



Chapter 14

Measuring Plan Performance and Data Management

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Chapter 14. Measuring Plan Performance and Data Management

The purpose of this section is to outline an appropriate monitoring plan to measure plan performance for each Imperial IRWMP project planned for implementation. An appropriate monitoring plan is one that ensures effective use of available data, stakeholder access to data, and that data generated through IRWMP implementation activities can be integrated into existing monitoring databases. Cost efficiency to achieve a sustainable monitoring and reporting program over the IRWMP project implementation and operation period is an important consideration.

14.1 PRIMARY RESPONSIBILITY FOR PROJECT-SPECIFIC MONITORING PLANS

Primary responsibility for development and implementation of project-specific monitoring plans rests with the project proponent or partners consistent with requirements of any mitigation, monitoring and reporting program identified in the approved environmental review document. Projects funded through CDWR Proposition 84 grant programs will also need monitoring programs consistent with the CDWR implementation grant contract and/or other grant agreements. Project proponents will need to prepare a project-specific monitoring plan prior to any grant award.

14.2 PROJECT-SPECIFIC MONITORING PLAN

The content of the project-specific monitoring plan must include a clear and concise description (in table format) of what is to be monitored to demonstrate how the project is going to meet IRWMP objectives and provide the anticipated benefits. A key component of all project-specific monitoring plans is to document the monetized and non-monetized economic benefits claimed in the grant application and any effectiveness analysis. Monitoring will include, but not be limited to, the following:

- Measurable benefits (acre-feet of yield, acres of habitat created, volume of water conserved, etc.)
- Location, method and frequency of monitoring
- Monitoring protocols/methodologies, including who will perform the monitoring
- Data Management System (DMS) or procedures to keep track of what is monitored
- Quality control/quality assurance plans, as required

- Procedures to ensure monitoring is carried out according to schedule and that adequate resources (funding and staff) are available to maintain project monitoring throughout the defined timeframe

Project proponents will document their progress at Water Forum meetings and will make available their monitoring reports as part of the implementation status and grant management activity.

14.3 DATA MANAGEMENT AND REPORTING

Data management is needed to ensure that the quality of the data is preserved and well documented with interpretation of changing trends and in achieving project goals. The data management and reporting programs will provide the efficient use of available data, stakeholder access to data, and to ensure that data generated by IRWM implementation activities can be integrated into existing State databases.

14.3.1 Adequacy of Available Data and Monitoring Efforts

The hydrologic system in and surrounding the Imperial Region has been extensively monitored for many years. Due to the number of agreements, compacts and legal requirements, the Imperial Region lies in one of the most monitored and measured water systems in the western United States, and existing monitoring and data management programs are extensive and complex.

Many of the historical, existing and future monitoring programs will be useful to the development and implementation of the plans and projects included in the IRWMP. Requisite data types depend on the type of project and might include canal, river and drain flows, surface water deliveries, groundwater elevations, groundwater pumping, precipitation, water demands, locations and sizes of water-related facilities, political and agency boundaries, land use, water quality, locations of sensitive habitats and species, and hydrogeologic data.

In concert with other agencies, the IRWMP implementation will continue to provide an exhaustive search for all data relevant to the IRWMP projects on an ongoing basis. Data gaps that are identified will need to be filled through new monitoring activities or new studies. Table 14-1 outlines typical data requirements for the priority projects included in the IRWMP. The data will include at a minimum any record relevant to surface water, groundwater, stormwater, and ecosystem restoration.

Table 14-1. Required Data for Priority Projects Outlined in the IRWMP

Data Type	Water Supply	Groundwater Management	Ecosystem Restoration	Recycled Water	Water Quality
Canal, Drain & River Flows	X		X		X
Locations of Sensitive Habitats and Species	X	X	X		X
Water Quality	X	X	X	X	X
Surface Water Deliveries	X	X			X
Groundwater Elevations		X			
Groundwater Pumping		X			X
Hydrogeologic Data		X			X
Precipitation	X	X			X
Water Demand	X	X		X	
Water Related Facilities - Location & Size	X	X		X	X
Political and Agency Boundaries	X	X	X	X	X
Land Use	X	X	X	X	X

14.3.2 IID Data Management

As the manager of the imported Colorado River water supply, IID tracks the water supply, demand, delivery, conserved savings and produces a water budget for the water service area. The QSA/Transfer Agreements, related permits, and monitoring plans have led IID to implement an extensive monitoring network and data management system (the Water Information System, WIS). WIS incorporates quality assurance/quality control (QA/QC) operations and a data storage warehouse function for site-specific time-series flow data for water flowing through the IID system, including deliveries to over 5,500 gates and at measurement sites along nearly 1,670 miles of canals and laterals and 1,450 miles of drains. The WIS supports preparation of the IID Water Annual Report.¹

