Bay Area Clean Water Agencies
A Joint Powers Public Agency
Leading the Way to Protect our Bay

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Unlike its counterparts in the Central Valley (Central Valley Clean Water Agencies Association) and Southern California (Southern California Alliance of POTWs), which are incorporated as 501(c)(3) non-profit organizations, the Bay Area Clean Water Agencies (BACWA) is a joint powers agency and therefore must comply with all state laws applicable to local governments. The purpose of this memorandum is to provide BACWA Board members with a synopsis of key laws and regulations of which they should be aware during their tenure on the Board.

A. CONFLICTS OF INTEREST, FINANCIAL DISCLOSURE & ETHICS

California's Political Reform Act (Government Code section 87100, *et seq.*) imposes broad conflict of interest and disclosure requirements on public officials. Specifically, it requires that public officials (1) disqualify themselves from decisions in which they have a financial interest, (2) annually complete and file a Statement of Economic Interest and (3) biennially complete training on ethics rules.

1. Conflicts of Interest

California Gov. Code § 87100 prohibits all public officials from making, participating in making, or in any way using their position to influence a government decision in which they know or have reason to know they have a financial interest. The Fair Political Practices Commission has developed an eight-part test to ascertain whether a person must disqualify him or herself from an agency decision: (1) Is the individual a public official? (2) Is a government decision being made? (3) Is an economic interest involved? (4) Does the decision directly or indirectly involve the official's economic interests? (5) Is the potential impact on the official's economic interests material? (6) Is a material effect reasonably foreseeable as a result of the decision? (7) Will the impact to the official's interests be the same as the effect on the public generally? (8) Even if there is a disqualifying conflict of interest, is the official's participation legally required?

Resources:

- FPPC Fact Sheet (http://www.fppc.ca.gov/index.php?id=37).

2. Statements of Economic Interests (Form 700)

All local public officials who make, or participate in making, governmental decisions that could affect their personal financial interests are required to file financial disclosure forms referred to as Statements of Economic Interests (SEI). Officials must file an initial "assuming office statement" within 30 days of taking office and a "leaving office statement" within 30 days of leaving office. While in office, officials must file a SEI on or before **April 1** of each year with the designated filing officer. BACWA's designated filing officer, the Assistant Executive

Director, will send a notice to all Board members and alternates no later than **March 1** of each year reminding them of this obligation.

Resources:

- Top Ten questions about Form 700 (http://www.fppc.ca.gov/forms/700-08-09/top_ten.pdf).
- FPPC summary of disclosure laws and reporting requirements. (http://www.fppc.ca.gov/library/seibook9-04.pdf).

3. Ethics Training

Local agency officials must complete ethics training within one year of their first day of service, and once in each subsequent two year period. Certification of these trainings must be submitted to and retained by BACWA (and should be submitted to the Assistant Executive Director). Free trainings are available at the California Association of Sanitation Agencies' annual meeting and online (http://localethics.fppc.ca.gov/login.aspx).

Resources:

- Institute for Local Government, Understanding Public Service Ethics (http://www.ca-ilg.org/sites/ilgbackup.org/files/Basics_PersFinancialGain_WM.pdf).

B. PUBLIC MEETINGS

The purpose of California's Brown Act is to facilitate public participation in local government decisions and to curb misuse of the democratic process by secret legislation by public bodies. To these ends, the Brown Act imposes an "open meeting" requirement on local legislative bodies. The key points for BACWA Board members to consider include the following:

a. All meetings of the Executive Board must be open, and public and notice of agenda items must be publicly posted at least 72 hours in advance.
    - A meeting is any gathering of a majority of the Board to hear, discuss, or deliberate on matters within the agency's jurisdiction.
    - Serial communications, including written and verbal, constitute meetings.
    - Meetings must be held within the agency's jurisdiction.
    - The public must be afforded the opportunity to address the Board.
    - All votes must be public.

b. Closed sessions are only allowed in limited circumstances.
    - Closed sessions to discuss pending or potential litigation are allowed only if open discussion "would prejudice the position of the agency in the litigation."
    - Closed sessions are allowed to discuss the employment, performance evaluation, discipline, complaints about or dismissal of a specific employee or potential employee.

- Each item to be transacted or discussed in a closed session must be briefly described on an agenda for the meeting. Prior to adjourning into closed session, a representative must orally announce the items to be discussed in closed session. Once the closed session has been completed, the agency must reconvene in open session, where it may be required to report votes and actions taken in closed session.

c. Issues not included on the agenda may be included in limited circumstances.
   - The Board, by majority vote, may determine that the matter in question constitutes an emergency pursuant to Cal. Gov't Code section 54956.5.
   - The Board, by a vote of 2/3 of the members, may determine that there is a need for immediate action which cannot reasonably wait for the next regularly scheduled meeting. The need must have come to the attention of the agency staff after the agenda was posted.
   - Finally, where an item has been posted on an agenda for a prior meeting, the item may be continued to a subsequent meeting that is held within five days of the meeting for which the item was properly posted.

Resources
- Attorney General's Guide to the Brown Act (http://caag.state.ca.us/publications/2003_Main_BrownAct.pdf).
- The First Amendment Project's Pocket Guide to the Brown Act (http://www.thefirstamendment.org/Brown-Act-Brochure-DEC-03.pdf).

C. PUBLIC INFORMATION & RECORDS REQUESTS (Public Records Act)

As a public agency, BACWA is subject to the Public Records Act (PRA) which specifies that government's records are generally public property. The fundamental precept of the PRA is that government records must be disclosed upon request unless the disclosure is necessary to protect an individual's right to privacy or would interfere with the government's ability to carry out its essential function. The law specifies exemptions to disclosure intended to protect these considerations but generally, the law is weighted in favor of disclosure.

Upon receipt of a request for public records, BACWA has ten days to ascertain whether the requested information is protected from disclosure. If it is not, BACWA must produce copies of, or give the requester access to, all relevant documents. If BACWA believes that an exemption applies, it must deny the request in writing and explain the basis thereof.

The following is a list of the types of records exempt from disclosure that are most relevant to BACWA. All other records, including electronic communications between Board members and management must be disclosed upon request.
- Discussions between the agency and an attorney providing legal advice.
- Records concerning agency litigation that are not communications between the agency and an attorney, but only until the claim is resolved or settled.

- Records which, if disclosed, would impair the agency's deliberative process, but only if the public interest served by not making the records public clearly outweighs the public interest served by disclosure.
- Preliminary drafts, notes and memoranda, but only if they (1) are not retained in the ordinary couse of business and the public interest in withholding clearly outweighs the public interest in disclosure.
- Personnel, medical or similar files that, if disclosed would reveal intimate, private details.

Resources:

- Attorney General's Guide to the Public Records Act (http://www.ag.ca.gov/publications/summary_public_records_act.pdf).
- The First Amendment Project's Pocket Guide to the Public Records Act (http://www.thefirstamendment.org/publicrecordsact.pdf).

JOINT POWERS AGREEMENT

CREATING AN AGENCY TO BE KNOWN AS THE

BAY AREA DISCHARGERS ASSOCIATION

THIS AGREEMENT is entered into this 4th day of Jan., 1984, between the CENTRAL CONTRA COSTA SANITARY DISTRICT, a public corporation, hereinafter known as "CCCSD"; the EAST BAY DISCHARGERS AUTHORITY, a joint powers authority, hereinafter known as "EBDA"; the EAST BAY MUNICIPAL UTILITY DISTRICT, a public corporation, hereinafter known as "EBMUD"; the CITY AND COUNTY OF SAN FRANCISCO, a municipal corporation, hereinafter known as "San Francisco"; and the CITY OF SAN JOSE, a municipal corporation, hereinafter known as "San Jose." Hereinafter, these five agencies will sometimes be referred to as the "original signatory agencies".

WITNESSETH:

WHEREAS, each of the foregoing public agencies is empowered to survey, study, and report concerning matters related to wastewater treatment and disposal and conduct other activities concerning such treatment and disposal; and specifically they are empowered to monitor discharges of treated wastewater to waters of the bay system and gather and interpret the data of such monitoring with primary emphasis on effects of treated wastewater discharges on waters on the bay system;

WHEREAS, each of the foregoing agencies is desirous of conducting some of these activities jointly; and

WHEREAS, each of the foregoing agencies is desirous hereby to exercise, jointly, selected powers common to all.

WHEREAS EBDA consists of the following jurisdictions: CITY OF HAYWARD, CITY OF SAN LEANDRO, ORO LOMA SANITARY DISTRICT, CASTRO VALLEY SANITARY DISTRICT, UNION SANITARY DISTRICT.

WHEREAS San Jose represents the following jurisdictions: CITY OF SANTA CLARA, a co-owner of the Water Pollution Control Plant, and the agencies tributary to that plant, CITY OF MILPITAS, SUNOL SANITARY DISTRICT, BURBANK SANITARY DISTRICT, COUNTY SANITATION DISTRICTS 2-3, COUNTY SANITATION DISTRICT 4, CUPERTINO SANITARY DISTRICT.

NOW, THEREFORE, IN CONSIDERATION of the mutual promises, covenants, and conditions hereinafter contained, the parties agree as follows:

1. DEFINITIONS

Unless the context otherwise requires, the terms defined in this section shall, for all purposes of this Agreement, have the meanings herein specified.

Agreement: This joint powers agreement.

Annual Budget: See Section 9.

Annual Work Plan: See Section 8.

Associate Member: Any public agency, other than the original signatory agencies, with wastewater treatment or disposal responsibilities accepted for membership in this Association by the Executive Board.

Association: Bay Area Dischargers Association

Bay: San Francisco Bay System.

Executive Board: A board consisting of the General Manager or person of equivalent position from each of the original signatory agencies.

Fiscal Year: The period from July 1 to June 30.

Member Agency: Any of the original signatory agencies and any Associate Members.

Original Signatory Agencies: Central Contra Costa Sanitary District, East Bay Dischargers Authority, East Bay Municipal Utility District, City and County of San Francisco, and the City of San Jose.

Overhead: Activities or costs not directly associated with a program.

Participating Agency: A Member Agency receiving benefits and sharing in the costs of a program.

Program: Work that is directly related to the accomplishment of the purposes of the Association.

Programs of General Benefit: Programs that benefit all member agencies in the same general proportions assumed in the cost allocation formula.

Programs of Specific Benefit: Programs whose benefits are significantly greater for some member agencies than for others and whose costs are allocated to agencies in accordance with the programs' benefits.

San Francisco Bay System: San Francisco Bay, the Golden Gate, San Pablo Bay, Carquinez Strait, Suisun Bay, Grizzly Bay, Honker Bay, and other adjacent waters as may be determined from time to time by the Executive Board.

Simple Majority: More than half of the voting members of the Executive Board.

Total Discharge: The volume of wastewater discharged into the Bay, in gallons.

2. PURPOSE

The purpose of this Agreement is to create an agency as a public entity separate and apart from the parties to this Agreement to administer and exercise such Agreement, the purpose of which is as follows:

- To collect data on the aquatic life and quality of waters of the San Francisco Bay system, with emphasis on pollution-related effects;
- To coordinate the work of this Association with related work of other agencies or organizations;
- To interpret data collected by this Association and by others in order to assess the effects of pollution and other factors on the Bay;
- To manage this data to assure its continued usefulness;
- To carry out other tasks in support of the collection, interpretation, and management of data;
- To represent the interests of the member agencies;
- To develop and disseminate information about the Bay;
- To carry out other programs of mutual interest;

3. CREATION OF ASSOCIATION

Pursuant to Chapter 5, Division 7 of Title 1 (commencing with government Code Section 6500 et seq.,) there is hereby created an agency as a public entity, separate and apart from the signatories in this Agreement, to be known as the "Bay Area Dischargers Association", herein called "Association". Such agency shall administer and execute this Agreement.

The Agreement shall be effective on the date of execution by the last original signatory agency.

4. POWERS AND AUTHORITIES OF THE ASSOCIATION

The Association shall and is hereby authorized in its own name to do all things necessary and desirable (subject to the limitations of this Agreement) to carry out the purposes of this Agreement, including but not limited to the following:

- o To make and enter contracts;
- o To employ agents and employees;
- o To acquire, hold, or dispose of property;
- o To incur debts, liabilities, and obligations which shall not constitute the debts, liabilities, or obligations of any of the Member Agencies;
- o To apply for and accept grants;
- o To make plans and conduct studies;
- o To sue and be sued in its own name.

The Association is prohibited from issuing revenue bonds or otherwise incurring indebtedness as provided in Article 2, Chapter 2, Division 7, Title 1 (commencing with Section 6550 of the Government Code).

5. ORGANIZATION

A. Executive Board

Such Association shall have an Executive Board composed of five (5) members serving in their individual capacities as members of such Executive Board. The members of the Executive Board shall be the General Managers or persons of equivalent position of each of the five original signatory agencies.

Each member agency shall officially designate their member of the Executive Board. Each member agency shall also designate an alternate to serve in the absence of the member.

B. Associate Members

Other public agencies with wastewater treatment and disposal responsibilities can join the Association as Associate Members with the approval of the Executive Board. The Executive Board shall set the conditions and privileges of membership for Associate Members, and these conditions and privileges shall not be inconsistent with the terms of this agreement.

C. Procedures

The Executive Board may adopt bylaws, rules for conduct of meetings, and operating procedures. The administrative procedures and policies of a member agency may be adopted by the Association.

D. Meetings

The Executive Board shall meet at least twice in each calendar year and such other times as necessary to conduct the business of the Association. A majority of Executive Board Members shall constitute a quorum.

All meetings of the Association shall be held subject to the provisions of the Ralph M. Brown Act, being Sections 54950 et seq of the California Government Code, and other applicable laws of the State of California requiring notice of meetings of public bodies to be given.

6. REPORTS TO MEMBER AGENCIES

Each year the Association will report to the governing bodies of each of the member agencies. This report will describe the technical and financial activities of the Association during the preceeding year.

7. OFFICERS

The Association shall have two officers: Chairman and Vice-Chairman. The Executive Board shall select the Chairman and Vice-Chairman from the members of the Executive Board. Each officer shall hold office for one year with the term of office coinciding with the fiscal year of the Association.

A. Chairman

The Chairman shall, subject to the direction of the Executive Board, supervise and control the affairs of the Association and the activities of the officers of the Executive Board, the staff, and consultants. The Chairman shall perform all duties incident to the office and such other duties as may be required to carry out this Agreement or which may be prescribed from time to time by the Executive Board.

B. Vice-Chairman

The Vice-Chairman shall serve as Chairman in the absence of the regularly elected Chairman. In the event both the Chairman and Vice-Chairman are absent from a meeting which otherwise would constitute a quorum and a temporary Chairman was not designated by the Chairman at the last regular meeting, any member may call the meeting to order, and a temporary Chairman may be elected by majority vote to serve until the Chairman or Vice-Chairman is present.

8. TREASURER

The Treasurer shall be the depository of and have custody of all money of the Association from whatever source. The Treasurer shall perform all duties required to be performed by an Auditor. The Treasurer of one of the Member Agencies, with consent of the Member Agency, shall be designated Treasurer of the Association by unanimous approval of the Executive Board. The Treasurer shall:

- Receive and receipt for all money of the Association and place it in the treasury of the Association to the credit of the Association;
- Be responsible for the safekeeping and disbursement of all Association money;
- Pay, when due, from Association funds and upon the signature of the Chairman and counter-signature of the Treasurer, all sums payable by the Association;
- Verify and report in writing to the Executive Board on the first day of each quarter of the Association's fiscal year the amount of receipts since the last report and the amount paid out since the last report in compliance with Article 1, Chapter 5, Division 7, Title 1 of the California Government Code (Sections 6500 et seq);

- o Invest all of the Association's funds, not currently required, in the manner provided by law and collect interest thereon for account of the Association;

- o Make or arrange for a contract with a certified public accountant to make an annual audit of the accounts and records of the Association. In each case the minimum requirements of the audit shall conform to generally accepted auditing standards. The report of the audit shall be filed as a public record with the Executive Board, each member signatory agency, and the county auditor of each county in which the agency is located, not later than six months following the end of the fiscal year under examination unless such filing date is extended by the Executive Board.

The governing body of the same Member Agency as the Treasurer shall determine charges to be made against the Association for the services of the Treasurer. Payment of these charges shall be subject to the approval of the Executive Board.

9. ANNUAL WORK PLAN

Each year, prior to July 1, the Association shall prepare an annual work plan describing the work to be done by the Association in the ensuing fiscal year. The work plan shall segregate all work of the Association into two categories, overhead and programs. Work falling into the category of programs will be further segregated into two sub-categories: programs of general benefit to all Member Agencies and programs of specific benefit to one or more Member Agencies. For each program, the work plan will set forth information including the following:

- o The purpose of the program;

- o The method by which the program will be carried out;

- o The products to be produced by the program;

- o The schedule for carrying out the program;

- o The responsibility for carrying out the program;

- o The budget for the program.

The work plan will be prepared in three parts. Part A shall consist of the information on overhead. Part B shall consist of the information on programs of general benefit to all Member Agencies. Part C shall contain the information on programs of specific benefit to one or more Member Agencies.

10. ANNUAL BUDGET

Concurrent with the preparation of the annual work plan the Association will prepare an annual budget based on the work plan. The budget shall include, but not be limited to, the following parts:

- o Part A of the budget shall set forth the cost of overhead and the allocation of overhead cost among Member Agencies;
- o Part B of the budget shall set forth the cost of programs of general benefit and the allocation of costs of such programs among Member Agencies;
- o Part C of the budget shall set forth the cost of programs of specific benefit to one or more agencies and the allocation of such costs among participating agencies.

11. VOTING

The Association shall be governed by the Executive Board which shall exercise all powers and authority on behalf of the Association, subject to the following limitations:

- o The affirmative vote of all five members of the Executive Board shall be required for approval of Parts A and B of the annual work plan and the annual budget and any amendments to Parts A and B of the annual work plan and annual budget.
- o The affirmative vote of a simple majority of the members of the Executive Board and the affirmative vote of all members of the Executive Board participating in a program of specific benefit shall be required for approval of Part C of the annual work plan and budget and any amendments to that Part;
- o A simple majority vote of members of the Executive Board shall be required for approval of all business not otherwise described herein.

A simple majority of members of the Executive Board shall constitute a quorum.

12. ALLOCATION OF COSTS

Costs for work described in Parts A and B of the annual work plan shall be allocated to each of the Original Signatory Agencies as follows:

- o One half of these costs shall be allocated equally among each of the Original Signatory Agencies;
- o One half shall be allocated among the Original Signatory Agencies in proportion to each agency's total discharge to the San Francisco Bay System during the preceeding fiscal year.

The allocation of costs to Associate Members for work described in Parts A and B of the annual work plan shall be determined by the Executive Board on a case-by-case basis.

Costs for work described in Part C of the annual work plan shall be allocated among those agencies participating in the programs in direct proportion to the benefits received by each agency in a manner established by the Executive Board at the time each program of specific benefit is approved or revised.

13. PAYMENT OF ANNUAL COSTS

Not later than March 1st of each year, following the first year of service to an Agency, the Association shall notify each Agency of its allocated share of the estimated costs for the forthcoming fiscal year. Each Agency hereby agrees to include in each annual budget approved by the governing body of such Agency amounts estimated to be sufficient to pay all such charges and to pay to the Association within thirty days of receipt of a statement of the Agency's allocated share of the actual costs for the billing period as determined by the Executive Board.

