

**STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION**

**STAFF REPORT FOR REGULAR MEETING OF DECEMBER 1-2, 2005**

Prepared on November 9, 2005

**ITEM NUMBER: 11**

**SUBJECT: Adoption of Pajaro River Total Maximum Daily Loads (TMDLs) for Sediment (including Llagas Creek, Rider Creek, and San Benito River) and Land Disturbance Prohibition as Basin Plan Amendments**

**SUMMARY**

This item presents staff's proposed Pajaro River Total Maximum Daily Loads (TMDLs) for sediment, and a Land Disturbance Prohibition, as Basin Plan Amendments. Pajaro River, Llagas Creek, Rider Creek, and San Benito River are identified as impaired by sediment on the 2002 Clean Water Act Section 303(d) list of impaired waterbodies. Staff recommends adoption of the Pajaro River TMDLs for Sediment (including, Llagas Creek, Rider Creek, and San Benito River) and Implementation Plan. As part of the implementation plan, staff also recommends adoption of a watershed-specific land disturbance prohibition as amendments to the *Water Quality Control Plan, Central Coast Basin* (Basin Plan). The TMDL implementation plan will resolve sediment impairments over the next 45 years.

The Central Coast Water Board will use the following mechanisms to implement the TMDLs: the existing Conditional Waiver for Discharges from Irrigated Agricultural Lands, renewal of existing Waste Discharge Requirements for sand and gravel mining operations and a land disturbance prohibition for pasture and range lands, roads, animal and livestock facilities and hydromodification-related activities that result in streambank erosion (Pajaro River watershed land disturbance prohibition). These mechanisms are required by the *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program*. Additionally the Central Coast Water Board will rely on national pollutant discharge elimination system (NPDES) permits for the Phase II Stormwater program for discharges of sediment in storm water runoff.

If adopted by the Water Board, these TMDLs will establish requirements and activities to control sediment discharges. Staff will then implement the TMDLs to improve and protect the beneficial uses of these waterbodies. The most sensitive beneficial uses include cold fresh water habitat, migration, and spawning.

**DISCUSSION**

**Project Development**

At the onset of this project in Fiscal Year 2000, Water Board staff knew that limited studies had been conducted in the Pajaro River Watershed to characterize sediment impairment. The studies that had been conducted produced qualitative results and only addressed limited portions of the watershed, predominantly the upper and lower reaches of the Pajaro River. This meant that limited or no information was available to develop the TMDL for approximately 1,045 sq miles of the 1,260 sq mile watershed.

Also, agency staff have provided little education, outreach, and technical assistance to landowners and potential nonpoint source dischargers in the upper reaches of the Pajaro River Watershed. Therefore, staff prioritized grant funding for the upper portions of the Pajaro River Watershed and attempted to direct funds to the Loma Prieta Resource Conservation District (RCD). At that time, the Loma Prieta RCD had no technical staff and limited funds to sustain a part-time administrator. They tried to accept grant funds to perform sediment assessments and conduct landowner education and outreach, but later declined due to their limited resources.

Eventually, Water Board staff contracted with the Santa Cruz Resource Conservation District to

assess the characteristics and sources of sedimentation in the Lower Pajaro River area. We also contracted with the Monterey Bay Sanctuary Foundation to study the same issues in the Upper Pajaro River area.

These studies reported that urban and agricultural encroachment upon streams, the poor condition of drainage infrastructure (ditches, culverts, and roads), and streambank instability due to removal and/or loss of riparian vegetation were resulting in acute erosion and sedimentation problems in the watershed.

These studies proved valuable in terms of identifying qualitative sources and locations of sediment, as well as flagging localized problem areas within the upper and lower portions of the watershed. However, the studies did not fill the data gaps - quantification of sources, numeric targets, allocations and TMDLs - necessary for Water Board staff to recommend TMDLs and an implementation plan to the Water Board.

Water Board staff then collaborated with the US Environmental Protection Agency to contract with Tetra Tech, Inc., to evaluate appropriate numeric targets, suspended sediment loading characteristics and sources, and allocations.

