



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

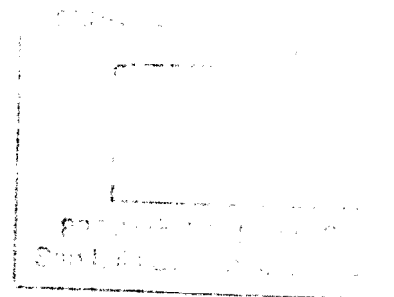
REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

file: TMDL

JUL 19 2007

Dorothy Rice
Executive Director
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100



Dear Ms. Rice:

Thank you for submitting total maximum daily loads (TMDLs) to address pathogens in Watsonville Slough. The TMDLs were submitted on December 28, 2006 and received by EPA on ~~January 4, 2007~~. Concurrent with the submitted TMDLs, the State included a Use Attainability Analysis (UAA) to amend the water quality standards for Watsonville Slough and its tributaries by removing shellfish harvesting as a designated use. EPA approved the UAA on March 28, 2007.

Watsonville Slough is included on California's 2004-2006 Clean Water Act Section 303(d) list for impairment due to pathogens. During the TMDL development process, the State identified four tributaries: Harkins Slough, Gallighan Slough, Struve Slough and Hanson Slough that also exceeded the State's fecal coliform standards associated with recreational contact. Pursuant to the requirements of Section 303(d)(1), the State adopted TMDLs to address fecal coliform, an indicator of potentially harmful pathogens, in Watsonville Slough and four tributaries.


During the decision-making process, the State clearly identified these additional water body-pollutant combinations as water quality limited waters for which TMDLs are required. The State provided sufficient documentation to support its determination of pathogen impairment and provided opportunities for public review and comment on the additional water body-pollutant identifications. The State's decision to concurrently identify additional water quality limited segments and adopt TMDLs for those segments is consistent with the provisions of the Clean Water Act and federal regulations. As the State's decision to identify the additional water body-pollutant combinations is consistent with the requirements of Section 303(d) and federal regulations at 40 CFR 130.7, EPA hereby approves the identification of these additional combinations pursuant to Section 303(d)(2).

Based on EPA's review, I have concluded the TMDLs adequately address the pollutant of concern and, upon implementation, will result in attainment of applicable water quality standards. The TMDLs include waste load allocations and load allocations as needed, take into consideration seasonal variations and critical conditions, and provide an adequate margin of safety. The State provided adequate opportunities for the public to review and comment on the TMDLs. All required elements are adequately addressed; therefore, the TMDLs are hereby approved pursuant to Clean Water Act Section 303(d)(2).

The State's submittal also contains a detailed plan for implementing the TMDLs. Current federal regulations do not define TMDLs as containing implementation plans; therefore, EPA is not taking action on the implementation plan or compliance schedule provided with the TMDLs. EPA generally concurs with the State's proposed implementation approaches. If the Regional Board contemplates including schedules of compliance in NPDES permits, it can only do so if they are consistent with a compliance schedule-authorizing provision that has been submitted to EPA under CWA Section 303(c) and approved by EPA.

The enclosed review discusses the basis for this approval decision. We appreciate the State and Regional Boards' work to complete and adopt the TMDLs and we look forward to our continuing partnership in TMDL development. If you have questions concerning this approval, please call me at (415) 972-3572 or Lynn Suer at (415) 972-3148.

Sincerely yours,


Alexis Strauss
Director, Water Division

Enclosure

cc: Roger Briggs, Central Coast RWQCB

TMDL Review Checklist

State: California

Water bodies: Watsonville Slough and tributaries

Pollutant(s): Pathogens

Date of Initial Submission: December 28, 2006

Date Received by EPA: January 4, 2007

Dates of Supplemental Submission(s) and Receipt by EPA: March 28, 2007 (UAA approval by EPA), June 30, 2007 (email from Central Coast RWQCB)

EPA Reviewer: Karen Irwin

1. Submittal Letter:

State submittal letter indicates final TMDL(s) for specific water(s)/pollutant(s) were adopted by state and submitted to EPA for approval under 303(d). Acknowledge if any supplemental material was provided and receipt date.

