Watershed Information Center & Conservancy of Napa County

AGENDA

REGULAR BOARD MEETING

Thursday, October 27, 2005 at 4:00 p.m.
2nd Floor Conference Room, Hall of Justice Building,
1125 Third Street, Napa CA

1. **CALL TO ORDER & ROLL CALL** (Chairman/Staff)

2. **APPROVAL OF ACTION MINUTES**
   Regular meeting of July 28, 2005 and August 25, 2005 (Chairman)

3. **PUBLIC COMMENT**
   In this time period, anyone may comment to the Board regarding any subject over which the Board has jurisdiction, or request consideration to place an item on a future Agenda. No comments will be allowed involving any subject matter that is scheduled for discussion as part of this Agenda. Individuals will be limited to a three-minute presentation. No action will be taken by the Board as a result of any item presented at this time. (Chairman)

4. **ANNOUNCEMENTS** (Board/Staff)

   a. **"Promoting a Sustainable Water Future: Ag. Water Rights, Challenges & Opportunities"** a forum sponsored by the Napa County Farm Bureau, November 3, 2005 (Staff)

   b. CalFed Watershed Program is accepting nominations for **full scholarships to attend a "Watershed Partnerships Seminar**," February 27- March 10, 2006 (Staff)

   c. **Consideration of new 2006 Meeting Calendar** at next WICC Board Meeting (Staff)

   d. Others (Board/Staff)

5. **UPDATES/REPORTS:**

   a. Update on current County **General Plan Steering Committee activities and General Plan Update** process (Board/Staff)

   b. Board of Supervisor's to consider **approval of the WICC's 2005-06 Strategic Plan and expansion of the WICC Board's membership** on November 1, 2005 (Staff)

c. Report on **items to be discussed by the Board's Technical Advisory Committee (TAC)** on November 2, 2005 (Staff)

6. **REPORT, DISCUSSION AND POSSIBLE DIRECTION TO STAFF REGARDING RECOMMENDATION TO THE BOARD OF SUPERVISORS:**

   a. Report, discussion and possible direction to staff regarding the listing of the Napa River as water quality impaired and the **Total Maximum Daily Load (TMDL) process underway by the State Regional Water Quality Control Board to address sediment and pathogens pollution**; including TMDL development and implementation timeline, public meeting/workshop announcements and public comment opportunities and deadlines (Staff)

   b. Report, discussion and possible direction to staff regarding recommendation to the Board of Supervisors that a letter be sent to the State Water Resources Control Board commenting on the proposed **listing of the Napa River as water quality impaired due to excess mercury pollution** by the December 6, 2005 deadline (Staff)

7. **PRESENTATION AND DISCUSSION ON NAPA COUNTY'S FISHERIES RESOURCES; INCLUDING PAST, PRESENT AND POTENTIAL FUTURE ACTIONS TO BETTER UNDERSTAND AND MANAGE THIS AQUATIC RESOURCE:**

   Presentation and discussion on Napa County's fisheries resources; including past, present and potential future actions to better understand and manage this aquatic resource by Jonathan Koehler, Fisheries Biologist for the Napa County Resource Conservation District (Staff/RCD)

8. **FUTURE AGENDA ITEMS** (Board/Staff)

9. **NEXT MEETING:**

   Due to the Thanksgiving Holiday, the **Regular Board Meeting of November 24, 2005 will be canceled.** As a result, the Board will need to discuss having a Special Meeting in November or no meeting at all and meet next during the Regular Board Meeting of December 22, 2005.

10. **ADJOURNMENT** (Chairman)

Note: If requested, the agenda and documents in the agenda packet shall be made available in appropriate alternative formats to persons with a disability. Please contact Jeff Sharp at 707-259-5936, 1195 Third St., Suite 210, Napa CA 94559) to request alternative formats.

Watershed Information Center & Conservancy OF NAPA COUNTY

Members
Diane Dillon
Mark Luce
Lori Luporini*
Mark Van Gorder*
David Graves
Jeff Reichel
Phill Blake
Donald Gasser
Kate Dargan
Jeffrey Redding
Tom Shelton
Charles Slutzkin
Carol Kunze
Richard Camera

Alternates
Harold Moskowite
Karen Slusser

* Appointment pending 7/26/05

- MINUTES / ACTION SUMMARY -

REVISED AGENDA 7/25/05

REGULAR BOARD MEETING

Thursday, July 28, 2005 at 4:00 p.m.
2nd Floor Conference Room, Hall of Justice Building,
1125 Third Street, Napa CA

Staff Representatives

Patrick Lowe,
Secretary
Deputy Director,
Conservation Div., CDPD

Jeff Sharp,
Watershed Coordinator
Planner III,
Conservation Div., CDPD

Laura Anderson,
Counsel
Attorney IV,
County Counsel's Office

1. **CALL TO ORDER & ROLL CALL** (Chairman)

Meeting Adjourned

DUE TO LACK OF A QUORUM, THE CHAIR OF THE WATERSHED INFORMATION CENTER & CONSERVANCY (WICC) BOARD DECLARED THE REGULAR MEETING OF JULY 28, 2005, TO BE ADJOURNED TO THE REGULAR MEETING OF THE WICC BOARD TO BE HELD ON AUGUST 25, 2005, AT 4:00 P.M.

ALL ITEMS OF BUSINESS THAT WERE SCHEDULED BEFORE THE WICC BOARD FOR JULY 28, 2005, WERE CONTINUED TO THE REGULAR MEETING SCHEDULED FOR THURSDAY, AUGUST 25, 2005, AT 4:00 P.M. IN THE HALL OF JUSTICE BUILDING, SECOND FLOOR CONFERENCE/TRAINING ROOM, 1125 THIRD STREET, NAPA, CALIFORNIA.

Watershed Information Center & Conservancy OF NAPA COUNTY

Members
Diane Dillon
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Tom Shelton
Charles Slutzkin
Carol Kunze
Richard Camera

Alternates
Harold Moskowite
Karen Slusser

- MINUTES / ACTION SUMMARY -

REGULAR BOARD MEETING

Thursday, August 25, 2005 at 4:00 p.m.
2nd Floor Conference Room, Hall of Justice Building,
1125 Third Street, Napa CA

Staff Representatives

Patrick Lowe,
Secretary
Deputy Director,
Conservation Div., CDPD

Jeff Sharp,
Watershed Coordinator
Planner III,
Conservation Div., CDPD

Laura Anderson,
Counsel
Attorney IV,
County Counsel's Office

1. **CALL TO ORDER, WELCOMING OF NEW MEMBERS & ROLL CALL** (Chairman)
   Welcome Lori Luporini from the City of American Canyon and Mark Van Gorder from the City of Napa

   Members Present: Diane Dillon, Lori Luporini, Mark Van Gorder, David Graves, Jeff Reichel, Phill Blake, Donald Gasser, Charles Slutzkin, Carol Kunze, Richard Camera
   Members Absent Excused: Mark Luce, Jeffrey Redding
   Members Absent: Kate Dargan, Tom Shelton
   Staff Present: Patrick Lowe, Jeff Sharp

2. **APPROVAL OF ACTION MINUTES**
   Regular meeting of June 23, 2005 (Chairman)

   Outcome: Approved as presented.

   Note: Due to lack of quorum, the Board's regular meeting of July 28, 2005 was adjourned by the Secretary. All items of business before the WICC Board on July 28, 2005 will be heard during this, August 25, 2005, meeting.

3. **PUBLIC COMMENT**
   In this time period, anyone may comment to the Board regarding any subject over which the Board has jurisdiction, or request consideration to place an item on a future Agenda. No comments will be allowed involving any subject matter that is scheduled for discussion as part of this Agenda. Individuals will be limited to a three-minute presentation. No action will be taken by the Board as a result of any item presented at this time. (Chairman)

   Outcome: None presented.

4. **ANNOUNCEMENTS** (Board/Staff)

   a. Possible **WICC oversight of the Napa Valley Watershed Management Study and Plan** funded by the U.S. Army Corp of Engineers (Staff)

Outcome: Informational. Karen Rippey, U.S. Army Corps staff, outlined the framework of the Watershed Management Study and Plan. WICC staff informed the Board that the current contract is administered by the County's Flood District and that discussions with Flood District staff are underway. The County, as well as the Flood District Board, would need to approve the transfer of the contract to the County Board, who would then designate the WICC Board as its Advisory Committee to the contract and associated scope of work. The Watershed Management Study and Plan supports many of the efforts outlined in the WICC's Strategic Plan. Staff will continue to discuss the opportunity with Flood District staff and update the Board.

b. **WICC Board Member biographies and photographs needed** for the WICC WebCenter (Staff)

Outcome: Informational. Staff announced that only two Board Members have provided biographies and photographs for use in on the WICC WebCenter. The information will be used to add a human element to the WICC WebCenter and inform site users and the public of the WICC's Board of Directors and the community representation they embody. A reminder to provide this information will be sent to the Board by staff.

c. Others (Board/Staff)

Outcome: Informational. Friends of the Napa River (Bernhard Krevet) announced their 15th Annual River Festival/Symphony on the River on September 4, 2005. Resource Conservation District (Charles Slutzkin) announced locally sponsored Coastal Clean-up Day activities to be held through out the county on September 17, 2005. Staff announced the California Non-Point Source Conference in Sacramento, November 7-9, 2005; California Watershed Forum in Sacramento, September 28, 2005; Yuba River: People Saving Rivers, Watershed Protection Through Citizen Monitoring in Nevada City, October 18, 2005; and upcoming WICC WebCenter features under development that will facilitate watershed groups use of the site. The Wildlife Commission (David Graves) expressed an interest in participating and showcasing their work on the WICC WebCenter and requested a presentation to the Commission on the WICC from staff.

5. **UPDATES/REPORTS:**

a. Update and report from the WICC Board's ad-hoc subcommittee meeting of July 12, 2005 on their preliminary **development of a countywide watershed monitoring strategy** (Staff)

Outcome: Informational. Staff outlined the work conducted by the Board's Monitoring Strategy Sub-Committee on July 12th and explained the many issues and challenges facing the design and completion of a comprehensive monitoring strategy. A draft of the Strategy has been developed and will be reviewed by the Board's Technical Advisory Committee (TAC). TAC comments will be forwarded to the WICC's consultant (SFEI) working on the Strategy. The final draft will be forwarded to the Board for refinement and consideration. A more formal Monitoring Plan will be developed from the Strategy with greater public/stakeholder involvement. A brochure that outlines the basic framework and goals of the strategy will be developed and used to promote community awareness and participation in a larger watershed monitoring program.

b. Update on the August 23, 2005 Board of Supervisor's meeting and their consideration and **possible direction to the WICC Board to review draft materials associated with the Napa River TMDL** process underway by the California Regional Water Quality Control Board (RWQCB) (Staff)

Outcome: Informational. On Tuesday, August 23, 2005, the Supervisors directed the WICC Board to monitor the TMDL process and provide the County Board comment on the progression and development of proposed TMDLs for the Napa River. Supervisor Dillon felt the WICC would be a good forum for initial community discussions regarding the proposed TMDLs; particularly as the WICC has expressly voiced its desire to expand its membership to be more inclusive by including a representative from each city/town in Napa County rather then just two representatives nominated from the City Selection Committee. She reminded the WICC Board that mandated TMDLs from the State Water Board are not just a County jurisdictional concern, but will impact all jurisdictions within the Napa River Basin. Use of the WICC Board's TAC and the establishment of an ad-hoc committee to focus on the matter were also discussed. The WICC Board also discussed the possibility of soliciting further outside technical review of the current TMDL technical reports, pending concurrence and

support from the County Board. Phil Blake suggested that the WICC Board could play a valuable role in assisting Regional Water Board staff to design acceptable and suitable management practices that work for our local community. The members agreed that the WICC is a conducive environment for the community to voice its concerns and comments on the TMDL process and that the WICC could provide an instructive role in educating the community on the matter (a workshop was suggested). It was decided that the WICC would keep a standing item on its agenda to allow for discussion and input on the proposed TMDLs.