14. JOINT REVOLVING FUND

A Joint Revolving Fund shall be established, which shall be used to pay all administrative, operating, engineering, and other noncapital expenses incurred by the Association. Each Agency shall, within thirty days of execution of this Agreement, deposit into the Joint Revolving Fund the sum of $10,000 to cover initial formation costs, including preparation of the initial budget and work plan. The deposit shall be credited against the annual cost allocated to the member agency.

All monies in the joint revolving fund shall be paid out by the Treasurer for obligations authorized and approved by the Executive Board.

15. STAFF AND CONSULTANTS

The Association may employ or contract for any staff or consultants as may be reasonably necessary to carry out the purposes of this Agreement, including, but not limited to an Executive Director, consultants, and experts in various technical aspects of the Association's programs. The Association may elect to use the staff technical or administrative services of a member agency and shall pay the charges jointly agreed upon between the Agency furnishing the services and the Executive Board.

16. OFFICES

For the purposes of forming the Association and for initial operation, the principal office of the Association shall be at EBMUD. The Association is hereby granted full power and authority to change said principal office from one location to another. Fifteen days prior to such change, the Chairman shall notify the Secretary of State and each member agency in writing of the change.

17. TERMINATION OF AGREEMENT

This Agreement shall be terminated upon the resignation of any one of the original signatory agencies.

18. DISPOSITION OF PROPERTY AND SURPLUS FUNDS

At the termination of this Agreement, any and all property, funds, assets, and interests therein of the Association shall become the property of and be distributed to the Member Agencies. Money collected from Member Agencies and held in reserve by the Association for payment of costs of programs shall be allocated among Member Agencies in proportion to each agency's contributions to such reserves. All other property, funds, assets, and interests shall be distributed to Member Agencies in proportion to each agency's contributions to the Association for costs set forth in Part A of the annual budgets.

19. REPORTS AND PUBLICATIONS

All reports and publications must be approved by the Executive Board before being released for public distribution.

20. SUCCESSORS

This Agreement shall be binding upon and shall inure to the benefit of the successors of the parties.

21. INDEMNIFICATION LIABILITY AND INSURANCE

Third party liability insurance naming each Member Agency as an additional insured party, shall be carried during the entire term of this Agreement; the premiums shall be paid by the Association.

Each Member Agency agrees to indemnify and hold harmless every other Member Agency to this Agreement and their officers, agents, and employees free from any cost or liability imposed upon any other Member Agency, officers, agents, or employees arising out of any acts or omissions of its own officers, agents, or employees.

22. ARTICLE HEADINGS

Article headings in this Agreement are for convenience only and are not intended to be used in interpreting or construing the terms, convenants, and conditions of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement on the dates hereafter set forth.

ATTEST

By Joyce E. McMillan

Dated: Oct 20, 1983

CENTRAL CONTRA COSTA SANITARY DISTRICT

By _____

Dated: Oct 20, 1983

ATTEST

By _____

Dated: OCT 13, 1983

EAST BAY DISCHARGERS AUTHORITY

By _____
Manager

Dated: Sept 30, 1983

By _____
Chairman of the Commission

Dated: Oct 5, 1983

ATTEST

By _____
PAUL E. MALCOM
SECRETARY

Dated: 9/26/83

EAST BAY MUNICIPAL UTILITY DISTRICT

By _____
JEROME B. GILBERT GENERAL MANAGER

Dated: September 23, 1983

ATTEST

By _____

Dated: _____

CITY AND COUNTY OF SAN FRANCISCO

By _____
Mayor of San Francisco

Dated: 11/4/84

ATTEST

By _____

Dated: _____

CITY OF SAN JOSE

By _____
HELEN E. JACKSON
City Clerk

Dated: _____

AMENDMENT TO
JOINT POWERS AGREEMENT

THIS AMENDMENT TO JOINT POWERS AGREEMENT CREATING AN AGENCY TO BE KNOWN AS THE BAY AREA DISCHARGERS ASSOCIATION (the "Joint Powers Agreement") is entered into this ____day of February, 2001, between the CENTRAL CONTRA COSTA SANITARY DISTRICT, a public corporation; the EAST BAY DISCHARGERS AUTHORITY, a joint powers authority; the EAST BAY MUNICIPAL UTILITY DISTRICT, a public corporation; the CITY AND COUNTY OF SAN FRANCISCO, a municipal corporation; and the CITY OF SAN JOSE, a municipal corporation (the "Original Signatory Agencies").

WHEREAS the Original Signatory Agencies acting by and through their designated members of the Executive Board, desire to amend the Joint Powers Agreement in the manner herein set forth to change the name of such association to Bay Area Clean Water Agencies effective as of March 1, 2001.

NOW, THEREFORE, the Joint Powers Agreement is amended, effective as of March 1, 2001, as follows:

1. The definition of the term "Association" in Section 1 is amended to read as follows: "Association: Bay Area Clean Water Agencies."

2. Section 3 is amended to delete the name, "Bay Area Dischargers Association," and insert in place thereof the name, "Bay Area Clean Water Agencies."

All other terms of the Joint Powers Agreement remain the same.

IN WITNESS WHEREOF, the Original Signatory Agencies have executed this Agreement on the dates hereafter set forth.

CENTRAL CONTRA COSTA SANITARY DISTRICT

By J. Kelly

Dated: 2-22-01

EAST BAY DISCHARGERS AUTHORITY

By Charles V. Weir

Dated: 2/22/01

BACWA EXECUTIVE BOARD CONTACTS LIST FOR 2010 – 2011

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revised 7/30/10

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revised 7/30/10

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revised 7/30/10

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Consultant – Monica Oakley
(see Collection Systems Committee)

BAY AREA CLEAN WATER AGENCIES
SUCCESSION PLANNING
September 2010

A. BACWA Principal Representation

Agency	Representative	Title & Roles
EBMUD	Ben Horenstein	BACWA, Chair BACWA, Finance Committee Tri-TAC Chair
	Dave Williams (Alternate)	Aquatic Science Center, Board Member Summit Partners, Representative NACWA, Vice-President
	Ed McCormick (Alternate)	
SFPUC	Tommy Moala	
	Natalie Sierra (Alternate)	Tri-TAC, Vice Chair
City of San Jose	Bhavani Yerrapotu	
	Dave Tucker (Alternate)	WERF, Mercury Collaborative Research
	Dale Ihrke (Alternate)	
	John Stufflebean (Alternate)	
	Kirsten Struve (Alternate)	Aquatic Science Center, Board Member RMP Steering Committee Member
EBDA	Mike Conner	Aquatic Science Center, Board Member
	Karl Royer (Alternate)	
	Rich Currie (Alternate)	
CCSD	Jim Kelly	

B. Other BACWA Representation

Agency	Representative	Successor/ Alternate	Notes
SFEI	Chuck Weir Dave Tucker		
RMP Technical Committee	Rod Miller & Francoise Rodigari		
RMP Steering Committee	Kristen Struve (Large POTWs) Dan Tafolla (Medium POTWs)		Need small POTW representative.
Summit Partners	Dave Williams Amy Chastain		
Aquatic Science Center	Kirsten Struve	Jim Kelly	
	Dave Williams	Amy Chastain	
	Mike Connor	Arleen Navarret	Need replacement for Arleen.
CWCCG	Stephanie Cheng Amy Chastain		

EXECUTIVE BOARD MEETING CALENDAR

MONTH	DAY	TIME
January	27	8:00 – 9:00 EB Mtg. 9:00 – 1:30 Annual Member Mtg.
February	24	9:00 – 12:00
March	24	9:00 – 12:00
April	21	9:00 – 12:00
May	26	9:00 – 12:00
June	23	9:00 – 12:00
July	28	9:00 – 12:00
August	25	9:00 – 12:00
September – Pardee Retreat*	13-16	
October	27	9:00 – 12:00
November	17	9:00 – 12:00
December	15	9:00 – 2:00 (Holiday Lunch)

* May move to October.

CASA 2011 Conferences

MID-YEAR CONFERENCE
January 12-45 JW Marriot-Desert Springs Palm Desert, CA (888) 538-9459

D.C. CONFERENCE
March 14 - 16 Hotel Monaco Washington, D.C. (800) 649-1202

SPRING CONFERENCE
April 27 - 30 Hyatt Regency Sacramento, CA (800) 633-7313

56th ANNUAL CONFERENCE
August 10 - 13 Mission Bay Hilton in San Diego, CA (800) 445-8667

WEF 2011 Conferences

Impaired Waters Symposium 2011: Spanning the Water Quality Continuum – From Standards to TMDLs
Hilton Miami Downtown
Miami, Florida
January 12 — 13, 2011

Nutrient Recovery and Management 2011
Hilton Miami Downtown
Miami, Florida
January 9 – 12, 2011

The Utility Management Conference™ 2011
Downtown Denver
Denver, Colorado
February 8 — 11, 2011

Disinfection 2011
Hyatt Regency Cincinnati
Cincinnati, Ohio
April 10 – 13, 2011

Residuals and Biosolids 2011 - Adapting Residuals Management to a Changing Climate
Sacramento Convention Center
Sacramento, California
May 22 – 25, 2011

Collection Systems 2011 — Rehab or Roulette: Is our Environment at Risk?
Raleigh Convention Center
Raleigh, North Carolina
June 12 – 15, 2011

EWA-WEF-JSWA Specialty Conference on Cutting-Edge Technologies and Best Practices on Sewerage
TBD
Tokyo, Japan
July 28-29, 2011

Energy & Water 2011 - Efficiency, Generation, Management, and Climate Impacts
Hyatt Regency McCormick Place
Chicago, Illinois
July 31 – August 2, 2011

NACWA 2011 Conferences

2011 Winter Conference
February 1-4, 2011
Hyatt Regency Pier Sixty-Six
Ft. Lauderdale, FL

2011 National Environmental Policy Forum
May 8-11, 2011
Westin Washington DC City Center
Washington, D.C.

2011 National Pretreatment & Pollution Prevention Workshop
May 18-20, 2011
St. Louis, MO

2011 Summer Conference & 41st Annual Meeting
July 19-22, 2011
Westin Chicago River North
Chicago, IL

Breakout: **Building Scale**

- Public education – perception, wastewater quality controls & safety, operation and maintenance
- Regulatory framework – building codes
- Technology – scalable systems
- Responsibility - who should be responsible?
- Risk assessment – persistence of contaminants

Breakout: **Cluster Scale**

Key Point: With advances in online analytics, we have the technology for cluster-scale scalping of wastewater for reuse, and public acceptance is there for irrigation and toilet applications.

- Knowledge of local site (hydrogeology, geography) is an advantage

- Regulatory cooperation is critical and may be problematic in some areas

- Scalping is a more likely to be successful upfront than full decentralized (anaerobic) treatment

- Game-Changing Technologies:
  - Membrane systems
  - Advanced oxidation (UV treatment, Ozone)
  - Sand Filtration systems

Breakout: **Cluster Scale**

- Technology Needed:
  - Online Analytics at small scale
  - Efficiency & cost of membrane systems
  - Odor prevention
  - Remote operation and management
- Public acceptance of reuse:
  1. Irrigation
  2. Toilet
  3. Showers
  4. Drinking water (option of last resort)

Breakout: **Catchment**

Key Point: We Need a Joint Vision for Bay Area

Incremental Pathway
Collaboration between plants for experimentation and scale-up
Regulatory/Compliance Environment
Flexibility?
Technologies for:
NH3 + N removal
Enhanced primary treatment
Residual solids

Breakout: **Catchment**

Research:

Energy Budgets for all Treatment Plants

Measurement of Flows- water, BOD, nutrients, I/I

Effects/Potential of different technologies

Effects of concentration

Toxics?

TSS

Salts

Risk analysis of upstream scalping failure

Breakout: **REGIONAL SCALE**

Key Point: Source-market proximity and connections

- Case studies, successful models
- Identify "markets" and their water quality needs
- Marketing mechanisms (brokers)

Key Point: Funding/permitting incentives

- Funding/permitting heterogeneity
- Ex. Storm water (altering hydrograph)

Breakout: **REGIONAL SCALE**

Key Point: Next generation of WWT

- Regional themes/problems (sea level rise)
- Opportunities for habitat creation/ restoration, renaturalization

Key Point: Retrofit versus new

- Appropriate scale for tackling retrofit
- Technology needs
- Tech transfer (e.g., Australia)
- New sources (e.g., urban runoff)

Breakout: Economic Issues

Key Point:

- Important to realize the fundamental challenge of introducing novel systems to a hesitant public and agencies with conflicting missions.
- Potential Solution: Identifying proximate sites for demonstrations where liability can be minimized. (e.g. Institutionalized exceptions to discharge regulations)

Breakout: Economics of Distributed Systems

Questions:

- What is the minimum size of a customer for a distributed WWT system that results in (a) nutrient, (b) energy, (c) water recovery.

- What are the variable costs that may be associated with any single distributed system and what are the costs of handling large variability in WW flows.

- What is value to a "green-brand" derived from using recycled water if any and to whom.

- Can investors recover the fixed costs of a distributed system.

Breakout: **Bench to Pilot to Full Scale**

Bench -> Pilot -> Full Scale is <u>iterative</u>

Key Point: Need to establish a Non-Profit Entity

- Sponsors a bench-scale facility
  - Shared with a current facility
- All stakeholders involved (funding)
- Streamlined permitting system
- Regulatory certification

Breakout: **Bench to Pilot to Full Scale**

Key Point: Stakeholders must be involved

- WWT authorities
- Equipment companies
- Consultants
- Regulatory body (approval / validation)

Breakout: **Bench to Pilot to Full Scale**

Key Point: Funding

- Stakeholders + government (public & private collaboration)
- Surcharge associated with water bills
- Education fees
- Consultant trials and equipment trials at facility
- Material suppliers pay for use

Breakout: **Bus. Gov & Finance**

Key Point: "Treated Hetch Hetchy"

- Balance between price, value and cost of water
- Public Awareness
- Decoupling sales of water from profit
- Creating market place for resources found in wastewater
- Use existing infrastructure for Rec. water

Wastewater as a Resource
Draft Vision Statement

ISSUE:
Technological advances together with the pressing challenges of climate change, water scarcity, and escalating energy costs have created opportunities for recovery of valuable products from wastewater, including clean water, renewable energy, fertilizer and other useful materials

VISION:
Systems for resource recovery from wastewater will be developed and deployed to maximize the value of recovered water, energy, and materials, thereby contributing to the development of vibrant, self-sufficient economies and healthy ecosystems around the Bay.

MAIN OBJECTIVE:
The Bay Area will become a regional catalyst for innovation and implementation of recovering the valuable resources contained in sewage.

NEXT STEPS:

1. Finalize the vision statement.
2. Establish regional academic, government and industry partnerships.
3. Set up regional water and energy balance workshops, focused on wastewater.
4. Develop scale-up procedures, test beds and financing mechanisms for new wastewater resource utilization technologies.

BACKGROUND:
The wastewater treatment systems that protect the water quality of the San Francisco Bay have reached their design lives and are now in need of renewal. These systems were designed at a time when water was plentiful, energy costs were low, and climate change was not a consideration. From those times to now, the wastes and wastewater resulting from the consumption of water, food, fertilizers, and materials are collected, transported to centralized treatment facilities, and treated to remove organics, nutrients, and toxic substances. Treated water and residuals (gas and solid) are discharged to the environment. A compelling alternative is for distributed and centralized treatment plants to become local centers for resource recovery, enabling low-cost production of clean water that offsets demand for imported water, renewable energy that offsets demand for fossil fuels, nutrients that offset demand for imported fertilizer, and renewable materials that offset demand for imported materials made from non-renewable feedstock. In this vision, coordinated, networked treatment systems enable resource recovery to meet local demands. Decreased dependency upon imports will decrease the energy and emissions that result when water and materials are transported over long distances and establish a local resource base that is less vulnerable to global market fluctuations, political conflict, and natural disasters.

IRWM Plan & State Funding: BACWA'S Roles & Responsibilities

Issues:

1. Whether BACWA should apply for Proposition 84 funds on behalf of the Bay Area Integrated Regional Water Management Plan participating agencies.

2. If BACWA is the Proposition 84 grant applicant, how should cost-sharing and management/oversight conditions with participating agencies be structured?

Background & Discussion:

The Bay Area Integrated Regional Water Management Plan (IRWMP) is a multi-stakeholder, nine-county effort to coordinate a strategic approach to regional water resources management. The IRWMP was created for two reasons. First, it brings together stakeholders to develop a more efficient, comprehensive and effective approach to regional resources management. Second, it ensures that Bay Area projects are eligible for State funding, as Proposition 50 and 84 require that projects to be considered for funding be part of an IRWMP.

Integrated Regional Water Management Plan

The current IRWMP is comprised of four "functional area documents": (1) Water Supply & Quality, (2) Wastewater & Recycled Water, (3) Flood Protection & Stormwater Management, and (4) Watershed Management-Habitat Protection & Restoration. In 2003, BACWA was one of approximately twenty agencies that signed a Letter of Mutual Understanding (LOMU), agreeing to participate in and assist with development of the IRWMP. The LOMU identified BACWA as one of four entities on the IRWMP governing body (called the Coordinating Committee) and as the lead in developing the Wastewater & Recycled Water functional area document, which was approved by BACWA in 2006.

Around this time BACWA also provided $25,000 (of $100,000 in total funds) to hire a consultant to provide support for IRWMP implementation. Key implementation activities funded were development and maintenance of a website, assistance with required reports, addition of new projects to the Plan, and meeting support. The Coastal Conservancy administered the cost share agreement. In May of 2010, BACWA committed $60,000 (of an estimated $183,000 in total funds) to continue implementation activities and to update the IWRMP to ensure eligibility for Proposition 84 funding. The update is being completed by a consultant, RMC, the contract with whom is managed by the Marin Municipal Water District. The expenses related to this contract and the update are eligible to serve as a cost match for a State grant to help update the IRWMP, for which the participating agencies are currently applying.

Proposition 50 Funding

In 2006, BACWA agreed to apply, on behalf of IRWMP participants, to the Department of Water Resources (DWR) for Proposition 50 funding. In 2007, BACWA was awarded a $12.5 million grant for fourteen projects identified in the IRWMP. Of the twelve agencies whose projects are currently being funded, five are BACWA members.