The TMDLs were submitted on December 28, 2006 and received on January 4, 2007. As supplemental material concurrently submitted with the TMDLs, the State provided a Use Attainability Analysis (UAA) to amend the water quality standards for the Watsonville Slough and its tributaries by removing Shellfish Harvesting as a designated use. (Note: EPA separately approved the UAA under Clean Water Act Section 303(c) on March 28, 2007.) On June 30, 2007, we received supplemental clarification of the TMDLs from Lisa McCann, Central Coast Regional Water Quality Control Board (Regional Board).

The Regional Board adopted TMDLs for the Watsonville Slough and tributaries on March 24, 2006 (Regional Board Resolution R3-2006-0025). The Resolution contains the Basin Plan amendment and describes elements of the TMDLs. The California State Board (SWRCB) approved the TMDLs on September 21, 2006 (SWRCB Resolution 2006-0067) and the State Office of Administrative Law approved them on November 20, 2006 (OAL file # 06-1102-02 S).

EPA finds the State's analysis concerning water body impairment associated with pathogens in the Watsonville Slough and tributaries to be reasonable and consistent with the requirements of Section 303(d).

2. TMDLs Included:

The submittal clearly identifies the water segments and pollutants or stressors for which TMDLs were developed. The submittal should include the water segment identifier (e.g., NHD code) for each segment addressed. The submittal should clearly identify the TMDLs adopted for currently 303(d) listed waterbody-pollutant combinations. It should also clarify if TMDLs were adopted for new impairment findings (by waterbody-pollutant combinations) that do not exist on the current 303(d) list. If appropriate, the submittal should describe any assessment decisions that may have resulted in non-impairment status for water/pollutant combinations that exist on State's most current 303(d) list.

Watsonville Slough was included on the State's 1998 and 2002 Section 303(d) lists as impaired due to

pathogens, as well as on the current 2004-2006 Section 303(d) list. (The current list describes Watsonville Slough as a Water Quality Limited Segment Being Addressed by a USEPA-approved TMDL, however, EPA has requested the State to re-categorize it as a Water Quality Limited Segment Still Needing a TMDL since EPA has not yet approved the Watsonville Slough TMDLs. EPA 2004-06 303(d) List decision letter to SWRCB, June 28, 2007, pg. 18.)

The State's submittal addresses pathogens in the Watsonville Slough Watershed, which includes four tributaries to the Watsonville Slough: Harkins Slough, Gallighan Slough, Struve Slough and Hanson Slough. The submittal demonstrates that these four tributary sloughs exceed Basin Plan numeric water quality objectives for fecal coliform, which are pathogen-indicator organisms, thus documenting the State's finding of impairment. [Basin Plan Amendment Resolution ("Resolution"), Attachment 1, p. 6] The Regional Board confirms that the public had opportunity to comment on the data that supported the Regional Board's decision to consider these water bodies impaired, therefore, TMDLs were required. (June 30, 2007 email from Lisa McCann.)

EPA concurs with the State's finding of impairment for the four water body-pollutant combinations not included on the State's 2004-2006 Section 303(d) list. The State's adoption of pathogen TMDLs for these water bodies as part of the Watsonville Slough watershed is appropriate.

3. Water Quality Standards Attainment: *TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.*

The TMDLs identify water contact recreational use (REC-1) and non-contact recreational use (REC-2) as beneficial uses related to fecal coliform in the Watsonville Slough Watershed. [Final Project Report, p. 3] The numeric TMDLs for the five sloughs are concentration-based and equal to the REC-1 fecal coliform standards contained in the Basin Plan: 200 most probable number (MPN)/100ml (geometric mean) and 400MPN/100ml (maximum). The waste load allocations and load allocations for each responsible discharger or group of dischargers cannot exceed 200 MPN/100ml and 400 MPN/100ml. [Resolution, Attachment 1, p. 75 ("the allocation to each responsible party is the receiving water fecal coliform concentration equal to the TMDL").] Protecting to the level of the REC-1 standards will also result in attainment of the less stringent fecal coliform REC-2 standards.

The State reasonably concluded that attainment of the numeric targets and associated TMDLs, waste load allocations, and load allocations will result in attainment of the applicable numeric water quality objectives [Resolution, Attachment 2, pp. 56-57]. This finding is supported by monitoring requirements in the TMDLs for responsible parties to provide data representing their respective fecal coliform loadings. [Resolution, Attachment 1, pp. 7-9 and Attachment 2, p. 69] While genetic analysis suggests that some exceedences could be due to natural background sources (bird feces), the CCRWCQB does not believe the analysis supports a conclusion that the sloughs will not achieve the REC-1 standards if controllable sources are removed. Furthermore, future hydrological improvements resulting from implementing elements of the proposed Watershed Conservation Plan could improve circulation and reduce natural background bacteria loads. (June 30, 2007 email from Lisa McCann.)

