



**Winston H. Hickox**  
Secretary for  
Environmental  
Protection

# State Water Resources Control Board

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## Division of Water Quality

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**Gray Davis**  
Governor

February 5, 2002

Members and Alternates:

### MEETING OF THE AB 982 PUBLIC ADVISORY GROUP

The AB 982 Public Advisory Group (PAG) will meet on February 15, 2002 at the California State Chamber of Commerce, 1215 K Street, 14<sup>th</sup> Floor, in Sacramento, California.

Please find enclosed the meeting agenda and the documents to support many of the agenda items. If you are planning to have handouts, please bring at least 40 copies for the PAG members and audience.

If you have any questions regarding the PAG or the meeting, please call me at (916) 341-5560. You may also call the liaison to the PAG, Laura Sharpe at (916) 341-5596.

Sincerely,

Craig J. Wilson, Chief  
Monitoring and TMDL Listing Unit  
Division of Water Quality

Enclosures

cc: Interested Parties

# AB 982 Public Advisory Group

Friday, February 15, 2002  
10:30 a.m. to 4:30 p.m.

California State Chamber of Commerce  
1215 K Street, Suite 1400  
Sacramento, California

## A G E N D A

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1. *Convene Meeting – Co-Chairs* 10:30 a.m.—10:35 a.m.
  
2. *Introduction* 10:35 a.m.—10:40 a.m.
  - Steve Ekstrom
  - Description of the Meeting: Listing Waters on the Section 303(d) list in 2002 and development of concepts for the SWRCB's Listing and De-listing Policy.
  
3. *October 10, 2001 Meeting Summary* 10:40 a.m.—10:45 a.m.  
Action Item: Consider approval of Meeting Summary (Attached)
  
4. *The Clean Water Act Section 303(d) List in 2002.* 10:45 a.m.—12:00 p.m.
  - Tom Mumley, Tom Howard, Craig J. Wilson
  - Overview/Status
  - Process
  - Schedule (attached)
  - Dialogue/discussion on the 2002 List
  
5. *Lunch* 12:00 p.m.—1:15 p.m.

6. *Concepts for the Listing/De-listing Policy* 1:15 p.m.—3:30 p.m.
- Tom Mumley, Tom Howard, Craig J. Wilson
  - Presentation of issues and comments (attached) received at several meetings with PAG members, the Storm Water Quality Task Force, and a California Farm Bureau water quality group.
  - Dialogue/discussion on the issues and comments.
  - Discuss of the PAG's future involvement in the Policy development.
7. *Break* 3:30 p.m.—3:45 p.m.
8. *Update on Implementation of the TMDL Initiative and Action Plan* 3:45 p.m.—4:15 p.m.
- Tom Mumley
  - Dialogue/discussion
8. *Wrap-up and Next Steps* 4:15 p.m.—4:25 p.m.
9. *Public Comment* 4:25 p.m.—4:30 p.m.
- Any person wishing to address the PAG may do so during this item.
10. *Adjourn* 4:30 p.m.

## Agenda Item 3

### October 10, 2001 Meeting Summary

## **AB 982 Public Advisory Group**

Hyatt Regency Hotel, Carmel Room  
1209 L Street  
Sacramento, California

### *Meeting Summary*

Wednesday, October 10, 2001

**Convene Meeting:** Co-Chairs Craig Johns and David Beckman opened the meeting at approximately 9:30 a.m. and declared a quorum.

**Introductions:** Steve Ekstrom, PAG facilitator, asked members to introduce themselves. He also noted that the primary purpose of this meeting was for PAG to react to the TMDL Initiative/Action Plan that will form the basis of the Second Report to the Legislature.

**Summary of the July 16-17, 2001 meeting:** The summary was accepted with one change. A PAG member asked that when addenda are included with meeting summaries that authors' names be indicated. The author of the addendum (Leslie Mintz) was identified.

**TMDL Initiative and Action Plan:** Tom Howard, Deputy Director, and Tom Mumley, TMDL Program Manager, discussed their roles. Tom Howard stressed the Board's commitment to the TMDL program, noting that the Board has declared it to be its highest water quality activity. He stated that his role was to ensure the appropriate implementation of the TMDL program. The TMDL program will embrace a problem solving approach.

A reorganization of the Division of Water Quality (DWQ) is nearly complete. A new TMDL section will be formed in DWQ as one of six sections of the Division. Ken Harris will be the TMDL Section Chief. Tom Mumley, with the San Francisco Bay Regional Board, will be the TMDL Program Manager. Unit Chiefs will be Craig J. Wilson (Monitoring and TMDL Listing), Val Connor (Assessment and TMDL Support), and Paul Lillebo (Basin Planning).

Tom Mumley noted that the PAG has wanted a more clearly defined TMDL program and that the Board listened to this concern and responded with this reorganization plan. Tom Mumley emphasized the importance of good communication with PAG and mentioned that there is a lot of unfinished business that he looks forward to getting PAG's advice on.

PAG members expressed their appreciation for the way in which the Board and staff have responded to their concerns.

Tom Mumley gave an overview of the TMDL Initiative, noting that more detail would follow later in the meeting. Comments from PAG included:

- TMDL productivity: What can be expected? How will it be defined?
- Accountability: What specific products can be identified?
- Early implementation: Some environmental caucus members are concerned with “early off-ramps” that would prevent TMDLs from being completed.
- Stakeholders: Some environmental caucus members are concerned that more time for input is not always better; regulated caucus members pointed out that often really good ideas emerge from stakeholders and caution needs to be taken not to cut their input opportunities too short. The caucuses do not agree on the scope of stakeholder processes.
- TMDL definition: The Initiative and Action Plan appears to broaden the definition of a TMDL. It is appropriate to stay with the established definitions.
- “Clean water” as an overarching goal or vision: Both communities felt that this was missing from the Initiative.
- Prevention: We need to make sure that clean waters remain clean.
- Appreciation was expressed for the chart that showed PAG’s consensus points and where they show up in the TMDL Initiative.
- TMDL Program scope: It is not appropriate to implement the various water quality programs through the TMDL Program. Each effort needs to be independent.

**PAG’s Interaction and Involvement with the TMDL Initiative and Action Plan;**

**Role of the PAG:** Tom Mumley explained that of the nine strategies in the Initiative, the first five currently have specific actions. Actions on the remaining four are to be determined. Using handouts and a slide presentation, he reviewed each of the five strategies in detail, asking for PAG’s input.

**I: TMDL Program Structure and Management**

PAG comments included:

- Be clear about actual TMDL productivity, e.g., how many TMDLs are targeted to be completed, and by when.
- Look for ways to combine “reaches” in a water body as a way of possibly reducing the number of TMDLs that need to be developed.
- PAG’s role as suggested by staff is appropriate.

**II: Information Management**

PAG comments included:

- Need to make sure the TMDL database is available on the SWRCB website.
- Can staff say when the action plan will be posted on the website? (Staff will indicate this in the action plan).
- Need to make sure Regional Board members are educated and informed about the TMDL Program.

- Could staff put the Basin Planning Procedures Manual on the web?
- Look for ways to link the website with other existing databases.
- How will PAG's comments be included in the report to the legislature?
- PAG's role as suggested by staff is appropriate.

### III: TMDL Toolbox and Guidelines

Tom Mumley explained that he intends to form workgroups that will specialize in various TMDLs (e.g., pathogens, habitat impairment, metals, pesticides, hydrocarbons, trash, and dissolved oxygen). These workgroups can be resources to any Region as they develop their TMDLs.

PAG comments included:

- Concern about using TMDL "templates." (Tom explained that this was not a shortcut approach but a way of learning from best practices; it is not intended to be a "one-size-fits-all" approach).
- Look for cross-cutting issues and produce guidelines.
- Be clear about how stakeholder input will be used to review workgroup products.
- When will workgroups be formed, and who will be on them? (Tom responded that members will be named in about one month, and in about two months their work plans will be identified).
- In addition to the suggested PAG role of advice and comment, it was suggested that PAG could also serve as a sounding board as staff work through the challenges and issues.
- PAG's role as suggested by staff is appropriate.

### IV: Outreach, Communication and Participation

Tom Mumley explained that the intent of stakeholder participation is not necessarily to achieve consensus, but that there's a spectrum of ways stakeholders can be involved (e.g., facilitated meetings, councils, providing testimony, public forums, etc.). There are criteria that could help define appropriate input methodologies.

PAG comments included:

- Let stakeholders know about timeframes.
- How will processes for any particular TMDL be determined? (Tom's response: it's an art; start at the lowest level of participation and work up, as needed; share experience).
- It would be useful if staff could describe factors to be considered when deciding on a stakeholder process, with some examples.
- Perhaps "stakeholder process" should be one of the tools in the TMDL toolbox and guidelines.
- There needs to be emphasis on helping rural regions get more stakeholders involved.
- Perhaps work groups could recommend viable stakeholder processes according to their particular pollutant.

- Regions should make a commitment to reaching out the environmental justice community.
- PAG's role as suggested by staff is appropriate.

#### V. Early implementation

Tom Mumley explained that early implementation is a way of engaging parties early, perhaps even by giving notice of the intent to develop a TMDL. The intent is to get awareness "on the table" early, and to use incentive-based solutions.

PAG comments included:

- Don't let early implementation cause delays.
- Perhaps the title of this strategy is not accurate, as it implies starting action on a TMDL early, before it's even developed; maybe a better title would be something like, "Pre-TMDL Action."
- Could "early implementation" apply to non-point sources? (staff believes it could).
- PAG's role as suggested by staff is appropriate.

**Update on the Section 303(d) Listing Scheduled for 2002; Listing Policy:** Val Connor, Chief of Assessment and the TMDL Support Unit, gave a presentation on the schedule for 2002. No questions were asked by PAG.

**TMDLs in California: Diazinon in Urban Creeks:** Bill Johnson gave a presentation on how diazinon is being treated in urban creeks. He pointed out that as diazinon is being phased out other pesticides are being emphasized and that they could be harmful to water quality. Discussion followed, one area of contention being the relationship between the Water Boards' and the Department of Pesticide Regulation.

**PAG's Role Relative to the SWRCB's Report to the Legislature:** Tom Howard explained that the draft report is not written yet because staff wanted PAG's input on the Initiative/Action Plan first. He asked what role PAG wanted to play. After discussion the following was agreed to:

1. Staff will prepare a draft report by the end of October, and will immediately mail it to PAG members.
2. The co-chairs will form a subcommittee that will prepare PAG's comments on the draft report.
3. By November 7 the co-chairs will give staff a status report on the subcommittee's progress.
4. Comments to the SWRCB from PAG will be submitted by November 21.

**Wrap-up and Next Steps:**



October 16, 2001

DRAFT

Regarding the five-strategies/action plans that were reviewed today, PAG should get any additional input to Tom Mumley by October 19<sup>th</sup>. Tom can be reached at (510) 622-2395, (916) 341-5627, or [tem@rb2.swrcb.ca.gov](mailto:tem@rb2.swrcb.ca.gov).

Regarding the four other strategies (Monitoring and Assessment, Basin Planning, TMDL Implementation, and Budget Development and Management) PAG will have opportunities to comment as the action plans are developed.

The next PAG meeting will be on January 15, 2002 in Sacramento, specific location to be determined. The primary agenda for the meeting will be listing and de-listing Policy.

**Public Comment:** No one from the public chose to address the PAG.

**Adjournment:** The meeting was adjourned by the Co-Chairs at 3:50 p.m.

## Agenda Item 4

### Process and Schedule for the 2002 Section 303(d) List Submittal

## **Section 303(d) List of Water Quality Limited Segments**

### **Methodology For Evaluating Regional Water Quality Control Board Recommendations for the Section 303(d) List**

#### ***Introduction***

This report describes the process by which the State Water Resources Control Board (SWRCB) staff is evaluating and recommending waters for revision of California's Clean Water Act Section 303(d) list of water quality limited segments. This process is intended to apply to only the listing process conducted in 2002. The SWRCB is in the process of developing a listing/de-listing Policy that will provide a consistent approach for adding and deleting waters from future list submittals.

#### ***Overview of Process***

The RWQCBs solicited the public for data and information and then submitted recommendations to the SWRCB for listing water quality limited segments still requiring Total Maximum Daily Loads (TMDLs). The RWQCBs have assembled and evaluated all existing and readily available water quality-related data and information to develop the list (40 CFR 130.7(b)(5)) and provided documentation to list or not to list a state's waters (40 CFR 130.7(b)(6)).

The SWRCB is reviewing the RWQCB recommendations and identified waters that do not meet applicable water quality standards with technology-based controls alone. The record contains the rationale for decisions to use or not to use any existing and readily available data and information (40 CFR 130.7(b)(6)(iii)). The SWRCB is also identifying and setting priorities for the listed water quality limited segments still requiring TMDLs (40 CFR 130.7(b)). A water quality limited segment is "any segment [of a water body] where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after application of technology-based effluent limitations required by CWA Sections 301(b) or 306."

In developing the staff recommendations it is assumed that:

1. The 1998 Section 303(d) list forms the basis for the 2002 list submittal.
2. All waters listed on the 1998 list will be included in the 2002 list submittal unless it was recommended by a RWQCBs to change the listing status of a water body.

3. If there is insufficient data and information to list, water bodies will be placed on a "Watch List". The Watch List is not part of the Section 303(d) list but will be sent to the U.S. Environmental Protection Agency.

SWRCB staff is reviewing each RWQCB proposal on a case-by-case basis. Staff will make an assessment of several factors as follows:

1. Watershed/Water Body
2. Stressor/Beneficial Use
3. Assessment of data quality. Extent to which data quality requirements are met.
4. Linkage between measurements and beneficial use or standard
5. Correlation of stressor to response
6. Utility of measure for judging if standards or uses are not attained
7. Water Body-specific Information
8. Sensitivity of the measurement for detecting response
9. Spatial representativeness
10. Temporal representativeness
11. Quantitativeness
12. Use of standard method
13. Source of pollutant
14. Availability of an alternative enforceable program

For each of these factors, staff is preparing a written description of how the RWQCBs addressed the water body. Each recommendation to the SWRCB is being developed based on strength, value, and believability of all the data and information available. Staff are using best professional judgement to consider all existing readily available data and information in making recommendations. SWRCB management will review initial recommendations and final recommendations will be made for additions to the list, deletions from the list, waters excluded from the list, or waters to be placed on the watch list.

*Clean Water Act Section 303(d) List Submittal*  
*2002*  
*SCHEDULE*

<b>Task</b>	<b>Completion Date</b>
Complete Draft Section 303(d) List and Staff Report	April 2, 2002
Notice Hearing	April 2, 2002
Northern California Hearing (Sacramento)	May 23-24, 2002
Southern California Hearing (Most likely in Ontario)	May 30, 2002
Respond to Comments	June-July, 2002
SWRCB Workshop	September, 2002
SWRCB Meeting	September, 2002
Submit Section 303(d) List to U.S. EPA	October, 2002

## Agenda Item 6

### Concepts for the Listing/De-listing Policy

## **Issues and Discussion Regarding Listing/De-listing Policy**

February 15, 2002  
PAG Meeting

## **Where did the comments come from?**

- Environmental Caucus (4 meetings)
- Regulated Caucuses (2 meetings)
- Storm Water Quality Task Force
- California Water Quality Coalition
- Meetings held December 2001-February 2002

## **More on the Environmental and Regulated Community Comments**

- The comments presented here are summarized from the discussions
- The topics discussed in the meetings covered a variety of topics
- A summarized list of all comments grouped by major topic is available
- In the comment sections "E" signifies an Environmental Community comment and "R" a Regulated Community comment

## **The SWRCB Seeks Advice on These Major Issues**

- Scope of the Policy
- Listing Concepts
- De-listing Concepts
- Weight of Evidence
- Watch List
- Sources of Pollutants
- Other Issues Identified by the PAG



## Policy Scope

- *ISSUE*: What factors should be addressed by the Listing/De-listing Policy?
- *ISSUE*: Incorporate guidance on:
  - » listing/de-listing factors?
  - » beneficial use designation/de-designation?
  - » water quality standards revision or development?

## Comments on Scope

- R: Policy should include provisions for development of list and revision of standards and beneficial uses
- R/E: Develop list of Water Quality Limited Segments still requiring TMDLs
- E: Divorce listing decision from management decisions (development of the TMDLs)
- E: List should be a scientifically-based decision on impairment

## **PAG Dialogue**

- *ISSUE*: Scope of the Policy
  - » Dialogue
  - » Consensus
  - » Future Direction

## **Listing Concepts**

- *ISSUE*: How specific should be Policy be?
- *ISSUE*: Should the SWRCB specify public participation process, types of data to solicit, and how data will be evaluated?

## **Comments on Listing (1)**

- E: Overarching policy principle should be to protect the environment and human health
- E: Base on Best Professional Judgement (BPJ), each circumstance is so different
- E: Should be precautionary

## **Comments on Listing (2)**

- E: Should not be too specific
- E: Burden of proof on regulated community to prove why WQS are not met
- E: List even if the pollutant is not identified
- E: Do not consider the TMDL in Listing Process

### **Comments on Listing (3)**

- R: Establish core principles in the Policy
- R: Should be predictable
- R: Specify BPJ
- R: Should be objective, specific, and rigorous
- R/E: Data needs to be scientifically defensible

### **Comments on Listing (4)**

- R: Process needs more integrity
- R: Process should be transparent
- R: Don't reinvent process, use other State approaches
- E: Establish open process, previous list process in CA poor
- E: Avoid poor communication between public, RB, and SB

## PAG Dialogue

- *ISSUE*: Listing
  - » Dialogue
  - » Consensus
  - » Future Direction

## De-listing Concepts

- *ISSUE*: Should de-listing be allowed?
- *ISSUE*: What factors should trigger de-listing?
- *ISSUE*: After TMDL completed, should water body be removed from the list?

## De-listing Comments

- E: It is illegal to de-list
- E: Keep waters on list until WQS met or BU restored
- R: Need to review the entire existing list
- R: Specify how to get waters off the list
- R: Remove from list if TMDL completed
- R: Remove if the data are bad

## PAG Dialogue

- *ISSUE*: De-listing
  - » Dialogue
  - » Consensus
  - » Future Direction

## Weight of Evidence

- Budget Act requires use of Weight of Evidence (WOE) approach
- *ISSUE*: What are the components of the approach?
- *ISSUE*: How specific should the WOE be?

## Comments on WOE (1)

- Use multiple lines of evidence
  - » R/E: Biology, toxicity, and chemistry
  - » R: BU assessment, bioassessment, toxicity, and chemical WQS attainment
- R: Establish rigorous QA/QC requirements that all data must meet
- R: Use only credible data
- R: Use a credible amount of data

## **Weight of Evidence (2)**

- R: Any numeric value must be adopted as numeric WQO, otherwise do not use
- R: Adopt translator and use it consistently
- E: Single line of evidence should be used if WQS not met
- E: Some communities may not be able to list or de-list if they can't afford monitoring (Environmental Justice issues)
- E: Use sliding scale of quality for all data and information

## **Comments on WOE (3)**

- E: Use numeric values to interpret narrative standards
- E: Allow all data but require minimum QA procedures
- E: Use all data, not some predetermined type or amount
- E: Don't worry about listing clean waters, most water bodies are impaired
- E: Use all information: pictures and opinions show obvious pollution
- E: Use qualitative data to support quantitative lines of evidence



## **Comments on WOE (4)**

- Confidence in the decision should be:
  - » E: Low when listing
  - » E: High when de-listing
  - » R: High when listing
  - » R/E: the same when listing or de-listing

## **Comment on WOE (5)**

- R: Use FL approaches for developing the list (e.g., binomial model, 2-part list, etc.)
- E: FL approach sets the bar too high
- E: Consistency not needed if circumstances warrant
- R: Consistency needed throughout State

## **PAG Dialogue**

- *ISSUE*: Weight of Evidence
  - » Dialogue
  - » Consensus
  - » Future Direction

## **Watch List**

- *ISSUE*: Should the SWRCB create a "Watch List"(WL)?
- *ISSUE*: What waters should be placed on a watch list?
- *ISSUE*: What should happen to waters placed on a watch list?

## Comments on WL (1)

- E: WL is a mechanism to avoid listing, lots of potential for abuse
- R: WL is a mechanism to focus on getting the information to list
- E: When in doubt, list
- R: When in doubt, get more information
- E: Watch-listed waters should focus on watershed management

## Comments on WL (2)

- E: Watch-listed waters should be posted as areas to avoid
- R: Watch List should not be part of 303(d) list (no regulatory force)
- R: FL planning list is appropriate
- E: FL planning list is not appropriate
- R: NAS preliminary list is supportable
- E: NAS preliminary list is not supportable
- E: Watch list accommodates the regulated community

## **PAG Dialogue**

- **ISSUE:** Watch List

- » Dialogue
- » Consensus
- » Future Direction

## **Natural Sources of Pollutants**

- **ISSUE:** Should waters be listed if the source of pollutants in natural?
- **ISSUE:** Should TMDLs be required for natural sources of pollutants?

## Comments on Natural Sources

- R: Don't list, TMDL is not necessary
- R: Don't list, we can't do anything about WQS exceedance caused by natural conditions
- E: List, TMDL is necessary to prevent future degradation
- E: List, illegal to avoid listing if WQS not met.
- E: List, make low priority, change WQS or BU to remedy issue

## PAG Dialogue

- *ISSUE*: Natural Sources of Pollutants
  - » Dialogue
  - » Consensus
  - » Future Direction

## **PAG Input in the Future**

- Do you want to have more detailed input into the Policy?
- Options
  - » schedule more meetings
  - » convene subcommittees
  - » other options



**Winston H. Hickox**  
Secretary for  
Environmental  
Protection

# State Water Resources Control Board

## Division of Water Quality

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**Gray Davis**  
Governor

March 28, 2002

Members and Alternates:

### MEETING OF THE AB 982 PUBLIC ADVISORY GROUP

The AB 982 Public Advisory Group (PAG) will meet on April 8, 2002 at the Radisson Hotel Sacramento, 500 Leisure Lane, in Suite 302, in Sacramento, California.

Please find enclosed the meeting agenda and the documents to support many of the agenda items. If you are planning to have handouts, please bring at least 40 copies for the PAG members and audience.

If you have any questions regarding the PAG or the meeting, please call me at (916) 341-5560. You may also call the liaison to the PAG, Laura Sharpe at (916) 341-5596.

Sincerely,

Craig J. Wilson, Chief  
Monitoring and TMDL Listing Unit  
Division of Water Quality

Enclosures

cc: Interested Parties

# AB 982 Public Advisory Group

Monday, April 8<sup>th</sup> 2002  
9 a.m. to 4 p.m.

Radisson Hotel  
500 Leisure Lane  
Sacramento, California

## A G E N D A

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1. *Convene Meeting – Co-Chairs* 9 a.m.—9:05 a.m.
  
2. *Introduction* 9:05 a.m.—9:10 a.m.
  - Steve Ekstrom
  - Description of the Meeting: Continue development of concepts for the SWRCB's Listing and De-listing Policy and the upcoming Legislative Report.
  
3. *February 15, 2002 Meeting Summary* 9:10 a.m.—9:15 a.m.

Action Item: Consider approval of Meeting Summary (Attached)
  
4. *Update on the 2002 Section 303(d) List* 9:15 a.m.—10:00 a.m.
  - Craig J. Wilson
  - Brief description of draft Staff Report describing revisions to the 303(d) list.
  - Dialogue
  
5. *Concepts for the Listing/De-listing Policy* 10:00 a.m.—12:00 p.m.
  - Craig J. Wilson
  - Presentation of issues and comments (attached) received at several meetings with PAG members, the Storm Water Quality Task Force, and a California Farm Bureau water quality group.
  - Dialogue/discussion on the issues and comments.



