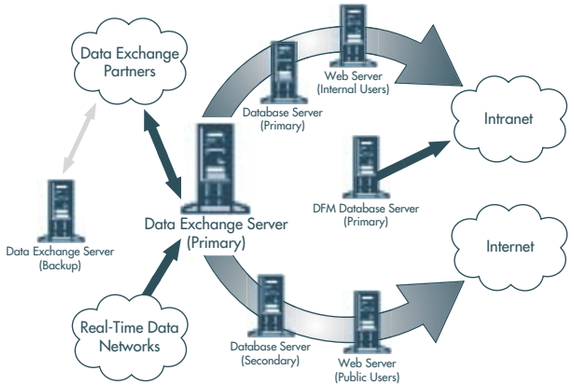
THE NETWORK



THE PARTNERS

CDEC electronically exchanges real-time data with the following cooperative agencies:

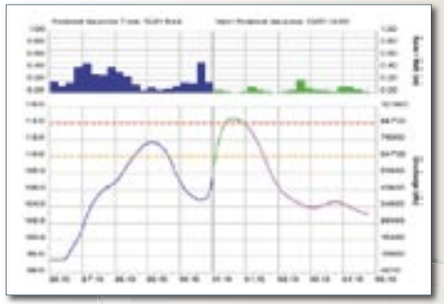
- NATIONAL WEATHER SERVICE (NWS)
- US ARMY CORPS OF ENGINEERS (USACE)
- US BUREAU OF RECLAMATION (USBR)
- US GEOLOGICAL SURVEY (USGS)
- CALIFORNIA DEPARTMENT OF FISH AND GAME (DFG)
- CALIFORNIA DEPARTMENT OF WATER RESOURCES (DWR)
  - Division of Operations & Maintenance
  - Division of Planning & Local Assistance
  - Division of Environmental Services
- SACRAMENTO MUNICIPAL UTILITY DISTRICT (SMUD)
- PACIFIC GAS & ELECTRIC (PG&E)
- EAST BAY MUNICIPAL UTILITY DISTRICT (EBMUD)

Also, CDEC cooperatively displays data from many other agencies.

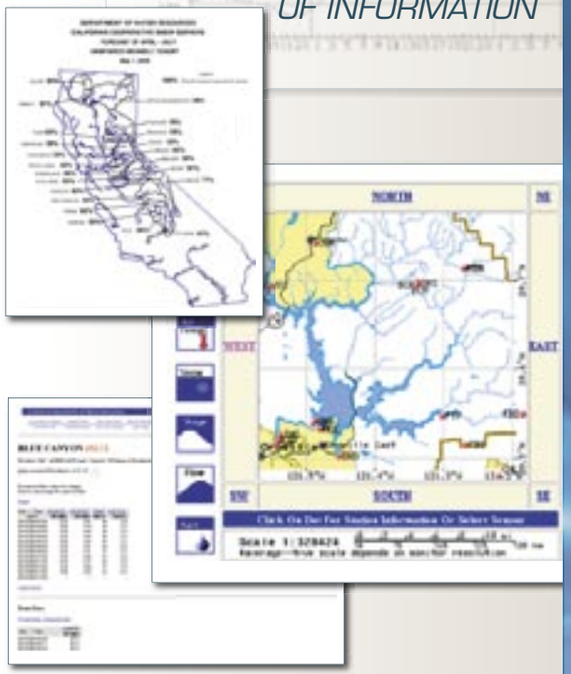
DIRECT DATA RECEIVERS

- DESERT RESEARCH INSTITUTE
- US NAVY
- LAWRENCE BERKELEY LABS
- CALIFORNIA DEPARTMENT OF TRANSPORTATION
- RENO WATER MASTER'S OFFICE

THE PRODUCTS



THE CDEC WEB SITE PROVIDES A COMMON ACCESS POINT TO A VAST INVENTORY OF INFORMATION



CALIFORNIA DATA EXCHANGE CENTER

CONTACT INFORMATION

EMAIL
webmaster@flood.water.ca.gov

WEBSITE
http://cdec.water.ca.gov

PHONE
(916) 574-1777

ACCESS POINT TO THE DEPARTMENT OF WATER RESOURCES OPERATIONAL HYDROLOGIC DATA

CALIFORNIA DATA EXCHANGE CENTER

The California Data Exchange Center (CDEC) provides a centralized database to store, process, and exchange real-time hydrologic information gathered by various cooperators throughout the State. CDEC then disseminates this information to the cooperators, public and private agencies, news media, and the general public. The data collected by CDEC enable forecasters to prepare flood forecasts and water supply forecasts; reservoir and hydroelectric operators to schedule reservoir releases; and water suppliers to anticipate water availability.