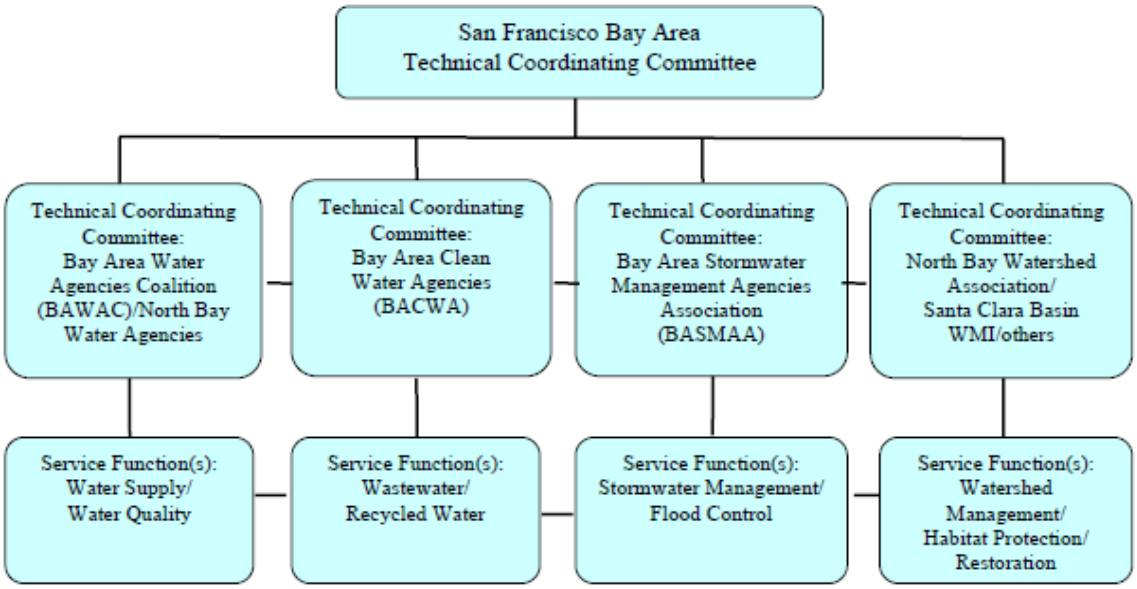
BACWA has agreements with each participating agency requiring them to cover grant administrative costs and to release and indemnify BACWA for any and all claims of liability. In total, the agencies

provided $250,000 (approximately 2%) to cover administrative costs (cost related to legal, consulting, accounting, and staff time for management). BACWA also recovers indirect costs /overheard consistent with its indirect cost allocation policy, at a rate of 5% of total administrative costs invoiced to DWR. EBMUD provides a substantial in-kind contribution through the services of Brian Campbell. Brian acts as the primary liaison between BACWA, the participating agencies, the consultant (Ernie Avila) hired to coordinate invoicing and reporting, DWR, and BACWA's Treasurer (EBMUD). These grants will run through 2014.

Proposition 84 Funding

In August of this year DWR released its Proposition 84 Proposal Solicitation Package for IWRMP projects. Complete applications are due January 7, 2011. The San Francisco Bay Region is eligible for a total of $138 million but only between $15 million and $30 million is available as part of this first round. The application is due in January 2011, and final awards are expected to be made in June 2011.

The Coordinating Committee participants have once again requested that BACWA serve as the applicant for the Proposition 84 grant. The preliminary schedule calls for analysis and selection of projects during the September to October timeframe with the grant proposal being prepared during November/December, which will require a Board resolution. If successful, the implementation period will likely be around five years or so similar to the current Prop 50 grant which is now in its third year. The Executive Board must decide whether BACWA should act as the applicant/interagency coordinator for Proposition 84 funds and, if it does, how it will ensure recovery of the direct and indirect related to serving in this capacity.


San Francisco Bay Area
Technical Coordinating Committee
Technical Coordinating Committee: Bay Area Water Agencies Coalition (BAWAC)/North Bay Water Agencies
Technical Coordinating Committee: Bay Area Clean Water Agencies (BACWA)
Technical Coordinating Committee: Bay Area Stormwater Management Agencies Association (BASMAA)
Technical Coordinating Committee: North Bay Watershed Association/ Santa Clara Basin WMI/others
Service Function(s): Water Supply/ Water Quality
Service Function(s): Wastewater/ Recycled Water
Service Function(s): Stormwater Management/ Flood Control
Service Function(s): Watershed Management/ Habitat Protection/ Restoration

BACWA POLICIES AND PROCEDURES

TITLE	**Cost Allocation Policy for Programs of Special Benefit**
DATE	March 25, 2010
PURPOSE	The purpose of this policy is to describe the general approach taken by the Executive Board of the Bay Area Clean Water Agencies (BACWA) to ensure that costs related to the administration of programs of special benefit are properly apportioned to those programs. It describes the principles that guide the Executive Board in determining how such costs will be allocated to programs of special benefit and provides guidelines for establishing appropriate indirect cost recovery rates for programs of special benefit.
DEFINITIONS	Direct Costs: Those costs that are readily identifiable and can be directly charged to a particular project. Indirect Costs: Those costs that are incurred for common or joint objectives that cannot be identified readily and specifically with a particular project. Programs of Special Benefit: Programs that benefit some member agencies more than others and whose costs are allocated to agencies in accordance with the programs' benefits. Indirect Cost Recovery Rate: The ratio of indirect costs to direct costs, expressed as a percentage and used to calculate the indirect costs to BACWA of administering programs of special interest.
APPLICABILITY	This policy applies to BACWA's programs of special benefit. This policy is adopted pursuant to Section 5.c. of the Joint Powers Agreement, which authorizes the Executive Board to adopt bylaws, rules for conduct of meetings, and operating procedures.
REFERENCES & BACKGROUND	This policy is consistent with current BACWA practices and federal guidance on indirect cost recovery. California does not publish standard guidance on indirect cost charges applicable to state grants and contracts. Each agency or grant program provides specific guidance on eligible costs and allowable overhead and administrative charges. The federal Office of Management and Budget (OMB) Circular A-87, "Cost Principles and Procedures for Developing Cost Allocation Plans and Indirect

Cost rates for Agreements with the Federal Government" (herein referred to as OMB A-87) provides the general basis for this policy. OMB A-87 establishes principles and standards for determining costs for federal awards carried out through grants, cost reimbursement contracts, and other agreements with State and local governments. OMB A-87 outlines a "Simplified Method" for indirect cost recovery that allocates indirect costs by (1) classifying the grantee's total costs for the base period as either direct or indirect, and (2) dividing the total allowable indirect costs by an equitable distribution base. The distribution base may be total direct costs excluding capital expenditures and other distorting items.

Applying the Simplified Method described in OMB A-87 results in an indirect cost recovery rate of 5%. BACWA's financial statements for the past two fiscal years (FY07-08, FY08-09) indicate that BACWA's general and administrative costs averaged 5% of all costs for 2007, 2008, and 2009. The policy described below incorporates this rate but provides the Executive Board with flexibility to adjust this rate based on the particular circumstances of each project.

POLICY

- BACWA's policy is to recover the direct costs and indirect costs related to programs of special benefit. BACWA's indirect cost recovery rate is 5% of a program's direct costs or budget.
- For special programs with budgets of less than $200,000 per year, the Executive Board may determine that administrative direct costs are de minimis and only recover indirect costs.
- For special programs in which BACWA is acting as an interagency service provider so that the majority of direct costs are those related to carrying out grants and contracts for the benefit of the program participants, the indirect cost recovery rate will be applied to the first $200,000 of the direct costs, and may be decreased or waived above $200,000.
- BACWA may adjust the indirect cost recovery rate based on the particular circumstances of each program of special benefit.
- BACWA will apply the indirect cost recovery rate to all applicable programs on an annual basis, or a more frequent basis if appropriate.
- BACWA will review this policy regularly to ensure that the actual allocations adequately cover BACWA's costs and are appropriate for the level of benefit received.

Regional Planning & Infrastructure

(Bhavani Yerrapotu, San Jose)

ISSUE:

Whether BACWA should focus on advocacy for regional wastewater infrastructure investments and promote a regional approach to sustainable infrastructure

BACKGROUND & DISCUSSION:

BACWA's vision is to "develop a region-wide understanding of the watershed protection and enhancement needs of the SF Bay Estuary .. and ensure that this understanding leads to long-term stewardship of the Estuary." BACWA's mission is "through leadership, service and advocacy for its members, BACWA provides an effective regional voice for the clean water industry's role in stewardship of the SF Bay environment."

One of BACWA's core commitments is to seek regional solutions and promote regional collaborations and partnerships. With wastewater infrastructure aging around the nation and in need of repair and rehabilitation, while new ideas are emerging to use all the resources in wastewater (energy, water, nutrients) beneficially and accept new resources into wastewater treatment plants.

BACWA has already played a role in regional planning for recycled water and biosolid, is developing a regional approach for energy, and discussing collaboration on wastewater as a resource.

A more basic understanding of regional infrastructure and treatment needs, demand/markets for the resources, amount of wastestream (e.g. FOG) would assist the region in developing and rehabilitating infrastructure sustainably. Following an inventory of needs, BACWA could consider advocating for funding infrastructure regionally.

Tasks/Projects Considered:

- Infrastructure needs inventory
- Resource inventory (FOG, other wastes as appropriate)
- Lobby/pursue funding/advocacy

Coordination with Regional Wastewater Agencies & Organizations

(Mike Connor, EBDA)

ISSUES:

BACWA is the major collaboration of all the area's wastewater agencies to jointly address wastewater issues. A number of new collaborations have been formed by many of the same agencies to address similar issues. Is this system redundancy cost-effective? Does it represent a failing of BACWA?

BACKGROUND & DISCUSSION:

BACWA's formation was mostly oriented around providing a joint voice and training for area wastewater agencies in regulatory issues. In addition, BACWA's mission and goals statement includes collaboration as part of its mandate. However, many of BACWA's member agencies have formed other coalitions of wastewater agencies to address specific issues including

- ✓BA Biosolids to Energy
- ✓BA Recycled Water Coalition
- ✓BA Pollution Prevention Group
- ✓Bayworks
- ✓North Bay and East Bay Chemical Buyers Collectives.

Each of these organizations develops its own membership and funding processes. Some BACWA Board agencies are a member of each of these groups, but rarely are all agencies involved. Sometimes Board agencies actively reject involvement depending on the low priority they attach to the issue.

Often these groups have larger governance and funding roles for the smaller agencies compared to the BACWA associate members. Usually, their financial function is handled by one agency serving as lead which initiated the process. For many of the groups, the lead agency is not a BACWA Board member,

Alternative Approaches

1. *Maintain the current system.*

The current system gives the agencies the ability to focus in-house short-term efforts where their current priorities lay. The personal interest of the lead agency ensures that the issue will be pushed forward and addressed effectively. While the process could be more cost-effective, enthusiasm outweighs process.

2. *Bring all these groups under the BACWA umbrella.*

New organizations generally re-invent the wheel. BACWA has developed significant financial, governance, and communications infrastructure that could allow these processes

to move ahead more effectively. The leadership of these groups by smaller agencies indicates a governance failure by of the BACWA structure that should be amended.

3. *Develop a BACWA endorsement for these groups, market specialized BACWA services to the groups, and offer to sponsor the group in the long-term after the groups age beyond their initial priorities.*

BACWA should be formally associated with as much of the activities related to its wastewater agency members as possible, but doesn't need to be in charge. We should be very transparent in what information and skills we have available to help agencies start up these focused groups. We should also try to include group web links on our website and important news in our newsletter.

Emergency Response Coordination

(Ben Horenstein, EBMUD)

ISSUE:

Whether BACWA should develop and facilitate a workgroup that would assist agencies in emergency planning.

BACKGROUND & DISCUSSION:

This BACWA workgroup would focus on the need/opportunity for joint planning and coordination between local wastewater agencies to prepare for a major bay area earthquake event as well as other smaller scale events that may benefit from mutual assistance programs among bay area wastewater agencies.

The committee's primary goals and objectives would be to:

- Create a realistic picture of expected wastewater infrastructure damage region wide from a major bay area seismic event and share with the RWQCB to understand potential public health and environmental impacts and priorities;
- Open a constructive working dialogue between bay area wastewater agencies and RWQCB with the focus of identifying and evaluating gaps within any plans and procedures currently in place to address regulatory challenges that may face us in the event of a major earthquake (e.g., discharge of untreated sewage vs discharge of disinfected sewage)
- Share information on resources and capabilities that may be available to share with each other through a mutual assistance network in the event of a non-region disaster (e.g., tsunami that impacts a limited number of bay area facilities)
- Engage in region wide disaster preparedness drills focused on wastewater agency issues.

The vision at this point is to meet quarterly. There would be involvement of both collections system agencies and wastewater treatment plants.

BACWA Strategic Plan

March 6, 2009

BACWA's Mission

Through leadership, service and advocacy for its members, BACWA provides an effective regional voice for the clean water industry's role in stewardship of the San Francisco Bay environment.

BACWA's Core Values and Commitments

- Use the best available knowledge, including scientific/technical information
- Support regulatory compliance by members
- Promote stewardship of the Bay Environment
- Seek regional solutions and promote regional collaborations and partnerships
- Conduct business in an open and transparent manner
- Ensure prudent use of financial resources
- Provide services which are valuable to members

Goals That BACWA Strives to Support and Achieve

1. Members are knowledgeable about critical issues and activities
2. Members are in compliance with applicable rules and regulations
3. Effective collaborative partnerships for regional environmental benefit are established
4. An integrated approach to a healthy Bay is promoted, emerging issues are identified, and effective solutions are developed
5. Stakeholders are aware of BACWA and its members' achievements and role in the stewardship of the Bay
6. Members value and actively participate in BACWA activities

1. Members are knowledgeable about current critical issues and activities

Strategy 1: Provide timely regulatory and technical information to members about regional air quality, biosolids and water quality (and quantity) issues.

Objective 1: *Committee members and BACWA members are informed on a regular basis about priority issues and concerns which impact either current or future compliance, management, or funding options.*

Strategy 2: Develop policy and technical information which addresses priority issues and supports BACWA's advocacy and partnership activities.

Objective 1: *There is clarity and agreement within the POTW, scientific, NGO and regulatory community regarding the source and impacts of nutrients in the San Francisco Bay.*

Objective 2: *BACWA develops an understanding of the issues associated with the diversion of dry weather urban runoff to POTWs.*

2. Members are in compliance with applicable rules and regulations

Strategy 1: Support members to achieve compliance with regulatory requirements. Priority areas identified include issues associated with TMDLs and Basin Plan Amendments, NPDES permits and pollution prevention, water recycling and water resources, Water Quality Standards, wet weather (including collection system issues), Biosolids, and climate change.

Objective 1: *Ongoing and upcoming policy and regulatory issues have been identified and are understood, and advocacy positions have been prepared.*

Objective 2: *Common issues associated with assuring/demonstrating compliance by BACWA members have been identified, and joint actions to support compliance have been initiated.*

3. Effective collaborative partnerships for regional environmental benefit are established

Strategy 1: Establish and expand ongoing communication, coordination and cooperation with the agencies that regulate members with regard to rulemaking, regional compliance issues and emerging environmental challenges.

Objective 1*: BACWA identifies and helps develop a common understanding of the mutual priorities of BACWA and the Water Board.*

Objective 2: *Through cooperation with the Water Board and EPA, BACWA effectively participates in the Basin Plan amendments and triennial reviews of the Basin Plan.*

Strategy 2: Establish partnerships with universities or other research institutions to develop collaborative approaches to issues of importance to members.

Objective 1: *SFEI, ASC, and Bay area universities are valued research institutions that collaborate with BACWA to enhance knowledge on Bay-wide environmental issues and watershed priorities.*

Strategy 3: Establish partnerships with other dischargers to the Bay, water resource users, NGOs and community groups to develop an understanding of common interests and how to work together.

Objective 1*: BACWA understands the interests and positions of WSPA, BASMAA and NGOs on environmental issues and develops partnerships as appropriate.*

Objective 2: *San Francisco Bay IRWMP and BACWA work together to maximize grant funding for priority projects.*

4. An integrated approach to a healthy Bay is promoted, emerging issues are identified, and effective solutions are developed

Strategy 1: Develop proactive solutions and approaches for emerging issues to support BACWA's mission and goals in relevant legislative and regulatory efforts.

Objective 1*: The vision of an integrated approach to a healthy Bay has been articulated, the appropriate roles and responsibilities of clean water agencies for that vision have been identified, and how clean water agencies' investments can contribute to that vision has been offered.*

Strategy 2: Identify and understand emerging common issues for BACWA members, such as those associated with climate change, treatment and discharge responsibilities, infrastructure needs and financial obligations.

Objective 1*: Members understand the wastewater and relevant drinking water-related infrastructure needs for the region, including the investments necessary to address them.*

Objective 2: *BACWA explores the potential synergies of meeting the infrastructure and financial needs of clean water agencies through regional collaboration.*

Objective 3*: The potential impacts of climate change on BACWA members are understood and measures to mitigate and support adaptation to these impacts are advanced.*

5. Stakeholders are aware of BACWA and its members' achievements and role in stewardship of the Bay environment

Strategy 1: Communicate achievements of member agencies and build confidence in their and BACWA's commitment to stewardship.

***Objective 1**: The record of members' compliance with regulatory requirements is understood, appropriate rewards and recognition are pursued and commendations received are communicated to stakeholders.*

***Objective 2**: Regulatory agencies and stakeholders recognize BACWA and members' commitment and contributions to a healthy San Francisco Bay.*

6. Members value and actively participate in BACWA activities

Strategy 1: Improve communication capability and operational capacity across all committees, programs and issues.

***Objective 1**: Members are informed about BACWA activities in a routine and timely manner.*

***Objective 2**: Committees are capable of consistent and reliable communication with their members and the overall BACWA membership.*

Strategy 2: Provide administrative, legal and other support to projects or programs that provide significant net benefit to members.

***Objective 1:** Requests for BACWA support are considered and decided upon by the Board based on consistent criteria that recognizes both members' potential direct benefits and possible administrative and other costs to BACWA.*

Strategy 3: Communicate with and engage members to maintain their commitment to BACWA.

***Objective 1**: Members receive value through internal BACWA coordination, participation and collaboration on issues of regional importance.*

***Objective 2**: Members increase staff engagement with BACWA and share responsibility for the leadership and the work of the committees.*

Bay Area Clean Water Agencies
A Joint Powers Public Agency
Leading the Way to Protect our Bay

Annual Workplan & Budget
Fiscal Year 2010 - 2011

The Bay Area Clean Water Agencies (BACWA) is a joint public powers agency created by a 1984 Joint Powers Agreement (JPA) between the Central Contra Costa Sanitary District (CCCSD), the East Bay Dischargers Association (EBDA), the East Bay Municipal Utility District (EBMUD), the City of San Francisco, and the City of San Jose (collectively, "the Principals"). The JPA establishes the principles by which BACWA operates and imposes requirements related to the governance and operation of BACWA. One of the requirements of the JPA is that BACWA must prepare an annual budget and work plan that distinguishes between overhead (**Part A**), programs of general benefit to all members (**Part B.1**), and programs of special benefit (**Part B.2**).

The purpose of this workplan and budget is to fulfill the requirements of the JPA for the 2010 – 2011 fiscal year (2011 FY). The workplan (**Parts A, B.1, and B.2)** specifies the purpose of each of BACWA's programs during the 2011 FY, the methods by which they will be carried out, the products that will be developed, and the persons responsible for implementation. The schedule for implementation of these programs is July 1, 2010 through June 30, 2011. The budget (**Part C)** relates to the workplan and shows the anticipated revenues and expenses for these programs.

In 2009, the BACWA Executive Board completed a strategic planning process that resulted in the articulation of BACWA's mission, core values and goals. These are summarized below and are touchstones for the development of BACWA programs and projects which are described in the workplan.

