



project clean water

## **Science and Technology Technical Advisory Committee**

The Project Clean Water Science and Technology Technical Advisory Committee began meeting in November 2000. Since that time, the TAC has provided direction and oversight on water quality-related scientific and technical issues throughout San Diego County. During the first phase of Project Clean Water (ending in July 2001), the TAC compiled a baseline inventory and initial assessment of priority science and technology issues. Based on this initial work, the TAC also developed a list of action items to implement during future phases of Project Clean Water.

The TAC continues to meet monthly to work toward the implementation of identified action items and to further characterize and address priority issues and concerns. During the First Annual Clean Water Summit the TAC will review and update as appropriate the action items listed below:

- 1. Complete a more detailed assessment of priority science and technology issues in January 2002.**
- 2. Characterize existing receiving water quality.**
- 3. Establish a baseline of potential health impacts to beach visitors.**
- 4. Support the development of rapid detection methods for bacterial contamination in coastal water.**
- 5. Investigate alternative approaches to recreational water monitoring that better integrate state-of-the-art scientific and technological tools and methodologies into management decision-making.**
- 6. Assess the impact of priority sources of water pollution, starting with aerial deposition of pollutants.**
- 7. Develop an integrated water quality management approach defined by the physical systems associated with watersheds, airsheds and land forms.**
- 8. Provide guidance on priority scientific and technical issues.**
- 9. Provide recommended standards for data analysis and reporting as necessary to further integration of results.**

# Science and Technology Technical Advisory Committee Action Item Progress Report

## **Action Item 1: Complete a more detailed assessment of priority science and technology issues in January 2002.**

The January 31, 2002 Focused Assessment reorganized existing action items and identified additional priorities for the TAC. The Focused Assessment serves two primary purposes. First, it provides a more structured framework within which existing and new action items can be evaluated and pursued. This framework addresses the following three priorities:

- Increasing cooperation and coordination between efforts,
- Develop a more comprehensive inventory of existing monitoring and research activities, and
- Improving existing approaches to recreational water monitoring.

Second, the Focused Assessment articulates other priorities of the TAC not initially identified in the first phase of Project Clean Water. Pursuant to Action Item 1, the TAC has initiated a project to compile, and make available via the Project Clean Water website, summarized information on water quality projects being conducted in the San Diego region. To this end, a partnership was established to utilize the existing Natural Resource Project Inventory (NRPI) (see <http://endeavor.des.ucdavis.edu/nrpi/>). This activity is closely related to, and builds upon, the baseline inventory completed by the TAC in June 2001.

## **Action Item 2: Characterize existing receiving water quality.**

The TAC has initially focused its efforts on providing critical review of the ongoing 2002 revision of the Impaired Waterbodies List for the San Diego Region. Sections 305(b) and 303(d) of the Clean Water Act require the San Diego Regional Water Quality Control Board (SDRWQCB) to assess receiving water quality to determine waterbodies that are not achieving beneficial uses. After initial discussion, the TAC concluded that it could contribute to this process in two important ways. First, it could provide critical review of the ongoing 2002 update. Second, the TAC could serve as a resource for improving the informational base and critical review process by which future updates are conducted.

In November 2001, the TAC carefully reviewed the draft list and submitted detailed comments focusing on specific technical concerns related primarily to data quality and data analysis techniques. Several members of the TAC also participated in a SDRWQCB Public Workshop on December 5, 2001. After the SDRWQCB forwarded their recommendations to the State Water Resources Control Board (SWRCB) in early 2002, the San Diego Regional 303(d) Workgroup was established to provide additional critical review. Several TAC participants were actively involved in this workgroup and provided testimony at the SWRCB Workshop on May 30, 2002. Comments developed by the TAC and the San Diego Regional 303(d) Workgroup are available on the Project Clean Water website.

A second and closely related direction pursued by the TAC involved investigating the feasibility of developing a summary compilation table of water quality criteria for the purpose of assisting managers and scientists with data interpretation. The TAC closely studied the document, *A Compilation of Water Quality Goals*, developed by Jon Marshack of the Region 4 Water Quality Control Board and a website developed by CalTrans (see [http://endeavor.des.ucdavis.edu/wgsid/wblist.asp?region\\_pkey=9](http://endeavor.des.ucdavis.edu/wgsid/wblist.asp?region_pkey=9)), which are considered to represent the current state of the art in water quality criteria compilation and visualization tools. Science and Technology TAC participants have concluded that a web-based, clickable GIS tool that allows users to access waterbody-specific information on beneficial uses and relevant water quality criteria would be extremely useful in the San Diego Region. The TAC is currently investigating the development of such a tool.

**Action Item 3: Establish a baseline of potential health impacts to beach visitors.**

As a starting point, the TAC reviewed epidemiological studies conducted by the US Environmental Protection Agency (USEPA) and the World Health Organization. Both of these reports based their microbiological recreational water standards on a summary of epidemiological studies conducted through 1996.