6. **PRESENTATION, DISCUSSION AND POSSIBLE RECOMMENDATION TO THE NAPA COUNTY BOARD OF SUPERVISORS THAT THE COUNTY BOARD OF SUPERVISORS ADOPT THE 2005-06 STRATEGIC PLAN PROPOSED BY THE WICC BOARD:**

   Presentation, discussion and possible **recommendation to the Napa County Board of Supervisors that the County Board of Supervisors adopt the 2005-06 Strategic Plan proposed by the WICC Board** prepared from Board Member interviews, Board discussion during its May 9, 2005 Strategic Planning Workshop, comments received on Draft Executive Summary and direction and prioritizations provided at the Board's June 23, 2005 Regular Meeting. (Staff)

   Outcome: (Note: This item was considered after #8) Direction. The final draft of the WICC Board's Strategic Plan was presented. The Board remarked on the Plan's use of color, format and font and was pleased with the finished product. It was mentioned that the Plan contained a recommendation to expand the WICC Board's membership to include a representative from each city and town in Napa County. The Board requested that staff provide occasional updates on the WICC's progress towards fulfilling the goals, objectives and action items outlined in the Plan (a quarterly progress-report was suggested). The Board directed staff to present the Plan to the County Board of Supervisors for their consideration, as well as the recommendation contained therein to expand the WICC Board's membership.

7. **REPORT, DISCUSSION AND POSSIBLE DIRECTION TO STAFF ON COORDINANTING A LOCALLY CONSOLIDATED PROPOSAL TO THE STATE WATER RESOURCES CONTROL BOARD CONSOLIDATED GRANT PROGRAM 2005-06:**

   Report, discussion and possible direction to staff on **coordinating a locally consolidated proposal and list of projects for application to the State Water Resources Control Board's Consolidated Grants Program 2005-06**, which will include meeting with interested organizations and stakeholders and assisting with local and regional watershed funding meetings and assessment needs. Funding will include activities such as stewardship assistance, on the ground projects, habitat assessments, and watershed planning and monitoring efforts. The County Board of Supervisors will ultimately need to consider and approve any grant application developed and submitted on behalf of the WICC resulting from this effort (Staff)

   Outcome: (Note: This item was considered before #6) Direction. The Resource Conservation District (RCD) has been monitoring the State Board's Consolidated Grant process outlined the program and the status of the grant proposal guidelines. The WICC Board directed staff to follow the program's development closely, review and comment on the draft guidelines as appropriate and assist other groups along with the RCD to coordinate local funding priorities and grant preparation as needed to increase the likelihood of grant approval/award.

8. **REPORT, DISCUSSION AND POSSIBLE RECOMMENDATION TO THE NAPA COUNTY BOARD OF SUPERVISORS THAT THE COUNTY BOARD OF SUPERVISORS REQUEST THAT WATERSHED COORDINATOR FUNDING BE INCLUDED IN A NEW BOND ACT FOR 2006:**

   Report, discussion and possible **recommendation to the Napa County Board of Supervisors that the County Board request that Watershed Coordinator funding be included in a new bond act currently proposed for 2006**, (SB 153) the California Clean Water, Clean Air, Safe Neighborhood Parks (sponsored by Senators Chesbro, Kehoe, Kuehl, Perata, Simitian, and Torlakson). This bill is very similar to

Proposition 40. If approved by voters, it would authorize $3 billion in bonds for a variety of land conservation purposes. Currently $32,000 of the WICC's annual staff time is funded with Watershed Coordinator Funding presently awarded through a grant from the California Dept. of Conservation. That level of current funding is expected to expire during 2007 (Staff/RCD)

Outcome: (Note: This item was considered after #7 and before #6) No action. Resource Conservation District staff updated the WICC Board on the status of the bill and informed the Board that that no action is needed at this time as the bill is not likely to move forward to a vote by the legislature. If future support is warranted, the matter will be brought back to the Board for their consideration. As a result of the update, no action by the WICC Board was taken on this item.

9. **FUTURE AGENDA ITEMS** (Board/Staff)

Outcome: Don Gasser expressed concern over potential short and long-term (bird) wildlife impacts associated with the use of noise cannons to ward off bird predation on vineyard crops. A discussion on the use of cannons and alternate vineyard protection measures (netting, distress calls, falcons) followed. The control and management of birds near the County Airport was also brought up. No agenda item was requested, but the concern was brought up and a request was made for more information on the matter.

Kate Dargen requested some time on the October meeting to provide an update on a test of Hyperspectral Imaging over a section of Napa County.

10. **NEXT MEETING – Regular Board Meeting of September 22, 2005 – 4:00 PM**
Hall of Justice Building, 2nd floor Conference Room, 1125 Third Street, Napa

11. **ADJOURNMENT** (Chairman)

If requested, the agenda and documents in the agenda packet shall be made available in appropriate alternative formats to persons with a disability. Please contact Jeff Sharp at 707-259-5936, 1195 Third St., Suite 210, Napa CA 94559) to request alternative formats.

Promoting a Sustainable Water Future:

Ag Water Rights, Challenges & Opportunities

An Information Packed Forum Addressing Today's Critical Farming Water Issues!

Here are some of the topics our panel of experts will address:

- **Al Kalin, Farm Advisor for the successful Imperial County voluntary TMDL program will explain how you can survive and thrive in the face of state and federal regulations!**

- **Don Ridenhour, Napa County Assistant Public Works Director will present the 2050 Water Supply/Demand Study and answer the question, "Do we have enough water in Napa County?"**

- **Whose Water is it? A informative presentation on Surface and Ground Water Rights and Groundwater Management by attorney Jan Goldsmith & engineer Mike Praul.**

- **Also Covered...Recycled Water Opportunities, Reservoir Management, Fish Friendly Farming and Stream Diversions.**

Sponsored by Napa County Farm Bureau

Thursday, November 3, 2005 1-5 pm

Native Son's Hall, 1313 Spring Street, St. Helena

Cost: $20 each - Napa County Farm Bureau Members
$50 each - non-members; *Registration fee waived by joining Farm Bureau!*

Promoting a Sustainable Water Future

Attendee(s):_____ Company:_____

_____ Phone: _____

Membership Number or Name _____

Credit card # _____Exp. date _____

Signature _____

Please complete and detach this portion and send with your check or credit card information to:

Napa County Farm Bureau (NCFB) * 811 Jefferson Street * Napa, CA 94559 * PH: 224-5403

CALFED Watershed Program
Watershed Partnerships Seminar

February 27—March 10, 2006
Lake Natoma Inn, Folsom, CA

Scholarships Now Available!

This two-week seminar provides strategies and tools for working effectively in community-based and locally-led watershed management. Participants will explore current community-based projects and state-of-the-art approaches through interactive presentations by experienced practitioners. In small group settings, participants will actively hone the personal and collaborative skills necessary to work with diverse stakeholders in dynamic groups. They will realize the relationships that leadership, creativity, science, assessment, plant and animal ecology, and modeling play in sustaining healthy watersheds.

The Seminar will include:

- Practice in a variety of scientific, technical, interpersonal and innovative skills needed to develop effective locally-led environmental management
- Participation in a learning group that challenges, takes risks, explores new ideas and behaviors, and manages conflicts to gain new insights
- Application of science, technology and leadership skills to improve collaboration with others
- Practice in new ways of communicating and achieving goals in a range of real situations
- Experience in ways group diversity can be used to achieve peak performance
- Sharing of in-the-field experiences, issues, conflicts, solutions and methods

Participants can expect to:

- Acquire skills and technical knowledge to work effectively with a variety of other stakeholders
- Develop perspectives and techniques to strengthen local watershed partnerships
- Study scientific and technical elements of watershed assessment and planning
- Recognize how behaviors and attitudes can contribute to or erode group effectiveness
- Experience how imagination, innovation and commitment help build effective local watershed management
- Learn the relationship between watershed science and watershed management

The CALFED Watershed Program is seeking nominations for FULL SCHOLARSHIPS to attend the Seminar. Nominations are due by NOVEMBER 15, 2005 (nomination form attached.) Space is limited—no more than 40 students will be selected for this program.

Selected nominees will be granted a full scholarship to attend the Seminar (a $3,200 value). Room, food, tuition and materials are included. Participants are expected to stay at the hotel for the entire Seminar: Monday through Friday of first week, Monday through Thursday of second week, with weekend stay optional, but encouraged.

Desired Candidates:

Participants will be selected to provide a high degree of diversity in the Seminar. Some of those we seek include: County and City elected officials, state and federal agency managers, environmental group members, agricultural representatives, educators, business interests, legislative staff, water purveyors and managers, recreation industry representatives, media representatives, developers and contractors, and others with an interest in local watershed management, and who may wish to improve their skills in community-based, locally-led environmental management.

Scholarship recipients will be selected from among the nominees based on their likely contribution to furthering the objectives of locally-driven, community-based watershed management in the Bay-Delta system. Prior experience in watershed management is not a pre-requisite for consideration. The selected class will represent a broad range of backgrounds, management perspectives, geographic locations, occupations, experience and expertise. The applicant's potential to have an effect in natural resource management of the Bay-Delta system will be an important consideration.

Demand for this class is high, and space is limited to no more than 40 people in each Seminar. It is intended to improve management capacity, personal awareness, and collaborative skills of those who attend. The class is particularly helpful for those in middle to upper management positions, who must make difficult decisions on a regular basis, and those whose performance depends on constructing consensus among a diversity of perspectives and opinions.

What the Seminar Includes:

The Seminar faculty includes major policy makers, agency managers and directors, non-government entities, and nationally known experts in many topics. The topics are varied, and presented through lectures, interactive exercises and hands-on learning. The format of the Seminar typically allows for interaction with the faculty, as well as continued interaction with other students during and outside of classroom activities.

A sampling of topics:

- Conflict management
- Teamwork and collaboration
- Watershed science
- Performance and status monitoring
- Organizational Development
- Facilitation (both meetings and processes)
- Policy development—local, national, and federal
- Management science
- Program management and implementation skills

The Seminar also includes presentations from successful projects across the state, along with "lessons learned" from those projects and programs. The class features an all-day field trip in the second week, along with class construction of a watershed management plan for a specific local watershed.

More Details About the Seminar:

The Seminar begins on Monday afternoon of the first week, and concludes late on Thursday evening of the second week. There will be planned time during each day for participants to respond to emails, check messages, respond to urgent issues, etc…. Evenings and much of the intervening weekend are often spent voluntarily working on team assignments.

Participants in the Seminar will build new networks of peers that have proved valuable to past class members. The network will include past graduates of the Seminar, and will feature a web-based forum to maintain connections and exchange ideas and experiences with all alumni of the CALFED Watershed Program Partnerships Seminars and many of the Seminar faculty.

Clear Form Print Form

CALFED Watershed Program
Partnership Seminar Scholarship Application Form

Please submit your recommendation of a person or persons (use a separate form for each nomination) to attend the CALFED Watershed Program Partnerships Seminar from February 27, through March 10, 2006.

Return form by November 15, 2005, to Julie Alvis (jalvis@calwater.ca.gov) or Dennis Bowker (dennisbowker@volcano.net). Or, return via U.S. Mail to Partnerships Seminar, CALFED Watershed Program, 650 Capitol Mall, 5th Floor, Sacramento, CA 95814, Attn: Julie Alvis. Thank you!

Nominee Information

Name:

Title or Position:

Company/Affiliation:

Address (include city, state and zip code):

E-mail:

Telephone:

Nominator Information (self nominations acceptable)

(For self nominations, please indicate "Same as above.")

Name:

Title or Position:

Company/Affiliation:

Address (include city, state and zip code):

E-mail:

Telephone:

Clear Form Print Form

Summary of Qualifications

Please answer each of the following questions in a paragraph or two.

1. How will the nominee contribute to improving and strengthening community-based watershed management in the Bay-Delta system?

2. What experience, skills, and knowledge will this nominee bring to the Seminar and to the other Seminar participants?

Clear Form Print Form

3. Which skills or areas of knowledge are likely to be most important or useful for this nominee to take away from the Seminar?

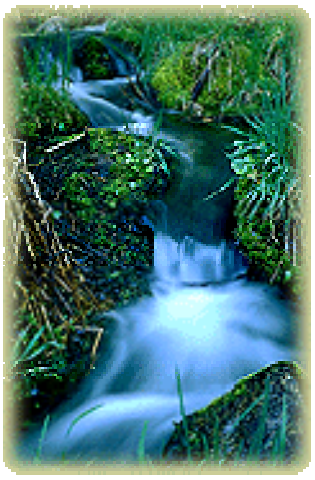
4. What other information (such as volunteer activities, recreation activities, awards, etc…) do you feel is important for us to consider when reviewing this nomination for a Seminar scholarship?

