

**California Water Quality Monitoring Council
Council Meeting, June 23, 2008
Cal EPA Building, Sacramento**

Meeting Summary

Council members in attendance:

Jon Bishop, Geoff Brosseau, Joe Grindstaff, Sam Harader, Rufus Howell, Parry Klassen, Terry McCauley, Steve Steinberg, Linda Sheehan, Steve Weisberg

Workgroup members in attendance:

Brock Bernstein, Val Connor, Melenee Emanuel, Terry Fleming, John Hunt (scribe), Emilie Reyes, Vera Williams

Others in attendance:

Bob Brodberg, Mark Martin, Dorothy Rice

The meeting began at 10:30 with introductions and opening remarks by Jon Bishop. Brock Bernstein facilitated the meeting, and outlined the three meeting objectives: inform members about the legislative mandates, present the groundwork that had been done by the workgroup, and describe the products that the California Water Quality Monitoring Council (CWQMC) must produce. Val Conner gave a PowerPoint presentation describing the types of large water quality monitoring programs currently active in California. She emphasized that the goal of the SB1070 legislation was to make ambient water quality data comparable and accessible to multiple audiences. The following is a summary of topics discussed and key points.

Scope

The scope of monitoring considered by the CWQMC includes both surface water and groundwater, and covers more than contaminant data. The Memorandum of Understanding (MOU) between the Secretaries of Cal EPA and the Resources Agency makes reference to healthy ecosystems, water quality, wildlife populations, habitat, and ancillary data such as

land cover. Water flow and supply affect water quality, and may be included. Sources for these types of data are listed in the draft inventory.

CWQMC Authority

The CWQMC is authorized to make recommendations to the Secretaries of Cal EPA and the Resources Agency, who can implement those recommendations through their departments, boards, and agencies. The CWQMC is tasked with providing a plan for effective monitoring and information dissemination. The Act sets a timeline and requires a report, but is not specific on the types of solutions the CWQMC should recommend. The CWQMC's authority consists of its ability to set examples, offer persuasive recommendations, and encourage member agencies to participate. The CWQMC does not have authority to set standards. Neither the term of the CWQMC nor of its members is yet specified, but the CWQMC is expected to be reviewed triennially.

CWQMC governance

Three generalized governance structures were presented for consideration, noting that consensus works very well until it doesn't. The group considered an intermediate governance structure, but there was general agreement that the CWQMC would focus on producing its deliverables in the short term (next 6 months), and deal with governance issues as they arise.

Member comments on what they'd like to see from the CWQMC

- Better dissemination of water quality data. This has been requested both by regulated entities and the public.
- Websites where the public can find water quality information for waterbodies they care about. (The Coastkeeper website with maps of impaired waterbodies was presented as an example of an inexpensive format for getting water quality data to the public.)
- Websites that begin with general maps, but allow drilling down to detailed data sets, including groundwater data sets. Some past projects have spent years searching for existing data needed for modeling, basin planning, or other uses.

- Data maintenance over time, so that once data sets are assembled, they not lost. This would likely require identifying and funding specific staff positions for ongoing maintenance of all relevant data bases.
- Fostering of a public sense of stewardship for water quality.
- Identification of all groundwater monitoring sites (~15,000) and access to their data, at least in geographic subsets. Since 911, there have been security issues with publicly displaying the locations of groundwater wells.
- Beyond data access, interpretation must be available in the form of report cards or other easily understandable indices.
- Endpoint analysis.
- Coordination and improvement of existing data management systems, rather than creation of a new, expensive, mammoth data base.
- Initial products that are narrowly scoped so that progress can be made on a reasonable scale.
- A focus on ambient data from ecologically valuable waterbodies. BMP evaluation data do not fit well in ambient data bases.
- Identification of the management questions and monitoring objectives associated with the data being captured and displayed. Coordination is most successful when management questions are most closely aligned.
- A one-stop shop for surface water and groundwater data that can be accessed and reviewed before new monitoring programs are mandated or initiated.
- Data comparability among grant projects and agency monitoring (as is being done by SWAMP).
- Inclusion of smaller streams and waterbodies (backwaters) where data are valuable for watershed assessments in NPS, TMDL, and agricultural waiver monitoring of source contributions. Small cities in rural areas should have facilities for storing or accessing local WQ data.
- Consideration of the intrinsic scale of an issue. For example, is copper a local issue, regional, statewide, national? Data management systems should reflect the geographic scale of the issue.

