



## Section 7 Data Management

Data acquisition and sharing will be accomplished through coordination among local agencies and stakeholder groups. This will further assist project proponents in monitoring and data management. Once information is developed and available for dissemination, the public and NOC WMA stakeholders will be able to access specific data on the County of Orange, OC Watersheds website: [www.ocwatersheds.com](http://www.ocwatersheds.com). Through the current and future technology of websites and data browsers, the public, stakeholders, and regulators can query data to assist in decision making and management objectives. In addition, water quality monitoring data can be queried and displayed, which is valuable in ensuring the success of the watershed monitoring plan. Water quality monitoring information will be posted in lay terms so that the general public will be able to gain an understanding about and support activities within the region. Other monitoring websites will be identified and utilized as appropriate during implementation of the NOC WMA Plan. As projects within the Plan are implemented, monitoring and information management will be conducted.

Water management data has been, and is currently being, collected throughout the region by various governmental and non-governmental organizations. This data includes surface water quality, surface flow, groundwater quality and quantity, stormwater discharge (NPDES Program), water use, and habitat assessments. The objective of data collection is to; define existing conditions, help develop water management objectives, evaluate project and overall Plan effectiveness, provide a tool for IRWM planning and decision making, and provide a means of sharing information with state agencies, stakeholders, and the general public. The proper collection, organization, storage, and dissemination of this data is essential to the continued success of regional water management and to the ongoing participation and support of stakeholders.

### 7.1 Existing Monitoring Efforts

Various monitoring methods are being implemented throughout the Region to meet water quality data needs. All projects proposed in this plan will implement one or more of the following data monitoring efforts:

- ◆ Water Quality Monitoring: For those projects designed to improve the chemical quality of water, water sampling is expected to be performed in a manner compatible with State prescribed methods. A Quality Assurance Project Plan (QAPP) may also be required for such projects.
- ◆ Ambient Water Quality Monitoring: Monitoring data for these projects will follow the SWAMP data reporting requirements.
- ◆ Load Reduction Monitoring: Projects that include the removal of pollutants from water bodies will generate an annual estimate of load reductions achieved.
- ◆ Stream and Wetland Monitoring: Projects that include protection or restoration of streams, shorelines, or wetlands



- will provide an annual accounting of the acreage of wetlands restored, feet of streambank and shoreline protected, and feet of stream channel stabilized, as appropriate.
- ◆ Photo-Monitoring: Projects which include restoration or construction activities will include photographic documentation in accordance with the guidelines produced by the SWRCB.

As projects within the NOC WMA Plan come to fruition, monitoring and information management will be implemented. To ensure data consistency and quality assurance, two activities consistent with the SWRCB will be employed; quality control and quality assessment. Quality control assures adequate sampling and technical activities are performed. Quality assessment refers to the process of quantifying the effectiveness of the quality control procedures.

### 7.2 Data Management System and Dissemination

A wide range of water and natural resource data are collected throughout the region by various entities, such as permitted dischargers, non-governmental organizations, research institutes, and government agencies. The responsibility of maintaining and managing this data is typically the responsibility of the entity collecting it. It is the intent of the NOC WMA to support data collection throughout the region and assist with consistency, management, and dissemination of the data to support regional decision making, stakeholder interests, and public education and involvement.

Primary data management functions will continue to reside with the primary data collectors (data owners). The data owners are responsible for the collection, storage, quality assurance/quality control (QA/QC), analysis, reporting in compatible formats, and distribution to required regulatory agencies. When data is submitted to the County, data owners shall submit such data in a format specified by the County. Including existing state databases, such as IWRIS, CERES, CEDEN, SWAMP, GAMA, and other RWQCB programs, is in a format compatible with those databases. Data owners shall also submit data in a format specified by the County for dissemination to stakeholders and the public on the County's website. The County shall post the data on its website in a user-friendly format for easy accessibility by stakeholders and the public.

The County shall; work with stakeholders to implement a consistent QA/QC program for data collection and analysis, provide a central location for data accessibility, avoid data redundancy, work to fill data gaps, and ensure data comparability. The County shall be responsible for disseminating data to IRWM Group stakeholders and the general public.

Data accessible on the website will focus primarily on IRWM generated data from individual Plan projects and programs. However, relevant existing data and water related data sets may be posted on the website as appropriate. Examples of data to be made available on the County's

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website include: raw and analyzed data sets, Plan project information, IRWM planning process information such as meeting schedules, meeting minutes, agendas, annual reports, Plan updates, etc. All data will be posted in user-friendly electronic formats accessible to the general public. Other relevant information will be made available on the website such as related web links and stakeholder and agency contact information. Other monitoring websites will be identified and utilized as appropriate during implementation of the Plan.

The Orange County Water District (OCWD, the District) conducts an extensive and comprehensive program to monitor the Orange County groundwater basin. This monitoring program tracks dynamic basin conditions including groundwater production, storage, elevations, and water quality. Data collected in OCWD's monitoring program are stored in the District's electronic database, the Water Resources Management System (WRMS). WRMS contains comprehensive well information, current and historical data, as well as information on sub-surface geology, groundwater modeling, and water quality. This database provides for subsequent retrieval and analysis of data or preparation of data reports and data submittals to other agencies.