### **Numeric Targets**

Tetra Tech's results provided the foundation for staff to propose numeric targets for suspended sediment that protect cold freshwater habitat. In addition, staff proposes additional numeric targets for streambed characteristics to protect the spawning and rearing beneficial uses. These targets will serve as numeric interpretations of the narrative, general water quality objective for sediment. The objective states, "the suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses." Additionally, there are no numeric water quality criteria relating to sedimentation/siltation impairment. These TMDLs use multiple numeric targets within two categories: suspended sediment concentration and streambed characteristics.

Numeric targets for suspended sediment concentration and duration are derived from the Newcombe and Jensen "Severity of Ill Effects"

(SEV) model (more information on this model is presented on pages 9-16 of the Final Project Report, Attachment B, at the following website:

<http://www.waterboards.ca.gov/centralcoast/Board/Meetings/2005meetings.htm>

). Tetra Tech analysts established the suspended sediment numeric targets by comparing modeled results for two loading scenarios (existing conditions and load reduction conditions) to the Newcombe and Jensen SEV. The results of these comparisons are the numeric targets. The suspended sediment numeric targets represent water quality conditions for seven major subwatersheds within the Pajaro River system (see Table 4-4, page 16, of the Final Project Report, Attachment B, at the following website:

<http://www.waterboards.ca.gov/centralcoast/Board/Meetings/2005meetings.htm>).

Numeric targets for streambed characteristics are also proposed, and include residual pool volume targets, as well as size and composition of sediment within spawning gravels (see Table 4-5, page 17, of the Final Project Report, Attachment B, at the following website:

<http://www.waterboards.ca.gov/centralcoast/Board/Meetings/2005meetings.htm>).

### **Source Analysis**

The source analysis for this TMDL was challenging due to the discrepancies and uncertainties created in integrating the qualitative source identification from past reports, with the quantitative analysis conducted by Tetra Tech. Tetra Tech relied on a computer model that was not capable of specifying or quantifying all of the sediment sources that were identified in earlier qualitative studies. For example, the qualitative studies identified streambank erosion as one of the contributors to sediment impairment in portions of the Pajaro River watershed, but the Tetra Tech report did not quantify or discuss the relative contribution of this source to the watershed-wide impairment. To reconcile this discrepancy, Water Board staff identified sources in terms of sediment producing activities (e.g., operating roads or grazing cattle). We then allocated loads to the land uses in which these activities occur (e.g., urban lands, pasture lands). Water Board staff has proposed implementation requirements for parties conducting these activities within specific land use categories.

Sources of sediment include nonpoint and point source discharge activities occurring within numerous land use source categories.

Nonpoint sources include:

- irrigated agriculture activities upon crop, fallow and orchard lands;
- timber harvesting activities upon forested lands;
- grazing activities upon pasture and range lands;
- urban and rural residential development, roads, farm animal and livestock boarding upon urban lands;
- unpaved roads in the San Benito watershed, and paved and unpaved roads in the Corralitos Creek and Rider Creek watersheds upon lands in the roads land use category;
- hydromodification-related activities upon all types of land uses;
- off-road recreational vehicle areas;
- sand and gravel mining;
- natural erosion and landslides.

Point sources include the small Municipal Separate Storm Sewer Systems (MS4s) of Watsonville, Hollister, Gilroy, and Morgan Hill.

#### **TMDLs and Allocations**

To determine the TMDLs and allocations, Tetra Tech developed a dynamic watershed model to consider time-variable nonpoint source contributions from twenty-four (24) subwatersheds using the Soil and Water Assessment Tool (SWAT) model (more information on this model is presented on pages 26-33 in the Final Project Report, Attachment B, at the following website: <http://www.waterboards.ca.gov/centralcoast/Board/Meetings/2005meetings.htm>). The analysis establishes a set of TMDLs and allocations for seven major subwatersheds by comparing modeled results for two scenarios (existing conditions and load reduction conditions). The set of seven TMDLs is a composite of the loads and allocations from the twenty-four subwatersheds. More information on this analysis is presented on pages 34 and 35 of the Final Project Report, Attachment B, at the following website:

<http://www.waterboards.ca.gov/centralcoast/Board/Meetings/2005meetings.htm>. The TMDL load allocations are shown in Table 6-5, page 36 of the

Final Project Report, Attachment B, at the following website:

<http://www.waterboards.ca.gov/centralcoast/Board/Meetings/2005meetings.htm>).