- Server networks. Open standards and protocols are available to create links among servers, but these standards need to be specified. WMS and WFS tools are built into everything created in the last 5 years. A linked server system allows local control and broad access without a mammoth database. The CWQMC should reach out to servers rather than force people to format and submit data.
- Timeliness. Reporting is slowed by QA review. Documented data quality and rapid data availability are desirable but conflicting components of information exchange. Systems need to consider rules for disseminating preliminary data, such as making certain data available to a limited set of users.
- Model support. Data should be available in formats useful for modeling. If you do a good job modeling, you need less monitoring.
- Recommendations for future monitoring design, including parameter suites that would add value to future monitoring results. Results from the EPIC project may be useful for indicator recommendations.

Decisions that will influence the CWQMC approach

1. Should information be presented as data or as report cards? (preference stated for report cards, with drilling options to source data.)
2. Should the focus be statewide or local? (May depend on the scope of the issue, but there were recommendations to provide locally relevant information.)
3. Types of data to focus on: surface water, drinking water, groundwater, ecological impacts? (Pick the low-hanging fruit.)
4. What should the baseline year be for data sets? How far back in time? (Depends on the questions asked.)

Assessment

The CWQMC should focus on assessment tools. There must be agreement among stakeholders, agencies, and public representatives on how report card grades are generated. Grades are short-hand for indices that are based on thresholds (including standards), but with consideration of history, objectives, metrics, and the reliability and weighting of indicators. (Previous workgroup discussions have included developing indices similar to popular

economic statistics, such as the index of leading economic indicators or consumer price index, which are readily understood by the interested public).

The CWQMC should avoid re-inventing the wheel and should adopt (and sometimes adapt) existing well-established grading systems. Examples include Heal the Bay grades for bacteria, sediment quality objectives (SQO), wetland assessments, and OEHHA consumption advisories. Assessment methodologies need to be readily accessible, scientifically defensible, and objective. The assessment process must be transparent so that all involved can see what is underlying the report cards.

Audiences for WQ information

The audiences need to be defined specifically, not generally as in “the public.” Audiences include agency staff, legislative staff, advocacy groups, and the general public inquiring about specific issues. However, to be successful, the CWQMC should initially limit the number of audiences and number of products targeted to those audiences. The 10-year plan should list and prioritize audiences. The matrix of waterbody types and beneficial uses may be helpful for prioritizing.

Potential impediments to collaboration

Data availability may be limiting for some types of assessments, and the CWQMC should not assume that useful products can currently be generated for all types of existing data. As an example, SQO assessments need three different parameters measured on each sediment sample; but for many sites, not all three are available. Data management should include identification of existing data gaps.

Collaboration is not efficient in many cases, and the CWQMC should identify or focus on data sets for which value is added by combining data from multiple monitoring programs.

Competition for funding among grant recipients and among agency programs can impede collaboration. The CWQMC should focus on making data available from multiple programs

rather than recommending coordination on grant proposals. The focus should be on adding value by combining data.

CWQMC Products and Timeline

The CWQMC's report to the Secretaries is due December 1, 2008. This should be a strategy document with recommendations for making water quality data accessible, and for streamlining and integrating future monitoring. There was general agreement that the CWQMC should (1) create web-based information products that combine data from multiple programs to meet the needs of specific audiences, and (2) as proof of concept, describe and support existing projects that provide data streams useful for combined assessments. Sponsors of the legislation did not envision a massive data infrastructure, but instead a network of linked nodes focusing on a limited set of parameters and a basic first-cut report card.

The SB1070 workgroup reported that the required inventory of monitoring programs was compiled by the workgroup and submitted prior to the April 1 legislative deadline.