4. Numeric Target(s): *Submission describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. Numeric water quality target(s) for TMDL identified, and adequate basis for target(s) as interpretation of water quality standards is provided.*

The numeric TMDL targets are equal to the applicable fecal coliform water quality standards in the REC-1 designation. Fecal coliform are pathogen-indicator organisms. The applicable water quality standards are:

- 1) Water Contact Recreation (REC-1): Fecal coliform concentration, based on a minimum of not less

than five samples for any 30-day period, shall not exceed a log mean of 200 per 100ml, nor shall more than 10% of total samples during any 30-day period exceed 400 per 100ml.

2) Non-Contact Water Recreation (REC-2): Fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 2000 per 100ml, nor shall more than 10% of samples collected during any 30-day period exceed 4000 per 100ml.

[Resolution, Attachment 2, p. 3]

EPA concludes that the State's approach to apply the existing numeric water quality objectives for recreational uses as the allocations in these waters is reasonable, environmentally protective, and consistent with existing standards.

5. Source Analysis: *Point, non-point, and background sources of pollutants of concern are described, including the magnitude and location of sources. Submittal demonstrates all significant sources have been considered. Point, nonpoint, and background sources of pollutants of concern are described, including the magnitude and location of sources. The submittal demonstrates all significant sources have been considered.*

The submittal contains an assessment of all readily available data and information concerning sources of pathogens in the Watsonville Slough watershed. Point sources include the Santa Cruz County urban and landfill stormwater systems and sanitary sewer collection system; the City of Watsonville urban stormwater and sanitary sewer collection systems, and; other miscellaneous facilities with industrial stormwater permits which are "not expected to be sources of pathogens" in the Watsonville Slough watershed. [Resolution, Attachment 2, pp. 47-49 and 56] Nonpoint sources include humans, pets, livestock, land-applied manure in irrigation agriculture, and uncontrollable (natural background) bird sources. [Resolution, Attachment 2, p. 52]

The submittal adequately considered all significant sources of pathogens in Watsonville Slough and tributaries.

6. Loading Capacity Linkage Analysis: *Submittal describes relationship between numeric target(s) and identified pollutant sources. Submittal clearly identifies loading capacity. For each pollutant, describes analytical basis for conclusion that sum of allocations and margin of safety does not exceed the loading capacity of the receiving water(s).*

The TMDLs do not apply load-based limits based on the reasoning that 1) they are not practical to establish in this watershed system due to both the natural hydrologic functioning of the sloughs and their extensive alteration; and 2) defining and controlling bacteria levels on a mass basis is impractical due to the potential for bacteria re-growth and die-off. [Resolution, Attachment 2, p. 52]

The link between pollutant loads and water quality objectives is established because the numeric WLAs and LAs are the REC-1 fecal coliform water quality objectives. Fecal coliform are pathogen-indicator organisms.

7. TMDL and Allocations:

TMDL—Submittal identifies the total allowable load, which is set equal to or less than the loading capacity. TMDL is expressed in terms of mass-based, concentration-based or other equivalent approaches that are consistent with federal requirements. If TMDL has seasonal features then please describe. TMDLs and allocations should be expressed in terms of daily time steps. If the TMDL and/or allocations are also expressed in terms other than mass loads per day, the submittal explains why it is reasonable and appropriate to express the TMDL in those terms.

Allocations—Submittal identifies appropriate waste load allocations for all point sources and load allocations for all non-point sources. Allocations are expressed in terms of mass-based, concentration-based or other equivalent approaches, the submittal explains why it is reasonable and appropriate to express in those terms. If point sources are present, submittal identifies existing NPDES permits by name and number. More discussion of point sources in watershed. If no point sources are present, waste load allocations are zero. More discussion of non-point sources. If no non-point sources are present, then load allocations are zero.