- |  |                      |
|--|----------------------|
| 6. <i>Lunch</i>  | 12:00 p.m.—1:15 p.m. |
| 7. <i>Concepts for the Listing/De-listing Policy (Continued)</i> <ul style="list-style-type: none"><li>• Dialogue/discussion on the issues and comments</li></ul>  | 1:15 p.m.—2:30 p.m.  |
| 8. <i>Break</i>  | 2:30p.m. —2:45 p.m.  |
| 9. <i>Content of the Legislative Report</i> <ul style="list-style-type: none"><li>• Laura Sharpe, Craig J. Wilson</li><li>• Dialogue/ Discussion on 2001 Legislative Report along with concepts and ideas for the content of the upcoming 2002 Legislative Report.</li></ul> | 2:45 p.m.—3:45 p.m.  |
| 10. <i>Wrap-up and Next Steps</i>  | 3:45 p.m.—3:55 p.m.  |
| 11. <i>Public Comment</i> <ul style="list-style-type: none"><li>• Any person wishing to address the PAG may do so during this item.</li></ul>  | 3:55p.m. —4:00 p.m.  |
| 12. <i>Adjourn</i>   | 4:00 p.m.            |

## Agenda Item 3

### February 15, 2002 Meeting Summary

## **AB 982 Public Advisory Group**

California State Chamber of Commerce  
1215 K Street  
Sacramento, California

### *Meeting Summary*

Friday, February 15, 2002

**Convene Meeting:** Co-Chairs Craig Johns and Linda Sheehan (substituting for David Beckman) opened the meeting at 10:35 a.m. and declared a quorum.

**Introductions:** Steve Ekstrom, PAG facilitator, asked members to introduce themselves. He also noted that the primary purpose of this meeting was for PAG to comment on the 2002 list, offer advice on listing/de-listing policy development, and comment on the update of the TMDL action plan.

**Summary of the October 10, 2001 meeting:** The summary was accepted as presented.

**The Clean Water Act, Section 303(d) 2002 list:** Craig J. Wilson gave a brief presentation on the 2002 list, noting that staff plan to release their report in early April, 2002. There will be hearings on the report in mid to late May in northern and southern California. Finally, there will be a workshop in September 2002, as well as a Water Board meeting on this topic in the same month. The 303(d) list will be submitted to U.S. EPA in October 2002.

Of particular interest to members were the 14 items staffs propose to use to assess water bodies, and the concept of a watch list.

Comments and questions from the PAG included:

- Why is pollutant source (item 13) used when it's not a criterion for listing?
- Showing the pollutant source could help with prioritizing.
- The state shouldn't prioritize, but the regional boards should.
- There's a difference between how to list and how to prioritize. Listing should be done first, then bring in other information in order to prioritize.
- How will you memorialize the assessment of these criteria? Fact sheet? Spreadsheet?
- Are the 14 items weighted?
- Perhaps staff could categorize the 14 items into a shorter list.
- The listing process is supposed to be precautionary – fewer assessment items should be used.
- Look to the language of the CWA for help.
- Items 1, 2 and 3 are the main focus; the others could perhaps be folded into these three.

- In item 14, the word “alternative” is problematic.
- It’s appreciated that this will be a transparent process to the public.
- A “watch list” could turn into a loophole. How can it be used with being abused?
- Perhaps the watch list could be used as a placeholder list for items where compromise may be needed.
- If an item is on a watch list, it warrants monitoring.
- The environmental caucus supports the plan to use the 1998 list in its entirety.
- A possible watch list compromise: create one; state the information that’s needed to pull a water body off the watch list; if no information is forthcoming for two years, put it on the 303(d) list.
- We should make sure that we are sticking to the Federal regulations closely in the 303(d) process.
- If alternative enforceable programs that have kept water bodies off the 303(d) list in the past haven’t worked, the water bodies should be listed and a TMDL should be completed.
- What TMDL priority should be given to waters that already have programs in place to handle pollutants?
- The key question to ask during the listing process: Is the water body meeting or in violation of the standards?
- The State Board should include as much information as possible for the listing of a water body.
- A lot of best professional judgements (BPJ) will be made, can’t the State Board give new ideas to how the process could get away from having to rely on BPJ?
- Tier the criteria for listing so the process sides on the side of protection.
- Either the water body is impaired or is it not? Too much information given on a water body in question could also be bad for the State Board decision making process.
- The State Board should “standardize” the Regional Board’s listing processes.
- How will the State Board show exceedances of narrative water quality objectives for biological factors?
- What are the criteria going to be to place a water body on a Watch List? How will funding be tied the monitoring that would be needed for watch-listed water bodies?
- Documenting the decision making process is an important step forward for the State Board, as is the transparency of the process.

Members of the public were invited to comment.

***Consensus point: The PAG agrees that the listing process should be transparent.***

**Update on Implementation of the TMDL Initiative and Action Plan:** Tom Mumley reviewed the implementation of the TMDL Initiative and Action Plan.

There was a concern about last year’s report to the Legislature and the fact that PAG hasn’t seen it, nor do they know how or whether their comments were incorporated. Following discussion, Tom Mumley stated he would distribute the action plan to PAG

members, indicating how the Water Board responded to PAG's comments. Tom Howard will look into distributing the entire report to PAG.

A question arose about how much money is available for TMDLs in FY 2001-02. A total of \$11.4 million (combined federal and state) is available for TMDL development and \$2.97 million for TMDL implementation.

Members of the public were invited to comment.

**Concepts for the Listing/De-listing Policy:** Craig asked the PAG for input to aid the development of a listing/de-listing policy, stating that the goal is to have the policy completed by January, 2003. He then presented four of six topics for discussion, including comments he'd received from interviews held with the environment and regulated caucuses and other groups. At the end of each topic presentation, the PAG held a discussion and looked for consensus points.

Policy Scope

No consensus items were reached on this item.

Listing Concepts

*Consensus point: The public participation process should be transparent; in addition it should be a) specific and b) well advertised with active outreach to diverse geographic areas and those with environmental justice interests.*

*Consensus point: To the greatest extent possible, there should be a consistent, standardized set of tools and principles used across Regions to evaluate data. Additionally, site-specific information should be taken into consideration.*

De-listing Concepts:

*Consensus point: Assuming a water body is listed for the right reasons, it should not be de-listed before water quality standards are achieved.*

Weight of Evidence

The following points were made:

- This is the core of the list/de-list policy
- Use the highest level of certainty we can afford.

Discussion on "weight of evidence" will be continued at the next meeting.

**Wrap-up and Next Steps:** It was felt that another meeting was needed to complete the input on list/de-list policy development, and possibly address other items. It was agreed that the PAG will meet all day on April 8, 2002, in Sacramento.

An agenda will be developed with the co-chairs shortly and distributed to PAG members.

**Public Comment:** Members of the public were invited to address the PAG.

**Adjournment:** The meeting was adjourned by the Co-Chairs at 4:30 p.m.

## Agenda Item 5

### Concepts for the Listing/De-listing Policy

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## **Issues and Discussion Regarding Listing/De-listing Policy**

February 15, 2002  
PAG Meeting

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## **Where did the comments come from?**

- Environmental Caucus (4 meetings)
- Regulated Caucuses (2 meetings)
- Storm Water Quality Task Force
- California Water Quality Coalition
- Meetings held December 2001-February 2002



## **More on the Environmental and Regulated Community Comments**

- The comments presented here are summarized from the discussions
- The topics discussed in the meetings covered a variety of topics
- A summarized list of all comments grouped by major topic is available
- In the comment sections "E" signifies an Environmental Community comment and "R" a Regulated Community comment

## **The SWRCB Seeks Advice on These Major Issues**

- Scope of the Policy
- Listing Concepts
- De-listing Concepts
- Weight of Evidence
- Watch List
- Sources of Pollutants
- Other Issues Identified by the PAG

## **Policy Scope**

- *ISSUE*: What factors should be addressed by the Listing/De-listing Policy?
- *ISSUE*: Incorporate guidance on:
  - » listing/de-listing factors?
  - » beneficial use designation/de-designation?
  - » water quality standards revision or development?

## **Comments on Scope**

- R: Policy should include provisions for development of list and revision of standards and beneficial uses
- R/E: Develop list of Water Quality Limited Segments still requiring TMDLs
- E: Divorce listing decision from management decisions (development of the TMDLs)
- E: List should be a scientifically-based decision on impairment

## **PAG Dialogue**

- *ISSUE:* Scope of the Policy
  - » Dialogue
  - » Consensus
  - » Future Direction

## **Listing Concepts**

- *ISSUE:* How specific should the Policy be?
- *ISSUE:* Should the SWRCB specify public participation process, types of data to solicit, and how data will be evaluated?

## **Comments on Listing (1)**

- E: Overarching policy principle should be to protect the environment and human health
- E: Base on Best Professional Judgement (BPJ), each circumstance is so different
- E: Should be precautionary

## **Comments on Listing (2)**

- E: Should not be too specific
- E: Burden of proof on regulated community to prove why WQS are not met
- E: List even if the pollutant is not identified
- E: Do not consider the TMDL in Listing Process

### **Comments on Listing (3)**

- R: Establish core principles in the Policy
- R: Should be predictable
- R: Specify BPJ
- R: Should be objective, specific, and rigorous
- R/E: Data needs to be scientifically defensible

### **Comments on Listing (4)**

- R: Process needs more integrity
- R: Process should be transparent
- R: Don't reinvent process, use other State approaches
- E: Establish open process, previous list process in CA poor
- E: Avoid poor communication between public, RB, and SB

## **PAG Dialogue**

- *ISSUE*: Listing
  - » Dialogue
  - » Consensus
  - » Future Direction

## **De-listing Concepts**

- *ISSUE*: Should de-listing be allowed?
- *ISSUE*: What factors should trigger de-listing?
- *ISSUE*: After TMDL completed, should water body be removed from the list?

## De-listing Comments

- E: It is illegal to de-list
- E: Keep waters on list until WQS met or BU restored
- R: Need to review the entire existing list
- R: Specify how to get waters off the list
- R: Remove from list if TMDL completed
- R: Remove if the data are bad

## PAG Dialogue

- *ISSUE*: De-listing
  - » Dialogue
  - » Consensus
  - » Future Direction

## Weight of Evidence

- Budget Act requires use of Weight of Evidence (WOE) approach
- *ISSUE*: What are the components of the approach?
- *ISSUE*: How specific should the WOE be?

## Comments on WOE (1)

- Use multiple lines of evidence
  - » R/E: Biology, toxicity, and chemistry
  - » R: BU assessment, bioassessment, toxicity, and chemical WQS attainment
- R: Establish rigorous QA/QC requirements that all data must meet
- R: Use only credible data
- R: Use a credible amount of data



## **Weight of Evidence (2)**

- R: Any numeric value must be adopted as numeric WQO, otherwise do not use
- R: Adopt translator and use it consistently
- E: Single line of evidence should be used if WQS not met
- E: Some communities may not be able to list or de-list if they can't afford monitoring (Environmental Justice issues)
- E: Use sliding scale of quality for all data and information

## **Comments on WOE (3)**

- E: Use numeric values to interpret narrative standards
- E: Allow all data but require minimum QA procedures
- E: Use all data, not some predetermined type or amount
- E: Don't worry about listing clean waters, most water bodies are impaired
- E: Use all information: pictures and opinions show obvious pollution
- E: Use qualitative data to support quantitative lines of evidence

## **Comments on WOE (4)**

- Confidence in the decision should be:
  - » E: Low when listing
  - » E: High when de-listing
  - » R: High when listing
  - » R/E: the same when listing or de-listing

## **Comment on WOE (5)**

- R: Use FL approaches for developing the list (e.g., binomial model, 2-part list, etc.)
- E: FL approach sets the bar too high
- E: Consistency not needed if circumstances warrant
- R: Consistency needed throughout State

## **PAG Dialogue**

- *ISSUE*: Weight of Evidence
  - » Dialogue
  - » Consensus
  - » Future Direction

## **Watch List**

- *ISSUE*: Should the SWRCB create a "Watch List"(WL)?
- *ISSUE*: What waters should be placed on a watch list?
- *ISSUE*: What should happen to waters placed on a watch list?

## **Comments on WL (1)**

- E: WL is a mechanism to avoid listing, lots of potential for abuse
- R: WL is a mechanism to focus on getting the information to list
- E: When in doubt, list
- R: When in doubt, get more information
- E: Watch-listed waters should focus on watershed management

## **Comments on WL (2)**

- E: Watch-listed waters should be posted as areas to avoid
- R: Watch List should not be part of 303(d) list (no regulatory force)
- R: FL planning list is appropriate
- E: FL planning list is not appropriate
- R: NAS preliminary list is supportable
- E: NAS preliminary list is not supportable
- E: Watch list accommodates the regulated community

## **PAG Dialogue**

- *ISSUE*: Watch List

- » Dialogue
- » Consensus
- » Future Direction

## **Natural Sources of Pollutants**

- *ISSUE*: Should waters be listed if the source of pollutants is natural?
- *ISSUE*: Should TMDLs be required for natural sources of pollutants?

## Comments on Natural Sources

- R: Don't list, TMDL is not necessary
- R: Don't list, we can't do anything about WQS exceedance caused by natural conditions
- E: List, TMDL is necessary to prevent future degradation
- E: List, illegal to avoid listing if WQS not met.
- E: List, make low priority, change WQS or BU to remedy issue

## PAG Dialogue

- *ISSUE*: Natural Sources of Pollutants
  - » Dialogue
  - » Consensus
  - » Future Direction

## **PAG Input in the Future**

- Do you want to have more detailed input into the Policy?
- Options
  - » schedule more meetings
  - » convene subcommittees
  - » other options



**Winston H. Hickox**  
*Secretary for  
Environmental  
Protection*

# State Water Resources Control Board

## Division of Water Quality

10011 Street • Sacramento, California 95814 • (916) 341-5560  
Mailing Address: P.O. Box 944213 • Sacramento, California • 94244-2130  
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**Gray Davis**  
*Governor*

July 12, 2002

Members and Alternates:

### MEETING OF THE AB 982 PUBLIC ADVISORY GROUP

The AB 982 Public Advisory Group (PAG) will meet on July 23, 2002 in the Coastal Hearing Room (2<sup>nd</sup> floor), in the Cal/EPA Building located at 1001 I Street in Sacramento, California.

Please find enclosed the meeting agenda and the documents supporting many of the agenda items. If you are planning to have handouts, please bring at least 40 copies for the PAG members and audience.

If you have any questions regarding the PAG or the meeting, please call me at (916) 341-5560. You may also call the liaison to the PAG, Laura Sharpe at (916) 341-5596.

Sincerely,

Craig J. Wilson, Chief  
TMDL Listing Unit  
Division of Water Quality

Enclosures

cc: Interested Parties



## AB 982 Public Advisory Group

Tuesday, July 23<sup>rd</sup> 2002  
9 a.m. to 4 p.m.

Coastal Hearing Room (2<sup>nd</sup> floor)  
Cal/EPA Building  
1001 I Street  
Sacramento, California

### AGENDA

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1. *Convene Meeting – Co-Chairs* 9:00 a.m. – 9:05 a.m.
2. *Introduction* 9:05 a.m. – 9:10 a.m.
  - Steve Ekstrom
  - Description of the meeting: 2002 Section 303(d) List Update, Continue Development of the Concepts for the SWRCBs Listing and De-listing Policy, Legislative Report Update, SWAMP Update.
3. *April 8, 2002 Meeting Summary* 9:10 a.m.—9:20 a.m.  
Action Item: Consider approval of Meeting Summary (Attached)
4. *Update on the Section 2002 303(d) List* 9:20 a.m.—10:05 a.m.
  - Craig J. Wilson
  - Brief discussion on progress and next steps
  - Schedule
  - Dialogue
5. *Concepts for the Listing/ De-Listing Policy* 10:05 a.m.—12:00 p.m.  
(Attached)
  - Craig J. Wilson
  - Presentation of the Concepts for Developing a Policy for Listing and De-listing on California's

- Section 303(d) List
  - Products and Schedule
  - Dialogue/Discussion on the issues.
  
- 6. *Lunch* 12:00 p.m.—1:15 p.m.
  
- 7. *Concepts for the Listing/ De-Listing Policy (Continued)* 1:15 p.m.—2:30 p.m.
  - Dialogue/Discussion on the issues.
  
- 8. *Break* 2:30 p.m.—2:40 p.m.
  
- 9. *Legislative Report* 2:40 p.m.—3:00 p.m.
  - Laura Sharpe
  - Update on the report
  - Schedule for Completion
  - Dialogue
  
- 10. *Update on SWAMP* 3:00 p.m.—3:45 p.m.
  - Del Rasmussen
  - Update on the status of the SWAMP Program
  - Dialogue/Discussion on the issues and comments
  
- 12. *Wrap- up and Next Steps* 3:45 p.m.— 3:55 p.m.
  
- 13. *Public Comment* 3:55 p.m.— 4:00 p.m.
  
- 14. *Adjourn* 4:00 p.m.

## Agenda Item 3

### April 8, 2002 Meeting Summary

## AB 982 Public Advisory Group

Radisson Hotel  
500 Leisure Lane  
Sacramento, California

### *Meeting Summary*

Monday, April 8, 2002

**Convene Meeting:** Co-Chairs Craig Johns and David Beckman opened the meeting at 9:10 a.m. and declared a quorum.

**Introductions:** Steve Ekstrom, PAG facilitator, asked members to introduce themselves. He also noted that the primary purpose of this meeting was for PAG to comment on staff's draft report on the 2002 Section 303(d) list, to offer advice on listing/de-listing policy development, and to comment on the proposed outline of the report to the legislature.

**Summary of the February 15, 2002 meeting:** The summary was accepted as presented, with the exception of the wording of the de-listing consensus item on page 3. Of concern to the regulated community was the wording "for the right reasons." It was agreed that this wording would be addressed under item 5 of the agenda, "Concepts for the Listing/De-listing Policy."

**Update on the 2002 Section 303(d) List.** Craig J. Wilson gave a brief presentation on the 3-volume draft report, noting that approximately 200 water bodies were added and approximately 70 were removed. Craig also noted there were three public hearings scheduled: May 23 (primary focus will be Regions 1, 2, and 3), May 24 (primary focus will be Regions 5 and 6), and May 30 (primary focus will be Regions 4, 7, 8, and 9). The May 23 and 24 meetings will be at the Cal/EPA Building in Sacramento; the May 30 meeting will be at the Double Tree Hotel/Ontario Airport. It is anticipated that there will be a workshop in September 2002 with the Water Board taking action on the report in the same month.

Comments from the PAG included:

- Can individuals examine the administrative record? Response: yes, see Vol. 1, page 7 for details.
- Can new information be introduced at the hearings? The PAG discussed this issue and agreed on the following consensus point:

**Consensus point: The members of the PAG believe that applicable law and good public policy require the State Board to consider all relevant information in making decisions with respect to the 2002 Section 303(d) list of impaired waters. For that reason, the PAG strongly urges the State Board to accept and reasonably consider such information that may be presented to the State Board on or before the public hearings scheduled in May 2002. (NOTE: the co-chairs will write a letter to the Board expressing this point.)**

- Regarding temperature, there seem to be inconsistencies with how certain water bodies are treated – some are on the watch list, some are listed.
- Staff are encouraged to use maps so the public can see where the impaired water bodies are.
- How can one determine the reach on each listing? Response: that's determined during the TMDL process.

Staff were thanked for their hard work on the draft report.

**New Co-chair:** David Beckman announced that he will no longer serve as the Co-chair for the environmental caucus, and that Linda Sheehan will assume Co-chair responsibilities. David was thanked for his service, and Linda was welcomed.

**Concepts for the Listing/De-listing Policy:** This item was continued from the February meeting. Craig Wilson reviewed the items covered at that meeting.

#### Policy Scope

No additional comments were made.

#### Listing Concepts

No additional comments were made.

#### De-listing Concepts

At this point the de-listing consensus item from February was revisited at the request of the regulated caucus. It should be noted that the environmental caucus continued to support the original language, which read, "Assuming a water body is listed for the right reasons, it should not be de-listed before water quality standards are achieved." The regulated caucus had two concerns: (1) "for the right reasons" should be reworded; (2) a water body should be de-listed once an implementation plan is adopted, not when water quality is achieved. The environment caucus believed a water body should remain on the list after an implementation plan is adopted, as this will keep the focus of the public and regulators on the water body.

There was much discussion and it was agreed that the item will not be treated as a consensus point. Assuming water bodies are appropriately listed, the PAG did agree that impaired waters should remain on the list until an implementation plan is adopted. The PAG also agreed that impaired water bodies should be de-listed once water quality standards are achieved. It's the period of time between the adoption of an implementation

plan and achieving water quality standards where the PAG was unable to reach agreement. The regulated caucus felt a water body should be de-listed after an implementation plan is adopted, while the environmental caucus felt a water body should remain on the list until water quality standards are achieved.

#### Weight of Evidence

Craig Wilson described a variety of factors that influence 303(d) listing and de-listing. The topics discussed were (1) the binomial model used by Florida for assessing if standards are met, (2) the assumptions of the model (such as temporal independence and randomness), (3) data quality, (4) spatial and temporal sample representativeness, and (5) the use of qualitative information in listing decisions.

Comments from PAG included:

- The policy should include an opportunity for the State to revisit old standards and beneficial uses that are no longer valid and/or appropriate.
- The data used to support beach closures should be used to list water bodies and not the beach closure itself.
- A Weight of Evidence approach should include an analysis of multiple lines of evidence.
- Photographs should be used in conjunction with other lines of evidence and information.
- If you attempt to quantify non-numeric information, the best professional judgment gets lost.
- The Florida binomial model should be one tool in the toolbox for determining if a water body should be listed.

The outcome of the discussion was that staff will develop a proposal for the PAG and distribute it in draft prior to the next meeting.

#### Watch List

There was much discussion on the concept of the watch list. Its purpose was unclear to the PAG, and the term "watch list" was unacceptable. Suggested alternative names included: "action list," "additional monitoring list," and "secondary list."

Staff will develop a proposal for PAG to consider at the next meeting that will include the purpose of the list, criteria for getting on the list, and how the list would be used. Staff will also propose a different name for the watch list.

**Content of the Legislative Report:** Laura Sharpe noted that the report must be completed by September 30, 2002 so the Board has ample time to consider it before forwarding it to the Governor's office by November 30, 2002. Laura then asked the PAG what they thought the report should include. The following comments were made:

- On TMDLs completed, show which have implementation plans.
- Discuss inter-agency relationships.

- When discussing 303(d) listing, cite some of the issues PAG has been dealing with.
- Add maps to show where monitoring is occurring.
- Provide an assessment of the cost of TMDL development, i.e., estimate the number of TMDLs that can be done with current funding.
- Provide a flowchart of the TMDL process.
- In the monitoring section, show where gaps are, and where monitoring is not occurring.
- In the budget section, show the federal contribution and contribution from other sources, e.g., bond money.

Staff were asked to create a timeline for the development and submittal of the report, specifically showing where PAG input will occur.

**Additional agenda item – SWAMP update:** staff were asked to provide an update on SWAMP. The following was stated:

- There will be small cuts this year, mostly out of contracts.
- 2<sup>nd</sup> year work plans are done.
- 3<sup>rd</sup> year draft work plans are due from the Regional Boards by 6/30/02.
- The statewide quality assurance plan is almost complete.
- SWIM II is not ready yet but SWAMP will store data in a database being developed with the Department of Fish and Game.

**Wrap-up and Next Steps:** It was agreed that the next meeting of the PAG will be on July 23, 2002 in Sacramento.

**Public Comment:** Members of the public were invited to address the PAG.

**Adjournment:** The meeting was adjourned by the Co-Chairs at 3:40 p.m.

## Agenda Item 6

### Concepts for Developing a Policy for Listing and De-listing on California's 303(d) List





**Winston H. Hickox**  
Secretary for  
Environmental  
Protection

# State Water Resources Control Board

## Division of Water Quality

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**Gray Davis**  
Governor

**TO:** AB 982 Public Advisory Group (PAG) Members and Alternates

**FROM:** Craig J. Wilson, Chief  
TMDL Listing Unit  
**DIVISION OF WATER QUALITY**

**DATE:** July 12, 2002

**SUBJECT:** DRAFT CONCEPTS FOR DEVELOPING A POLICY FOR LISTING AND DE-  
LISTING ON CALIFORNIA'S 303(d) LIST

Attached is a concept paper that describes many of the issues that could be addressed by the State Water Resources Control Board in developing its policy for listing and de-listing on California's section 303(d) list.

These concepts are being provided to the PAG to stimulate discussion on the identified policy issues. The presentation of language for discussion should not be viewed as an endorsement of one of the alternative approaches presented.

If you would like to discuss the concept paper before the PAG meeting, please do not hesitate to call me at (916) 341-5560.

Attachment

## **Concepts for Developing a Policy for Listing and De-listing on California's 303(d) List**

This report describes the process by which the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs) could evaluate and recommend waters for revision of California's Clean Water Act section 303(d) list of water quality limited segments. This process is intended to focus on the listing process conducted after 2002.