Mission	Core Values
Provide an effective regional voice for the clean water industry's role in the stewardship of the San Francisco Bay environment.	• Best available scientific knowledge • Stewardship of the environment • Transparency • Regional solutions and collaborations • Value to members • Prudent use of financial resources

Goals
(1) Members are knowledgeable. (2) Members are in compliance. (3) Collaborative efforts to achieve regional environmental benefit are established. (4) An integrated approach to a healthy Bay is promoted. (5) Public and stakeholders are aware of BACWA and its members achievements as stewards. (6) Members value and participate in BACWA.

PART A: OVERHEAD

Overhead consists of BACWA's administrative expenses that are necessary for the agency to carry out its core functions. Overhead includes, but is not limited to, expenses related to financial management, insurance, and organizational support. Administration of BACWA is carried out by an Executive Director and Assistant Executive Director who are selected by the Executive Board and who contract directly with BACWA. Treasurer services are provided by EBMUD who manages BACWA's finances and performs an annual audit.

ADMINISTRATION				
Goal(s)	**Objective(s)**	**Deliverables/Outcomes**	**Implementation**	**FY 11 Budget**
All	1. Provide service to members by ensuring that BACWA is effectively and efficiently managed. **(Admin)**	1(a) Organized and efficient meetings.	• ED	• $90,000 (BACWA, Exec. Dir.) • $70,000 (BACWA, AED) • $40,000 (BACWA Finan. Services) • $8,000 (BACWA, Admin.) • $5,000 (BACWA, Insurance) • $10,000 (BACWA, Legal) • $10,000 (BACWA, Mtg Support)
		1(b) Accurate and informational financial management, including generation of Treasurers' reports and audit.	• ED, AED, Treasurer	
		1(c) Effective document management.	• ED, AED	
		1(d) Effective organizational risk management.	• ED	

PART B(1): GENERAL BENEFIT PROGRAMS

There are two general benefit programs: the core Bay Area Clean Water Agencies program and the technically driven Clean Bay Collaborative (CBC) program, which replaced the Clean Estuary Partnership in 2008. Contributions from individual agencies provide the revenues for these two programs, with the Principals contributing almost three-quarters of the revenues for the BACWA program and more than two-thirds of the revenues for the CBC.

The BACWA program provides communication and regulatory support to member agencies. Program expenses include support for committee facilitation and projects, assistance on regulatory and technical issues, funding for mutually beneficial collaborations and sponsorships, and communications expenses such as the website, newsletters, the annual report, and the annual meeting.

The purpose of the CBC is to promote regional coordination to meet regulatory requirements and to develop science and policy to assist with future regulation and ensure protection of San Francisco Bay. Program expenses for the CBC consist of indirect and direct costs to BACWA and the costs of special studies and reports on scientific, technical and regulatory issues affecting Bay Area POTWs and the San Francisco Bay environment.

BACWA WORKPLAN & BUDGET SUPPORT FOR GOALS AND OBJECTIVES

Goal(s)	Objective(s)	Deliverables/Outcomes	Implementation	FY 11 Budget
(1) Members are knowledgeable. **(2)** Members are in compliance. **(5)** Stakeholders are aware of BACWA and its' members achievements in stewardship of the Bay. **(6)** Members understand the value of participation in BACWA.	**1.** Provide forums for members to share information, learn, participate in policy and regulatory discussions, and collaborate on mutually beneficial projects. **(Committee Support)**	**1(a)** Collection Systems Committee Support - Meeting support and facilitation ($12k) - Regulatory tracking, analysis and reporting ($13k)	• Consultant & Comm. Chair	• $25,000 (CS Comm)
		1(b) Permits Committee Support - Meeting support and facilitation ($12k) - Regulatory tracking, analysis and reporting ($13k)	• Consultant & Comm. Chair	• $25,000 (Permits Comm)
		1(c) Water Recycling Committee Support - Meeting support and facilitation ($6k) - Bay Area water use table ($5k)	• Consultant & Comm. Chair	• $11,000 (Recycling Comm)
		1(d) Biosolids Committee Support - Fact sheets on biosolids ($8k) - Attendance at WEF Biosolids Conference ($2k)	• Comm. Chair	• $10,000 (Biosolids Comm)
		1(e) Laboratory Committee Support - Conference Attendance ($5k) - Training ($2k)	• Comm. Chair	• $7,000 (Lab Comm)
		1(f) Infoshare Groups - Meeting support and facilitation ($21k) - Project support ($4k)	• Consultant	• $25,000 (InfoShare Comm)
		1(h) Support for BAPPG projects to assist member compliance.	• Comm. Chair	• $50,000 (Special Prog.) • $20,000 (Media Rel.)
		1(g) Misc. Committee Support	• ED, AED	• $10,000 (Misc. Comm)
	2. Increase direct communication with members regarding regulatory developments and BACWA accomplishments. **(Commun)**	**2(a)** Regular e-mail newsletter	• ED, AED, Consultant	• $15,000 (Commun.)
		2(b) Annual meeting	• ED, AED	• $5,000 (Commun)
		2(c) Annual report	• ED, AED, Consultant	• $20,000 (Commun)
	3. Make the website an effective tool for informing members and the public of BACWA activities and accomplishments **(Commun)**	**3(a)** Make improvements to website functionality & aesthetics	• ED, AED, Consultant	• $70,000 (Commun)
(3) Effective partnerships for environmental benefit established. **(5)** Stakeholders are aware of BACWA and members' stewardship of the Bay.	**4.** Encourage partnerships and relationships that further BACWA's strategic goals. (**Collaborations)**	**4(a)** Collaborations and sponsorships: CPSC, PSI, State of the Estuary, Clean Water American Alliance	• ED, AED	• $35,500 (Coll. & Sponsor.)
		4(b) Increase the visibility of BACWA and its members' activities through communications with the public via the media, including media piece on or around Earth Day.	• ED, AED, Consultant	• $5,000 (Media Rel.)
(1) Members are knowledgeable. **(2)** Members are in compliance.	**5.** Provide BACWA members with the resources to evaluate and respond to new issues.	**5(a)** Comment letters on regulatory developments as they arise; issue summaries and fact sheets on developing issues.	• ED, AED, Consultant, Comm. Chairs	• $20,000 (Legal) • $100,000 (Tech. Support)

CLEAN BAY COLLABORATIVE WORKPLAN & BUDGET SUPPORT FOR GOALS AND OBJECTIVES				
Goal(s)	**Objective(s)**	**Deliverables/Outcomes**	**Implementation**	**FY 11 Budget**
(3) Effective collaborative partnerships for environmental benefit are established. **(4)** An integrated approach to a healthy Bay is promoted, emerging issues are identified and effective solutions developed. **(5)** Stakeholders are aware of BACWA and members' stewardship of the Bay.	**1.** Ensure wastewater agencies interests, perspectives, and experiences are considered in the development of climate-related policies and regulations. (**Climate)**	**1(a)** Support the California Wastewater Climate Change Group	• CASA	• $50,000
	2. Ensure wastewater agencies interests, perspectives, and experiences are considered in the development of energy-related policies and regulations. **(Energy)**	**2(a)** Create an energy workgroup/committee to help BACWA members coordinate on energy issues including regulation, funding sources, and negotiations with utilities	• ED, AED, Consultant, EB Workgroup	• $15,000
	3. Facilitate the use of recycled water to meet State's 20 by 2020 mandate and encourage re-use of wastewater. **(Recycled Water)**	**3(a)** Recycled water irrigation guide	• Comm. Chair	• $40,000
(2) Members are in compliance with applicable rules and regulations.	**4.** Ensure that members are in compliance with regional permit requirements. **(Hg, PCBs Cu, HCN)**	**4(a)** Annual reports on mercury special studies, and POTW mass emissions	• ED, Consultants	• $20,000
		4(b) Implementation of a risk reduction program	• ED, Consultants	• $0
		4(c) PCB TMDL implementation	• ED, Consultants, EB Workgroup	• $40,000
		4(d) Track and report on HCN and Cu communal compliance tasks (special studies)	• ED	• $0
	5. Assist members in improving the quality of CIWQS data. (**CIWQS)**	**5(a)** Develop and implement data reporting recommendations.	• ED, Consultants	• $5,000
	6. Other support as needed.	**6(a)** As-needed regulatory support (e.g., risk reduction)	• ED, Consultants	• $100,000
(1) Members are knowledgeable about critical issues and activities. **(4)** An integrated approach to a healthy Bay is promoted, emerging issues are identified and effective solutions developed.	**7.** Develop an understanding of potential regulatory developments and possible impacts on Bay Area POTWs. **(Se, SQOs, nutrients, SW diversion, SHELL)**	**7(a)** Issue paper on selenium and technical support for TMDL WLA development	• ED, Consultants	• $30,000
		7(b) Issue paper on sediment quality objectives development status and implementation approaches	• ED, Consultants	• $25,000
		7(c) Issue paper on ammonia.	• ED, Consultants	• $25,000
		7(d) Final stormwater diversion white paper & checklist	• ED, Consultants, EB Workgoup	• $20,000
		7(e) Issue paper on SHELL use and impacts to Bay Area POTWs	• ED, Consultants, EB Workgoup	• $10,000
	8. Increase the understanding of managers, regulators and the public of the impacts of CECs on POTWs and the ecosystem, and options for controlling. **(CECs)**	**8(a)** Fact sheet(s) for managers.	• ED, Comm. Chair	• $5,000
		8(b) Regulatory tracking and response	• ED, Consultants	• $10,000

PART B(2): SPECIAL BENEFIT PROGRAMS

BACWA has four active special benefit programs: the Bay Area Pollution Prevention Group (BAPPG), the Air Committee, Proposition 50 Administration, and Water Operator Training (WOT). Contributions towards BAPPG, the Air Committee, and WOT are optional and are established by entities that manage those programs: the BAPPG and Air Committee chairs, and the Central Contra Costa Sanitary District in conjunction with Solano Community College. Proposition 50 costs are paid for by the agencies that receive Proposition 50 grants from the Department of Water Resources.

BAY AREA POLLUTION PREVENTION GROUP WORKPLAN & BUDGET SUPPORT FOR GOALS AND OBJECTIVES				
Goal(s)	**Objective(s)**	**Deliverables/Outcomes**	**Implementation**	**FY 11 Budget**
(1) Members are knowledgeable about critical issues and activities. **(2)** Members are in compliance with applicable rules and regulations.	**1.** Reduce mercury in POTW effluent.	**1(a)** Update mercury amalgam separator list	• Comm. Champion, Consultant	• $2,500
		1(b) Trainings and materials for dental hygienists and dental assistant schools	• Comm. Champion, Consultant	• $4,750
	2. Reduce fats, oils and grease discharged to sewer systems and assist members in complying with SSO WDR requirements.	**2(a)** Holiday FOG outreach campaign	• Comm. Champion, Consultant	• $4,162
		2(b) Video on FOG disposal	• Comm. Champion, Consultant	• $2,000
		2(c) Holiday Spanish and Asian-language radio ads	• Comm. Champion, Consultant	• $15,000
	3. Reduce improper disposal of pharmaceuticals in the sanitary sewer system.	**3(a)** Teleosis partnership	• Comm. Champion, Consultant	• $4,999
	4. Reduce copper in POTW discharges.	**4(a)** Outreach campaign to Bay Area Plumbing Apprenticeship program	• Comm. Champion, Consultant	• $2,000
	5. Reduce cyanide in POTW discharges.	**5(a)** Fact sheet for jewelers	• Comm. Champion, Consultant	• $2,000
	6. Reduce pesticides disposal in sanitary sewer systems	**6(a)** Support for “Our Water our World” campaign	• Comm. Champion	• $10,000
		6(b) Support local and statewide Green Chemistry initiative	• Comm. Champion	• $0
	7. Reduce trash discharges to San Francisco Bay	**7(a)** Partnership with Save the Bay	• Comm. Champion	• $4,999
	8. Facilitate general pollution prevention efforts to reduce pollution to San Francisco Bay	**8(a)** School outreach	• Comm. Champion	• $3,000
		8(b) Agency coordination and P2 week poster	• Comm. Champion	• $1,500
	9. Address key issues as they arise	**9(a)** Emerging issues	• Comm. Champion	• $5,000

AIR COMMITTEE WORKPLAN & BUDGET SUPPORT FOR GOALS AND OBJECTIVES				
Goal(s)	**Objective(s)**	**Deliverables/Outcomes**	**Implementation**	**FY 11 Budget**
(1) Members are knowledgeable about critical issues and activities. **(2)** Members are in compliance with applicable rules and regulations. **(3)** Effective collaborative partnerships for regional environmental benefit are established.	**1.** Track and respond to the regulation of POTW air emissions.	**1(a)** Consultant contract	• Comm. Chair & Consultant	• $91,400

PROPOSITION 50 ADMINISTRATION WORKPLAN & BUDGET SUPPORT FOR GOALS AND OBJECTIVES				
Goal(s)	**Objective(s)**	**Deliverables/Outcomes**	**Implementation**	**FY 11 Budget**
(3) Effective collaborative partnerships for regional environmental benefit are established.	**1.** Facilitate implementation of projects to benefit the San Francisco Bay environment through Prop 50.	**1(a)** Invoices generated and submitted to DWR, payments received and distributed to participating agencies.	• EBMUD, ED, AED	NA (depends on DWR schedule)
		1(b) Quarterly progress reports to DWR	• EBMUD, Consultant	

WATER OPERATOR TRAINING WORKPLAN & BUDGET SUPPORT FOR GOALS AND OBJECTIVES				
Goal(s)	**Objective(s)**	**Deliverables/Outcomes**	**Implementation**	**FY 11 Budget**
(3) Effective collaborative partnerships for regional environmental benefit are established.	**1.** Encourage development of a skilled workforce.	**1(a)** Classes scheduled and held.	• CCSD, AED, Solano Community College	To be determined by Solano Community College.

BAY AREA CLEAN WATER AGENCIES BUDGET

REVENUES	FY10-11	Notes
Principals' Contributions	450,000	Assumes the same as previous years.
Assoc. Contributions	97,500	
Affl. Contributions	61,500	
Interest Income	15,000	Est. from EBMUD Accounting
Special Prog. Costs	75,226	Indir. & dir., excl. prop 50, incl. 39K from CBC for ED
Operating Reserve Transfer	37,274	
REVENUE TOTAL	**736,500**	
EXPENSES	FY10-11	Notes
Committees		
Collections System	25,000	12k mtg support, 13k regulatory tracking
Permit Committee	25,000	12k mtg support, 13k regulatory tracking
Water Recycling	11,000	6k mtg support, 5k water use table
Biosolids	10,000	8k fact sheets, 2k conference
InfoShare Groups	25,000	21k mtg support, 4k as-needed support
Laboratory	7,000	5k conf., 2k training
Misc. Support	10,000	
Committee TOTAL	**113,000**	
Executive Board Tech. Support		
Expert Support	100,000	Respond to unanticipated regulatory dev. and info needs
Media Relations Support	25,000	20k BAPPG support; 5k misc. (LTEs, Op-Ed, etc.)
Tech. Support TOTAL	**125,000**	
Executive Board Legal Support		
Regulatory Support	20,000	Respond to unanticipated regulatory developments
Executive Board Support	10,000	Organization legal support
Legal Support TOTAL	**30,000**	
Collaborations		
CWAA	10,000	Clean Water American Alliance support, expected annually
CPSC	5,000	California Product Stewardship Council, expected annually
PSI	500	Product Stewardship institute, expected annually
State of the Estuary	20,000	To support conference in Sept. 2011, expected biennally
Collaborations TOTAL	**35,500**	
Commun. and Reporting		
Annual Report	20,000	Same as previous year
Website Dev. & Maint.	70,000	Includes file hosting, web hosting, some reorganization
Newsletter	15,000	Includes consultant support for developing template
Communications TOTAL	**105,000**	
Special Programs		
BAPPG Contribution	50,000	Increased $15k over FY09-10
Special Programs TOTAL	**50,000**	
General Support		
Meeting Support	10,000	Annual meeting, Pardee
Contingency	15,000	Misc. expenses
General Support TOTAL	**25,000**	
Administrative Expenses		
Executive Director	130,000	20k less than previous years
Ass't Executive Director	70,000	10k increase
EBMUD Financial Services	40,000	Same as previous year
Administrative Expenses	8,000	Copies, trainings, etc.
Insurance	5,000	
Admin TOTAL	**253,000**	
EXPENSE TOTAL	**736,500**	

CLEAN BAY COLLABORATIVE BUDGET		
Revenue	**FY10-11**	**FY10-11 Notes**
Contributions	450,000	Same as last year
Fund Transfer	0	
WQA Interest/ Misc	8,000	Estimate from EBMUD accounting
TOTAL	**458,000**	
Expenses	**FY10-11**	**FY10-11 Notes**
Technical Support	175,000	See workplan for detail
Collab. & Sponsorships	50,000	CWCCG
Trainings	7,190	CIWQS QA/QC training
Commun. & Reporting	65,000	40k recycled water guide, 20k Hg mass reporting, 5k CEC
Other	100,000	risk reduction efforts
BACWA Direct Cost (ED)	39,000	Assumes 30% ED time as coordinator
BACWA Indirect Cost	21,810	5% of costs, assumes costs = revenues
TOTAL	**458,000**	

BAPPG BUDGET		
Revenue	**FY10-11**	**FY10-11 Notes**
Contributions	85,005	Assumes $50k BACWA contribution
Interest/Misc.	55,600	Misc. includes operating reserve
TOTAL	**140,605**	
Expenses	**FY10-11**	
Contract Expenses	116,910	May increase to match revenues
BACWA Indirect Costs	5,846	
TOTAL	**122,756**	

AIR COMMITTEE BUDGET		
Revenue	**FY10-11**	**FY10-11 Notes**
Contributions	91,399	Same as last year
WQA Interest/ Misc	0	
TOTAL	**91,399**	
Expenses	**FY10-11**	
Contract Expenses	86,829	
BACWA Indirect Costs	4,570	
TOTAL	**91,399**	

WOT BUDGET		
Revenue	**FY10-11**	**FY10-11 Notes**
Contributions	118,360	Assumes same as previous year
Interest/ Misc	350	
TOTAL	**118,710**	
Expenses	**FY10-11**	**FY10-11 Notes**
Contract Expenses	81,000	
BACWA Indirect Costs	2,500	3% (closer to actual costs than 5%)
TOTAL	**83,500**	

PROP 50 ADMIN BUDGET		
Revenue	**FY 08-14**	**FY10-11 Notes**
Agency Contributions	250,000	Difficult to estimate
IRWMP Transfer (07-08)	1,873	
Interest (07-08)	1,484	
Interest (08-09)	1,504	
Interest (09-10)	5,809	
Interest (10-11)	2,000	2k
Interest (11-12)	1,500	
Interest (11-12)	1,000	
TOTAL	**265,170**	
Expenses	**FY 08-14**	**FY10-11 Estimates**
Consultant	120,000	
Legal	50,000	0 (49k disbursed)
Accounting/Audit	15,000	3k (2.8k disbursed)
BACWA Direct Costs	50,000	5k (26.5k disbursed for ED, AED, web)
BACWA Indirect Costs	8,475	1.5k (5% of dir costs after 11.30.08)
Contingency	21,695	
TOTAL	**265,170**	

2009 Pardee Technical Seminar Synopsis

A. *Executive Board Business*

1. Executive Board Issues

There is strong interest in developing strong involvement of non-Principal BACWA members in the organization to increase the representative strength and the collective ability of BACWA. Agreement was reached that BACWA will reach out to approximately five of the larger non-Principals to solicit their feedback regarding such issues as their level of involvement, the value of the services received by BACWA. As an interim measure there was agreement that BACWA will identify a larger venue (EBMUD Opps Facility) for BACWA Executive Board meetings and will schedule more time for the February meeting.

