

STRAWMAN PROPOSAL FOR A SAN JOAQUIN RIVER REGIONAL MONITORING PROGRAM

January 30, 2012

Background

Monitoring of the San Joaquin River Watershed (Friant Dam to Vernalis) for flow and quality parameters has been performed for more than 30 years by numerous government and private interests. Over the last three years, there has been a dramatic drop in the amount of monitoring performed by these entities.

Based on interviews conducted as part of this project (and building on outreach conducted by San Francisco Estuary Institute and the Great Valley Center in 2008), ***a need has been identified for entities performing monitoring to increase collaboration between their programs.***

Such collaboration could achieve efficiencies in current and anticipated efforts and ensure that flow and water quality information satisfies both individual project needs and those mandated by state and federal agencies. A coordinated regional program would increase capacity to conduct assessments relevant to a range of management issues and scales and would relate information from smaller sub-watersheds within the region to broader regional assessments.

Proposal Benefits

A San Joaquin River Regional Monitoring Program (SJR RMP) could greatly improve the usefulness and cohesiveness of existing monitoring and assessment efforts by organizing them around common objectives.

The effort would focus on eliminating potential duplication of effort while ensuring timely reporting of information to support water program decisions, answer research questions and track conditions and trends in the region. It could also facilitate the assessment of the various water resources in the basin and ensure that information developed is accessible to stakeholders and the general public.

Current and Planned Activities to Initiate a Regional Monitoring Program

Information gained from interviews with many of the entities performing monitoring in the watershed is the basis for a framework to develop a SJR RMP. Options described below can help initiate broader discussions and would be implemented using a phased approach.

- Identify key stakeholders (completed in 2011);
- Facilitate discussions among stakeholders by identifying common needs, goals and assessment questions (first meeting February 14, 2012);
- Define operational parameters of an SJR RMP (2-14 meeting and June 2012 stakeholder meeting).

Next step to organize an SJR RMP:

- Form a regionally based entity* or cooperative agreement (based on consensus of stakeholders).

- Participants would be organizations that are collecting data on water quality and flow of the main stem and tributaries. (Could be facilitated initially by CURES through this EPA project.)

*Similar regional monitoring efforts are being developed in other parts of the State including the San Francisco Bay region, the Delta, Santa Monica Bay, the Southern California Coastal Water Research Project (SCCWRP) and the Multi-Agency Rocky Intertidal Monitoring Network (MARINE).

RMP Program Elements

The five elements needed for a successful regional monitoring program (building on the 2010 Strategy*):

- 1. Institutional arrangements and funding,**
- 2. Support data management,**
- 3. Standardization of methods and quality assurance,**
- 4. Coordination of sampling, and**
- 5. Data analysis and interpretation.**

*See strategy at [www.http://www.curesworks.org/SJRiverForum.asp](http://www.curesworks.org/SJRiverForum.asp)

1) Institutional Arrangements and Funding

This proposal has suggested actions for building an SJR RMP. The resources to continue this work will in large part depend on agencies and other parties with a direct stake in monitoring and assessment. While it would be premature to presume a specific management structure, it is possible to describe the functions that must be performed and present alternatives to accomplish these functions. Essential functions include:

- Creating and implementing a governance structure,
- Engaging stakeholder participation,
- Identifying the priority management topics that will focus coordination within Region,
- Representing the SJ Region vis-à-vis the other RMPs in the watershed (Delta, Bay, Sacramento),
- Developing a regional data management strategy, and
- Developing both short- and long -term funding sources.

To support the Regional Monitoring Program, two actions are proposed:

- a) Hold an annual forum of regional stakeholders to discuss the state of the San Joaquin River.**
 - a. CURES is hosting the first of these meetings in February 2012. The forum objective is for technical experts in regional monitoring and assessment to discuss advantages/disadvantages of an RMP and how it might be used for targeted, regional assessments. Information from the forum proceedings will be used to update the RMP strategy. To continue to support this communication effort, periodic (annual) conferences would be held.
- b) Form a technical advisory group that meets on a periodic basis to:**
 - a. encourage information sharing and stakeholder input in the development of the SJR RMP,
 - b. identify sampling overlap in ongoing monitoring programs and potential for standardization of field and laboratory practices,
 - c. review data management practices,

- d. support development of an organizational structure,
- e. pursue long-term sustainable funding sources for the RMP.