The document is intended to be used by the AB 982 Public Advisory Group (PAG) to stimulate discussion on the approaches and factors that should be used to list waters on the section 303(d) list. The document is subject to revision and should not be cited or referenced. This document has not been reviewed or approved by the SWRCB.

The report is divided into sections by the various topics that could be addressed in the Listing/De-listing Policy. Under each major topic is a brief description of the issue, alternative ways to address the issue, and, in most cases, language that could be used to implement one or more of the alternatives. In many cases, the language is taken from the listing methodologies from other States, U.S. Environmental Protection Agency (U.S. EPA) guidance, approaches previously used by the SWRCB and RWQCBs, or ideas generated during scoping sessions for the Policy.

### **Background**

Section 303(d)(1) of the federal Clean Water Act (CWA) requires states to identify waters that do not meet applicable water quality standards with technology-based controls alone. Federal regulations also require the identification and priority setting for water quality limited segments still requiring Total Maximum Daily Loads (TMDLs) (40 CFR 130.7(b)). A water quality limited segment is defined as "any segment [of a water body] where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after application of technology-based effluent limitations required by CWA Sections 301(b) or 306."

States are also required to establish a priority ranking of these waters for purposes of developing TMDLs (40 CFR 130.7(b)(4)). The states are required to assemble and evaluate all existing and readily available water quality-related data and information to develop the list (40 CFR 130.7(b)(5)) and to provide documentation to list or not to list a state's waters (40 CFR 130.7(b)(6)).

Section 13191.3(a) of the California Water Code requires the SWRCB, on or before July 1, 2003, to prepare guidelines to be used by the SWRCB and the RWQCBs for the purpose of listing and delisting waters and developing and implementing the total maximum daily load (TMDL) program and total maximum daily loads pursuant to Section 303(d) of the federal Clean Water Act (33 U.S.C. Sec. 1313(d)). In addition, the SWRCB is required to consider the consensus recommendations on the guidelines adopted by the PAG.

The Supplemental Report of 2001 Budget Act also requires the SWRCB to use a "weight of evidence" approach in developing a policy for listing and de-listing waters and to include criteria that ensure the data and information used are accurate and verifiable.

## **Scope of the Listing/Delisting Policy**

**Issue:** What factors should be addressed by the Listing/De-listing Policy?

**Alternatives:**

1. Incorporate guidance on listing/de-listing factors only.
2. In addition to incorporating guidance on interpretation of water quality standards, incorporate guidance on beneficial use designation/de-designation and water quality standards revision or development.
3. Incorporate a requirement to revise the entire existing section 303(d) list so it is consistent with the Listing/De-listing Policy.
4. Do not require that the entire section 303(d) list be reviewed. Only change the existing list if new data and information are available and indicate a change is needed.

**Language for Discussion:**

*Policy for Developing California's List of Surface Waters  
Not Meeting Water Quality Standards*

This Policy describes the process by which the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs) will evaluate and recommend waters for inclusion or removal from California's list of surface waters that do not meet water quality standards. The list created by this Policy includes the Clean Water Act section 303(d) list of water quality limited segments.

This Policy is intended to apply to the listing process conducted to comply with Clean Water Act (CWA) section 303(d). The Policy is to be used to interpret existing numeric and narrative water quality standards to make decisions regarding standards attainment. The Policy shall not be used to (1) determine compliance with any permit or waste discharge requirement provision; (2) to establish, revise, or refine any water quality objective or beneficial use; or (3) translate narrative water quality objectives for the purposes of regulating point sources.

Each water body and pollutant combination identified on the 2002 CWA section 303(d) list shall be evaluated using the provisions of this Policy. This reassessment shall be completed one time. After the reassessment is completed, the existing section 303(d) list shall form the basis for any subsequent lists.

## **Process: RWQCBs and SWRCB approval of the section 303(d) list**

**Issue:** The SWRCB and RWQCBs have developed the section 303(d) list using a number of different methodologies since 1976. What are the steps in the development and approval of the section 303(d) list?

**Alternatives:**

1. The process should be managed primarily by the RWQCBs. The SWRCB role is to assemble the RWQCB lists without review or change.
2. The process should be managed primarily by the SWRCB. The RWQCBs will only make recommendations to the SWRCB. The SWRCB will develop the list.
3. The process should be managed by both the RWQCBs and the SWRCB. RWQCBs should use consistent listing/de-listing guidelines and the SWRCB will review consistency with the guidelines.

**Process for Discussion:**

The process for developing the list of surface waters not meeting standards shall have the following ten steps:

1. RWQCB Solicitation of Existing and Readily Available Data and Information  
Letter to public  
RWQCB search for new data
2. Development of RWQCB Fact Sheets and recommendations on each water body-pollutant/pollution combination
3. RWQCB Public Process  
Hearing  
Board meeting
4. RWQCB Board adoption of Fact Sheets
5. RWQCB submittal of Fact Sheets and all data and information to the SWRCB
6. SWRCB review of RWQCB list recommendations
7. SWRCB evaluation fact sheets  
Completeness  
Review of RWQCB evaluation of data using Policy  
Recommendations
8. SWRCB Statewide List  
Assemble all fact sheets

Develop SWRCB staff recommendations on listing and de-listing  
Form comprehensive list

9. SWRCB Public Process

Draft documents

Hearing

Workshop

Meeting

10. SWRCB submittal of List(s) to USEPA

## **Existing Readily Available Data and Information**

**Issue:** In developing the section 303(d) list, federal regulation requires the SWRCB and RWQCBs to assemble and consider all readily available data and information. To date, each RWQCB has used its judgement in identifying which data and information to use. The SWRCB has not specified the data to be considered in developing the list.

**Alternatives:**

1. Do not specify the minimum data sets that should be reviewed when RWQCBs are developing their draft section 303(d) lists. Rely on existing federal regulation.
2. Specify general categories of data to consider.
3. Specify very specifically the data sets that will be used. Exclude all other data and information.

**Language for Discussion:**

The RWQCBs and SWRCB shall assemble and consider all readily available data and information in the development of California's list of surface waters not meeting water quality standards. The data and information shall be reviewed in the following order: submittals resulting from the solicitation, selected data possessed by the RWQCBs, and other sources. At a minimum, readily available data and information includes paper or electronic copies of:

1. The most recent Section 303(d) List, the most recent Section 305(b) Report, and the most recent California Integrated Water Quality Report
2. CWA section 319 nonpoint source assessments
3. Drinking water source assessments
4. Information on water quality problems in documents prepared to satisfy Superfund and Resource Conservation and Recovery Act requirements
5. The most recent Toxic Release Inventory
6. Fish and shellfish advisories, beach postings and closures, or other water quality-based restrictions
7. Reports of fish kills, cancers, lesions or tumors.
8. Dilution calculations, trend analyses, or predictive models for assessing the physical, chemical, or biological condition of streams, rivers, lakes, reservoirs, estuaries, coastal lagoons, or the ocean.
9. Water quality data and information from SWAMP.

10. Water quality problems and existing and readily available water quality data and information reported by local, state and Federal agencies (including discharger monitoring reports); citizen monitoring groups; academic institutions; and the public.

## **Solicitation of All Readily Available Data and Information**

**Issue:** Assembling all existing and readily available data and information is central in developing and revising the section 303(d) list. While the RWQCBs have access to a number of sources of data, many federal, state, and local agencies as well as the interested public may have data and information that may be useful in developing the list.

How should the SWRCB and RWQCBs solicit readily available data and information?

**Alternatives:**

1. Do not specify the method or requirements for data submittal.
2. Specify general requirements for data submittal.
3. Require a specific data submittal and quality of data that will be acceptable for development of the section 303(d) list.

**Language for Discussion:**

The SWRCB shall seek all readily available data and information on the quality of surface waters of the State. To do this, the RWQCBs shall solicit this data and information from the public.

Readily available data and information shall be solicited from any interested party, including but not limited to: private citizens; public agencies; State and federal governmental agencies; non-profit organizations; and businesses possessing data and information regarding the quality of the region's waters.

In general, RWQCBs shall seek all readily available data and assessment information generated since the last listing cycle. For purposes of data and information solicitation, information is any documentation describing the current or anticipated water quality condition of a surface water body. Data is considered to be a subset of information that consists of reports detailing measurements of specific environmental characteristics. The data and information may pertain to physical, chemical, and/or biological conditions of the Region's waters or watersheds.

Information solicited should contain the following:

- The name of the person providing the information.
- Mailing address, telephone numbers, and email address of a contact person for the information provided.
- Two hard copies and an electronic copy of all information provided. The submittal must specify the software used to format the information and provide definitions for any codes or abbreviations used.
- Bibliographic citations for all information provided.
- If computer model outputs are included in the information, provide bibliographic citations and specify any calibration and quality assurance information available for the model(s) used.



Data solicited should contain the following:

- Data in electronic form, in spreadsheet, database, or ASCII formats. The submittal must specify the format and define any codes or abbreviations used in the database.
- Metadata for the field data, i.e., when measurements were taken, locations, number of samples, detection limits, and other relevant factors.
- Metadata for any Geographical Information System data must be included. The metadata must detail all the parameters of the projection, including datum.
- A description of and reference for the quality assurance procedures.
- Two hard copies of the data.
- In addition, data from citizen volunteer water quality monitoring efforts needs:
  - The name of the group;
  - Indication of any training in water quality assessment completed by members of the group

Data and information previously submitted to the RWQCBs, such as Discharge Monitoring Reports, should not be solicited as the data and information is already available to the RWQCBs. Data and information not submitted to the RWQCBs by interested parties is considered to be not readily available.

## Assessment Methodology

**Issue:** The SWRCB and RWQCBs are required to provide the U.S.EPA with the methodology used to develop the section 303(d) list. How detailed and specific should the State's methodology be? Should the SWRCB specify the types of data to solicit and how data will be evaluated using a weight-of-evidence approach?

**Alternatives:**

1. Do not specify the assessment methodology. Allow each RWQCB to use its own approach and make its own judgements of the methodology to use.
2. Use the methodology used by the RWQCBs to develop the 1998 section 303(d) list.
3. Use the methodology used by the SWRCB to develop the 2002 section 303(d) list.
4. Use an approach that allows each RWQCB to interpret water quality objectives as specified in the Basin Plans and, in the absence of Basin Plan guidance, use their best professional judgment to develop the list. Provide guidance on acute, chronic, one-time, and recurring water quality problems.
5. Develop a nested approach that would require the specific interpretation rules for quantitative data or allow the use of all data available to make judgements about listing. This approach would set specific rules for the types and amount of numeric data to use in assessing standards attainment and would also allow the use of non-quantified data and data not meeting the specific requirements if multiple lines of evidence are available.
6. Use an approach based on the U.S. EPA's guidance on development of the section 305(b) report and section 303(d) list (Integrated Report Guidance dated November 19, 2001).
7. Use Florida's listing and de-listing approach. This approach includes the use of planning and verified lists, the binomial model for assessment standards attainment, specific guidelines for the various types of standards and parameters used to develop the section 303(d) list.
8. Use Arizona's listing and de-listing approach. This approach includes an evaluation of credible data, the use of a planning list, weight-of-evidence, binomial model, and general guidance on interpreting narrative standards.
9. Use Texas' listing and de-listing approach. This approach includes identification of sources of data, interpretation of numerical data using the binomial model, assessment of use support, and assessment of "secondary concerns" (exceedance of guidelines not adopted as standards).
10. Use a risk management model based on the weight of evidence approach developed for Massachusetts. Approach provides numerical and narrative methods for

assessing the quality of the data and information available to interpret aquatic life protection.

11. **Develop a California-specific Weight-of-Evidence Approach.** Select a variety of approaches or techniques in order to best fit California's needs. The approach should be specific enough to allow the interested public to see the steps, the data, and the evaluation used to develop the list. Specify which data is sufficient by themselves and which data require multiple lines of evidence.

**Concept for discussion:**

*Evaluation of readily available data and information using a weight-of-evidence approach*

There are certain conditions that are *sufficient by themselves* to demonstrate that water quality standards are not attained. Other conditions may require evaluation of multiple types of data or pieces of information in order to arrive at a reasonable determination of whether standards are attained. In some instances, the available data and information may yield conflicting information as to whether or not water quality standards are met or beneficial uses are attained. Therefore, the weight of evidence approach follows a two-step process to accommodate the variety of data that might be encountered.

The first step of the determination process is to screen the available data and information for an adequate data subset of known quality and sufficient spatial and temporal coverage for comparison with that specific set of conditions that are *sufficient by themselves* to demonstrate standards attainment. These listing factors are:

Numeric data exceeds numeric water quality objectives, maximum contaminant levels, or California/National Toxics Rule water quality criteria.

Consumption of Aquatic Species

Beach Posting or Closure

The second step is to consider the available data and information using a variety of listing factors that require multiple lines of evidence for listing. The listing factors that require multiple lines of evidence are:

Toxicity

Health Advisories

Nuisance

Adverse Biological Response

Degradation of Aquatic Life Populations or Communities

## Documentation

**Issue:** Evaluation of the data and information for listing waters of the section 303(d) list is often complex. In order for the listing decision to be transparent, the assessment of the data and information should be presented in a way that allows for the RWQCBs and the SWRCB to understand the reasons for each proposal. What kinds and amounts of documentation are needed to support the section 303(d) listing process?

### Alternatives:

1. Each RWQCB should be allowed to document their recommendations in any manner they deem appropriate. No or minimal changes in RWQCB workload.
2. The SWRCB should specify some general guidance for the factors that should be documented. Perhaps use another State's documentation requirements such as Texas.
3. Develop water body specific fact sheets that describe all the data and information pertaining to the specific water body. Only provide fact sheets for waters recommended for listing and de-listing. These types of requirements would put a new workload on the RWQCBs. At present there is no dedicated funding source for completing the section 303(d) list.
4. The SWRCB should require the RWQCBs to submit specific information in a standard format so the Board and the public have a clear idea of the data used, the quality of the data, what the data represent, which water quality standards are exceeded, and the other important information about the listing. These types of requirements would put a new workload on the RWQCBs. At present there is no dedicated funding source for completing the section 303(d) list.

### Language for Discussion:

#### *RWQCB Fact Sheet Preparation*

Each RWQCB shall prepare fact sheets for each waterbody-pollutant/pollution combination that is proposed for listing or de-listing from the list of water quality limited segments. The fact sheets shall present a description of the evidence used to support each component of the weight of evidence approach. Fact sheets shall be prepared for all data and information solicited (even for data not used to support a new listing or de-listing). The fact sheets shall contain the following:

- A. Region
- B. Type of water body (Bay and Harbors, Coastal Shoreline, Estuary, Lake/Reservoir, Ocean, Rivers/Stream, Saline Lake, Tidal Wetlands, Freshwater Wetland)
- C. Name of water body segment (including Calwater watershed)
- D. Pollutant or type of pollution
- E. Medium (water, sediment, tissue, habitat, etc.)

- F. Water quality standards (copy applicable standard from appropriate plan or regulation) including:
- Beneficial use
  - Numeric water quality objective/water quality criteria plus metric (single value threshold, mean, median, etc.) or narrative water quality objective plus guideline(s) used to interpret
  - Antidegradation (if applicable to situation)
  - Any other provision of the standard used
- G. Description of numeric data
- Quality assurance
  - Standard methods used
  - Spatial representation, size affected (including map)
  - Temporal representation
  - Site-specific information
  - Age of data
  - Effect of seasonality
  - Events/conditions that might influence data evaluation (e.g., storms, flow conditions, laboratory data qualifiers, etc.)
  - Number of samples
  - Number of samples exceeding guideline or standard
  - Source of data
- H. Description of non-numeric data and information
- Types of observations
  - Spatial representation, size affected (including map)
  - Reference conditions (if appropriate)
  - Temporal representation
  - Site-specific information
  - Age of information
  - Effect of seasonality
  - Events/conditions that might influence information evaluation (e.g., storms, flow conditions, laboratory data qualifiers, etc.)
  - Number of samples or observations
  - Number of samples or observations exceeding guideline or standard
  - Perspective on magnitude of problem
  - Numeric indices derived from qualitative data
  - Source of information
- I. Potential source of pollutant or pollution (including permits, waste discharge requirements, natural sources, etc.)
- J. Program(s) addressing the problem, if known
- K. Data entry into GeoWBS (Geographic Water Body System)
- L. Data evaluation (see below)
- M. Recommendation (see below)
- N. Priority ranking (see below)
- O. TMDL schedule (see below)

If the data and information reviewed do not indicate a listing or de-listing decision can be made, the fact sheet may address multiple pollutant/pollution-water body combinations.

## **Interpreting Narrative Water Quality Objectives**

**Issue:** Many water quality standards are narrative and consequently, subject to substantial subjectivity in interpretation. Narrative standards typically take the form: No toxics shall be discharged in toxic amounts.

Federal regulation explicitly states that narrative water quality standards should be assessed in developing the section 303(d) list. RWQCBs have used a variety of guidelines or scientifically derived values to interpret narrative standards.

Given that narrative standards can be interpreted subjectively, how best can the SWRCB and RWQCBs strengthen the use of chemical, physical, and biological data in the assessment of narrative water quality standards?

**Alternatives:**

1. Do not allow the use of any guidelines for interpreting narrative water quality standards.
2. On a case-by-case basis, allow RWQCBs to establish the method and approach for interpreting narrative water quality standards.
3. Establish general guidance on the requirements for the interpretation of narrative standards. State the types of interpretative guidelines that may be used. Provide guidance on how to interpret high natural background concentrations.
4. Establish explicit guidance for specific parameters which guidelines should be used. List the guidelines in the Policy.

**Language for Discussion:**

Narrative water quality objectives shall be interpreted using the following guidelines:

<b>Beneficial Use</b>	<b>Evaluation Criteria for Measurement Endpoints</b>
Aquatic Life	NAS tissue guidelines, BPTCP approaches to identify toxic hot spots, published temperature thresholds; published sedimentation thresholds; Federal agency and other state sediment quality guidelines, DFG guidelines, Sediment Apparent Effects Thresholds from California and other states, toxicity guidelines
Fish Consumption	NAS tissue guidelines, FDA action levels, U.S. EPA screening values fish advisories, State Action levels; MTRLS calculated from water quality objectives or criteria; Fish and Shellfish Consumption Advisories
Shellfish Harvesting	WQO (Ocean Plan), Shellfish harvesting bans
Drinking Water	DHS Primary MCLs, Secondary MCLs; EPA Primary MCLs, Secondary MCLs; MCL goals; OEHHA Public Health Goals (PHGs); DHS Action Levels; Drinking Water Health Advisories; Water Quality Advisories; Suggested No-Adverse-Response Levels (SNARLs); Prop 65 levels; CalEPA, USEPA and NAS drinking water Cancer Risk
Swimming, Non-contact recreation	DHS bacterial standards, beach closures and postings
Agricultural Water Supply	Agricultural Water Quality Goals published by the Food and Agriculture Organization of the United Nations
Aesthetics	For taste and odor: certain CTR, WQO, and other published thresholds.
No relationship to BU and should not be used	SMW EDL

When site-specific natural background concentrations in water or sediment are higher than necessary to protect beneficial uses, the natural background concentration is considered to comply with the narrative water quality standard.



## Listing Factors and De-listing Factors

**Issue:** Interpretation of data and information to determine if water quality standards are attained is central to development of the section 303(d) list. Should the SWRCB present in the Policy the approaches and methods for interpreting each type of water quality standard? What is the relationship among the various factors? Should interpretation of standards be tempered by the controllability of the pollutants?

**Alternatives:**

1. List if any type of water quality standard is not met. Implement U.S. EPA's policy of independent applicability.
2. Do not list if it can be demonstrated that the beneficial use is not impacted even though numeric water quality standards are not met. This option is not legal. Water quality objectives are part of water quality standards. Waters must be listed if standards are not met, not merely if beneficial uses are not protected.
3. Exclude short-term events such as spills and permit violations from the list. This option may be inconsistent with federal regulations.
4. List only for controllable sources of pollutants or pollution. Establish statewide policy for determining the standard if background concentrations of naturally occurring substances are high.
5. Place waters on the list if effluent limits are stringent enough to implement water quality standards but are not enforced.

**Language for Discussion:**

As a preface to the listing factor section:

Waters shall be listed upon sufficient credible data and information that indicate water quality standards are not met or beneficial uses are not attained. In all cases, data and information that is collected during a known spill or a violation of a permit requirement or waste discharge requirement shall not be used in the assessment of standards and beneficial use attainment.

For each pollutant/pollution-water body combination potentially caused by controllable sources, if a segment of a water body meets any one or more of the following conditions, the segment is considered to be a water quality limited segment and shall be placed on the *California List of Surface Waters Not Meeting Water Quality Standards*:

After the listing factor section:

**De-listing Factors**

A water body shall not be placed on *California's List of Surface Waters Not Meeting Water Quality Standards* if the existing and readily available data and information indicate that a water body is not a water quality limited segment (i.e., does not meet the conditions specified for one of more of the listing factors).

If objectives or standards have been revised and the site or water body is no longer a water quality limited segment then the segment should be reevaluated for placement in the appropriate category.

The category of a segment should be reevaluated if the beneficial use not attained has been de-designated (after U.S. EPA approval of a Use Attainability Analysis) and the segment is no longer considered to be a water quality limited segment.

The category of a segment should be reevaluated if the listing was based of faulty data. Faulty data include, but are not limited to, typographical errors, improper quality assurance/quality control procedures, or limitations related to the analytical methods that would lead to improper conclusions regarding the water quality status of the segment.

## **Listing Factor 1: Numeric Water Quality Standards**

**Issue:** How should numeric water quality standards be interpreted?

**Alternatives:**

1. Do not specify how to interpret numeric standards
2. Raw score approach (select percentage exceeded)
3. Binomial model (selected percentage exceeded plus confidence level)  
Options:
  - Exceedance percentage (5%, 10%, 20%, 50%, ?)
  - Listing confidence level (99%, 95%, 90%, 85%, 80%, ?)
  - De-listing confidence level (1%, 5%, 10%, 15%, 20%, ?)
4. Binomial model 2 (allow varying confidence level to get on/off lists)

**Language for Discussion:**

The segment (1) exceeds numeric water quality objectives or water quality standards for pollutants that are contained in Regional or Statewide water quality control plans in greater than XX percent of the samples, (2) exceeds water quality criteria promulgated as part of the CTR or the NTR in greater than XX percent of the samples, or (3) exceeds MCLs in greater than XX percent of the samples.

**AND/OR**

Water Chemistry: When considering whether to list a segment of a water body, use a statistical comparison that assumes (1) a binomial distribution of the observations, (2) water quality standards are exceeded in XX percent of the samples, and (3) a listing (listing when in fact it should be) confidence level of XX percent. Therefore, list a water body or site if standards are exceeded in at least XX temporally independent samples from a sample size of XX with a confidence level of XX percent. For sample sizes greater than XX, the number of samples that exceed the standard will be calculated using Microsoft Excel® function:

CRITBINOM (sample size, XX% exceedance probability, XX% listing confidence level).

When considering whether to remove a segment of a water body from the list use a statistical comparison that assumes (1) a binomial distribution of the observations, (2) water quality standards are exceeded in XX% of the samples, and (3) a false de-listing (de-listing when in fact is should not be) confidence level of XX percent. Therefore, de-list a water body or site if standards are not exceeded in at least XX temporally independent samples. For sample sizes greater than XX, the number of samples that may exceed the standard will be calculated using Microsoft Excel® function:

CRITBINOM (sample size, XX% exceedance probability, XX% false de-listing confidence level).

## **Data Quality**

**Issue:** A wide range of data has been used in the past for 303(d) listing and delisting of water bodies. Knowing the quality of these data is essential in determining the strength of the recommendation to list a water body. In developing the 303(d) list what data quality should be required?

**Alternatives:**

1. Use all data of any quality or of unknown quality to make decisions to list or de-list waters.
2. The SWRCB should provide only general guidance on the quality of data that is acceptable.
3. The SWRCB should establish specific guidelines on the quality of numeric data to be used in the 303(d) listing process.
4. The SWRCB should provide specific guidance on data quality but should allow data of lesser or unknown quality to be used as long as these data of poorer quality are used only to support high quality data.
5. Use all data and information, as required by federal regulations, but ascribe varying weight depending on the confidence level of the data. Any data not used must have a clear basis for not using it.

**Language for Discussion:**

*Assessment of numeric data quality*

The quality of the data used in the development of the section 303(d) list should be of sufficiently high quality to make determinations of water quality standards attainment. Quantitative data are of little use unless accompanied by descriptions of sample collection, the analytical methods used, quality control protocols, and the degree to which data quality requirements are met.