2. Roles & Responsibilities

Interest exists in researching mechanisms for improving BACWA's organizational efficiency. Topics considered included delegating more decision-making authority to the Executive Director, utilizing a consultant to further clarify Executive Board/Director roles and responsibilities, researching ways to use a credit card to streamline financial transactions, and developing an interim workplan based on the business plan that will account for the Executive Director transition.

3. Communications

Specific recommendations for improving communications included the development of a communications plan that would include improvements to the website functionality, development of a newsletter and members surveys. BACWA will also revise the format of the Executive Board agendas and content of the Board Action Requests to improve readability. A need for more secure file storage was identified.

The benefits and limitations of creating an award to be given by BACWA were discussed.

4. Committees

Committees are recognized as a valuable resource for BACWA and its members. Discussions were had regarding ways to better use the committees and their resources. Currently no formal procedures exists for specifying when a committee is formed and what the role of the committees and workgroups are in terms of implementing the BACWA business plan and communicating with the Executive Director. Interest exists in developing committee charters and policies and procedures. Quarterly meetings of the committee chairs need to be re-initiated.

The possibility of starting an energy committee was and will continue to be explored, as was the possibility of identifying more opportunities to partner with other organizations to publicize and conduct workshops.

5. Regional & Special Programs

The benefits of BACWA leading regional programs such as regional reporting on mercury and collaborative relationships (Bay Vision and Prop 50/84 grants) were discussed. Agreement was reached that BACWA needs to have an overhead policy and the ABAG and SFEP policies were identified as possible models.

B. *Technical Seminar*

Informational/issue sheets were developed for a broad array of issues and will be made available on the BACWA members website.

1. Regulatory Policy Discussion

Based on an informal survey, the following issues were identified as being of particular concern:

- PCBs TMDL (4 votes)
- Bacteria Basin Plan Amendment re shellfish (3 votes)
- Dioxin Permit Amendment (3 votes)
- Collection System spill reporting (2 votes)
- Stormwater Diversion (1 vote)
- Selenium TMDL (1 vote)

2. Emerging Issues

Based on an informal survey, the following issues were identified as being of particular concern:

- Nutrient criteria (5 votes)
- Climate change implications (3 votes)
- Sediment Quality Objectives (3 votes)
- Emerging contaminants (2 votes)
- Collection system issues (2 votes)
- Drinking water beneficial use designation (1 vote)

3. Evaluating the Previous Year ("Hearts, Pluses, Delta")

Hearts	Pluses	Deltas
♥ Hg watershed permit ♥ BACWA Workshops (GHG Reporting; CS; Stormwater Diversion; Dental Amalgam; P2; Pharmaceuticals) ♥ Biosolids White Paper ♥ CWCCG – Key Role in Creation ♥ Operator Training (>200 trained; 10% hired) ♥ No Drugs Down the Drain ♥ Overcoming Resource Limitations to Hold Training/Workshops ♥ Membership Compliance ♥ BAPPG Participation; esp. interagency ♥ Comm. w/ BAAQMD re regulation of biogenic GHG as stationary sources	+ Committee Communication + Dioxin Amend + SSO Reporting + Recycled Water Communication + Stormwater Diversion Process + GHG Reporting – First Year + Se- Good Science with 303(d) Listing + Collection System WS + BACWA Reputation for Getting Things Done + Strategic Planning Process + Fed and State Funding + Prop 50 Grant ($12.5 Million) + Standard Format for NPDES Permit	Δ Communication/Partnering w/ Potential Stakeholders Δ First Hg Risk Reduction Report Δ Unfocused RWQCB Communications Δ Lack of CBC Progress Δ PCB Δ Financial Management Δ Cross Media

2008 Pardee Technical Seminar Synopsis

A. BACWA Evaluation

What is the purpose of BACWA?

- Advocate for regional solutions and activities to support members' compliance.
- Facilitator for programs of common interest and special benefit for Principals.
- Clearinghouse for information for members.

What do members expect from BACWA?

- Leveraging of resources and talents.
- Forum to discuss issues and concerns.
- Help tracking and understanding changing regulatory landscape.
- Resource for learning and professional development.
- Common voice and representation.

What is the 3 to 5 year vision for BACW?

- Engage non-Principal members.
- Provide a "focal point" for the clean water community.
- Refrain from avoiding infrastructure funding issues.
- Emerging issues.
- "Doing the right thing" and cultivating a positive image.

What are the critical issues for BACWA members in the next 3 to 5 years?

- Infrastructure funding
- Staffing
- Potential/need for increased treatment
- Emerging pollutants
- Odor issues
- Greenhouse Gas issues
- Urban runoff treatment
- Produce stewardship/green chemistry

What are next steps for BACWA?

- Develop strategic plan
- Use Clean Bay Collaborative to address water quality attainment issues.
- Develop Management Plan

B. Hearts, Plus, Delta

"Resolution of issues, accomplishment and engagement of members"

- CN SSO Completed
- Hg Watershed Permit adopted and Hg TMDL approved by EPA
- Cu SSO almost completed
- SFEI/WB/EPA Dioxin Panel
- White Paper and Ind. Panel on Dioxin
- SFEI Matured and engaged in broader issues (Mike's Leadership)
- Openness's and Availability of WB Senior Managers – able to be frank and open in our joint and mutual programs

"Getting something started that has potential for good resolution or relations, or making progress on an issue"

- Communication on specific issues
- Willingness of WB staff to call and ask about testimony and permit comments
- Using RMP special workgroup on Hg and Dioxin to focus on Bay issues
- Making the bacteria consultant available to share their expertise and helping everyone understand the issues so that we can identify a specific project for the triennial review
- Work with WERF on MeHg – especially involvement of Richard Looker
- Emerging Contaminants common group with RMP workgroup
- No drugs down the drain

▲ Timeliness – things take too long; Bad results such as PCB TMDL or enforcement with high fines; diverting from focus and relationship Issues

- CBC – What is it?
- Regular meetings between BACWA and WB managers
- Forum for all parties to get together and talk
- Appealing permits (WB does not like this – for BACWA it takes time and expenses)
- Talk to BASMAA sooner about issues
- Timeliness
- SSO Challenge (not sure that we defined this)
- Getting our basic message out about a variety of issues such as wet weather overflows, EDCs and P2

C. Regulatory Issues Discussed

(*in order of identified importance*)

1. Dioxin Permit Limits
2. Bacteria
3. Sanitary Sewer Overflow Enforcement
4. Urban runoff treatment
5. Nutrient Removal
6. CIWQS

Not ranked: EDC in recycled water/biosolids, AB32 and Air Permitting, Threats to Landfill & ADC, Blending, Use of RMP to solve regulatory issues.

D. 2008 Action Items

1. Dioxins
   - Provide Water Board with information necessary to use BEFs to calculate permit limits
   - Improve reliability of dioxin data through workshop (Dec. or January) on sampling protocols & QA/QC

2. Bacteria
   - Develop roadmap through Clean Bay Collaborative

3. Sanitary Sewer Overflow Enforcement
   - Reduce SSOs through development of a regional lateral program, including brochure
   - Improve BACWA's messaging around SSOs
   - Integrate Regional Board staff into Collection Systems Committee

- Evaluate spill data

4. Urban runoff treatment
   - Prepare white paper by January 2009

5. Nutrient Removal
   None identified in notes

6. CIWQS
   None identified in notes

7. Clean Bay Collaborative
   - Develop roadmaps for projects.
   - Develop a P2 forum on emerging contaminants
   - ID risk reduction champion
   - Continue Se TMDL development engagement
   - Place CEP reports on BACWA website

Current Technical & Regulatory Issues

A. PCB TMDL IMPLEMENTATION

Consistent with the approach agreed upon at a June 30 BACWA/Regional Board staff workgroup meeting, consultants Larry Walker & Associates have prepared a draft permit amendment and provided it to Regional Board staff. They key aspects of this permit are summarized below. Currently, we expect that this permit amendment will be publicly noticed in October or November.

- Structure. Amend Mercury Watershed Permit to include PCBs. This permitting option is more desirable to Regional Water Board staff than issuing a separate PCB Permit because it allows limits to take effect in all permits simultaneously and does not add another permit to their workload. This permit will expire 12/31/2012.

- Mass Limits. Draft permit will not include mass limits at this time. The rationale for excluding mass limits is that they are infeasible to calculate because there is insufficient data to calculate them. Regional Water Board staff believes that the TMDL language regarding implementation supports this rationale, and – through previous discussions – that EPA will support this approach.

- Concentration Limits. Draft permit will include performance-based concentration limits, expressed as AMELs and AWELs and calculated using the same performance-based approach utilized for mercury limits. The Water Board has proposed the following limits:

	AMELs (pg/L)	**MDEL (pg/L)**
Advanced Treatment	320	490
Secondary Treatment	8,600	17,000

- Compliance Assessment. Method 608 will be specified as the compliance method. It is possible that by the time the permit re-issues EPA will have finalized their currently draft rule approving Method 1668C and requiring its use. If the permit only has concentration-based limits this rule is not likely to post significant compliance problems for most agencies.

- Compliance Monitoring Frequency. Two times a year for Major Dischargers, once a year for Minor Dischargers. No seasonal requirements.

- Risk Reduction Efforts. No additional requirements; current mercury-related efforts will be sufficient.

- Refinement of Wasteload Allocations. Annual monitoring for all POTWs using Method 1668.

***Suggested Questions for Discussion*:**

- None. To be discussed at September 23 Executive Board meeting.

B. RISK REDUCTION

The Mercury and PCB TMDLs require all NPDES permittees to develop and implement programs to reduce the human health risk posed by consuming contaminated Bay fish. BACWA has been working with CDPH, ASC, SFEI, WSPA and BASMAA to implement a project to develop a program that will meet the requirements of the TMDL. We hope to have an MOU signed by all relevant parties by the end of September at the latest.

***Suggested Questions for Discussion*:**

- None.

B. SEDIMENT QUALITY OBJECTIVES

The Regional Board will be including the following language about sediment quality objectives (SQOs) in future NPDES permits:

Fact Sheet section IV.C.2

"Sediment Quality Objectives. The Water Quality Control Plan for Enclosed Bays and Estuaries—Part 1, Sediment Quality contains a narrative WQO: "Pollutants in sediments shall not be present in quantities that, alone or in combination, are toxic to benthic communities in bays and estuaries of California." This WQO is to be implemented by integrating three lines of evidence: sediment toxicity, benthic community condition, and sediment chemistry. The Policy requires that if the Regional Water Board determines that a discharge has reasonable potential to cause or contribute to an exceedance of this WQO, it is to impose the WQO as a receiving water limit."

Fact Sheet section IV.C.3.e

"Pollutants in some receiving water sediments may be present in quantities that, alone or in combination, are toxic to benthic communities. Efforts are underway to identify stressors causing such conditions. However, to date there is no evidence directly linking compromised sediment conditions to the discharge<s> subject to this Order; therefore, the Regional Water Board cannot draw a conclusion about reasonable potential for the discharge to cause or contribute to exceedances of the sediment quality objectives. Nevertheless, the Discharger continues to participate in the RMP, which monitors San Francisco Bay sediment and seeks to identify stressors responsible for degraded sediment quality. Thus far, the monitoring has provided only limited information about potential stressors and sediment transport."

The Regional Water Board is exploring appropriate requirements to impose on the Discharger, along with other dischargers in the region, to obtain additional information that may inform future RPAs.

***Suggested Questions for Discussion*:**

- Are there any next steps for BACWA to take with respect to this effort?

C. ERS TO E-SMR TRANSITION

The State Water Board is attempting to migrate all major NPDES permittees to their online self monitoring reporting system (e-SMR) by the end of the calendar year. For many years the San Francisco Bay region has reported electronically to the Regional Water Board via its unique Electronic Reporting System (ERS). The Laboratory and Permits committees have been discussing the implications of this transition for member agencies and held a workshop earlier this year at which State Board staff gave an overview of e-SMR and Mike Palucci from Yuba City showed. Preliminarily discussions suggest that this transition will not be problematic for agencies that use Laboratory Information Management Systems (LIMS). The impact to agencies that do not use LIMS is still unclear. It is also not apparent how the Regional Board will access discharge data for reasonable potential analysis and other purposes once the transition is completed.

***Suggested Questions for Discussion*:**

- Should BACWA engage a consultant to assess the impacts of this transition on a variety of agencies and recommend next steps for BACWA?

D. GREENHOUSE GAS REPORTING

Several developments in State greenhouse gas regulations that affect POTWs are expected to occur in the coming years. First, the Air Resources Board (ARB) is expected to finalize cap and trade program regulations by the end of 2010, and the program is expected to begin in 2012. Second, ARB is scheduled to decide whether to modify current mandatory reporting regulations in the following ways:

- Reduce the mandatory reporting threshold from 25,000 to 10,000 mt CO2/yr,
- Conversion to CO2 equivalents for determining threshold,
- Eliminating 3rd party verification requirements if not participating in cap and trade,
- Removal of the cogeneration category.

The past two years, BACWA – through the AIR Committee – has held workshops on complying with greenhouse gas reporting requirements. It also supports the California Association of Sanitation Agencies' California Wastewater Climate Change Group (CWCCG), which works to ensure that State climate change regulations consider issues and constraints affecting POTWs. For example, the CWCCG is advocating for cap and trade regulations that exclude municipal wastewater from capped sectors and provide incentives for combined heat and power operations.

***Suggested Questions for Discussion*:**

- Are there any additional trainings or outreach that BACWA should conduct?

E. URBAN STORMWATER DIVERSION

A draft of BACWA's white paper on stormwater diversions was completed in August of 2010 and is expected to be finalized by the end of September. The objective of this white paper was to identify the challenges and opportunities associated with diversions of flow from stormwater systems to POTWs. The questions addressed by the white paper include (1) the institutional, technical, and economic challenges that need to be overcome to implement diversions; and (2) the potential watershed and institutional opportunities associated with diversions.

Also in August of this year, the Bay Area Stormwater Management Agencies Association (BASMAA) completed a draft feasibility evaluation of diverting pump station diversions. This feasibility evaluation was a requirement of the NPDES permit for municipal separate storm sewer systems issued by the Regional Water Board to reduce PCBs and mercury loading to the Bay. While not yet final, the evaluation strongly suggests that the cost per gram of PCBs removed would be extremely high (one scenario estimates the cost per gram removed to be approximately $1,600,000).

***Suggested Questions for Discussion*:**

- What are next steps for BACWA?

F. SELENIUM TMDL

In 1986 the Office of Environmental Health Hazard Assessment (OEHHA) issued an interim human health advisory for the consumption of diving ducks and white sturgeon because selenium concentration in tissue samples collected exceeded interim human health screening values of 2.5 ug/g and 2.0 ug/g for diving ducks and sturgeon respectively. As a result of this advisory, the North San Francisco Bay was placed on the State's list of impaired waterbodies ("303(d) list") in 1998. In 2007, the Regional Water Board began development of a Total Maximum Daily Load (TMDL) for selenium in the North Bay.

The first step in this process was the development of an advisory committee and retention of a consultant, TetraTech, to identify and characterize selenium sources and processes controlling the uptake of selenium by biota, quantify selenium loads and develop a model to help with the linkage analysis and assessment of attainment measures. The last technical memorandum was completed and reviewed in Spring 2010. Available information strongly suggests that, even if point source discharges were eliminated, the Bay would still be impaired as the result of loading from the Sacramento-San Joaquin River Delta. As a result, the Regional Water Board prepared a revised TMDL project plan that, inter alia, states the following:

- The TMDL project report and decision point deadline has been pushed back to 2012.
- Particulate selenium and dietary uptake appears to be the most important exposure pathway for aquatic organisms. More information on selenium particulate data is necessary to understand background selenium loading to the Bay.
- The adverse impact of selenium on diving ducks and sturgeon appears to be caused primarily by the presence of the invasive clam Corbula amurensis, which accumulates selenium at much higher rates than native crustaceans.
- Much more information on selenium particulate data which is essential to better quantify and confirm the role of the background selenium load entering the Bay.
- Selenium speciation is critical to understanding its mobility, transformation and partitioning in the environment, yet most of the speciation data available for the North Bay were collected in 1999.
- The extended TMDL schedule will allow the Regional Water Board to incorporate (1) California-wide selenium wildlife criteria being developed by US EPA Region IX, and (2) EPA's nation-wide aquatic life criterion and guidance on implementation based on fish tissue concentrations.
- The refineries are being required, via their NPDES permits, to collect discharge characterization and ambient data (dissolved v. particulate selenium, and speciation).

BACWA retained experts at CH2MHill to participate in the TMDL advisory committee and to review the technical memoranda. As part of this engagement with the process, BACWA also informally provided revised selenium discharge data for twenty-five agencies discharging to the North Bay or its tributaries. The revised data resulted in lower loading estimates from POTWs than the technical memorandum indicated. BACWA also unsuccessfully requested removal of the North Bay from the 303(d) list on the grounds that OEHAA revised some of the assumptions underlying its original advisory, which if taken into account, would result in new human health screening values higher than the mean tissue concentrations observed in Bay wildlife.

The future implications for POTWs in terms of permit effluent limits are unclear, but the technical expert's opinion is that more stringent regulation of Bay dischargers is unlikely. It is notable, however, that the proposed TMDL will only address the North Bay. The Oakland Inner Harbor, Central San Francisco Bay, and South San Francisco Bay are also listed as being impaired for selenium. Potential interim actions that BACWA may consider, and discuss with the Regional Water Board, include gathering data on selenium concentrations and speciation for all of San Francisco Bay.

***Suggested Questions for Discussion*:**

- Should BACWA gather data on the members' selenium discharges to all of San Francisco Bay?
- Are there any other actions that BACWA should consider undertaking related to this effort?

G. SANITARY SEWER OVERFLOW REGULATION & ENFORCEMENT

Concern exists among the Bay Area wastewater community that the area appears to experience a greater number of sanitary sewer overflows (SSOs) than other regions in the State. This past year BACWA retained an expert to review and analyze SSO data available from the State and Regional Water Board to understand this trend. The analysis was frustrated by quality issues with the data; no conclusions about reasons for the Bay Area's higher rate were made. Instead, at BACWA's request, the expert documented examples of quality control problems and made recommendations for ways to address them. The Collection Systems Committee plans to communicate the information in this report to the State Water Board's SSO WDR review task force.

There is also some concern in the Bay Area that enforcement – by the Regional Water Board, EPA, and non-profit organizations - of Clean Water Act violations resulting from sanitary sewer overflows is increasing. These enforcement actions can be both disruptive and very expensive for agencies.

***Suggested Questions for Discussion*:**

- Should BACWA implement any of the recommendations made by the expert consultant?
- Should BACWA formally engage Water Board and EPA staff in discussing enforcement trends?
- Should BACWA take a position on some of the elements in the enforcement actions (such as response time, lateral replacement programs, etc.)?