#### **Implementation Plan**

This TMDL Implementation Plan identifies actions to control sediment discharges and the regulatory mechanisms to implement the TMDLs. The Implementation section of Attachment A, Resolution No. R3-2005-0132, pages 8-10, indicates specific regulatory authorities and time frames for these actions.

Landowners and operators who conduct irrigated agricultural activities will implement agricultural management measures and perform monitoring and reporting pursuant to the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands.

Land owners and operators who conduct timber harvest activities will implement timber harvest management measures and perform monitoring and reporting pursuant to the General Conditional Waiver of Waste Discharge Requirements for Timber Harvest Activities.

Land owners and operators who conduct sand and gravel mining operations must assess cumulative impacts to beneficial uses from their operations and develop and implement mitigation measures for the impacts. The Executive Officer will revise Waste Discharge Requirements to require the assessments and mitigation measures. Water Board staff will encourage sand and gravel mining operators to conduct the cumulative impacts assessment cooperatively.

The small Municipal Separate Storm Sewer System (MS4) communities of Watsonville, Hollister, Gilroy, and Morgan Hill (cities), are required to include specific actions to reduce sediment discharges pursuant to NPDES General Permit for Storm Sewer Systems. The cities will then describe the actions taken in their annual report.

Landowners and operators who conduct grazing activities, farm animal and livestock boarding, hydromodification-related activities that cause streambank erosion, and road activities must comply with the Pajaro River Watershed land

disturbance prohibition. Staff proposes the following language be added to the Basin Plan as the Pajaro River Watershed land disturbance prohibition.

The controllable discharge of soil, silt, or earthen material from any grazing, farm animal and livestock, hydromodification, road, or other activity of whatever nature into waters of the State within the Pajaro River watershed is prohibited.

The controllable discharge of soil, silt, or earthen material from any grazing, farm animal and livestock, hydromodification, road, or other activity of whatever nature to a location where such material could pass into waters of the State within the Pajaro River watershed is prohibited.

The above two prohibitions do not apply to any discharge regulated by existing National Pollutant Discharge Elimination System permits, Waste Discharge Requirements or waivers of Waste Discharge Requirements.

The above two prohibitions do not apply to any grazing, farm animal and livestock, hydromodification, or road activity if the owner or operator:

- i. Submits a Nonpoint Source Pollution Control Implementation Program, consistent with the *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program, May 20, 2004*, that is approved by the Executive Officer, or
- ii. Demonstrates there is no activity that may cause soil, silt, or earthen material to pass into waters of the state within the Pajaro River watershed, as approved by the Executive Officer.

This Land Disturbance Prohibition takes effect three years following approval by the U.S. Environmental Protection Agency.

*The Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program,*

*May 20, 2004* describes the elements that must be included in a Nonpoint Source Pollution Control Implementation Program (NPS Implementation Program). Each NPS Implementation Program must include the following key elements:

**Key Element 1:** An NPS Implementation Program must explicitly acknowledge the beneficial uses and water quality requirements the programs are designed to protect and meet;

**Key Element 2:** The NPS Implementation Program shall include a description of the management practices (MPs) and other program elements that are expected to be implemented, along with an evaluation program that ensures proper implementation and verification;

**Key Element 3:** The Implementation Program shall include a time schedule and quantifiable milestones, should the Water Board so require;

**Key Element 4:** The Implementation Program shall include sufficient feedback mechanisms (e.g. reporting, inspection, monitoring, etc.) so that the Water Board, dischargers, and the public can determine if the implementation program is achieving its stated purpose(s), or whether additional or different MPs or other actions are required; and,