Data supported by a Quality Assurance Project Plan (QAPP) pursuant to the requirements of 40 CFR 31.45 then the data are acceptable for use in developing the section 303(d) list. The data from major monitoring programs in California are considered of adequate quality. The major programs include SWAMP, the Southern California Bight Projects of the Southern California Coastal Water Research Project, U.S. Geological Survey, U.S. Environmental Protection Agency's Environmental Monitoring and Assessment Program, the Regional Monitoring Program of the San Francisco Estuary Institute, and the Bay Protection and Toxic Cleanup Program (BPTCP).

Data without rigorous quality control can be useful (in combination with high quality data and information). If the data collection and analysis is not supported by a QAPP or if it is not possible to tell if the data collection and analysis was supported by a QAPP, then the data and information cannot be used by itself to support listing or delisting of a water segment. These data may only be used to corroborate other data and information with an appropriate QAPP.

**DRAFT**

July 11, 2002

The RWQCBs should clearly evaluate and make a finding in the fact sheets on the appropriateness of data collection and analysis practices. If any data quality objectives in the QAPP are not met, the reason for not meeting them and the potential impact on the overall assessment should be clearly documented.

## **Age of Data**

**Issue:** An underlying assumption of the listing process is that the assessments made today represent conditions in State's waters. If very old data are used to make the assessment the likelihood of those data represent current conditions is low. Also, as methods for sampling and analysis improve older data may be of lesser relevance or quality. In each case, the RWQCBs and SWRCB must determine how much of the data collected over time is relevant to the listing or de-listing decision.

### **Alternatives:**

1. Determine on a case-by-case basis which data should be used in the 303(d) assessments.
2. Establish guidance that data older than five years should not be used in the assessments.
3. Establish guidance that data older than seven years should not be used in the assessments.
4. Establish guidance that data older than ten years should not be used in the assessments.
5. Establish specific guidance as described in Alternatives 2 or 3 and allow the use of older data to support the findings based on newer data. Data collected at the site within past 5 years for water and 10 years for sediment, tissue, and persistent organic chemicals is acceptable.

### **Language for Discussion:**

Only the most recent XX year period of data and information shall be used for listing or delisting waters on the section 303(d) list. Data older than XX years may be used on a case-by-case basis if the older data are used in conjunction with newer data to demonstrate trends or if the conditions in a water body have not changed. In either case, the reason for using older data shall be described in the water body fact sheet.

## **Water Body-specific Information**

**Issue:** Confidence in the monitoring data and information is increased if it comes from the water body segment under consideration. In the absence of water body-specific data and information, should data be applied to other similar water bodies?

**Alternatives:**

1. Allow RWQCBs to establish on a case-by-case basis the water body-specific conditions necessary to list or de-list a water body.
2. Establish general guidance on the requirements for water body-specific conditions so the data evaluated represents the specific water body.
3. Establish more specific guidance for various water quality parameters.

**Language for Discussion:**

Data used to assess water quality standards attainment should be actual data that can be quantified and qualified. Information that is estimated, modeled, or projected shall not be used for listing or de-listing decisions. In order to be used in developing the list:

1. Data must be measured at one or more sites in water body
2. Environmental conditions in a water body or at a site must be taken into consideration (e.g., effects of seasonality, events such as storms, the occurrence of wildfires, land use practices, etc.)

## **Temporal Representation**

**Issue:** Should minimum temporal requirements be established for the data to be sufficiently representative?

**Alternatives:**

1. Allow RWQCBs to establish on a case-by-case basis the temporal representativeness of the samples used to assess standards attainment.
2. Establish general guidance on the requirements for temporal representation so samples represent multiple seasons and avoid representing short-term events.  
Options: Sampling must be from at least two seasons  
          Sampling must be from at least three seasons  
          At least two events.  
          No more than two thirds of the sampling from any one year.
3. Establish more specific guidance for water quality parameters on the requirements for temporal representation.

**Language for Discussion:**

Samples shall be collected to be representative of temporal characteristics of the water body. Samples used in the assessment must be temporally independent.

In general, samples should be collected on multiple days during more than XX season(s) or more than XX event(s) when effects would be expected to be clearly manifested. The minimum data set shall be for XX year(s) and shall cover at least XX seasons (at least XX sampling events). No more than XX (percentage) of the data set shall be collected in one year. Samples collected less than XX days apart shall be combined and considered one sampling event.

If the majority of samples are collected on a single day or during short-term natural event (e.g., a storm, flood, wildfire), the data shall not be used as the primary data set to supporting the listing.



## **Spatial Representation**

**Issue:** Should minimum spatial requirements be established for the data to be sufficiently representative?

**Alternatives:**

1. Allow RWQCBs to establish on a case-by-case basis the spatial representativeness of the samples used to assess standards attainment.
2. Establish general guidance on the requirements for spatial representation so samples represent the intended geographical extent.

Options: 200 meters (Florida)  
50 meters separation for bacterial standards or beach postings

3. Establish more specific guidance for water quality parameters on the requirements for spatial representation.

**Language for Discussion:**

Samples shall be collected to be representative of spatial characteristics of the water body. To the extent possible, all samples should be collected to statistically represent the segment of the water body or collected in a consistent targeted manner that represents the segment of the water body.

Samples collected within XX meters of each other shall be considered the same station or location. Samples from mixing zones generally should not be included as part of the data set.

The fact sheet shall contain a description of pertinent factors such as the depth of water quality measurements, flow, hardness, pH, the extent of tidal influence, and other relevant sample-specific factors.

## **Minimum Number of Samples**

**Issue:** Should a minimum number of samples be defined to make listing and de-listing decisions?

**Alternatives:**

1. Allow RWQCBs to establish on a case-by-case basis the number of samples to be used to assess standards attainment.
2. Establish general guidance on the requirements for the number of samples to make listing or de-listing decisions or when no decision will be made.
3. Establish water body type guidance for specific parameters on the requirements for numbers of samples.

Options: Select minimum number of samples to list: 1, 2, 3, 4, 10, 20, or ?

Select minimum number of samples to de-list: 8, 18, 28, 29, 45, or ?

**Language for Discussion:**

For assessment of numeric water quality objectives or water quality criteria, a minimum of XX temporally independent samples from each water body segment for the most recent XX year period are needed to determine if water quality standards are exceeded.

For entire water bodies, field measurements, constituents in water, sediment, or tissue collected at multiple sites may be aggregated to meet the minimum requirement. Field measurements and constituents in water should be collected on different days to be included in the minimum number of samples.

For segments of water bodies, fewer than XX samples for biological assessments and tissue measurements may be used on a case-by-case basis.

Data sets with fewer than X samples should receive high priority for monitoring.

Water quality data should not be used in the development of the list when there are X or fewer samples.

## Analysis of Numeric Data

**Issue:** Once it is determined that numeric data is of sufficient quality and quantity, it is necessary to determine whether water quality standards are met. The RWQCBs and SWRCB must answer the question: Are standard achieved? The answer is either “yes” or “no.” The challenge is to interpret the sometimes limited amount of data to determine if water quality standards are not met and the water should be listed.

In order to assess the status of a water body, samples are collected and analyzed. The goal is to measure a representative sample of the water body so the samples represent the conditions in the natural environment. Consequently, the potential for error exists in every decision and, depending on circumstances, can be great. The goal is to deduce actual water body conditions and make reliable decisions from water quality sample data. In the case of 303(d) listing, the goal is to identify those waters that are not meeting or are not expected to meet standards.

### Alternatives:

1. Use raw score approach suggested by U.S. EPA in the section 305(b) guidance.
2. Use binomial model advocated by other states such as Florida, Nebraska, Texas, and Arizona.
3. Use Bayesian Binomial Model advocated by the state of Virginia. This approach allows for use of prior understanding and data to assess if standards are attained.

### Further Discussion:

In order to carefully assess if standards are met, statistical procedures can be used to manage the errors. To use a statistical approach, decisions need to be made about (1) the hypotheses to test, (2) percentage of samples that are allowed to exceed the water quality standard, and (3) the magnitude of error that will be tolerated.

The major focus is on evaluating concentrations of pollutants in water, sediment, and tissue samples. It is also probable that the evaluation will be comprised of a small number of samples that, in turn, can cause large uncertainty. The Binomial Model has been used by many states to list and de-list water bodies. The binomial approach has been challenged and is in litigation.

#### *Assumptions/requirements of Binomial Distribution Model*

- Samples (trials/observations) give either a “yes” or “no” answer (i.e., dichotomous response).
- The probabilities ( $p$ ,  $1-p$ ) of “yes” and “no” responses remain constant.
- Samples are finite in number ( $n$ ).

- Samples are randomly collected. In other words, the samples are collected in a manner that represents the conditions of the water body of interest. If repeated samples are collected during a storm event, the samples do not represent any thing other than storm conditions.
- Samples are identical (consistent).
- Samples are independent.

*Advantages of Binomial Distribution Model*

- Nonparametric (e.g., computational simplicity and more “power” [1-β] than equivalent parametric test when test assumptions not met).
- Distribution best “fits” yes-no (dichotomous response) type of data.
- Well understood.
- Easy to calculate (e.g., using Excel).

*Disadvantages of Binomial Distribution Model*

- Does not take into account magnitude--how great was any one exceedence?
- Does not appear to address time extent--how prevalent was exceedence?
- Unfamiliarity--not used by SWRCB and RWQCB staff before.
- May appear overly complicated to non-scientific/technical public.

*Hypothesis Testing*

Hypothesis testing is a way to make inferences using statistics. To use this type of statistical testing, a null hypothesis must be developed. The null hypothesis represents the *status quo*. For example:

- A water body is not yet listed and should not be listed.
- A water body was previously listed and should remain listed.

If the data collected or used are very different from what would be expected, assuming the null hypothesis is true, then the null hypothesis is rejected. If the data are not at variance with what would be expected, assuming the null hypothesis is true, then the null hypothesis is not rejected. A null hypothesis is not accepted just because it is not rejected.

*Listing*

$H_0$  (null hypothesis) = Actual conditions do not exceed a water quality standard some critical percentage of the time (i.e.,  $p \leq p_0$ ). Preliminary assumption: Water quality standards are being met and the water body should not be listed.

$H_a$  (alternate hypothesis) = Actual conditions exceed the standard more than some critical percentage of the time (i.e.,  $p > p_0$ ).

<u>Decision</u>	<u><math>H_0</math> True</u> (standards met)	<u><math>H_0</math> False</u> (standards not met)
Reject $H_0$ (list)	<b>Type I Error</b> (list when inappropriate to)	Correct Decision
Do not reject $H_0$ (do not list)	Correct Decision	<b>Type II Error</b> (do not list when appropriate to)

The model uses dichotomous (yes/no) data. Samples either (a) do not exceed ( $\leq$ ) (“no”) or (b) exceed ( $>$ ) (“yes”) some water quality standard.

$p$  = the true probability (from 0 to 1) that any sample from a water body segment will exceed a particular criterion. Unfortunately, this is impossible to know. Since we cannot know actual conditions (i.e.,  $p$ ), we generate an estimate ( $p_s$ ) by sampling, then evaluate various hypotheses.

$p_0$  = “cutoff” value (e.g., 10% or 0.10 is used by a number of states and several RWQCBs); a policy choice--the pre-selected basis for (listing/delisting) decisions

An important goal is to minimize the chance of **Type I** error (i.e., keep Type I error low, confidence high (e.g.,  $\geq 95\%$ )). To do this requires a suitable minimum number of exceedences per sample in order to achieve desired confidence level. Type I error can be addressed either in the listing process or prior to TMDL development through a de-listing process.

*De-listing*

$H_0$  = Actual conditions exceed a standard some critical percentage of the time or more [i.e.,  $p \geq p_0$ ]. Preliminary assumption: Water quality standards are not being met (i.e., original listing was correct) and the water body should not be de-listed.

$H_a$  = Actual conditions exceed a standard less than some critical percentage of the time [i.e.,  $p < p_0$ ].

<b>Decision</b>	<b>H<sub>0</sub> True (standards not met)</b>	<b>H<sub>0</sub> False (standards met)</b>
Reject H <sub>0</sub> (de-list)	<b>Type I Error</b> (de-list when inappropriate to)	Correct Decision
Do not reject H <sub>0</sub> (do not de-list)	Correct Decision	<b>Type II Error</b> (do not de-list when appropriate to)

It is also a goal to minimize the chance of **Type I** error in delisting. To do this requires a suitable maximum number of exceedences per sample in order to achieve desired confidence.

*Allowable percentage of samples that can exceed the standard*

With complete understanding of a water body, any exceedance of a water quality standard would indicate that a water body does not meet water quality standards. However, a complete understanding of our waters is not possible because decisions are made with limited data that are greatly affected by variability in natural or background conditions and in human activity. Other sources of variability include measurement error in the analysis of samples (typically for measurements of metals and organic chemicals, data quality requirements for accuracy and precision range from 10 to 30 percent differences are allowed).

The U.S. EPA has recognized these factors and at least for the section 305(b) requirements, has allowed that if >10 percent of the samples for any acute or chronic criterion does not support beneficial uses (assuming at least 10 samples over a three year period).

*Magnitude of Error*

$\alpha$  ("alpha") = Chance of a **Type I** error (i.e., rejecting null hypothesis when it is true).

$\beta$  ("beta") = Chance of a **Type II** error (i.e., not rejecting the null hypothesis when it is false). ( $\alpha$  and  $\beta$  are not necessarily directly related.)

Scientists normally pre-select a desired  $\alpha$  (e.g., 1%, 5% or 10%). Test results determine whether  $\alpha$  is achieved and **H<sub>0</sub>** is rejected. **1- $\alpha$  (confidence)** = the chance of not rejecting the null hypothesis when it is indeed true (e.g., 99%, 95%, or 90%).

In the 303(d) process the selection of  $\alpha$  is a policy decision. Selecting a low  $\alpha$  decreases the chance of making the mistake to list when we should not. A larger  $\alpha$  requires fewer samples to list but many more "no hits" to de-list. The challenge is to balance the selection of  $\alpha$ . The goal is to minimize the chance of  $\alpha$  (**Type I** error) and to not list unless appropriate to while keeping confidence (1- $\alpha$ ) high. The  $\alpha$  error is controlled by requiring a suitable minimum number of exceedences per sample size in order to achieve desired 1- $\alpha$ .

$\beta$  is minimized (and  $1-\beta$  maximized) primarily by increasing sample size ( $n$ ).  $1-\beta$  ("power") = the chance of rejecting the null hypothesis when it is indeed false.  $\beta$  is controlled by selecting the minimum sample size and the resources available for monitoring.

*Examples*

Minimum Number of Exceedences to List  
Water Body with Various Confidences ( $1-\alpha$ ) ( $p_0 = 0.10$ )

<u>n</u>	<u>80%</u>	<u>90%</u>	<u>95%</u>	<u>99%</u>
4	1	1	2	2
5	1	1	2	2
10	2	2	3	4
15	2	3	4	5
20	3	4	4	6
30	4	5	6	7
40	6	6	7	9

Minimum Number of Exceedences to List  
Water Body with Various Confidences ( $1-\alpha$ ) ( $p_0 = 0.20$ )

<u>n</u>	<u>80%</u>	<u>90%</u>	<u>95%</u>	<u>99%</u>
4	1	2	2	3
5	2	2	3	3
10	3	4	4	5
15	4	5	6	7
20	5	6	7	8
30	8	9	10	11
40	10	11	12	14

Maximum Number of Exceedences to De-List  
Water Body with Various Confidences ( $1-\alpha$ ) ( $p_0 = 0.10$ )

<u>n</u>	<u>80%</u>	<u>90%</u>	<u>95%</u>	<u>99%</u>
10	0	0	0	0
18	1	0	0	0
28	1	1	0	0
29	2	1	1	0
45	3	2	1	1
50	3	2	2	1
100	7	6	5	4

Maximum Number of Exceedences to *De*-List  
Water Body with Various Confidences (1- $\alpha$ ) ( $p_0 = 0.20$ )

<u>n</u>	<u>80%</u>	<u>90%</u>	<u>95%</u>	<u>99%</u>
8	1	0	0	0
11	1	1	0	0
15	2	1	1	0
21	3	2	1	1
30	4	3	3	1
40	6	5	4	3
50	8	6	6	4
100	17	15	14	11



## **Listing Factor 2: Numeric Bacterial Water Quality Standards**

**Issue:** How should numeric bacterial water quality standards be interpreted?

**Alternatives:**

1. Do not use this factor.
2. Interpret case-by-case.
3. Establish consistent value to trigger listing. Distinguish between wet-weather and dry-weather conditions.

**Language for Discussion:**

The segment exceeds bacterial standards more than 10 percent of the days (>36.5 days per year) as measured by the number of beach posting days by the local environmental health agency. When consecutive years are used (the time period between the 303(d) listing periods) the number of beach postings will not exceed the 10 percent threshold in two of three consecutive years in the time period. All the postings from routine beach water quality monitoring should be considered in the assessment time period except for those considered non-routine by the local environmental health agency. The number of "rain advisory" days (when rain advisories are issued by the local health agency) should not be included in the assessment.

Samples collected to assess bacterial water quality standards shall represent 50 meters on each side of monitoring station unless:

- Adaptive sampling data are available indicating a broader length of beach is impaired by the discharge.
- Two adjacent monitoring stations are linked by hydrological conditions. In this case the beach segment between the stations is listed as well as the 50 meters on each side.
- Flow rates are known and indicate a broader length of beach that do not meet standards.

### **Listing Factor 3: Health Advisories**

**Issue:** How should health advisory information be interpreted?

**Alternatives:**

1. Use only OEHHA advisories.
2. Use all types of advisories.
3. Association determined by comparison to water or sediment values.
4. Association determined case-by-case (do not specify in Policy).

**Language for Discussion:**

When a health advisory against the consumption of edible resident non-migratory organisms or a shellfish harvesting ban has been issued by Office of Environmental Health Hazard Assessment (OEHHA) or Department of Health Services (DHS), the segment is automatically considered to be a water quality limited segment if the chemical or biological contaminant is associated with sediment or water in the segment.

## **Listing Factor 4: Tissue**

**Issue:** How should chemical residue concentrations in tissue be interpreted?

**Alternatives:**

1. Do not use this factor.
2. Interpret case-by-case.
3. Establish consistent value to trigger listing.

Options:

Raw score approach (select percentage exceeded)

Binomial model (select percentage exceeded plus confidence level, select number of minimum measurements)

More Options:

Exceedance percentage (1%, 5%, 10%, 20%, 50%, ?)

Listing confidence level (99%, 95%, 90%, 85%, 80%, ?)

De-listing confidence level (1%, 5%, 10%, 15%, 20%, ?)

Binomial model 2 (allow varying confidence level to get on/off list)

**Language for Discussion:**

The tissue pollutant levels of organisms collected from a segment exceed levels established by FDA for the protection of human health or the NAS for the protection of human health or wildlife, MTRLS, measurement endpoints from other State and federal agencies, other states, and other countries. This factor shall be used to translate appropriate narrative water quality objectives.

Acceptable tissue concentrations are measured either as muscle tissue (preferred) or whole body residues. Residues in liver tissue alone are not considered a suitable measure. Animals can either be deployed (if a resident species) or collected from resident populations. Recurrent measurements in tissue are required. Residue levels established for one species for the protection of human health can be applied to any other consumable species.

Shellfish: To use tissue data, each data point should include a minimum of three replicates. The value of interest is the average value of the three replicates. Each replicate should be comprised of at least 15 individuals. For existing State Mussel Watch information related to organic pollutants, a single composite sample (20-100 individuals), may be used instead of the replicate measures.

Fin-fish: A minimum of three replicates is necessary. The number of individuals needed will depend on the size and availability of the animals collected; although a minimum of five animals per replicate is recommended. The value of interest is the average of the three replicates. Animals of similar age and reproductive stage should be used.

**AND/OR**

Water Chemistry: When considering whether to list a segment of a water body, use a statistical comparison that assumes (1) a binomial distribution of the observations, (2) the tissue guideline is exceeded in XX percent of the samples, and (3) a listing (listing when in fact it should be) confidence level of XX percent. Therefore, list a water body or site if the guideline is exceeded in at least XX temporally independent samples from a sample size of XX with a confidence level of XX percent. For sample sizes greater than XX, the number of samples that exceed the standard will be calculated using Microsoft Excel® function:

CRITBINOM (sample size, XX% exceedance probability, XX% listing confidence level).

When considering whether to remove a segment of a water body from the list use a statistical comparison that assumes (1) a binomial distribution of the observations, (2) the tissue guideline is exceeded in XX% of the samples, and (3) a false de-listing (de-listing when in fact is should not be) confidence level of XX percent. Therefore, de-list a water body or site if standards are not exceeded in at least XX temporally independent samples. For sample sizes greater than XX, the number of samples that may exceed the standard will be calculated using Microsoft Excel® function:

CRITBINOM (sample size, XX% exceedance probability, XX% false de-listing confidence level).

## **Listing Factor 5: Beach Postings and Closures**

**Issue:** How should beach postings and closures be interpreted?

**Alternatives:**

1. Do not use this factor.
2. Interpret case-by-case.
3. Establish consistent value to trigger listing.

**Language for Discussion:**

Coastal and inland bathing areas have been posted more than 37 days per year for at least two out of three consecutive years or for at least three years out of six consecutive years. Permanent postings backed by bacterial indicator densities measured in the segment shall also be used for this assessment. This factor shall be used to translate appropriate narrative water quality objectives.

Beach Closures are acute episodes usually caused by a sewage spill or another kind of single source contamination. Closure events should be addressed by enforcement of existing permits, waste discharge requirements, basin plans, and other regulatory authority. TMDLs should be used to address beach closures if they cannot be address by other means.

## Listing Factor 6: Toxicity

**Issue:** Toxicity measurements can assess the response of aquatic organisms to pollutants. The use of a number of different organisms ensures a greater opportunity to identify problematic conditions. Toxicity can be assessed in relation to either complex mixtures or individual substances. It can also be evaluated on the basis of acute or chronic exposures in test systems. The determination of an array of toxicity testing endpoints ranging from lethality, through critical life stages, will allow the evaluation of a variety of effects.

### Alternatives:

1. Do not use this factor.
2. Interpret case-by-case.
3. Establish consistent value to trigger listing.
  - Options:
    - Establish number of hits to list or number of "no hits" to de-list (e.g., two or more tests with significant toxicity, one test in past 7 years with significant toxicity, etc.)
    - Establish percent difference from control that should be used to determine toxicity
    - Use BPTCP reference envelope approach to determine toxicity
    - Establish values and approach for association assessment
    - Binomial model (using low number of measurements)
  - More Options:
    - Exceedance percentage (1%, 5%, 10%, 20%, 50%, ?)
    - Listing confidence level (99%, 95%, 90%, 85%, 80%, ?)
    - De-listing confidence level (1%, 5%, 10%, 15%, 20%, ?)
  - Establish methods to use or that are acceptable.
4. Establish general very specific guidance on the requirements for the interpretation of narrative standards. State the types of interpretative guidelines that may be used. Provide guidance on how to interpret background toxicity.

### Language for Discussion:

Water or sediment exhibits toxicity associated with pollutants that is significantly different from the toxicity observed at reference sites or using reference conditions (*i.e.*, when compared to the lower confidence interval of the reference envelope or, in the absence of a reference envelope, is significantly toxic as compared to controls (using a t-test) and the response is less than 90 percent of the minimum significant difference for each specific test organism). This factor shall be used to translate appropriate narrative water quality objectives.

To determine whether toxicity exists, recurrent measurements (at least two separate sampling dates) should demonstrate an effect. Appropriate reference and control measures must be included in the toxicity testing. The acceptable methods include those listed in water quality control plans or used by

**DRAFT**

July 11, 2002

SWAMP, the Southern California Bight Projects of the Southern California Coastal Water Research Project, U.S. Geological Survey, U.S. Environmental Protection Agency's Environmental Monitoring and Assessment Program, the Regional Monitoring Program of the San Francisco Estuary Institute, and the Bay Protection and Toxic Cleanup Program (BPTCP).

Pollutants should be present in the media at concentrations sufficient to cause or contribute to toxic responses in order to satisfy this condition.

## **Listing Factor 7: Nuisance**

**Issue:** Many pollutants may be indecent or offensive to the senses. In these cases, the pollutants can cause a nuisance. Many types of data and information can support a finding of nuisance but the primary type is non-numeric information. The SWRCB and RWQCBs receive large amounts of non-numeric information as part of the section 303(d) listing process. These types of information are difficult to interpret in a consistent manner.