Submit Form via e-mail

CALFED BAY-DELTA PROGRAM

Watershed Program

About the CALFED Watershed Program



The Watershed Program was established in 1998 as an aid to achieving the overarching goal of the CALFED Bay-Delta Program to restore ecological health and improve water management by working with the community at a watershed level. The goals of the Watershed Program are to provide financial and technical assistance for watershed activities that help achieve the mission and objectives of CALFED, and to promote collaboration and integration among community based watershed efforts.

RESOLUTION NO. 05- ____

A RESOLUTION OF THE BOARD OF SUPERVISORS OF THE COUNTY OF NAPA, STATE OF CALIFORNIA, ADOPTING A 2005-06 STRATEGIC PLAN FOR THE WATERSHED INFORMATION CENTER AND CONSERVANCY BOARD AND AMENDING RESOLUTION NO. 04-26 AND RESOLUTION NO. 04-77 REGARDING MEMBERSHIP ON THE WATERSHED INFORMATION CENTER AND CONSERVANCY BOARD

WHEREAS, on May 21, 2002, the Board adopted a resolution creating the joint Napa River Watershed Conservancy and Watershed Information Center Board (the "Conservancy/WIC Board") and the composition of the members of the Conservancy/WIC Board. The Conservancy/WIC Board was later renamed the Watershed Information Center and Conservancy Board of Napa County (the "WICC Board");

WHEREAS, on March 25, 2004, the WICC Board adopted its first Strategic Plan;

WHEREAS, the WICC Board has recommended certain changes to its previously adopted Strategic Plan to better reflect the WICC Board's vision and guiding principles. Those changes are reflected in the "Watershed Information Center and Conservancy of Napa County Final 2005-06 Strategic Plan, dated August 2005" (the "2005-06 Strategic Plan") which the WICC Board recommends that the Board of Supervisors adopt;

WHEREAS, one of the recommendations in the 2005-06 Strategic Plan is to expand the WICC Board to include one representative from each city or town in Napa County. Currently, the WICC Board's city representation is limited to two city members and one alternate city member. The city members and alternate city members are currently nominated by the City Selection Committee;

WHEREAS, having a representative from each city or town in the County on the WICC Board will promote broader public outreach and community dialogue of the WICC Board's visions and goals. The additional representatives from each city or town in the County will also reduce the need to have an alternate city member;

NOW, THEREFORE BE IT RESOLVED that the Board of Supervisors of the County of Napa hereby resolves as follows:

1. The 2005-06 Strategic Plan is hereby adopted and the WICC Board is directed to act in accordance with the guiding principles and actions contained therein.

2. Resolution No. 04-26 regarding two city members nominated from the City Selection Committee and Resolution No. 04-77 regarding an alternate city member nominated from the City Selection Committee are hereby amended so that instead of two city members nominated by the City Selection Committee, there shall be one representative from each city or town in Napa County nominated by the city manager or town manager from each city or town. There shall no longer be an alternate city or town member on the WICC Board.

3. All other terms and provisions of Resolution No. 04-26 and Resolution No. 04-77 not in conflict with the terms and provisions of this Resolution shall remain unchanged and in effect.

4. The County Executive Officer is directed to place a copy of this Resolution, or appropriate summary thereof, in Part II of the Napa County Policy Manual, Section 24 in place of the previous Section 24.

5. This Resolution is exempt from CEQA pursuant to Title 14 CCR Section 15061 (b)(3), as it can be seen with certainty that there is no possibility that the proposed action may have a significant effect on the environment and therefore CEQA is not applicable.

THE FOREGOING RESOLUTION WAS DULY AND REGULARLY ADOPTED by the Board of Supervisors of the County of Napa, State of California, at a regular meeting of said Board held on the 1st day of November, 2005, by the following vote:

AYES: SUPERVISORS _____

_____

NOES: SUPERVISORS _____

ABSENT: SUPERVISORS _____

_____

DIANE DILLON, Chairperson
Napa County Board of Supervisors

ATTEST:
PAMELA A. MILLER
Clerk of the Board

By: _____

Approved As To Form
Office of County Counsel

By: Laura J. Anderson (email signature)
Deputy County Counsel

Date: October 11, 2005

Approved by the Napa County Board of Supervisors

Date: _____

Processed by:

_____
Deputy Clerk of the Board

. . planning/WICC BOARD/RADOPTSTRATPLAN-CITYMEMNS.doc

A Watershed Monitoring Strategy for Napa County
DRAFT

Prepared for Watershed Information Center and Conservancy Board

Prepared by Jennifer Hayworth and Rainer Hoenicke
San Francisco Estuary Institute

August 2005

Table of Contents

Acknowledgments

Production of this document was possible through support and funding from the following: the Napa County Board of Supervisors, the Napa County Watershed Information Center & Conservancy (WICC) Board, and members of the WICC Technical Advisory Committee (TAC) including Phillip Blake (NRCS), Jeff Reichel (Land Trust of Napa County), Richard Camera (Hess Collection), Don Gasser and Kate Dargan (Napa Co. Fire Marshall), and Patrick Lowe (Napa County Conservation, Development, and Planning Department). In particular, we would like to thank Jeff Sharp (Napa County Conservation, Development, and Planning Department) for his coordination efforts, technical guidance and editorial review. We thank Linda Wanczyk (SFEI) for graphic design work on the document. This plan draws on elements from other on-going efforts to develop sound watershed and monitoring implementation plans, and we gratefully acknowledge those resources including the USEPA and the California State Water Resources Control Board.

Executive Summary

MONITORING STRATEGY PURPOSE

The Napa County Watershed Information Center & Conservancy (WICC) updated its Strategic Plan in the summer of 2005. A key goal of the Plan is to *improve watershed health throughout Napa County by supporting community efforts to protect and enhance watershed lands and natural processes with an emphasis on riparian corridors and native species and their habitats.* Development of a monitoring strategy is a necessary first step toward this goal. Within the context of the WICC Strategic Plan, monitoring is a key management action for tracking success of natural resource protection and restoration efforts and assessing and reporting on the long-term environmental health and socio-economic well being of Napa County's watershed lands. Where public expenditures are used for watershed management activities, good information based on monitoring data is a requirement for gaining and maintaining public confidence. Because ecosystems are complex, monitoring information is also a key component needed for adaptive watershed management. Adaptive management is a systematic process for continually improving management policies and practices by learning from the outcomes of operational programs. Its most effective form–"active" adaptive management–employs management programs that are designed to experimentally compare selected policies or practices, by evaluating alternative hypotheses about the system being managed.

ESSENTIAL ELEMENTS

Development and implementation of a monitoring plan follow a logical progression, and contain ten essential elements as outlined by the US EPA. These are:

- Clear management goals and monitoring objectives,
- Assessment questions formulated directly from goals,
- Monitoring program design,
- Indicator selection,
- Quality assurance,
- Data management,
- Data analysis and assessment,
- Program reporting,
- Programmatic evaluation,
- General support and infrastructure planning.

1. Management Goals and Monitoring Objectives

WICC has begun to identify conservation and planning goals based on community needs and interests for the county's watersheds, including broad goals established for the Napa River Watershed and the watersheds of upper Putah and Suisun Creeks. TMDLs for sediment, pathogens, and nutrients have also been proposed or are being developed (in the case of nutrients) for the Napa River Watershed. Each TMDL implementation plan is based on adaptive and performance-based management principles, and monitoring information will provide the basis for flexible and most cost-effective implementation for achieving allocation targets. Candidate watershed goals as proposed by WICC are derived from the broader watershed goals and in consideration of proposed TMDLs target allocations. They are:

- Protect and enhance watershed lands and natural processes
- Achieve improved watershed health
- Protect and restore water quality and beneficial uses
- Continuously apply new information and lessons learned from management action or inaction to adjust future steps

A set of monitoring objectives specific to support the above goals are also proposed:

- Characterize watershed conditions and trends using appropriate indicators of "healthy" watershed processes and valued ecosystem components
- Improve the condition of the county's water bodies recognized as having beneficial use impairment problems
- Prevent degradation of intact water bodies throughout the county
- Prioritize beneficial use protection and restoration activities
- Insure monitoring information is used in decision-making

2. Assessment Questions

The next step in implementing the monitoring strategy is to derive assessment questions related to each goal and objective that are designed to provide answers relevant to the specific needs of Napa County watershed protection. These questions can be developed on several scales and arranged in hierarchical order into an increasingly specific set of questions. Appropriate assessment questions help guide the design of the monitoring program and can focus monitoring expenditures commensurate with the level of uncertainty, potential implementation costs, and risks of inaction.

3. Monitoring Program Design

A carefully laid out monitoring strategy saves management time and money. An effective monitoring strategy design must consider many factors, including available resources (budget, personnel, current and past data gathering efforts), design adaptability, data quality issues such as comparability and scientific robustness, and suitable design approaches that can yield data for all levels of assessment questions posed. The design should allow for monitoring at various spatial and temporal scales utilizing multiple indicators, as this provides greater weight of evidence for decision-making. An integrative design approach is recommended to accomplish this. A suitable framework that incorporates these principles has been developed by USEPA and consists of three levels: 1) Inventory of watershed resources (e.g., habitat types, water body types); 2) rapid assessment of condition using appropriate indicators; and 3) more detailed or intensive monitoring and assessment of relationships between watershed management actions and watershed health indicators. This framework of three levels was recently incorporated into the statewide monitoring strategy for surface waters under the State Water Resource Control Board's Surface Water Monitoring and Assessment Program (SWAMP). The methodology is currently applied to wetlands and riparian habitat under the California Wetlands Inventory and the California Rapid Assessment Methodology.

Prioritization of data collection efforts will need to be governed by WICC's prioritization of the assessment questions, with particular interest in addressing the protection/prevention of impairment in currently intact water bodies, as well as the potential progress toward delisting impaired water bodies.

4. Watershed Indicator Selection
An important element of the monitoring implementation strategy is to identify watershed health indicators that correspond with the prioritized assessment questions, and that are chosen considering the balance between cost and achievable results. A list of preliminary watershed indicators specific to Napa County concerns should be chosen so that they reflect representative geographic areas and ecosystem functions and components.

5. Quality Assurance
Monitoring strategy implementation will include development of data quality objectives for the chosen parameters, data verification, as well as validation and audit procedures for laboratories and field sampling.

6. Data Management
A WICC Board goal is to make credible ambient monitoring data and information available to all stakeholders in a timely and accessible manner. The foundation for a cooperative information management system will likely require a centralized storage database designed around a sample-driven model capturing geospatial data for every indicator sample collected and transferred into the WICC WebCenter. Several key elements must be considered in the process, including developing guidelines to maintain data quality and comparability, data verification and validation, and development of and training on data tools for effective information sharing.

7. Data Analysis and Assessment
To achieve the goal of providing a consistent, defensible framework for the evaluation of monitoring data relative to state and countywide standards, a methodology for assessing watershed conditions relative to various benchmarks and guidelines must be developed. The methodology must incorporate key elements such identifying available data and procedures used to collect it, document requirements relating to data quality issues, include or reference procedures for evaluating the quality of datasets, and explain data reduction procedures appropriate for comparing data to applicable water quality standards and land use goals. Data from different sources need to be of known quality and in a consistent format.

8. Program Reporting and Communication
The WICC WebCenter provides one tool for a variety of users to access data for reporting purposes. However, summary reports and condition assessments require additional tools that are currently not available at the county level and will require considerable resources to maintain. Monitoring strategy implementation also requires thought on the frequency of reporting required for timely management intervention for critical parameters or for policy development (e.g., adjustments in conservation ordinances or building codes), and appropriate reporting media and venues.

9. Programmatic Evaluation
The strategy should incorporate periodic external scientific and administrative reviews to obtain feedback on program validity and effective implementation to meet the needs of the County. Approximately five years of data collection and interpretation are required to evaluate

lessons learned, to determine the degree questions have been answered that formed the rationale for the monitoring program, and propose adjustments.

10. General Support and Infrastructure Planning

Several elements must be considered in the strategy in order to foster institutional collaborations and coordination, including County staff time and training needed to run the monitoring program, scientific laboratory needs, funding necessary and potential funding mechanisms available, and support required for grant writing and other activities. The Strategy will likely be implemented with a wide variety of funding sources, examples of which may range from federal, state, and private foundation grants to voluntary contributions, General Fund allocations, impact fees on products and activities that diminish watershed health (e.g. impervious surface cover), or fines imposed on violators of land use regulations. However, a minimum level of long-term and reliable funding is required to maintain a trend record and understanding of changes in core watershed health indicators.