Straw man website structure

Staff presented a matrix table drafted as an example entry point to link visitors to information currently available on the public website. There was general agreement that the table targeted an "insider" agency audience, as it required the user to know which agency would have the needed information. The CWQMC suggested an alternative approach that would present the links thematically (contaminant type, source activity, habitat type, geographic location, type of impact), rather than programmatically. The CWQMC was asked to consider what the column headings, link labels, or entry points should be to most effectively reach the audience. There should be multiple ways to get to the information sought. The CIWQS review addressed this topic, and should be consulted.

Staff should let the CWQMC know what constraints are placed on web design by the State Board administration.

Network Design

How do you design a network? It cannot just be all data everywhere. There need to be points of entry. Two possible routes were suggested, via statewide overview or via local waterbody, perhaps both through maps. The CWQMC must weigh in on how the data are brought in and assessed. Also, the CWQMC must decide how the system should be designed to merge and assess data.

Partner websites

Agencies have at times refrained from posting report card assessments on their official websites, but have allowed links to third party websites that post report cards based on accepted assessment procedures. One example is the State Water Board link to the Heal the Bay beach bacteria report card. This could be a viable option for the CWQMC. There are many programs that use State Board and other agency funds to develop and display WQ information; the CWQMC can link to these sites and put the CWQMC stamp on the information.

Staff should determine whether the State Board or other agencies have a policy that could affect the CWQMC's ability to link to partners. Note that server links can run both ways, so that non-State data could show up on a State site. Firewalls may be the biggest obstacles to desired linkages.

At least three types of agreements need to be set up and in place between the Board and partners hosting CWQMC data:

- (1) agreement to share data of known quality;
- (2) agreement on assessment tools and tool development processes;
- (3) transparency of assessment tools and tool development processes.

EPA has a federated system, the National Environmental Information Exchange Network (NEIEN), with data nodes and schema to allow data bases to talk to one another. EPA has funding to provide a node, which the CWQMC may wish to pursue. SWAMP has its data

base, but it is perhaps too complicated for most folks who could better access summaries through CEDEN. WQX (formerly Storet) can connect to CEDEN through schema.

The CWQMC could help in the partnering process by breaking down institutional impediments to data integration.

Agency (Water Board) staff should bring the CWQMC information on the status of CEDEN and BDAT.

Internet data portals

A list was made of existing monitoring data streams that provide opportunities for early incorporation into CWQMC data portals:

- the sediment quality objectives program
- wetlands monitoring (in conjunction with the WMC)
- the harmful algal bloom (HAB) monitoring network (in conjunction with the OPC)
- BEACH bacteria monitoring
- extremes monitoring
- indices of biological integrity (IBI) assessment tool development
- MARINE rocky intertidal habitat monitoring
- the San Francisco Bay Regional Monitoring Program (SFRMP)
- the San Joaquin Regional Monitoring Program (SJRMP)
- ongoing statewide SWAMP programs for fish tissue and stream monitoring
- the Groundwater Ambient Monitoring and Assessment (GAMA) Tulare study
- volunteer monitoring programs, such as clean water team and reef check
- CDFG's Cooperative Research and Assessment of Nearshore Ecosystems (CRANE)
- the NOAA National Mussel Watch program in California.
- USGS National Water Quality Assessment (NAWQA)
- the DWR data exchange network (CEDEC, which is a data portal, rather than a monitoring program)
- GeoTracker

In many cases, incorporation of data streams from these program would be a simple matter of documenting the program and creating the interface to it. In other cases, the data could be linked but additional data management or assessment would be necessary.

The CWQMC would add value by making existing data sets more accessible, linking programs that are not yet linked, and turning the combined data into information using transparent and widely-accepted assessment tools. Successful data management tools (such as those developed by the Central Coast Ambient Monitoring Program [CCAMP]) could be quickly applied to other programs, and these tools could help bring outside data into the SWAMP data base.

Monitoring programs at different stages of development could be included and evaluated in the CWQMC report, and accessed through web portals with various levels of enhancement. Different stages could be categorized as:

- (1) programs with finished products ready for public access;
- (2) programs with data that are in-hand and assessed, but not yet accessible via website (such as the SQO and SWAMP tissue assessment);
- (3) programs where some data are available but have not been assessed or posted (HAB, MARINE);
- (4) loose data.