**Alternatives:**

1. Do not use this factor.
2. Use non-numeric data as ancillary information to support numeric lines of evidence.
3. Establish consistent value to trigger listing or specific interpretation guidelines for a finding of nuisance. Develop or use existing interpretation guidelines for qualitative, non-numeric data. Provide guidance on the principles of visual assessments (including photo documentation), a brief description of methods, their applications, and quality assurance practices for reducing error or subjectivity.
4. Determine on a case-by-case basis which non-numeric data should be used in the 303(d) assessments.

**Language for Discussion:**

Water or sediment exhibits a nuisance (as defined in Water Code Section 13050(m)) measured in the segment. This factor shall be used to translate appropriate narrative water quality objectives and findings of nuisance. Both numeric data and non-numeric data (visual assessments) should be used.

Visual Assessment is a technique to document waterway and watershed conditions and uses. It requires minimal technical equipment or training and relies primarily on the monitor's sensory abilities and common sense. There are two general approaches to visual assessments. The narrative approach involves the use of standardized forms to interpret visual (and other sensory) observations into words or numeric descriptions. There is also a photographic approach. Photographic monitoring, also referred to as "photo documentation," provides a permanent visual documentation of specific waterway and/or watershed conditions. Photographic monitoring may be used as a stand-alone assessment or may accompany a narrative assessment.

Visual assessments are attempts to document conditions from the viewpoint of the individual observer, and are therefore usually qualitative or, at best, semi-quantitative. This assessment can be used as a baseline for gross problem identification, or for tracking gross changes over time. It is assumed that, based on the visual results, a more in-depth monitoring program will be designed to evaluate specific non-point or point source pollution problems.

The following eight parameters can be used in visual assessments: Odor, algae, foam, turbidity, flow, oil, litter or trash, and color.



In addition to visual assessments, numeric data associated with odor, algae, foam, turbidity, flow, oil, litter or trash, and color shall be used to support listing or de-listing sites or water bodies.

## **Listing Factor 8: Adverse Biological Response**

**Issue:** Adverse effects on aquatic organisms may also be determined for necropsy or for morphological deformities, defects, or other pathological changes in specific tissues or organs. Lesions in these tissues are often correlated with death, deformity, or poor general fitness (condition indices) of animals, and include cancerous or precancerous transformations in tissues such as the gills, liver, reproductive organs, etc. Some abnormalities can, however, appear in the early stages of the development of more damaging pathologies that may be reversible (these are indications of exposure rather than actual adverse effects).

**Alternatives:**

1. Do not use this factor.
2. Interpret case-by-case.
3. Establish consistent value to trigger listing.

Options:

Use professional judgement of a qualified scientist to interpret data.  
Use only published reports of adverse biological response.

4. Establish values for association assessment

**Language for Discussion:**

Adverse biological response as compared to reference conditions measured in the environment is associated with pollutants found in resident individuals or pollution. Endpoints for this factor include reduction in growth, reduction in reproductive capacity, abnormal development, histopathological abnormalities, and other adverse conditions. Evidence that pollutants or pollution are capable of causing or contributing to the adverse condition must be associated with the adverse response. This factor shall be used to translate appropriate narrative water quality objectives.

Growth Measures: Reductions in growth can be addressed using suitable bioassay through measurements of field populations.

Reproductive Measures: Reproductive measures must clearly indicate reductions in viability of eggs or offspring, or reductions in fecundity. Suitable measures include: pollutant concentrations in tissue, sediment, or water which have been demonstrated in laboratory tests to cause reproductive impairment, or significant differences in viability or development of eggs between reference and test sites.

Abnormal Development: Abnormal development can be determined using measures of physical or behavioral disorders or aberrations. Evidence that the disorder can be caused by toxic pollutants, in whole or in part, must be available.

Histopathology: Abnormalities representing distinct adverse effects, such as carcinomas or tissue necrosis, must be evident. Evidence that toxic pollutants are capable of causing or contributing to the disease condition must also be available.

## **Listing Factor 9: Degradation of Biological Populations or Communities**

**Issue:** The analysis of community composition provides not only a direct assessment of impacts, but also an opportunity to identify indicator species, i.e., species that respond predictably or characteristically in the presence or absence of degraded conditions, such as those produced by a polluted environment. Due to the myriad of forces influencing the composition of a community or population, it is often difficult to determine whether pollution or pollutants are responsible for such changes.

Community structure (organisms that live in the water or sediments) can be used to assess whether sites with substantially similar physical characteristics differ in terms of the species present and numbers of individuals of each species. These types of measures focus on the population or community level. The results can then be analyzed using various indices, ordination techniques, principal component analysis, or other techniques to identify potential causes of any differences detected.

### **Alternatives:**

1. Do not use this factor.
2. Interpret case-by-case.
3. Establish consistent value(s) to trigger listing.

#### Options:

- Use professional judgement of qualified scientists to interpret data.
- Express factor in terms of changes in numbers, species diversity, indices of community metrics, etc.
- Identify appropriate reference conditions within watersheds or ecoregion
- Require assessment of before and after impact conditions

4. Establish values for association assessment

### **Language for Discussion:**

Significant degradation in biological populations and/or communities associated with the presence of elevated levels of pollutants or pollution. This factor shall be used to translate appropriate narrative water quality objectives.

This condition requires that the diminished numbers of species or individuals of a single species (when compared to a reference site) are associated with pollution or concentrations of pollutants or pollution. The analysis should rely on measurements from at least two stations. At least one site should not be degraded so that a suitable comparison can be made.

## **Listing Factor 10: Trends in Water Quality**

**Issue:** Federal regulations require the identification of waters not meeting or are expected not to meet water quality standards. EPA expects states to assess potentially threatened waters and to list waters which are expected to exceed standards during the listing cycle.

**Alternatives:**

1. Do not use this factor.
2. Interpret case-by-case.
3. Establish consistent value or approach to trigger listing that considers the factors that could influence trends in water quality.

Options:

- Specify minimum number of sampling periods (days, months, years, etc.) for trends
- Establish specific conditions for using trend analysis
- Specify statistical approaches for evaluating trend data
- Specify methods for considering: Seasonal effects, Interannual effects, changes in monitoring methods, changes in analysis of samples, etc.

4. Use antidegradation analysis to confirm if there are unreasonable impacts on beneficial uses. This alternative could be implemented using a process to classify surface waters of California under the three-tier system used in the Federal antidegradation regulations.

**Language for Discussion:**

Conditions in any one listing factor shows a trend of declining beneficial use support or water quality standards attainment.

## **Forming the California List of Surface Waters Not Meeting Water Quality Standards, the section 303(d) list, section 305(b) report, and the integrated water quality report**

**Issue:** A key portion of the listing process is deciding how to address water bodies and sites identified as not meeting water quality standards. The SWRCB and RWQCBs must also prepare both the section 303(d) list as well as the section 305(b) report. U.S. EPA has issued guidance (November 19, 2001) to have the States integrate these Clean Water Act requirements into one report.

**Alternatives:**

1. Place all waters that do not meet standards on the section 303(d) list. Do not use a watch list.
2. Place all waters that do not meet standards on the section 303(d) list and, for those waters with inadequate monitoring data, use a watch list or preliminary list (per the NAS recommendation) that sets priority for monitoring. The consequence of being placed on the watch list would be clearly described.
3. Integrate the section 303(d) and section 305(b) reporting requirements into the development of the California List of Surface Waters Not Meeting Water Quality Standards but modify certain aspects of the Guidance. This option we could clearly describe the purpose and need for each portion of the list. For example, a "Monitoring Priority List" could be created that would set State priorities for future monitoring. The categories could be patterned after the proposed categories presented in the U.S. EPA 2002 Integrated Water Quality Monitoring and Assessment Report Guidance except that all waters where water quality standards are not met will be included on the section 303(d) list.
4. Integrate the section 303(d) and section 305(b) reporting requirements into the development of the California List of Surface Waters Not Meeting Water Quality Standards. Implement the U.S. EPA guidance. Develop five categories of waters as proposed in the integrated report guidance. Present the consequences of being placed in each category.
5. Develop a multi-part listing process for 303(d) listing purposes and do not integrate with the 305(b) reporting requirements. Under this option we could clearly describe the purpose and need for each portion of the watch list. For example, a "Monitoring Priority List" could be created that would set State priorities for future monitoring. The categories could be patterned after the proposed categories presented in the U.S. EPA 2002 Integrated Water Quality Monitoring and Assessment Report Guidance.

**Language for Discussion:**

The section 305(b) report provides an assessment of all water bodies and identifies waters where beneficial uses are supported, partially supported, and not supported. The section 303(d) list identifies waters where water quality standards are not met and where Total Maximum Daily Loads are still required.

California's Integrated Water Quality Report shall identify each of the state's waters and describe the water quality of each water body by comparison to the appropriate state water quality standards. In performing this analysis, the integrated report shall be developed using the methodology presented below.

*RWQCB Recommendations*

The RWQCBs shall develop recommendations for each water body-pollutant/pollution combination for placement in the following categories:

1. Clean Waters List (Category 1): Waters with all beneficial uses met and all water quality standards attained.
2. Probable Clean Waters List (Category 2): Waters with some beneficial uses met and some water quality standards attained, but there is insufficient existing and readily available data and information to determine if the remaining uses and standards are met or threatened.
3. Monitoring Priority List (Category 3): Waters with insufficient existing and readily available data and information to determine if water quality standards are attained or beneficial uses are met.
4. The California List of Surface Waters Not Meeting Water Quality Standards (Category 4 or the section 303(d) list):
  - TMDL Completed List (Category 4A): Waters where beneficial uses are not attained and water quality standards are not met but TMDL(s) are approved for the water body.
  - Enforceable Program List (Category 4B): Waters where beneficial uses are not attained or water quality standards are not met but an enforceable program exists that will address the water quality problem in a reasonable time frame.
  - Pollution List (Category 4C): Waters where beneficial uses are not attained or water quality standards are not met but the problem is not caused by a pollutant.
  - The TMDL List (Category 4D): Waters where beneficial uses are not attained or water quality standards are not met and the problem is caused by a pollutant or pollutants. A TMDL is necessary to address the problem and is scheduled for completion.

*Integrated Report*

The SWRCB shall develop California's Integrated Water Quality Report containing the water bodies listed by category. The integrated report shall also contain the schedule for completion of TMDLs, priority ranking, and schedule for priority monitoring.

For the purposes of section 305(b), the integrated report shall contain:

1. An estimate of the extent that Clean Water Act (CWA) programs have improved water quality or will improve water quality.
2. Recommendations for future actions necessary and identification of waters needing action.
3. An estimate of the environmental, economic, and social costs and benefits needed to achieve the objectives of the CWA and an estimated date of this achievement.
4. A description of the nature and extent of nonpoint source pollution and recommendations for programs needed to control each category of nonpoint sources and the implementation costs.



## **Priority Ranking for the Water Quality Limited Segments Still Requiring TMDLs**

**Issue:** States are required to set priorities for waters on the section 303(d) list where the development of TMDLs is necessary.

**Alternatives:**

1. Do not present a TMDL priority setting method and allow each region to establish priorities depending on their needs and the requirements of the Clean Water Act and federal regulation.
2. Use the general TMDL priority setting factors presented in the listing approach used by the RWQCBs and the SWRCB in 1998.
3. Use the general TMDL priority setting factors presented in the listing approach used by the SWRCB in 2002.
4. If the list has multiple parts, establish priorities using general priority setting factors for each part of the list.
5. Do not link priority setting with the schedule for establishing TMDLs.
6. Use a numeric ranking system with each factor weighted appropriately.

**Language for Discussion:**

For the water bodies on the TMDL list, RWQCB should establish high, medium, and low priority categories based on:

- Water body significance (such as importance and extent of beneficial uses, threatened and endangered species concerns, and size of water body).
- Degree that water quality standards are not met or beneficial uses are not attained or threatened (such as the severity of the pollution or number of pollutants/stressors of concern) (40 CFR 130.7(b)(4)).
- Availability of funding and information to address the water quality problem
- Overall need for an adequate pace of TMDL development for all listed waters over the next two years.

**OR**

For the water bodies listed on the TMDL List, RWQCB shall establish high, medium, and low priority categories based on:

- Water body significance (such as importance and extent of beneficial uses, threatened and endangered species concerns, and size of water body).
- Degree that water quality standards are not met or beneficial uses are not attained or threatened (such as the severity of the pollution or number of pollutants/stressors of concern) (40 CFR 130.7(b)(4)).

## **TMDL schedule for the next two-years**

**Issue:** States are required to develop a schedule for completion of TMDLs. Federal regulations require a priority ranking for listed waters to guide TMDL planning for the next two years.

**Alternatives:**

1. Do not present a schedule setting method and allow each region to establish schedules for establishing TMDLs depending on their needs, priorities, and resource availability.
2. Use the general schedule setting factors presented in the listing approach used by the SWRCB in 2002.
3. Do not link priority setting with the schedule for establishing TMDLs.
4. Establish consistent, specific approach for establishing schedules for establishing TMDLs.

**Language for Discussion:**

For the water bodies on the TMDL list, RWQCB shall develop a schedule for those waters needing a TMDL using the following categories:

1. Those waters given a high priority are targeted for TMDL completion in the next two years.
2. Medium priority to be addressed within 5 years.
3. Low priorities will be completed in more than 5 years.

**OR**

For the water bodies on the TMDLs list, RWQCB should develop a schedule for those waters needing a TMDL using the following factors:

- Availability of funding and information to address the water quality problem
- Overall need for an adequate pace of TMDL development for all listed waters over the next two years.

## **Definitions**

**Issue:** Many terms need definition so they are consistently used.

Some terms and potential sources of a definition are:

- Pollutant—CWA, Porter-Cologne
- Pollution—CWA, Porter-Cologne
- Contaminant—Porter-Cologne
- Exotic/Invasive Species—Public Resources Code
- Controllable sources—Basin Plans
- Uncontrollable sources
- Natural source of pollution/pollutant
- Water quality standards—CWA, federal regulation
- Beneficial use—Porter-Cologne
- Water body
- Reach
- Water quality limited segment—Federal regulation
- Alternate enforceable program (and examples)
- Nuisance—Porter-Cologne
- Impairment, Impaired



**Winston H. Hickox**  
*Secretary for  
Environmental  
Protection*

# State Water Resources Control Board

## Division of Water Quality

10011 Street • Sacramento, California 95814 • (916) 341-5560  
Mailing Address: P.O. Box 944213 • Sacramento, California • 94244-2130  
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**Gray Davis**  
*Governor*

October 11, 2002

Members and Alternates:

### MEETING OF THE AB 982 PUBLIC ADVISORY GROUP

The AB 982 Public Advisory Group (PAG) will meet on October 22, 2002 from 9:00 a.m. to 4 p.m. at the California Chamber of Commerce located at 1215 K Street, Suite 1400 Sacramento, California.

Please find enclosed the meeting agenda and the documents supporting some of the agenda items. If you are planning to have handouts, please bring at least 40 copies for the PAG members and audience.

If you have any questions regarding the PAG or the meeting, please call me at (916) 341-5560. You may also call the liaison to the PAG, Laura Sharpe at (916) 341-5596.

Sincerely,

Craig J. Wilson, Chief  
TMDL Listing Unit  
Division of Water Quality

Enclosures

cc: Interested Parties

AB 982 Public Advisory Group

Tuesday, October 22, 2002  
9:00 a.m. to 4 p.m.

California Chamber of Commerce  
1215 K Street, Suite 1400  
Sacramento, California

**AGENDA**

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- |   |                       |
|---|-----------------------|
| 1. <i>Convene Meeting – Co-Chairs</i>   | 9:00 a.m. – 9:05 a.m. |
| 2. <i>Introduction</i>  | 9:05 a.m. – 9:10 a.m. |
| • Steve Ekstrom   |                       |
| • Description of the meeting: Concepts for the SWRCBs Listing and De-listing Policy, 2002 Section 303(d) List Update, TMDL Guidelines Development, and the Future Direction of the PAG. |                       |
| 3. <i>July 23, 2002 Meeting Summary</i>   | 9:10 a.m.—9:20 a.m.   |
| 4. <i>Update on the Section 2002 303(d) List</i>  | 9:20 a.m.—11:00 a.m.  |
| • Craig J. Wilson   |                       |
| • Brief discussion on progress and next steps   |                       |
| • Dialogue  |                       |
| 5. <i>Concepts for the Listing/ De-Listing Policy</i>   | 11:00 a.m.—12:00 p.m. |
| • Co-Chairs   |                       |
| • Review of Environmental and Regulated Community Comment Letters   |                       |
| • Dialogue/Discussion   |                       |
| 6. <i>Lunch</i>   | 12:00 p.m.—1:15 p.m.  |
| 7. <i>TMDL Guidelines Development</i>   | 1:15 p.m.—2:30 p.m.   |
| • Tom Mumley  |                       |
| • Dialogue/Discussion   |                       |
| 8. <i>Break</i>   | 2:30 p.m.—2:40 p.m.   |
| 9. <i>Future Direction of the PAG</i>   | 2:40 p.m.—3:45 p.m.   |
| • Co-Chairs   |                       |
| 10. <i>Wrap- up and Next Steps</i>  | 3:45 p.m.— 3:55 p.m.  |
| 11. <i>Public Comment</i>   | 3:55 p.m.— 4:00 p.m.  |
| 12. <i>Adjourn</i>  | 4:00 p.m.             |

## Agenda Item 3

### July 23, 2002 Meeting Summary

## **AB 982 Public Advisory Group**

Coastal Hearing Room  
Cal/EPA Building  
1001 I Street  
Sacramento, California

### *Meeting Summary*

Tuesday, July 23, 2002

**Convene Meeting:** Co-Chairs Craig Johns and Linda Sheehan opened the meeting at 9:08 a.m. and declared a quorum.

**Introduction:** Steve Ekstrom, PAG facilitator, asked members to introduce themselves. He gave a description of the agenda noting that a central purpose of the meeting was to get PAG's input on the issues cited in a staff report that need to be addressed for the development of the listing/de-listing policy.

Linda Sheehan also noted a few items: Dave Paradies will be serving as an alternate for Barbara Vlamis, and Leo O'Brien (not in attendance today) of San Francisco Bay Keepers, will replace Jonathan Kaplan on the PAG. Linda also read the environmental caucus' position on Waste Discharge Requirement waivers. Linda submitted the following text of what she read for the minutes:

"We the members of the Environmental Caucus of the AB 982 Public Advisory Group, strongly support controls on all discharges that may impact the health of California's waters. We particularly support the development of effective programs to replace waste discharge requirement waivers that are due to expire on January 1, 2003 pursuant to SB 390. These exemptions from the state's clean water act have caused many of the impairments that the state is now struggling to identify, prioritize, and clean up. We urge the state to vacate existing waivers by the January 1<sup>st</sup> statutory deadline and replace them with requirements that will protect California's waters from further degradation and ensure that we work expeditiously toward achieving water quality standards in all impaired waters. We would welcome the opportunity to work closely with the Regional Boards, State Board, and the regulated community to develop a workable and effective interim and longer term programs to replace these waivers."

**Summary of the April 8, 2002 meeting:** The summary was accepted as mailed.

**Update on the 2002 Section 303(d) List.** Craig J. Wilson mentioned that the draft report on the 2002 Section 303(d) list was prepared in early April, followed by hearings. The Water Board received 190 letters and 360 pages of testimony, with a total of 1526 comments. Volume 4 of the report will contain the Board's written response to comments. Next steps include presenting the report to the Board in September, a



September workshop, and final submittal to USEPA in October. If data re-evaluation is needed, the submittal of the Section 303(d) List will be delayed.

A member asked if the PAG can have a copy of the Water Board's comments on U.S. EPA's CALM Guidance – the answer was yes.

**Concepts for the Listing/De-Listing Policy:** Craig Wilson introduced the document mailed in advance to the PAG that delineates issues that need to be addressed. He pointed out that these issues would form the basis of the listing/de-listing policy. Regarding the schedule, following receipt of feedback in July, a functional equivalent document will be prepared by the end of October 2002 and released in November or December. Hearings will likely be held in the spring of 2003.

The PAG decided to begin with a discussion of the issue outlined on pages 45/46, "Forming the California List of Surface Waters Not Meeting Water Quality Standards."

PAG comments included:

- The environmental caucus is not comfortable with having more than one list; a *separate monitoring list is unnecessary.*
- One list, if done well, is OK with the regulated community, other lists may be good management tools.
- Perhaps having one list with three or four parts is OK.
- More lists do not accomplish more clean up of the waters.
- Region 5 has very little monitoring right now, and this is of major concern, as is funding for the monitoring.
- A "reasonable" time frame for a monitoring list seems like a bad idea, don't go reasonable go aggressive.
- Pick a direction, be clear, make it defensible and go with what is right and leave it for discussion.

Overall summary of the discussion supported by both caucuses: a simpler, more condensed list is advisable. By developing several lists, it gives the impression that staff is trying to please too many parties. Staff should pick a direction and support it, even if it means not everyone will be satisfied. The 303(d) list should be the list that requires TMDLs for water bodies that are impaired.

The PAG then directed its attention to page 2 of the handout, "Scope of the Listing/De-listing Policy." Does the list get revised as new data is available? How does one determine if a listing is justified? When it is determined that a water body should be listed or de-listed? The environmental caucus is opposed to more and more reviews of the list, believing that an initial review at the problem statement phase of a TMDL should be sufficient. The regulated community is comfortable with doing an assessment at the problem level stage, but there should also be other ways to further assess.

**PAG comments included:**

- The regulated community suggests review of the entire 1998 303(d) List once the policy is in place, the list (98') should be gone through, not just carried over.
- We must apply the policy to the list even if it's incrementally, otherwise the policy has no integrity. The policy will only be as good as the list.
- The environmental community feels that resources spent on re-assessing and reviewing waters on the 1998 List would be wasteful. Resources that are already limited should be directed towards cleaning water bodies.
- There are more waterbodies listed with every cycle, with the waters always getting dirtier. Whatever policy is in place there will always be more waterbodies listed than de-listed. The waters aren't getting cleaner.
- We just can't keep revisiting the waters that were listed in the past, we need to move forward. The waters that were listed inappropriately is a small portion of the waters listed appropriately that are impaired.
- Water bodies that are clean shouldn't be listed. There are already situations and times when the list should be reviewed such as; during TMDL development, triennial review period, and the interim permitting stage.

Staff pointed out that staffing limitations preclude a full review of the old list. It was suggested by a PAG member that perhaps the PAG should develop funding suggestions for assessing the old list.

After much discussion, the PAG did not achieve any consensus points on these issues.

**Public comment:** just before the lunch break the public was invited to comment.

- Regarding the staff limitations on assessing waters on the old list, perhaps they could do a "practice" reassessment, e.g., assess 5 water bodies, and see what the impact is. This could then be extrapolated out to determine the impact of a broader reassessment.
- To assess waters on the old list, get outside funding from a third party. This wouldn't impact staff and wouldn't hold up TMDL efforts.

**Comments from the Executive Director:** Celeste Cantu addressed the PAG about budget issues. The Water Board's top priority continues to be TMDLs. To date, the monitoring budget is not affected by proposed budget cuts, and no lay-offs are expected. If cuts are required, the Water Board will prioritize actions by threat to water quality so that the waters of greatest concern will still receive attention.

**Concepts for the Listing/De-Listing Policy (continued):** Discussion followed after the lunch break. Staff asked the PAG to discuss the issue on page 18, "How should numeric water quality standards be interpreted?"

PAG comments included:

- Binomial and best professional judgment, and other judgments, should be used.
- There should be consistency across regions.
- Use existing criteria.
- Take magnitude into consideration.
- There should be high confidence to get on or off the list.
- Regional boards should not set confidence levels.

*Important note: because the PAG was unable to comment on all the issues in the staff report, there was concern that a different method of getting input was needed. After discussion it was agreed that the environmental and regulated communities would meet separately to develop their views on the issues and each would submit their written comments to staff by August 23.*

**Legislative Report:** Laura Shape updated the PAG on the development of the annual report to the legislature. She noted that the report would include a list of TMDLs completed, and those that are being worked on. Narratives would accompany each. Laura also noted that the draft report would be available for PAG comment in late September or early October.