1. Introduction

1.1 Background

The Napa County Watershed Information Center & Conservancy (WICC) Board adopted an updated strategic plan in 2005 that included five thematic goal categories: (1) Watershed Conservation and Management; (2) Watershed Information Center and Conservancy Website; (3)Communication, Coordination, and Partnerships; (4) Education; and (5) Organizational Structure and Funding (PMC Conservation and Resource Planning Group, 2005). One of the specific goals in the first category is to: *Coordinate and facilitate watershed planning, research, and monitoring efforts among Napa County organizations, agencies, landowners, and citizens*. The development of a monitoring strategy is a necessary first step toward this goal.

Monitoring in the most general sense is the periodic or continuous collection of data (measured parameters) using consistent methods. Within the context of the WICC Strategic Plan, monitoring is a key management action for tracking success of natural resource protection and restoration efforts and assessing and reporting on the long-term environmental health and socio-economic well being of the Napa County's watershed lands. Where public expenditures are used for watershed management activities, good information based on monitoring data is also a requirement for gaining and maintaining public confidence. Because ecosystems are complex, monitoring information is needed for adaptive watershed management.

1.2 Adaptive Management

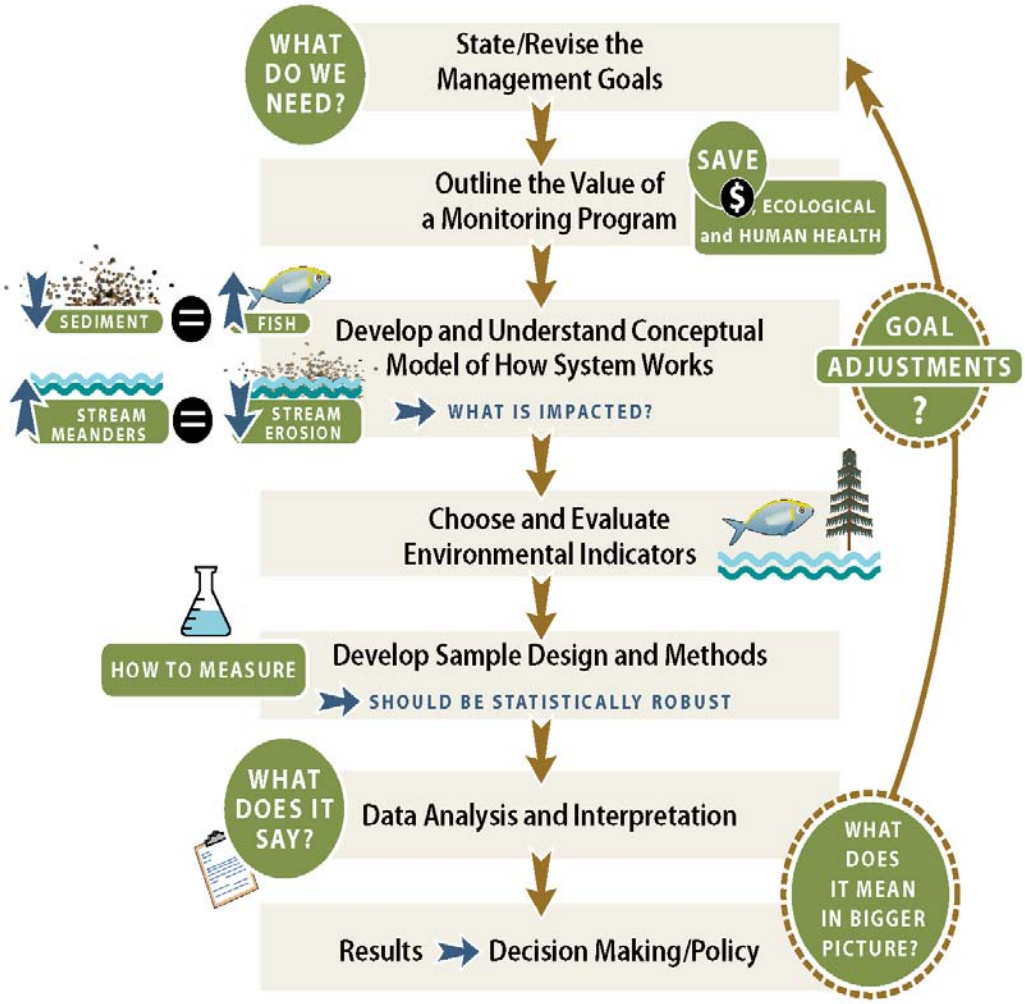
Adaptive management is a process that employs research and monitoring to allow certain projects and activities to proceed despite some uncertainties and risks regarding their consequences. Adaptive management approaches decision-making as a structured process to reduce the costs of management experiments with increasing opportunities for social learning. Adaptive management should be used to continually revise and update goals and methods to help reduce the inherent uncertainty associated with watershed enhancement and protection activities. Adaptive management increases understanding why certain actions work and others do not. Expressed differently, adaptive management is the opposite of the usual trial and error approach, where decisions are made without the required information to evaluate risks of failure (wasted expenditures) or risks of inaction (and the possibility of continued declines in quality of life issues and watershed health).

Monitoring represents an important element in a feedback loop to insure that human activities (watershed management activities) intended to achieve a desired set of conditions actually perform in the most socially efficient manner. Proper monitoring provides adaptive management the required feedback and assessment information. Informative monitoring insures that management systems respond to changing watershed conditions and processes, including the human communities that affect and are affected by them.

1.3 Essential Elements of a Monitoring Strategy

Napa County and the WICC Board are fortunate to be able to build on numerous similar monitoring strategy development efforts throughout the nation. Figure 1 provides a sketch of the required elements, beginning with an assemblage of management goals and objectives that can be used to develop assessment questions at increasing levels of specificity.

Figure 1. Strategy for Development and Implementation of a Monitoring Plan



Several challenges exist in developing a meaningful and sustainable monitoring system. One challenge lies in the selection of an appropriate mix of monitored parameters that can be combined into a set of indicators representative of environmental conditions that are responsive to changes in management actions. In most cases, it is unclear what metrics should represent progress toward broad goal statements (e.g., "protect sensitive lands"). Furthermore, watersheds, including their social, cultural, and economic elements, are complex systems with a large number of variables. Complete certainty about the desired effects of a specific management practice on environmental conditions is in most cases impossible. The correct mix of parameters providing just the right weight of evidence can help improve the likelihood of moving ahead with sound decisions. What the "right weight of evidence" is depends on the risks of inaction or business as usual (e.g. possible species extinction, periodic flood damage to fellow community members downstream) and the investment necessary to implement a set of actions. Therefore, investment in monitoring, as part of the adaptive management cycle, needs to be commensurate with the potential costs of course corrections toward more sustainable practices and the magnitude of short- and long-term risks to the environment and society if no action is taken. A well-established tool for dealing with monitoring challenges is to begin with broad goal statements and develop appropriate monitoring objectives. From the developed goals and objectives, specific assessment questions relating to each goal are then derived.

2. Management Goals

2.1'Community Goals' for Napa County's Watershed Lands

WICC has begun to identify conservation and planning goals based on community needs and interests for the county's watersheds. Broad goals have first been established for the Napa River Watershed and expanded to encompass the watersheds of upper Putah and Suisun Creeks. These are:

- Protect sensitive lands;
- Facilitate restoration of priority habitats;
- Support existing watershed stewardship programs;
- Partner with cities to address urban impacts and cost sharing; and
- Conduct fundraising to support monitoring;
- Coordinate research, monitoring and data management;
- Conduct public outreach and education; and
- Coordinate compilation of baseline watershed conditions.

In addition, the upper Putah Creek agricultural community is part of a larger coalition group under specific regulatory conditions waiving discharge requirements (e.g. surface water runoff) for irrigated agricultural facilities and has signed on to the goals the Central Valley Regional Water Quality Control Board expressed in its formulation of the Waiver Conditions (CVRWQCB 2003). In order to protect beneficial uses, a critical goal is to determine the existing ecological conditions of agriculturally dominated water bodies, including

- Assess the impacts of waste discharges from irrigated lands to surface water;

- Determine the degree of implementation of management practices to reduce discharge of specific wastes that impact water quality;
- Determine the effectiveness of management practices and strategies to reduce discharges of wastes that impact water quality;
- Determine concentration and load of waste in these discharges to surface waters; and
- Evaluate compliance with existing narrative and numeric water quality objectives to determine if additional implementation of management practices is necessary to improve and/or protect water quality.

In addition to the broad WICC goals, specific environmental endpoints or targets have been proposed in draft form for the Napa River watershed that relate to the restoration of impaired beneficial uses through implementing a "Total Maximum Daily Load (TMDL)" for sediment, pathogens, and nutrients under Section 303(d) of the Clean Water Act (namely safe water contact and anadromous fish habitat). Water quality objectives are currently violated that are designed to protect cold and warm freshwater habitat, fish migration and spawning, preservation of rare and endangered species, wildlife habitat, and human health/recreation. The current pathogen TMDL for Napa River is based on bacterial density targets (geometric mean and ninetieth percentile of E. coli density of 126 and 406 CFU/100mL, respectively), as well as zero discharge of untreated human waste to the river, its tributaries, or connected groundwater flows (Krottje and Tuden 2005). Future numeric water quality targets for nutrient TMDLs will be based on water column nutrient concentrations (draft Basin Plan objective of 0.025 mg-N/L (annual median) for un-ionized ammonia and 10 mg-N/L for nitrate), algal densities, and water column dissolved oxygen concentrations (draft objectives of 5.0 mg/L minimum for warm water habitat and 7.0 mg/L for cold water habitat) (Krottje and Whyte 2003). TMDL allocation targets for sediment have been proposed using anadromous fish species (steelhead and Chinook salmon) and the endangered California freshwater shrimp as indicators of watershed health, primarily because land and water use practices that restore these species are also likely to be protective of other valued ecosystem components (Napolitano et al. 2005). Attainment of these proposed targets will require a reduction in human-caused sediment inputs by 50%.

The Implementation Plan for the sediment TMDL will include: (1) a description of the types of management actions needed to achieve water quality objectives and recommendations for all responsible parties, public and private; (2) an action time schedule; and (3) descriptions of the compliance monitoring and surveillance to ensure successful implementation of management practices. Thus, each TMDL implementation plan is based on the adaptive and performance-based management principles outlined in Section 1.1, and monitoring information will provide the basis for flexible and most cost-effective implementation for reductions in human-induced pollutant inputs. Monitoring will also allow managers to determine if they have reached their goal or if the goal needs to be adjusted based upon newly collected and more robust information/data.

2.2 Proposed Goals and Monitoring Objectives

In June 2005, the WICC formed an ad-hoc sub-committee to refine management goals and to guide development of a countywide watershed monitoring strategy. Candidate watershed goals specific to the watershed of Napa County were derived from the broad WICC goals and the proposed TMDLs target allocations. They are:

- Protect and enhance watershed lands and natural processes
- Achieve improved watershed health
- Protect and restore water quality and beneficial uses
- Continuously apply new information and lessons learned from management action or inaction to adjust future steps

A set of monitoring objectives specific to support the above goals are also proposed and will need to be agreed upon by WICC Board before the monitoring strategy can be fully developed (by its Technical Advisory Committee?) and ultimately implemented. Those specific objectives are:

- Characterize watershed conditions and trends using appropriate indicators of "healthy" watershed processes and valued ecosystem components
- Improve the condition of the county's waterbodies recognized as having beneficial use impairment problems
- Prevent degradation of intact (i.e. unimpaired) waterbodies throughout the county
- Prioritize beneficial use protection and restoration activities
- Insure monitoring information is used in decision-making

3. Assessment Questions

The next step in implementing the monitoring strategy is to derive assessment questions related to each goal and objective that are designed to provide answers relevant to the specific needs of Napa County watershed protection. These questions can be developed on several scales and arranged in hierarchical order into an increasingly specific set of questions. Appropriate assessment questions help guide the design of the monitoring program and can focus monitoring expenditures commensurate with the level of uncertainty, potential implementation costs, and risks of inaction. In addition, previously collected baseline data and information can be evaluated as to their relevance to the set of assessment questions and combined into representative indicators suitable for scenario planning and project design or performance after implementation (e.g., detention basin size to meet the requirement of less than 15% peak runoff increases after land alteration). From the above goals and objectives, we have suggested a set of assessment questions to determine data needs and focus a monitoring strategy that is relevant for the community and decision-makers of Napa County (Appendix A). These types of questions need to be agreed on and prioritized before a monitoring program responsive to these needs can be designed.