The two main entities that collect and manage data related to flood forecasting and response for California are CDEC and the NWS California-Nevada River Forecast Center (CNRFC). Both collect and manage data for internal use, while CDEC also formats and manages data for public use via the Web. Collection efforts by the CNRFC are centered on data necessary to fulfill its mission of flood forecasting. CDEC's original data collection efforts revolved around supporting the State-Federal Flood Operations Center (FOC), but since have grown into managing hydrometeorological data statewide for a variety of resource management uses. While the CNRFC does not rely exclusively on CDEC to provide data necessary to develop flood forecasts, it does supplement its collection efforts with data from CDEC to increase its effectiveness.

THE SYSTEM

Data collection workstations (satellite and microwave receiver interfaces) are the first piece of the CDEC server network (see The Network diagram other side). They collect data, such as precipitation, stage, and temperature readings, which are transmitted to the microwave and satellite receivers. The other main method for collecting these data is via the CDEC data exchange server.

Data collection from the sources identified is handled by specialized software developed specifically for this task internally or by qualified vendors. For example, the interrogated radio network receiver interface uses custom software developed by CDEC. Data are collected and transmitted by the CDEC data exchange server using internally developed software. Manual data entry or editing is handled using computer programs developed by CDEC staff.

Internal clients can access data either through the internal Web server or by connecting directly to the internal database server to retrieve data. Connecting directly to the database can be accomplished with common software applications that support ODBC database connections. Examples of such applications include Microsoft Excel and Microsoft Access. External clients connect to the external Web server to retrieve data.

The CDEC Web site provides a common access point to a vast inventory of information.

THE DATA

Real-time data are collected from remote data stations via the State microwave radio network and GOES satellite system. Real-time data include river stage, precipitation, snow water content, temperature, water quality and full weather data.

CDEC operates a data exchange program with various Federal and State agencies and other public agencies. This data exchange program involves the automated transfer and receipt of data and information via network connections. This data include precipitation, snow water content, reservoir operations, reservoir summary reports, weather forecasts, river bulletins, full weather data, river gage data, and river flow rating tables and shifts. Value added information is created from the data and presented in a variety of formats including maps, plots, charts and publications.

THE USERS

Many users use CDEC for information on flooding and the impacts of flooding in the region. The system also provides information for planning studies, flood emergency response, and water-control system operation in the basins. The evaluators include USACE, NWS, DWR, USBR, the Governor's Office of Emergency Services (OES), local government agencies, and special districts. Other uses include, but not limited to, research, wastewater management and recreational.

The Flood Operations Center, through the CDEC System serves as an efficient central point for flood response and operational decision making, intelligence gathering, and media and public information dissemination. DWR, through CDEC, redistributes the CNRFC guidance products, along with the real-time hydrometeorological data. This provides emergency managers in the basins with a single access point to flood information.

THE BENEFITS

The information collected by CDEC and the river and runoff forecasts published by DWR on CDEC are essential for efficiently managing hydroelectric generation, water supplies for irrigation, municipal and industrial uses, flood management operations, and environmental requirements. While other cooperating agencies produce their own forecasts for individual basins from the data collected and filed by this program, the independent statewide forecasts produced by DWR are used by regulatory agencies to set standards statewide, and by most major water projects to plan operations and determine water allocations affecting most of the population in California.

Benefits associated with hydrologic forecasts, which CDEC support, result from a variety of sources. Flood losses can be lessened by upstream reservoirs, emergency action to flood fights, and providing warnings to threatened areas. The annual State economic benefits of issuing flood forecasts are estimated at $19 million by the National Hydrologic Warning Council in 2002. The benefits of water supply forecasts are $49 million, based on the economic value of the water produced by California's major rivers flowing from the Sierra Cascade and Trinity mountains.