The Imperial County Farm Bureau TMDL program is voluntary, however nearly all farmers in Imperial Valley participate because it offers growers and landowners a straightforward path to compliance with the mandatory TMDL regulation. Farmers implement a variety of Best Management Practices (BMPs) to reduce silt and mineral runoff on their own farms, and maintain a record of their efforts, and attend annual meetings to keep up-to-date and share information relating to BMPs and TMDL management on their farms. ICFB reports the resulting information to the Basin 7 RWQCB. The IID also has a TMDL monitoring program and monitoring data are provided to the RWQCB and thus to the Surface Water Ambient Monitoring Program (SWAMP).

¹ IID website: "Water Annual Reports" <<http://www.iid.com/index.aspx?page=440>>

Other surface water monitoring programs funded with state grants or to meet compliance requirements would include program-specific monitoring plans and requirements to submit data to SWAMP. IID is investing in an Integrated Information Management (IIM) system and an upgrade to its Supervisory Control and Data Acquisition (ClearSCADA) system (under development) to manage implementation of the EDP, Definite Plan and System Conservation Plan. Additional monitoring and data collection for other proposed IID projects would be defined in the project-specific monitoring plans as described above and would be added as needed or required to document benefits and other potential effects.

To comply with USEPA requirements and avoid termination of canal water service, residents in the IID service area who do not receive treated water service must obtain alternative water service for drinking and cooking from a state-approved provider. To avoid penalties that could exceed \$25,000 a day, IID strictly enforces this rule. IID tracks nearly 4,000 raw water service accounts required by the California Department of Public Health (CDPH) to have alternate drinking water service. The section maintains a small-acreage pipe and drinking water database, and provides an annual compliance update to CDPH.

14.3.3 Groundwater Monitoring and Data Management

Groundwater monitoring would be needed for groundwater projects such as the one proposed for the East Mesa. The current plan is for the County, pursuant to the groundwater ordinance, to require ambient groundwater monitoring with the proposed groundwater management areas, should such a project move forward. Project-specific monitoring would document specific project operations, benefits and ensure any impacts are avoided. An ambient monitoring program would be used to track seasonal and long term trends and regional conditions in the groundwater basin.

The County, as the authority for groundwater management, is the local monitoring entity that would coordinate groundwater monitoring activities with CDWR. In 2009, the Legislature passed SBX7 6, which establishes, for the first time in California, collaboration between local monitoring parties and CDWR to collect groundwater elevations statewide and make this information available to the public. With such limited groundwater development, the County has a limited monitoring program and limited groundwater data management capabilities currently. Data that is collected is managed and made available through agreements with the USGS.

When IRWMP groundwater related projects are implemented, or when further feasibility studies are conducted through cooperative IID/County study, then the final data management and quality control plan would be completed. The IID WIS manages time series data, and as the likely developer of a groundwater storage facility, any collected data would be submitted by IID to the California Statewide Groundwater Elevation Monitoring (CASGEM) program.

14.3.4 Imperial IRWMP Annual Report

On behalf of the Water Forum, IID will prepare an IRWMP Annual Report that documents progress towards meeting the IRWMP goals. It is anticipated that stakeholders would provide their project specific monitoring reports to the City of Imperial pursuant to CDWR requirements, and that these

would be used by the City of Imperial to prepare quarterly reports and invoices. The progress will be summarized in the IRWMP Annual Report. Existing reporting will also be used for tracking the IRWMP. This includes the IID Annual Water Report and Water Conservation Plan Updates.² The most recent 2010 Water Department Annual report provided a summary of the IRWMP activity and this is expected to continue.

14.3.5 IRWMP Web Site

The IRWMP web site will be used for data and information sharing. Projects specific monitoring plans and reports will be provided by stakeholders and posted on the IRWMP web site as they are submitted to the City of Imperial and to CDWR. Project technical reports would also be posted.

14.3.6 Reliance on State of California Systems

The responsibilities, protocols and reporting requirements for the drinking water and wastewater quality sampling and reporting are based on the State law and the conditions in individual system permits. All of the permitted systems provide data to the State in the form and format that is required, using the systems and tools available to the regulated facility.

To support both the regulated community and public access to data, the State's data submittal, public access and sharing capabilities are evolving. The Imperial Region relies on the responsible state agencies to provide technical support and systems that help the regulated community to provide the required data.