4. Monitoring Program Design

4.1 Key Elements

The design of the monitoring program is crucial and should be guided by several principles, including budget affordability and design adaptability. The design must provide data that meet specific informational needs, are comparable within all of the county's watersheds, and are scientifically robust enough to draw accurate conclusions. The design should allow for monitoring at various spatial and temporal scales as expressed by the different scales of the assessment questions. An integrative design approach is necessary to accomplish this. For example, some questions may target environmental trends through time for each watershed, which would require a probabilistic, random sampling design that generates data representative of watershed conditions. If a question pertains to monitoring the success of a particular restoration project within one watershed, a non-random, 'targeted' design would be appropriate. The incorporation of both designs within the larger monitoring strategy will be necessary to answer the variety of assessment questions for Napa County. The merits of such an integrative approach are described more fully in USGS testimony to the US Senate on February 2005 concerning monitoring designs (Appendix B). Additionally, the monitoring design should utilize multiple indicators at varying spatial and temporal scales, as this provides greater weight of evidence in the data acquired. A suitable framework that incorporates these principles has been developed by USEPA and consists of three levels: 1) Inventory of watershed resources (e.g., habitat types, water body types); 2) rapid assessment of condition using appropriate indicators; and 3) more detailed or intensive monitoring and assessment of relationships between watershed management actions and watershed health indicators.

One of the first steps in design development is to identify current and past inventories and monitoring efforts in Napa County. Since the creation of the WICC, significant progress has already been made on inventorying habitats, biological resources, and the factors that control them. The most significant has been the development of the Baseline Data Report for Napa County and the impairment assessment work for the sediment TMDL. The Baseline Data Report describes and documents current watershed conditions for the entire county, and the TMDL impairment assessment identifies limiting factors for recovery of anadromous fisheries.

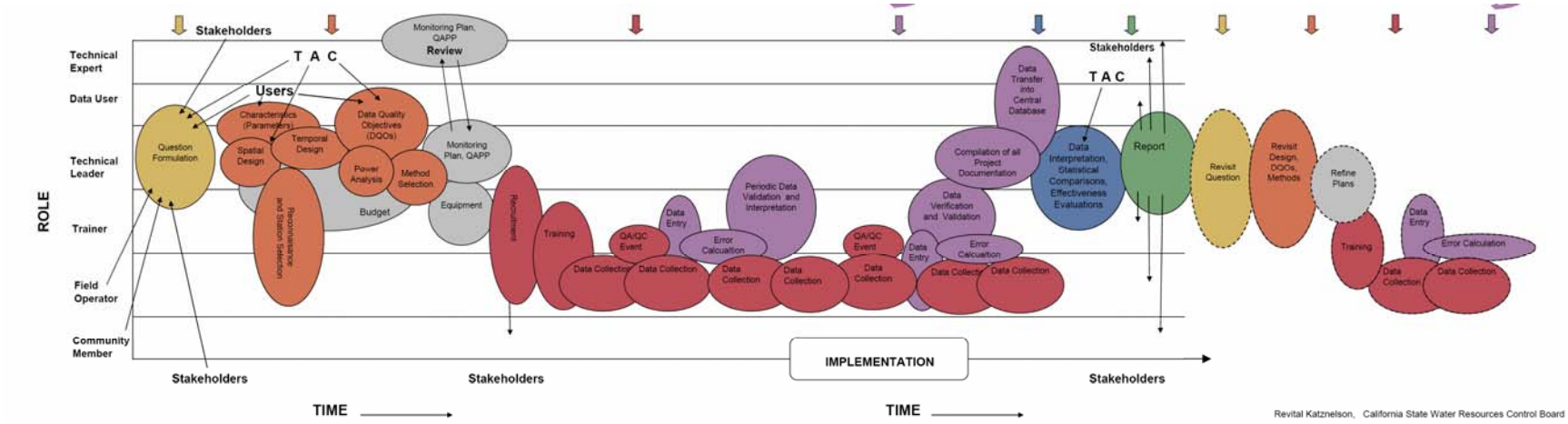
Once assessment questions derived from the management goals and objectives statements have been formulated and agreed on, the Baseline Data Report can be used as a valuable tool in conceptual model development, for identifying data gaps that should be filled through special studies, and insuring that data are collected in a comparable manner at appropriate intervals and in the right places to track progress toward the goals. Appendix C lists some potential sources of past and current Napa County monitoring efforts.

4.2 Implementation Prioritization

Prioritization of data collection efforts will need to be governed by WICC's prioritization of the assessment questions. In some areas, Napa landowners may already

be ready to participate in monitoring, and those areas might receive priority consideration. The common information needs of individual landowners should be identified first, followed by higher landscape level issues. Prioritization criteria should be established to specifically address the protection/prevention of impairment in currently intact water0 bodies, as well as the potential progress toward delisting impaired water bodies. Prioritization will help to insure that intact and unimpaired beneficial uses can be maintained and preserved. Development and implementation of the monitoring strategy will require several stages through time, but progress can be easily tracked (Figure 2).

Figure 2. Roles of stakeholders and participants in monitoring program development and implementation *(from Revital Katznelson, SWRCB)*



5. Watershed Indicator Selection

For each assessment question, there is a suite of appropriate parameters (known as indicators) that will provide the necessary data to answer it. An important element of the monitoring implementation strategy is to identify watershed health indicators that correspond with the prioritized assessment questions. A list of preliminary watershed indicators specific to Napa County concerns should be chosen so that they reflect representative geographic areas and ecosystem functions and components (Appendix D). Indicators can be organized in a variety of ways. However, one of the most broadly accepted organizational tools is the "Pressure – State- Response" (PSR) Model and variations thereof (OECD 2003, http://www.oecd.org/dataoecd/7/47/24993546.pdf). It represents an easy-to-understand organizing framework to insure a weight of evidence can be generated that links societal responses and reductions in adverse environmental impacts (pressures) to improvements in environmental condition (improved state). Cost also plays an important role in indicator selection, as achievable monitoring efforts must be balanced with available funding resources. Surrogate indicators that yield sufficient data to answer assessment questions may be chosen above more costly indicators. For instance, in order to assess improvement in ESA salmonid populations, it is cheaper and just as effective to measure the quality of the spawning habitat (e.g. percent shading) than survey salmonid numbers.

6. Quality Assurance

Monitoring strategy implementation will also include development of data quality objectives for the chosen parameters, data verification, as well as validation procedures and audit procedures for laboratories and field sampling. Establishing a QA (Quality Assurance) team may be appropriate to develop and guide QA procedures and review standard operating procedures (SOP), produce QA reports, and evaluate data quality for past and current monitoring programs. A number of useful guidance documents exist and are in development that can easily be adapted to the County's needs (Appendix E).

7. Data Management

The County's vision, as expressed through the WICC Board is to make credible ambient monitoring data and information available to all stakeholders in a timely and accessible manner. Concerns regarding privacy issues will require decisions about the scale and in what format data will be presented. The foundation for this cooperative information management system will likely require a centralized storage database designed around a sample-driven model capturing geospatial data for every indicator sample collected and transferred into the WICC WebCenter. Water quality, toxicity, sediment chemistry, microbiological, habitat, biological, fish and shellfish tissue data and metadata should be associated with geographical assessment units such as the National Hydrography Dataset (NHD) or more finely delineated sub-watersheds within the Napa River, Putah Creek, and Suisun Basins. Implementation considerations include:

- Establishing and maintaining an electronic data management system for integrating multiple ambient monitoring data types.
- Developing guidelines and technical specifications for data organization, flow and verification/validation to maintain data quality and comparability on a local and regional level.
- Data verification and validation.
- Loading historic and current monitoring data into the database.
- Providing expanded training on the WICC interactive WebCenter to expand coordination by data generators throughout the County.
- Facilitating intra- and inter-agency data comparability by developing and providing general use tools such as protocols and formats for electronic data transfer, procedures and tools for batch uploading of data, protocols and tools for data verification and validation and query and analytical tools for summarizing and analyzing data.

8. Data Analysis and Assessment

The goal is to provide a consistent defensible framework for the evaluation of monitoring data relative to state and countywide standards, for the protection of beneficial uses, and for tracking the effectiveness of watershed related management actions and policies.

This will require a methodology for assessing watershed conditions relative to various benchmarks and guidelines, as expressed in the Water Board's Basin Plan, the County's General Plan, and Integrated Regional Water Management Plans, among other local and regional watershed planning efforts. The methodology must describe how existing available data and information relevant to applicable water quality standards, land use guidelines, species recovery plans, and other conservation and protection goals will be compiled and analyzed to make decisions about how these standards and goals may be attained. The methodology should:

- Identify the required or likely sources of existing and available data and information and procedures for collecting or assembling it.
- Describe or reference requirements relating to data quality and descriptive accuracy, such as analytical precision, temporal and geographical representation and metadata documentation needs.
- Include or reference procedures for evaluating the quality of datasets.
- Explain data reduction procedures (for example, statistical analyses) appropriate for comparing data to applicable water quality standards and land use goals.

9. Program Reporting and Communication

9.1 Data sharing: Web-based maps, graphs, standard database formats

Watershed health indicators are comprised of a range of parameters in seven general categories:

- Landscape condition (e.g., habitat types, landscape structure, land cover)
- Biotic condition (e.g., ecosystems and communities, species and populations)
- Chemical and physical characteristics (e.g., nutrients, trace inorganic and organic chemicals, temperature, oxygen)
- Ecological processes (e.g., primary production)
- Hydrology and geomorphology (e.g., surface and groundwater flows, groundwater elevations, channel and floodplain morphology/complexity, sediment transport and storage)
- Natural disturbance regimes (e.g., frequency, intensity, extent, duration)
- Human uses and watershed services (e.g., timber, water use, land use, recreation, food production)

Data from these kinds of categories are collected either routinely or sporadically by numerous entities from individual landowners to federal agencies. In order to combine data from different sources, they need to be of known quality and in a consistent format. The WICC WebCenter provides one tool for a variety of users to access data for reporting purposes. However, summary reports and condition assessments require additional tools that are currently not available at the county level and will require considerable resources to maintain.

9.2 Communication to identified audiences

Information derived from watershed health indicators at various spatial scales (individual parcel to whole river basin) has different audiences and requires different communication mechanisms. Individual landowners, e.g., need to know if their management measures produced certain outcomes that may not be very relevant for the general public or policy-makers. However, broad indicators at the landscape level may be of interest to a general audience interested in the "state of the watershed." Monitoring strategy implementation requires thought about:

- The frequency of reporting required for timely management intervention at the parcel level (e.g., real time stream flow data) for critical parameters affecting certain condition indicators (e.g., stream temperature, survival of steelhead young-of-the-year), or for policy development (e.g., adjustments in conservation ordinances or building codes).
- Reporting media and venues (e.g., videos, fact sheets, newsletters, or annual reports in digital or hard-copy format; workshops, public meetings, etc.)

10. Programmatic Evaluation

Periodic external reviews of a monitoring program serve to obtain feedback on the program's scientific validity, whether it is being implemented as designed, and how well it serves the decision needs of the County. Most rigorously conducted monitoring programs conduct periodic external scientific and administrative reviews to remain relevant. As a rule of thumb, about five years of data collection and interpretation are

required to evaluate the types of lessons learned and to what degree questions have been answered that formed the rationale for the monitoring program, so that adjustments can be made.

11. General Support and Infrastructure Planning

11.1 Planning Coordination/Institutional collaborations

This element of the monitoring strategy deals with the support needed to implement a coordinated and comprehensive watershed health monitoring and assessment program, which includes identifying:

- The required number of staff needed for monitoring program implementation and oversight.
- Needed laboratory support to perform scientifically appropriate documented methods.
- Training needs for program implementation, including for field, laboratory, data management and data assessment staff.
- Required funding (for example, for salaries, training, travel, equipment, laboratory analysis, and external scientific review of assessment reports) for implementing the program, along with anticipated sources and amounts of funding and the effects of any shortfalls.
- Needed support for grant-writing and other fundraising activities.

11.2 Funding options

The Monitoring Strategy will likely be implemented with a wide variety of funding sources, examples of which may range from federal, state, and private foundation grants to voluntary contributions, General Fund allocations, impact fees on products and activities that diminish watershed health (e.g. impervious surface cover), or fines imposed on violators of land use regulations. However, a minimum level of long-term and reliable funding is required to maintain a trend record and understanding of changes in core watershed health indicators.