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June 16, 2010

Monica Oakley, P.E.
Oakley Water Strategies
2100 Lakeshore Avenue, Suite C
Oakland, CA 94606

Re: Results of CIWQS SSO Data Analysis

Dear Ms. Oakley,

Purpose

The purpose of this report is to summarize the results of analysis of the California Integrated Water Quality System (CIWQS) sanitary sewer overflow (SSO) data and to identify issues with the data that interfere with both analysis and use of the data.

Background

The State Water Resources Control Board (SWRCB) required public agencies with sanitary sewer systems larger than one mile in length to begin electronic reporting of SSOs using CIWQS between January 2, 2007 and September 2, 2007, with the starting dates staggered by Region.

A previous analysis of CIWQS SSO data conducted by Larson Consulting during early 2008 indicated that there were regional differences in SSO performance metrics. Improvements in SSO reporting and two years of additional data were anticipated to provide a clearer picture of any regional differences and their underlying causes. The focus of this analysis was to determine whether there were differences in the SSO metrics between the San Francisco Bay Region and other regions of the State; however, even after significant work to correct obvious errors in the CIWQS SSO dataset, the data did not support a reliable analysis due to nature and extent of errors in the dataset.

The term "agency" in this report refers to a unique combination of Agency and Collection System that is associated with a Waste Discharge Identification Number (WDID). This definition is used, for the purposes of this report, to differentiate agencies that own/operate

more than one sanitary sewer system and also sanitary sewer systems that are located in more than one region.

CIWQS Data Issues

There are two basic types of issues with the current CIWQS data:

- Errors resulting from data input and lack of error checking and/or data quality assurance.
- Errors in the CIWQS user interface and data queries.

Both of these issues are discussed in detail, along with examples, in the following section of this report.

A. Data Input Errors, Limited Error Checking, and Limited Data Quality Assurance

An estimated 1,100 individuals with varying levels of computer/typing/language skills provide data input into CIWQS. Analysis of agency questionnaire and SSO data indicated that current data entry often produces illogical data. The state of the dataset indicates that current error messages and after-the-fact data review is either nonexistent or ineffective. This section of the report presents some of the more common data issues.

1. Sewer System Size and Budget

Description of Problem

Agency size is an essential component used in calculating the metrics used to compare performance over time and/or among agencies. The data fields in the CIWQS Questionnaire related to system size are: Size by Population, Miles of Force Main, Miles of Gravity Sewer, Miles of Laterals, Miles of Lateral Responsible, Number of Service Laterals, and Population Served.

Annual O&M Budget, Annual Capital Budget, Sewer Cleaning Production, Gravity Sewer Inspection Production, and Staffing need to be viewed relative to sewer system size for meaningful analysis.

There are 1,097 unique agencies in CIWQS. O&M and Capital Budget data were either missing or illogical for nearly 30% of agencies. Sewer system size data was not available or illogical for 4% of agencies.

Example of Illogical Data	Related Metric
16 Miles of Sewer (Gravity & Pressure) Population under 1,790 **Annual O&M Budget over $20,000,000**	O&M Cost ~ $1,300,000 per mile
512 Miles of Sewer (Gravity & Pressure) **4,320,000 Miles of Lateral** Population 207,500	20.8 miles of lateral per capita

Recommendation

An information field on the input screen showing a calculation of $/connection and $/mile may help Users identify invalid data for both budget and size field types. For numbers outside of a reasonable range, a warning message should be displayed.

2. Reporting Compliance

Description of Problem

Accurate and representative SSO reporting is a prerequisite to having meaningful and believable performance benchmarks.

As of September 2007, all agencies were required to be enrolled in CIWQS and to report SSOs online or submit a monthly "No Spill" report if there were no Public Spills during that time period.

Compliance with Monthly Reporting: In comparing the Interactive Regulated Facilities Report and the Summary Spill Report (SSO_overview.xls), it appears that 41% of agencies did not report any Category 1 or Category 2 SSOs using CIWQS during calendar year (CY) 2009. At least two of those agencies have populations greater than 10,000.

Recommendation

- Add WDID to all data entry screens/reports instead of Agency/Collection System name, so the report is always associated with the correct agency (i.e. multiple agencies are not created because a slightly different name or spelling is entered).
- Publish "No Spill" reports online in order to provide a complete picture of each agency's performance/compliance with reporting requirements for parties using the Interactive SSO Report.

3. General Errors and Date Checking

Description of Problem

Start Date, End Date, and Agency Notify Date are all central to metrics tracking changes in performance over time and comparing performance among agencies and Regions. Certified Date is important in determining the status of a spill report and compliance with regulations.

Spill reports appear to include any spill with a Start Date that is between the Start and End Date criteria specified for the query. Multiple queries are typically required due to CIWQS limitations in the amount of detailed data that can be exported from a report (300 rows). There is no error checking for dates. Without further analysis, these factors can result in inflated Annual SSO Rates and misleading information.

Error checking on other tables is advisable as well.

Date Type	Example Date/Time Discrepancies	Comments
Start Date Agency Notified Date Operator Arrival Date End Date Certification Date	**10/23/2009 5:30** 10/23/2008 6:15 10/23/2008 7:45 10/23/2008 7:45 11/17/2008 0:00	Start date is one year after all other dates. SSO event does not show up on any monthly queries.
Start Date Agency Notified Date Operator Arrival Date End Date Certification Date	**10/29/2008 12:08** 10/29/2009 12:08 10/29/2009 12:30 10/29/2009 12:45 11/10/2009 0:00	Start date is exactly one year prior to agency notify date. SSO event shows up on 12 monthly queries.
Start Date Agency Notified Date Operator Arrival Date End Date Certification Date	**6/1/1993 0:00** 6/8/2007 12:00 6/8/2007 12:00 6/8/2007 12:00 6/12/2007 0:00	This appears to be valid data (" Lateral was missed during rehab"). However, SSO event shows up on any query between 1993 and 2007.
Start Date Agency Notified Date Operator Arrival Date End Date Certification Date	**1/5/2209 1:00** 1/5/2009 2:00 1/5/2009 2:00 1/5/2009 2:30 7/16/2009 0:00	Start date is in future. SSO event does not show up on any monthly queries.
SSMP Audit Date	7/7/2011	Completion dates on SSMP table are in the future.
Region	5R (should be 2)	Though there are agencies with responsibility for sewers in more than one region, there are instances where SSO and Questionnaire data has the wrong region entered.

Recommendation

Date fields on the Spills table should be validated for use in calculating response time with "warning" messages generated when:

- End Date, Agency Notify Date, or Operator Arrival Date are before the Start Date.
- Difference between any of the dates is more than 365 days.
- Any date is in the future.

4. Inconsistencies and Lack of Public Access to No Spill Reporting

Description of Problem

CIWQS allows both Public Spill Reports and a No Spill Report for the same time period. Some agencies have reported a Private Lateral Spill but not a Public Spill or submitted a No Spill Report.

Report	Data	Error Type
"Public Spill" (count) "Private Spill" (count) "No Spill" Report Submitted Month/Year	1 0 True 02/2008	Should not have submitted a No Spill report because the agency reported one Public SSO that month.

Recommendation

- Monthly spill reporting should be limited to one (or more) Public Spill report(s) or one No Spill report per agency.
- Filing Private Spill reports should not affect Public Spill/No Spill reporting. Add warning level error checking for data input.

5. Data Essential to Analysis should be Required

Description of Problem

Use of the Failure Occurred field is inconsistent and unusable for analysis in its current state. There are only four categories shown in the database: Main, Lower Lateral, Upper Lateral, and Other (specify below). The Failure Occurred field is left blank approximately 70% of the time.

The purpose of this field should be to identify lateral versus sewer main spills, thereby allowing a comparison between agencies that have responsibility for laterals and those without that responsibility.

It appears that Users aren't sure how to categorize the "failure".

Where Failure Occurred Explanation for "Other (specify below)"
City owned cleanout
Crack in force main
Force main air release valve
In a manhole
Manhole lid preceding lift station holding tank.
Sewer lift station
Siphon

Recommendation

Require that field be populated with one of the categories prior to allowing certification of report. This would eliminate the large number of "null" values.

Change the field name from "Where Failure Occurred" to "Where Problem Occurred" since a number of explanations state that a pipe ***failure*** did not occur.

Add other common categories including gravity main/manhole, force main/ appurtenances, upper lateral (public), or lower lateral (public).

Remove "Other (specify below)" option.

6. *Provide Guidance for Cause*

Description of Problem

The identification of the primary cause is essential to determining the appropriate steps to prevent the problem from recurring. In a majority of cases where the cause was entered as "Other", the text description typically indicates that there was more than one cause.

Multiple categories of "Debris" and combination of Debris/Grease/Roots appear to be largest point of confusion.

Spill Cause	Number of SSOs	Percent of SSOs
Debris-General	672	12%
Debris-Rags	271	5%
Debris	28	1%
Flow exceeded capacity	33	1%
Grease deposition (FOG)	1,055	19%
Operator error	34	< 1%
Other	545	10%
Pipe structural problem/failure	315	6%
Pump station failure	73	< 1%
Rainfall exceeded design	30	< 1%
Root intrusion	2,478	44%
Vandalism	58	< 1%
Grand Total	5,592	

Examples of "Other" Causes
Broken lateral
Broken force main
Collapse
Food waste, plastic gloves, paper towels
Grease and roots
Grease and debris

Recommendation

A field should be identified as "Primary Cause" and should be required prior to final certification of a spill report.

“Unknown” and “Other” should not be allowed on certified report if the point of failure (where problem occurred) was in the sewer system or public lower lateral.

Definitions should be available to clarify the difference between categories (e.g. "Flow exceeded capacity" and "Rainfall exceeded design").

Provide a set of “interview” questions if the User selects “Other” to help with identification of Primary Cause, especially in determining which is primary if there are multiple causes (roots/grease/debris/broken pipe). For example: Was there broken pipe? Were there roots? Was there grease?

Allow for a secondary cause if that is useful information to the Water Board.

Reduce the number of categories where the result/action is not significantly different (e.g. consolidate Debris, Debris-General and Debris-Rags)

7. *Estimated Spill Volume vs. Portion of Spill Recovered*

Description of Problem

More than 20 spills in CY 2009 had a Volume Recovered that was greater than the Total Spill Volume. There were similar errors related to Spill Volume Reaching Surface Waters.

Example of Illogical Data from CY 2009	Example 1	Example 2	Example 3
Total Volume of SSO (gal)	1	525	1,500
Total Volume Recovered (gal)	5	2,500	82,500
Volume Reaching Surface Water	5	0	500

Recommendation

Add error checking so that Users cannot enter values in the Volume Recovered or Volume that Reached Waters fields with a sum that is greater than the Total Spill Volume.

Add an informational warning that the volume recovered should not include wash-down water.

B. Error in CIWQS SSO User Interface and Data Queries

1. *Results of Summary and Detail Reports are Different*

Description of Issue

The number of spills on the Spill Public Report - Summary Report and Spill Details Report do not agree. The Summary Report (SSO_overview.xls) includes spills that

occur on dates including the Start and End Dates specified. However, the Detail Report (exported to Excel as SSO_details.xls) does not include spills that occur on the End Date. Therefore, the Summary Report will often not match the Detail Report for important information such as total number of spills.

ID	Number of SSOs on Overview Report[1]	Number of SSOs on Detail Report[2]	Date of Data Missing from Detail Report[3]
10095	1	0	2010.01.31 02.00.00
10122	4	3	2010.01.31 15.42.00
11204	4	3	2010.01.31 11.50.00

Query criteria: Region 2, Start Date 01/01/2010; End Date 01/31/2010.

1. Spill Public Report - Summary Report: Export this Report to Excel
2. Spill Public Report - Summary Report: Export All Spill Details to Excel
3. Missing data was identified by re-running report for period 1/1/2010 through 2/1/2010 and comparing results.

Recommendations

Query for Detail Report should be fixed and tested to make sure the results of the Detail Report match those of the Overview Report.

General Recommendations related to Reports:

Make WDID a required field and add as search criteria for CIWQS reports. Agency and collection system names can be entered differently in CIWQS (e.g. San Mateo Cnty CS, San Mateo County CS) and some agencies report in more than one Region (e.g. DDSD). Having a unique identifier on all of the CIWQS tables could avoid some errors in interpreting the data.

Change date format on reports to a standard datetime field (e.g. 05/07/2007 10:15:00 instead of 2007.05.07 10.15.00).

2. *SSO Rate Metric is provided in SSOs/100 Miles while the commonly used Metric is SSOs/100 Miles/Year.*

Description of Error

The most common metric used to compare performance between agencies is SSOs per 100 Miles per Year. The Spill Public Report - Summary Report uses the metric "SSOs per 100 Miles". In the example that follows, the Annual SSO Rate for the two agencies is similar, but the SSOs per 100 Miles is very different.

ID	Number of SSOs for Specified Time Period[1]	Number of SSOs per Year[2]	Total Sewer Miles[3]	SSOs per 100 Miles[4]	SSOs per 100 Miles per Year
10912	143	1,489	4,352	3.3	34.2
11068	3	3	9	33.3	33.3

1. Query criteria: Start Date 01/01/2010; End Date 01/31/2010.
2. Query criteria: Start Date 02/01/2009; End Date 01/31/2010.
3. Sewer Miles = Miles Pressure Sewer + Miles Gravity Sewer + Miles Lateral Responsible
4. As shown in CIWQS

Recommendations

Query for Summary Page and Overview Report should be changed to calculate SSOs per 100 Miles per Year.

Current/Planned SWRCB Staff Actions

A. CIWQS Changes

SWRCB Staff operates on the basis that the data in CIWQS belongs to the participating agencies. SWRCB Staff notifies the responsible agency when they are aware of erroneous or illogical data and requests that the agency initiate the changes.

The CIWQS Data Review Committee meets two times per month with an attendance of 20-40 agency staff to discuss CIWQS "bugs" and "enhancements." The committee's current focus is on developing performance metrics that they hope will go beyond SSOs/100 miles/year in an effort not to disadvantage smaller agencies in performance comparisons. This committee is aware of the data reporting shortfalls and they have developed a list of needed changes (e.g. making "SSO Occurrence Location" a mandatory field). This will support the future analysis of mainline vs. public lateral SSOs. They will offer tools to update the historical data but they believe that many agencies do not have the data needed or the interest to update all of the historical data.

The SWRCB Staff has completed approximately 200 corrections/enhancements to CIWQS since its inception, and they have a list of over 80 current issues that they are meeting weekly with information technology staff to implement/resolve. The current problem list suggests that there are many problems with CIWQS for the SWRCB and RWQCB staffs who are trying to use CIWQS to support regulatory decisions (e.g. ability to search for agencies with no reported SSOs nor submitting a No Spill report by region, ability to flag SSO events that are subject to enforcement action, monthly enforcement reporting).

B. GWDR Compliance

Notices of Violation (NOVs) for approximately 130 enrolled agencies that are not reporting or do not have current agency questionnaire data were expected to be mailed during May 2010.

NOVs for approximately 50 additional agencies that have not enrolled under the General Waste Discharge Requirements (GWDR) are expected to be mailed during June 2010.

Additional Activities for Improving CIWQS

A. Training

It is clear from analyzing CIWQS data that there are common errors in reporting data. The data errors make analysis and comparison with other agencies difficult and misleading. BACWA could improve the data from its member agencies by providing periodic training in the use of CIWQS including approaches to assure the quality of the CIWQS data.

B. Annual Reporting

The RWQCB requires agencies in the San Francisco Bay Region to submit written Annual SSO Reports. In addition, RWQCB Staff recently notified agencies that they will be required to submit their Annual SSO Reports electronically in the future. This requirement creates the potential for conflicting SSO data. BACWA could explore alternative ways of meeting the RWQCB's information needs.

C. CIWQS Enhancement: Automated Error Checking

The SWRCB, using the information and experience it has gained to date, could achieve a significant improvement in data quality by implementing automated error checking similar to the one it uses to ensure the longitude and latitude are correct for the agency's county. This would eliminate errors such as small agencies that appear to have 90,000 miles of gravity sewers.

D. CIWQS Enhancement: Email Reminders to Improve Compliance

There are instances where the agency overlooks certifying an SSO report, completing the "No Spill" report, or updating its Agency Questionnaire. CIWQS has the capability to send emails. The SWRCB could add the ability to send an automated email reminding the LRO that they have uncertified reports, are missing "No Spill" Reports, or have an Agency Questionnaire update due in the near future.

E. CIWQS Enhancement: Online Program Guidance

Written guidance on the use of CIWQS is limited to the manuals provided to participants in the CWEA training held in 2007. The information in those manuals is dated. The SWRCB could improve the quality of the CIWQS data entry activities by supplementing its help desk with online program guidance including: frequently asked questions, detection and correction of frequent data entry issues, and notice of program changes.

Closing

Larson Consulting would be pleased to respond to any questions regarding this report and its contents.

Sincerely,

John Larson

Municipal Wastewater Perspective on a California Greenhouse Gas Cap and Trade Program

The California Wastewater Climate Change Group (CWCCG) is a statewide coalition of wastewater treatment agencies. Together, we treat approximately 90% of the municipal wastewater in California. The mission of the CWCCG is to address climate change policies, initiatives, and challenges through a unified voice advocating for California wastewater community perspectives.

The CWCCG believes that the wastewater management sector should not be included as a capped sector under a declining cap and trade program. We would welcome the opportunity to provide offset credits for use by others in capped sectors.

EXCLUSION FROM CAPPED SECTORS

It is prudent to exclude essential public services such as wastewater agencies from the capped sectors under the cap and trade program for the following reasons:

1) **Wastewater is a "must manage" product of society that, for public health and safety reasons, has long been considered an <u>essential public service</u>**. Essential public services should be insulated from marketplace uncertainties and not be forced to compete for allowance credits for non-discretionary, health-protective infrastructure and services. When facility changes consistent with approved regional plans or changes in regulations are needed, the need is within a strict time horizon and should not be delayed by the lack of credits nor excessive costs associated with scarce credits. SCAQMD's Rule 1302 provides a definition of "essential public services" that may be considered for cap and trade rulemaking.[1]

2) **Essential public services such as wastewater agencies have limited ability to curtail their operations (in terms of volume or quality) due to the health and safety services they provide and the strict water quality regulations under which they operate.** Under a declining cap scenario, as proposed, or with growth of population and increasingly stringent water regulations – both of which are out of the agency's control and evolve over time – meeting targets would likely be impossible without the purchase of credits. Wastewater agencies faced with increasing the level of treatment and volume of wastewater processed would therefore be forced to acquire credits to offset their emissions[2] at any cost or face failure in the delivery of services. These

[1] From SCAQMD Rule 1302, " essential public services" include (1) sewage treatment facilities, which are publicly owned or operated, and consistent with an approved regional growth plan; 2) prisons; 3) police facilities; 4) fire fighting facilities; 5) schools; 6) hospitals; 7) construction and operation of a landfill gas control or processing facility; 8) water delivery operations; and 9) public transit.