It is anticipated that volunteers for this technical committee will be sought at the February 2012 Forum in Modesto. In addition to local stakeholders such as agricultural water coalitions, water districts and cities, representatives from the Department of Water Resources (DWR), the Bureau of Reclamation (USBR), the State Regional Water Quality Control Board (RWQCB), should be included as they have major, ongoing monitoring efforts in this region. Other members would include representatives from the Department of Fish and Game (DFG), the Environmental Protection Agency (EPA), US Geological Service (USGS) and Department of Pesticide Regulation (DPR),

2) Support data management via working with the California Environmental Data Exchange Network (CEDEN); establish a regional data portal

A regional program should increase capacity to conduct assessments relevant to a range of management issues and scales, and to relate information from smaller sub-watersheds within the region to broader regional assessments. The role of data management is to further this goal by making it possible to collect, store, transfer, integrate, and access data that meet established standards.

CEDEN is a data management system sponsored by the State Water Resources Control Board and used by the Central Valley Water Board that includes, at present, four regional Data Centers, a centralized database, and tools such as templates for submitting and retrieving data. Current plans are to expand functions such as the ability to link and query distributed databases. There are a number of existing databases that have been developed by each of the major monitoring groups in the San Joaquin Region. Given the plans for CEDEN and its existing Data Centers, establishing a new Data Center is considered unnecessary. Rather, it is recommended that efforts be directed towards developing a data portal. This could build on the approach currently being developed by the California Water Quality Monitoring Council. The Monitoring Council's web portals will use CEDEN as the intended central access point for most data, with CEDEN providing an efficient route to other databases (including the EPA, DWR, USBR, USGS and SWRCB) where additional data may reside.

A portal for the San Joaquin RMP could be housed at a remote site and linked to CEDEN and other data bases. An entity would need to develop the necessary crosswalks for communicating with CEDEN and other databases and the query tools necessary to get the data for regional and site-specific queries. The query tools will be built on input from the RMP Technical Committee, the Monitoring Council and other planned portals such as the Bay-Delta RMP.

3) Standardize Monitoring Methods and Quality Assurance

Standardization of field methods and laboratory practices is an important step in ensuring the 'comparability' of data. Ensuring comparability, to the greatest extent possible, is essential to improving the coordination and efficiency of monitoring.

The goal of this program element is therefore to establish processes for compiling, analyzing, and assessing monitoring data. The data currently being collected follow a range of protocols and standards designed to meet the performance criteria on the individual programs, but do not necessarily address the needs required in a comprehensive assessment. Successful regional assessments will require accepted protocols for data analysis and assessment that ideally would be scalable to support both site-specific and regional assessments.

It is anticipated that the SJR RMP Technical Committee formed in the task above will be charged with identifying these needs and providing recommendations for obtaining this information. To the extent that the California Environmental Data Exchange Network (CEDEN) is used as the source of the monitoring data (see below), issues of data quality and comparability will be reduced, as data in CEDEN conform to the standards and protocols of the State's Surface Water Ambient Monitoring Program (SWAMP)

4) Coordination of Sampling

Stakeholder interviews indicated that there is currently little overlap in existing water monitoring programs. Current monitoring is performed to meet specific regulatory requirements such as:

- NPDES permits,
- Irrigated Lands Regulatory Program (ILRP),
- Surveys (Surface Water Ambient Monitoring Program (SWAMP),
- Grasslands Bypass Project or
- Specialized programs (Department of Pesticide Regulation (DPR) monitoring of pesticide runoff in urban areas).

Additionally, monitoring is occurring under programs and studies such as the San Joaquin River Restoration (see www.restoresjr.net). The Restoration and Grasslands programs integrate various types of monitoring (e.g., flow, water chemistry, toxicity, and biologic condition) from a number of agencies. The Central Valley Monitoring Directory (see www.centralvalleymonitoring.org) provides information about existing monitoring programs and can be used as a coordination tool. Effective coordinating would prevent duplication of effort in future programs.

5) Data Analysis and Interpretation

Coordination of sampling, methods standardization for comparability, and data management help to prepare for analyses addressing questions or management problems of importance to the region.

Initial monitoring coordination should focus on parameters such as flow, temperature, pH, dissolved oxygen, salt, etc. These parameters are of interest to most monitoring programs, are easily collected and can be set up for continuous monitoring. DWR and USBR have made significant advances in this area, but further work is needed.

It is recommended that, early on, the RMP sponsor an assessment that provides a useful product while also testing the technical elements of data management. This study should have broad implications for science and policy, focus on a clearly stated objective (or question), and have significant stakeholder interest.

A possible topic for study could focus on salts and nitrates as these constituents are an emerging issue in this region. Groups such as the Central Valley Salinity Coalition, DWR, SWRCB and the Bureau of Reclamation could be major partners in developing a regional assessment.

Since a successful RMP needs buy-in from the major entities that are performing monitoring, initial assessments should focus on issues with the broadest interest in the monitoring community.

Periodic updates of this plan will be posted at <http://www.curesworks.org/sjRiverForum.asp>