Comments from the PAG included:

- Review SWAMP rotating basin strategy and speculate when you might be able to use the data. Compare the real cost to the 2002-03 budget.
- Articulate the concern that the legislature not cut monitoring funding that the Water Board and PAG had strongly advocated for.
- Appreciation to staff for including some of the PAG's previous concerns in the legislative report, e.g., an accounting of TMDLs, schedules showing deadlines, and including monitoring information.

**Update on SWAMP:** Del Rasmussen provided the update noting that 2001-02 represented a strong coordinated effort of the regional boards. They had a \$3.5 million budget in which 95% of data collection was completed and 75% of lab analyses were completed. Since 2001, 400 water bodies have been sampled in 250 watersheds. The Scientific Planning and Review Committee (SPARC) should be issuing its report soon.

The projected budget for FY 2002-03 is \$3.35 million, which represents a \$250,000 reduction in monitoring (\$500,000 reduction total, including SMP, TSMP, and Toxicity Testing).

PAG members expressed strong concern for the cuts:

- The cut was made without consultation with the PAG
- PAG lobbied hard for monitoring monies, and should know in advance if they are slated for cuts.
- Why were these cuts proposed if TMDLs represent a top priority program?

Other PAG comments included:

- New and better monitoring is happening.
- The lab contracting process is problematic; the PAG should write a letter to the Water Board about improving the contracting process.

**Public Comment:** One person commented that they appreciated PAG's concern for the possible cuts to the monitoring budget. The trend in funding monitoring should be up, not down.

**Wrap-up and Next Steps:** It was agreed that the next meeting of the PAG would be on October 22, 2002 in Sacramento.

**Adjournment:** The Co-Chairs adjourned the meeting at 4:00 p.m.

## Agenda Item 5

### Concepts for Developing a Policy for Listing and De-listing on California's 303(d) List

# AB 982 PAG REGULATED CAUCUS

September 14, 2002

Craig J. Wilson, Chief  
TMDL Listing Unit  
Division of Water Quality  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812

Via Electronic and U.S. Mail

**SUBJECT: AB 982 REGULATED CAUCUS COMMENTS REGARDING THE  
“DRAFT CONCEPTS FOR DEVELOPING A POLICY FOR  
LISTING AND DE-LISTING ON CALIFORNIA’S 303(d) LIST”  
(Dated July 11, 2002)**

Dear Craig,

On behalf of the membership of the Regulated Caucus of the AB 982 Public Advisory Group (PAG), I am pleased to provide our comments regarding the draft Listing Concepts (dated July 11, 2002) as presented at the July 23, 2002 PAG meeting. We hope you will find these comments helpful as you prepare the draft Listing and De-Listing Policy for public review and comment.

As an initial comment, we believe many of the principles employed by the SWRCB in reviewing the regional board listing submittals for 2002 are sound and should be further developed and carried through to the Listing and De-Listing Policy. These include:

- Establishment of a “Watch” List for waters where data is insufficient to make an impairment determination; where the stressor is unknown, and where an alternative enforceable program is in place,
- De-Listing where the impairment is due to natural conditions;
- De-Listing where data show no impairment of beneficial uses.
- Requiring water body specific information for listing;
- Development of a “TMDLs Completed” List.

In short, we believe the SWRCB has begun to move in a positive direction with the 2002 303(d) Listing process, and we offer these comments to help ensure a workable, technically sound Listing Policy for future listing cycles.

## **AB 982 PAG REGULATED CAUCUS**

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TMDL Listing Unit, SWRCB  
September 11, 2002  
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### **Scope of the Policy (Page 2)**

The Regulated Caucus strongly supports reviewing all listed waters for consistency with the adopted policy. We endorse the discussion language (paragraph 3) that states that each water body on the 2002 list shall be evaluated using the provisions of the policy, as a one-time reassessment. This review is appropriate, as the State has never before employed a consistent listing policy subject to public review and comment. This approach is endorsed by the U.S. EPA in its forthcoming "Watershed Rule", as well as by the National research Council.

The 2002 list will include waters that have been "grandfathered" in over time and that were never subject to any structured or meaningful review. This assessment is also necessary if the Listing Policy is to be credible and meaningful, as some 1400 water quality limited segments are already listed. Adopting a "blinders on" approach to these listings will not serve the goal of developing a list of waters for which TMDLs are to be completed. The Regulated Caucus rejects the position, argued by members of the Environmental Caucus at the July 23 PAG meeting, that requiring a review of previously "grandfathered" waters will result in unreasonable TMDL development delay, or invite continuous challenges. Indeed, this approach is consistent with the "triage" approach to listing and TMDL development recently advocated by SWRCB Chair Art Baggett.

The concept paper states that the policy will be used to interpret existing narrative standards. We do not oppose this concept outright. We continue to maintain, however, that narrative objectives may not be used as a substitute for, or to implement new, numeric objectives without first adopting those numeric objectives in accordance with Sections 13241 and 13242 of the Water Code. Any numeric values which are used as the basis for 303(d) listing are being used in exactly the same manner that adopted numeric water quality objectives would be used. Therefore, the policy should require that numeric "guidelines" used as the basis for 303(d) listing as an interpretation of a narrative objective either be adopted as water quality objectives under the Water Code procedures or that the numeric guidelines be adopted as part of the 303(e) continuing planning process subject to notice and comment.

### **Process: RWOCB and SWRCB Approval of Proposed List (Pages 3-4)**

The Regulated Caucus supports Alternative 3, management of the process by both the regional boards and the SWRCB. The regional boards should apply the policy and the SWRCB should review the regional board listings for consistency with the policy.

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We endorse the process laid out in the discussion section, in particular the regional board adoption of Fact Sheets for each listing decision. We do believe it is important to clarify that new information may be brought forward at each stage of the process, up until SWRCB adoption, within reasonable parameters established in the policy. Precluding such information is in conflict with the Clean Water Act requirement that all "readily available information" be considered when making listing decisions.

**Existing and Readily Available Data and Information (Pages 5-6)**

As required by federal rules, the policy should require the state and regional boards to assemble all existing and readily available water quality-related data. State and regional boards should solicit data from all available sources including federal, state, regional and local agencies and institutions, environmental and volunteer groups, private and public organizations, watershed groups, tribes, point and non-point dischargers and private individuals. Data from the SWAMP should be provided to the regional boards.

Once assembled, the policy should then provide the minimum quality assurance and quality control requirements that will allow the boards and the public to evaluate and ensure that data is credible and scientifically defensible so as to assure that all listing and de-listing decisions are appropriate. (See comments regarding Data Quality below.) Any listing/de-listing decision not supported with sufficient, credible data will be flawed, increasing the likelihood of administrative and judicial challenges.

The policy should require that all data must be reviewed and presented in the 305(b) water quality assessment report. Data not used for impairment assessment should be included in the report with comments on why it was not used. The policy should allow for use of data that does not meet minimum QA/QC requirements only if the missing elements will not impact the quality of the listing determination.

With regard to the specific information enumerated, we recommend that the use of Toxics Release Inventory estimates be limited to a support role, e.g. to validate that significant sources exist for a listed pollutant in a listed water body. TRI estimates should never be used as the sole basis for listing, as this information has no direct relationship to pollutants being discharged to a water body and therefore does not provide a credible impairment indicator. Similarly, data used to support a fish advisory or beach posting/closure should be employed as the basis for listing, rather than using the advisory or closure itself as the sole basis for listing



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The policy should specify that predictive models alone are insufficient for determining impairment, and that ambient data are necessary to document actual conditions.

**Solicitation of Readily Available Data and Information (Pages 7-8)**

The Regulated Caucus supports Alternative 3, requirement of specific data submittal and quality of data acceptable for use in listing. We believe that the discussion language set forth is a good approach to data submittal, and we especially support the statement that data already submitted to the regional boards, such as discharge monitoring reports, need not be re-submitted during the listing process. We believe it would be helpful to clarify that ambient receiving water data and information is the primary type of data to be used in the 303(d) listing process.

Anecdotal information by itself should be given lower credibility, and in general should be used as a basis for listing only with additional supporting data or information. We also recommend that the proposed list of parties from whom data for 303(d) listing will be requested be expanded to include local public agencies and watershed groups. These parties often have information about a given water segment that meets the data quality requirements, and must be considered.

**Assessment Methodology (Pages 9-10)**

The Regulated Caucus supports Alternative 11, development of a California-specific Weight-of-Evidence Approach. We believe that many elements of the work done in other states, including Arizona and Florida, are scientifically sound and should form the starting point for the California policy. Moreover, these elements have been thoroughly vetted in the public processes before those rules were adopted and, in the case of the Florida rule, approved by U.S. EPA.

Many of these specific elements are discussed subsequently in our comments regarding particular listing factors. Contrary to the discussion language presented in this section, we do not agree that the following conditions are sufficient to serve as the sole basis for listing:

- (1) Data exceeds drinking water MCLs (MCLs are applicable to tap water, not to ambient waters);

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- (2) Beach postings or closures (Beach closures and postings occur for reasons unrelated to ongoing water quality impairment. See subsequent comments);
- (3) Consumption of aquatic species (we are unclear what is meant by this factor but we do not agree that fish or shellfish consumption advisories are acceptable as the sole basis for listing, unless the basis for these advisories has been adopted as existing, legally-adopted state water quality objectives).

We also support the requirement that multiple lines of evidence be considered using a variety of listing factors such as adverse biological response and degradation of aquatic life populations or communities. These factors are not sufficient by themselves as a basis for listing since these responses may be attributed to factors other than exceedances of water quality objectives (i.e., physical habitat limitations).

### **Documentation (Pages 11-12)**

We support Alternative 4, requiring the regional boards to submit specific information in a standard format to allow the SWRCB and the public to have a clear idea of the source, quality, and quantity of the data used for listing. The Regulated Caucus believes it is critical that the Fact Sheet clearly identify the water quality standard that is exceeded and the basis for that determination. For example, if the basis for the determination is an exceedance of a narrative criterion, the translator used or the basis for the decision must be laid out in a manner transparent to all stakeholders." In the language for discussion, a number of items are described in relation to numeric data. In addition to the number of samples exceeding a guideline or standard, we recommend that the degree or magnitude of the exceedances also be provided, similar to the item under non-numeric data and information ("perspective on magnitude of problem").

### **Interpreting Narrative Water Quality Objectives (Pages 13-15)**

The determination as to when a narrative objective is being attained is inherently less objective and consistent than for numeric objectives. Therefore, the policy should provide for a quantitative, objective manner to determine when a water body is impaired based on narrative objectives. Federal guidance recommends that states translate narrative objectives, but federal regulations do not identify numeric advisory guidelines

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as the sole basis for listing based on narrative objectives. The requirement to "assess" or translate narrative objectives can be implemented using an approach similar to that outlined in several Basin Plans. In the Central Valley Basin Plan, for example, the regional board is directed to use biological measures (toxicity tests or results from biological studies) to interpret the narrative toxicity objective. Where biological effects are seen, a connection to a specific pollutant must be demonstrated. In cases where the evidence that a specific pollutant has produced an observed biological effect is compelling, the listing of a water body for that pollutant on the basis of the narrative objective would be warranted.

As noted above, the Regulated Caucus does not support the proposed approach of using narrative objectives as an avenue to use numeric "guideline" values that have never been subject to public review and comment as de facto water quality objectives. Unless directly adopted as numeric water quality objectives under the process specified in Sections 13241 and 13242 of the Water Code, the "guideline" values listed in the table on page 14 should *not* be used as the basis of 303(d) listing decisions. For factors such as fish advisories and beach postings, the necessary step is to adopt the numeric threshold values used as the basis for setting an advisory or posting a beach as numeric water quality objectives.

We recognize that this may be an onerous task, but to do less would entirely subvert the process for establishment of water quality objectives that is mandated in the Water Code. Water quality objectives are the cornerstone of both the State and federal regulatory processes. End-running the Water Code process eliminates the critical step in the statutory process wherein the SWRCB and regional boards balance important values and set objectives that are reasonably attainable.

### Listing and De-Listing Factors (Pages 16-17)

The Regulated Caucus supports Alternative 4--List only for controllable sources of pollutants or pollution. Establish statewide policy for determining the standard if background concentrations of naturally occurring substances are high.

A water body should not be included on the 303(d) list if pollutant loadings (or pollution) are known to be from naturally occurring conditions alone and are the cause of non-attainment of water quality standards. Instead, the waterbody should be included on the "Watch" list to allow reevaluation of the water quality objective.

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There are several situations in Region 4 (Los Angeles), for example, where water quality objectives were developed in 1975 to reflect background conditions. Unfortunately, the data used to establish the background conditions do not reflect temporal or spatial conditions of the water body. These objectives were developed based on limited data sets and were only intended to reflect water quality conditions at a specific location (where sampling occurred) within the waterbody. Over the years these objectives have been reinterpreted to apply throughout the entire stream reach, and in some cases, objectives originally adopted as flow-weighted annual averages have been re-interpreted as "never to exceed" maximums. In cases where the objectives were based on background conditions, a reevaluation of the objectives is warranted prior to a final determination of impairment. Furthermore, U.S. EPA recommends that under conditions where it is suspected that standards are not attainable due to natural biological, physical, and/or chemical limitations, irreversible man-made factors, or economic reasons, a Use Attainability Analysis (UAA) be conducted to analyze these factors and confirm non-attainability.<sup>1</sup> The UAA is used to substantiate a change in designated uses and corresponding standards.

Additional information that should be considered when determining whether a water quality standard is exceeded due to naturally occurring substances includes soil type, geology, hydrology, flow regime, biological communities, geomorphology, climatic factors (e.g., drought conditions), natural processes, and anthropogenic influences in the watershed. In particular, the SWRCB should carefully consider the way in which drought conditions should be considered, given the fact that large amounts of water are moved from one basin to another in California, and changes in water quality in one basin can therefore dramatically affect the water quality in another basin. This has become a particularly thorny issue in southern California (Regions 4 and 9) due to the establishment of mineral objectives based on "background" conditions in the 1970s (as described above), when water imports may not have been occurring (or the quantity or quality of imported water may have been different). We appear to be moving toward a situation where dischargers to effluent dependent waters are being asked to treat wastewater (or dewatered groundwater) to the level necessary to "correct for" drought conditions. We would consider drought to be a "natural condition," but currently drought is being considered to be the "critical" condition for which the TMDL must correct.

With regard to the other alternatives included in this section, we disagree with the characterization of their legitimacy and legality. Alternative 2, for example, states that it would not be legal to exclude from listing those waters where a water quality objective is

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<sup>1</sup>Reference EPA website at <http://www.epa.gov/waterscience/models/allocation>

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exceeded but the beneficial use is not impacted. We strongly disagree with this statement. A water quality standard consists of a beneficial use AND the criterion to protect that use. A water quality standard is both the use and the criterion, together. The criterion has no independent relevance—it is established at a level necessary to protect the beneficial use.

The concept paper also suggests that exclusion of short-term events such as spills and permit violations from the list may be inconsistent with federal regulations. We believe it is not only consistent with the regulations but, more importantly, the language of the Clean Water Act. The Act calls for listing those waters where compliance with point source controls are not sufficient to attain water quality standards. Permit conditions are clearly point source controls, which, if violated, are not being complied with. In addition, U.S. EPA regulations affirm that waters need not be listed where an alternative enforceable program is in place. (CITE) Finally, U.S. EPA has approved listing policies in other states, including Arizona and Florida, which exclude short-term events from their listing approaches.

**Listing Factor #1: Numeric Water Quality Standards (Page 18)**

In general, the Regulated Caucus supports the binomial approach. We believe it would be helpful to establish a technical working group to flesh out this aspect of the policy and reach a common base of understanding for complicated statistical concepts regarding hypothesis testing. Among the issues that need to be addressed:

1. The selection of exceedance percentages and confidence intervals should be appropriate for the objectives in question (i.e. aquatic life versus human health objectives). Proper averaging periods must be considered in the analysis. Additionally, the exceedance frequency specified in the USEPA criteria documents should be evaluated.
2. The suggested statistical de-listing approach should only be applied to waters that are originally listed using the proposed statistical listing approach. Otherwise, waters that were listed using questionable data may be retained on the list due to the restrictive requirements on de-listing (see page 30, last table).
3. Criteria that will be used in selecting the values to be used for exceedance percentages and confidence levels will be important policy determinations if the proposed method is selected.

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4. The binomial approach does not take into account the magnitude or time duration of exceedances, and this may in some cases be problematic. For a toxic pollutant, for example, the actual toxicity is based on these factors (dose and exposure). Therefore, a limitation of the proposed approach appears to be that it does not address these important factors.

**Data Quality (Pages 19-20)**

The Regulated Caucus supports Alternative 3. The SWRCB should establish specific guidelines on the quality of numeric data to be used in the listing process. The minimum quality assurance and quality control requirements for data to be used in impairment assessments should be detailed in the policy and should include at least the following requirements:

- a quality assurance plan that identifies sampling methods, field and lab analysis, data management and personnel training.
- a sampling and analysis plan that identifies rationale for sampling sites, water quality parameters to be measured, sampling frequency and methods to ensure that samples are representative of temporal and spatial surface water quality and to ensure that data are reproducible.
- use of generally acceptable standard methods for data collection, presentation and analytical procedures.
- use of state licensed or certified laboratories
- use of test procedures identified in 40 CFR 136.

The above is consistent with US EPA Listing Guidance and CALM Guidance, which provide for the states to develop and implement data quality and evaluation requirements.

**Age of Data (Page 21)**

The Regulated Caucus supports the establishment of guidance on the age of data. In general, we believe that only recent data should be used, to ensure that TMDLs are being developed to address existing, rather than historical, conditions. Data greater than five years old should generally not be used. In some cases, analytical data older than this may be questionable (e.g., heavy metals such as mercury). Additionally, older data for sediment and tissue are not acceptable, as they do not account for depuration and fate

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processes which may have improved the levels. However, we agree that older data may be used on a case-by-case basis if used in conjunction with newer data to demonstrate trends.

**Water Body-Specific Information (Page 22)**

The Regulated Caucus supports the approach set forth in the discussion language requiring data for a specific water body to support listing, and that estimated, modeled or projected information not be used in listing or de-listing decisions. We note, however, that where model results are based on actual data for a water body and are used to amplify the understanding of a complicated problem, we believe that such information should be considered in the listing/de-listing decisions.

**Temporal Representation (Page 23)**

The Regulated Caucus endorses Alternative 2, establishment of specific guidance regarding temporal representation, including a requirement that no more than two-thirds of the samples should come from any one year. Data should be distributed over at least two distinct seasons (i.e., in California we really mean low flow and high flow seasons). There should be guidelines on how much data can come from low flow or high flow conditions (e.g., no more than 2/3 each) to avoid a bias to one condition. Again, the SWRCB should consider how the temporal sampling requirements will play out during drought conditions (which may last several years), and whether impairments due solely to drought are appropriate for listing. We also support the discussion language requiring sampling events to be temporally independent.

**Spatial Representation (Page 24)**

We support Alternative 2, establishment of general guidance on the requirements for spatial representation such that samples represent the intended geographical extent. We recommend that stations should be at least 200 meters apart.) For rivers/streams/coastline, a single station should not be used to represent more than 25 miles. For lakes, reservoirs and estuaries, one station should not be used to represent more than 25% of the area. Vertical profile guidance, is also warranted, especially in areas influenced by tides.

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**Minimum Number of Samples (Page 25)**

The Regulated Caucus supports Alternative 3, establishment of specific guidance regarding the minimum number of samples required for listing and de-listing. We are not able at this time to endorse a specific number of samples required for listing and de-listing. Instead, we recommend the formation of a technical working group to evaluate the issues identified in our discussion regarding interpretation of numeric objectives (pages 5-6, above.)

**Analysis of Numeric Data (PAGES 26-31)**

The Regulated Caucus supports Alternative 2, the use of the binomial model advocated by other states such as Florida, Nebraska, Texas, and Arizona. Numeric water quality standards should be interpreted using a binomial statistical approach that minimizes Type I and Type II errors.

We advocate using binomial statistical approaches to assess impairment determinations, as these approaches account for Type I and II errors. A Type I error in the context of impairment determinations would be falsely declaring a water body as impaired, while a Type II error would be falsely declaring a water body as un-impaired. Utilizing the binomial procedure allows Type I and Type II errors to be managed by controlling the number of samples, selecting acceptable and unacceptable exceedance rates, and/or by selection of cutoff values to declare a waterbody as impaired. The current "raw score" approach results in unusually large error rates (both Type I and Type II), and this method does not allow for the control of these error rates. With the binomial statistical approach, a Type I error rate may be selected, and the Type II error rate can be controlled through sample size. As sample size increases, Type II errors using the binomial method can be mitigated.

The Type I error rate (falsely determining a water body impaired) for the "raw score" method is very high relative to the binomial method. For example, with a sample size of 10 samples, the raw score approach results in a Type I error rate of 26%, which is roughly 3 times the error rate resulting from the binomial method. Type I errors, or false positives, result in the diversion of limited financial resources from actual to perceived water quality problems, and therefore the SWRCB should utilize a statistical approach that minimizes Type I errors.



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The Bayesian method is a version of the binomial approach that can be used as an alternative to the raw score approach. This method is also effective at minimizing Type I and Type II errors, and is particularly useful in controlling error rates in datasets smaller than 20 samples. The Bayesian approach however requires a basis for establishing a prior expectation about the condition of a water body or stream reach. Sites where there is a high prior belief that the site is impaired require fewer violations to declare impairment, whereas sites with a high prior belief that there is no impairment would require more violations to declare the site as impaired. Use of this method would become difficult and subjective when there is limited existing information about the condition of the water body. However, this approach may be warranted in cases where it is obvious that a use is not impaired even though the WQO has been exceeded in the waterbody and listing was justified based on the use of the "raw score" method. Such circumstances have been experienced in the Santa Clara River Watershed, for example, whereby various segments of the river were added to the 1998 303(d) list due to chloride levels in the river exceeding the WQO that was established in 1978 to protect agricultural crops. Although the river was listed as impaired due to chloride the avocado crops have continued to produce yields at their highest recorded levels. Conversely, this approach may be useful when the waterbody does not exceed any water quality objective, yet there is scientific evidence that shows an impaired use as a result of water quality conditions.

In addition, the Regulated Caucus supports using the "weight-of-evidence" concept for determining impairment. This approach provides assurance that water bodies will not be listed as impaired nor de-listed based solely on analyses of collected analytical data, but instead will be evaluated based on combined information from multiple lines of evidence. All appropriate water quality factors should be considered in addition to analytical data (including geology, hydrology, flow regime, climate and other natural processes and anthropogenic influences) when making impairment determinations. Also, consideration of the quality of data should be given when assessing the water body. For example, newer measurements (representing spatial and temporal conditions) should be given greater weight than older measurements, and more frequent data collection given greater weight than nominal datasets. We caution, however, that the approach must truly reflect a weight of evidence approach and not be used as a means to justify unfettered discretion in the guise of "best professional judgment." Guidance on how "weight-of-evidence" should be considered for listing and de-listing decisions should be developed by the SWRCB in an effort to provide consistency in the exercise of best professional judgment.

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**Listing Factor #2: Numeric Bacterial Water Quality Standards (Page 32)**

The Regulated Caucus supports Alternative 3, the use of a consistent trigger value that distinguishes between wet and dry weather conditions. Beach contamination in Southern California is particularly associated with wet-weather events. Case-by-case determinations lack the clarity that allows interested parties and the public to review and evaluate proposed listings. This approach requires development of an appropriate threshold number of exceedances over the standard, to determine impairment. This number should be consistent with a threshold for de-listing.

**Listing Factor #3: Health Advisories (Page 33)**

The presence of fish advisories should not be the basis for 303(d) listings. Health advisories are risk management tools adopted by other agencies (Department of Health Services, OEHHA, or county health departments) outside the jurisdiction of the Clean Water Act. TO address this issue within the context of the Clean Water Act, the numeric guidelines or threshold values used as the basis for setting advisories should be used in the 303(d) listing/TMDL process. As noted above, however, these values should only be used for listing where those values have been adopted as fish tissue objectives under the process specified in the Water Code.

Any health advisory levels to be used for listing should be adopted as water quality standards. In any event, one fish should not be sufficient – tissue levels from several commonly eaten fish weighted across various trophic levels using appropriate human health consumption data at each trophic level should be used to establish the true risk.