[2] In addition, the majority of emissions from wastewater treatment systems are biogenic. Biogenic emissions have been excluded from regulation in all major GHG regulatory programs implemented to date around the world. For example, the USEPA's Proposed Mandatory Reporting Rule states, "The calculation of total emissions for the purposes of determining whether a facility exceeds the threshold should not include biogenic CO_2 emissions (e.g.,

agencies would not only be at a distinct disadvantage in the marketplace and incur added costs, but would be forced to choose between meeting water quality and GHG reduction requirements.

3) **Essential public services have budget cycles, purchasing processes, and related limitations that are incompatible with market-based compliance systems.** Essential public services such as wastewater agencies cannot accommodate volatile price increases for allowance credits. By way of example, in the 2000-2001 timeframe, credit prices in SCAQMD's RECLAIM program jumped from cents per pound to over $60 per pound in a very short period of time - a two order-of-magnitude change. Public wastewater agencies simply cannot adjust to such extreme price swings in such a short timeframe. In addition, government competitive bidding requirements can slow down the trading process as a result of more formalized procedures and the need for transparency, thus putting essential public services at a distinct disadvantage in a market-based system.

If deemed absolutely necessary to regulate the wastewater sector's GHG emissions, we would welcome the opportunity to work with CARB on the development of an effective and appropriate regime through a public process.

INCENTIVIZING GHG REDUCTIONS THROUGH OFFSET OPPORTUNITIES

Reducing GHG emissions is an important goal that essential public services can best support by providing offsets to capped sectors in the cap and trade program.

Innovative opportunities for generation of offsets and use of renewable fuels exist within essential public service sectors such as municipal wastewater. These include projects such as energy recovery from biosolids, soil carbon sequestration and reduction of fossil fuel derived inorganic fertilizer use through land application of biosolids, and combined heat and power fueled by digester gas. The offset credits generated would be additional to any regulatory requirements that may be developed for the wastewater sector.

SUMMARY

The CWCCG believes that the wastewater management sector should not be included as a capped sector under a cap and trade program because it is an essential public service. We believe there are many opportunities to assist in providing overall GHG reductions and would welcome the opportunity to provide offset credits to the capped sectors.

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those resulting from combustion of biofuels)." Moreover, Chapter 6, page 6.6 of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories contains the statement, "Carbon dioxide emissions from wastewater are not considered in the IPCC Guidelines because these are of biogenic origin and should not be included in national total emissions."

Oro Loma Sanitary District
MEMORANDUM

TO: Judge Landis, Board of Directors

FROM: Jason Warner, General Manager

DATE: August 16, 2010

SUBJECT: PROTECTING THE FUTURE USE OF DIGESTER GAS FIRED ENGINES IN WASTEWATER APPLICATIONS – TALKING POINTS

Cogeneration systems using reciprocating engines in wastewater applications are the optimal solution to the electricity and heat needs of the wastewater industry. Billions of dollars of treatment infrastructure have been built around the use of anaerobic digesters to stabilize solids collected in the treatment process. These digesters provide renewable biogas, which can be used to produce electricity and heat in digester gas fired engine/generator systems. Alternative uses of the gas, including use in boilers and waste gas flares, produce far less environmental benefits with equal or greater emissions impacts.

Digester gas fired engine based systems are the only proven technology to reliably produce electricity and required heat from digester gas. Other technologies, including fuel cells and microturbines, have proven unreliable and unable to accommodate the inherent variability associated with the biological production of methane gas.

The Air Board has approved a set of revised cogeneration system emission standards, titled Regulation 9, Rule 8, which will become effective on January 1, 2012. These standards cut the NOx emissions limits associated with cogen systems from 140 ppm to 65 ppm (natural gas) and 70 ppm (digester gas). These standards are very stringent and may not be able to be met by all agencies.

There are 24 lean burn digester gas engines in the Bay Area. These include locations at Dublin San Ramon Services District, Napa Sanitary District, Delta Diablo Sanitation District, Union Sanitary District, Oro Loma Sanitary District, San Francisco Dept. of Public Works (multiple sites), Santa Rosa, South San Francisco, Hayward, Central Marin Sanitation Agency, Union Sanitary District, Fairfield-Suisun Sanitary District, and West County Sanitary District. Lean burn gas engines are ideal for wastewater applications because treatment plants provide renewably generated methane and they require large amounts of heat to facilitate the process microbiology.

Multiple variables (air fuel ratio, upstream gas conditioning, maintenance) are tuned to achieve a balance between NOx emissions and CO. Emissions levels of each of these two species are typically optimized at the expense of the other. The Air Board's white paper on the best available control technologies for CO emissions acknowledges this (Frazier, 2008). It says 'Since the simultaneous goals of minimizing NOx formation and attaining complete combustion (minimizing CO emissions) from the firing of waste gases in lean burn engines appear to be

somewhat at odds with each other, emissions priorities must be established.' The strict limits established by Regulation 9, Rule 8 serve to establish the priority; NOx over CO.

CO emissions are gaining greater and greater attention due to their status as a greenhouse gas. This presents a temptation to regulators to establish a dual standard. However, with the Reg. 9, Rule 8 standards set for implementation in 2012, there is no further room to reduce CO because the NOx standards are so tight. There is no room to further optimize CO emissions without increasing NOx levels above the new rules. The only alternative will be to shut the engines down. This will force utilities to send the digester gas to a boiler, where it will be used to heat water to heat the digesters. The net effect of shutting the engines down will be greater CO emissions, increased costs to the ratepayers for more expensive utility power, loss of green jobs, and the loss of a renewable energy source.

Regulators and leaders should acknowledge that the use of digester gas in reciprocating engines is the optimal use of our existing infrastructure and renewable biogas resources. No further ratcheting of NOx or CO should occur until new technologies are identified and proven out.

(Frazier, 2008) Frazier Randy, 'Concerning BACT: CO Emissions from Digester Gas Fired Lean Burn Engines.' January 24, 2008.

Nutrients

Editors' Note:
MORE TO COME
As is not uncommon, The Water Report finds itself covering subject matter for which there exists divergent viewpoints. Our next issue will feature an article by author(s) directly involved in the development of the "nutrient numeric endpoint" methodology discussed herein. Readers should be aware that there are fundamental disagreements over both interpretation of the NNE process and the facts themselves.

As this article was circulated in draft form to parties interested in presenting another view, our editing has been minimal.

Clean Water Act

NPDES

Point Source Discharges

Non-point Source

NUTRIENT NUMERIC ENDPOINTS

NOT QUITE READY FOR PRIME TIME?

by Jeremy N. Jungreis and Scott Thomas, Ph.D.

INTRODUCTION

The US Environmental Protection Agency (EPA) and California State Water Resources Control Board (SWRCB) want to know whether water is clean enough to meet all of the goals established by federal and state law. Often, just looking at a waterbody or taking a sample in the water column is not enough to definitely inform regulators about the overall health of a river. So, with Tetra Tech Incorporated (hereinafter Tetra Tech) as the primary author, EPA and the SWRCB are developing a process, the Nutrient Numberic Endpoint (NNE) approach, that is intended to answer some of the most difficult questions about "nutrients" that come up in water quality decision-making. They hope to take some of the subjectivity out of complex water quality and permitting decisions.

NNE is a process for evaluating water quality utilizing secondary indicators (such as algal density, chlorophyll prevalence, benthic integrity and dissolved oxygen levels among other factors). Unfortunately, at this early stage of the NNE process development (the pilot study stage), many questions remain unanswered about NNE's long-term usefulness in balancing water quality goals with the realities of human habitation in an arid climate. After discussing the genesis of the NNE and its relationship to state and federal responsibilities under the federal Clean Water Act (CWA), this article will discuss recent efforts to apply NNE in California watersheds — focusing particularly on a recent pilot study which applied an NNE type analysis (largely in the absence of site specific data) in California's Santa Margarita River (SMR) Basin. The results of the SMR pilot project, which included no opportunity for stakeholder participation until after a "final" draft report was issued, seem to suggest a trend towards setting of water quality targets for nutrients (nitrogen and phosphorus) at levels lower than natural background levels. (See generally, Central Coast Regional Water Quality Control Board, Final Project Report, 2006). Obviously, the setting of water quality targets at levels more stringent than those which can be achieved in a world without the influence of mankind begs the question of NNE's usefulness. While NNE may someday prove the valuable tool that EPA and the SWRCB hope it to be, initial indications — as discussed herein — are that significant modifications in the process (including the acquisition and analysis of far more site specific data) need to be incorporated before the public will accept the validity of conclusions generated through NNE.

REGULATORY BACKGROUND TO THE NNE

When Congress passed the federal Water Pollution Control Act ("Clean Water Act" or CWA) in 1972, 33 U.S.C. § 1251-1387, stakeholders on all sides thought that treatment plant technology would be the salvation of our Nation's waters — waters that were very much in need of healing after more than a century of largely unregulated discharges. They were right, and they were wrong too. The National Pollutant Discharge Elimination System (NPDES) created by the CWA (33 U.S.C. § 1342), ushered in an era of mandatory treatment for industrial and municipal discharges. And the waters did get cleaner. However, the NPDES program, which is triggered only upon point source discharges of pollutants to jurisdictional waters, could only do so much (see generally, Reed D. Benson, *Pollution Without Solution: Flow Impairment Problems Under Clean Water Act Section 303*, 24 Stan. Envtl. L.J. 199 (2005)). In 1999, states reported that 40 percent of the waters they surveyed remained too contaminated for basic uses, including fishing and swimming. More troubling still, such impairment persisted in the face of private and public sector spending in excess of $500 billion for water-pollution control facilities (USGS 1999). Today, over 10,000 water bodies in 49 states are listed as impaired for nutrients or nutrient-related eutrophication (USEPA 2007), and much of the pollutant loading in our Nation's waterways comes not from a pipe but from non-point source pollution — i.e. pollution that emanates largely from urban and agricultural runoff. Non-point source pollution remains the hardest to control because the sources are diffuse and often outside the reach of regulatory oversight (there is no "discharge" per se with runoff). As our nation becomes increasingly urbanized, stakeholders are seeing that non-point source loadings alone are sufficient to "impair" beneficial uses in a waterbody — leaving no allocation for new or existing point source discharges.

Nutrients

CWA Goal: Fishable and Swimmable

State's Role

"Impaired" Waterbody

"TMDL Targets"

Although many stakeholders did not know it at the time, Congress retained the central theme of water quality laws that preceded passage of the CWA. As before, states were instructed to continue establishing and enforcing water quality standards for water segments within their jurisdiction, but now these water quality standards would be measured against the CWA's goal of having all waters become fishable and swimmable (Benson at note 81). Accordingly, Congress prescribed a much greater federal role in water quality standard setting, but the principal actors remained the states. The states, utilizing criteria established by the newly-created EPA, designated beneficial uses to be protected in each waterbody within their jurisdiction. They were then required, again with EPA's assistance and oversight (33 U.S.C. § 1314(a)(7)), to develop water quality criteria (either narrative, numeric, or in many cases both) that would ensure the attainment and maintenance of all identified beneficial uses. 40 C.F.R. § 130.3.

That is where the fight is now. Most point source dischargers throughout the country have valid NPDES permits that already apply expensive technology to the removal of water pollutants. Nonetheless, many streams, particularly in arid portions of the country where diluting flows are seasonal at best, fail to consistently meet water quality standards. When standards are not met — and a growing segment of the public is increasingly eager to raise the issue for state and federal regulators — the Clean Water Act requires states to list the waterbody as "impaired" with the EPA, and this listing triggers further regulatory action under Section 303(d) of the Clean Water Act. 33 U.S.C. § 1313(d); also 40 C.F.R. § 130.7(d)(1) (requiring submission of state 303(d) lists to EPA every two years). The next step in the process is for the states, upon consultation with EPA and prioritization of efforts, to develop a **t**otal **m**aximum **d**aily **l**oad (TMDL) for the impaired waterbody. 33 U.S.C. § 1313(d)(1)(C). Setting of a TMDL is a formal administrative process subject to public participation. In the process of setting the TMDL, the regulatory agency may establish "TMDL targets" (measured endpoints that demonstrate attainment of pertinent beneficial uses), and such targets may be set lower than the numeric water quality standards in order to provide a margin of safety. 33 U.S.C. § 1313 (d) (1) (c); See also (Tetra Tech 2007).

Unfortunately, many state water quality standards are not reflective of the waterbodies they purport to govern. Water quality standards were set in the 1970s, often without site-specific data or adequate stakeholder participation. Notwithstanding a nominal obligation to revisit the propriety of standards at least every three years (33 U.S.C. § 1313(c)(1)), regulators often assume — with some basis given their limited budgets and increasing workloads — that existing standards are adequate unless proven otherwise through stakeholder initiative or litigation. Hence, under the current system, watersheds are over or under regulated based on standards that were hurriedly cobbled together to meet EPA's regulatory deadlines over 30 years ago (when much of the science regarding water quality relationships was in its infancy). The problem is particularly acute for nutrients — perhaps the most difficult types of pollutants from which to draw conclusions of "impairment." See generally USEPA 1999.

Nutrients, typically the by-product of **p**ublicly **o**wned **t**reatment **w**orks (POTW) discharges, municipal stormwater and agricultural runoff, occur naturally in nature and are the building blocks for natural ecosystems. However, in excess concentrations they can choke a waterbody. *Id.* Nutrient loadings include nitrogen and phosphorus, and the many chemical compounds based on these two elements, such as nitrate, nitrite, ammonia, and phosphate. Except in extreme cases, nutrients alone do not impair beneficial uses. Rather, in combination with sunlight, temperature and flow volume/velocity they can cause indirect impacts to protected uses by promoting excessive algal growth and low dissolved oxygen levels. Because impairment is an indirect consequence of nutrient loading, the evaluation of impairment (and extent thereof) continues to be a very subjective and complex process (Tetra Tech 2007 at 1). NNE undertakes to remove some of the subjectivity from the nutrient characterization process (Tetra Tech 2004 at 1-2).

NNE AND ITS ORIGINS

In 1998, EPA published the *National Strategy for the Development of Regional Nutrient Criteria* — a first step for developing nutrient criteria under Section 304 of the Clean Water Act (USEPA 1998). EPA then proceeded to divide the US into ecoregions (regions of similar physical, climatic, and ecological characteristics) in order to establish ecoregional nutrient criteria. They evaluated data sets from 1990 to 1998 and then proposed that the upper 25% of all nutrient data could be assumed to represent unimpacted reference conditions (e.g., natural background levels) for each ecoregion. These 25th percentile values were characterized as criteria recommendations that could be used to protect waters against nutrient over-enrichment (USEPA 2000). The 2000 EPA report noted, however, that ecoregion spanning recommendations might not prove very predictive. EPA cautioned that States and Tribes may "need to identify with greater precision the nutrient levels that protect aquatic life and recreational uses… through development of criteria modified to reflect conditions at a smaller geographic scale than an ecoregion such as a subecoregion, the State or Tribe level, or specific class of waterbodies." *Id.*

NNE Stakeholder Info Meeting AUG 21

As we went to press, August 21st had been selected as the date for an informational meeting regarding NNE development. Members of a Santa Margarita River Basin stakeholder group (the Santa Margarita Technical Advisory Committee) will be meeting with NNE developers (Tetra Tech et al) to express concerns and receive information. Other interested parties will be welcome to attend, though direct participation may be limited to NNE presenters and stakeholder group members. The exact location of the meeting was as yet undetermined. For info, email: jbanales@lc.usbr.gov

Nutrients

Eutrophication

Numeric Limitations

Advisory Group

Pilot Study

Nutrient Concentrations

NNE Approach

Site-Specific Data

"Response Variables"

Numeric Targets

"BURCs"

As previously referenced, ambient nutrient concentration data alone may not be effective in assessing eutrophication (e.g., an anoxic condition in a waterbody often caused by lack of dissolved oxygen and excessive algal growth) because algal productivity depends on additional factors such as sediment characteristics, stream gradient, temperature, light availability, flooding frequency, and biological community structure (Tetra Tech 2006). Yet, many water quality standards in the Western US are tied to a numeric nutrient limit. These numeric standards often give limited, if any, consideration to spatial or temporal variation in key drivers of nutrient loading such as precipitation, stream flow, and temperature. Is a numeric limitation appropriate for the entire watershed, or only a reach; the entire year, or only a season?

In a further step towards developing useful nutrient criteria, EPA Region IX called together a Regional Technical Advisory Group (RTAG) in 1999. RTAG included stakeholders from state water quality agencies in Region IX, Tribes, other State and federal agencies, and some representatives from industry and environmental groups. A key member of this team was Tetra Tech, which developed pilot projects and studies and facilitated development of NNE. The RTAG conducted a pilot project in 1999 and 2000 to develop a water quality database organized by ecoregion to assess the availability of existing water quality and biological data to support nutrient criteria development, and to evaluate regional reference conditions for streams and rivers in aggregated Ecoregion II (Western Forested Mountains). The results of this pilot project suggested that the proposed reference condition distributions would require refinement and supporting studies to ensure that the adopted criteria were appropriate on a site-specific basis (Tetra Tech 2006). In 2000, RTAG reviewed the findings of the pilot study using the original Level III ecoregions to evaluate the draft criteria previously completed for rivers and streams. The results suggested if the EPA reference-based values were adopted, then a large number of likely unimpaired water bodies would be misclassified as impaired. The RTAG responded by adopting a resolution to pursue development of more predictive nutrient criteria (see Tetra Tech 2006).

The drawbacks of using nutrient concentrations alone to predict protection of beneficial uses are reflected in a 2003 California pilot study (Tetra Tech 2003). In the study, 22,000 data points from streams and lakes were classified as minimally impacted, unimpaired, impaired by nutrients, or impaired by non-nutrients. Box plots for each available nutrient parameter were created, and the researchers performed yearly and summer-season analyses. While the researchers found that an increase in the median of each parameter across all data points correlated with degradation in use attainability, the range of concentrations found in each category overlapped across orders of magnitude, confounding the legitimacy of setting scientifically defensible state-wide or region-wide water quality criteria (Tetra Tech 2003).

Unphased, EPA Region IX, in cooperation with the California SWRCB, decided to try again, this time with NNE — an approach that nominally responds to prior criticism of over-reliance on nutrient concentrations alone by focusing on "secondary response indicators." Development of the NNE approach largely occurred in the absence of regulated stakeholder participation (other than that of the RTAG), and ignored the suggestions of members of the regulated community that a site-specific, dynamic modeling approach must be undertaken in concert with NNE if the goal is to quantitatively evaluate nutrient-biomass relationships for particular river systems. Assuming impairment from nutrient biomass data in other watersheds (from other regions of the country or world) would not be helpful in the absence of a validated water quality model populated with a fair quantum of site-specific data. However, setting up models based on site-specific data for each waterbody to be studied is very expensive, and NNE's sponsors had a limited budget. As previously mentioned, the intention of NNE's approach is to select nutrient response indicators for evaluating impairment. NNE's approach requires consideration of biological indicators that it terms "response variables," in addition to measurement of nitrogen and phosphorus at representative sections of the water column. These response variables include measurement (or estimate) of benthic algal biomass, planktonic chlorophyll, dissolved oxygen, dissolved organic carbon, macrophyte cover, and water clarity. NNE then seeks to develop water quality targets for the response variables rather than targets for the nutrients themselves (e.g., how much algae can be present without impairing all designated beneficial uses). Numeric models, such as the currently unvalidated QUAL2K Model, are then used to convert the initial water quality targets for the response variables into numeric targets for nutrients (Tetra Tech 2006). These nutrient targets, once ground tested, can then be used by regulators to establish TMDLs for impaired water bodies, or can form the basis for establishing new water quality criteria that are better aligned with existing conditions in the watershed.