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Appendix A. Examples of Assessment Questions based on Management Goals (MG) and Monitoring Objectives (MO)

MG 1. Protect and enhance watershed lands and natural processes

MO 1. Characterize watershed conditions and trends using appropriate indicators of "healthy" watershed processes and valued ecosystem components

A1. Which watershed lands should be protected and enhanced?

- Where are the sensitive lands and priority habitats within each watershed?
- What are the social and economic factors associated with the use of those resources/lands?

A2. To what extent have natural processes been disturbed, and where do they need to be restored and protected?

- Where are current restoration projects?
- What are the urban and rural pollutant sources within each watershed, and what are their relative contributions to impairments in sensitive and priority habitats?
- What management practices are in place to prevent and reduce pollution in impaired waterbodies?
- What further efforts are needed to reduce impacts from urban and rural runoff?

A3. What are appropriate indicators of success?

- What indicators are reasonable representations of surface water condition?

MG 2. Achieve improved watershed health

MO 2. Improve the condition of the county's waterbodies recognized as having beneficial use impairment

A1. How do we want to define watershed health?

A2. What conditions do we consider desirable?

A3. What are existing trends of appropriate indicators of watershed health?

- What is the condition of representative habitats over time - improving, degrading, staying the same? Conditions in the past, present, and future?
- How are pollution patterns and trends affected by management actions (BMPs, source control)?
- What watershed segments in each watershed have the most concern over current and future social and economic pressures impacting environmental resources?

MG 3. Protect water quality and beneficial uses

MO 3. Prioritize beneficial use protection and restoration activities

A1. What is the present condition of water quality?

- Are aquatic beneficial uses (cold and warm freshwater habitat, fish migration and spawning, wildlife habitat, and preservation of rare & endangered species) impaired in identified sensitive habitats?
- Where are draft TMDL targets being exceeded? At several scales – watershed, project site.

A2. What are appropriate indicators of beneficial use condition and trends?

- What indicators show a signal relative to implemented management measures?

MO 4. Prevent degradation of intact (e.g. unimpaired) waterbodies throughout the county

- Which stewardship programs exist?
- What are the criteria for prioritizing support to these programs?
- What programs/efforts would benefit the most from fundraising?
- Where are significant research studies occurring in each watershed that can be used to evaluate the relative environmental and social benefits of various management options?
- What are current monitoring methodologies employed within each watershed by various agencies/organizations, and where are areas of intersection and/or gaps?
- Where are significant individual and watershed-based management actions/ projects?

MG 4. Continuously apply new information and lessons learned from actions to adjust future steps

MO 5. Insure monitoring information is used in decision-making

- What baseline data are necessary to promote standardization and robust science-based decision-making?

Appendix B. USGS Testimony to Congress on Water Quality Monitoring

Monitoring in the 21st Century to Address our Nation's Water-Resource Questions

By Timothy L. Miller, USGS
February 25, 2005

A time of increasing complexity

Water-quality monitoring has become a high priority across the Nation, in large part because the issues are more complex and money is tighter. The demand for high-quality water is increasing in order to support a complex web of human activities and fishery and wildlife needs. This increasing demand for water, along with population growth and point and nonpoint sources of pollution, threatens the quality *and* quantity—and therefore the availability—of all our water resources.

This is a challenge all across the country. Areas once thought of as "water rich"—mostly in terms of limitless availability—are now considered "water challenged," such as in southern Florida, where available water must support 6 million people along their coasts, extensive agriculture south of Lake Okeechobee, and ecosystems in the Everglades and the Florida Bay. No longer is only the arid western U.S. challenged to manage its water needs for drinking, irrigation, aquatic ecosystems, and recreation.

As was acknowledged more than 30 years ago when the Clean Water Act was implemented, monitoring is fundamental to successful management of water resources. However, the nature of monitoring must adapt to increasingly complex water demands and issues. Monitoring is no longer limited to "end of pipe" site-specific data on dissolved oxygen or suspended solids, collected for day-to-day evaluations of compliance or decisions about permitting. Three specific challenges force a shift in monitoring since the implementation of the Clean Water Act.

- Most water-quality problems are caused by diffuse "nonpoint" sources of pollution from agricultural land, urban development, forest harvesting, and the atmosphere. These sources are more difficult to monitor, evaluate, and control than point sources, such as discharges of sewage and industrial waste. The amount of pollution from nonpoint sources varies from hour-to-hour and season-to-season, making it difficult to monitor and quantify the sources over time.
- Water-quality issues themselves have become more complex. Forty years ago, concerns about water quality focused largely on the sanitary quality of rivers and streams—in bacteria counts, nutrients, dissolved oxygen for fish, and a few measures like temperature and salinity. While these factors are still important, new and more complex issues have emerged. Hundreds of synthetic organic compounds, like pesticides and volatile organic compounds (VOCs) in solvents and gasoline have been introduced into the environment. Over the last 10 years, improved laboratory techniques have led to the "discovery" in our waters of microbial and viral contaminants, pharmaceuticals, and hormones that weren't measured before.
- Evaluation and monitoring of pollution sources and of the condition of our water resources have been limited because available information is fragmented. Inconsistency in the types of data collected, the standards and analytical methods used, and the selection of monitoring sites makes it difficult to integrate the findings.

Different questions require different kinds of monitoring. It's important to understand that one monitoring design cannot solve all of our water-resource issues or questions. For example, depending on specific interests or responsibilities, one might ask:

- Is the water meeting beneficial uses; that is, is it acceptable for drinking or swimming or irrigation or for sustaining aquatic habitat?
    - What percentage of streams is impaired within a State?
- Are regulatory requirements being met? Are concentrations or loads below those allowed in discharge permits?
- How does the water quality of one water body compare with those nearby or across the Nation?
- Is water quality getting better or worse? Does water quality change during certain times of the year?
- What are the sources of contaminants and causes of the problems?
- How do changes in land use or management practices affect water quality?

None of these questions is easy to answer, and each requires a different kind of monitoring—a specific set of data collected in certain places and at certain times. So, undoubtedly, monitoring designs end up being unique or different—varying in the timescales and spatial scales covered. The process, however, is always the same. The process begins with clearly defining the water-resource questions; outlining the decisions that will be made from the data; and then identifying the data (or monitoring) needed to make the decision.

Water-resource issues or questions determine monitoring objectives. And the objectives determine the monitoring design. No design, therefore, is "better" or "more successful" than another. Success is measured by whether the monitoring design addresses the specific objectives. Different types of monitoring—such as "probabilistic" and "targeted" designs—answer different sets of questions. Although both of these designs can contribute to statewide, regional, or national assessments, and improve understanding of the general or "ambient" water resource, they provide different types of information. Both types of monitoring are important, and therefore, should not be viewed as competitive or duplicative, and both need support with adequate funding. In fact, these designs are so different that discussions should not focus on whether one design can substitute for another but on how to integrate the two in order to go beyond what each can provide individually, particularly in predicting conditions in unmonitored areas. This can be illustrated by addressing an overarching question driving many discussions "What is the quality of our Nation's waters?"

What monitoring design best answers "What is the quality of our Nation's waters?" Again, it depends on specific objectives and questions. To some, this may reflect an overall assessment of the resource as required in the Clean Water Act section 305(b): "What percentage of the Nation's waters is impaired? What percentage is in good condition? What percentage of streams is meeting their beneficial uses?" Such questions require a broad-based probabilistic monitoring design, in which sites are chosen randomly and are distributed across a certain region. This type of monitoring provides a quantitative, statistically valid estimate of, for example, the number of impaired stream miles within a region or State. Probabilistic monitoring and assessments help to document what is going well (how much of the resource is in good condition) and what is not (how much is in poor condition). The data collected help decision makers prioritize regions having the most degraded waters and assess which stressors—such as nutrients, sedimentation, and habitat disturbance—are of most importance in that region or State. Many probabilistic monitoring programs are currently implemented by States and within the U.S. Environmental Protection Agency, such as the Environmental Monitoring and Assessment Program (EMAP).

Probabilistic monitoring is a useful and cost-effective method for getting an unbiased, broad geographic snapshot of "whether there is a problem" and "how big the problem is." To others, "assessing the Nation's waters" leads to other questions, including "Why are water-quality conditions happening and when? Do certain natural features, land uses, or human activities, and management actions affect the occurrence and movement of certain contaminants? Are water conditions changing over time? "

These are equally important questions, but require a "targeted" monitoring design that focuses on understanding the relations between water-quality conditions and the natural and human factors that cause those conditions. Monitoring sites are therefore not selected randomly within a grid, but because they represent certain human activities, environmental settings, or hydrologic conditions during different seasons or times of year. For example, sites may be selected to assess the effects of agriculture and urban development on pesticide and nutrient contamination in streams.

A "targeted" monitoring design requires data collection:

- Over different seasons. This is important because, for example, USGS assessments generally show low concentrations of contaminants, such as pesticides, in streams for most of the year—lower than most standards and guidelines established to protect aquatic life and human health. However, the assessments also show pulses of elevated concentrations—often 100 to 1,000 times greater in magnitude, exceeding standards and guidelines—during times of the year associated with rainfall and applications of chemicals. Such pulses could affect aquatic life at critical points in the life cycle and also could affect drinking water.
- In different land uses, including agricultural, urban, and more pristine land-use settings. USGS assessments show that water conditions are very different among the different settings; insecticides, for example, are more frequently detected at higher concentrations in urban streams than in agricultural streams. Water conditions also are different among different land-use practices; phosphorus, sediment, and selected pesticides, for example, are at higher concentrations in streams draining agricultural fields with furrow irrigation than in agricultural fields with sprinkler irrigation.
- In different geologic settings. The setting—whether it is sand and gravel or volcanic rock, for example—affects how readily water moves over the land and into the ground.
- During different hydrologic conditions. The amount of streamflow and the timing of high and low flows determine how contaminants are carried in streams, and the connections between streams and ground water determine how the ground water will be affected.
- Over the long term. Without comparable data collected over time, assessments cannot distinguish long-term trends from short-term fluctuations and natural fluctuations from effects of human activities. USGS assessments show that water quality continually changes. The changes can be relatively quick—within days, weeks, or months, such as in streams in the Midwest where types of herbicides used on corn and soybeans have changed, or relatively slow, such as in ground water beneath the Delmarva Peninsula where nitrate concentrations are beginning to decrease after 10 years of improved management of nitrogen fertilizers.

Targeted sampling brings an understanding of the causes of water-quality conditions. It establishes relations between water quality and the natural and human factors that affect water quality. Targeted monitoring and assessments help decision makers to (1) identify streams, aquifers, and watersheds most vulnerable to contamination; (2) target management actions based on causes and sources of pollution; and (3) monitor and measure the effectiveness of those actions over time. Such monitoring would not be necessary if all streams and watersheds responded the same over time. But they are different. As shown by targeted assessments across the Nation, such as through the USGS National Water-Quality Assessment (NAWQA) Program,

even among similar land uses, the differences in sources, land-use practices, hydrology and other natural factors make one watershed more vulnerable to contamination than another and result in different ways that management strategies can improve water quality.

Integrating the two designs

Neither probabilistic nor targeted monitoring designs answer all questions about the Nation's water resources. While the targeted design cannot provide a quantified estimate of, for example, percentage of streams impaired within a broad geographic region, a probabilistic design cannot account for sources, seasonal differences, varying streamflow and ground-water contributions, or processes that control the movement and quality of water.

Ideally, data collection and monitoring should be consistent and comparable so that the findings can be integrated. National investments and partnerships must commit to increasing the comparability and integration of monitoring in order to enhance our ability to answer critical questions about water resources and understand the quality of the Nation's waters.