In addition to the epidemiological review, the TAC investigated other recreational water standards being used in the developed world. The TAC determined that while these standards do not establish a disease baseline, they show that protective standards to prevent disease are similar in different regions. The TAC will also monitor the forthcoming Mission Bay Epidemiological study to assess how this and other concurrent studies can be interpreted together to assess health impacts to users of the Bay. The TAC will also review the most recent draft of the Implementation Guidance for Ambient Water Quality Criteria for Bacteria prepared by the USEPA and submit comments on this document, if deemed appropriate. In addition, the upcoming USEPA epidemiological studies will be monitored.

The TAC will continue to identify different types of data and studies that are relevant to establishing a baseline of potential health impacts to beach visitors and will prepare a bibliography that will be available on the Project Clean Water website. Following this process the TAC will begin to interpret the different lines of evidence and develop a framework for evaluating these potential health impacts.

**Action Item 4: Support the development of rapid detection methods for bacterial contamination in coastal waters.**

Since the establishment of this action item, Assembly Member Nakano introduced Assembly Bill 639. This bill has been chaptered and requires the State Water Resources Control Board to develop a reliable, rapid, and affordable diagnostic test for measuring indicators of contamination by pathogens in coastal waters. The TAC will actively monitor the progress of this effort, as well as other individual efforts to develop and evaluate new methods (e.g., through collaboration with local academic and research institutions, etc.). Where possible, the TAC will also advocate the use of the San Diego community as a testing ground for comparing new methodologies to current accepted methods.

**Action Item 5: Investigate alternative approaches to recreational water monitoring that better integrate state-of-the-art-scientific and technical tools and methodologies into management decision-making.**

Because of the many different recreational water monitoring approaches, tools, and methodologies currently under development or investigation, the TAC recognizes the complexity and long-term nature of this Action Item. As a starting point, the TAC has identified two ways in which they can address this Action Item; (1) encourage researchers to pursue innovative and promising projects with direct application to recreational water assessment (such as the CODAR study being conducted in Imperial Beach), and (2) pursue funding (e.g. Proposition 40 and Clean Beach Initiative) to support these projects. The TAC will also work to compile information on potential alternative approaches and provide results via the Project Clean Water website.

**Action Item 6: Assess the impact of priority sources of water pollution, starting with aerial deposition.**

The TAC began assessing the importance of aerial deposition in San Diego County during Phase II of Project Clean Water. The TAC conducted an on-line literature review of air deposition research and monitoring projects in California, identified the common air contaminants considered to pose the greatest threat to water quality in the State, and summarized the sources, depositional pathways, and biological effects of these pollutants. Based on this initial investigation, the aerial deposition of nitrogen compounds appears to be the most widespread and significant in terms of potential water quality effects. The TAC's continuing efforts are therefore focused on developing a preliminary estimate of nitrogen deposition in a representative San Diego County watershed. The approach outlined in the EPA (2001) document, *Frequently Asked Questions About Atmospheric Deposition*, will be utilized for this purpose. Resources available to assist the TAC in this endeavor include the San Diego County Air Pollution Control District and the Sweetwater Authority, both of which are involved with atmospheric monitoring. The estimated completion date for this project is November 2002.

**Action Item 7: Develop an integrated water quality management approach defined by the physical systems associated with watersheds, airsheds and landforms.**

This action item is closely related to Action Item 6. Since this task will necessarily involve the exploration of a number of complex approaches addressed under separate regulatory programs, the TAC has partitioned its efforts into short-term and long-term elements. The short-term focus includes two primary elements; (1) the assessment of aerial deposition as a potential source of water quality impacts, and (2) the development of a strategy for assessing other key sources and integrating these into a comprehensive management framework and approach. A longer-term plan of action that strategically identifies and evaluates other physical systems (e.g., groundwater, etc.) will be developed over the next year.

**Action Item 8: Provide guidance on priority scientific and technical issues.**

Providing technical and scientific guidance to Project Clean Water is an ongoing function of the Science and Technology TAC. Over the past year, the TAC has addressed this mandate by continuing to explore each of the assigned action items and by continuing to identify and explore other priority issues and tasks that expand and redefine its work.

**Action Item 9: Provide recommended standards for data analysis and reporting as necessary to further integration of results.**

A multitude of existing programs gather data and information relevant to the Project Clean Water goal of integrating water quality management efforts to address regional priorities. Because of this, the TAC recognized the need to develop standards for the reporting and analysis of selected data sets to ensure their consistency. To date, work by the TAC and other technical workgroups has focused on standards development within the context of local stormwater management programs. Through the Copermitttee Monitoring Workgroup, standardized approaches have been developed to implement key monitoring program components (dry weather field screening and analytical monitoring, and coastal storm drain outfall monitoring). Data reporting standards will be drafted to support these programs by September 2002.

The Data and Information Management Workgroup has also explored the need for developing standards toward the integration of monitoring and other types of program data. The Workgroup is currently developing recommended standards to address Municipal Separate Storm Sewer System (MS4) digitization and various other program data. Many of these standardization issues focus on reporting requirements and data storage and management. To address the specific issue of MS4 digitization, the Workgroup recently created a sub-group to develop recommended digitization standards to support Permit compliance, satisfy Public Works/Flood Control needs, and meet long-term management needs, including computerized modeling. These standards will be completed by October 2002.