Any water quality- based approach, no matter how well thought out, requires ground tested data before it can be considered predictive. NNE begins with assumptions about the current condition of a waterbody (with or without current data) to be studied, and those assumptions then drive future calculations. The current version of NNE divides water bodies into three Beneficial Use Risk Categories (BURCs) based upon the amount of chlorophyll a (from algae) anticipated to be in the water (see Figure 1, next page).

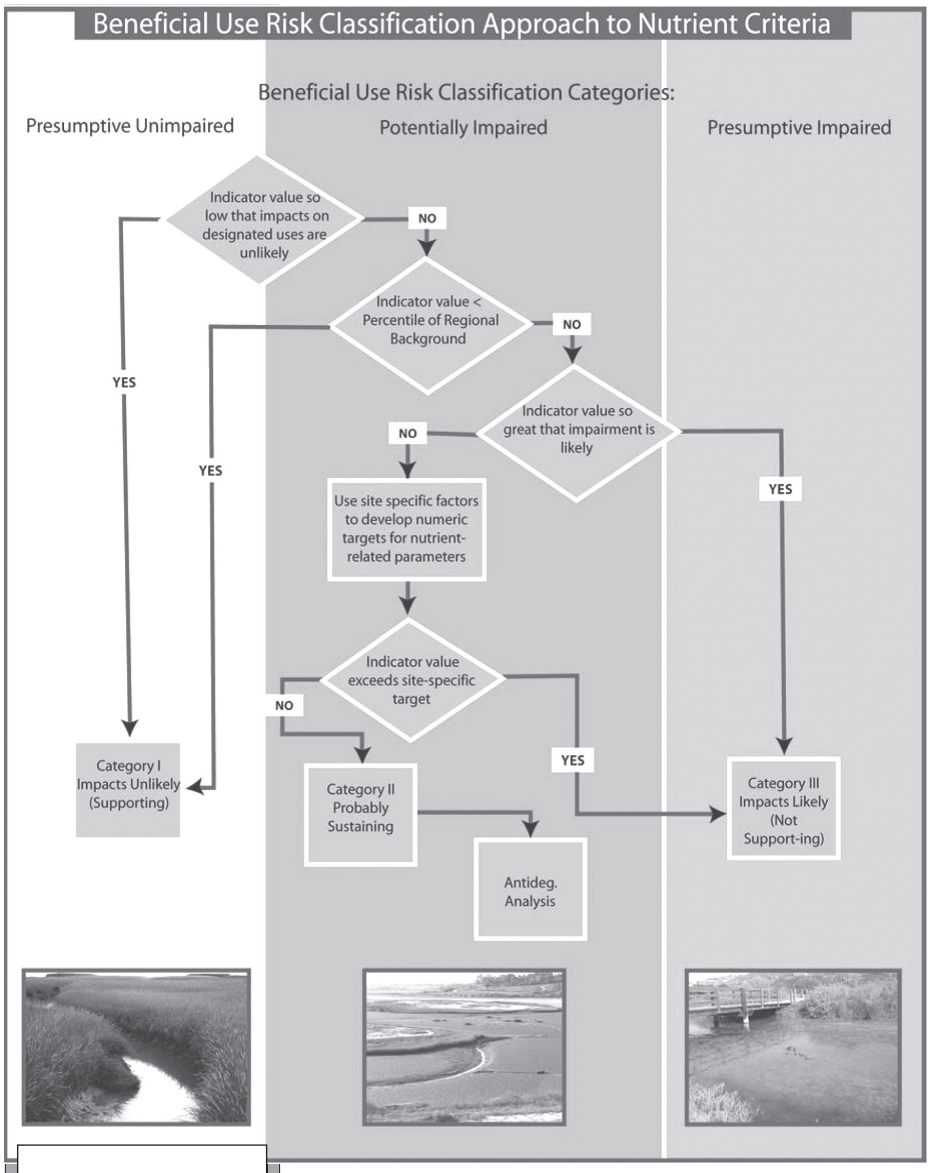

FIGURE 1: Tetra Tech BURC Graphic

Arid Climate Variables

BURC I waters are not expected to exhibit impairment due to nutrients, while BURC III waters have a high probability of impairment. BURC II waters are in an intermediate range where additional information and analysis may be needed to determine if a beneficial use is supported, threatened, or impaired (Tetra Tech 2006). NNE lists target levels for response indicators delineating the boundaries between BURC I/II and BURC II/III. The BURCs were developed via a literature search entirely outside of the normal regulatory process — and largely utilized data gathered outside of the arid Southwestern States. Thus, the primary assumptions that drive the remainder of NNE's process are premised upon data describing watersheds with different climate and geology. Are BURCs appropriate for arid and Mediterranean climates or for effluent-dominated streams that would be dry for most of the year in the absence of irrigation return flows, municipal stormwater and reclaimed wastewater? One suspects that the low (or no) flow conditions that prevail for much of the year in arid systems would be, at least in many cases, naturally conducive to significant algal growth irrespective of nutrient additions. High temperatures and ponding associated with low flow conditions (combined with an abundance of sunlight) are an invitation to algal growth. See CCRWQCB 2006 at 23-27 (indicating that extensive algal biomass is the "natural condition" during attenuated summertime flows in Coastal Southern/ Central California). If higher algal densities are a natural condition (for which flora and fauna in the watershed have adapted), then it would seem odd to begin NNE process with a categorization of BURC III because a high level of algal biomass (whether measured or assumed via literature searches) is likely an inaccurate predictor of a watershed's overall health — at least in Southern and Central California. In any event, the underlying assumptions regarding the BURCs must be verified for all the regions for which they are proposed before they can be used to set defensible nutrient targets or water quality standards.

Current TMDL Approach v. NNE Approach

NNE CASE STUDIES

Following its release of a programmatic report explaining NNE's process in 2006 (Tetra Tech (2006)), Tetra Tech, funded by EPA Region IX, began a series of four case studies intended to "validate" the NNE approach. In addition to the Santa Margarita River case study — which is discussed extensively herein — EPA also completed NNE case studies on the Klamath River in Northern California, Chorro Creek on the Central Coast of California, and Malibu Creek near Los Angeles. The regulatory status of each waterbody (e.g., its status on the 303(d) list or TMDL development) varies considerably. While the relatively unpolluted mainstem Santa Margarita is not currently slated for TMDL development (and may never be), the Klamath nutrient TMDL has been under development for several years; the Chorro Creek nutrient TMDL is currently pending approval before SWRCB; and Malibu Creek is already implementing a recently developed nutrient TMDL. It would appear that Chorro Creek may be the test case for how California will resolve differences between the current approach to TMDL setting (e.g., direct calculation of target concentration and appropriate flow or consideration of numeric nutrient measurements at different sites in combination with subjective evaluation of overall water health—such as the presence/absence of "nuisance algae"), and NNE'S approach (BURCs and measurements of secondary indicators).

Nutrients

Lower Targets for Nutrients

An examination of the nutrient targets proposed in NNE Case Studies conducted in watersheds with an existing TMDL reveals that NNE'S process produces a lower target for nutrients. Table 2 compares the TMDLs developed in Malibu and Chorro Creek with those suggested in NNE Case Studies. In both cases, following NNE's approach leads to target values for phosphorus that are two orders of magnitude more stringent than the TMDLs (developed over the course of years with extensive data and stakeholder input) for these waters. For nitrogen, the targets seem to be more closely aligned, though NNE would appear to mandate a more stringent target in most cases.

Table 2.
Comparison of NNE Case Study Results with TMDL Values Proposed or Implemented in California

Case Study	NNE Scoping Tool Range of Values (mg/L)*		TMDL Values (mg/L)	
	Total Nitrogen	Total Phosphorus	Nitrogen	Phosphorus
Chorro Creek	0.46-1.6	0.005-0.032	1.5**	0.4**
Malibu Creek	0.05-1.6	0.0014-0.028	1.0***	0.1

* The several spreadsheet models within NNE approach yield different results, hence a range of values.
** Chorro Creek TMDL targets are set differently: nitrate as N and orthophosphorus as P.
*** This is a summer value, only. The winter value is 8 mg/L total nitrogen.

As discussed in the paragraphs below, the results in the Santa Margarita River Case Study are similar to the suggestions of the Chorro and Malibu Creek studies (e.g., nutrient target recommendations that are in all likelihood lower than natural background conditions). A brief review of the SMR Case Study below provides some areas of future inquiry for stakeholders when they encounter NNE.

THE SANTA MARGARITA RIVER CASE STUDY

Undisturbed Riparian

Urban Runoff

Flow Variability

The Santa Margarita River, located in Southern California, drains a watershed of over 740 square miles. The river reaches the Pacific Ocean at Marine Corps Base Camp Pendleton. The lower Santa Margarita watershed provides the greatest remaining expanse of largely undisturbed riparian corridor in coastal Southern California. The lower 27 miles, comprised of the main river channel and its estuary, is dominated by federal and state land ownership. The area serves as valuable habitat for federal and state listed endangered or threatened species and other wildlife. Precipitation and urban runoff comprise a significant majority of the surface flow in the Santa Margarita River Basin. Local runoff generated by precipitation events is dependent on soil characteristics, slope, soil moisture, storm intensity, and storm duration. Due to variation in these factors, runoff quality and quantity vary greatly from year-to-year, month-to-month, and location-to-location. During extremely dry years, no surface flow reaches the ocean. In extremely wet years, the mean daily flow has reached as high as 19,500 **c**ubic **f**eet per **s**econd (cfs), making the Santa Margarita River a highly variable stream system.

Assumptions

The Santa Margarita Case Study estimated most hydrologic and ecological conditions based upon a literature search, using very limited site-specific data of recent origin. It then incorporated a number of inaccurate assumptions about interrelationships in the watershed to include the impact of solar radiation and shading on algal biomass, grazing impact upon algae, and ratios of inorganic to organic nutrients.

Beneficial Use Risk Categories (BURCs)

Rulemaking v. EPA "Policy"

As previously alluded, the first problematic assumption in NNE's Case Study was that the BURCs reflected levels of chlorophyll *a* that are protective of beneficial uses were developed based upon data from wetter regions of the United States and abroad. The concept of BURCs holds promise if developed in the proper context. However, if BURCs are to form the benchmark for assumptions about how much additional loading can be assimilated into a waterbody, they should be developed as part of a formalized rulemaking on a statewide or local basis. They should not be forced upon the regulated community as regional EPA "policy" outside of the context of formal stakeholder participation and scientific peer review.

Data Regarding Benthic Algal Biomass

Lack of Data

There was a conspicuous lack of data regarding benthic algal biomass or chlorophyll *a* for the Santa Margarita River. Having current algal biomass and chlorophyll *a* data would seem to be crucial to assessing the applicability of NNE's process in the river. Also missing was a comprehensive data set on turbidity, which is used to estimate light extinction in the water column. Only a few data points scattered across the watershed were considered.

Nutrients

Watershed Extrapolation

Shading Field Data

Benthic Biomass

Grazing Assumptions

Fixed Ratio Assumption

Natural Background

Inferences from Oxygen and PH Measurements

Lacking algae data, the Santa Margarita Case Study used oxygen and pH data to infer algal growth by showing deviations from oxygen saturation. The Case Study stated that monitoring at one station on the river revealed that "excursions" below dissolved oxygen criteria "occur frequently in summer at the low point of the daily diurnal cycle in the Santa Margarita" thereby suggesting impairment. However, no calculation was presented regarding the actual percent of time that such excursions occurred, nor does the Case Study explain how analysis of dissolved oxygen at a single point on the river can be extrapolated to the entire watershed.

Absence of Canopy Cover and Shading Data

The Case Study did not include actual field data for canopy cover and topographic shading — an important factor (particularly in the absence of actual algal biomass data) because of the relationship between shading/canopy and temperature/photosynthesis. Generally speaking, the less canopy and shading during low flow conditions, the greater the chances of impairment associated with algae (see CCRWQCB 2006 at 23-27). Shading appears to be a key parameter within the "QUAL2K"model, upon which NNE numeric outputs are based, but in the Case Study there was no shading field data that could be plugged into the model.

Questionable Assumptions Regarding the Ash Free Dry Weight Ratio (AFDW)

The QUAL2K model approaches predict benthic biomass based upon "**a**sh **f**ree **d**ry **w**eight" — a means of normalizing the weight calculation of the collected algae after removal of moisture. Prediction of benthic chlorophyll *a* depends upon a ratio of chlorophyll *a* to AFDW. However, no such ratio exists in the literature for Southern California streams. Meanwhile, EPA's Environmental Monitoring and Assessment Program (EMAP) database for California does include significant data pertaining to ash-free dry weight and chlorophyll *a* for benthic algae. These EMAP data were dismissed as "too low for benthic algae" by Tetra Tech (Tetra Tech 2006). The EMAP dataset is not insubstantial, containing 173 data points. The EMAP ratio of chlorophyll *a* to AFDW averages 1.673 (Tetra Tech 2006), while NNE uses a ratio of 2.5, a 49% higher estimate for anticipated benthic algae. Lacking site-specific data, it would seem to be more appropriate for NNE to have used other California data contained in EMAP, rather than substitute ratios borrowed from research on northern Rocky Mountain stream ecology.

Questionable Assumptions Regarding Grazing

The Santa Margarita River Case Study uses the maximum benthic algal biomass potential as assessed under typical summer conditions with no shading and no additional algal loss due to scour or grazing. This yields a theoretical upper bound on expected average biomass as a function of nutrient concentration. Tetra Tech explains that "accounting for grazing within the 'natural' death rate is problematic in general, as grazers may remove from 6 to 97 percent of algal biomass, depending on grazer density, types of algae and grazer(s), and so on. This problem is largely avoided when the intention is to predict the maximum concentration that would be present under minimal grazer pressure." Tetra Tech (2006). Grazing is a process that is likely to remove nuisance algae from a watershed through natural processes, yet it appears that NNE simply brushed past it by assuming the "worst case scenario" regarding grazing rates.

Questionable Assumptions Regarding Ratios of Inorganic to Total Nitrogen

The NNE approach uses median ratios of **t**otal **i**norganic **n**itrogen (TIN) to **t**otal **n**utrients (TN) of 0.35 for Nitrogen and 0.65 for Phosphorus. Such fixed inorganic to organic ratios among and within diverse watersheds are unlikely to occur, but appear to have been chosen in order to simplify NNE's process. Organic nutrients are generally thought not to be as available to nuisance forms of algae as the inorganic forms. Thus, the assumption of a fixed ratio (with a higher assumption of TIN) and associated greater production of algae may have skewed the outputs from the model towards more stringent nitrogen targets. It would have been more appropriate to run NNE's model with measured inorganic nutrient concentrations rather than rely on a fixed ratio with limited statistical basis. Indeed, Tetra Tech (2006) concedes that "the large variability in actual fractions limits the applicability of a generic approach to setting total nutrient criteria based on simulation with inorganic nutrient fractions," but oddly Tetra Tech seems to have ignored its own advice in the Santa Margarita Case Study.

Natural Background Levels and "Existing" Beneficial Uses

Natural background levels for the Santa Margarita were not factored into NNE Case Study. Yet there is a disparity between the measured values of nitrogen and phosphorus taken from unimpaired waters region-wide versus NNE model recommendations for nitrogen and phosphorus in the Santa Margarita Case Study. While the median and mean values for total nitrogen in unimpaired waters of the region are 0.4 and 1.01 mg/L respectively (Tetra Tech 2006), NNE value for the Santa Margarita ranges from 0.23 – 0.80 mg/L — which is substantially lower than regional background. Similarly, the median and mean values for total Phosphorus in unimpaired waters are 0.07 and 0.36 mg/L respectively, while NNE value is the range

Nutrients

0.0071 – 0.036 mg/L — an order of magnitude lower. No explanation is provided for the disparity between actual measured values of *unimpaired* streams and NNE target for insuring maintenance of beneficial uses. Compare CCRWQCB 2006 (indicating large scale algal growth is a natural condition for Southern California rivers during low flow conditions).

Theoretical Uses

A TMDL target that is set lower than natural background levels can, by definition, never be achieved. Nature will not permit it. Once such a TMDL is set, stakeholders must spend large sums of money to develop what amounts to a perpetual TMDL. This is not what the drafters of the Clean Water Act had in mind. 33 U.S.C. § 1313(d)(1)(D) (requiring setting of daily load capable of "implement[ing] the applicable water quality standards"). Moreover, nutrient concentration targets derived from secondary indicators are more likely to be accepted by stakeholders if they protect "existing uses" rather than those that could theoretically exist at some future date. Compare 40 C.F.R. § 131.10 (g) (allowing states the discretion to remove a designated use that is not an "existing use"). Theoretical uses may require far more stringent nutrient criteria at great cost and with limited ecological benefit. The Santa Margarita Case Study acknowledges this problem (see Tetra Tech 2007 at 4: "A major question is whether the NNE targets proposed… are appropriate to effluent-dominated streams in Southern California."), but then recommends setting unattainable nutrient targets anyway. *Id.* at 16.

Effluent Dominated Streams

FINAL THOUGHTS

EPA Memo

EPA's Assistant Administrator Benjamin Grumbles recently issued a memo to the Directors of State and Tribal water programs urging accelerated development of numeric standards and calling for development of a science-based foundation for numeric criteria in estuaries, wetlands, and large rivers. He stated that adopting numeric standards have a number of key advantages, including easier TMDL development, quantification to enable better evaluation of runoff minimization programs, and measurable, objective baselines against which to chart environmental progress (USEPA 2007). The NNE approach offers promise for how states might meet Grumble's challenge to set numeric nutrient criteria. Unfortunately, from our review of NNE Case Studies (some of which were more scientifically rigorous than others), it appears that this promise is not yet fulfilled. The early applications of NNE appear to build one conservative assumption upon the next in pursuit of protecting beneficial uses that may never exist. The result is recommended nutrient targets that are largely unachievable in the arid and effluent-dominated streams of the Southwest. Such unrealistic nutrient targets, if adopted as water quality standards or as part of a TMDL, will be extremely costly to implement — if they can be implemented at all. Perhaps of greater significance, however, is the possibility that implementation of such unrealistic standards will leave the very same watersheds without water. Beneficial uses require, above all else, a supply of water. See *PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 511 U.S. 700, 719 (1994): "[A] sufficient lowering of the water quantity in a body of water could destroy all of its designated uses, be it for drinking water, recreation, navigation or, as here, as a fishery." The nutrient targets for nitrogen suggested by NNE process cannot be consistently met using any currently known treatment technology. If adopted as numeric criteria under state law, there would be essentially a de facto prohibition on any kind of discharge — even those from state-of-the-art treatment facilities — for most of the watersheds in Southern California. This would preclude reclamation and remove one of the primary sources of water during the dry summer months. NNE is a good concept, but EPA and the SWRCB need to carefully consider, in consultation with impacted stakeholders, how the NNE can best achieve its objectives before formally using it in formal regulatory processes.

Unrealistic Targets

De Facto Prohibition

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