**Listing Factor #4: Fish Tissue (Pages 34-35)**

The Regulated Caucus supports Alternative 1—this factor should not be used for listing. Tissue pollutant levels such as National Academy of Sciences (NAS) Guidelines, U.S. Food and Drug Administration (FDA) Action Levels, Median International Standards (MIS), and Maximum Tissue Residue Levels (MTRLs) are informal guidance criteria, and are not water quality objectives adopted in accordance with state and federal legal requirements. If adopted numeric water quality objectives are not providing adequate use protection, then it is the obligation of the SWRCB and regional boards to modify these objectives in accordance with the Porter-Cologne Water Quality Control

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Act or to adopt and incorporate into the Basin Plans legally adequate translation mechanisms so that narrative objectives may be used in the interim while numeric standards are being derived. Listing waters based on informal criteria or guidelines that are not adopted as water quality standards circumvents the standard-setting process, and renders that process meaningless. (*City of Los Angeles et al. v. U.S. Environmental Protection Agency* (U.S. District Court, Central District of California, Western Division, No. CV 00-08919 R(RZx), December 18, 2001), "For toxic pollutants, where a State adopts narrative criteria to protect designated uses, the State must "provide information identifying the method by which the State intends to regulate point source discharges of toxic pollutants on water quality limited segments based on such narrative criteria." (Citation omitted) These procedures provide the public and regulated community with fair notice of what is expected of them, and also ensure that the narrative criteria have clear bounds and a rational basis for their implementation.")

**Listing Factor #5: Beach Postings and Closures (Page 36)**

The Regulated Caucus supports Alternative 1—Beach postings and closures, by themselves, should not be used for listing. As noted in the discussion language, closures are acute episodes caused by discrete events that can and should be addressed by enforcement of existing permits, waste discharge requirements and other regulatory authority. In some cases, the local health officer may close a beach as a precautionary measure based on a potential threatened condition (e.g., a reported sewer spill incident that reaches an inland water body or storm drain). Further investigation or receipt of additional information, however, may demonstrate that the waterbody was not affected (e.g., the spill was contained and never reached the beach). In cases like this it would not make sense to include the beach on the 303(d) list, as there was no actual impairment. Furthermore, TMDLs should be used to address water body impairments that are ongoing, not snapshots in time.

Where REC 1 and REC 2 are designated beneficial uses, water quality objectives are in place to protect these uses. These objectives provide a basis for reviewing water quality monitoring data to determine whether or not these waters are impaired. Using the number of beach postings based on beach sanitation standards is not a direct measurement to an **applicable** numeric standard.

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**Listing Factor #6: Toxicity (Pages 37-38)**

The Regulated Caucus believes it is imperative that a strong connection exist between a pollutant or pollutants and observed conditions to support a listing decision. Evidence of this connection should be sufficient to support the significant investment of resources on a TMDL for that pollutant. This comment applies equally to listing factors 7, 8 and 9.

Because we view toxicity tests as useful diagnostic tools rather than confirmations of impairment, we recommend that toxicity not be used as a listing factor (Alternative 1). Toxicity tests tell us that something is wrong, but unless we know the cause of the toxicity, it is not possible to address the problem through a TMDL or other regulatory tool. If toxicity is to be used, the SWRCB must develop very specific guidance on interpreting narrative standards (Alternative 4). A significant amount of work has been done evaluating WET methods, and the science is evolving. For example, a study conducted by the Western Coalition of Arid States (WESTCAS) showed that one WET method returned 43% false positives. In other studies conducted by U.S. EPA in response to litigation, U.S. EPA's own selected contract labs were unable to follow U.S. EPA's protocols consistently.

**Listing Factor #7: Nuisance (Pages 39-40)**

The Regulated Caucus supports Alternative 1—Conditions of nuisance should not be used for listing. We believe that use of a vague concept such as nuisance will allow circumvention of the data quality and quantity standards, narrative translators and other requirements set forth in the policy. Use of this factor will contribute to "drive-by" listings that are not based on credible, verifiable information.

We do not support the use of visual surveys, photographic monitoring or other anecdotal information as a basis for listing, particularly if there are no numeric objectives for the parameters being observed and the assessment of that information will be solely a matter of staff judgment. The problem with relying on such photographic or anecdotal information is best illustrated by the mirror situation, where someone seeks to de-list a water based on photographic or anecdotal information. In other words, relying on such information to make de-listing decisions would enable a party to take photographs or present anecdotal information contrary to the initial information, and a regional board would have to consider and weigh equally such information. We believe sound science

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dictates that only objective and verifiable information be used to make these important decisions.

**Listing Factor ##8&9: Adverse Biological Response; Degradation of Biological Populations or Communities (Pages 41-43)**

We reiterate our earlier comment that it is imperative that a strong connection exist between a pollutant or pollutants and these observed conditions to support a listing decision. Evidence of this connection should be sufficient to support the significant investment of resources on a TMDL for that pollutant. We do not support the use of these factors for 303(d) listing, though they may be used to identify areas where additional monitoring and study are needed to identify the pollutant or stressor causing the observed conditions. As mentioned previously, multiple lines of evidence should be considered, since these biological responses may be attributed to factors other than exceedances of water quality objectives (e.g., physical habitat limitations, disease, or invasive exotic species, none of which are conducive to a TMDL solution).

**Listing Factor #10: Trends in Water Quality (Page 44)**

Relying on "trends in water quality" to dictate TMDL listing and development decisions is indicative of the mindset that has evolved wherein the 303(d) list must include every conceivable water quality issue and every existing piece of water quality information. That is not the purpose of the 303(d) list, which is to set forth those waters that do not meet water quality standards and for which TMDLs are to be completed. Clean Water Act section 305(b) requires the states to prepare comprehensive assessments of all waters within the state. Clean Water Act section 303(e) requires the states to have a continuing planning process (CPP). The 305(b) Report and the CPP are the appropriate vehicles for reporting on water quality trends—not the 303(d) list.

**Forming the California List of Surface Waters Not Meeting Water Quality Standards – the Section 303(d) List, Section 305(b) Report, and the Integrated Water Quality Report (Pages 45-47)**

The Regulated Caucus supports Alternative 4, integration of the section 303(d) listing and section 305(b) reporting requirements as proposed in U.S. EPA's integrated report guidance. At the July 23, 2002 meeting of the PAG, there was significant

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discussion regarding Alternative 3, which calls for subdividing the 303(d) list itself into four categories: TMDLs completed, Alternative Enforceable Program, Pollution List and TMDL list. We support the policy direction of this approach, but cannot support adoption of an overly broad 303(d) list.

We believe it is perfectly appropriate for the SWRCB to track separately those waters impaired by "pollution" rather than "pollutants", to inventory waters where other enforceable programs are in place to attain standards, and to maintain a list of completed (but perhaps not fully implemented) TMDLs. However, we do not believe that these categories of waters should be included on the section 303(d) list. The 303(d) list should be the list of waters impaired by pollutants for which TMDLs will be developed. Other water quality concerns can be addressed by other programs.

Waters meeting standards, and threatened waters, should be inventoried in the comprehensive water quality assessment required under section 305(b), and may also be listed for advisory TMDLs under section 303(d)(3). The SWRCB should follow the direction outlined by the U.S. EPA guidance, where only those waters for which TMDLs are to be developed are included on the section 303(d) list. Any other approach may lead to confusion, debate about the legal significance of listing, and potentially, unworkable consent decrees.

The Regulated Caucus supports the establishment of a "Watch" or Monitoring Priority List as a part of the integrated report. The "Watch" list provides a mechanism to identify and track water bodies where more information must be collected to determine whether water quality standards (beneficial uses and water quality criteria or objectives) are attained. The Watch list is also an appropriate tool for reassessing waters when application of the "weight-of-evidence" approach shows there is no impairment despite the exceedance of a water column objective. In those cases, the water quality objective should be re-examined before embarking on the TMDL process. Water bodies on the "Watch" list should receive high priority for monitoring or further study before the next update of the 303(d) list. The policy should specify criteria for inclusion on the "Watch" list as well as the various other components of the integrated report.

**Priority Ranking for the Water Quality Limited Segments Still Requiring TMDLs  
(Pages 48-49)**

The Regulated Caucus supports the establishment of priority setting factors to be used by the regional boards. We support the discussion language, with one caveat. We

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caution that the overall need for an "adequate pace of TMDL development" not result in unrealistic schedules that will short circuit stakeholder participation in the process. We also recommend that the SWRCB consider adding another factor for prioritizing TMDLs. If restrictive interim permitting conditions are to be imposed upon point source dischargers, we believe that TMDLs for waters with point source discharges should be given higher priority. Lastly, we recommend that there be a requirement that an explanation for the priority ranking be provided in the Fact Sheet.

**TMDL Schedule for the Next Two Years (Page 50)**

The Regulated Caucus believes there should be a relationship between TMDL prioritization and scheduling. We support development of high priority TMDLs in the short term and lower priority TMDLs in the out years. We also believe complex TMDLs should be scheduled to begin early even if they may not be completed until after the two year time period. We do not want to end up with a number of complex, high priority TMDLs stacked up to be completed 10 years out.

Thank you for the opportunity to provide our comments on the proposed listing concepts. As always, we would be happy to discuss our recommendations with you and the members of the Environmental Caucus.

Sincerely,

AB 982 Regulated Caucus, by



Craig S.J. Johns, Co-Chair  
AB 982 Public Advisory Group

cc: Celeste Cantu, Executive Director  
Linda Sheehan, Co-Chair, AB 982 Public Advisory Group  
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September 13, 2002

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**Re:** Environmental Caucus Comments on "Draft Concepts for Developing a Policy for Listing and Delisting on California's 303(d) List" (July 11, 2002)

Dear Mr. Wilson:

On behalf of the Environmental Caucus of the AB 982 Public Advisory Group ("Environmental Caucus"), I am pleased to submit these comments on the State Water Resources Control Board's (SWRCB) "Draft Concepts for Developing a Policy for Listing and Delisting on California's 303(d) List" (Draft Policy). Our primary positions with respect to the development of a Draft Policy are as follows:

- **Scope:** The purpose of the Policy is not to interpret numeric standards, but rather to review data to assess compliance with standards. Accordingly, the Policy should not incorporate guidance on beneficial use de-designation or water quality standards revision.
- **Data:** All readily available data should be considered. QA/QC guidance should be reasonable and consider the amount and type of data that can be provided given available and prospective budgets.
- **Assessing Compliance with Water Quality Standards:** In evaluating whether a water segment meets water quality standards, the state should consider a variety of factors; one strategy (such as use of the binomial model) should not stand alone or trump other factors or strategies. Moreover, we believe the Policy should be specifically based on the premise that it should be easier to list and harder to delist, and accordingly there should be separate criteria for each process.
- **Contents of 303(d) List:** All water bodies that do not meet water quality standards must be on the list, and they cannot be removed until it has been shown that the water body has met standards over a minimum period. The Policy should be applied to new listings only. It should not be applied against current listings before moving forward; current listings will be evaluated as they come up in priority order. We do not support the use of a "Monitoring Priority List" or a "Probable Clean Waters List."
- **Public Access to Process:** Transparency and consistency in decision-making is essential, as is a reasonable level of public review and opportunity for comment. Public consensus with respect to listings is not required.



We provide further detail on these positions and raise additional issues in the text below. We will be providing additional technical comments on the Draft Policy, and will provide more comprehensive comments on the draft final Policy when it is made available for public review.

## I. SCOPE

Both pages 2 and 18<sup>1</sup> of the Draft Policy provide options to “interpret numeric water quality standards.” The purpose of the Draft Policy is not to interpret numeric standards; rather, its purpose is to review data to assess compliance with standards. We agree with the statements on page 2 that the Policy should not be used to revise water quality objectives or beneficial uses. Accordingly, we are opposed to Alternative No. 2 on page 2, which would incorporate beneficial use designation/de-designation and water quality standards revision into the listing policy guidance. Beneficial use designation and water quality standards revision are explicitly dealt with in other parts of the Clean Water Act, and therefore should be addressed outside this Draft Policy.

## II. DATA

As required in the regulations implementing Section 303(d) of the Clean Water Act, we believe that all readily available data should be used (see page 5 of Draft Policy). 40 CFR Sec. 130.7(b)(5). In accordance with this position, we have several specific comments on certain pages of the Draft Policy:

- p. 8 – Solicitation of Data. The last sentence of this section is confusing; it seems to state that the Regional Boards should not consider data unless it is delivered to them (such as through Discharge Monitoring Reports). We believe the Boards must actively seek out data as well (e.g., data from USGS, drinking water monitoring, SWAMP, and other databases) in accordance with the “all readily available data” regulation.
- p. 11 – Documentation. Since we support transparency of the listing process (see further comments below), we support approaches to documentation that fully memorialize Regional and State Board evaluation methodologies. In addition, because SB 72 (Kuehl) is supposed to standardize statewide the reporting format for stormwater monitoring information, we encourage the State Board to leverage SB 72 efforts. Finally, any documentation approach must be comprehensive enough to accommodate all types of data; we do not support an approach that would have the indirect effect of excluding or making it difficult to submit a particular type of available data.
- p. 16 – Listing/Delisting Factors. We do not support Alternative 3, and we are opposed to the statement that “In all cases, data and information that is collected during a known spill or [permit violation] shall not be used in the assessment of standards and beneficial use attainment.” Blanket exclusions such as this are contrary to the “all readily available data” policy called for by federal law. Likewise, we are opposed to Alternative 2, as it is

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<sup>1</sup> Page 26 also appears to address this issue; the topic of assessing compliance with water quality standards should be combined into a single section to avoid confusion.

illegal and promotes de-facto de-designation. As we have previously stated, neither designation/de-designation of beneficial uses, nor standards development or revision, should not be within the scope of a listing policy.

In addition, while we agree in concept that the discovery of clearly faulty data should be a trigger for a review of a listed segment, we would like to see an affirmative statement that delisting water segments that are based upon "faulty data" or "limitations related to the analytical methods that would lead to improper conclusions" cannot take place *unless affirmative information is proffered* to show that the water segment is not, in fact, impaired. The definitions of "faulty data" and "limitations related to the analytical methods" in the Draft Policy are loose. Outdated guidelines, for example, could conceivably fall under such a definition. As some members of the PAG Environmental Caucus have stated in their comments previously, such guidelines, while not current, may still indicate a problem. Before delisting, the Regional or State Board should show that despite such "faulty data" or "limitations," the water body is in fact not impaired.

- p. 19 – Data Quality. We support Alternative 5, under which QA/QC is only a consideration, and does not preclude readily available data from being considered. Since data are collected from many sources, the weight given to data in a listing decision can be based in part on an assessment of the quality assurance methods for the data and the degree of adherence to the quality assurance procedures.<sup>2</sup> Data supported by a Quality Assurance Plan (QAPP) pursuant to the requirements of 40 CFR 31.45 should be deemed acceptable for use in developing the 303(d) list.
- p. 21 – Age of Data. Again, we believe that all available data should be used, particularly given the low levels of funding for SWAMP and other monitoring programs. The age of data employed in a listing decision can be taken into consideration when making quality assurance assessments regarding the weight given the data.
- p. 22 – Water Body Specific Information. The term "actual data" should be defined, and should include photographs.
- pp. 23 *et seq.* – Temporal and Spatial Representation and "Minimum Number of Samples". These requirements should all be feasible; *i.e.*, cognizant of monitoring budgets. Infeasible requirements will guarantee that impaired waters will go unlisted. Along these lines, we reiterate our opposition to recent SWAMP budget cuts, as we articulated in the July PAG meeting. If the state will not commit to funding for even the most basic level of monitoring, it cannot place unreachable restrictions on what data can be used.

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<sup>2</sup> If the Policy is to include a list of monitoring groups and efforts, as the Draft Policy does, then it should also include, among others: NOAA, California Department of Fish and Game (for fish habitat surveys), California State Mussel Watch Program, California State Toxic Substances Monitoring Program, U.C. Davis Granite Canyon Toxicity Testing Laboratory, the California Aquatic Bioassessment Laboratory, the Sierra Nevada Aquatic Research Laboratory, the Monterey Bay Aquarium Research Institute, and the Central Coast Long Term Environmental Assessment Program.

- p. 23 – Temporal Representation. Regional Boards should establish temporal representation requirements on a case by case basis. Moreover, the suggested policy language is not appropriate because it presumes the existence of monitoring resources that do not currently exist and have never existed. While general guidance regarding desired temporal representation can be developed, it must consider available and projected monitoring resources, or impaired waters will go unlisted.
- p. 24 – Spatial Representation. Regional Boards should establish spatial representation requirements on a case by case basis. The other language on page 24 should be eliminated, since it sanctions a “one size fits all” approach to monitoring.
- p. 25 – Minimum Number of Samples. General guidance on minimum number of samples could be established as an aid to the Regional Boards, who should then establish on a case by case basis, considering sampling resources and other factors, the number of samples used to assess standards attainment. An unfunded mandate for high sample counts will not protect water quality.

## II. ASSESSING COMPLIANCE WITH WATER QUALITY STANDARDS

With respect to assessment of compliance with water quality standards, the Draft Policy does not specifically differentiate between criteria for listing and criteria for de-listing. As we have stated repeatedly, we believe it should be easier to list and harder to delist. Consequently, we believe there should be separate criteria for each assessment process, clearly laid out.

We also believe that a single strategy is not possible or reasonable. For example, the use of a single strategy approach for both dioxin and nitrate would not make sense. Required sample counts, percentage exceedances, and confidence limits are different for different substances, and need to be determined based on best professional judgment at the Regional Board level.

So, we would at a minimum be opposed to Alternatives 3, 5, 6, 7, 8 and 9 on page 9 as too narrow for listing to ensure listing of impaired waters with an adequate margin of safety. We also believe all of the data need to be considered as a whole, and so are opposed to the use of the binomial model alone, rather than as one factor in an overall assessment. The reasons for our concerns with use of the binomial model alone were discussed at the July 2002 PAG meeting, and include the following:

- aquatic life could be dead by the time you get enough exceedances to meet the threshold;
- bioassessments in particular can indicate impairment with fewer samples than proposed under the model;
- standards often don't permit the number of exceedances you would need to meet the model's parameters;
- the binomial model doesn't consider the magnitude of exceedances or exceedance trends, both of which can be very important;
- set exceedance percentages and listing/delisting confidence level percentages may not work for different parameters (causing more complexity than anticipated); and

- the method may be illegal (EPA is being sued over the Florida rule) because all reasonably available data must be used, and the binomial model alone ignores other data.

With respect to de-listing, the Draft Policy currently does not provide for the “margin of safety” called for in the Clean Water Act. For instance, a fixed time period will not be sufficient for many circumstances. As an example, if a harbor is listed for synthetic chemicals that adhere to fine sediment particles, it will need to be monitored for a sufficient period of time to include rainy seasons that drive the fate and transport of the substances. A Policy that had an appropriate delisting margin of safety would include guidance establishing a minimum (rather than fixed) sampling time period, as well as a minimum sample count.

Finally, with respect to the tissue discussion on page 34, many PAG members submitted Section 303(d) list comments to the State Board stating that we do not believe it is proper to delist water segments that were originally listed based on elevated data levels (EDLs), or outdated NAS guidelines, *unless affirmative information is proffered* to show that the water segment is not, in fact, impaired. For example, some Environmental Caucus members have stated that although the EDL is not a standard and is not directly related to a beneficial use, the fact that tissue levels in a given water body exceed levels in 85 or 95 percent of other water bodies may indicate a problem. The question is: do those elevated tissue levels have human health impacts? And do they impact the aquatic life that are accumulating these problems? Since the data are available, they should be compared to known standards where possible, and delisting should only occur if levels are below those known to affect human health or aquatic life.

### III. CONTENTS OF 303(d) LIST

With respect to the contents of the list, we strongly support Alternative #1 on page 16; that is, the water body should be on the list if any type of standard is not met. This is the only option that complies with the requirements in Clean Water Act Section 303(d). We also support the listing of waters that are expected to exceed standards during the listing cycle (*see* page 44).

As discussed at the July 2002 PAG meeting, we also strongly support the proposal on page 45 that the state reject past and current reliance on an “Enforceable Programs List,” a “Pollution List,” and a “TMDL Completed List” as lists separate from the Section 303(d) list. Members of the Environmental Caucus have submitted extensive comments on this topic (*see, e.g.,* Heal the Bay comments dated June 12, 2002; NRDC comments dated May 15, 2002, and NRDC Supplemental comments dated June 12, 2002). Water bodies that do not meet standards must be included on the 303(d) list, and TMDLs are required where the application of existing requirements has not resulted in water quality standard attainment. Given that the Clean Water Act requirements are twenty-five or more years old, and fifteen years old in the case of Section 402(p) (stormwater), it is abundantly clear that existing requirements have failed to attain standards for the pollutants on the list and associated waters.

Moreover, listed waters must stay on the list until they meet standards. This is the position approved by the vast majority of the members of the AB 982 Public Advisory Group (PAG) at our meeting on February 15, 2002. There is no basis in the Clean Water Act for

delisting a water body simply because a TMDL has been written. Section 303 of the Act mandates that impaired waters be listed; it does not grant EPA authority to allow states to remove waters from the list while the impairment is continuing.

We do not support the use of a "Monitoring Priority List" or a "Probable Clean Waters List" (as described on page 45). As we stated at the July 2002 PAG meeting, we believe that these lists are at best duplicative of, and at worst counterproductive to, Regional Board efforts to set monitoring priorities under SWAMP. If the State Water Board wishes to assess the relative health of the state's waters, it should not do so selectively through the 303(d) listing process, but rather as a comprehensive and planned assessment of all of the state's waters.

#### IV. PUBLIC ACCESS TO PROCESS

We agree with the implication on the top of page 11 that the listing decision should be "transparent" to the public. We believe that this means that not only must the reasons for list deletions and rejections must be transparent, but also that all data (not just that "solicited," as Draft Policy states at the bottom of the page) should be considered in developing "fact sheets" for each water body/pollutant-pollution combination. Transparency is essential for the process to be successful. However, this does not mean that there must be public consensus for listings.

Finally, we strongly disagree with the suggestion on page 2 that the whole list should be reviewed against the final Policy after it is complete. The Policy should only be applied to new potential listings. Currently-listed waters will be "reviewed" as they come up in the normal process; when a problem statement is drafted for the water body, inaccurate listings will become evident. The program is far enough behind as it is without spending another year just reviewing the list.

\* \* \*

Thank you for the opportunity to provide these comments. Please do not hesitate to call if you have any questions. We look forward to providing additional technical comments soon, as well as when the draft final Policy is made available for public review.

Sincerely,

Linda Sheehan  
Co-Chair, AB 982 Public Advisory Group

cc: Arthur G. Baggett, Jr., Chair, SWRCB  
Celeste Cantu, Executive Director

Storm Water Task Force Meeting  
Comments on the 303(d) List and the Listing Policy  
San Diego 1/18/02  
From 2:00 to 3:00

Notes:

- The Dual list idea is a good one. 303(d) List and a Watch List
- We should focus on big water bodies first and then look at the smaller ones.
- We should look at the upstream contributors of the water body and then target the entire watershed area.
- QAPP should be needed for data to be used. The data should show an exceedance of standards.
- Use direct measures of beneficial uses to determine impairment... biological, toxicity, chemical.
- Do not address trends leading to a problem, address the real problem.
- Use multiple lines of evidence to list.
- Connection between tri-ennial review process and the 303(d) listing process.
- Base the 303(d) Listing on QUADRIPOD, 4 legs...
  - Numerical Standards
  - Toxicity Data
  - Benthic, fish community
  - Beneficial uses (measurement of use itself)
- Watch List may lead to a compromised list. If a water body gets put on the Watch List than if no new info exists the next cycle time, than it should be listed n the 303(d) List.
- Data should be rigorous.
- The San Diego RB did a consistent listing job. Applied the data equally, and considered frequency of exceedances.
- First step should be to develop standards. New data is always need.
- Go with a rule of thumb.
- Policy Comment: 303(d) List is a priority... State should be rigorous on listing.
- High Confidence in the data should be needed to use it for listing.
- Data is highly variable, as far a quality of the data goes.
- Lay out the entire process to the public, or as much as you can, reach out to the community before the listing. Lay out all the evidence to the public.
- Transparency is very important.
- A watershed focussed approach is a good one.