Key elements for evaluating programs and combining data include common management questions, monitoring objectives, design, indicators, infrastructure, and assessment tools.

Portal design also needs to consider the scale of the themes addressed: local, regional, statewide, (national, global).

The CWQMC needs to evaluate what it will take to keep the data flowing to the portals.

CWQMC Report

Text from SB1070 Bill describing the reporting requirements:

SEC. 4. 13181. (b) The monitoring council shall report, on or before December 1, 2008, to the California Environmental Protection Agency and the Resources Agency with regard to its recommendations for maximizing the efficiency and effectiveness of existing water quality data collection and dissemination, and for ensuring that collected data are maintained and available for use by decision makers and the public.

The timeline and reporting strategy were discussed. The basic approach is for the workgroup staff and contractors to incorporate CWQMC ideas into drafts, and maintain communication with CWQMC subcommittees through emails and conference calls. Val, Brock, and John can build a detailed annotated outline of the report, which will include a one paragraph summary of each opportunity (as above) with a mini prospectus of the status of each program.

Staff and contractors currently available to assist with CWQMC products include two State Board staff positions (full-time) and two to three State Board contractors (% time currently uncertain). There was some discussion of funding availability. Contract timing limits funding options. It may be that \$20K to \$30K could be added to existing contracts. Other entities may have contract funds or staff time they would be willing to contribute in order to join the process. For example, building a harmful algal bloom portal could generate support from the Ocean Protection Council (OPC), or the Wetlands Monitoring Council (WMC) might provide support for a wetlands portal. The CWQMC suggested that workgroup staff attend the July 17 meeting of the WMC.

There was general agreement on a number of principles and details for the CWQMC process and products, and these were gathered into a structure for the 2008 report, as follows:

Report Chapter 1

Thematic portals as a guiding principle for information access

Page 1: “We believe there are good WQ monitoring data out there. The State needs to develop a series of linked, theme-based web portals to make those data available. Here are some case studies of themed projects.”

Report Chapter 2

Structure for program evaluation.

Evaluate existing programs based on how far they have progressed within each of the EPA 10 program elements (Strategy, Monitoring Objectives, Monitoring Design, Indicators, Quality Assurance, Data Management, Data Analysis and Assessment, Reporting, Programmatic Evaluation, General Support and Infrastructure Planning). This evaluation could also consider the level of commonality between programs for each element, to help identify opportunities for combining data streams.

Report Chapter 3

Proof of concept examples

Provide examples of thematic portals that link, combine, and assess data from multiple data streams. Examples could come from a programs at various levels of development.

Report Chapter 4

CWQMC Recommendations

Recommendations were not discussed in detail. The two general recommendation categories were (1) improved data access, through expanding and dedicating resources to thematic web portals, and (2) guidelines for future monitoring and implementation, including recommendations for (integrating?) regional monitoring. The CWQMC could evaluate whether regional monitoring is a good, cost effective way to do statewide monitoring.

Report Chapter 5

Implementation

No discussion yet on this topic.

Action items

- (1) Produce an annotated outline for the CWQMC report.
- (2) Determine the attributes of a good web portal site. Consider current data, historical conditions, and assessment approaches. Specify design requirements for what a site should do for target audiences, including decision makers, agency staff, and public constituencies; and consider the different options for how they will use it.
- (3) List and evaluate existing portals, including the EPA National Environmental Information Exchange Network (NEIEN) site, the Marine Life Protected Area site, and other WQ Monitoring Council sites.
- (4) Specify the technical design of the web portals: how they will turn paper and spreadsheets into data bases, and how data bases will be displayed and manipulated by the user.
- (5) Outline a portal concept for the harmful algal bloom network and present it to the Ocean Protection Council for their support. The next OPC meeting is Sept 11, but the HAB project is already being deliberated.
- (6) Engage the following groups (short list) and bring them into the discussion: SFRMP, SJRMP, Klamath RMP, SoCal Bight, SWAMP regional programs, and agency programs.
- (7) Other action items not listed at the end of the meeting are captured elsewhere in this summary.

Schedule for the remaining 2008 CWQMC meetings

August 18, October 15, November 17: All 10:00 to 3:00