TMDLs for Watsonville Sloughs:

The concentration-based TMDL numeric targets for pathogens are set at the same level as the REC-1 water quality objectives in the Basin Plan; these concentration based values apply to the TMDLs, the wasteload allocations for point sources and load allocations for nonpoint sources:

Fecal Coliform:

Geometric Mean: ≤ 200 MPN/100ml (not less than 5 samples over a 30-day period)

Maximum: 400 MPN/100ml (not more than 10% of total samples during a 30-day period)

The natural background allocation equals the TMDL numeric targets. [Resolution, Attachment 1, p. 6]

Receiving water fecal coliform is set to the level of the REC-1 fecal coliform standards for the following sources and water bodies. [Resolution, Attachment 2, p. 56]

Waste Load Allocations for Point sources:

Santa Cruz County (urban stormwater) - Watsonville, Struve and Harkins Sloughs. (NPDES General Permit No. CAS000004)

City of Watsonville (urban stormwater) - Watsonville, Struve and Harkins, Gallighan, and Hanson Sloughs. (NPDES General Permit No. CAS000004)

Santa Cruz County Freedom Sanitation District (Sanitary Sewer Collection System) - Harkins Slough.

City of Watsonville (Sanitary Sewer Collection System) - Watsonville and Struve Sloughs.

Santa Cruz County (landfill stormwater) - Gallighan Slough.

Load Allocations for Nonpoint sources:

Operators or owners of irrigated lands who land-apply manure - Watsonville and Harkins Sloughs.

Operators or owners of livestock facilities and animals - Watsonville and Harkins Sloughs.

Based on the information in the Basin Plan Amendment and the attachment, EPA concludes that the State's approach of setting TMDLs and allocations on a concentration basis is appropriate for the water bodies and pollutants of concern and is consistent with the provisions of CWA and federal regulations. See 40 CFR 130.2(i). These allocations are suitable for daily load evaluations.

8. Margin of Safety: *Submission describes explicit and/or implicit margin of safety for each pollutant.*

The TMDL submittal states: "A margin of safety has been established implicitly through the use of the protective numeric targets, which are in this case the water quality objectives for the beneficial uses of the Sloughs. The pathogen TMDL for Watsonville Sloughs is the water quality objective for REC-1. The Central Coast Regional Water Quality Control Plan states that 'Controllable water quality shall conform to the water quality objectives... When other conditions cause degradation of water quality beyond the levels or limits established as water quality objectives, controllable conditions shall not cause further degradation of water quality.' Because the allocation for controllable sources is set at the water quality objective, if achieved these allocations will by definition achieve the water quality objectives. Thus, in

this TMDL there is no uncertainty relative to the effect of loads from controlled sources on water quality.” [Resolution, Attachment 2, p. 57]

EPA considers this an appropriate approach for dealing with uncertainty concerning the relationship between TMDL, waste load allocations, load allocations, and water quality conditions.

9. Seasonal Variations and Critical Conditions: *Submission describes method for accounting for seasonal variations and critical conditions in the TMDL(s).*

These TMDLs and allocations apply year-round. The submittal compared data from the summer and winter sampling periods; while genetic analysis supports a preliminary conclusion that impairment is more likely during winter, exceedence data provide no clear pattern of seasonal variation. The submittal identifies critical conditions in the Watsonville Slough and tributaries necessary for pathogen impairment. [Resolution, Attachment 2, pp. 53-54]

The State’s analysis adequately accounts for seasonal variations and critical conditions.

10. Public Participation: *Submission documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).*

The Regional Board held a public hearing on March 24, 2006 and received and responded to public comments. [Resolution, Attachment 7] The SWRCB also held a public hearing on September 21, 2006 and received and responded to public comments.

The State demonstrated that it provided sufficient opportunities for public comments and considered public comments in its final decision by providing reasonably detailed responsiveness summaries.

11. Technical Analysis: *Submission provides appropriate level of technical analysis supporting TMDL elements.*

The technical analysis provides a thorough review and summary of available information concerning pathogen impairments in the Watsonville Slough watershed. EPA concludes that the State was reasonably diligent and appropriate in its technical analysis.

12. Reasonable Assurances: *If waste load allocations are made less stringent based on inclusion of load allocations that reflect nonpoint source reductions, submission describes how there are reasonable assurances that necessary nonpoint source reductions will occur.*

Not Applicable.

13. Other: *table for clarifying submittal for TMDL waterbody-combinations for corresponding 303(d) listing, new impairment findings or non-impairment findings.*

TMDLS for 303d list	Listed Year
Watsonville Slough – pathogens	2002
TMDLS for new impairments	N/A
Harkins Slough – pathogens	
Gallighan Slough – pathogens	
Struve Slough – pathogens	
Hanson Slough – pathogens	