Appendix C. Potential sources of past and current Napa County watershed monitoring

- Resource Conservation District (RCD) turbidity and stage data at some stations
- Friends of Napa River fish surveys
- Friends of Napa River, RCD macroinvertebrate studies
- US Army Corps of Engineers (USACE) - Lower Napa River Flood Control
- US Geological Survey (USGS) stage and sediment data for Napa River
- San Francisco Estuary Institute (SFEI) nutrient and pathogen studies in Napa; also, historical ecology work
- National Wetlands Inventory (NWI) – wetland and riparian habitat mapping
- Stillwater Sciences' work on temp, turbidity, permeability, pool filling
- Robert Leidy and Jonathon Koehler fish surveys
- City of Napa water quality data
- Reservoirs – rainfall, storage, release
- California Department of Fish and Game (CDFG), Region 3
- Rutherford Dust
- WICC Baseline data report
- California Department of Water Resources (DWR) well data
- State Water Resources Control Board (SWRCB) water rights database

Appendix D. Potential Indicators: Matrix relating broad and specific level indicators to proposed Management Objectives

Management Objectives	Indicators Broad Level (Watershed)	Indicators Specific Level (Project, Stream)
Characterize watershed conditions and trends	• Current and Planned Land Management Activities • % Landscape Composition/ Landuse • Road density • Drainage density • Hydrological modifications of surface waters • Topography and soil type • Rainfall measures • Extent and diversity of habitat types • % Fragmentation of habitat patches • Biological community extent and composition • Surface water extent	• Connectivity to floodplain • % Riparian cover and buffer extent • Pool/Riffle composition • Species population size and diversity • Presence/Absence of sensitive species • Nutrient concentrations • Pathogen counts • Sediment quality characteristics • Water quality characteristics • Rates of bed and bank erosion • Scour potential • Bed permeability • Incision Rate
Improve the condition of the county's waterbodies recognized as having beneficial use impairment problems	• Change over time in watershed segments of concern (decreased erosion & incision, increased biological usage) • Trends in gravel permeability, scour depth, and meander wavelength • Trends in meeting numeric nutrient and pathogen targets • Increase of restoration activities (# permits) associated with impaired watersheds • % Decrease in fish barriers • % Decreases in drainage density • Decrease in # of swim advisories	• Sustained increase in salmonid numbers and diversity • Sustained decrease in nutrient concentrations and pathogen counts • Increase in riparian cover and composition • Sustained decrease in water temperatures • Increase in stream miles in channel equilibrium
Prevent degradation of intact (e.g. unimpaired) waterbodies throughout the county	• Available funding • Watershed permitting activities • Number of stewardship programs' activities in areas of concern • Current research and monitoring activities in areas of concern	• Road number and type • BMPs onsite and impacts • Riparian buffer changes (extent and composition) • Specific water quality parameters (including nutrients & pathogens) • Changes in chemical water quality

	• Population growth patterns • Land use changes (development pressure) • % Wetlands • % Riparian Corridor • BMPs applied • Change in % unimpaired vs. impaired	• Bed scour and permeability • Incision rate • Biological assemblage abundance and diversity
Prioritize beneficial use protection and restoration activities	• Available funding • % Watershed with TMDL targets exceeded • Land use changes (development pressure) • Population growth patterns • Permitted watershed restoration activities • % Coverage and overlap by stewardship groups	• Increased use of waterbodies by swimmers/fishermen • Riparian buffer changes (extent and composition) • BMPs onsite and impacts • Increased use of waterbodies by wildlife • Water quality monitoring (including nutrients & pathogens) • Biological assemblage abundance and diversity
Insure monitoring information is used in decision-making	• WICC meetings to review data and monitoring recommendations • # Policy documents referencing Strategic Plan • Monitoring information referenced in project review	• Data comparability among current studies • Communication between WICC Board, stakeholders, and monitoring entities

Appendix E. List of Existing QA/QC Guidance Documents

Lowe, S, Hoenicke, R and J. Davis. May 1999. Quality Assurance Project Plan for the Regional Monitoring Program for Trace Substances. San Francisco Estuary Institute (SFEI), Oakland, CA.

Nichol, G and E. Reyes. March 24, 2004. Surface Water Ambient Monitoring Program (SWAMP) - Compatible Quality Assurance Project Plans (Version 1.0). State Water Resources Control Board (SWRCB), Dept of Water Quality, Sacramento, CA.

US EPA. September 1996. The Volunteer Monitor's Guide To Quality Assurance Project Plans. EPA 841-B-96-003. Office of Wetlands, Oceans and Watersheds (4503F), United States Environmental Protection Agency, Washington D.C.

Appendix F – Glossary of Watershed Monitoring Terms
**** Denotes from EPA Watershed Academy***

Adaptive Management - Adaptive management is a systematic process for continually improving management policies and practices by learning from the outcomes of operational programs. Its most effective form–"active" adaptive management–employs management programs that are designed to experimentally compare selected policies or practices, by evaluating alternative hypotheses about the system being managed. (From Ministry of Forests and Range 2000)

***Ambient monitoring -** All forms of monitoring conducted beyond the immediate influence of a discharge pipe or injection well and may include sampling of sediments and living resources.

***Assessment -** The translation of scientific data into policy-relevant information that is suitable for supporting decision-making and action.

Assessment Questions – Questions developed to focus monitoring data on environmental management issues that clearly relate to ecological components or processes deemed important in ecological condition.

***Biological parameters -** Include measures related to the plant and animal life of the water body, such as fish species diversity and abundance, or the presence or absence of indicator fishes, aquatic invertebrates, or aquatic plants.

***Chemical parameters -** Include contaminants such as metals, dissolved nutrients, oils, and pesticides, and also include chemical properties of the aquatic system such as dissolved oxygen, chemical oxygen demand, and acid neutralizing capacity.

Conceptual Model - Visual or textual characterization of an ecosystem or watershed that defines problems, identifies the type of solutions needed, and provide logical steps in the development of a strategy and goals. (US EPA 2000)

***Data Quality Objectives (DQOs) -** In the context of water quality monitoring, the characteristics or goals that are determined by a monitoring or interpretive program to be essential to the usefulness of the data. They would include, but not be limited to, the specification of delineation of the limits of precision and bias of measurements, the completeness of sampling and measurements, the representativeness of sites relative to program objectives, the validity of data, and so forth.

Ecosystem - A naturally occurring assemblage of organisms (plant, animal and other living organisms—also referred to as a biotic community) living together with their environment, functioning as a loose unit. (From Wikipedia Encyclopedia)

***Effectiveness monitoring -** Documents how well the management practices meet intended objectives. Monitoring evaluates the cause and effect relations between management

activities and conditions of the riparian dependent resources. Terrestrial and in-stream methods constitute monitoring that evaluates and documents the total effectiveness of site-specific actions.

***Environmental indicator -** A measurable feature or features that provide managerially and scientifically useful evidence of environmental and ecosystem quality or reliable evidence of trends in quality. The selection of relevant indicators should be derived directly from the assessment question and from professional judgment.

***Environmental restoration** - The return of a degraded ecosystem to a close approximation of its remaining natural potential.

Habitat - The physical environment that surrounds (influences and is utilized by) a species population. (From Wikipedia)

***Implementation monitoring -** Documents whether or not management practices were applied as designed. Project and contract administration is a part of implementation monitoring.

***Implementation Plan** - Developing a step-by-step plan for addressing management objectives, selecting the best watershed management alternatives, listing strategies for implementing selected management alternatives, and determining how to measure progress and evaluate efforts. The plan specifically identifies funding mechanisms, prioritizes management actions, and outlines plan review and stakeholder feedback process.

Management Goals and Objectives - Goals direct implementation actions and provide standards for measuring success. The chosen goals should be achievable ecologically, given the natural potential of the area, and socioeconomically, given the available resources and the extent of community support, and should have stakeholder consensus. Good goals provide focus and increase project efficiency. (US EPA 2000)

***Monitoring -** Periodic or continuous collection of data (measured parameters) using consistent methods to determine the status (the condition of the ecological resources) of a water body and watershed and the changes in those measurements over time.

***Physical parameters -** Include general conditions such as temperature, flow, sediment characteristics, water color, and within-channel habitat structure.

***Probability-based sampling** (Probabilistic Sampling Design) - A sampling method in which randomness is built into the design so that properties of the sampled population can be assessed in terms of their likelihood of occurrence or existence.

***Quality assurance/quality control (QA/QC) -**A system of procedures, checks, audits, and corrective actions to ensure that all EPA research design and performance, environmental monitoring and sampling, and other technical and reporting activities are of the highest achievable quality.

***Random sampling -** A sampling method in which every possible sample has the same chance of being selected.

***Sampling design -** All of the details concerning sampling units, sample selection, timing, spatial distribution and other issues involved in gaining sufficient sampling data for a monitoring and assessment program.

***Statistically significant results -** Sampling data that collectively meet or exceed data quality objectives or pass a statistical testing method, and therefore can support or disprove a hypothesis or other inference.

***Systematic sampling -** A sampling method in which sample selection begins at a random starting point but subsequently selects additional sampling units at equal intervals along a stated gradient or numbered list; for example, sampling a river channel's width and depth at 1-kilometer intervals along its full length.

***Trends and changes -** A trend is the consistent directional change in a population's characteristics documented by a minimum of three sampling events over a period of time (or sometimes distance); a change is a difference in a characteristic between just two sampling events.

***Total Maximum Daily Load (TMDL) -** A calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. Water quality standards are set by States, Territories, and Tribes, and identify the uses for each waterbody, for example, drinking water supply, contact recreation (swimming), and aquatic life support (fishing), and the scientific criteria to support that use. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and non-point sources. The calculation must include a margin of safety to ensure that the waterbody can be used for the purposes the State has designated. The calculation must also account for seasonal variation in water quality. (From Clean Water Act 1987)

***Water quality assessment -** The determination whether a water body is attaining its designated uses for such purposes as drinking, contact recreation, fisheries, and irrigation, based on state Water Quality Standards as provided for in the Clean Water Act of 1987.

***Water quality monitoring -** An integrated activity for evaluating the physical, chemical, and biological characteristics of water in relation to human health, ecological conditions, and designated water uses.

Watershed - A region of land where water flows into a specified body of water, such as a river, lake, sea, or ocean. Also a topographical boundary between catchment basins. (From Wikipedia)

***Watershed monitoring -** Monitoring primarily designed to sample and assess the characteristics and/or condition of a watershed or watersheds, or to sample and assess

specific entities on a watershed basis (i.e. as a geographic unit for sampling). For example, water quality monitoring conducted on a watershed basis would include monitoring physical, chemical, and biological condition of the water body as well as specific watershed characteristics (e.g., stream corridor traits, wetlands, and watershed land use/land cover patterns) that may be related to observed water quality.

California Regional Water Quality Control Board
San Francisco Bay Region

Alan C. Lloyd
Secretary for Environmental Protection

1515 Clay Street, Suite 1400, Oakland, California 94612
Phone (510) 622-2300 • FAX (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay

Arnold Schwarzenegger
Governor

October 7, 2005

Notice of Public Meeting to Define Project Scope Under California Environmental Quality Act (CEQA)

For proposed amendments to Water Quality Control Plan, San Francisco Bay Basin

and

Announcement of a Workshop

to discuss a proposed plan to eliminate water quality problems due to

SEDIMENT

and enhance habitat for salmon and steelhead in the watershed

NOTICE IS HEREBY GIVEN that the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), will hold a public meeting pursuant to the California Environmental Quality Act (Public Resources Code §21000 et seq., CEQA) to define the project scope in connection with an upcoming proposed amendment to the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The amendment would:

1. Establish a Total Maximum Daily Load (TMDL) for sediment in the Napa River
2. Establish an implementation plan to achieve and support the TMDL, including targets and allocations, and a related plan to enhance stream habitat conditions
3. Revise portions of Chapter 4 (Implementation Plan) of the Basin Plan

The purpose of the meeting is to discuss the scope and content of environmental documents to be prepared pursuant to the Water Board's certified regulatory program for basin planning under CEQA Guidelines (see Title 14 Cal. Code of Regulations, §15251[g]). In conjunction with the public meeting, Water Board staff will also host a workshop to: 1) present responses to comments received on the sediment TMDL project report; and 2) discuss next steps in the public process.

Date:	**Monday, November 7, 2005**
Time:	**9:00 to 11:00 am**
Location:	**Napa City/County Library** **Community Meeting Room** **580 Coombs Street** **Napa, CA 94559**
Staff Contact:	Mike Napolitano Engineering Geologist (510) 622-2397 / mnapolitano@waterboards.ca.gov

California Regional Water Quality Control Board
San Francisco Bay Region

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Secretary for Environmental Protection

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Arnold Schwarzenegger
Governor

October 7, 2005

Notice of Public Meeting to Define Project Scope Under California Environmental Quality Act (CEQA)
For proposed amendments to Water Quality Control Plan, San Francisco Bay Basin
and

Announcement of a Workshop to discuss a proposed plan to eliminate water quality problems due to PATHOGENS

NOTICE IS HEREBY GIVEN that the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), will hold a public meeting pursuant to the California Environmental Quality Act (Public Resources Code §21000 et seq., CEQA) to define the project scope in connection with an upcoming proposed amendment to the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The amendment would:

1. Establish a Total Maximum Daily Load (TMDL) for pathogens in the Napa River
2. Establish an implementation plan to achieve and support the TMDL, including targets and allocations
3. Revise portions of Chapter 4 (Implementation Plan) of the Basin Plan

The purpose of the meeting is to discuss the scope and content of environmental documents to be prepared pursuant to the Water Board's certified regulatory program for basin planning under CEQA Guidelines (see Title 14 Cal. Code of Regulations, §15251[g]). In conjunction with the public meeting, Water Board staff will also host a workshop to: 1) present responses to comments received on the pathogen TMDL project report; and 2) discuss next steps in the public process.