Existing data monitoring and measurement in the IID area are discussed in Chapter 5. At this time there are no specific plans for any new data management systems.

documents the data, monitoring and data management needs in the Region and how the existing data collection, management, and reporting programs can be used as the IRWMP is implemented.

² IID website: "Water Planning." < <http://www.iid.com/index.aspx?page=185> >

Table 14-2. Data and Monitoring in the Region and Relation to the IRWMP

Need/Purpose	Program/System, Source/Access	Summary Reports/Plans/Description
Track progress implementing the Imperial IRWMP	Imperial Integrated Regional Water Management Plan web site. < http://imperialirwmp.org/ >	IRWMP documents and technical studies Project list Meeting schedules, agenda, notes and minutes IRWMP Annual Report Project Specific Monitoring Report
Track and Monitor Water in the Imperial Region		
Track and monitor flow data	IID Oracle-based Water Information system (WIS), tracks and warehouses time-series flow data, with monthly and annual QA/QC Other types of data also stored – e.g., QA/QC CIMIS record; USGS record for IID flow sites	<ul style="list-style-type: none"> • All IID reports that require QA/QC time-series flow record • IID reports with algorithms – verify conservation (ECP, IID/MWD Conservation Verification); IID Water Balance • QA/QC CIMIS record for the Imperial Valley
Track and monitor water deliveries. Support preparation of annual water report.	IID TruePoint System (TPS), stored in IID Water Information System (WIS)	Document results.
Monitor water operations	Integrated Information Management (IIM), Supervisory Control and Data Acquisition (ClearSCADA) system (under development)	System Conservation Plan and Delivery Measurement Description Invalid source specified.
Irrigation scheduling support and conservation	California Irrigation Management Information System (CIMIS). < http://www.cimis.water.ca.gov/cimis/welcome.jsp >	IID is a CIMIS cooperator. CIMIS provides daily and monthly climate record; supports tracking climate change. IID provides weekly CIMIS ET reports to growers. IID conducts a QA/QC procedure on Imperial Valley CIMIS record for use in conservation verification, WB and other algorithms.
Tracking alternative water service for residents outside a treated water service area receiving water from IID service pipes.	IID Small-acreage Pipe and Drinking Water Database	IID annual report to CDPH
IID Title 22 (California Code of Regulations) source water sampling and analyses	< http://www.iid.com/index.aspx?page=183 > Data submitted to CDPH	Annual monitoring results. IID samples and analyzes data to support local public water systems to facilitate annual production of a Customer Confidence Report.

Table 14-2. Data and Monitoring in the Region and Relation to the IRWMP, Continued

Need/Purpose	Program/System, Source/Access	Summary Reports/Plans/Description
Monitor drain water quality to comply with TMDLs	http://www.iid.com/index.aspx?page=184 Data is submitted to the RWQCB, Surface Water Ambient Monitoring Program (SWAMP). See http://www.ca-watersheds.org/reg9-public/ or http://bdat.ca.gov	IID Drain Water Quality Improvement Plan (Revised DWQIP)
Monitor waste discharge water quality	California Integrated Water Quality System (CIWQS)	State Water Resources Control Board and RWQCB use to manage permits and other orders, track inspections, manage violations and enforcement activities. CIWQS allows online submittal of Permittee information for certain programs and makes data available to the public through reports. Imperial Region dischargers are using this system.
Monitor groundwater conditions	California Statewide Groundwater Elevation Monitoring (CASGEM) http://www.water.ca.gov/groundwater/casgem/	Ambient groundwater monitoring in the Region is limited. Future groundwater monitoring will submit data to CASGEM. Will support County to comply with SB7X 6 requirements if and when required.
Track Colorado River Conditions		
<ul style="list-style-type: none"> • Supply forecasting • Plan operations and deliveries • Address the effects of climate change • Protect water rights and the Region’s supply 	U.S. Bureau of Reclamation Regional Reports http://www.usbr.gov/lc/reportsarchive.html	<i>Annual Operating Plan for Colorado River Reservoirs.</i> Reports on operations of the Colorado River reservoirs for the completed year and the projected operations and releases for the current year. Water master report to document compliance with requirements.
	Lower Colorado River Reservoir and River Data http://www.usbr.gov/lc/region/g4000/riverdata/index.html	Hourly and daily data at key geographic locations
	http://www.usbr.gov/lc/region/g4000/hourly/forecast12.pdf	USBR Forecasted Water User Reports
	http://www.usbr.gov/lc/region/g4000/hourly/use12.pdf	USBR Actual Water User Reports

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