### **State Data Management Programs**

To promote data reliability, the Region will implement techniques compatible with State programs such as the Integrated Water Resources Information System (IWRIS), the California Environmental Resources Evaluation System (CERES), the California Environmental Data Exchange Network (CEDEN), the Surface Water Ambient Monitoring Program (SWAMP), and the Groundwater Ambient Monitoring and Assessment (GAMA) Program.

The following provides an overview of the State information and data exchange programs, including IWRIS, CERES, CEDEN, SWAMP, and GAMA:

**IWRIS:** IWRIS is a data management tool for water resources data. It is a web based GIS application that allows you to access, integrate, query, and visualize multiple sets of data. The IWRIS databases include the DWR Water Data Library (WDL). The WDL database stores data from various monitoring stations, including groundwater level wells, water quality stations, surface water stage and flow sites, rainfall/climate observers, and water well logs. IWRIS databases also include the California Data Exchange Center (CDEC), USGS streamflow, Local Groundwater Assistance Grants (AB303), and data from local agencies. Information on IWRIS is available at: [www.water.ca.gov/iwriss](http://www.water.ca.gov/iwriss).

**CERES:** The California Environmental Resources Evaluation System (CERES) is an information system developed by the California Resources Agency to facilitate access to a variety of electronic data describing California's rich and diverse environments. The goal of CERES is to

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improve environmental analysis and planning by integrating natural and cultural resource information from multiple contributors and making it available to a wide variety of users.

CERES collects, integrates data and information to distribute it via the World Wide Web, tapping into important information sources and contributing to advances in the science of data management and metadata cataloging by encouraging cooperation among governmental, educational, and private groups.

CERES focuses on three related components: technology, data, and community. The first, technology component includes the development of new software and network structures to accommodate the search and retrieval, organization, and accessibility demands associated with huge volumes of data in a wide range of forms. The second component, data, encompasses the conversion of vast quantities of information into digital form as well as the evaluation of existing digital data sets and the development of metadata catalogs required searching and data-quality and appropriate use assessment. The third component, community, contains CERES' efforts to promote the use of the network for planning and policy and to foster the growth of new users and contributors in a far-reaching web of affiliations.

CERES also coordinates focused applications to support well-defined natural resource management activities and supply the public with critical and timely information.

Developed CERES' Web links include:

Environmental Education

Environmental Law

Land Use Planning Information Network

Watershed Information Technical System

California Wetlands Information System

The California Environmental Information Catalog

California Environmental Keyword Thesaurus

Data standards are central to the exchange of information between CERES partners. Some data are exchanged by manually transferring them into a shared system. Other data are exchanged using machine to machine transfers. CERES has identified multiple websites and standards to be useful for coordinated data sharing, including the California Environmental Information Catalog (CEIC). CEIC is CERES' own online directory for reporting and discovery of information resources for California. Potential partnerships for information exchange utilizing this system include cities, counties, utilities, state and federal agencies, private businesses, and academic institutions which have spatial and other types of data resources. CEIC is based on the Federal Geographic Data Committee (FGDC) metadata standard. Contributors may enter data into the catalog via a convenient

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web interface, or with a batch process by exporting the data to an XML file made available to CEIC over the Internet.

**CEDEN:** The California Environmental Data Exchange Network (CEDEN) is another of CERES' identified websites for coordinated data sharing. CEDEN is a growing statewide cooperative data exchange program of various groups involved in the water and environmental resources of the State of California. Most of CEDEN's data exchange services are custom developed using a robust tool set which has been used to connect scores of programs into the network. Multiple projects are underway to extend CEDEN data exchange to additional standards and those services should be available in the coming year. The Surface Waters Ambient Monitoring Program (SWAMP) describes the standards used for these services, as well as the Environmental Data Standards Council (EDSC), which uses standards to establish data exchanges with the CalEPA sector of the US EPA National Environmental Information Exchange Network.

**SWAMP:** The Surface Water Ambient Monitoring Program (SWAMP) was proposed to integrate existing water quality monitoring activities of the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB), and to coordinate with other monitoring programs.

SWAMP is a statewide ambient monitoring effort designed to assess the conditions of surface waters throughout the state of California. Responsibility for implementation of monitoring activities resides with the nine RWQCBs that have jurisdiction over their specific geographical areas within the state. Ambient monitoring refers to any activity in which information about the status of the physical, chemical, and biological characteristics of the environment is collected to answer specific questions about the status, and trends in those characteristics. For the purposes of SWAMP, ambient monitoring refers to these activities as they relate to the characteristics of water quality.

SWAMP also hopes to capture monitoring information collected under other State and Regional Board Programs such as the State's TMDL (Total Maximum Daily Load), Nonpoint Source, and Watershed Project Support programs. SWAMP does not conduct effluent or discharge monitoring which is covered under National Pollutant Discharge Elimination System permits and Waste Discharge Requirements. In addition, local project implementation and reported water quality results will also provide additional monitoring information for the SWAMP.