Date:	**Monday, November 7, 2005**
Time:	**11:00 am to 12:00 noon**
Location:	**Napa City/County Library** **Community Meeting Room** **580 Coombs Street** **Napa, CA 94559**
Staff Contact:	**Peter Krottje** **Environmental Scientist** **(510) 622-2382 / pkrottje@waterboards.ca.gov**

Napa River proposed for 303d listing under the CWA for mercury contamination

The Napa River is now proposed for 303d listing under the Clean Water Act (CWA) for mercury contamination (see article to follow). The listing is based on evidence collected from fish tissue samples. A public workshop on the matter will be held in Sacramento on Tuesday, December 6th at 10am to receive comments. The deadline for comments is December 6, 2005.

Additional information can be found at:
http://www.waterboards.ca.gov/tmdl/docs/303d_update/r2_v2.pdf
(on pages 36-37) as well as
http://www.waterboards.ca.gov/tmdl/docs/303d_update/workshopnotice303d.pdf

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State Board releases draft list of water bodies not meeting quality standards
By State Water Resources Control Board

(From YubaNet.com – 10/3/05)

The State Water Resources Control Board has listed streams, rivers and lakes within California that appear to not meet water quality standards. The Board will hold two workshops in December to determine whether any water bodies should be added to or dropped from the draft list.

The list is compiled as part of the Board's ongoing commitment to preserve, enhance and restore the quality of California's water resources and is required by Section 303(d) of the federal Clean Water Act.

More data are available (statewide) this year than ever before and some water bodies may have been added to the list because of newly available data, not because of actual degradation to water quality. Conversely, some individual stream sections may have dropped from the list because of a lack of specific data. The most recent comparable list was released in 2002 with 1,883 water body-pollutant combinations. The new draft list proposes dropping 177 of those and adding 464. (Note that each addition may

represent an additional, specific pollutant found in a single body of water or stream/river section and not an additional body of water.) The scheduled workshops will aid the Board in determining if all the proposed additions and deletions are justified. The list will be made final next year.

The Clean Water Act requires states to periodically identify water bodies that do not meet quality standards. States are required to provide lists to the U.S. Environmental Protection Agency and to develop Total Maximum Daily Loads (TMDLs) for those water bodies. TMDLs are the maximum load of a pollutant that can be discharged into the water body without exceeding water quality standards.

For each water body on the list, the State Water Board includes a description of pollutants and the schedules for developing TMDLs in the future.

The State Water Board will hear public comments on proposed revisions to the list on December 1, 2005, at the Pasadena Hilton beginning at 10 a.m. and on December 6, 2005, at the State Water Board's Sierra Hearing room in Sacramento, also beginning at 10 a.m. The Pasadena Hilton is located at 168 South Los Robles Avenue. The State Water Resources Control Board is at 1001 I Street. The Sierra Hearing Room is located on the second floor.

The draft proposal 303(d) list (http://www.waterboards.ca.gov/tmdl/303d_update.html) is posted on the State Water Resources Control Board Web site.

All comments on the proposed changes to the proposed list be submitted by email, mail, or fax, and postmarked no later than 5:00 p.m., December 6, 2005.

Alan C. Lloyd, Ph.D.
Agency Secretary

State Water Resources Control Board

1001 I Street • Sacramento, California 95814 • (916) 341-5455
Mailing Address: P.O. Box 100 • Sacramento, California • 95812-0100
FAX (916) 341-5463 • http://www.waterboards.ca.gov

Arnold Schwarzenegger
Governor

NOTICE OF PUBLIC WORKSHOPS

REVISION TO FEDERAL CLEAN WATER ACT SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS FOR CALIFORNIA

Thursday, December 1, 2005 - 10:00 a.m.
Hilton Pasadena Hotel
168 South Los Robles Avenue
Pasadena, CA
And
Tuesday, December 6, 2005 - 10:00 a.m.
State Water Resources Control Board
Sierra Hearing Room – Second Floor
Joe Serna, Jr. Cal/EPA Headquarters Building
1001 I Street, Sacramento, CA

NOTICE IS HEREBY GIVEN that public workshops will be held by the State Water Resources Control Board (State Water Board) to seek comments on proposed revisions of the federal Clean Water Act (CWA) section 303(d) list [section 303(d) list] of water quality limited segments for California. The Board will not make any decision regarding the section 303(d) list at the workshops. The section 303(d) list will be considered for adoption at a future State Water Board meeting.

The workshop(s) will focus on the revisions to the section 303(d) list on a regional basis, as follows:

December 1—Los Angeles, Lahontan, Colorado River Basin, Santa Ana, and San Diego regions
December 6—North Coast, San Francisco Bay, Central Coast, Central Valley, and Lahontan regions

While each workshop is focused on specific proposals, comments on any aspect of the proposed revised statewide section 303(d) list will be accepted at either of the two workshops.

BACKGROUND

Section 303(d) of the CWA requires states to identify waters that do not meet applicable water quality standards with technology-based controls alone. Applicable standards include the designated beneficial uses, the adopted water quality objectives, and the State's antidegradation policy. The section 303(d) list must include the water quality limited segments, associated pollutants, and a priority ranking of the waters for purposes of developing Total Maximum Daily Loads (TMDLs) in the next two years. A TMDL is the maximum load of a pollutant that can be discharged from point and nonpoint sources without exceeding water quality standards. States are required to submit the section 303(d) list and TMDL priorities to the U.S. Environmental Protection Agency (USEPA) for approval. The 2006 section 303(d) list is due to USEPA by April 2006.

DEVELOPMENT OF THE 2006 SECTION 303(d) LIST

The State Water Board staff solicited, assembled, and considered all readily available data and information. A public solicitation of data and information from State and federal agencies, and from other interested parties, was begun in April 2004. This public data solicitation was concluded in June 2004. The data received generally covered the period of 2001 to early 2004. Some data were submitted that addressed pre-2002 listings. Data (through March 2005) from the Surface Water Ambient Monitoring Program (SWAMP) were included in the record. Other sources of data and information that became readily available to State Water Board staff were also included in the administrative record.

All data and information was reviewed using the listing and delisting factors in the *Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List* (Listing Policy). The Listing Policy identifies the process by which the State Water Board and the Regional Water Quality Control Boards will comply with the listing requirements of CWA Section 303(d). The Listing Policy became effective in December 2004. The Listing Policy was used to make listing/delisting recommendations, which are summarized in fact sheets developed by State Water Board staff. In general, fact sheets were developed for all waters and pollutants where water quality standards were not attained.

A draft Staff Report (report) has been developed documenting recommendations for additions, deletions, and changes to the 2002 California section 303(d) list. Recommendations are also made for when TMDLs will be completed. The report provides a summary of list changes and the State Water Board staff analysis of data and information. Two additional staff reports were also developed for waters and pollutants where the recommendations were "Do Not List" or "Do Not Delist."

AVAILABILITY OF THE DRAFT STAFF REPORTS ON REVISION OF THE SECTION 303(d) LIST

The draft Staff Reports supporting the revision of the section 303(d) list are posted on the State Water Board Web site at http://www.waterboards.ca.gov/tmdl/303d_update.html. You may also receive a copy on CD-R of the draft Staff Reports by contacting:

Dorena Goding
Water Quality Assessment Unit
Division of Water Quality
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100
916-341-5596
FAX: (916) 341-5550
Email: dgoding@waterboards.ca.gov

SUBMISSION OF COMMENTS

The State Water Board encourages that all comments on the proposed changes to the section 303(d) list be submitted by email, mail, or fax, postmarked no later than 5:00 p.m., December 6, 2005. Time limitations on presentations may be imposed. The State Water Board requests that oral testimony be summarized. Persons with similar views are encouraged to make joint presentations. All comments received will be considered by the State Water Board before considering adoption of a revised section 303(d) list.

Written comments should be submitted to:

Craig J. Wilson, Chief
Water Quality Assessment Unit
Division of Water Quality
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100
FAX: (916) 341-5550
Email: cjwilson@waterboards.ca.gov

COURT REPORTER

A court reporter will record all the oral comments made during the public workshop(s). Persons who desire a copy of the workshop transcript must make their own arrangements with the court reporter.

PARKING AND ACCESSIBILITY

The enclosed maps show the locations of the workshops.

- **December 1, 2005 Pasadena Workshop**. Hotel parking is available at a fee of $10 for self-parking. Alternative public parking is available. The City of Pasadena operates three parking structures with over 2,500 parking spaces that serve the mixed-use urban village known as the Paseo Colorado. These parking structures are relatively close (within ten to fifteen minute walk) to the Hilton Pasadena Hotel. The **Los Robles Parking Structure** is located at 400 East Green Street (on the southwest corner of Los Robles and Green) and is accessible from Green Street and Los Robles Avenue. The **Marengo Parking Structure** is located at 155 East Green Street (on the northwest corner of Marengo and Green) and is accessible from Marengo Avenue, Green Street, and Arroyo Parkway. The **Paseo Colorado Subterranean Structure** is located at 300 East Colorado Boulevard (between Marengo and Los Robles) and can be accessed from Colorado Boulevard and Green Street. All these parking structures are open 7 days a week with a daily maximum of $6. Additional information can be found at http://www.ci.pasadena.ca.us/trans/parking/pkng_locs.asp.
- **December 6, 2005 Sacramento Workshop.** There is a parking garage across the street from the building with entrances on 10th and 11th Streets between "I" and "J" Streets, and there are metered parking spaces in the vicinity of the building. Both facilities are accessible to persons with disabilities. Individuals who require special accommodations are requested to contact Adrian Perez, at (916) 341-5880, at least five working days prior to the public hearing date. Persons with hearing or speech impairments can contact us by using the California Relay Service TDD. TDD (Telecommunications Device for the Deaf) is reachable only from phones equipped with a TDD Device. HEARING IMPAIRED RELAY SERVICE: TDD to voice 1-800-735-2929, Voice to TDD 1-800-735-2922**.**

All visitors are required to sign in and receive a badge prior to attending any meetings in the Cal/EPA building. The Visitor and Environmental Services Center is located just inside and to the left of the Cal/EPA Building's public entrance. Valid picture identification may be required due to the security level. Please allow up to 15 minutes for receiving clearance to proceed to the Sierra Hearing Room

Debbie Irvin
Clerk to the Board

SEP 30 2005
Date

Region 2

Water Segment: Napa River

Pollutant: Mercury

Decision: List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.5 of the Listing Policy. One line of evidence is available in the administrative record to assess this pollutant.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Two of the 3 samples exceeded the OEHHA Screening Value and this exceeds the allowable frequency listed in Table 3.1 of the Listing Policy.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Tissue

Beneficial Use: CM - Commercial and Sport Fishing (CA)

Matrix: Tissue

Water Quality Objective/ Water Quality Criterion: San Francisco Bay RWQCB Basin Plan: Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life.

	Effects on aquatic organisms, wildlife, and human health will be considered.
Evaluation Guideline:	0.3 ug/g (OEHHA Screening Value).
Data Used to Assess Water Quality:	Two out of 3 samples exceeded. One filet composite sample of bluegill (1995) and two individual samples of brown bullhead (1995) and Sacramento pike minnow (1997) were collected. The 1995 samples taken near Elm Street exceeded the guideline. The 1997 pike minnow taken near the J.F.K. boat ramp did not exceed (TSMP, 2002).
Spatial Representation:	Two stations were sampled: in Calistoga at Elm Street and 1/2 mile upstream from the J.F.K. Park boat ramp.
Temporal Representation:	Samples were collected in 1995 and 1997.
Data Quality Assessment:	Toxic Substances Monitoring Program 1994-95 Data Report. Environmental Chemistry Quality Assurance and Data Report for the Toxic Substances Monitoring Program,1996-2000. Department of Fish and Game.