**Attendees:**

**Storm Water Task Force Members (30 People)**

**Craig J. Wilson**  
**Laura J. Sharpe**  
**Tim Stevens**

EPA Meeting w/ Dave Smith and Sharon Lin  
Comments on the 303(d) List and the Listing Policy  
Cal/EPA Building 1/25/02  
From 10:00 to 1:00

Notes:

- Big... 10% Exceedance.
- Tailor to the way the standards are set up.
- Draft Guidance on how to do it from HQ.
- Strength: Streamline the process... categorize... simplify.
- EPA Guidance: We need to monitor all waters of the State. Every water body goes on some list...(one of the 5 below)
  1. All waters that meet the standards.
  2. Some uses are being attained / partially supporting
  3. Don't know anything about the water body
  4. a.) Waters that are impaired.  
b.) Programs are in place- TMDLs/ NPDES permits  
c.) List of waters that are impaired by natural causes.
  5. Waters on the 303(d) List, waters that are impaired and need a TMDL.
- Still unclear how EPA should crosswalk between 305(b)—GEOWBS—303(d) List.
- CALM Guidance... resource for future lists.
- SB469: Listing Policy written and approved by 2004.
- What to send to EPA? Send documentation of records—Summarize Data—Checklist of Sorts
- We need to explain why we aren't revisiting the 1998 list.
- The Watch list isn't required by EPA, it's just a status for future monitoring... send it.
- We need to articulate why water bodies don't make it onto the 303(d) List.
- Information is needed on how all the data was considered. Not only why we listed a water body.. But also who/ why we didn't list something that was recommended to us to list.
- Naturally Occurring Causes: If you don't list for natural causes you are changing standards... Do we really want to be changing standards? CA doesn't have a natural causes exemption to list.
- 130-7(b) List water bodies that need TMDLs .. Natural causes can't be fixed by creating a TMDL.
- We should list natural causes and set them as low-priority.
- Can data be proposed to us if it wasn't channeled through the regional boards first? Legally we may have to allow people to be able give us data directly after the April 15<sup>th</sup> deadline has passed, for submittal of data to the Regional Boards.
- Weight of Evidence approach seems OK.
- Perhaps we could Color Code the high/ medium/ low ratings for quicker use of the checklist.
- We should have the Binomial approach reviewed scientifically by some expert outside the Board.
- EPA differs on the Toxic rule estbl. By Florida and Arizona... 2 hits in 3 years?
- Binomial Approach should balance error rates. ... Type 1 error/ Type 2 error.
- Using a Watch List will help us to balance the approach.
- This methodology isn't an "underground regulation or policy" because.. it is only going to be used this one time for 2002 List.
- A numeric target is not a numeric objective, we need to clarify that with the RBs.
- We must use all the data available to us... "Information is broader than data" ... photos, smells, anecdotal... and we need to consider it all.

Comments from 2/15/02 Meeting:

- We should make sure that we are sticking to the Federal regulations closely in our 303 (d) process.
- If alternative enforceable programs that have kept water bodies off the 303(d) list in the past, haven't work the water bodies should be listed and a TMDL should be completed.
- What TMDL priority should be given to waters that already have programs in place to handle pollutants?
- The key question to ask is, is the water body meeting or in violation of the standards?
- The State Board should include as much information as possible for the listing of a water body.
- A lot of BPJs will be made, can't the State Board give new ideas to how the process could get away from having to rely on BPJs ?
- The 303(d) List shouldn't skew away from the point of the matter, protecting waters.
- Tier the criteria for listing so the process sides on the side of protection.
- Either the water body is impaired or is it not? Too much information given on a water body in question could also be bad for the State Board decision making process.
- The State Board should "standardize" the Regional Board's listing processes.
- How will the State Board show exceedances of narrative water quality objectives for biological factors?
- What are the criteria going to be to place a water body on a Watch List? How will funding be tied the monitoring that would be needed for watch- listed water bodies?
- Documenting the decision making process is a big important step forward for the State Board, as is the transparency of the process.



**PAG Comments on 303(d) List and Listing Policy**  
**Meeting Rm. 1510 on 12/2/01**  
**From 1:30 to 4:00**

Notes:

- Do the best on the Listing policy, don't use 2002 as the basis for the policy. The policy is important, do the policy first.
- **The 1998 303(d) List was a wake up call for industry.**
- We need to use much more scrutiny on the 303(d) List this time around.  
SWRCB should have ...minimally acceptable data limits.
- Be more objective...
- **We need a process with more integrity. This is non-negotiable.**
- Good Science, predictability, process appeal ...
- Need to make or brake the process with the policy.
- The policy must be adaptable to RB process.
- Be extremely specific.
- Use a statistical approach for the policy...(i.e. 10 data points, 10% exceedance and 85% confidence level.)
- Set up the rules ahead of time.
- There is a need for QA/QC protection of the data.
- Numeric or narrative data either way it must be a rigorous approach
- Delisting policy: Need to get things off the List... We shouldn't take a willy-nilly approach.
- Current List : Consider Dioxin, there is over listing. Too much of the Bay is listed.
- Policy--- Dioxin--- It would make it harder for the EPA to list.
- The more specificity the less the chance for EPA to intervene with the Policy.
- EPA will have to work with the states if the state does the right thing.
- The policy should address EDW...Wet/ Dry weather conditions... Storm water events.
- Need to address beneficial use designators.
- Look at appropriateness do we have to go back to BPJ's... Lack of Data=BPJ ...2 tests is not supportable.
- The Policy commitment should be to use credible data.
- QAPP- Floor for Analysis... Ambient waters ONLY.
- Apply a 2 Part List approach: Assurance of all the data used.
- A 2 part list has a lot of merit... Use 2 lists and you can get water data for the 303(d) list
- Formally recognize 2 tiers.
- NPDES permits should lead to doing more monitoring.
- Restructure NPDES permits to get new data.
- "Acceptable Information"...SWRCB needs to define!! The stakeholders need to know what is acceptable data.
- "Watch List" gives incentive to monitor... Added benefit is that it would create more information for the TMDL... cant prove a "negative"
- Delisting Process, need a reason to walk away from a TMDL.
- "Phased Delisting" ... Off the TMDL list ... onto the Watch list.
- Quality data need to be on the Watch list too.
- The Watch List is not part of the 303(d) list.

- How high is the “bar”? Political process.
- The Watch list should clearly articulate that no regulatory constraints... gathering more data is enough.
- Make sure that the Watch list isn't the 303(d) list.
- If the data doesn't pass through the “sieve” don't give the data to SWRCB.
- Bobbi Larson has the information we need for the topic of “Translation of the Narrative WQO”
- Narrative Standards need a translator.
- Establish the credibility needed to get on the list.
- Impossible for some everything shouldn't be listed...
- No-toxics in toxic amounts should be translated.
- Judgement important with Fecal and Total coliform Standards.
- What is acceptability variance... What problems should not be considered?
- What is acceptability of Magnitude, Frequency, Duration, and Sediment.
- Narrative: pick a translator and go with it change if needed.
- What is sufficient data?
- **Data needs to be scientifically defensible.**
- Bar elevation... Use Florida's approach... Is the discussion about bar elevation?
- Definition of water segments... (RB) need to look at basins... some water segments along water body are pristine, some are not.
- Samples should be representative.
- Sediment problems = water quality problems? (Region 4 / 2)
- BPJ's when applied to “Sediment problems = water quality problems” come to many wrong conclusions... permit issue, not listing issue now.
- Don't link up listing with sources.
- Address the difference between sediment... Water loading, Listing policy... needs to acknowledge.
- Clarify what is impairment and what is impaired for? Is it fish consumption? Mercury down in the channel?
- Be sure to list beneficial uses... in addition to the problem.
- Look at Idaho and Florida for ideas....
- Divorce 2002 303(d) List from the Listing policy
- Core Principles...

***Attendees:***

**Craig Johns**  
**Mark Rentz**  
**Kevin Bucher**  
**Jeff Sickenger**  
**Jim Scalin**  
**Steve Arita**  
**David Arrieta**  
**David Bolland**  
**Paul Martin**

**Craig J. Wilson**  
**Laura J. Sharpe**  
**Tim Stevens**

## PAG Comments on 303(d) List and Listing Policy

Chico on 1/3/02

From 10:00 to 12:30

### Notes:

- **Watershed management and TMDLs should be linked.**
- Lower Priority TMDLs should be handled with Watershed Management projects, At least to get the ball rolling if a TMDL isn't being worked on. Higher priority TMDLs obviously should be completed first.
- Existing programs in place are not addressing watershed issues.
- **The 1998 listing "sucked".**
- Northern environmental caucus members want to try to do a pilot Watershed Management project.
- The SB should develop guidelines for TMDLs, and let the RB handle the Watershed management project development.
- RB 5 , Redding Office is – not proactive
  - not involving the public in decision process
  - need have not only better communication, but communication period with the people who are involved with the area's environmental concerns.
  - Not addressing known historical environmental problems , i.e. largest toxic land dump/ largest hydrological mine
  - Be more aware of their jurisdiction
  - Not making an attempt to educate the public on issues
  - Needs to begin extracting data/information/skills from regional Universities and Rural Academics (i.e. Chico State)
- Agencies need to communicate, to cooperate and share resources, and get a clear status of what's going on in the region.
- Barbara Vlamis proposed 5 listings to the RB, one was chosen, RB is very vague/unclear as to why, and no attempts were made by the RB to gather more info or to communicate with her on problems they had with her recommendations.
- "Watch list" concept okay. . . can it lead , as it should to monitoring efforts? Should it kick off Watershed Management activities?
- Areas of known problems should be classified / tiered, given a priority of concern.
- Watch List could focus on Watershed Mgt. And on Water Quality...How would AG respond?
- Perhaps GIS spatial mapping could be useful for Watershed mgt. Projects.
- Natural causes of BU's should not have TMDLs done for them, but the should be listed as areas to avoid, advisories posted.
- How long should water bodies reside on a watchlist, until some action is taken to list it?
- Delisting rules, How to delist protocols should be harder and tougher than what it takes to get on the List.
- Watershed Management Approach should be backed by the PAG again.
- Stakeholder approach VS. Watershed Management approach(WMA)-
  - Stakeholder approach is to waterdown/ wearout.
  - Watershed management approach (WMA) is to fix the problem.
  - WMA focuses on meeting/ exceeding water quality objectives, Stakeholder process doesn't.

- WMA would focus on education, options for the public to do the right thing, increase public involvement.

- **The RB process for listing is a failure.**

*Attendees:*

**Lynn Barris  
Allen Hawthorne  
Barbara Vlamis  
Leah Wills**

**Craig J. Wilson  
Laura J. Sharpe  
Tim Stevens**

**PAG Comments on 303(d) List and Listing Policy  
Meeting Rm. 1810 on 1/10/02  
From 1:30 to 3:30**

Notes:

- Florida listing rules: the POTW's like what they did.
- Run the entire 303(d) List through the Policy, so that all the old listings and the new listings are on the same grounds.
- No "grandfathering" of the old list into the next listing cycle.
- **"Vicky -one data point -Conway" doesn't want listings to be based on ridiculous amounts of data.**
- The SB should spell out for the RB how to list.
- The RB should give all the data used to determine impairment to the public when they list.
- Everything and all data should be on the table.
- There needs to be a distinction in the Policy between "pollutants" and "pollution"
- Approach the Listing process from a science-based direction.
- Fair and equal treatment to all water bodies on the list
- TMDLs don't work for natural conditions, so why put them on the List? We can't fix them.
- TMDLs work for active inputs, point and non-point sources
- We should not list for natural conditions, physical alterations, legacy problems (no current input), or trash (maybe?)
- **TMDL should not be the end-all, be-all for the State...** it doesn't solve all the problems.
- Like a "planning list, tiered approach... Watch list (but they don't like the name)
- Another Process like the Watershed Management ( WMI)
- Other processes like Basin plan amendments.
- Other programs that are essential to include are BMPs, Education, Monitoring, all of these are non-enforceable.
- Agencies should work together to create solutions for complex TMDLs.
- Watch Lists should encourage monitoring efforts
- Create incentives for Watershed groups, provide them with resources.
- Superfund would be an alternative to TMDLs.
- Natural conditions: like coliforms- bacteria... shouldn't be listed if they are because of bird wetland areas.

- Narrative Water Quality objectives: Need to identify them, have data to support them.
- To list the RB should provide the following:
  - identify the standard being exceeded
  - identify the source of the standard they are using.
  - Must have data/ measurements that support the recommendation and show exceedance.
  - Must explain their reasons for listing that water body as impaired.
- **Narrative WQ Objectives should be used for chemical, physical, and biological data.**
- We should always perform standards assessment before the TMDLs are done, they are flawed.
- **Should use a multiple lines of evidence for the policy.**
- Confidence should be the same for listing as de-listing. Equal.
- We should adopt new, more current standards.
- All data should pass a threshold.
- Warnings for Chemicals and Pesticides should not be provided to the public as “Chemical A”...they should be more specific other than “Group A”, increasing education, increases awareness.
- Need a place to “park” water bodies...? Watchlist... so that they can be monitored more.
- Unique things occur to all areas that are ‘impaired’, we need to determine what’s upstream / downstream, what’s in the snow...
- Things to think about for the policy... QA all the data.
- More enforcement on site – specific basis for pollutants.
- **Schedule for TMDLs should be linked to the priority... reasonably , High Priority = 1<sup>st</sup> to be done.**
- Layout what the priorities are based on, how they were determined and why?
- Priority isn’t as important as what the time period that it will be completed is.
- Timeframes for TMDLs completion may be too aggressive for agriculture to comply.
- Generic Listings for pollutants are very bad.
- Three tier strategy ... Watch List, Need more info.... Alternative strategy... 303(d) List.

*Attendees:*

**Bobbi Larson**  
**Sharon Green**  
**Tom Grovhoug**  
**Craig Johns**  
**Margie**  
**Bill Thomas**  
**Tess Dunham**

**Craig J. Wilson**  
**Laura J. Sharpe**

**PAG Comments on 303(d) List and Listing Policy**  
**Los Angeles on 1/17/02**  
**From 9:00 to 11:30**

Notes:

- **Overarching principle should be to protect the environment and human health.**
- We need a robust policy.
- NAS guidance document has good and bad parts.
- Water bodies get put on the Watch List when the waters are clearly impaired WHEN there exists another program other than TMDLs that is currently in place to remedy the problem. This is not appropriate, the water bodies should be listed on the 303(d) regardless of other programs that are in place.
- Opposed to making the policy an exact copy of Florida's rules.
- The Florida policy has too many hurdles, not enough waters will get listed that need to be.
- Don't make the "bar" too high, that we can't get waters on the list...get on with it.
- You should need little info to List and a lot of info to delist.
- **A Watch List would accommodate the Discharger Community.**
- A watch list needs to be a mechanism that gets waters on the 303(d) List, not a place to hide waters.
- Standards should be met before a water body gets delisted.
- When a TMDL is completed a water body should remain on the List and not be delisted until a time when the TMDL has been proven to work to get the water body to meet standards.
- Water bodies should be kept on the list because it keeps waters tied to grant money.
- If a TMDL is completed it doesn't mean the problem is fixed.
- Critical TMDLs should be higher priority than others.
- The reality is that the 303(d) list is tied to many other programs.
- Natural Causes should be listed on the 303(d) List. They should be given low priority. Natural Causes contribute to the "load" in a water body and therefore should be listed.
- We shouldn't be concerned with "sources" when we list a water body on the 303(d) List.
- The 2002 EPA guidance allows for fewer water bodies to be placed on the list.
- What about using the CALM guidance?
- Don't set the bar to high. High Scientific credibility to get on the list will lead to a weak and short list.
- **"The DEVIL is in the DETAILS"** (LM) The Florida methodology sets the 'bar' very high.
- Any Watch List will give the Dischargers more power to keep water bodies off the 303(d) List.
- Funding Mechanisms for including water bodies on the list need to be thought about.
- The Watch List must have a way to make monitoring money available, to investigate the water bodies.
- It isn't proper to delist a water body for a reason, which was listed for other reasons.
- Antidegradation: If the pollutant is due to natural causes... don't make it worse.
- Commit to Narratives... John Marshak's Central Valley Guidelines are a good start.
- Use narrative standards for sure.
- Just list water bodies for impairment... is the water body impaired- yes or no.  
Worry about the "why" it is impaired portion of the problem when the TMDL is getting written.

**Attendees:**

**Leslie Mintz  
Conner Everts  
Steve Fleischli  
Shelley Luce**

**Craig J. Wilson  
Laura J. Sharpe  
Tim Stevens**

**PAG Comments on 303(d) List and Listing Policy  
San Diego on 1/17/02  
From 3:00 to 5:30**

Notes:

- Don't evaluate citizen-monitoring groups' data by a QAPP process. Do not devalue their data as when comparing it to an expensive study done by a lab.
- Public Access to waters in San Diego is a big problem... involving property owners, scientists trying to get data on water bodies, and law enforcement officers.
- Source Water protection is listed as 'medium priority' it should be "high" it concerns drinking water quality.
- Ground Water is too difficult to list because it must be tied to a surface water source.
- County land development needs to consider future resource protection, what plans are in place for the future of the count's water supply. BMPs aren't working.
- Historical Prospective is important as anything else.
- Some say Never List on qualitative data alone & some say List on qualitative data alone (pictures)
- Narrative data is a crucial component of the list.
- Monitoring funds = Prop 13 funds, which are available once a water body gets listed on the 303(d) List... crucial need for resource dollars.
- Old data won't have a QAPP... But it is still important to consider as a piece of the puzzle.
- **ECONOMICS: List with the in-equity in mind. Make the playing field even from an economic standpoint.**
- Naturally occurring causes should be listed. No new loading of a pollutant in an area where that pollutant is naturally occurring.
- Think about alternative programs.. not just TMDLs to fix the water body problem. Thin about Watershed programs... what is happening upstream.

**Attendees:**

**Bruce Resnik  
Laura Hunter  
Suzanne Michel  
Stephanie Pacey**

**Craig J. Wilson  
Laura J. Sharpe  
Tim Stevens**

**PAG Comments on 303(d) List and Listing Policy**  
**San Francisco on 1/28/02**  
**From 10:00 to 12:30**

Notes:

- Burden of Proof... who has the burden of proof? The Dischargers have the burden to prove that their waters are meeting standards and shouldn't be listed.
- NAS guidance document has good and bad parts
- Water bodies get put on the Watch List when the waters are clearly impaired WHEN there exists another program other than TMDLs that is currently in place to remedy the problem. This is not appropriate, the water bodies should be listed on the 303(d) regardless of other programs that are in place.
- Watch List is a good concept for setting priority for monitoring needs, however, It should completely separate from the 303(d) Process. It shouldn't be discussed in the context of the 303(d) List.
- Are the Water Quality standards impaired or not? This is the question to answer. If Yes, the standards aren't being met/ achieved than the water body has to go onto the 303(d) list.
- No where does it say in the federal law that if another program is in place to fix a water pollutant problem, than the water body can be kept off the 303(d) List... because a TMDL isn't needed to fix the problem.
- Who has the burden of proof? Does the public have to prove that standards aren't being met? That should be the Discharger responsibility.
- What is impairment? The bottom line is the standards being met or they are not.
- The data must be spatially and temporally sound.
- Pictures as qualitative data can't stand on their own, but shouldn't be discarded as useless... They should be used to strengthen the listing.
- Economics shouldn't be a consideration when the Dischargers are required to comply with their permits as a result of a water body residing on the 303(d) list.
- **DIVORCE THE LIST FROM MANAGEMENT.** The list should be separate from the concern of how would a TMDL be completed for what's being listed.
- Water bodies should be listed even if there is no pollutant known to be causing the impairment.
- Water Bodies should NEVER be delisted off the 303(d) List.
- If people want a shorter list than the Board should just focus on the High Priority water bodies on the list. That will serve as a short list.
- Just list water bodies for impairment... is the water body impaired- yes or no. Worry about the TMDL when it is time to be written and completed. These concepts should be Separate concerns.
- Regional Boards are too concerned with looking forward to TMDLs they will have to complete... they should only be concerned with the LIST itself.
- It should be very easy to list water bodies, without worrying if they are impaired or not, that should be determined down the road... when the TMDL gets completed. We shouldn't worry about listing clean waters as impaired... most of the water bodies are impaired anyway.



- Guidelines for good data:
  - QA PLAN
  - Citizen group monitoring is acceptable
  - Make sure the samples weren't biased.
  - Consider how many samples were collected.
  - Were standard methods used to collect the data.
  - Education of public is key to getting more data , that is of acceptable quality.
  - All data should ultimately be considered. Good or Bad.
- Be conservative when we list...Err on the side of protection of the environment and the public health.
- We should be listing for temperature, RB's are dropping the ball on Temp. , pH, and sediment concerns.
- There is a definite need for Narrative standards to be translated.
- Safe Harbors: Let people know that if they come forward with data from an area that they live/own the land, they will not bare the brunt of the cost of the solution to the problem.
- The 303(d) List makes the public aware of the problems existing in their waters.
- The TMDLs should hold the water bodies onto the 303(d) list , not get them off the list...  
"The exercise club rule.... The challenge is to keep the weight off"... i.e. the challenge is to keep the water body to keep meeting the standards, once the standards have been met via the TMDL process.
- Immediate effects of getting a water body on the 303(d) list are things like, education that a problem exists, may get more money from federal resources for that water body, city councils may take action to clean the water body before a big TMDL gets inflicted upon them.
- A statistical approach is a good one, but it can't be a solve all solution.. it won't work for bio-cumulative data for example.
- Natural Causes should be listed on the 303(d) List.
- **Bottom Line: Are the standards being met?**
- Toxicity should be listed every time, *no toxics in toxic amounts*.... There should not be need to identify the pollutant responsible for the toxicity results.
- **Once you are on the 303(d) List "you are on the hook"**

**Attendees:**

**Linda Sheehan  
Teri Olle  
Lena Brook  
Jonathan Kaplan  
Jean Choi  
Tim**

**Craig J. Wilson  
Laura J. Sharpe**

## PAG Comments on Listing Policy during Meeting on 4/8/02

### Delisting Discussion:

- Regulatory Caucus wishes to pull back the consensus point on the delisting item, written on page 3 of the last meeting summary.
- If standards are being achieved than a water body should be de-listed. If standards aren't being met than the water body should remain listed.
- Water bodies should not remain on the list after the TMDL has been completed.
- The question was posed as to what are the consequences of a water body remaining on the 303 (d) List after the TMDL is completed.
- The TMDL implementation plan should clean up the water, leaving a water body listed won't necessarily clean up the water.
- Keeping Waters listed on the 303 (d) List keeps the focus of the public and the regulators on the water body so that it can be addressed.
- Waters will take a long time to clean up, even after the implementation plan is set into motion. No way to determine how long a water body should remain on the 303 (d) List.
- Three things should be considered when delisting a water body,
  - If the water body was appropriately listed.
  - If the TMDL has been completed.
  - If the standards are being met or achieved.
- The water bodies that are on the list should be somehow "flagged" if the TMDL has been completed and/or the implementation plan is in place, however, the water body should remain on the 303 (d) list.
- Leaving water bodies on the list may actually hurt the 303 (d) List, by having too many different statuses of waters on the list together it may lead to confusion.

### Hearing Discussion:

- Concern that State Board isn't going to make all the RB data available to the public.
- State Board should accept data at the hearings, PAG feels that because it is a public hearing that more data should be able to be brought forward.
- PAG decided to write a letter to Art Baggett outlining a consensus on ideas about new info/data being accepted by the State Board at the hearings in May.
- Concern that the Regional Board has received data pertaining to the 1998 listed water bodies and they haven't considered it in their listing recommendations to the State Board.
- Encourage the use of maps on the Fact Sheets, to help the public determine the location of the water bodies throughout the State.
- How is the State Board going to decide whether the data brought forth at the hearings is relevant and acceptable?

### Watch List Discussion:

- The name "Watch list" should be replaced with another more appropriate name for that type of list.
- Interim lists don't accomplish anything, the goal should be clean water.
- When a TMDL reaches the stage of implementation, that is the time it should fall off the list.
- Concern that if water bodies come off the 303 (d) list, than available funds for monitoring will be lost for those water bodies.
- Some sort of Watch List should be linked to availability of monitoring funds.

- Some kind of Watch List should give a high priority status to water bodies to be monitored, and should accelerate the process.

**Weight of Evidence Discussion:**

- The Florida Binomial model is a good idea for some types of data but definitely not a good idea for all types of data.
- The policy should include an opportunity for the State to revisit old standards and beneficial uses that are no longer valid and/or appropriate.
- Beach closures should not be used as data to get a water body on the 303 (d) list, the data used to determine the Beach Closure in the first place should be used instead.
- Photographs should be used in conjunction with other lines of evidence and information.
- If you attempt to quantify non-numeric information, the best professional judgement gets lost.
- The Florida Binomial model should be one "tool" in the toolbox for determining if the water body should be listed.