**Key Element 5:** Each Water Board shall make clear, in advance, the potential consequences for failure to achieve an NPS control implementation program's stated purposes

#### **Monitoring Plan**

Central Coast Water Board staff will develop a monitoring program within five years following TMDL approval. The program will be consistent with other sediment TMDLs and regional sediment monitoring programs, and will be developed in cooperation with implementing parties. In addition, staff will identify funding sources during this five-year development period. This program will be complex to design and implement. The program will be also be labor-intensive because it will require ongoing measurements of sediment, stream flow, and streambed characteristics at many stations throughout the Pajaro River Watershed. Success of the monitoring program will depend on careful design and implementation by personnel with appropriate expertise in collecting the data.

While this will be a complex challenge, staff believes that this type of monitoring is necessary to determine beneficial use impacts of sediment and water quality improvements consistent with the assumptions of the TMDL.

### **Achieving the TMDL**

Water Board staff anticipates that this TMDL will be achieved in 45 years. This is based on the time required for implementing parties to conduct additional assessments, establish programs, implement management practices, develop a TMDL monitoring plan, and to gather necessary data in order to demonstrate that numeric targets are met.

### **ENVIRONMENTAL SUMMARY**

The basin planning process has been certified by the Resources Agency in accordance with Section 21080.5 of the Public Resources Code and is therefore exempt from Chapter 3 of the California Environmental Quality Act (CEQA). The analysis contained in the Final Project Report, the CEQA Checklist, this staff report and the responses to comments complies with the requirements of the SWRCB's certified regulatory CEQA process, as set forth in California Code of Regulations, Title 23, section 3775 et seq. Furthermore, the Central Coast Water Board finds that the analysis fulfills the Central Coast Water Board's obligations attendant with the adoption of regulations "requiring the installation of pollution control equipment, or a performance standard or treatment requirement," as set forth in section 21159 of the Public Resources Code. All public comments were considered.

### **ANTI-DEGRADATION**

Anti-Degradation – This order is consistent with the provisions of the State Water Resources Control Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California" and 40 CFR 131.12. The TMDL will result in improved water quality throughout the region and maintains the level of water quality necessary to protect existing and anticipated beneficial uses.

### **STATE SCIENTIFIC PEER REVIEW**

Peer Review comments were provided to staff on June 28, 2005. Staff prepared responses and revised the TMDL report in response to these comments on

July 25, 2005, prior to distributing for Public Comments. Peer Review comment and staff responses are included in Attachment F. These comments resulted in minor changes, mostly clarification of existing information or recommendations, as indicated in the staff responses.

### **PUBLIC COMMENTS**

This staff Report and its attachments, including the Resolution, were made available for Public comment on August 23, 2005. Comments were received by October 10, 2005. Public Comments and Staff responses are included in Attachment G to this Staff Report. These comments resulted in changes to the recommendations as indicated in the staff responses.

### **RECOMMENDATION**

Adopt Resolution No. R3-2005-0132 contained in Attachment A, as proposed, to establish the Pajaro River Sediment TMDL and Implementation Plan, and the Pajaro River Watershed Land Disturbance Prohibition as Basin Plan Amendments.

### **ATTACHMENTS**

- A. Resolution No. R3-2005-0132, including attachment "Proposed Basin Plan Amendments."
- B. Final Project Report: Total Maximum Daily Loads for Sediment in the Pajaro River Watershed including Pajaro River, Llagas Creek, Rider Creek, and San Benito River, March 2004 is at <http://www.waterboards.ca.gov/centralcoast/Board/Meetings/2005meetings.htm>.
- C. California Environmental Quality Act "Functional Equivalent" Report for Basin Plan Amendment (Resolution No. R3-2005-0132)
- D. Notice of Public Hearing / Notice of Filing
- E. Draft Certificate of Fee Exemption/De Minimus Impact Finding
- F. Scientific Peer Review Comments and Staff Response
- G. Public Comment and Staff Response